

Low-voltage moulded-case
circuit-breakers

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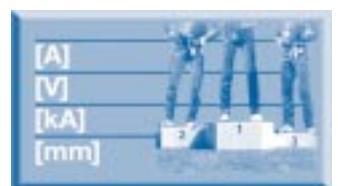


ABB SACE

ABB

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SACE Isomax S. The greatest project for moulded-case circuit-breakers

A single series for all applications

SACE Isomax S is a project which evolves continually and is today the largest and most complete family of low voltage moulded-case circuit-breakers on the market, able to fulfil all installation requirements, from the small user up to large industrial electrical power distribution plants.

Innovation, Technology and Quality have always been the main guides for ABB SACE in developing products and are at their peak in the SACE Isomax S series – the moulded-case circuit-breakers characterised by high quality, reliability, and performance under all conditions, simplicity of installation and safety of operation. The continual and constant evolution of the series has led to further extending the range of products, thereby making the SACE Isomax S offer increasingly complete over time.

The series, which is divided rationally into eight basic sizes from S1 to S8, does, in fact, consist of different ranges destined to fulfil any installation need in a specific and optimal way.

The completeness of the series can also be noted in better rationalisation of use: the overall dimensions, methods of installation and possibility of applying accessories are all the same, regardless of the type of range the circuit-breaker is placed in.

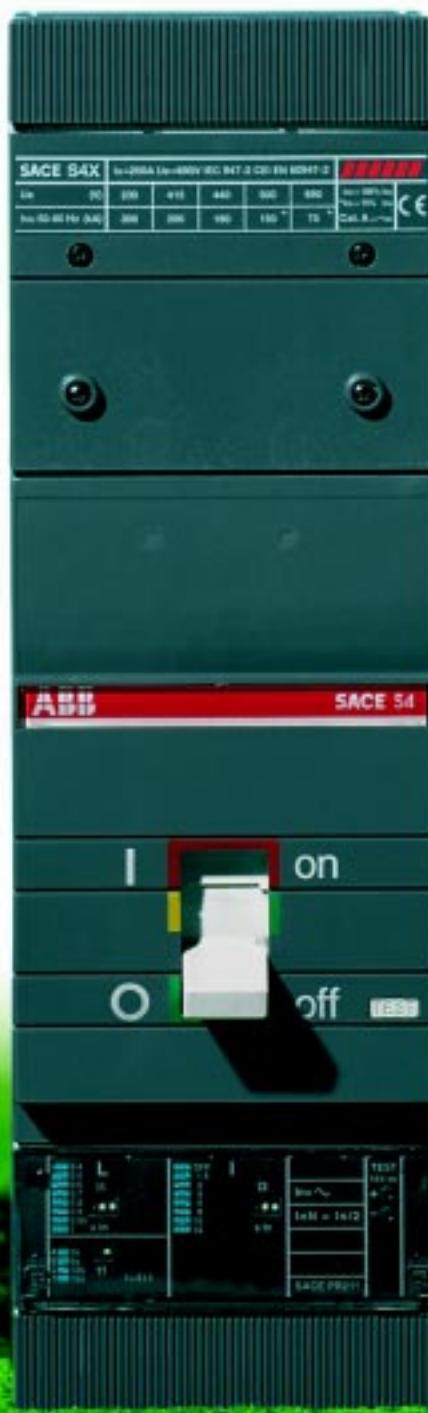
Great importance is also put on the microprocessor-based electronic releases (mounted on the circuit-breakers starting from 160A): SACE PR211/P, PR212/P and SACE PR212/MP (International ABB SACE Patent), specifically designed to actuate dedicated functions for motor starting and protection.

Thanks to innovative and state-of-the-art protection functions, they ensure reliability and precision and are unaffected by electromagnetic interference. A basic characteristic of these types of releases is their ability to communicate and dialogue with the SACE SD-View 810 self-configuring software, thereby allowing full integration of the circuit-breakers in the management logics relative to electric network supervision and control systems.





The new series has been studied respecting the most modern ergonomic criteria. Witness to this is the prize awarded with the IF seal to the circuit-breakers at the Design Forum in Hannover.





A world of solutions for installation design engineering.

An answer to all requirements.

The SACE Isamax S family is divided into eight basic sizes, S1, S2, S3, S4, S5, S6, S7 and S8 with rated uninterrupted currents from 125 to 3200A.

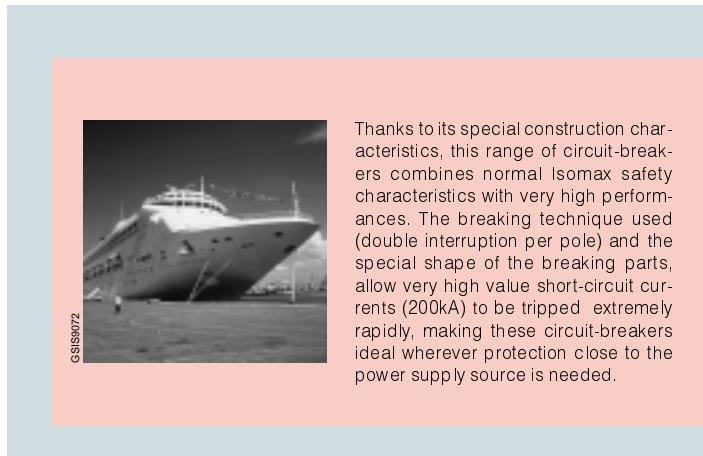
The types of devices consist of: fixed, plug-in and withdrawable circuit-breakers with seven ultimate rated breaking capacity levels - from 16 to 200kA (380-415V) - identified by the letters:

B, N, S, H, L, V, X.

From this family, which is considered the common "nucleus", a series of dedicated ranges are configured, which keep the same installation characteristics and accessory application possibilities. Within the series there are therefore circuit-breakers available for alternating and direct current distribution, current-limiting circuit-breakers, circuit-breakers for motor protection, switch-disconnectors, circuit-breakers for applications with voltages up to 1000V, and residual current circuit-breakers, as well as specific ranges (for motor protection and switch-disconnectors) complying with the North American UL489 and CSA C22.2 Standards.

This means wider application possibilities both in industrial and civil sectors.

They can therefore be mounted in primary (Power Center) and secondary (Panel Board) distribution switchboards, for motor protection and control (Motor Control Center), in generators and for end users. Their performances are, however, of particular interest where critical situations arise (very high rated and fault currents), or where complex plant engineering solutions are needed (special coordination requirements and plant automation). They also guarantee total selectivity of the protections up to full breaking capacity of the circuit-breaker installed on the load side.



GSISS072

Thanks to its special construction characteristics, this range of circuit-breakers combines normal Isamax safety characteristics with very high performances. The breaking technique used (double interruption per pole) and the special shape of the breaking parts, allow very high value short-circuit currents (200kA) to be tripped extremely rapidly, making these circuit-breakers ideal wherever protection close to the power supply source is needed.

Centralised supervision and control systems



The reliability, efficiency and quality of a LV electrical power distribution service is considerably increased by constant supervision of users and all the parameters of the installation itself. The information regarding the installations is collected using microprocessor-based field components which can be mounted directly on board the apparatus, such as the SACE PR212/P release, or using the devices in the SACE SD family. Moreover, the use of the SACE SD-View 810 software allows a simple personal computer to be converted into a work station for supervising and controlling electrical power distribution plants.

Alternating current

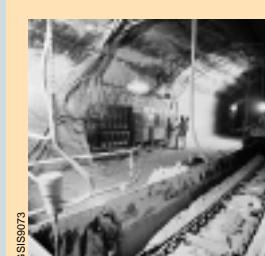


Circuit-breakers with thermomagnetic releases and circuit-breakers fitted with microprocessor-based SACE PR211/P, PR212/P releases are available for protection of alternating current networks. These feature an application field from 10 to 3200A and a rated voltage of 690V. Apart from the more generic applications, they are particularly suited to protection of generators, capacitors, transformers and machine tools.

Direct current



Pole connection in series allows applications in the most severe operating conditions and in any type of network (insulated, with earthed polarity, and with median point of the power supply earthed). The circuit-breakers for direct current with thermomagnetic releases are available for operating currents between 10A and 800 A, with rated voltages up to 750 V, with 3 poles in series, and 250 and 500V, with two poles in series.



GSISS073

The range for applications at 1000V in alternating current and direct current extends the use of the moulded-case circuit-breakers even further and is a good example of the continual evolution of the SACE Isamax S series. They are particularly suitable for installation in special ambients, such as mines, petrochemical plants and for electric traction.



GSISS074

ABB SACE proposes various solutions, which allow type 2 coordinations to be made for switching and protecting motors, from 0.37kW to 355kW. It is possible to select either circuit-breakers suited just to protection against short-circuit, or circuit-breakers fitted with the new SACE PR212/MP electronic release, which is technologically advanced and has been specifically studied for motor protection. The latter integrates protection functions on



**SACE Isomax S
current-limiting
circuit-breakers**



GSIS001

The switch-disconnectors are derived from the corresponding circuit-breakers, keeping the overall dimensions, versions and accessories unchanged. They guarantee operation and isolation in maximum safety and their release device can be activated either by the undervoltage release or by the shunt opening release. They can also be fitted with residual current releases, thereby constructing "pure" residual-current circuit-breakers.



**SACE Isomax S
switch-disconnectors**



**SACE Isomax S
Power distribution**



GSIS075



**SACE Isomax S
for applications
up to 1000V**



GSIS0693



**SACE Isomax S
according to UL/CSA
Standards**

Thanks to a specific range of SACE Isomax S circuit-breakers complying with the UL489 and CSA22.2 Standards, there are also greater possibilities for those customers operating on markets subject to the specifications defined in the North American standards. The range consists of seven sizes with rated uninterrupted current from 100A to 2500A and breaking capacities, at 480 V AC, which can reach 100kA. Within the basic series, there are circuit-breakers with magnetic only releases (MCP - Motor Control Protection) for motor protection, and switches (Moulded-Case Switch - MCS) for use as isolators or switching devices for lines, busbars or plant parts.



**SACE Isomax S
for motor protection
classical and advanced**

board the circuit-breaker which are normally carried out by other devices, thereby ensuring numerous installation and service advantages.



A world of success

The SACE Isomax S offer has been constantly renewed according to market requirements – and often even anticipating these – and is always to the fore from the technological viewpoint. Meanwhile, the quality and reliability have always remained at the maximum levels expected and the market has shown its appreciation of this.

Behind every reference lies a requirement fulfilled. It is facts which speak for SACE Isomax S. SACE Isomax S is a highly successful product of recognised quality, with many fields of application and it involves different sectors all over the world, with either standard or highly personalised products. There is nowhere electrical power is used where SACE Isomax S is not to be found: manufacturing industries, steelworks, refineries and chemical plants, drilling rigs, gas pipelines, water pipelines, hospitals, airports, trains, railway and underground railway stations, calculation centres, offices, congress centres, theatres, and skyscrapers, as well as the most prestigious buildings worldwide.

ABB SACE has, moreover, acquired knowledge which is practically unsurpassed in application areas where the highest degree of safety is required, and this has qualified it as the world leader in various sectors. Thousands of ships of all types – cruise ships, container ships, bulk carriers, tankers, etc. – and flying the flags of all nations – are equipped with ABB SACE products, which are also widely used in railway traction and are the favourite product in the depths of mines.

ABB SACE apparatus is also responsible for protection (sometimes also integrated with control functions) of plants of considerable economic and technological importance, constructed within the sphere of large infrastructure projects. Orders are processed which stand out both for their size (such as the pumping stations of gas pipelines thousands of kilometres long) and for their advanced context (astronomical observatories and international research centres). SACE Isomax S imposes itself on the markets worldwide. For example, apparatus has been supplied to some of the most important European and Middle Eastern electricity boards as well as to North American and Asian electrified transport companies.

Protection and control
in installations for electric
traction

Particularly severe
environmental conditions
such as mines and steelworks

Refineries and chemical plants
as well as
gas pipelines, water pipelines ...

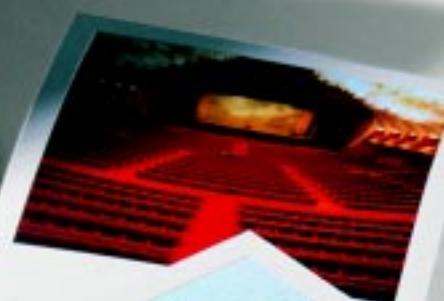
Installation on board ships



Offices, theatres,
shopping malls and residential
complexes



Underground railway
stations



Off-shore drilling rigs

Protection and control
of motors, generators...

GSI59076



Selection and design engineering tools, management flexibility, services and consultancy: an all-round offer

With the aim of guiding and facilitating selection of its products, ABB SACE ensures 360° support, both before and after the sale. For this purpose, to design and size electrical installations, it makes various work tools available, which facilitate calculations, ensure compliance of the installation with the Standards and reduce the risks of any errors.

These are basically divided into calculation, design and estimate software, and manual tools.

1

– **D.O.C.** (Design Optimization & Computation) is a system which allows correct sizing of industrial low voltage electrical installations, able to propose the most suitable design selections regarding cables, busbars and protection devices. It allows the design engineer to develop clear and complete design documentation rapidly, based on the calculation models provided by the most recent standards.

– **C.A.T.** (Computer Aided Technical Selection) is both an electronic catalogue and a technical aid tool for selecting and applying accessories to each individual circuit-breaker.

By means of a guided pathway, it is possible to select, configure and order the most suitable apparatus for your own installation requirements.

Four **Slide rules** of different colours, which make up the ABB Kits, allow rapid sizing calculations of the electrical installation. The following can be carried out:

- Cable sizing and calculation of the short-circuit currents (yellow slide rule)
- Checking the protections against direct contact and short-circuit of the cables (orange slide rule)
- Selective and back-up coordination (green slide rule)
- Sizing of motor lines and transformer outgoing feeders (blue slide rule)

The calculation methods and data indicated on the slide rules are taken from the CEI, IEC and NFC Standards in force and from installation practice.

The **Guide to low voltage installations** is a brief collection of legal and technical regulations based on the current standards, regarding design, sizing and installation of an electrical plant.

The guide takes into consideration the user plant from the electric power delivery point (MV/LV substation) in 1st category systems.

Immediate ordering and management flexibility

Rapid ordering procedures have been provided for circuit-breakers in the SACE Isomax S series, and the configuration logic of the series enables efficient and flexible warehouse management. An order file can be generated compatible with the EDIFACT (Metel or ABB) standard, ready to be converted into EDI format and transmitted electronically.





Using EDI (Electronic Data Interchange) to send orders rationalises the logistics chain, thereby reducing transit times and the risk of errors. EDI transmission allows the order to be loaded automatically at ABB SACE so that the request is immediately sent to production, together with the order acknowledgement to the customer.

The availability of standardised accessories for groups of circuit-breakers makes it possible to reduce the number kept in the warehouse and very short procurement times allow limited stocks to be kept as these can be rapidly replenished.

Training: an indispensable tool for professionals

By means of its technical training courses, ABB SACE is committed to putting its wealth of experience gained in over more than 60 years of operation at disposal. The courses are an opportunity for all operators in the sector to update their knowledge and compare

notes, under the guidance of experts. Information and training have always been success factors for professional growth and development. Professional refresher training on both technical aspects and product developments, as well as on the standards and legislation, is essential, considering that these have such important implications for the safety of people and plants. The primary aim is to meet the information needs of professionals, especially by converting the technical-standard and legislative concepts into practical terms which can be applied directly to the various products and installations.

"ABB SACE Service"

Training courses are also provided for operators and maintenance personnel who work on ABB SACE apparatus and systems. For this purpose and to meet the need for evaluation and maintenance of existing electrical installations, the company has set up the "Service Division" within its own structure, which acts as a qualified interlocutor working in close collaboration with the managers/users of the plants, to carry out maintenance, repair and overhauling activities at ABB SACE and on the user's premises. The division also offers a spare parts, assembly and commissioning service for its own switchboards.



Just one product for everyone

SACE Isomax S is a product which has been thought up and constructed for all types of customers: the user, the design engineer, the switchboard builder, the installer, the maintenance technician and the wholesaler.

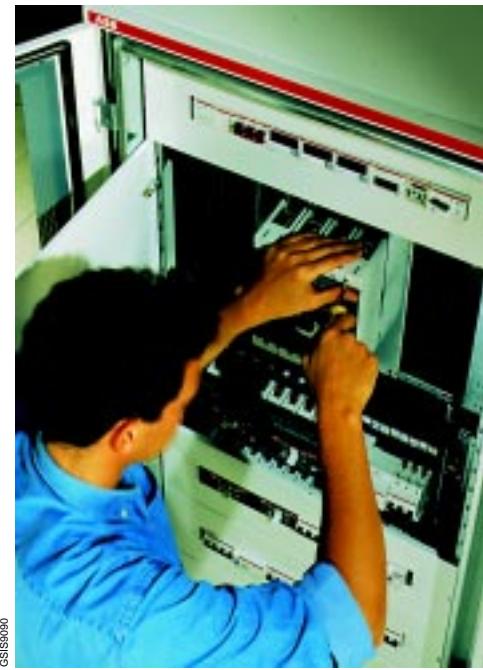
1
ABB SACE proposes technical solutions to the **user** which fulfil all requirements and are always up to date with technological innovations in the field of electrical power distribution. It offers high quality products, reliability and precision, which guarantee high performances under any conditions, safe products during service and, when necessary, simple replacement of any faulty parts.

The **design engineer** has products available which comply perfectly with the international technical standards and which are able to do the job simply, safely and reliably at the highest levels of performance. SACE Isomax S circuit-breakers offer the design engineer solutions for sizing, coordination and flexibility of application which allow him to draw up a state-of-the-art project, selecting from among well-known ranges and circuit diagrams to be integrated in a complete system, and satisfying all installation requirements and performances according to the standards.

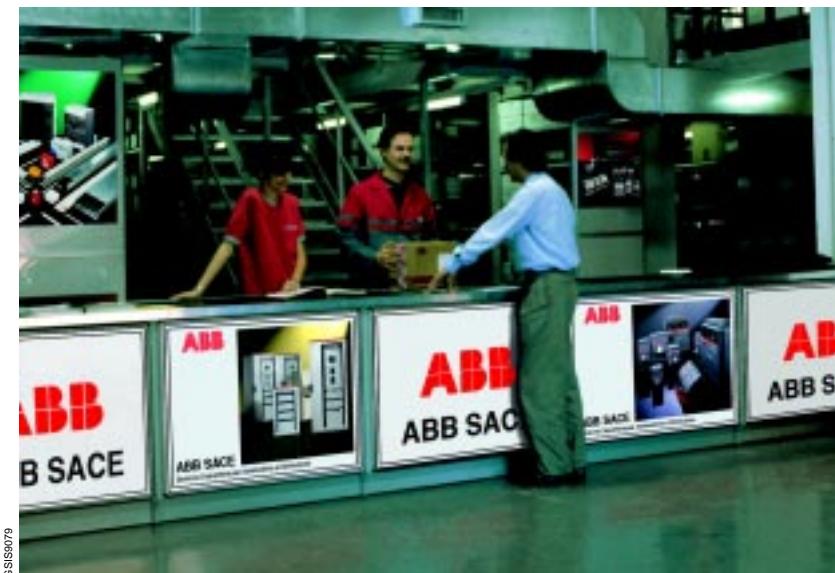
The requirements of a **switchboard builder** are fully satisfied thanks to careful design of the product. The limited volumes of the pieces of apparatus allow the switchboard dimensions to be kept to a minimum and the modularity and compactness the ranges of products are conceived with allow



GSIS9092



GSIS9090



GSIS9079

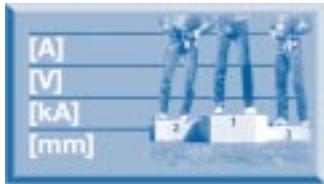
simple installation inside the switchboard. The whole range of products is divided into eight sizes and constructed in only three depths, thereby allowing standardisation of the supporting structures and of the switchboards and installation in prefabricated structures. The dimensional uniformity and the possibilities of connection, thanks to the variety of terminal available, considerably facilitates connections by means of busbars or cables.

ABB SACE provides the **installer** with products for any type of plant, which are practical to install, simple to use, assemble and connect and easy to check, thanks also to the quality of the accessories supplied with the apparatus and the technical support documentation provided.

SACE Isomax S circuit-breakers allow easy and safe maintenance to be carried out, enabling the accessories to be inserted conveniently on the front of the circuit-breaker. Construction rationality as well as modularity of the structure, allow the **maintenance technician** to carry out replacements without the need for any special adaptation, even when changing from one type of circuit-breaker to another (for example from an automatic

to a current-limiting circuit-breaker). Standardisation of Isomax S circuit-breakers and their accessories means simple and economical management of the spare parts warehouse for the **wholesaler**.

Furthermore, the clarity of product coding considerably helps product ordering, reduces procurement times and allows limited stocks to be kept in the warehouse since the products can be replenished rapidly.



Main characteristics

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Construction characteristics

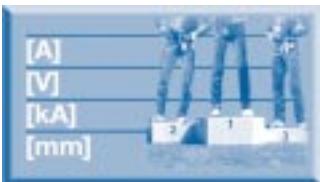
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Panorama of the SACE Isomax S family

A single series for all applications

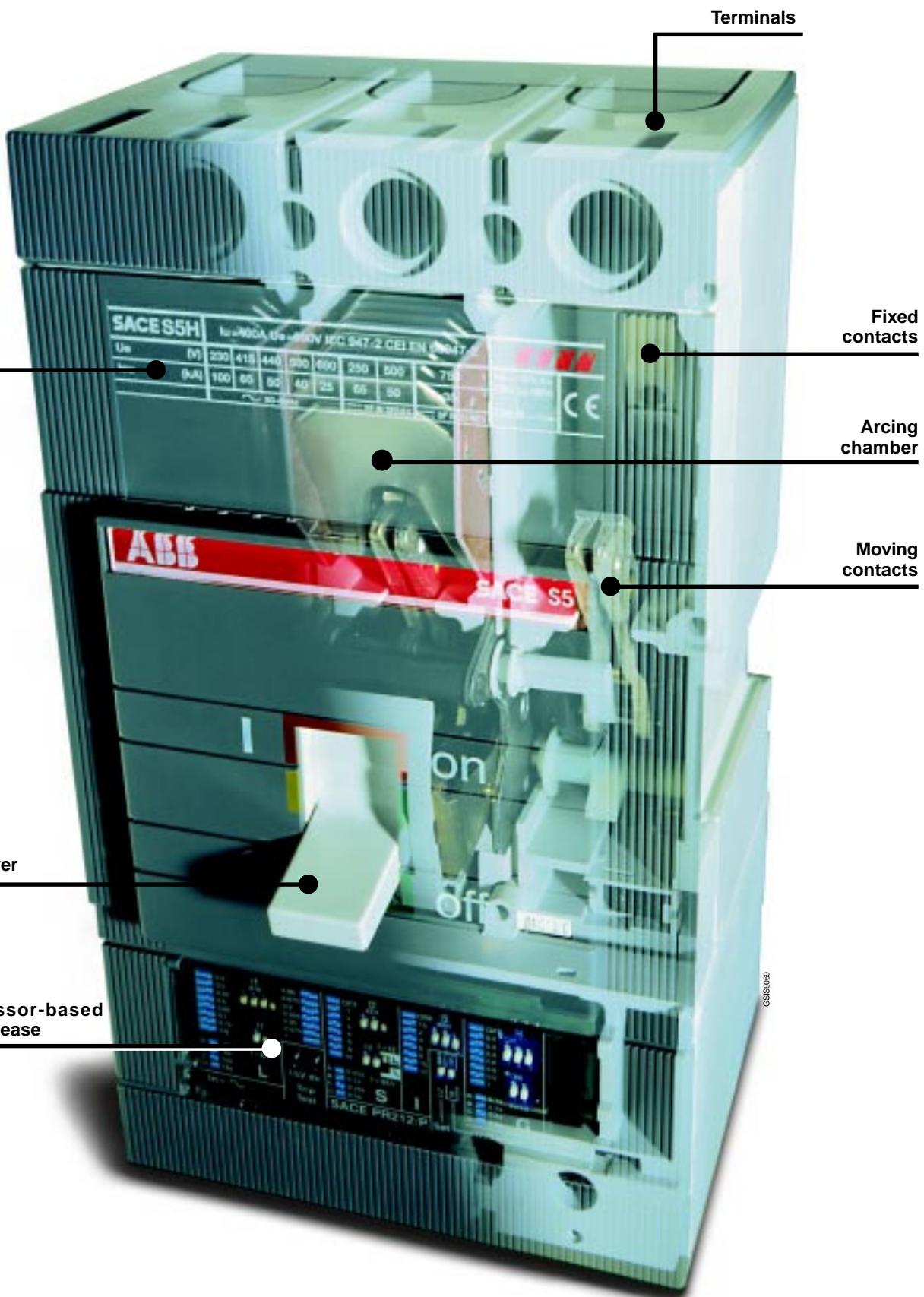
		SACE Isomax S1	SACE Isomax S2
CIRCUIT-BREAKERS FOR AC / DC DISTRIBUTION			
	Poles	[nr.]	S1
	Iu	[A]	3 - 4
	Ue (AC)	[V~]	125
	Icu (380/415V AC)	[kA]	500
			S2
	B	16	3 - 4
	N	25	160
	S		690
	H		
	L		
	V		
	Ue (DC)	[V-]	250
			500
CURRENT-LIMITING CIRCUIT-BREAKERS			S2X 100
	Poles	[nr.]	3
	Iu	[A]	100
	Ue	[V~]	690
	Icu (380/415V)	[kA]	70
	Icu (690V)	[kA]	10
CIRCUIT-BREAKERS FOR MOTOR PROTECTION			S2X 80
	Poles	[nr.]	3
	Iu	[A]	80
	In	[A]	1...80
	Ue	[V~]	690
	Magnetic only release IEC 60947-2		■
	Electronic release PR211/P (I), IEC 60947-2		-
	Electronic release PR212/MP, IEC 60947-4-1		-
CIRCUIT-BREAKERS FOR APPLICATIONS AT 1000 V AC			
	Poles	[nr.]	
	Iu	[A]	
	Icu (1000V AC)	[kA]	
CIRCUIT-BREAKERS FOR APPLICATIONS AT 1000 V AC			
	Poles	[nr.]	
	Iu	[A]	
	Icu (1000V DC), 4 poles in series	[kA]	
SWITCH-DISCONNECTORS according to IEC 60947-3 Standard			S2D
	Poles	[nr.]	3 - 4
	Ith	[A]	125 - 160
	Ue	[V~]	690
	Icm	[kA]	3,1
	Icw	[kA]	2,2
Circuit-breakers according to UL 489 and CSA 22.2 Standards			S1N
	Poles	[no.]	3
	Maximum continuous current (40 °C)	[A]	100
	Maximum Ampere Breaking Capacity (480 V)	[kA]	20
	Thermal-magnetic trip unit		■
	Microprocessor based trip unit		-
	MCP		-
	MCS		-

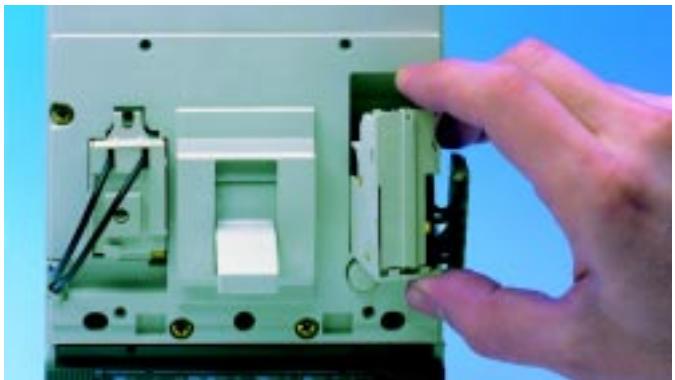
SACE Isomax S3	SACE Isomax S4	SACE Isomax S5	SACE Isomax S6	SACE Isomax S7	SACE Isomax S8
S3	S4	S5	S6	S7	S8
3 - 4	3 - 4	3 - 4	3 - 4	3 - 4	3 - 4
160-250	160-250	400-630	630-800	1250-1600	2000-2500-3200
690	690	690	690	690	690
35	35	35	35	50	50
65	65	65	65	65	85
85	100	100	100	100	120
750	-	750	750	-	-
S3X	S4X		S6X		
3 - 4	3 - 4		3 - 4		
125-200	250		400-630		
690	690		690		
200	200		200		
75	75		75		
S3 / S3X	S4 / S4X	S5	S6 / S6X	S7	
3	3	3	3	3	
160-250 / 125-200	160-250 / 250	400-630	630-800 / 400-630	1250-1600	
25...200	100...250	320...630	320..800	1000...1600	
690	690	690	690	690	
■	-	-	-	-	
-	■	■	■	■	
	■	■	■	■	
S3L / S3X	S4L / S4X	S5L	S6L / S6X		
3	3	3	3		
160 / 125	160-250 / 250	400	630-800 / 630		
6 / 30	8 / 30	8	12 / 30		
S3L		S5L	S6L		
4		4	4		
160-250		400	630 / 800		
40		40	40 / 50		
S3D			S6D	S7D	S8D
3 - 4			3 - 4	3 - 4	3 - 4
100 - 160 - 250 - 320			400 - 630 - 800	1000 - 1250 - 1600	2000-2500-3200
690			690	690	690
10			30	52,5	85
6,5			15	25	40
S3 B/N/H/L	S4 N/H/L	S5 N/H/L	S6 N/H/L	S7H	S8V
2 - 3	2 - 3	2 - 3	2 - 3	2 - 3	3
150 - 225	250	400	800	1200	1600-2000-2500
85	100	100	100	65	100
■	-	■	■	-	-
S3L	S4 N/H/L	S5 N/H/L	S6 N/H/L	S7H	S8V
S3 H-D 150/225	S4 H-D	S5 H-D	S6 H-D	S7 H-D	S8 V-D

[A]
[V]
[kA]
[mm]

Construction characteristics

Distinctive features of the series





Double insulation

The double insulation technique consists of total separation between the power circuits and the auxiliary circuits and is a characteristic of all SACE Isomax S apparatus from size S3 up. The housing of each electrical accessory is completely segregated from the power circuit, thus avoiding all risk of contact with live parts, thereby increasing operator safety conditions during management and inspection of the installations.

Moreover, the circuit-breaker has redundant insulation between the internal live parts, both regarding thickness of materials and the distances, which are greater than those required by the IEC Standards and are in accordance with American usage.



Selectivity

The complete range of releases means that the protection functions of the apparatus can be coordinated according to current-type, time-type, energy-type or residual-current selectivity chains. It is therefore possible to isolate only the areas affected by the fault, ensuring maximum service continuity. Circuit-breakers in category B are available from 400 A up.

Positive operation

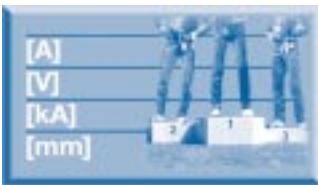
The operating lever always indicates the exact position of the circuit-breaker moving contacts, thereby guaranteeing safe and reliable indications (I = Closed; O = Open; yellow-green line = Open due to release trip). The circuit-breaker operating mechanism has free release, regardless of the pressure on the lever or the speed of operation. Release tripping automatically opens the moving contacts: to close them again, it is necessary to reset the operating mechanism by pushing the operating lever from the intermediate position to the lower limit of the open position.

For plug-in or withdrawable circuit-breakers, the moving part can only be detached from the fixed part with the circuit-breaker open (moving contacts separate from the relative fixed contacts).



Possibility of inspection

With the circuit-breaker out of service, it is possible to check the state of the internal parts and live components of the circuit-breaker directly. The arcing chambers and the fixed and moving contacts are accessible simply by removing the circuit-breaker cover. The operation, facilitated by the limited number of components, reduces maintenance times and ensures a higher degree of safety.



Construction characteristics

Distinctive features of the series



GSIS925



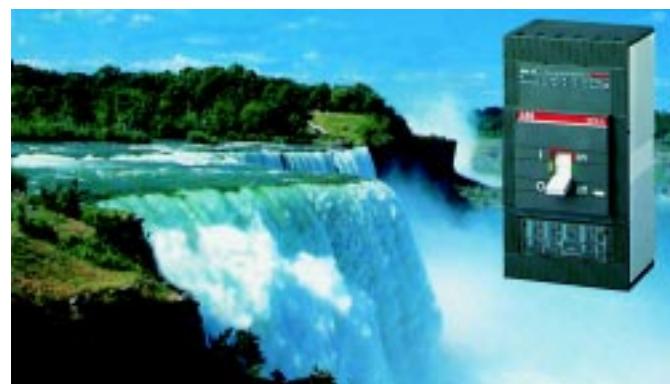
GSIS926

Isolation behaviour

In the open position, the circuit-breaker guarantees isolation of the circuit in compliance with the IEC 60947-2 Standard. For plug-in or withdrawable version circuit-breakers, in the racked-out or withdrawn position, the power and auxiliary circuits are isolated, ensuring that no parts are live. Under these conditions and by means of special connectors, it is possible to carry out blank tests, operating the circuit-breaker in complete safety. The redundant insulation distances guarantee the absence of leakage currents and dielectric strength in the event of any overvoltages between the input and output.



GSIS9127



GSIS9128

Electromagnetic compatibility

By using SACE PR211/P, PR212/P, PR212/MP microprocessor-based overcurrent releases and SACE RC210, RC211, RC212 electronic residual-current releases, the absence of unwarranted trips is guaranteed even in the presence of interference caused by electronic equipment, atmospheric disturbance or discharges of electrical type. Furthermore, the apparatus does not generate interference with other electronic equipment in the vicinity of the installation. This is in compliance with the IEC 60947-2 Appendix F, IEC 1000-4, EN 61000-4, EN 50081-1, EN 50081-2, EN 50082-1, EN 50082-2 European Directive No. 89/336 specifications regarding electromagnetic compatibility EMC.

Tropicalisation

The SACE Isamax S series of circuit-breakers and accessories comply with the strictest regulations for use in hot-humid-saline climates (in compliance with climatograph 8 of the IEC 721-2-1 Standards), thanks to:

- insulating cases made of fibreglass-reinforced synthetic resins;
- anti-corrosion treatment on all main metal parts (C UNI 3564-65 environment);
- Fe/Zn 12 galvanisation (UNI ISO 2081), protected by a conversion layer consisting mainly of chromates (UNI ISO 4520).



Installation positions

The circuit-breaker can be installed in any position without any effect on its rated characteristics. In compliance with the IEC 60947-2 Standards, SACE Isomax S circuit-breakers can be supplied through either top or bottom terminals, without jeopardising operation of the apparatus.

They can be installed in switchboards, mounted directly on the base plate or on Din rails up to size S5.

Mounting on DIN rail up to 630 A

The brackets for fixing onto standardised DIN EN 50022 rails for S1, S2 and DIN EN 50023 rails for S3, S4, S5 simplify assembly of the circuit-breakers up to 630 A in standard switchboards. This allows standardised supporting structures to be used and facilitates the stage for designing and constructing the switchboard metalwork structure.



Resistance to vibration

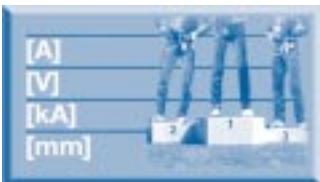
The circuit-breakers are unaffected by vibrations generated mechanically or due to electromagnetic effects, in compliance with the IEC 68-2-6 Standards and the strictest regulations of the major classification organisations:

- RINA
- DET Norske Veritas
- Lloyd's Register of Shipping
- Germanischer Lloyd
- Bureau Veritas.

Degrees of protection

Different measures have been taken in SACE Isomax S circuit-breakers to achieve IP20 degree of protection for the fixed, plug-in and withdrawable version circuit-breaker, excluding the terminals, and IP30 for the front parts of the circuit-breakers installed in switchboards.

The fixed parts are always provided with IP20 degree of protection. It is possible to achieve IP54 degree of protection in accordance with the IEC 60529 Standard with the circuit-breaker installed in a switchboard fitted with rotary handle operating mechanism transmission on the compartment door and the special insulation gaskets which can be ordered separately.



Construction characteristics

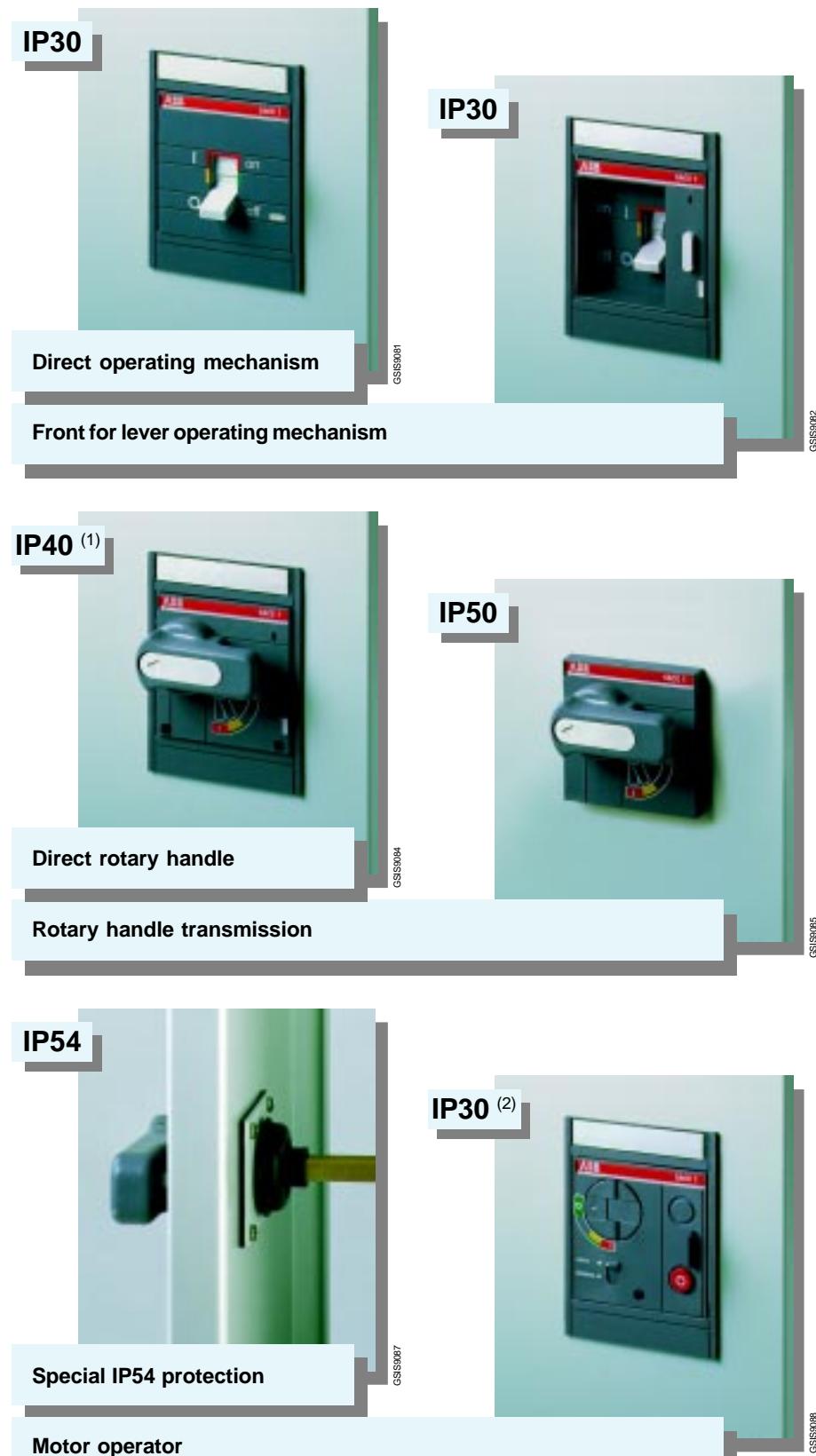
Conditions of use

Degrees of protection (according to CEI EN 60529 Standard file 519)

Circuit-breaker



Circuit-breaker in switchboard



(¹) IP30 for withdrawable circuit-breakers

(²) IP40 for S1-S2 and S6-S7 circuit-breakers

Operating temperature

SACE Isamax S circuit-breakers can be used in ambient conditions where the temperature in the surrounding atmosphere varies between -25 °C and +70 °C and stored in ambients with temperatures between -40 °C and +70 °C.

The circuit-breakers fitted with thermomagnetic overcurrent release have their thermal element set for a reference temperature of +40 °C.

For temperatures between +40 °C and +70 °C, with the same setting, there is lowering of the thermal trip threshold due to the temperature-related behaviour of the bimetallic strip of the release itself.

For temperatures lower than +40 °C, on the other hand, there is an increase in the thermal trip threshold as indicated in the table on page 5/39.

The electronic microprocessor-based overcurrent releases do not undergo any variations in performance with changes in

temperature but, in the case of temperatures higher than 40 °C, the maximum setting of the protection against overloads (function L) must be reduced to take into consideration inertial phenomena that occur in the copper parts of the circuit-breaker through which the phase current passes (moving and fixed contacts, and connection terminals) which cause a decrease in the rated uninterrupted current as indicated in the table on page 5/34.

The performances of the circuit-breaker cannot be guaranteed for temperatures above +70 °C.

To ensure service continuity of the installations, careful thought must be given as to how to keep the temperature within acceptable levels for operation of all the various devices and not only the circuit-breakers. For example, forced ventilation in the switchboards and in the areas where they are installed may be necessary.

Altitude

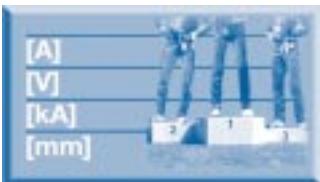
Up to an altitude of 2000 m SACE Isamax S circuit-breaker rated performances are unaffected.

As the altitude increases, the atmospheric properties change in terms of composition, dielectric strength, cooling capacity and pressure.

The circuit-breakers therefore undergo derating, which can basically be measured through the change in significant parameters such as the rated maximum operating voltage and

the rated uninterrupted current.

Altitude	[m]	2000	3000	4000
Rated service voltage, Ue	[V~]	690	600	500
Rated uninterrupted current, Iu	%Iu	100%	95%	90%



Construction characteristics

Modularity of the series SACE Isomax S

Starting from the fixed version circuit-breaker and by means of mounting the conversion kit, all the other versions which are used for the various requirements are obtained.

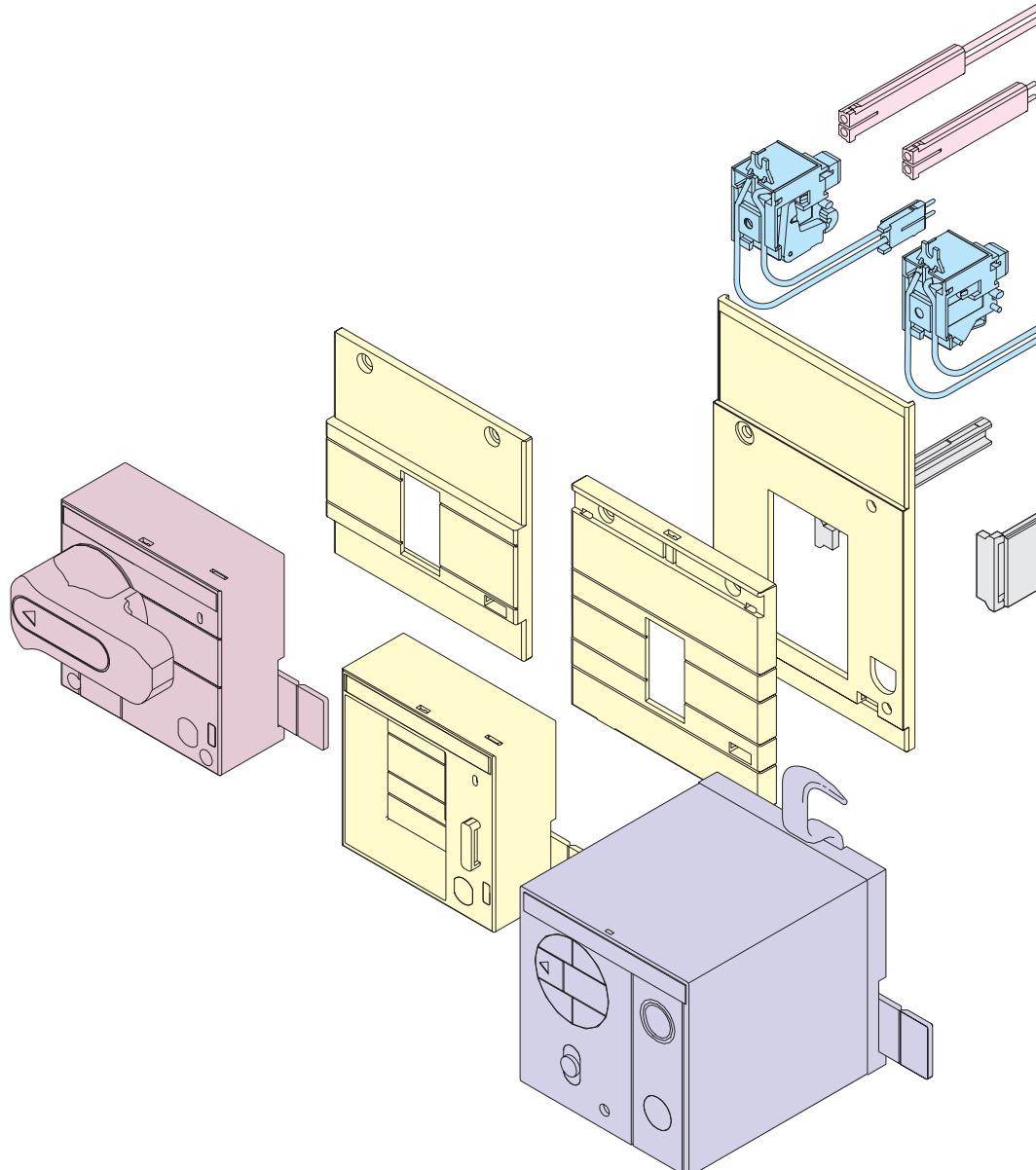
The following are available:

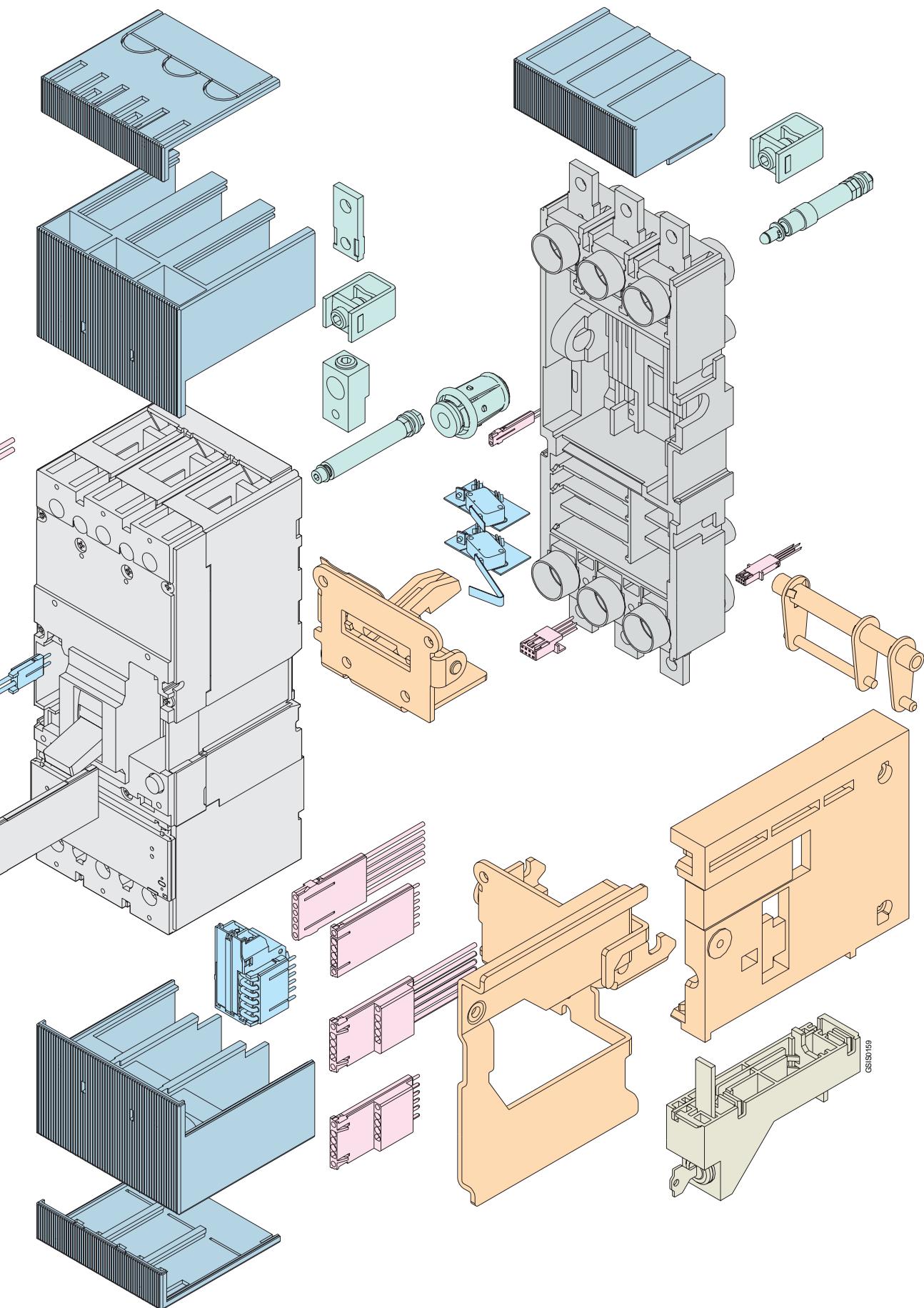
- kit for conversion from fixed circuit-breaker to moving part of a plug-in or withdrawable circuit-breaker
- conversion kit for the connection terminals which make it possible to obtain front and rear terminals for Copper or Aluminium cables, and front and rear terminals for flat bar terminals.

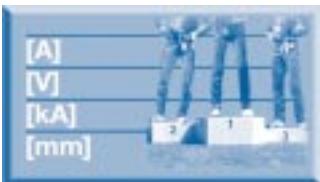
Various accessories are also available:

- shunt opening releases
- undervoltage releases
- auxiliary contacts
- position contacts

- the bracket for rear fixing onto DIN EN 50022 rail for S1-S2 circuit-breakers, DIN EN 50023 rail for S3-S4-S5 circuit-breakers
- direct action motor operator, with stored energy and with solenoid.
- rotary handle operating mechanisms directly on the circuit-breaker and with transmission on the compartment door
- residual-current releases
- accessories for microprocessor-based overcurrent releases such as the signalling, dialogue and actuation unit and external CTs.
- the fixed parts for plug-in or withdrawable circuit-breakers with front terminals for cables or for flat bars and rear terminals for flat bars.

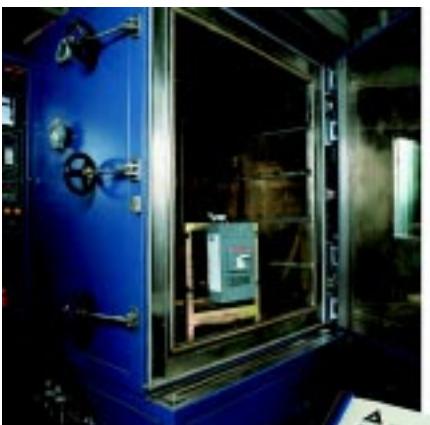






Compliance with the Standards

Standards, Approvals, Certifications and company quality system



SACE Isamax S circuit-breakers and their accessories comply with the IEC 60947-2, EN 60947-2 (unified in 17 countries of CENELEC), CEI EN 60947 and IEC 61000 international Standards and conform with the EC directive:

- "Low Voltage Directives" (LVD) no. 73/23 EEC
- "Electromagnetic Compatibility Directive" (EMC) no. 89/336 EEC.

Certification of compliance with the above-mentioned product Standards, is carried out, in respect of the European EN 45011 Standard, by the Italian certification organisation, ACAE (Association for Certification of Electrical Apparatus), - member of the European organisation LOVAG (Low Voltage Agreement Group).

The attention paid to protecting the environment is another important priority for ABB SACE, and as confirmation of this, the environmental management system has been certified by RINA.



GSIS9192



ISO 9001



GSIS9119

The ABB SACE Quality System complies with the International ISO 9001 Standard (model for assuring quality in design, development, construction, installation and assistance) and to the equivalent European EN ISO 9001 and Italian UNI EN ISO 9001 Standards.

The certification Organisation is RINA-QUACER.

ABB SACE obtained its first certification in 1990.

The ABB SACE Test Room is accredited by SINAL. The apparatus complies with the prescriptions for on-board installations and is approved by major Shipping Registers, such as: LLOYD'S REGISTER OF SHIPPING, GERMANISCHER LLOYD, BUREAU VERITAS, RINA, DET NORSKE VERITAS, POLSKI REIESTR STATKOW and the AMERICAN BUREAU OF SHIPPING.

ABB SACE was the first industrial company in the electro-mechanical sector in Italy to obtain this recognition, and, thanks to a revision of its production process with an eye to ecology, has managed to reduce consumption of raw materials, processing waste and the risk of accidents by 20%.

The attention paid to protecting the environment and to the safety of workers is a priority commitment of ABB SACE and as confirmation of this, the company developed the Environmental Management System in compliance with the International ISO 14001 Standard, certified in 1997, integrating this in 1999 with the Health and Safety in the Workplace Management System in accordance with BS 8800 (British Standards).

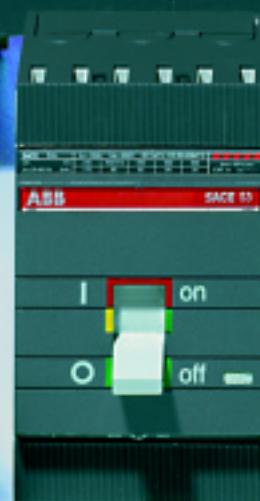
The prizes obtained by ABB SACE at the Forum Design in Hannover and at Electro in Paris bear witness to the consideration given to man and the respect for ergonomic criteria.

Please contact ABB SACE for information regarding the types of circuit-breakers approved, the performances approved and their relative validity.



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Circuit-breakers for power distribution



Eight sizes to optimise use for all plant and installation requirements

690V • 125-3200 A • 16-120 kA (380/415 V)





SACE Isomax S circuit-breakers for power distribution

Electrical characteristics IEC 60947-2



		SACE Isomax S1	SACE Isomax S2			SACE Isomax S3			
		B	N	B	N	S	N	H	L
Rated uninterrupted current, I_u	[A]	125		160			160 - 250		
Poles	Nr.	3-4		3-4			3-4		
Rated service voltage, U_e	(AC) 50-60Hz [V]	500		690			690		
	(DC) [V]	250		500			750		
Rated impulse withstand voltage, U_{imp}	[kV]	6		6			8		
Rated insulation voltage, U_i	[V]	500		690			800		
Test voltage at industrial frequency for 1 min.	[V]	3000		3000			3000		
Rated ultimate short-circuit breaking capacity, I_{cu}		B	N	B	N	S	N	H	L
(AC) 50-60 Hz 220/230 V [kA]		25	40	25	50	65	65	100	170
(AC) 50-60 Hz 380/415 V [kA]		16	25	16	35 (1)	50	35 (1)	65	85
(AC) 50-60 Hz 440 V [kA]		10	16	10	20	25	30	50	65
(AC) 50-60 Hz 500 V [kA]		8	12	8	12	15	25	40	50
(AC) 50-60 Hz 690 V [kA]		-	-	6	8	10	14	18	20 (5)
(DC) 250 V - 2 poles in series [kA]		16	25	16	35	50	35	65	85
(DC) 500 V - 2 poles in series [kA]		-	-	-	-	-	35	50	65
(DC) 500 V - 3 poles in series [kA]		-	-	16	35	50	-	-	-
(DC) 750 V - 3 poles in series [kA]		-	-	-	-	-	20	35	50
Rated short-circuit service breaking capacity, I_{cs} (2) [% I_{cu}]		50%	50%	100%	75%	75%	100%	75%	75%
Rated short-circuit making capacity (415 V) [kA]		32	52,5	32	74	105	74	143	187
Opening time (415V at I_{cu}) [ms]		8	6	8	7	6	8	7	6
Rated short-time withstand current for 1 s, I_{cw} [kA]									
Utilisation category (EN 60947-2)		A		A			A		
Isolation behaviour		■		■			■		
IEC 60947-2, EN 60947-2		■		■			■		
Releases: thermomagnetic	T fixed, M fixed 5 lth	■	■						
	T fixed, M fixed 10 lth	■	■						
	T adjustable, M fixed 3 lth						■	■	
	T adjustable, M fixed 5 lth			■	■		■	■	■
	T adjustable, M fixed 10 lth			■	■	■	■	■	■
	T adjustable, M adjustable								
magnetic only	M fixed		■		■	■	■	■	■
with microprocessor	PR211/P (I-LI) PR212/P (LSI-LSIG)								
Interchangeability									
Versions		F - P		F - P			F - P - W		
Terminals	fixed	FC-R		EF - FC - FC CuAl - R			F - EF - ES - FC FC CuAl - RC - R		
	plug-in	FC-R		FC - R			EF - FC - R		
	withdrawable (3)	-		-			EF - FC - R		
Fixing on DIN rail		DIN EN 50022		DIN EN 50022			DIN EN 50023		
Mechanical life	[No. operations / hourly operations]	25000/240		25000/240			25000/120		
Electrical life (at 415 V)	[No. operations / hourly operations]	8000/120		8000/120			10000(160A)-8000(250A)/120		
Basic dimensions, fixed	3/4 poles L [mm]	78/103		90/120			105/140		
	D [mm]	70		70			103,5		
	H [mm]	120		120			170		
Weights fixed	3/4 poles [kg]	0,9 / 1,2		1,1/1,5			2,6 / 3,5		
plug-in	3/4 poles [kg]	1 / 1,4		1,3/1,7			3,1 / 4,1		
withdrawable	3/4 poles [kg]	-		-			3,5 / 4,5		

(1) All the versions with $I_{cu}=35\text{kA}$ are certified at 36kA
 (2) For S3 N/H/L, S4 N/H/L, S5 N/H, and S6 N/S/H circuit-breakers the performance percentage of I_{cs} at 690V is reduced by 25%.

(3) The withdrawable version circuit-breakers must be fitted with the front flange for the lever operating mechanism or with its alternative accessories, such as the rotary handle or the motor operator

(4) For the S5 circuit-breaker, the plug-in version is only available for the version with 400A rated current
 (5) The SACE S3 circuit-breaker with breaking capacity L at 690V can only be supplied from above



SACE Isomax S4			SACE Isomax S5			SACE Isomax S6				SACE Isomax S7			SACE Isomax S8	
160 - 250			400 - 630			630 - 800				1250 - 1600			2000 - 2500 - 3200	
3-4	690	-	3-4	690	750	3-4	690	750	8	800	800	3000	3-4	690
8	800	3000	8	800	3000	8	800	3000	8	800	800	3000	8	690
N	H	L	N	H	L	N	S	H	L	S	H	L	H	V
65	100	200	65	100	200	65	85	100	200	85	100	200	85	120
35 (1)	65	100	35 (1)	65	100	35 (1)	50	65	100	50	65	100	85	120
30	50	80	30	50	80	30	45	50	80	40	55	80	70	100
25	40	65	25	40	65	25	35	40	65	35	45	70	50	70
18	22	30	20	25	30	20	22	25	30	20	25	35	40	50
-	-	-	35	65	100	35	50	65	100	-	-	-	-	-
-	-	-	35	50	65	20	35	50	65	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	20	35	50	16	20	35	50	-	-	-	-	-
100%	100%	75%	100%	100%	75%	100%	100%	100%	75%	100%	75%	50%	50%	50%
74	143	220	74	143	220	74	105	143	220	105	143	220	187	264
8	7	6	8	7	6	10	9	8	7	22	22	22	20	20
5 (400A)			7,6 (630A) - 10 (800A)				15 (1250A) - 20 (1600A)				35			
A			B (400A) - A (630A)				B				B			
■			■				■				■			
■			■				■				■			
■			■				■				■			
■			■				■				■			
■			■				■				■			
F - P - W			F - P (400) - W				F - W				F - W			
F - EF - ES - FC			F - EF(400A) - ES - FC				F - EF - ES - FC CuAl				F - EF - ES - FC CuAl (1250A)			
FC CuAl - RC - R			FC CuAl (400A)-RC (400A)-R				RC - R				HR - VR			
EF - FC - R			EF - FC - R				-				-			
EF - FC - R			EF(400A) - ES - FC (400A)				EF - HR - VR				EF - HR - VR			
DIN EN 50023			DIN EN 50023				-				-			
20000/120			20000/120				20000/120				10000/120			
10000(160A)-8000(250A)/120			7000(400A)-5000(630A)/60				7000(630A)-5000(800A)/60				7000(1250A)-5000(1600A)/20			
105/140			140/184				210/280				210/280			
103,5			103,5				103,5				138,5			
254			254				268				406			
4 / 5,3			5 / 7				9,5 / 12				17 / 22			
4,5 / 5,9			6,1 / 8,4				-				-			
4,9 / 6,3			6,4 / 8,7				12,1 / 15,1				21,8 / 29,2			

KEY TO VERSIONS
F = Fixed
P = Plug-in
W = Withdrawable

KEY TO TERMINALS
F = Front
EF = Extended front
ES = Extended spreaded front

FC = Front for copper cables
FC CuAl = Front for copper or aluminium cables
R = Rear threaded

RC = Rear for copper or aluminium cables
HR = Rear horizontal flat bar
VR = Rear vertical flat bar



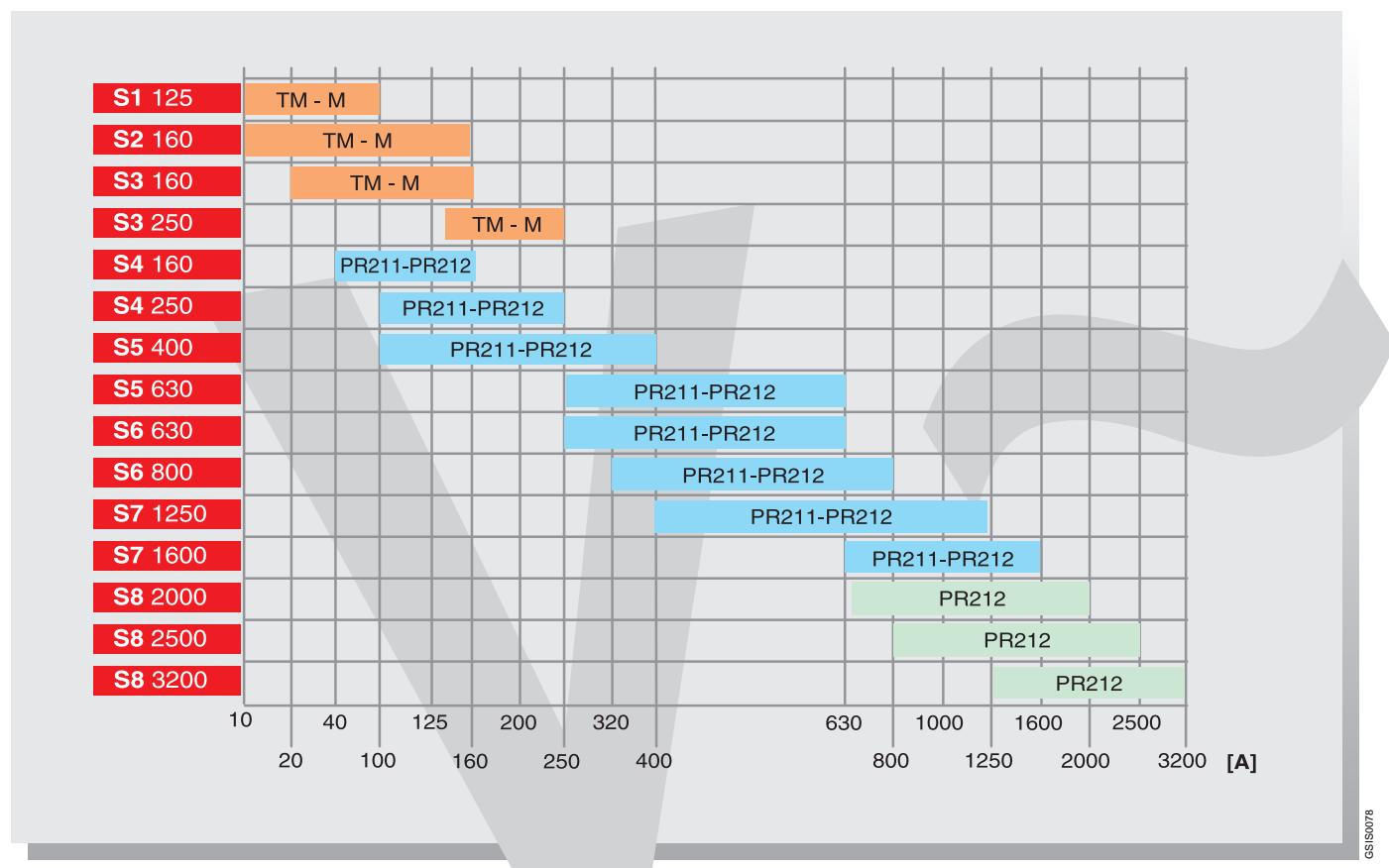
SACE Isomax S circuit-breakers for power distribution

General characteristics

The SACE Isomax S series of moulded-case circuit-breakers conforming to the IEC 60947-2 Standard, is divided into eight basic sizes, with rated uninterrupted currents from 125 to 3200 A and breaking capacities from 16 to 120 kA (380/415 V).

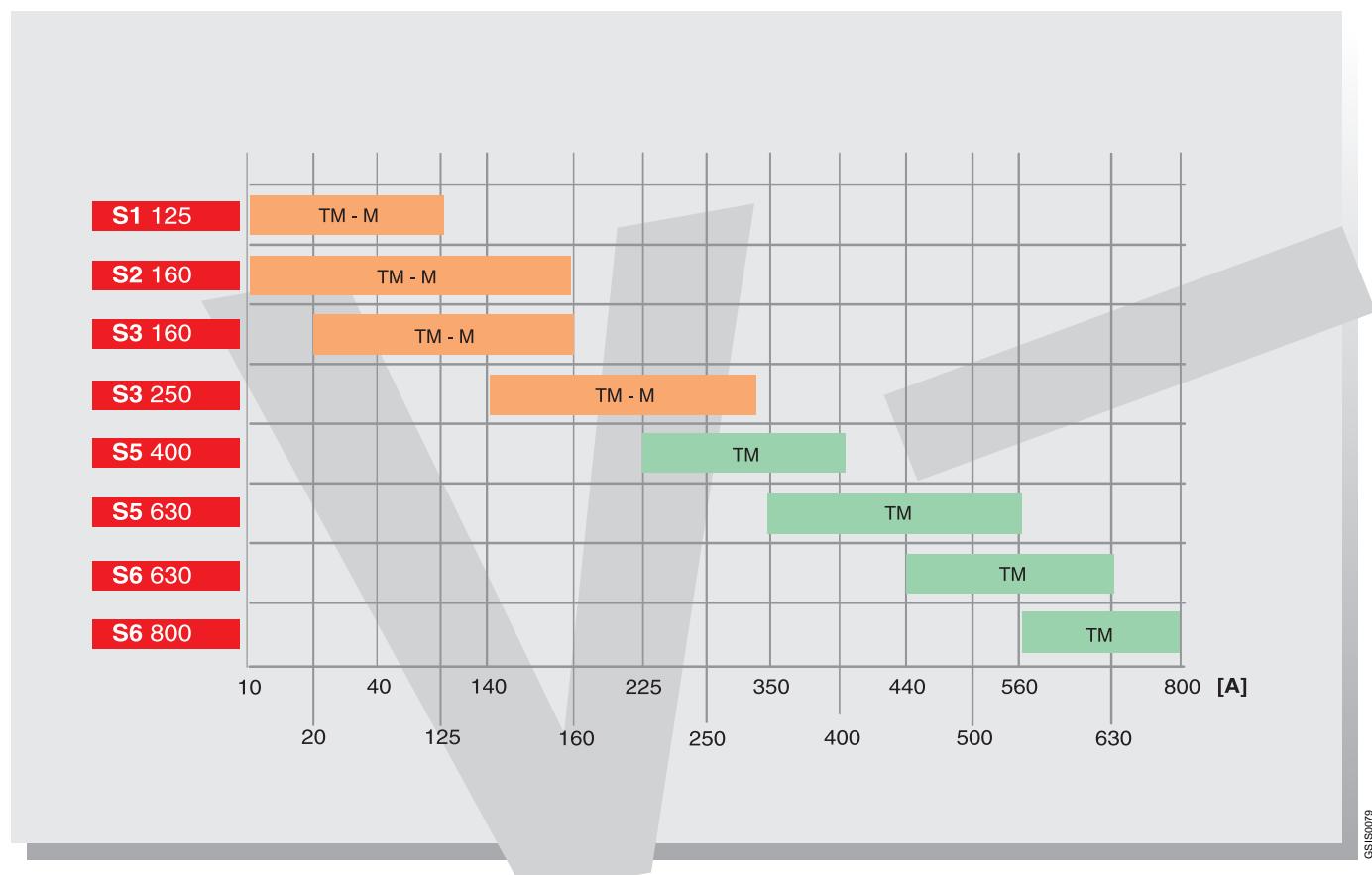
Selection of the size allows the basic electrical characteristics to be identified simply and immediately, whereas selection of the overcurrent release depends on the type of application required.

Range of application of the alternating current circuit-breakers



For protection of alternating current networks, SACE S1, S2, and S3 circuit-breakers fitted with thermomagnetic releases and SACE S4, S5, S6, S7, and S8 circuit-breakers fitted with SACE PR211/P or PR212/P electronic releases are available. These are characterised by an application range from 10 to 3200 A and by a rated voltage of 690 V.

Range of application of the direct current circuit-breakers



SACE S1, S2, S3, S5, and S6 circuit-breakers fitted with thermomagnetic releases are used in protection of direct current networks, with an application range from 10 to 800 A and a minimum operating voltage of 24 V DC. With 2 poles in series, SACE Isomax S circuit-breakers can be used with rated voltage of 250 and 500 V and breaking

capacities up to 100 kA (250 V DC) and 65 kA (500 V DC); whereas the SACE S3, S5, and S6 circuit-breakers with 3 poles in series can reach 750 V and breaking capacities up to 50 kA.

The various possible wiring diagrams and the trip threshold correction factors are indicated on page 5/47.

KEY

TM = Thermomagnetic
M = Magnetic only



SACE Isomax S circuit-breakers for power distribution

Thermomagnetic releases

SACE Isomax S1, S2, S3, S5, and S6 circuit-breakers can be fitted with thermomagnetic releases and are used for protection of alternating current networks with the S1, S2, and S3 circuit-breakers (for applications from 10A to 250A) and in direct current with the S1, S2, S3, S5, and S6 circuit-breakers (from 10A to 800A). They allow protection against overloads using a thermal device (with fixed threshold for S1 and adjustable threshold for S2, S3, S5, and S6) carried out using the bimetallic strip technique, and protection against short-circuit using a magnetic device (with fixed threshold for S1, S2, and S3 and adjustable threshold for S5 and S6).

The four-pole circuit-breakers are always fitted with the neutral protected by the release.



GSIS058

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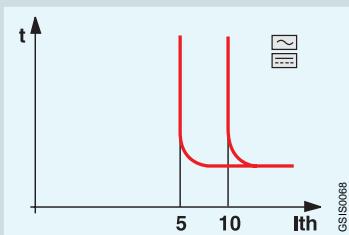
Thermomagnetic releases

L1 - L2 - L3	R10	R12,5	R16	R20	R25	R32	R32	R40	R50	R50	R63	R80	R100	R125	R125
neutral	R10	R12.5	R16	R20	R25	R32	R32	R40	R50	R50	R63	R80	R100	R125	R80
S1 125	■	■	■	■	■	■		■	■		■	■	■	■	
S2 160	■	■	■	■	■			■	■		■	■	■		■
S3 160						■			■		■	■	■		■
S3 250															
S5 400															
S5 630															
S6 630															
S6 800															
10 x Ith L1-L2-L3	500	500	500	500	500	500	500	500	500	500	630	800	1000	1250	1250
neutral	500	500	500	500	500	500	500	500	500	500	630	800	1000	1250	800
5 x Ith L1-L2-L3	160	160	160	200	200	200	300	200	250	300	320	400	500	630	630
neutral	160	160	160	200	200	200	300	200	250	300	320	400	500	630	400
3 x Ith L1-L2-L3													300		375
neutral													300		240
TM adjustable															
L1-L2-L3															
neutral															

Magnetic only releases

L1 - L2 - L3		R16	R40	R50	R50	R63	R80	R100	R125	R125	R125	R160	R200	R250
neutral		R16	R40	R50	R50	R63	R80	R100	R125	R80	R80	R100	R125	R160
S1 125		■	■	■		■	■	■	■					
S2 160		■	■	■		■	■	■		■		■		
S3 160					■		■	■			■	■		
S3 250													■	■
10 x Ith	L1-L2-L3			500	500	630	800	1000	1250	1250	1250	1600	2000	2500
	neutral			500	500	630	800	1000	1250	800	800	1000	1250	1600
5 x Ith	L1-L2-L3	160	200	250	300	320	400				630			
	neutral	160	200	250	300	320	400				400			

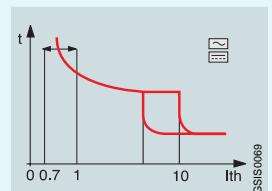
The magnetic only releases which equip the SACE S1, S2, and S3 circuit-breakers have a fixed trip threshold as indicated in the table. For S1, the magnetic only release is available in the version with breaking capacity N = 25 kA; for S2, breaking capacities N = 36 kA and S = 50 kA are available. The latter version is only available in the 10 x Ith version.



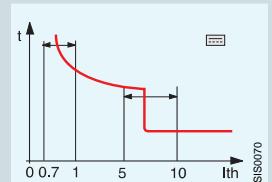
R160	R200	R250	R320	R400	R500	R630	R800
R100	R125	R160	R200	R250	R320	R400	R500
■							
■							
	■	■					
			■	■			
					■		
						■	
1600	2000	2500					
1000	1250	1600					
800	1000	1250					
500	625	800					
480	600	750					
300	375	480					
			3200	4000	5000	6300	8000
			2000	2500	3200	4000	5000

The letter "R" identifies the setting current for phase (L1-L2-L3) and neutral protection (second line). The ones indicated are the combinations provided as standard. On request, circuit-breakers with neutral at 100% of the phase setting can be supplied.

The thermomagnetic releases which equip the SACE S2 and S3 circuit-breakers have the thermal element with threshold adjustable from $0.7 \div 1 \times I_n$. The regulated current value which is obtained by using the appropriate selector must be intended as the rated value at $40^\circ C$. The magnetic element has fixed trip threshold, with trip values which vary according to the phase setting. The S2 circuit-breaker with breaking capacity S = 50 kA is only available in the 10 x Ith version.



The thermomagnetic releases which equip SACE S5 and S6 circuit-breakers have the thermal element with threshold adjustable from $0.7 \div 1 \times I_n$. The regulated current value which is obtained by using the appropriate selector must be intended as the rated value at $40^\circ C$. The magnetic element can be adjusted from $5 \div 10 \times I_n$. The table gives the maximum magnetic trip values ($10 \times I_n$) for protection of the phases (L1 - L2 - L3) and of the neutral.



The trip thresholds of the magnetic protection are a function of the setting used both for protection of the phases (L1 - L2 - L3) and of the neutral. The releases denominated 10 x Ith are indicated for all distribution applications, whereas the releases denominated 5 x Ith and 3 x Ith are used where a low magnetic trip threshold is required. With regard to this, the 3 x Ith are particularly suitable for protection of generators.



SACE Isomax S circuit-breakers for power distribution

Electronic releases

The SACE Isomax S4, S5, S6, S7 and S8 circuit-breakers for protection in alternating current can be fitted with SACE PR211/P or SACE PR212/P overcurrent releases, constructed using electronic microprocessor-based technology. This allows protection functions to be obtained which guarantee a high level of reliability and tripping precision and which are unaffected by the external ambient. The power supply needed for correct operation is supplied directly by the release current transformers, in the presence of a phase current higher than or equal to 18% of their rated current, even with a single phase supplied with voltage. There is only one adjustment for all the phases and the neutral and the release is simultaneous for all the circuit-breaker poles, with trip characteristics which are unaffected by the external ambient. The functions and settings of the release protections can be verified by means of the SACE TT1 and SACE PR010/T Test units.



SACE PR211/P

The SACE PR211/P release (available from S4 to S7) provides protection functions against overload L and instantaneous short-circuit I, and is available in the versions with functions I and LI. The wide range of adjustments make this release particularly suitable in all distribution where tripping reliability and precision is required and where magnetic only protection is needed (from 1.5 to $12 \times In$), using the SACE PR211/P version I release.

SACE PR212/P

The SACE PR212/P release (available from S4 to S8) provides protection functions against overload L, delayed short-circuit S and instantaneous short-circuit I, and against earth fault G. It is available in the versions PR212/P with functions LSI and LSIG; both allow use of the PR010/K signalling unit, the PR212/D dialogue unit and the PR212/T actuator unit, which can be used either simultaneously or individually, except for the

PR212/T actuator unit which is always supplied when the dialogue unit is required.

It is particularly suitable in applications with selective coordination requirements, for earthing protection against the risk of fire and evolutionary faults, and for remote control and parametrisation, network supervision and centralised load management.

In	100 A	160 A	250 A	320 A
S4 160	■	■		
S4 250			■	
S5 400				■
S5 630				
S6 630				
S6 800				
S7 1250				
S7 1600				
S8 2000				
S8 2500				
S8 3200				
L	40÷100	64÷160	100÷250	128÷320
S	100÷1000	160÷1600	250÷2500	320÷3200
I	150÷1200	240÷1920	375÷3000	480÷3840
G	20÷100	32÷160	50÷250	64÷320
neutral (50%)	20÷50	32÷80	50÷125	64÷160
neutral (100%)	40÷100	64÷160	100÷250	128÷320

For four-pole circuit-breakers fitted with SACE PR212/P release (LSI-LSIG), protection of the neutral can be set to 50% or 100% of the phase protection setting (by means of dip-switches on the front of the release).

For those with SACE PR211/P release (I-LI), protection of the neutral at 100% can be ordered by means of an additional code 1SDA037505R1.

With three-pole and distributed neutral circuit-breakers, external toroids can be used by connecting these directly either to the SACE PR211/P release, or to the SACE PR212/P release. On request, it is possible to obtain full protection of the neutral with setting equal to 100% of the protection.

The SACE PR211/P and SACE PR212/P microprocessor-based releases are self-supplied and ensure correct operation of the protection functions, even with only a single phase supplied with voltage, in the presence of a current higher than or equal to 18% of the rated phase value.

The protection release consists of current transformers (three or four according to the circuit-breaker polarity), the SACE PR211/P or SACE PR212/P protection unit and an OS demagnetising opening solenoid which acts directly on the circuit-breaker operating mechanism group.

The current transformers are housed inside the release box and supply the energy needed for correct operation of the protection and the signal required to determine the current. They are available with primary rated current as indicated in the table below.

When the protection intervenes, the circuit-breaker opens by means of the opening solenoid (OS), which changes over a contact for signalling release tripped. Resetting the signal is of mechanical type and takes place with resetting of the circuit-breaker operating lever.

It is possible to test the opening solenoid (OS) by means of the SACE TT1 test device. A positive result of the test

coincides with circuit-breaker opening. All the protection functions with relative trip times can be verified and tested using the SACE PR010/T accessory unit (only for PR212/P).

In the versions with SACE PR212/P - LSI/LSIG release, it is possible to set the adjustment parameters of the protection functions directly from the front (dip-switch positioned on MAN), or to set the parameters remotely (dip-switch positioned on ELT) thanks to the use of the SACE PR212/D dialogue units.

In case of any anomalies in remote parametrisation, the protection automatically uses the set of parameters set manually on the front of the circuit-breaker.

The PR010/K signalling or PR212/D dialogue units supply the PR212/P (24 VDC $\pm 20\%$) protection release continuously and this allows the adjustment parameters to be set even with the circuit-breaker open.

400 A	630 A	800 A	1000 A	1250 A	1600 A	2000 A	2500 A	3200 A
■								
	■							
		■						
			■					
				■	■			
					■			
						■	■	
							■	
160÷400	252÷630	320÷800	400÷1000	500÷1250	640÷1600	800÷2000	1000÷2500	1280÷3200
400÷4000	630÷6300	800÷8000	1000÷10000	1250÷12500	1600÷16000	2000÷20000	2500÷25000	3220÷32000
600÷4800	945÷7560	1200÷9600	1500÷12000	1875÷15000	2400÷19200	3000÷24000	3750÷30000	4800÷38400
80÷400	126÷630	160÷800	200÷1000	250÷1250	320÷1600	400÷2000	500÷2500	640÷3200
80÷200	126÷315	160÷400	200÷500	250÷625	320÷800	400÷1000	500÷1250	640÷1600
160÷400	252÷630	320÷800	400÷1000	500÷1250	640÷1600	—	—	—



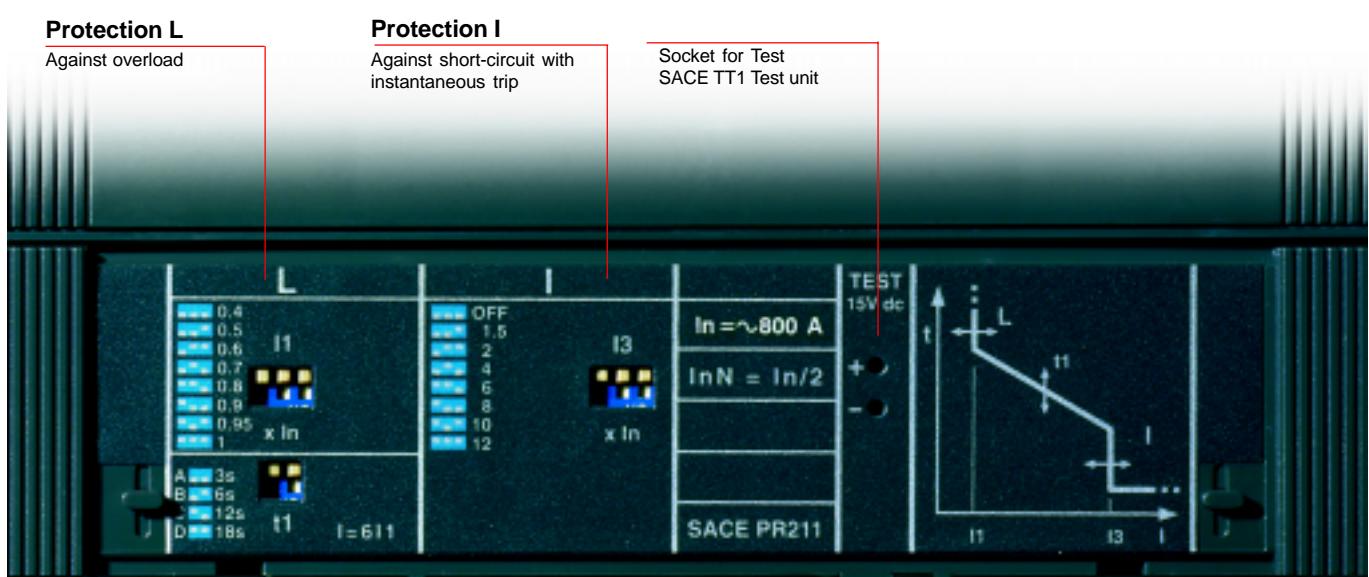
SACE Isomax S circuit-breakers for power distribution

Electronic releases

Protection functions and parametrisation of the SACE PR211/P, PR212/P releases

Protection function	Trip threshold
 CANNOT BE EXCLUDED <p>Against overload with inverse long time delay and trip characteristic according to a time dependent curve ($I^2t = \text{constant}$)</p>	 <p>$I_1 = 0,4 - 0,5 - 0,6 - 0,7 - 0,8 - 0,95 - 1 \times I_n \text{ PR211/P (I - LI)}$ $I_1 = 0,4 - 0,5 - 0,55 - 0,6 - 0,65 - 0,7 - 0,75 - 0,8 - 0,85 - 0,875 - 0,9 - 0,925 - 0,95 - 0,975 - 1 \times I_n \text{ PR212/P (LSI - LSIG)}$ Release between $1,05 \dots 1,30 \times I_1$ (IEC 60947-2)</p>
 CAN BE EXCLUDED <p>Against short-circuit with inverse short time delay and trip characteristic with dependent time ($I^2t = \text{constant}$) or independent time</p>	 <p>$I_2 = 1 - 2 - 3 - 4 - 6 - 8 - 10 \times I_n$ Tolerance $\pm 10\%$</p>
 CAN BE EXCLUDED <p>Against short-circuit with adjustable instantaneous trip</p>	 <p>$I_3 = 1,5 - 2 - 4 - 6 - 8 - 10 - 12 \times I_n (*)$ Tolerance $\pm 20\%$ (*) For S5 630, $I_3 \text{ max} = 8 \times I_n$</p>
 CAN BE EXCLUDED <p>Against earth fault with short inverse time delay and trip characteristic according to a dependent time curve ($I^2t = \text{constant}$)</p>	 <p>$I_4 = 0,2 - 0,3 - 0,4 - 0,6 - 0,8 - 0,9 - 1 \times I_n$ Tolerance $\pm 20\%$</p>

SACE PR211/P electronic release, functions I or LI



Characteristics of SACE PR211/P, SACE PR212/P electronic releases

Trip curves			
A	B	C	D
at $6 \times I_1$ $t_1 = 3\text{s}$	at $6 \times I_1$ $t_1 = 6\text{s}$	at $6 \times I_1$ $t_1 = 12\text{s}$	at $6 \times I_1$ $t_1 = 18\text{s}$
(tolerance: $\pm 10\%$ up to $2 \times I_n$; $\pm 20\%$ above $2 \times I_n$)			
at $8 \times I_n$ $t_2 = 0,05\text{s}$	at $8 \times I_n$ $t_2 = 0,1\text{s}$	at $8 \times I_n$ $t_2 = 0,25\text{s}$	at $8 \times I_n$ $t_2 = 0,5\text{s}$
(tolerance: $\pm 20\%$)			
$t_2 = 0,05\text{s}$ (tolerance: $\pm 20\%$)	$t_2 = 0,1\text{s}$	$t_2 = 0,25\text{s}$	$t_2 = 0,5\text{s}$
up to $3,25 \times I_4$ $t_4 = 100\text{ms}$			
up to $2,25 \times I_4$ $t_4 = 200\text{ms}$			
up to $1,6 \times I_4$ $t_4 = 400\text{ms}$			
up to $1,25 \times I_4$ $t_4 = 800\text{ms}$			
(tolerance: $\pm 20\%$)			

Operating temperature	-25 °C ÷ +70 °C
Relative humidity	90%
Service frequency	45 ... 66 Hz able to measure harmonics up to 550 Hz
Electromagnetic compatibility (LF and HF)	IEC 60947-2 Annex F
Electrostatic discharges	IEC 61000-4-2
Radiated electromagnetic field	IEC 61000-4-3
Short-time transients	IEC 61000-4-4
Mean time between failure (MTBF)	15 years (at 45 °C)
Characteristics of the signalling contact	
Maximum interrupted current	0,5 A
Maximum interrupted voltage	24 VDC/AC
Breaking capacity	3 W/VA
Contact/contact insulation	500 VAC
Contact/coil insulation	1000 VAC

SACE PR212/P electronic release, functions LSI or LSIG

Protection L

Against overload

Protection S

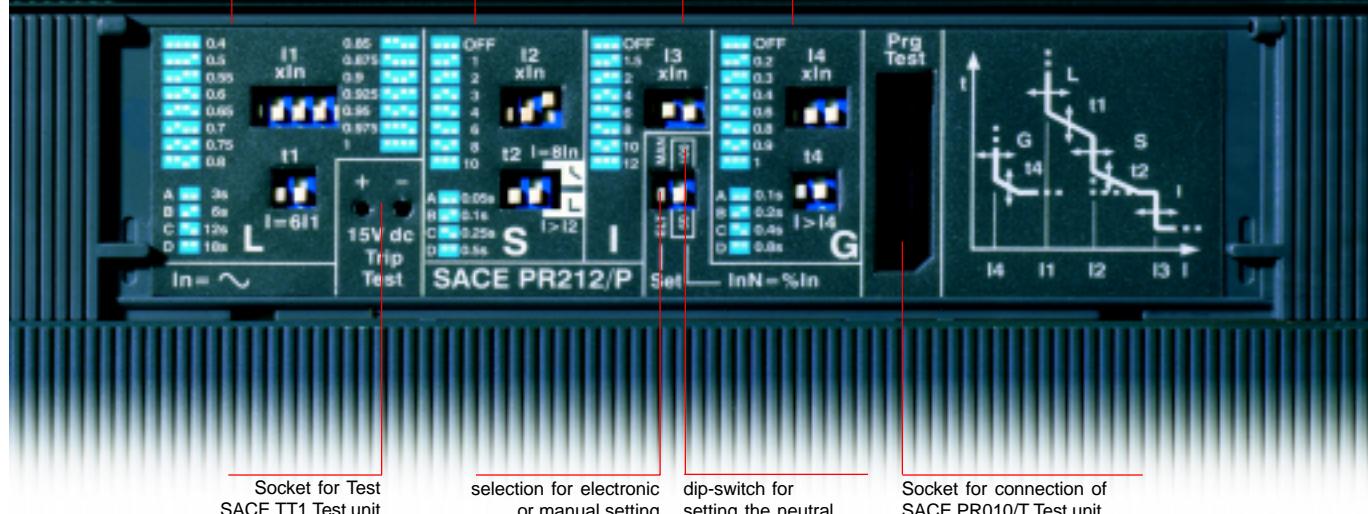
Against short-circuit with delayed trip

Protection I

Against short-circuit with instantaneous trip

Protection G

Against earth fault







SACE Isomax S current-limiting circuit-breakers



To interrupt and “limit” even
the worst faults

690V • 100-630A • 70-200kA (380/415 V)





SACE Isomax S current-limiting circuit-breakers

Electrical characteristics IEC 60947-2



		SACE Isomax S2X 100
Rated uninterrupted current, I_u	[A]	100
Poles	No.	3
Rated service voltage, U_e (AC) 50-60Hz	[V]	690
Rated impulse withstand voltage, U_{imp}	[kV]	6
Rated insulation voltage, U_i	[V]	690
Test voltage at industrial frequency for 1 min.		3000
Rated ultimate short-circuit breaking capacity, I_{cu}		X
(AC) 50-60 Hz 220/230 V	[kA]	100
(AC) 50-60 Hz 380/415 V	[kA]	70
(AC) 50-60 Hz 440 V	[kA]	70
(AC) 50-60 Hz 500 V	[kA]	50
(AC) 50-60 Hz 690 V	[kA]	10
Rated service short-circuit breaking capacity, I_{cs} (1)	[% I_{cu}]	75%
Rated short-circuit making capacity (415 V)	[kA]	154
Opening time (415V at I_{cu})	[ms]	3,5
Utilisation category (EN 60947-2)		A
Isolation behaviour		■
IEC 60947-2, EN 60947-2		■
Releases:	thermomagnetic - T adjustable, M fixed 10 lth with microprocessor PR211/P (I-LI) with microprocessor PR212/P (LSI-LSIG)	■
Interchangeability		
Versions		F-P
Terminals	fixed	EF - FC - FC CuAl - R
	plug-in	FC-R
	withdrawable	-
Fixing on DIN rail		
Mechanical life	[No. operations / hourly operations]	DIN EN 50022
Electrical life (at 415 V)	[No. operations / hourly operations]	25000/240
Basic dimensions, fixed	L (3/4 poles) [mm]	8000/120
	D [mm]	90/120
	H [mm]	70
Weights, 3/4 poles	fixed [kg]	120
	plug-in [kg]	1,1/1,5
	withdrawable [kg]	1,3/1,7
		-

(1) The value of I_{cs} at 500V and 690V for S3X, S4X and S6X is reduced by 25%

(2) For S3X with R32 setting: I_{cu} (690V) = 50 kA and I_{cs} = 100% I_{cu}

I_{cu} (500V) = 75 kA and I_{cs} = 100% I_{cu}

(3) S3X at 690V can only be supplied from above

KEY TO VERSIONS

F = Fixed

P = Plug-in

W = Withdrawable



SACE Isomax S3X	SACE Isomax S4X	SACE Isomax S6X
125-200	250	400-630
3-4	3-4	3-4
690	690	690
8	8	8
800	800	800
3000	3000	3000
X	X	X
300	300	300
200	200	200
180	180	180
150	150	150
75 (2)(3)	75	75
100%	100%	100%
440	440	440
3,5	3,5	3,5
A	A	A
■	■	■
■	■	■
■	■	■
■	■	■
F-P-W	F-P-W	F-W
F - EF - ES - FC - FC CuAl - RC - R	F - EF - ES - FC - FC CuAl - RC - R	F - EF - ES - FC CuAl - RC - R
EF - R	EF - R	-
EF - R	EF - R	EF - HR - VR
DIN EN 50023	DIN EN 50023	-
25000/120	20000/120	20000/120
10000(125A)-8000(200A) / 120	800 / 120	7000(630A)-5000(800A)/60
105/140	105/140	210/280
103,5	103,5	103,5
255	339	268
3,6 / 4,8	5 / 7	9,5 / 12
6,3 / 8,7	8,2 / 10,7	-
7,1 / 9,5	9 / 11,5	12,1 / 15,1

KEY TO TERMINALS

F = Front
EF = Extended front
ES = Extended spreaded front

FC = Front for copper cables
FC CuAl = Front for copper or aluminium cables
R = Rear threaded

RC = Rear for copper or aluminium cables
HR = Rear horizontal flat bar
VR = Rear vertical flat bar



SACE Isomax S current-limiting circuit-breakers

General characteristics

SACE Isomax S2X 100 - S3X - S4X - S6X current-limiting circuit-breakers

These pieces of apparatus are characterised by a rated voltage U_e of 690 V AC, by rated uninterrupted currents from 100 A to 630 A, by service currents from 1 to 630 A and by an ultimate short-circuit breaking capacity up to 200 kA at 380/415 V AC and 75 kA at 690 V AC.

The circuit-breakers, which comply with IEC 60947-2 Standards, are available in the three- and four-pole type (only three-pole for S2X 100) in the fixed, plug-in and withdrawable versions.

The function carried out by the current-limiting circuit-breakers is to "limit" the specific let-through energy to a maximum in the case of short-circuit, safeguarding the integrity of the circuits and of the apparatus located on the load side.

The breaking system used, which foresees double interruption per pole, allows very high value short-circuits to be interrupted extremely rapidly.

Moreover, the special shape of the interruptive parts allows the peak values of fault currents to be limited to figures considerably lower than those of the short-circuit current present at the point of installation.

For the circuit-breakers on the load side, the rapidity of opening notably reduces exposure to the electrodynamic stresses which occur in the case of a fault.



GSIS9028

Integration with the SACE Isomax S family

The range of current-limiting circuit-breakers has been conceived as a product aimed at particularly severe requirements, but comes within the sphere of the general SACE Isomax S project in any case.

The user gains considerable advantages because it means being able to optimise stocks, standardise support and installation structures and rationalise circuit-breaker selection thanks to

application flexibility which allows all low voltage application requirements to be covered.

In the SACE Isomax S series, the current-limiting circuit-breakers offer the same benefits of modular construction. All the other versions can be made from the "basic" version of the current-limiting circuit-breaker by means of special conversion kits.

For S3X, S4X and S6X, conversion from the fixed circuit-breaker into the moving part of plug-in or withdrawable circuit-breaker is carried out by means of special kits listed under the chapter entitled "Ordering codes" (for S2X 100, the kit is the same as the corresponding S2 B/N/S one).

The fixed parts of current-limiting plug-in or withdrawable version circuit-breakers can, on the other hand, be used either for the current-limiting circuit-breakers themselves or for the corresponding SACE S2 - S3 - S4 and S6 automatic circuit-breakers.

With regard to accessories, too, the S2X 100, S3X, S4X and S6X current-limiting circuit-breakers use the same accessories provided for the corresponding automatic circuit-breakers and also keep the same electrical characteristics.



SACE Limitor	SACE Isomax S
LN A 32-63-100	S2X 100
LN 100 / LN 125	S3X 125
LN 160 / LN 200	S3X 200
LN 320 (setting 250 A)	S4X 250
LN 320	S6X 400
LN 500 / LN 630	S6X 630

The electrical characteristics of the SACE Isomax S current-limiting circuit-breakers allow a comparison with the circuit-breakers in the previous SACE Limitor series to be established, to determine any replacements in the case of installation upgrading.

Only the following are an exception:

- the mechanical interlocking plate for two superimposed circuit-breakers
- the bracket for fixing onto DIN rail (for S3X and S4X)

The wiring diagrams are those of the corresponding SACE S2, S3, S4 and S6 circuit-breakers.

Apart from S2X 100 which are identical to the corresponding S2 B/N/S, of the circuit-breakers, the S3X, S4X and S6X current-limiting circuit-breakers keep the standardised depth of 103.5 mm, standardised widths of 105 mm (S3X-S4X) / 210mm (S6X) for the three-pole versions and 140 mm (S3X-S4X) / 280mm (S6X) for the four-pole versions, identical drilled fixing holes for the plugin and withdrawable versions and identical drilled holes for the compartment door in all the versions and for all the accessories.

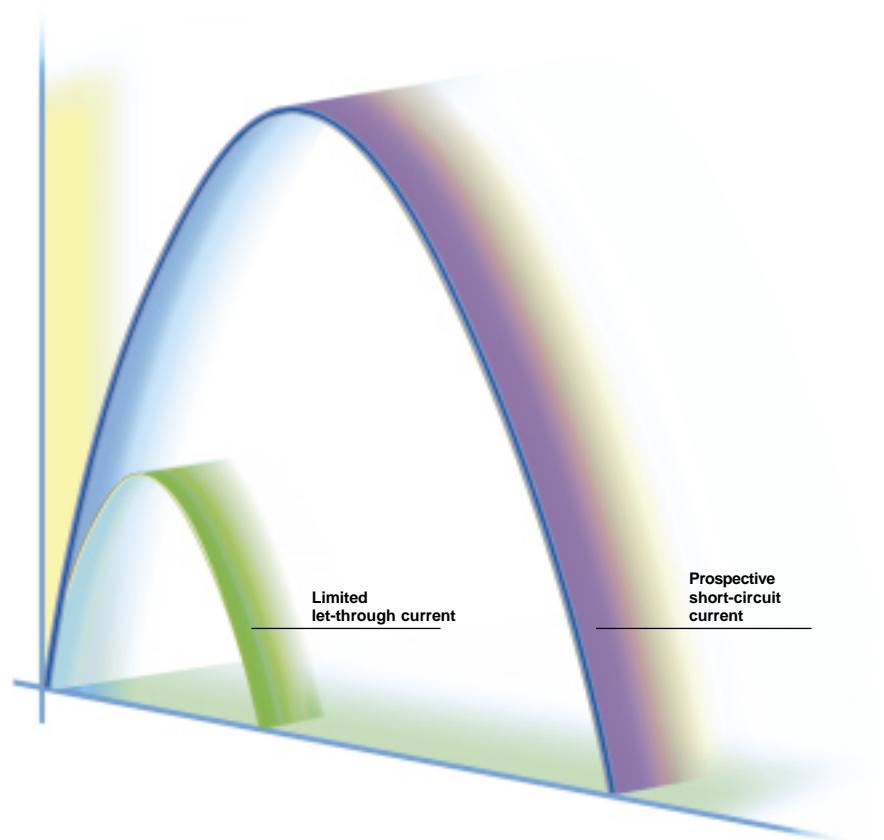
Applications

The current-limiting circuit-breakers are suitable for installation in all types of civil, industrial and service sector plants, as well as in electrical installations on board ships, in mines, on off-shore oil rigs and, generally, wherever very high short-circuit currents can occur due to the high powers of the generators and transformers – up to 200 kA at 380/415 V AC, 180 kA at 440 V AC and 75kA at 690 V AC.

The circuit-breakers can be placed near the power supply source both for general protection (plants, user groups and electrical lines) and for protection of electric machines (motors, generators, transformers, capacitor banks).

They can also be inserted in plants where back-up protection is foreseen, which allows use on the load side of circuit-breakers with breaking capacity lower than the prospective short-circuit current at the point of installation.

The breaking capacities of the SACE Isomax S current-limiting circuit-breakers have exceeded the best performances achieved by other apparatus of this type.



The increased contact opening speed, the dynamic blast action produced by the magnetic field and the structure of the arcing chamber contribute to extinguishing the arc in the shortest possible time, limiting the specific let-through energy value I^2t and the peak current.

GSI0088*



SACE Isomax S current-limiting circuit-breakers

General characteristics

Thermomagnetic overcurrent releases

The table below summarises the size values for the different types of releases:

I_{th} - rated current of the thermomagnetic release, referred to an ambient temperature of 40 °C

I_m - magnetic trip current

I_n - rated current of the electronic release

Thermomagnetic overcurrent releases

Circuit-breaker			L1 - L2 - L3 phases			Neutral
S2X 100	S3X 125	S3X 200	Setting [A]	Thermal adjustment [A] 0.7 ... 1 x I _{th}	Magnetic trip [A] I _m = 10 x I _{th}	Setting [A]
			R 1	0.7 ... 1	10	—
			R 1,6	1.1 ... 1.6	16	—
			R 2,5	1.75 ... 2.5	25	—
			R 4	2.8 ... 4	40	—
			R 6,3	4.4 ... 6.3	63	—
			R 10	7 ... 10	100	—
			R 12,5	8.7 ... 12,5	125	—
			R 16	11 ... 16	160	—
			R 20	14 ... 20	200	—
			R 25	17,5 ... 25	250	—
	■	■	R 32	22,5 ... 32	320 (S2X 100) - 500 (S3X)	R 32 (S3X)
			R 40	28 ... 40	400	—
	■	■	R 50	35 ... 50	500	R 100 (S3X)
			R 63	44 ... 63	630	—
	■	■	R 80	56 ... 80	800	R 80 (S3X)
	■	■	R 100	70 ... 100	1000	R 100 (S3X)
	■	■	R 125	87,5 ... 125	1250	R 80
			R 160	112 ... 160	1600	R 100
			R 200	140 ... 200	2000	R 125



SACE S2X 100 and S3X circuit-breakers, with thermomagnetic overcurrent releases

Electronic overcurrent releases

SACE PR211/P - PR212/P electronic overcurrent releases

Circuit-breaker			Release current In [A]	L1 - L2 - L3 phases				Neutral (50% Ith) [A]	Neutral (') (100% Ith) [A]
S4X 250	S6X 400	S6X 630		L	S	I	G		
			I1 [A]	I2 [A]	I3 [A]	I4 [A]			
■			100	40 ... 100	100 ... 1000	150 ... 1200	20 ... 100	20 ... 50	40 ... 100
■			160	64 ... 160	160 ... 1600	240 ... 1920	32 ... 160	32 ... 80	64 ... 160
■			250	100 ... 250	250 ... 2500	375 ... 3000	50 ... 250	50 ... 125	100 ... 250
	■		320	128 ... 320	320 ... 3200	480 ... 3840	64 ... 320	64 ... 160	128 ... 320
	■		400	160 ... 400	400 ... 4000	600 ... 4800	80 ... 400	80 ... 200	160 ... 400
		■	630	252 ... 630	630 ... 6300	945 ... 7560	126 ... 630	126 ... 315	252 ... 630

L = Protection function against overload

S = Protection function against short-circuit with delayed trip

I = Protection function against short-circuit with instantaneous trip

G = Protection function against earth fault with delayed trip

(') Only for PR212/P. Available on request for PR211/P, with additional ordering code 1SDA037505R1.

N.B. For more detailed information about the protection functions, please see page 3/12.



GSIS915

SACE S4X, S6X circuit-breakers, with microprocessor-based overcurrent releases





Protection against short-circuit

**Magnetic only and electronic circuit-breakers for
classical switching coordinations and
motor protection of any power**

690V • 80-1600 A • 70-200 kA (380/415 V)



Integrated protection

**The evolution of motor protection:
intelligence on board the circuit-breaker to “design”
protection around the motor, optimising space and time**

690V • 160-1250 A • 35-200 kA (380/415 V)



SACE Isomax S circuit-breakers for motor protection (protection against short-circuit)

Electrical characteristics IEC 60947-2 and IEC 60947-4-1



		S2X 80	S3	S3X
Rated uninterrupted current, I_u	[A]	80	160 / 250	125 / 200
Rated service current, I_n	[A]	1...80	3...160 / 160...200	3... 125 / 125...200
Poles	Nr.	3	3	3
Rated service voltage, U_e (AC) 50-60Hz	[V]	690	690	690
Rated impulse withstand voltage, U_{imp}	[kV]	6	8	8
Rated insulation voltage, U_i	[V]	690	800	800
Test voltage at industrial frequency for 1 min.	[V]	3000	3000	3000
Rated ultimate short-circuit breaking capacity, I_{cu}		X	N H L	X
(AC) 50-60 Hz 220/230 V	[kA]	100	65 100 170	300
(AC) 50-60 Hz 380/415 V	[kA]	70	35 (1) 65 85	200
(AC) 50-60 Hz 440 V	[kA]	70	30 50 65	180
(AC) 50-60 Hz 500 V	[kA]	50	25 40 50	150
(AC) 50-60 Hz 690 V	[kA]	10	14 18 20	75 (3)
Rated service short-circuit breaking capacity, I_{cs} (2)	[% I_{cu}]	75%	100% 75% 75%	100%
Rated short-circuit making capacity (415 V)	[kA]	154	74 143 187	440
Opening time (415V at I_{cu})	[ms]	3,5	8 7 6	3,5
Utilisation category (EN 60947-2)		A	A	A
Isolation behaviour		■	■	■
IEC 60947-2, EN 60947-2		■	■	■
Releases:	magnetic only, fixed 13xIn	■	-	-
	magnetic only, adjustable 4...12xIn	-	■	■
	microprocessor-based, PR211/P (I)	-	-	-
Interchangeability		-	-	-
Versions		F - P	F - P - W	F - P - W
Terminals	fixed	EF - FC FC CuAl - R	F - EF - ES - FC FC CuAl - RC - R	F - EF - ES - FC FC CuAl - R - RC
	plug-in	FC - R	EF - FC - R	EF - R
	withdrawable	-	EF - FC - R	EF - R
Fixing on DIN rail		DIN EN 50022	DIN EN 50023	DIN EN 50023
Mechanical life	[No. operations / hourly operations]	25000/240	25000/120	25000/120
Basic dimensions fixed, 3 poles	L [mm]	90	105	105
	D [mm]	70	103,5	103,5
	H [mm]	120	170	255
Weights	fixed, 3 poles	[kg]	1,1	2,6
	plug-in, 3 poles	[kg]	1,3	3,1
	withdrawable, 3 poles	[kg]	-	3,5
				7,1

(1) All the versions with $I_{cu}=35\text{kA}$ are certified at 36kA

(2) For S3N/H/L, S4N/H/L, S5N/H, and S6N/H circuit-breakers, the percentage performance of I_{cs} at 690V is reduced by 25%

(3) S3X at 690V can only be supplied from above

KEY TO VERSIONS

F = Fixed

P = Plug-in

W = Withdrawable



	S4	S4X	S5	S6	S6X	S7
160 / 250	250	400 / 630	630 / 800	400 / 630	1250 / 1600	
100, 160 / 250	100, 160, 250	320, 400 / 630	630 / 800	320, 400 / 630	1000, 1250 / 1600	
3	3	3	3	3	3	
690	690	690	690	690	690	
8	8	8	8	8	8	
800	800	800	800	800	800	
3000	3000	3000	3000	3000	3000	
N H L	X	N H L	N S H L	X	S H L	
65 100 200	300	65 100 200	65 85 100 200	300	85 100 200	
35 (1) 65 100	200	35 (1) 65 100	35 (1) 50 65 100	200	50 65 100	
30 50 80	180	30 50 80	30 45 50 80	180	40 55 80	
25 40 65	150	25 40 65	25 35 40 65	150	35 45 70	
18 22 30	75	20 25 30	20 22 25 30	75	20 25 35	
100% 100% 75%	100%	100% 100% 75%	100% 100% 100% 75%	100%	100% 75% 50%	
74 143 220	440	74 143 220	74 105 143 220	440	105 143 220	
8 7 6	3,5	8 7 6	10 9 8 7	3,5	22 22 22	
A	A	B(400A) / A(630A)	B	A	B	
■	■	■	■	■	■	
■	■	■	■	■	■	
-	-	-	-	-	-	
-	-	-	-	-	-	
■	■	■	■	■	■	
■	■	■	■	■	■	
F - P - W	F - P - W	F - P(400A) - W	F - W	F - W	F - W	
F - EF - ES - FC	F - EF - ES - FC	F - EF - ES - FC	F - EF - ES	F - EF - ES	F - EF - ES	
FC CuAl - R - RC	FC CuAl - R - RC	FC CuAl - R - RC(400A)	FC CuAl - R - RC	FC CuAl - R - RC	FC CuAl - R - RC	
EF - FC - R	EF - R	EF - FC - R	-	-	-	
EF - FC - R	EF - R	EF - FC - R - VR (630A)	EF - HR - VR	-	EF - VR - HR	
DIN EN 50023	DIN EN 50023	DIN EN 50023	-	-	-	
20000/120	20000/120	20000/120	20000/120	20000/120	20000/120	10000/120
105	105	140	210	210	210	210
103,5	103,5	103,5	103,5	103,5	103,5	138,5
254	339	254	268	406	406	406
4	5	5	9,5	15	15	17
4,5	8,2	6,1	-	-	-	-
4,9	9	6,4	12,1	25,4	25,4	21,8

KEY TO TERMINALS

F = Front

EF = Extended front

ES = Extended spreaded front

FC = Front for copper cables

FC CuAl = Front for copper or aluminium cables

R = Rear threaded

RC = Rear for copper or aluminium cables

HR = Rear horizontal flat bar

VR = Rear vertical flat bar



SACE Isomax S circuit-breakers for motor protection (protection against short-circuit)

General characteristics IEC 60947-2 and IEC 60947-4-1

Magnetic and electronic overcurrent releases

Three-phase asynchronous motor starting, switching and protection are essential operations for its correct use. The traditional system used for this purpose has three different devices: a circuit-breaker for protection against short-circuit, a thermal relay for protection against overload and lack of or unbalanced phase, and a counter for the motor operations. Everything must necessarily take into account the problems which arise on start-up.

In particular, different factors must be taken into account when selecting these devices, such as:

- the motor power
- the starting diagram
- the type of motor: with cage rotor or with wound rotor
- the fault current at the point of motor installation in the network.

ABB SACE proposes a wide range of circuit-breakers, which by implementing the protection against short-circuit exclusively, are suitable for use inside protected starters of traditional type.

The new SACE S2X 80, with fixed magnetic protection at 13 times the rated service current, is an extremely compact circuit-breaker, which stands out for its exceptional performances in terms of breaking capacity and limitation of the specific let-through energy.

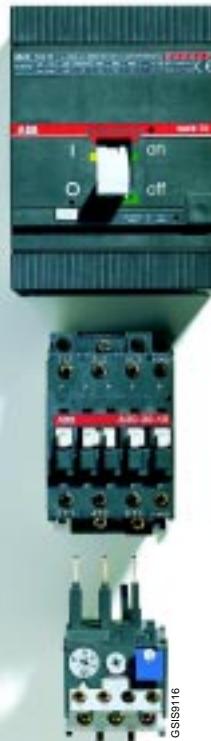
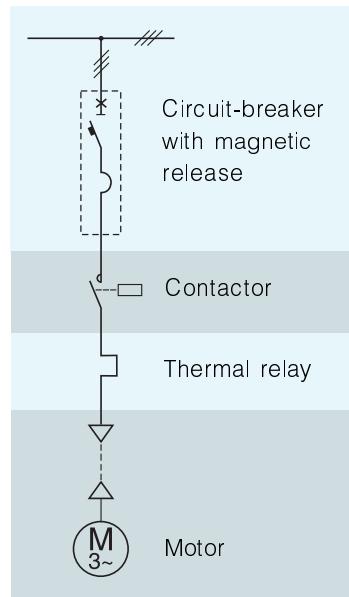
Extremely simple and rapid to install, it has the same possibility of mounting accessories and personalisation as the S2B/N/S circuit-breakers. It can be used in a vast range of start-ups, from 0.37kW to 37kW and from 400V-50kA up to 690V-50kA. SACE S3 N/H/L 160/250 circuit-breakers and the S3X 125/200 current-limiting circuit-breaker are fitted with a magnetic only release adjustable from 4 to 12 times the rated service current. They cover coordinations from 37 to 132kW and allow optimal motor protection thanks to their great flexibility due to the wide setting range of the magnetic threshold.

Finally, SACE S4 160/250, S5 400/630, S6 630/800, and S7 1250/1600, with different N-S-H-L breaking capacity levels, like the current-limiting S4X and S6X, can be fitted with the

3

Magnetic only fixed overcurrent releases

SACE Isomax S2X 80	
Phases L1 - L2 - L3	
Setting [A]	Magnetic trip $I_m = 13 \times I_n$ [A]
R1	13
R1.6	21
R2	26
R2.5	32
R3.2	42
R4	52
R5	65
R6.5	84
R8.8	110
R11	145
R12.5	163
R16	210
R20	260
R25	325
R32	415
R42	545
R52	680
R63	820
R80	1040



PR211/P (I) electronic microprocessor-based release. Above all, they are used for protection of high power motors and, thanks to adjustment of the protection against short-circuit from 1.5 to 12 times, allow the optimum trip value to be selected for any type of motor.



Magnetic only adjustable overcurrent releases

Circuit-breaker					Phases L1 - L2 - L3	
S3N 160	S3H 160 S3L 160	S3N 250 S3H 250 S3L 250	S3X 125	S3X 200	Setting [A]	Magnetic adjustment [A] $I_m = 4 \dots 12 \times I_{th}$
■					R 3	12 ... 36
■					R 5	20 ... 60
■					R 10	40 ... 120
■			■ (*)		R 25	100 ... 300
■	■		■		R 50	200 ... 600
■	■		■		R 100	400 ... 1200
■	■		■	■	R 125	500 ... 1500
■	■				R 160	640 ... 1600 (10 x I _{th})
		■		■	R 160	640 ... 1920
		■		■	R 200	800 ... 2400

(*) Only to be used in coordination with contactors

SACE PR211/P (I) electronic microprocessor-based overcurrent releases for motor protection

Circuit-breaker											Phases L1 - L2 - L3	
S4N 160 S4H 160 S4L 160	S4N 250 S4H 250 S4L 250	S5N 400 S5H 400 S5L 400	S6N 630 S6H 630 S6L 630	S6N 800 S6H 800 S6L 800	S7S 1250 S7H 1250 S7L 1250	S7S 1600 S7H 1600 S7L 1600	S4X 250	S6X 400	S6X 630	Rated current of release In [A]	I (*) $I_3 [A]$	
■						■				100	150 ... 1200	
■						■				160	240 ... 1920	
	■					■				250	375 ... 3000	
		■					■			320	480 ... 3840	
		■					■			400	600 ... 4800	
			■					■		630	945 ... 7560	
				■					■	800	1200 ... 9600	
					■					1000	1500 ... 12000	
						■				1250	1875 ... 15000	
						■				1600	2400 ... 19200	

(*) I = Protection function against short-circuit



SACE Isomax S circuit-breakers for motor protection (integrated protection)

Electrical characteristics IEC 60947-2 and IEC 60947-4



GS95107

S4		
160 / 250		
Rated uninterrupted current, I_u	[A]	160 / 250
Rated service current, I_n	[A]	100, 160 / 200
Poles	Nr.	3
Rated service voltage, U_e (AC) 50-60Hz	[V]	690
Rated impulse withstand voltage, U_{imp}	[kV]	8
Rated insulation voltage, U_i	[V]	800
Test voltage at industrial frequency for 1 min.	[V]	3000
Rated ultimate short-circuit breaking capacity, I_{cu}		N H L
(AC) 50-60 Hz 220/230 V	[kA]	65 100 200
(AC) 50-60 Hz 380/415 V	[kA]	35 (1) 65 100
(AC) 50-60 Hz 440 V	[kA]	30 50 80
(AC) 50-60 Hz 500 V	[kA]	25 40 65
(AC) 50-60 Hz 690 V	[kA]	18 22 30
Rated service short-circuit breaking capacity, I_{cs} (2)	[% I_{cu}]	100% 100% 75%
Rated short-circuit making capacity (415 V)	[kA]	74 143 220
Opening time (415V at I_{cu})	[ms]	8 7 6
Utilisation category (EN 60947-2)		A
Isolation behaviour		■
IEC 60947-2, EN 60947-2, IEC 60947-4-1, EN 60947-4-1		■
PR212/MP (LRIU) microprocessor-based releases		■
Interchangeability		■
Versions		F - P - W
Terminals	fixed	F - EF - ES - FC FC CuAl - R - RC
	plug-in	EF - FC - R
	withdrawable	EF - FC - R
Fixing on DIN rail DIN EN 50023		■
Mechanical life	[No. operations / hourly operations]	20000/120
Basic dimensions, fixed 3 poles	L [mm]	105
	D [mm]	103,5
	H [mm]	254
Weights	fixed, 3 poles	[kg]
	plug-in, 3 poles	[kg]
	withdrawable, 3 poles	[kg]
		4
		4,5
		4,9

(1) All the versions with $I_{cu}=35\text{kA}$ are certified at 36kA (2) For S4N/H/L, S5N/H, and S6N/H circuit-breakers the percentage performance of I_{cs} at 500V and 690V is reduced by 25%

KEY TO VERSIONS

F = Fixed

P = Plug-in

W = Withdrawable



	S4X	S5	S6	S6X	S7
250	400	630	400 / 630	1250	
100, 160, 200	320	630	320, 400 / 630	1000	
3	3	3	3	3	
690	690	690	690	690	
8	8	8	8	8	
800	800	800	800	800	
3000	3000	3000	3000	3000	
X	N H L	N H L	X	S H	
300	65 100 200	65 100 200	300	85 100	
200	35(1) 65 100	35(1) 65 100	200	50 65	
180	30 50 80	30 50 80	180	40 55	
150	25 40 65	25 40 65	150	35 45	
75	20 25 30	20 25 30	75	20 25	
100%	100% 100% 75%	100% 100% 75%	100%	100% 75%	
440	74 143 220	74 143 220	440	105 143	
3,5	8 7 6	9 8 7	3,5	22 22	
A	B	B	A	B	
■	■	■	■	■	
■	■	■	■	■	
■	■	■	■	■	
■	■	■	■	■	
F - P - W	F - P - W	F - W	F - W	F - W	
F - EF - ES - FC FC CuAl - R -	F - EF - ES - FC	F - EF - ES	F - EF	F - EF - ES	
RC	FC CuAl - R - RC	FC CuAl - R - RC	FC CuAl - R - RC	FC CuAl - HR - V	
EF - R	EF - FC - R	-	-	-	
EF - R	EF - FC - R	EF - HR - VR	EF - VR - HR	EF - VR - HR	
■	■	-	-	-	
20000/120	20000/120	20000/120	20000/120	10000/120	
105	140	210	210	210	
103,5	103,5	103,5	103,5	138,5	
339	254	268	406	406	
5	5	9,5	15	17	
8,2	6,1	-	-	-	
9	6,4	12,1	25,4	21,8	

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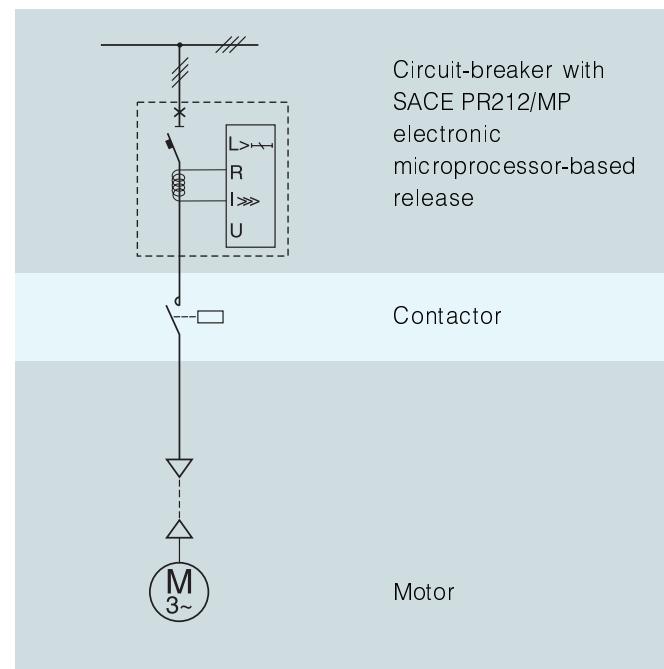
SACE Isomax S circuit-breakers for motor protection (integrated protection)

General characteristics

SACE PR212/MP electronic microprocessor-based releases

SACE Isomax S4N-H-L 160/250, S5N-H-L 400, S6N-H-L 800, S7S-H 1250 and S4X 250, S6X 400/630 circuit-breakers are fitted with SACE PR212/MP electronic releases constructed using microprocessor-based electronic technology. This allows functions to be obtained which guarantee high trip precision, utmost reliability and insensitivity to variations in the external temperature. The SACE PR212/MP electronic release guarantees complete motor protection as is fully integrated on board the circuit-breaker; moreover, it is able to control contactor opening in the case of a fault (except for short-circuit), by means of the SACE PR212/CI contactor accessory operating mechanism unit. Furthermore, the PR010/T unit for testing the release and checking the protection functions, the PR010/K signalling unit and the PR212/D dialogue unit are available. The electronic microprocessor-based releases are self-supplied and consist of three current transformers, the SACE PR212/MP protection unit and an opening solenoid which acts directly on the circuit-breaker operating mechanism unit. The current transformers – housed inside the release box, supply the energy and the signal required for correct operation of the protection.

The release is temperature-compensated and sensitive to lack of phase according to Table IV of the 60947-4-1 7.2.1.5.2 Standard.



SACE PR212/MP electronic microprocessor-based releases for motor protection

Circuit-breaker								Phases L1 - L2 - L3				
S4N 160 S4H 160 S4L 160	S4N 250 S4H 250 S4L 250	S5N 400 S5H 400 S5L 400	S6N 800 S6H 800 S6L 800	S7S 1250 S7H 1250	S4X 250	S6X 400	S6X 630	Release rated current In [A]	L I1 [A]	R I5 [A]	I I3 [A]	U Iu [A]
■					■			100	40 ... 100		600 ... 1300	
■					■			160	64 ... 160		960 ... 2080	
	■				■			200	80 ... 200		1200 ... 2600	
		■				■		320	128 ... 320	3 ... 10 x 11	1920 ... 4160	0,4 x 11
			■				■	400	160 ... 400		2400 ... 5200	
				■			■	630	252 ... 630		3780 ... 8190	
				■				1000	400 ... 1000		6000 ... 13000	

L = Protection function against overload with relative setting current ($I_1 = 0.4 \dots 1 \times I_n$, with 0.01 steps - Class = 10A, 10, 20, 30)

R = Protection function against rotor block with relative setting current and time ($I_5 = 3-4-5-6-7-8-10 \times I_1 - t_5 = 1-4-7-10 \text{ s}$)

I = Protection function against short-circuit with relative setting current ($I_3 = 6-7-8-9-10-11-12-13 \times I_n$)

U = Protection function against lack of or unbalance of phase with relative setting current and time ($I_u = 0.4 \times I_1 - t = 4 \text{ s}$)

The SACE Isomax S range of moulded-case circuit-breakers for motor protection is perfectly coordinated with the new ABB line of contactors. The latter, defined as A-Line, together with the line of overload thermal relays and SACE Isomax S moulded-case circuit-breakers, is the basis for the new generation of apparatus specially designed to guarantee a system of products which can be integrated according to the applications required. All this is done with the aim of not only continuously improving the products, but above all to provide designers, installers and end users with the best solutions in terms of performance and reliability, combined with simplicity of the system.

In particular, SACE Isomax S circuit-breakers and the "A" series of contactors are an extraordinary solution in terms of compactness, since they share the same width and design characteristics,

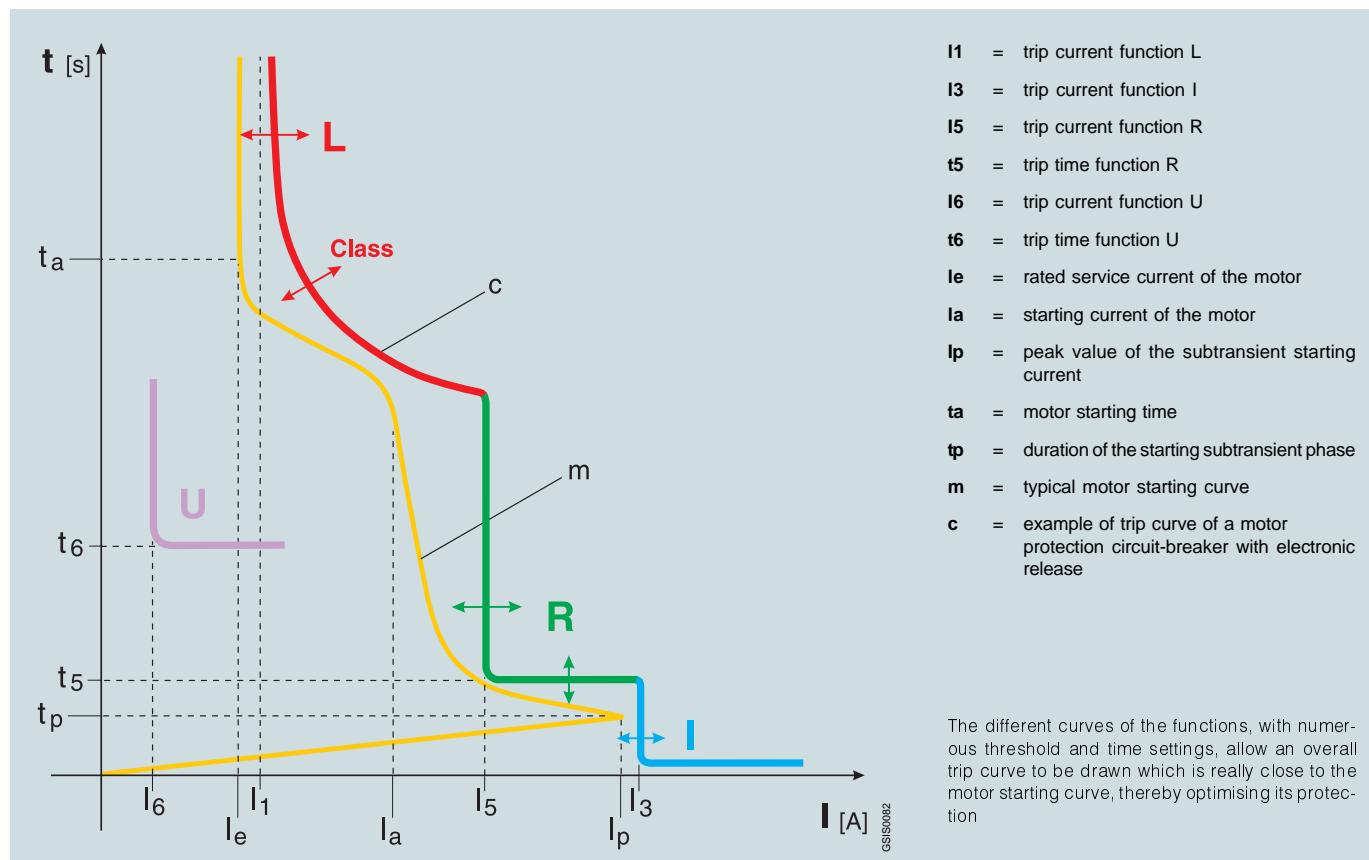
thereby saving space, assembly material, installation time and relative cabling operations.

The circuit-breaker-contactor group enhances this characteristic even further with the SACE PR212/MP electronic overcurrent release, which allows construction of an extremely compact protected starter, implementing protection against overload in accordance with the IEC 60947-4-1 Standard.



SACE Isomax S moulded-case circuit-breakers and the new A series contactors share the same width and depth and have been designed to construct a single compact unit

Typical operating characteristic of an asynchronous motor





SACE Isomax S circuit-breakers for motor protection (integrated protection)

General characteristics

Protection functions and parametrisation of the SACE PR212/MP release

Function L

Protection against overload

Function L protects the motor against undesired overloads according to the indications and classes defined in the IEC 60947-4-1 Standards.

Protection is based on a pre-established thermal model (ABB SACE International Patent) which, by simulating the copper and iron overtemperatures inside the motor, allows precise safeguarding of the machine. The protection intervenes when the preset overtemperature is reached. The trip time is fixed by selecting the trip class defined in the above-mentioned Standards.

The function is temperature-compensated and sensitive to phase missing/unbalance in accordance with the IEC 60947-4-1 Standard. In the case of auxiliary power supply, the thermal memory function is guaranteed, which allows the release to continue calculating the motor temperature even after an opening operation.

Function R

Protection against rotor block

Function R protects the motor against any rotor block during operation. This protection is automatically disabled for the whole of the motor starting phase and is then re-activated.

The protection already provides its function from low current increases (from 3 times the I1 service current of the circuit-breaker) and can also be disabled.

Both the current level to be tripped and the trip time delay can be selected.

The protection intervenes when at least one of the phase currents exceeds the preset value and remains above that threshold for the set t5 time.

Function I

Protection against short-circuit

This protection function intervenes in the case of a short-circuit between phases. It is sufficient for a single phase to exceed the set threshold to cause immediate opening of the circuit-breaker (the protection cannot be excluded).

The trip current can be adjusted up to 13 times the rated current of the release, whereas the time is fixed.

To prevent unwarranted trips during starting, the protection recognises whether the motor to be protected is in the starting phase or whether there is a short-circuit. This is to allow starting under completely safe conditions.

Function U

Protection against lack of and/or unbalance of a phase

Function U can be used in those cases where particularly precise control is needed regarding lack of and/or unbalance of phase currents. This function can be excluded and intervenes if the effective value of one or two currents drops below the level of 0.4 of the I1 current set with function L and remains there for more than 4 seconds.

Parametrisation of protection L

$$I1 = 0,4 \dots 1 \times In \text{ with } 0,01 \times In \text{ steps}$$

where $I1$ is the rated service current of the circuit-breaker, which must be the same or higher than that of the motor to be protected ($I1 \geq Ie$), and In is the rated current of the current transformers.

$$t1 = 4 - 8 - 16 - 24 \text{ s}$$

where $t1$ is the trip at $7.2 \times I1$ cold, depending on the class selected

$$\text{Class 10A - 10 - 20 - 30}$$

are the motor starting classes which determine the trip times for overload according to the IEC 60947-4-1 4.7.3 Table II Standards.

Release of the contactor: in normal operating mode

Tolerances: in accordance with the IEC 60947-4-1 Standard.

Parametrisation of protection R

$$I5 = OFF - 3 - 4 - 5 - 6 - 7 - 8 - 10 \times I1$$

where $I5$ is the current at which the rotor is considered to be blocked and $I1$ is the rated service current of the circuit-breaker selected for function L.

$$t5 = 1 - 4 - 7 - 10 \text{ s}$$

where $t5$ is the preset time threshold above which the release trips.

Release of the contactor: in normal operating mode

Tolerances: $\pm 10\%$ of the trip thresholds
 $\pm 20\%$ of the trip times

Parametrisation of protection I

$$I3 = 6 - 7 - 8 - 9 - 10 - 11 - 12 - 13 \times In$$

where $I3$ is the instantaneous trip current for short-circuit and In is the rated current of the current transformers.

To prevent unwarranted trips during the inrush phase of the motor, instantaneous tripping of protection I takes place at $1.5 \times I3$ (for $I3 \leq 9 \times In$), whereas for higher values ($I3 > 9 \times In$) tripping takes place at $13.5 \times In$.

Tolerances: $\pm 20\%$ of the trip thresholds
 $\pm 20\%$ of the trip times

Parametrisation of protection U

On, (with $I6 = 0.4 \times I1$ and $t6 = 4 \text{ s}$).

Off, in the Off position, the release remains sensitive to the lack of phase according to the IEC 60947-4-1 Standard, modifying the trip curves for protection L.

Release of the contactor: in normal operating mode

Tolerances: $\pm 20\%$ of the trip thresholds
 $\pm 20\%$ of the trip times

Parametrisation of the release

By means of the microswitch located on the front, the release can be fitted for parametrisation:

Man. (manual), thresholds and times are adjusted by using the microswitches on the front of the relay

Elt. (electronic), thresholds and times are adjusted remotely by means of the SACE PR212/D dialogue unit.

Operating methods

Normal mode: in the case of a fault detected by functions L-R-U, contactor opening can be controlled by means of the accessory SACE PR212/CI module or directly, without the need for external modules, with an ABB contactor fitted with an electronic interface with the circuit-breaker.

Heavy duty mode: the circuit-breaker opens for any type of L-R-I-U fault.

Back-up protection

The electronic release verifies whether the circuit-breaker or the contactor is effectively in the open or relay tripped position following an opening command. If this is not so, after a delay set to long or short time, the command for circuit-breaker opening is given again.

Protection L

against motor overload

luminous signalling of overload:
fixed for $I > 0.9 \times I_1$;
flashing for $I > 1.05 \times I_1$

Protection R

against blocked rotor

Protection I

against instantaneous short-circuit

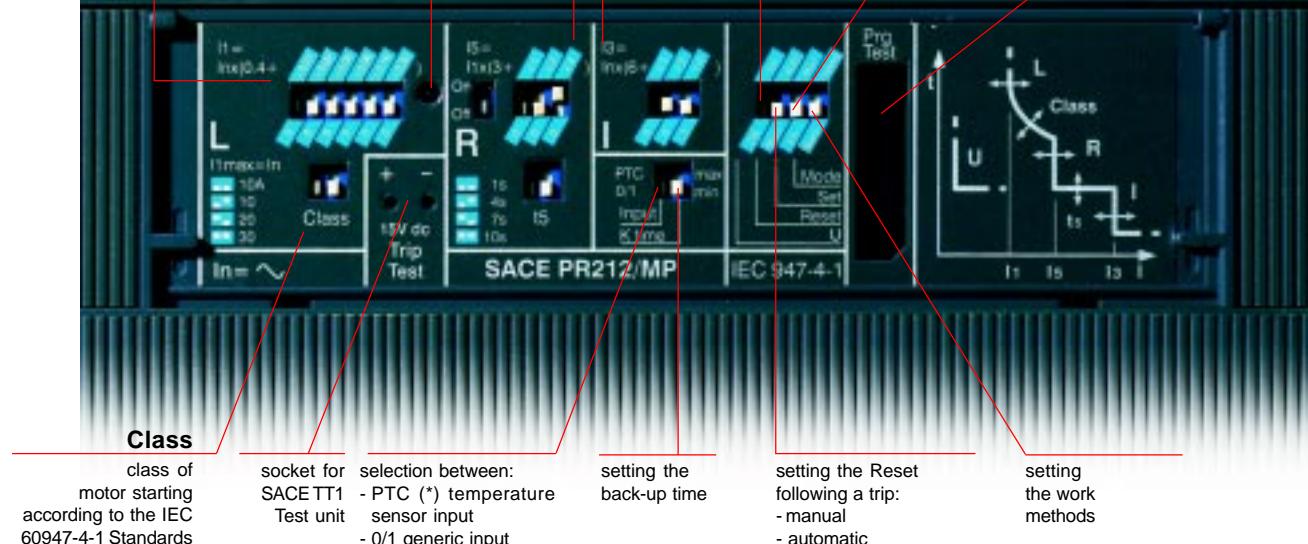
Protection U

against the lack and/or unbalance of a phase

Man. / Elt.

release parametrisation methods

socket for connection of SACE PR010/T Test unit



GSIS9053

(*) A special input is available to connect a PTC temperature probe, inserted in the motor to be protected

Characteristics of the SACE PR212/MP electronic microprocessor-based release

Overloading capacity	2 x In continuously, 7.2 x In for 35 s at 45 °C
Operating temperature	- 25 °C ... + 70 °C
Maximum relative humidity percentage	90% without condensation
Rated service frequency	45 - 66 Hz, able to measure harmonics up to 550 Hz
Current measurement methods	r.m.s. up to 3 x In (functions L, R, U) peak value for values over 3 x In (functions L, R, U) peak value for function I
Electromagnetic compatibility	According to: IEC 60947-2 Standard Annex F
Electrostatic discharges	According to: IEC 61000-4-2 Standard
Radiated electromagnetic field	According to: IEC 61000-4-3 Standard
Short-time transients	According to: IEC 61000-4-4 Standard
Mean time between failure (MTBF)	15 years (at 45 °C)





SACE Isomax S circuit-breakers
for applications up to 1000V



Taking the SACE Isomax S limits higher and higher

1000 V • 160-800 A • 6-50 kA



SACE Isomax S circuit-breakers for applications up to 1000V

Electrical and general characteristics IEC 60947-2

Within the panorama of Isomax proposals, there is also the range of circuit-breakers and switch-disconnectors for direct current and alternating current applications up to 1000V.

The typical application sectors are installations in mines, road or railway tunnels, traction and industrial applications in general.

The circuit-breakers for direct current (connection diagrams on page 5/47) are available in the four-pole version, whereas those for alternating current are available in the three-pole version, with adjustable or electronic thermomagnetic releases and have the same dimensions as the standard versions.

They can also be combined with all the accessories available for the Isomax series.



Range at 1000 V in a.c.

	S3
Rated uninterrupted current, Iu	[A] 160
Poles	Nr. 3
Rated service voltage, Ue (AC) 50-60Hz	[V] 1000
Rated impulse withstand voltage, Uiimp	[kV] 8
Rated insulation voltage, Ui	[V] 1000
Test voltage at industrial frequency for 1 min.	3000
Rated ultimate short-circuit breaking capacity, Icu (AC) 50-60 Hz 1000 V	[kA] 6
Rated short-circuit making capacity	[kA] 9,2
Opening time	[ms] 20
Rated short-time withstand current for 1 s, Icw	[kA]
Utilisation category (EN 60947-2)	A
Isolation behaviour	■
IEC 60947-2, EN 60947-2	■
Thermomagnetic releases T adjustable, M fixed 10 lth	■
PR211/P (LI only) microprocessor-based releases	
PR212/P (LSI-LSIG) microprocessor-based releases	
Versions	F
Terminals	F
Fixing on DIN rail	DIN EN 50023
Mechanical life	[No. operations / hourly operations] 25000/120
Dimensions	L [mm] 105
	D [mm] 103,5
	H [mm] 170
Weights	[kg] 2,6



Range at 1000 V in d.c.

	S3	S5	S6	S6
Rated uninterrupted current, Iu	[A] 160-250	400	630	800
Poles	Nr. 4	4	4	4
Rated service voltage, Ue	[V -]	1000	1000	1000
Rated impulse withstand voltage, Uiimp	[kV]	8	8	8
Rated insulation voltage, Ui	[V]	1000	1000	1000
Test voltage at industrial frequency for 1 min.	3000	3000	3000	3000
Ultimate rated short-circuit breaking capacity, Icu (4 poles in series)	[kA]	L 40	L 40	L 40
Rated short-circuit making capacity	[kA]	40	40	50
Opening time	[ms]	25	35	45
Rated short-time withstand current for 1 s, Icw	[kA]	-	5	7,6
Utilisation category (EN 60947-2)		A	B	B
Isolation behaviour	■	■	■	■
IEC 60947-2, EN 60947-2	■	■	■	■
Thermomagnetic releases, T adjustable - M fixed 10 lth	■	-	-	-
Thermomagnetic releases, T adjustable - M adjustable	-	■	■	■
Versions	F	F	F	F
Terminals	F	F	F	F
Fixing on DIN rail	DIN EN 50023	DIN EN 50023	-	-
Mechanical life	[No. operations / hourly operations] 25000/120	20000/120	20000/120	20000/120
Basic dimensions, fixed	L [mm] D [mm]	140 103,5	184 103,5	280 103,5
	H [mm]	170	254	268
Weights, fixed	[kg]	3,5	7	12

	S3X	S4	S4X	S5	S6	S6X
125	160-250	250	400	630-800	630	
3	3	3	3	3	3	3
1000	1000	1000	1000	1000	1000	1000
8	8	8	8	8	8	8
1000	1000	1000	1000	1000	1000	1000
3000	3000	3000	3000	3000	3000	3000
X	L	X	L	L	X	
30	8	30	8	12	30	
63	13,6	63	13,6	24	63	
10	30	20	30	30	25	
			5	7,6 (630A)-10 (800A)		
A	A	A	B	B	A	
■	■	■	■	■	■	
■	■	■	■	■	■	
■						
	■	■	■	■	■	
	■	■	■	■	■	
F	F	F	F	F	F	
F	F	F	F	F	F	
DIN EN 50023	DIN EN 50023	DIN EN 50023	DIN EN 50023	—	—	
25000/120	20000/120	20000/120	20000/120	20000/120	20000/120	
105	105	105	140	210	210	
103,5	103,5	103,5	103,5	103,5	103,5	
255	254	254	254	268	406	
3,6	4	4	5	9,5	15	

Circuit-breakers with electronic release for alternating current

	In100	In250	In400	In630	In800
S4L 160	■	—	—	—	—
S4L 250	—	■	—	—	—
S4X 250	—	■	—	—	—
S5L 400	—	—	■	—	—
S6L 630	—	—	—	■	—
S6X 630	—	—	—	■	—
S6L 800	—	—	—	—	■
Im = 1,5 ... 12 x In [A]	150...1200	375...3000	600 ... 4800	945...7560	1200...9600

Circuit-breakers with thermomagnetic release for alternating current

(thermal threshold adjustable from 0.7 to 1 x In; fixed magnetic threshold)

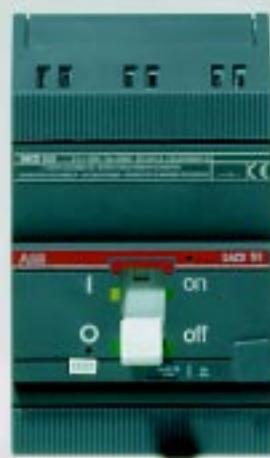
	R32	R50	R80	R100	R125	R160	R200	R250
S3L 160	■	■	■	■	■	■	—	—
S3X 125	■	■	■	■	■	—	—	—
Im AC (10xIn) [A]	500	500	800	1000	1250	1600	2000	2500

Circuit-breakers with thermomagnetic release for direct current

	R32 (1)	R50 (1)	R80 (1)	R100 (1)	R125 (1)	R160 (1)	R200 (1)	R250 (1)	R400 (2)	R630 (2)	R800 (2)
S3L 160	■	■	■	■	■	■	—	—	—	—	—
S3L 250	—	—	—	—	—	—	■	■	—	—	—
S5L 400	—	—	—	—	—	—	—	—	■	—	—
S6L 630	—	—	—	—	—	—	—	—	—	■	—
S6L 800	—	—	—	—	—	—	—	—	—	—	■
Im DC (10xIn) [A]	500	500	800	1000	1250	1600	2000	2500	—	—	—
Im DC (5-10xIn) [A]									2000-4000	3150-6300	4000-8000

(1) Thermal threshold adjustable from 0.7 and 1 x In; fixed magnetic threshold

(2) Thermal threshold adjustable from 0.7 and 1 x In; magnetic threshold adjustable between 5 and 10 x In.





ABB

**SACE Isomax S
switch-disconnectors**



**Close, carry and isolate.
The certainty of operating in complete safety.**

690 V • 125-3200 A • 3,1-85 kA (Icm) • 2,2-40 kA (Icw)



SACE Isomax S switch-disconnectors

Electrical and general characteristics IEC 60947-3



		S2D	S3D
Conventional thermal current at 60 °C, Ith	[A]	125 / 160	100 / 160 / 250 / 320
Number of poles	Nr.	3/4	3/4
Rated service voltage, Ue	(AC) 50-60Hz [V~]	690	690
	(DC) [V-]	500	750
Rated current, Iu	[A]	125-160	100-160-250-320
Rated impulse withstand voltage, Uimp	[kV]	6	8
Rated insulation voltage, Ui	[V]	690	800
Test voltage at industrial frequency for 1 min.	[V]	3000	3000
Rated short-circuit making capacity (415 V~), Icm	[kA]	3,1	10
Rated short-time withstand current for 1 s, Icw	[kA]	2,2	6,5
Isolation behaviour		■	■
IEC 60947-3		■	■
Versions		F - P	F - P - W
Terminals	fixed	EF - FC - FC CuAl R - RC	F - EF - FC FC CuAl - R - RC
	plug-in	FC - R	F - FC - R
	withdrawable	-	F - FC - R
Mechanical life	[No. of operations / hourly operations]	25000/240	25000/120
Basic dimensions, fixed	L (3/4 poles) [mm]	90/120	105/140
	D [mm]	70	103,5
	H [mm]	120	170
Weights, fixed	3/4 poles [kg]	1,1/1,5	2,6/3,5

Coordination with the circuit-breakers (kA at 380-415 V AC)

LOAD SIDE ⇒		S2D 125	S2D 160	S3D 100	S3D 160	S3D 250	S3D 320	S6D 400	S6D 630	S6D 800	S7D 1000
SUPPLY SIDE	S1B	16		16							
	S1N	25		25							
	S2B	16	16	16	16						
	S2N	35	35	35	35						
	S2S	50	50	50	50						
	S3N			35	35	35	35				
	S3H			65	65	65	65				
	S5N							35	35	35	
	S5H							35	35	35	
	S6N							35	35	35	
	S6S							50	50	50	
	S6H							65	65	65	
	S7S										50
	S7H										65
	S8H										
	S8V										



S6D	S7D	S8D
400 / 630 / 800	1000 / 1250 / 1600	2000 / 2500 / 3200
3/4	3/4	3/4
690	690	690
750	750	750
400-630-800	1000-1250-1600	2000-2500-3200
8	8	8
800	800	800
3000	3000	3000
30	52,5	85
15	25	40
■	■	■
■	■	■
F - W	F - W	F
F - EF - FC CuAl R - RC	F - EF - FC CuAl (1250A) HR - VR	EF (2500A)-R
-	-	-
F - HR - VR	F - HR - VR	-
20000/120	10000/120	10000/20
210/280	210/280	406/556
103,5	138,5	242
268	406	400
9,5/12	17/22	57/76

The switch-disconnectors derive from the corresponding circuit-breakers, of which they keep the same overall dimensions, versions, fixing systems and possibility of mounting accessories.

They are characterised by a rated voltage of 690 V in alternating current and 750 V in direct current.

Applications

They can be used as general circuit-breakers in sub-switchboards, as switching and isolating parts for lines, busbars or groups of apparatus, or as bus-ties. They can be part of general isolation devices of groups of machines or units for motor switching and protection.

Isolation

The main function carried out by these circuit-breakers consists of isolating the circuit they are inserted in.

Once open, the contacts are at a sufficient distance to prevent an arc striking, in accordance with the standard prescriptions relative to isolation behaviour. The position of the operating lever corresponds with certainty to that of the contacts (positive operation).

Protection

Each switch-disconnector must be protected on the supply side by a coordinated device which safeguards it against short-circuits. The coordination table at the side shows the SACE Isamax S circuit-breaker which can carry out the protection function for each switch-disconnector. These are always pieces of apparatus of a size corresponding to or lower than that of the switch-disconnector.

Making capacity

The making capacity, I_{cm} , is of considerable importance, since a switch-disconnector must be able to withstand the dynamic, thermal and current stresses that can occur during closing without being destroyed, up to and including closing under short-circuit conditions.

Endurance in the closed position

This identifies the capacity for maintaining the closed position for short-time overcurrents. It is an important parameter which qualifies the performances of these pieces of apparatus.





SACE Isomax S circuit-breakers
according to UL489 and
CSA C22.2 Standards



SACE Isomax S quality to conquer "New worlds"

480/600 V • 100-2500 A • 25-100 kA (480V)



SACE Isomax S circuit-breakers according to UL489 and CSA C22.2 Standards

Electrical and general characteristics

Circuit-breaker type		S1	S3 150			S3 225			
Maximum frame continuous current 40 °C	[A]	100		150			225		
Number of poles	Nr.	3		2 - 3			2 - 3		
Rated operational voltage (AC) 50-60 Hz (DC)	[V]	277/480		600			240 (B); 480 (N/H/L)		
Test voltage (1min.) 50-60 Hz	[V]			600			500		
UL/CSA short-circuit interrupting capacity	[kA rms]		N	N	H	L	B	N	H
240 V AC	[kA rms]		50	65	100	150	150	65	100
480 V AC	[kA rms]		14 (R15)		65 (R15, R30)		-	25	50
600 V AC	[kA rms]		20 (R20-R100)	25	50	85	-	-	65
500 V DC (2 poles in series)[kA rms]				35	50	65	50	20	35
600 V DC (3 poles in series)[kA rms]				20	35	50	-	-	50
Overcurrent trip relays									
Thermal-magnetic			■		■			■	
Microprocessor based			-		-			-	
Interchangeability			-		-			-	
Dimensions	H	[in/mm]	4,72 / 120		6,70 / 170			6,70 / 170	
fixed version	W	[in/mm]	3,07 / 78		4,13 / 105			4,13 / 105	
	D	[in/mm]	2,75 / 70		4,07 / 103,5			4,07 / 103,5	
Mechanical duration	[op./ frequency]		25000 / 240		25000 / 120			25000 / 120	
Weights (fixed - 3P)	[lbs.]		2,42		6,75			6,75	

In the field of moulded-case circuit-breakers, complying with the UL489 and CSA22.2 standards, the SACE Isomax S offer is enriched by the following ranges:

- circuit-breakers for power distribution (fitted with thermomagnetic or electronic releases)
- circuit-breakers with magnetic only releases for motor protection (Motor Control Protection – MCP)
- switch-disconnectors for use as isolators or switching devices for lines, busbars or parts of a plant circuit-breakers (Moulded Case Switch – MCS).

The SACE Isomax S offer in compliance with UL/CSA Standards is completed with the introduction of three new sizes. There are therefore increasing possibilities for those customers who also operate on markets subject to the standards defined in the UL/CSA Standards, with a whole range of moulded-case circuit-breakers available, with rated currents which go from 100A to 2500A and breaking capacities, at 480 V AC, which can reach 100kA.

Apart from lowering the range of rated currents, introduction of

the S1 size allows all those applications typical of power sub-distribution where a circuit-breaker characterised by limited dimensions, but guaranteeing great versatility of application of accessories and installation, is particularly convenient. They further increase the possibility of selection, thanks to the introduction of the new rating for S3, $I_{u}=225\text{A}$, with three levels of breaking capacity (N/H/L), up to service voltage values of $U_e=480\text{V AC}$ and 500V DC .

Finally, the S8 circuit-breaker according to the UL/CSA Standard also allows completion towards higher rated currents. Isomax S8V 1600, 2000 and 2500 are suited to installation immediately to the load side of power supply sources of low voltage systems and can operate safely under the most severe service conditions required by modern installations. Their high performances, great flexibility in mounting accessories, simple coordination with the devices on the load side and the possibility of limiting the depth of the switchboards thanks to their compact overall dimensions, make Isomax S8 a particularly advantageous choice.

	S4			S5			S6			S7		S8
	250			400			800			1200		1600-2000-2500
	2 - 3			2 - 3			2 - 3			2 - 3		3
	600			600			600			600		600
	-			600			600			-		-
	3000			3000			3000			3000		3000
	N	H	L	N	H	L	N	H	L	H		V
	65	150	200	65	150	200	65	150	200	100		120
	25	65	100	35	65	100	50	65	100	65		100
	18	22	35	22	22	35	25	35	42	50		85
	-	-	-	35	50	65	35	50	65	-		-
	-	-	-	20	35	50	20	35	50	-		-
	-	-	-	■	■	■	■	■	■	-		-
	■	■	■	■	■	■	■	■	■	■		■
	■	■	■	■	■	■	■	■	■	■		■
	10,00 / 254	10,00 / 254 (300A); 13,62 / 346 (400A)			14,25 / 268			16 / 406			15,75 / 400	
	4,13 / 105	5,51 / 140			8,27 / 210			8,27 / 210			15,98 / 406	
	4,07 / 103,5	4,07 / 103,5			4,07 / 103,5			5,45 / 138,5			9,25 / 235	
	20000 / 120	20000 / 120			20000 / 120			10000 / 120			10000 / 20	
	8,8	11			22			37,5			135	

Motor Control protection - MCP

Type	S3L		S4 N/H/L			S5 N/H/L			S6 N/H/L			S7H	S8V
Poles	3		3			3			3			3	3
Trip Unit													
Adjustable magnetic only (4...12xIn)													
PR211/P - I													
Rating [A]	3...25	50...150	100-250			400	400	400	600-800	600-800	600-800	1000-1200	1600-2000-2500
Interrupting capacity	L	L	N	H	L	N	H	L	N	H	L	H	V
240 V AC	50	150	65	150	200	65	150	200	65	150	200	100	120
480 V AC	25	85	25	65	100	35	65	100	50	65	100	65	100
600 V AC	10	25	18	22	35	22	22	35	25	35	42	50	85
500 V DC	65 ⁽¹⁾	65	-	-	-	-	-	-	-	-	-	-	-
600 V DC	50 ⁽¹⁾	50	-	-	-	-	-	-	-	-	-	-	-

⁽¹⁾ Performance available only for the 25 A rating version

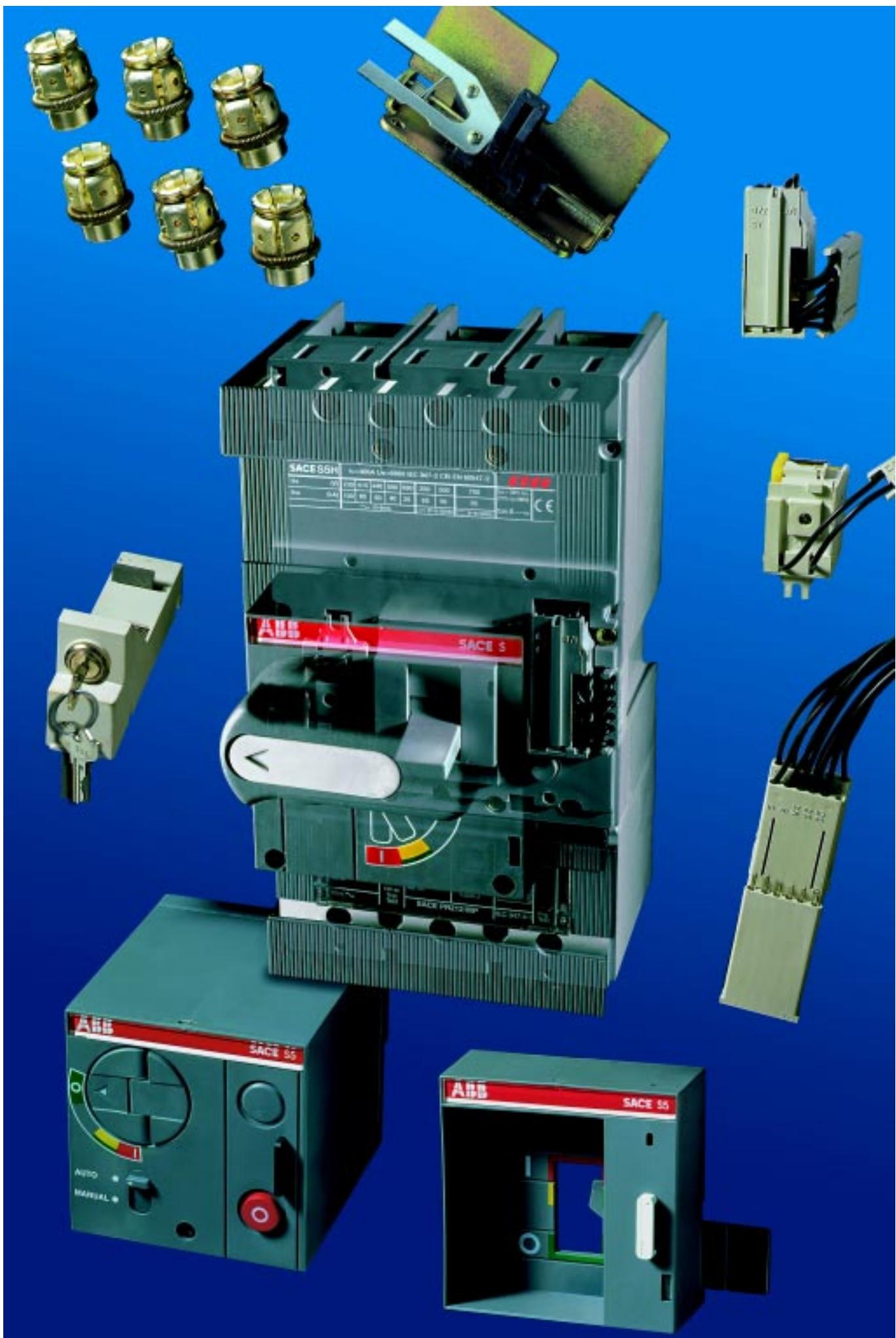
Moulded Case Switches - MCS

Type	S3 H-D 150	S3 H-D 225	S4 H-D	S5 H-D	S6 H-D	S7 H-D	S8 V-D
Rating [A]	150	225	250	400	800	1200	2500
Poles	3	3	3	3	3	3	3
Magnetic trip [A]	1500	2250	3000	5000	10000	20000	35000
Rated voltage (AC) 50-60 Hz [V~]	600	480	600	600	600	600	600
(DC) 3 poles in series [V-]	600	500	600	600	600	600	600



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GSIS0070



Accessories

Versions

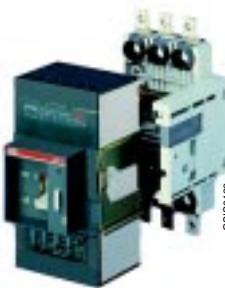
SACE Isomax S circuit-breakers are available in the FIXED, PLUG-IN or WITHDRAWABLE, three-pole or four-pole versions.



GSIS9120



GSIS9121



GSIS9122

F

FIXED

The FIXED version circuit-breaker with three or four-poles has:

- the same upper and lower terminals
- lever operating mechanism
- thermomagnetic or electronic release
- flange for the front door of the switch-board
- possibility of assembly on base plate or on DIN rail (up to 630A)
- circuit-breakers featuring only four depths (70mm for S1-S2, 103.5 for S3..S6, 138.5 for S7 and 242 for S8)
- standardised front for groups of circuit-breakers (45mm for S1..S5, 105mm for S3..S7).

P

PLUG-IN

The PLUG-IN version circuit-breaker consists of:

- fixed part to be installed directly on the base plate of the cubicle
- moving part obtained from the fixed circuit-breaker with the addition of the isolating contacts in correspondence with the connection terminals, of the rear frame for fixing to the fixed part and of the terminal covers.

Circuit-breaker racking out is carried out by unscrewing the top and bottom fixing screws. A special lock prevents the circuit-breaker from being racked in and out with the contacts in the closed position.

W

WITHDRAWABLE

The WITHDRAWABLE version circuit-breaker is made up of:

- fixed part, to be installed directly on the base plate of the cubicle with the side group mounted on the fixed part to allow the racking-out/racking-in movement
- moving part obtained from the fixed circuit-breaker with the addition of the isolating contacts in correspondence with the connection terminals, of the rear frame (which is coupled with the side piece provided on the fixed part for sliding) for fixing to the fixed part, and of the terminal covers.
- accessory to be applied on the front of the circuit-breaker with selection between front for lever operating mechanism, motor operator and rotary handle operating mechanism; application of one of these accessories allows the circuit-breaker lock to be made in the withdrawn position.

Racking-in/out of the moving part is carried out by means of the special operating lever supplied with the circuit-breaker in the moving part for withdrawable version or with the conversion kit of the fixed circuit-breaker into moving part of withdrawable circuit-breaker. The special mechanism allows the circuit-breaker to be put into the isolated position (with power and auxiliary circuits disconnected) with the compartment door closed, providing increased operator safety. The lever can only be inserted with the circuit-breaker open.

Once racked out or withdrawn, the circuit-breaker can be operated in the open/closed position and, by means of the special connection extensions, blank operating tests of the auxiliary control circuits can be carried out.

	F	P	W
	Fixed	Plug-in	Withdrawable
S1 125	■	■	—
S2 160	■	■	—
S3 160	■	■	■
S3 250	■	■	■
S4 160	■	■	■
S4 250	■	■	■
S5 400	■	■	■
S5 630	■	—	■
S6 630	■	—	■
S6 800	■	—	■
S7 1250	■	—	■
S7 1600	■	—	■
S8 2000	■	—	—
S8 2500	■	—	—
S8 3200	■	—	—



Accessories

Versions

Starting from the fixed version with front terminals, SACE Isomax S circuit-breakers can be converted into the various versions using the Conversion kits. This makes management of the product, its versions and stocks as a whole highly flexible. It is, in any case, always possible to ask for the circuit-breaker in the required version fully prepared in the factory.

Conversion kit into moving part for plug-in circuit-breaker

This allows the fixed circuit-breaker with front terminals to be converted into the moving part of a plug-in circuit-breaker.

The kit consists of:

- tulip isolating contacts
- frame
- assembly screws and nuts.

The fixed part is needed to complete the circuit-breaker.



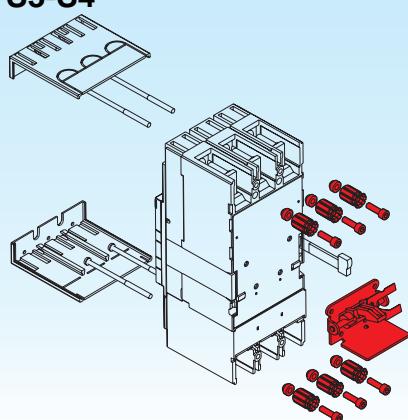
GSIS9096

S1-S2



GSIS901

S3-S4



GSIS90102

4

Fixed part

The fixed part allows the circuit-breaker to be constructed in the plug-in or withdrawable version. It can also be provided in the switchboard as a reserve power supply to be completed with a circuit-breaker at the appropriate time. For plug-in or withdrawable version circuit-breakers, different circuit-breaker positions are possible:

- Plug-in: racked-in – racked-out
- Withdrawable: racked-in – racked-out
- withdrawn

The fixed part for withdrawable version circuit-breaker is fitted with a guide for supporting the moving part during the isolation or withdrawal operations of the moving part. For SACE S6-S7 circuit-breakers, there are two guides.



GSIS9123



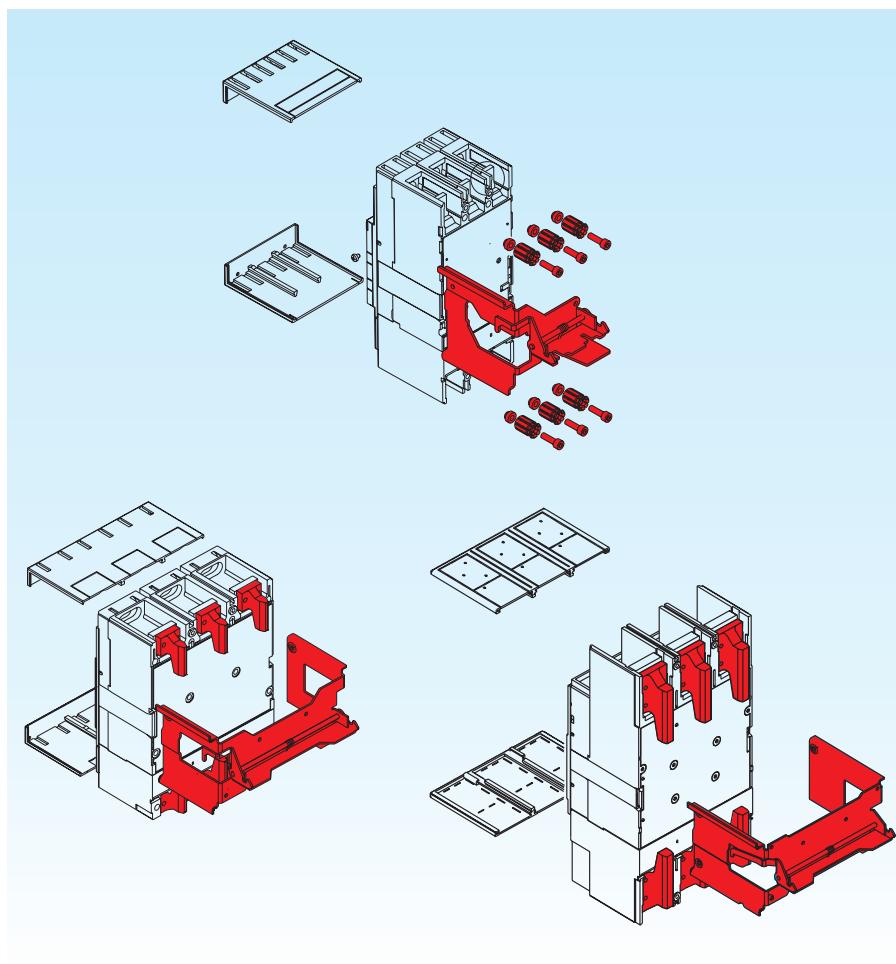
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Conversion kit into moving part for withdrawable circuit-breaker

This allows the fixed circuit-breaker with front terminals to be converted into the moving part of a withdrawable circuit-breaker. The kit consists of isolating contacts, frame, assembly screws and nuts. The circuit-breakers in the withdrawable version must always be completed, alternatively, with one of the following accessories:

- front for lever operating mechanism
 - rotary handle operating mechanism
 - motor operator,
- in order to make the racking-out lock if necessary.

The fixed part is needed to complete the circuit-breaker.



Conversion kit for fixed part of plug-in into fixed part of withdrawable

A guide for converting the fixed part of a plug-in version circuit-breaker into the fixed part of a withdrawable version circuit-breaker is available for SACE S3-S4-S5 circuit-breakers.



Racking-out handle

This allows racking-out and racking-in – even with the door closed – of the circuit-breaker in the fixed part.

The handle is the same for the whole range of circuit-breakers and is supplied as standard with the Conversion kit or with the circuit-breakers supplied in the withdrawable version.





Accessories

Connection terminals

The basic version of the circuit-breaker is supplied with:

- front terminals for SACE S3, S4, S5, S6, S7, and S8 circuit-breakers
- front terminals for copper cables for SACE S1, and S2 circuit-breakers.

Different types of terminals are available, which can be combined in different ways (upper or one type, lower of another type), allows the circuit-breaker to be connected to the plant in the most suitable way for installation requirements.

The following distinctions can be made between:

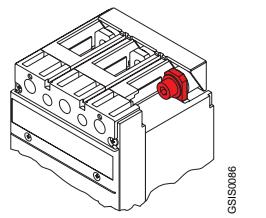
- **front terminals** which allow connection of cables or busbars by acting directly from the front of the circuit-breaker.
- **rear terminals** which allow installation of the circuit-breakers in switchboards with rear access to both cable and busbar connections.

Terminals for connection of busbars or cables terminated with cable terminals and terminals for direct connection of bare cable are available.

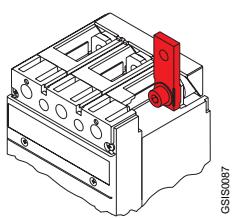
The information needed to make the connections is summarised for each type of terminal on pages 4/8-9. Flat bars of different dimensions and composition are recommended for connection with busbars. Furthermore, the minimum depth the flat bar to be connected must have is also indicated, if it is of a different composition to the one recommended. The minimum and maximum cross-section of the cables which can be tightened in the terminals and the diameter of the terminal are indicated for connection with bare cables

The torque values to be applied to the tightening screws of the terminals for cable and to the screws used for connecting the busbars to the flat bar terminals are given.

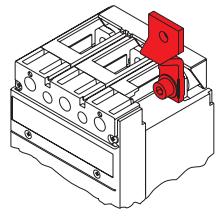
The circuit-breakers can be ordered complete with the terminals required, mounted directly in the factory, or the terminals can be ordered individually in packs of 3 - 4 - 6 - 8 pieces. Codes for ordering circuit-breakers directly in the configuration with upper / lower terminals of the same type are available.



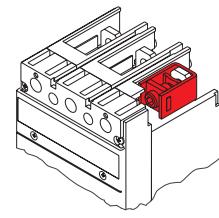
GSIS0096



GSIS0097



GSIS0088



GSIS0099

	Front terminals	Front extended terminals	Front extended spreaded terminals	Front terminals for copper cables
S1 125	—	—	—	F - P
S2 160	—	F	—	F - P
S2X 80, S2X 100	—	F	—	F - P
S3 160 / 250	F	F - P - W	F	F - P - W
S3X 125 / 200	F	F - P - W	F	F - P - W
S4 160 / 250	F	F - P - W	F	F - P - W
S4X 250	F	F - P - W	F	F - P - W
S5 400 / 630	F	F(400A)-P(400A)-W(400A)	F - W(630A)	F - P(400A) - W(400A)
S6 630 / 800	F	F - W	F	—
S6X 400 / 630	F	F - W (only at the bottom)	F	—
S7 1250 / 1600	F	F - W	F	—
S8 2000 / 2500 / 3200	F (2000A / 2500A)	—	—	—

F = Fixed

P = Plug-in

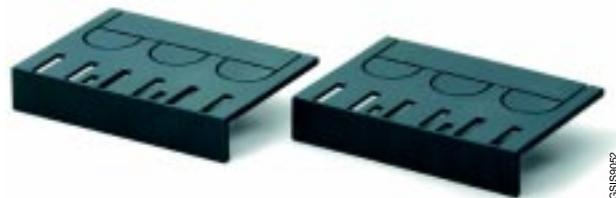
W = Withdrawable

Insulating terminal covers

The terminal covers are applied to the terminals of the circuit-breaker to prevent accidental contacts with live parts and thereby guarantee protection against indirect contacts. The following are available:

- **lower terminal covers**, which guarantee IP40 degree of protection for fixed circuit-breakers with rear terminals and for moving parts of plug-in or withdrawable circuit-breakers.
- **upper terminal covers** for fixed circuit-breakers with front terminals, front terminals for cables and rear terminals, which guarantee IP40 degree of protection.
- **terminal covers for fixed parts** of plug-in or withdrawable circuit-breakers, guarantee IP40 degree of protection on the front with moving part connected. They are available in a single version.

The degrees of protection indicated are valid for circuit-breakers installed in switchboards.

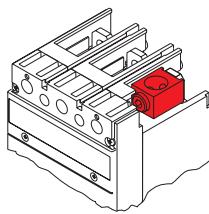


GSIS0192

Screws for sealing the terminal covers

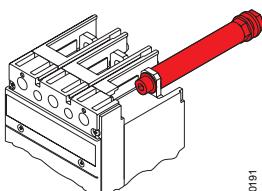
These are applied to the terminal covers of fixed circuit-breakers or to the moving parts of plug-in or withdrawable circuit-breakers. They prevent removal of the upper or lower terminal covers, and can be locked with wire and a lead seal.

FC CuAl



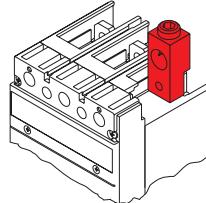
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R



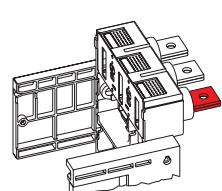
GSIS0191

RC



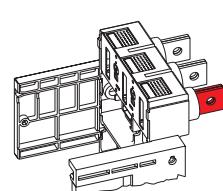
GSIS0192

HR



GSIS0193

VR



GSIS0194

4

Front terminals
for Cu/Al cables

Rear threaded
terminals

Rear terminals
for Cu/Al cables

Rear terminals
in horizontal flat bar

Rear terminals
in vertical flat bar

—

F - P

F

F - P

F

F - P - W

F

F - P - W

F

F - P - W

F(400A)

F - P(400A) - W

F(400A)

W(630A)

—

F

F

F

F(1250A)

—

—

—

—

—

—

—

W

W

F - W

W

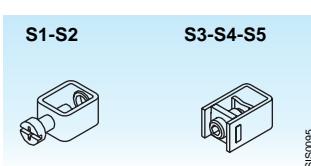
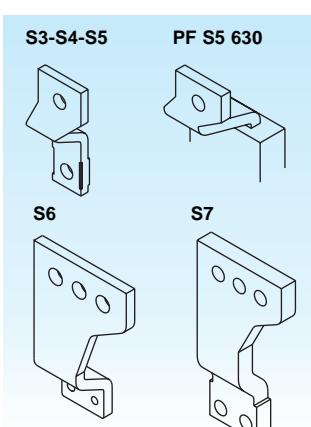
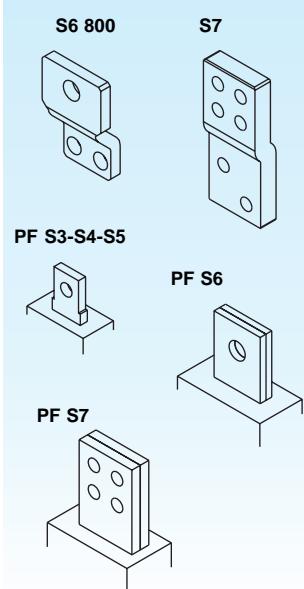
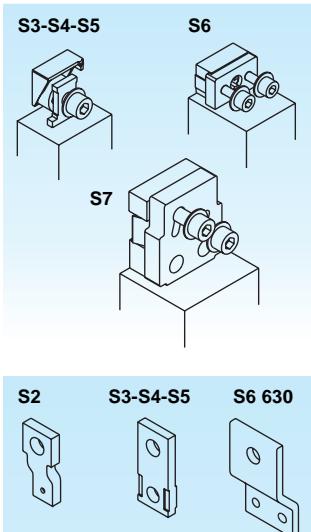
F - W

F



Accessories

Connection terminals



Front terminals

These allow busbars or cables terminated with a cable terminal to be connected

Type	version	pieces	busbars [mm]				tightening B [Nm]	terminal covers		
			L	H	P	hole		upper	lower	fixed part
S3 160, S3X 125	F	1	20	10	4	9	9	R	R	
S3 250, S3X 200	F	1	20	10	6	9	9	R	R	
S4 160	F	1	20	10	4	9	9	R	R	
S4 250, S4X 250	F	1	20	10	6	9	9	R	R	
S5 400	F	2	25	12	5	11	18	R	R	
S5 630	F	2	25	12	8	11	18	R	R	
S6 630, S6X 400-630	F	2	40	12	5	2 x 7	9	R	R	
S6 800	F	2	50	12	5	2 x 7	9	R	R	
S7 1250	F	2	50	20	8	2 x 11	18	R		
S7 1600	F	2	50	20	10	2 x 11	18	R		
S8 2000	F	3	100		5	4 x 15	70 ⁽²⁾	R		
S8 2500	F	4	100		5	4 x 15	70 ⁽²⁾	R		

Front extended terminals

These allow busbars or cables terminated with a cable terminal to be connected

Type	version	pieces	busbars [mm]				tightening [Nm] A B	terminal covers			
			L	P	hole	cable term. L hole		upper	lower	fixed p.	
S2 160	F	1	20	4	8	20	8	5	9	R	R
S3 160, S3X 125	F-P-W	1	20	4	8.5	20	8.5	9	9	R	R
S3 250, S3X 200	F-P-W	1	20	6	8.5	20	8.5	9	9	R	R
S4 160	F-P-W	1	20	4	8.5	20	8.5	9	9	R	R
S4 250, S4X 250	F-P-W	1	20	6	8.5	20	8.5	9	9	R	R
S5 400	F-P-W	2	25	5	11	25	11	18	18	R	R
S6 630, S6X 400-630	F-W	2	40	5	11	40	11	9	18	R	
S6 800	F-W	2	50	5	14	50	14	9	30	R	
S7 1250	F-W	2	50	8	4x11 ⁽⁴⁾			45	18	R	
S7 1600	F-W	2	50	10	4x11 ⁽⁴⁾			45	18	R	

Front extended spreaded terminals

These allow busbars or cables terminated with a cable terminal to be connected

Type	version	pieces	busbars [mm]				tightening [Nm] A B	terminal covers			
			L	P	hole	cable term. L hole		upper	lower	fixed p.	
S3	F	1	30	4	8.5	30	8.5	9	9	S	
S4	F	1	30	4	8.5	30	8.5	9	9	S	
S5 400	F	2	40	5	11	40	11	18	18	S	
S5 630	F-W	2	40	5	11	40	11	18	18	S	
S6	F	2	50	5	3 x 13	4 x 45	13	9	30		
S7 1600	F	2	50	10	3 x 13	4 x 45	13	45	20		

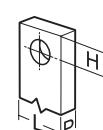
Front terminals for copper cables

These allow bare copper cables to be connected directly to the circuit-breaker. They are not suitable for tube cable terminals

Type	version	pieces	cable [mm ²]	busbars		cable term. L [mm]	tightening B [Nm]	Ø clamps [mm]	terminal covers		
				L	P				upper	lower	fixed p.
S1 125	F-P	1	1.5...50	max.10		max.10	2.5-5 ⁽¹⁾	11	R	R	
S2 160	F-P	1	1.5...70	max.12		max.12	2.5-5 ⁽¹⁾	12.5	R	R	
S3 160, S3X 125	F-P-W	1	6...185				16	18	R	R	S
S3 250, S3X 200	F-P-W	1	6...185				16	18	R	R	S
S4 160	F-P-W	1	6...185				16	18	R	R	S
S4 250, S4X 250	F-P-W	1	6...185				16	18	R	R	S
S5 400	F-P-W	1	16...240				25	24	R	R	S
S5 630	F-W	2	50...185				31	20	S		

Key

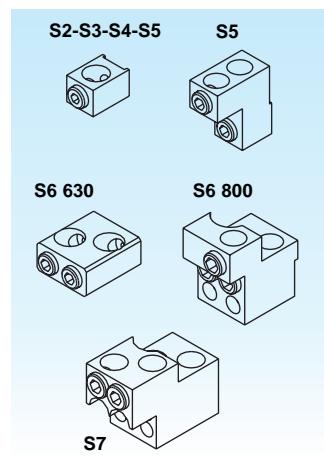
- (1) Tightening torque of 2.5 Nm for < 10 mm² cable cross-section
- A = Tightening of the terminal onto the circuit-breaker
- B = Tightening the cable/busbar or cable terminal onto the terminal
- R = On request
- S = Standard
- (2) M12 class 8.8 screws
- (3) M16 class 8.8 screws
- (4) Only use two holes diagonally



Front terminals for copper or aluminium cables

These allow copper or aluminium cables to be connected directly to the circuit-breaker (it is not possible to use solid aluminium cables). For the SACE S2 circuit-breaker, these terminals must be connected to the front extended terminals, which are supplied if the circuit-breaker is ordered fitted directly in the factory, whereas the front extended terminal kit must be specified if they are ordered as loose parts..

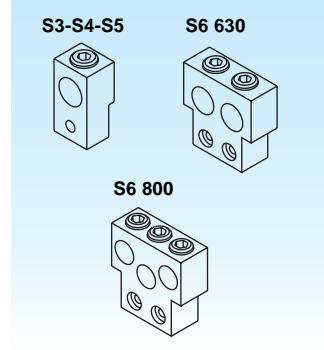
Type	version	pieces	cable [mm ²]	tightening		Ø clamps [mm]	terminal covers		
				A [Nm]	B [Nm]		upper	lower	fixed p.
S2 160	F	1	2.5...50	9	5.6	9.5	S		
	F	1	35...95	9	13.5	13.5	S		
S3 160 (R100A)	F	1	2.5...50	9	5.6	10	R		
S3 160, S3X 125	F	1	35...95	9	13.5	14.2	R		
S3 250, S3X 200	F	1	25...150	9	31	17	R		
S4 160	F	1	35...95	9	13.5	14.2	R		
S4 250, S4X 250	F	1	25...150	9	31	17	R		
S5 400	F	2	95...120	18	31	15.5	S		
	F	1	120...240	18	43	21.5	R		
S6 630, S6X400-630	F	2	120...240	5	31	21.5	R		
S6 800	F	3	70...185	9	43	19	S		
S7 1250	F	4	95...240	37	43	21.5	S		



Rear terminals for copper or aluminium cables

These allow copper or aluminium cables to be connected directly to the circuit-breaker.

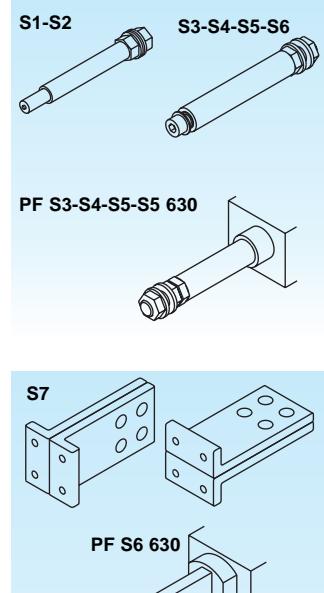
Type	version	pieces	tightening		Ø clamps	terminal covers		
			A [Nm]	B [Nm]		upper	lower	fixed p.
S3 160, S3X 125	F	1	9	31	16	S		
S3 250, S3X 200	F	1	9	31	16	S		
S4 160	F	1	9	31	16	S		
S4 250, S4X 250	F	1	9	31	16	S		
S5 400	F	1	18	43	21	S		
S6 630, S6X400-630	F	2	9	43	21	S		
S6 800	F	3	9	31	17.5	S		



Rear threaded terminals

These allow rear connection of busbars.

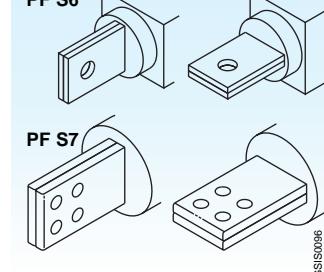
Type	version	pieces	busbars [mm]			cable term. [mm]	tightening	terminal covers		
			L	P	hole			upper	lower	fixed p.
S1 125	F	1	16	3			5	8		S
	P	1	16	3				8		
S2 160	F	1	18	4			5	8		S
	P	1	18	4				8		
S3 160, S3X 125	F	1	20	4	12.5	20	12.5	10	20	S
	P-W	1	20	4	12.5	20	12.5	10	20	
S3 250, S3X 200	F	1	20	6	12.5	20	12.5	10	20	S
	P-W	1	20	6	12.5	20	12.5	10	20	
S4 160	F	1	20	4	12.5	20	12.5	10	20	S
	P-W	1	20	4	12.5	20	12.5	10	20	
S4 250, S4X 250	F	1	20	6	12.5	20	12.5	10	20	S
	P-W	1	20	6	12.5	20	12.5	10	20	
S5 400	F	2	25	5	16.5	25	16.5	18	40	S
	P-W	2	25	5	16.5	25	16.5	18	40	
S5 630	F	2	40	5	25	40	25	18	100	S
	P-W	2	40	5	25	40	25	18	100	
S6 630, S6X 400-630	F	2	40	5	25	40	25	18	100	S
S6 800	F	2	50	5	25	50	25	18	100	S



Rear terminals in horizontal and vertical flat bar

These allow rear connection of busbars.

Type	version	pieces	busbars [mm]			cable term. [mm]	tightening	terminal covers		
			L	P	hole			upper	lower	fixed p.
S5 630	W	2	40	5	11	40	11		20	
S6 630, S6X 400-630	W	2	40	5	14	40	14		30	
S6 800	W	2	50	5	14	50	14		30	
S7 1250	F-W	2	50	8	4x11 ⁽⁴⁾				20	S
S7 1600	F-W	2	50	10	4x11 ⁽⁴⁾				20	S
S8 2000	F	3	100	5	4x15				70 ⁽²⁾	
S8 2500	F	4	100	5	4x15				70 ⁽²⁾	
S8 3200	F	6	100	5	4x18				100 ⁽³⁾	





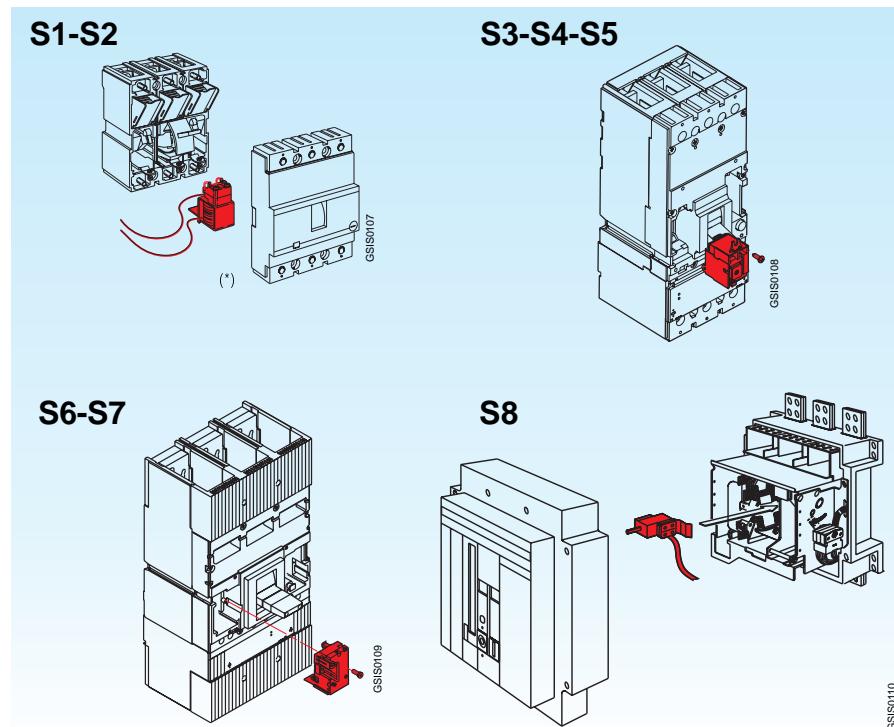
Accessories

Service releases

The service releases, shunt opening and undervoltage releases, housed and fixed in a slot in the left part of the circuit-breaker are always alternative to each other. The power supply is made by means of special connectors for sizes S3 to S7, whereas for S1-S2, it is made by means of free wires 0.6 m long or with plug-socket connectors which can be supplied on request. Assembly is carried out by pressure into the appropriate housing in the left part of the circuit-breaker.

Shunt opening release

This allows circuit-breaker opening by means of an electric command. Release operation is guaranteed for a voltage between 70% and 110% of the rated power supply voltage U_n , both in AC and in DC. It is always fitted with an auxiliary limit contact.



(*) For the SACE S1-S2 circuit-breakers, the service releases are fixed to the circuit-breaker cover

4

Power supply voltages

S1 - S2		S3 - S4 - S5		S6 - S7		S8	
50-60 Hz [V~]	DC [V-]	50-60 Hz [V~]	DC [V-]	50-60 Hz [V~]	DC [V-]	50-60 Hz [V~]	DC [V-]
24 ... 30			12		12		24
48	60	24	24	24	24	24	30
100 ... 130		48	48	48	48	48	48
220 ... 250		60	60 ... 72	60	60		60
380 ... 440		110 ... 120	110 ... 125	110 ... 120	110 ... 125	100 ... 127	100 ... 27
	24	220 ... 240	220 ... 250	220 ... 240	220 ... 250	127 ... 150	
	48	380 ... 400		380 ... 400		150 ... 180	160
	110	480		480		200 ... 255	200 ... 250
	220					380 ... 500	
	250						

Powers absorbed on inrush

S1...S5		S6...S7		S8	
AC [VA]	DC [W]	AC [VA]	DC [W]	AC [VA]	DC [W]
100	120	150	150	200	150

Circuit-breaker opening times

S3	S4...S7	S8
[ms]	[ms]	[ms]
≤ 15	≤ 15	≤ 20

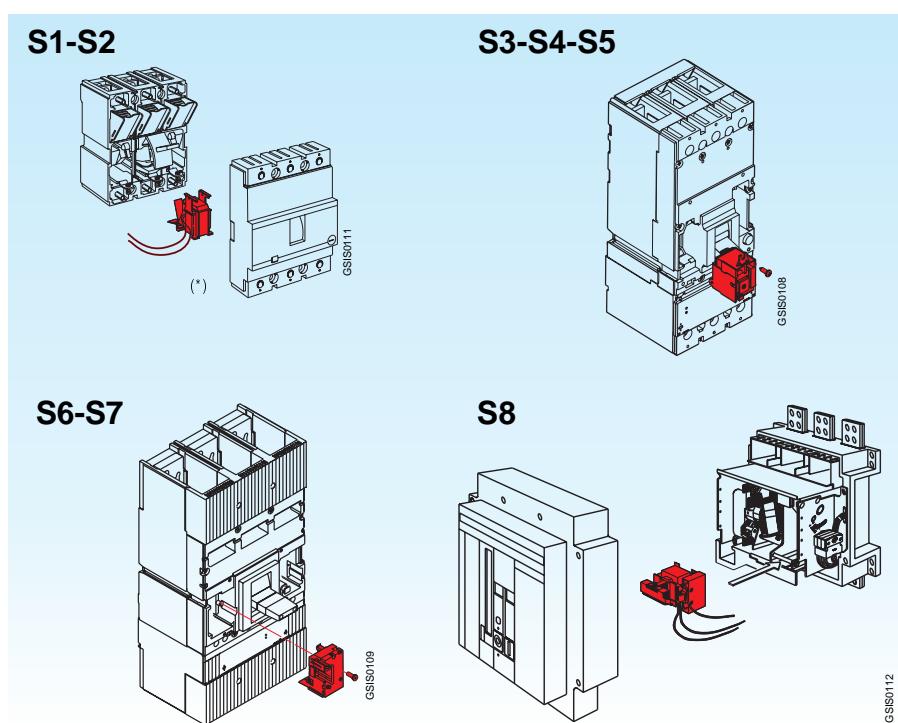
Number of operations

S3-S4	S5	S6-S7
[nr.]	[nr.]	[nr.]
10000	7500	2500

Undervoltage release

This opens the circuit-breaker due to a power supply failure to the release, or voltage drops to minimum values of $0.7 \times U_n$ with a trip range from 0.7 to $0.35 \times U_n$.

After tripping, the circuit-breaker can be closed again, starting with a voltage higher than $0.85 \times U_n$. With the undervoltage release de-energised, neither circuit-breaker nor main contact closure is possible.



Power supply voltages

(*) For the SACE S1-S2 circuit-breakers, the service releases are fixed to the cover of the circuit-breaker

S1 - S2			S3 - S4 - S5			S6 - S7			S8		
50 Hz [V~]	60 Hz [V~]	DC [V-]	50-60 Hz [V~]	DC [V-]	50-60 Hz [V~]	DC [V-]	50-60 Hz [V~]	DC [V-]	50 Hz [V~]	60 Hz [V~]	DC [V-]
24			24		24		24		24		
48	48		48		48		48			24	
110			60		60		60		30		
110			110 ... 127		110 ... 127		110 ... 127			30	
220			220 ... 250		220 ... 250		220 ... 250		48		
380	380 ... 440		380 ... 440		380 ... 440		380 ... 440			48	
			480		480		480		60		
	24			24			24			60	
	48			48			48		100	110...115	
	60			60			60		110...115	125 ... 127	
	110			110 ... 125			110 ... 125			110...125	
	220			220 ... 250			220 ... 250		120		
									127...130	208...220	
										220...250	
									220		
									230...240	277	
									240		
										310	
									380		
									380...400	440	
									415...440	480	
									500		

Powers absorbed during continuous service

S1...S5	S6 - S7	S8			
AC [VA]	DC [W]	AC [VA]	DC [W]	AC [VA]	DC [W]
6	3	10	4	30	15

Circuit-breaker opening times

S1...S2	S3	S4...S7	S8
[ms]	[ms]	[ms]	[ms]
≤ 15	≤ 18	≤ 25	≤ 25

Number of operations

S3-S4	S5	S6-S7
[nr.]	[nr.]	[nr.]
10000	7500	2500



Accessories

Service releases

Time-delayed undervoltage release

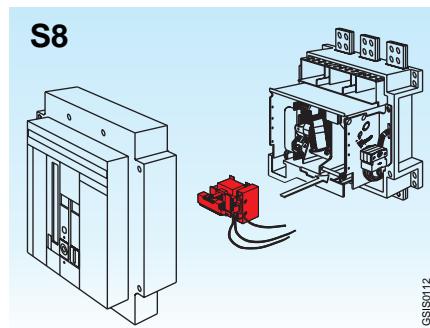
The undervoltage release can be combined with an external electronic power supply time-delay device, which allows circuit-breaker opening to be delayed in the case of a power cut to the release itself, according to fixed time-delays of 0.5-1-2-3 [s], so as to avoid unwarranted trips caused by temporary malfunctions. It is available for the SACE S3, S4, S5, S6, and S7 circuit-breakers with power supply voltages at 110-220 V (50-60 Hz) only coupled with an undervoltage release at 310 V DC. Different power supply voltages are possible for S8.



GSIS9042

Shunt closing release

This allows circuit-breaker closure by means of an electric command. Operation of the release is guaranteed for a voltage between 80% and 110% of the rated power supply voltage U_n , both in AC and in DC.



GSIS90112



GSIS9003

Power supply voltages

S8		
50 Hz [V~]	60 Hz [V~]	DC [V-]
24	24	24
		30
30		48
48		
60		60
100	110...115	110...125
110...115	125...127	120
127...130		
220		208...220
		220...250
230...240	277	
	240	
		310
380...400	440	
	380	
415 ... 440	480	
500		

Powers absorbed on inrush

S8	
AC [VA]	DC [W]
200	220

Circuit-breaker closing times

S8
[ms] ≤ 55

Connectors for service releases

These allow the shunt opening release or the undervoltage release to be connected to the power supply circuit. They are available in the following versions:

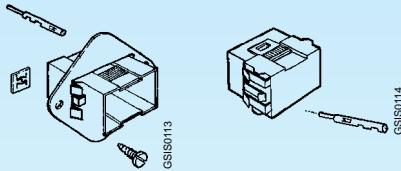
- plug-socket for S1-S2 circuit-breakers (free cables always supplied)
- for fixed S3 ... S7 circuit-breakers
- for plug-in/withdrawable S3 ... S7 circuit-breakers.

Assembly is by means of pressure into special slots in the left side of the circuit-breaker.

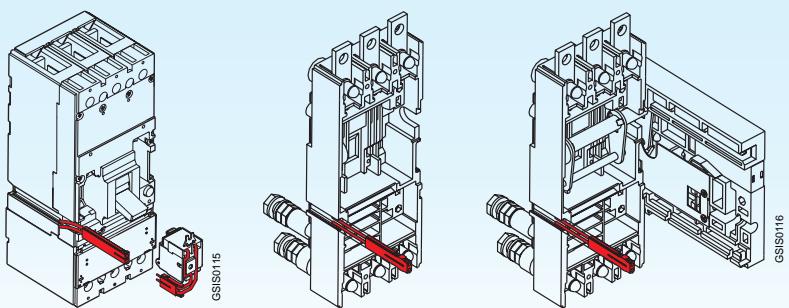
Cables of different lengths are available.



S1 - S2



S3 ... S7



Extension for testing service releases

Available for SACE S3, S4, S5, S6, and S7 circuit-breakers, this allows supply to the service releases with the circuit-breaker in the racked-out position. It is therefore possible to carry out blank operating tests of the circuit-breaker with the circuit-breaker in safe conditions, i.e. isolated in relation to the power circuits.





Accessories

Electric signals

These allow information relative to the circuit-breaker state of operation to be taken outside the circuit-breaker. Installation of these accessories is carried out directly from the front of the circuit-breaker in special slots, completely segregated from the live parts, with increased operator safety.

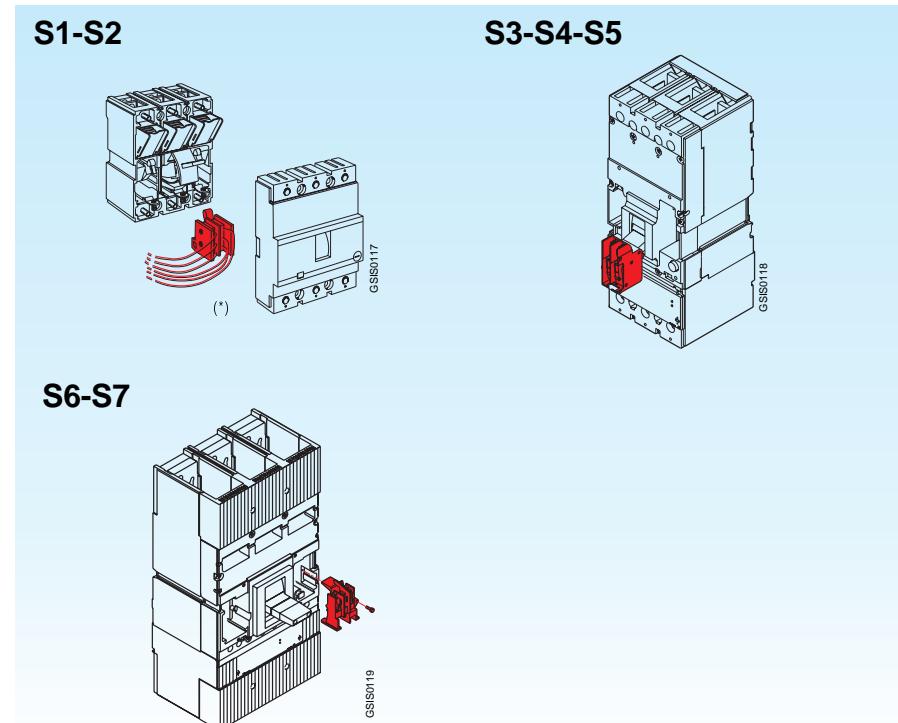
Auxiliary contacts

These carry out electrical signalling of the operating state of the circuit-breaker:

- Open/closed: indicates the position of the circuit-breaker contacts.
- Release trip: signals circuit-breaker opening because the overcurrent release has tripped (for an overload or short-circuit), the residual current, shunt opening or undervoltage release has tripped, or the emergency opening pushbutton of the motor operator or the test pushbutton has been pressed. Signalling is reset when the circuit-breaker is reset (recovery).

For SACE S3, S4, S5, S6, and S7 circuit-breakers the auxiliary contacts of the circuit-breaker are also available in the gold-plated version for digital signals, also suitable for use with voltages $U_n < 24\text{ V}$ with the same type of signalling and versions.

The signals indicated in the table are available:



(*) For SACE S1-S2 circuit-breakers the auxiliary contacts are fixed to the cover of the circuit-breaker



Signals	S1...S2	S3	S4...S7	S8
2 contacts during open/closed changeover	■	■	■	—
1 contact during open/closed changeover + 1 contact during release tripped changeover	■	■	■	—
1 circuit-breaker open signal + 1 circuit-breaker closed signal + 1 release tripped signal	—	—	■	—
3 NO or NC contacts	—	—	—	■
release tripped signal	—	—	—	■
microswitch for signalling closing springs charged	—	—	—	■

S1-S2		
Rated voltage U_n V ~ (50-60 Hz)	ohmic load I_n [A]	inductive I_n [A]
— 30	4	—
127 —	4	2A ($\cos\phi = 0,3$)
220 —	4	2A ($\cos\phi = 0,3$)

S3-S4-S5-S6-S7		
Rated voltage U_n V ~ (50-60 Hz)	V —	ohmic load I_n [A]
— 125	125	0,3
— 250	250	0,15
250	6	
400	3	

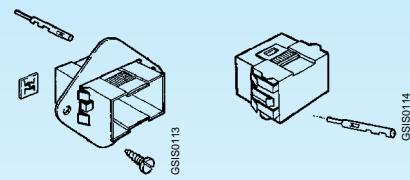
S8		
Rated voltage U_n V ~ (50-60 Hz)	V —	ohmic load I_n [A]
— 220	220	1
380		6
500		3

Connectors for auxiliary contacts

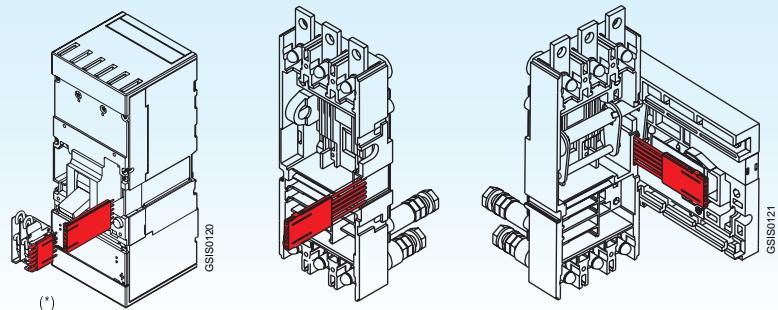
These allow the auxiliary contacts to be connected to the relative power supply circuit. For S1, S2 circuit-breakers, the power supply is made by means of free wires or with mobile plug-socket connectors. For SACE S3, S4, S5, S6, and S7 circuit-breakers, the auxiliary contacts (fitted with plug connector) can only be supplied by means of the specific connection connectors to be ordered specifying the size and version of the circuit-breaker (fixed or plug-in/withdrawable). Assembly is carried out by pressure into special slots in the right side of the circuit-breaker.



S1 - S2



S3 ... S7



(*) Connectors for auxiliary contacts, for fixed, plug-in or withdrawable circuit-breakers

Extension for testing auxiliary contacts

Available for SACE S3, S4, S5, S6, and S7 circuit-breakers, this allows the auxiliary contacts to be connected to the relative power supply circuit with the circuit-breaker in the racked-out position. With the circuit-breaker in safe conditions, i.e. isolated in relation to the power circuits, blank tests of circuit-breaker operation can be carried out.





Accessories

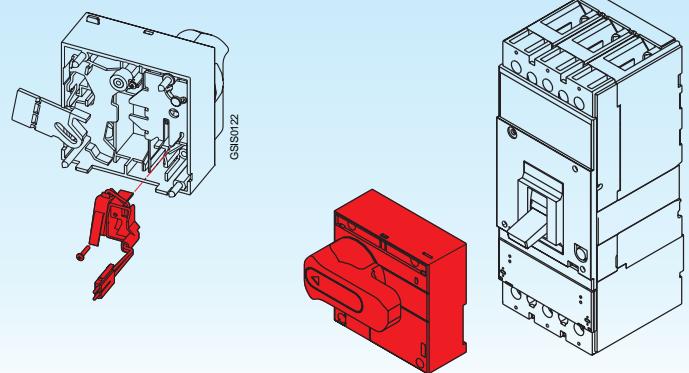
Electric signals

Early auxiliary contact for undervoltage release

The early auxiliary contact for the undervoltage release, interlocked with the rotary handle operating mechanism, keeps the release de-energised with the circuit-breaker open.

It is supplied complete with socket connector of the type with double slide for simultaneous connection of the undervoltage release and the accept contact.

S3 ... S7



GSIS0098

Circuit-breaker position contacts

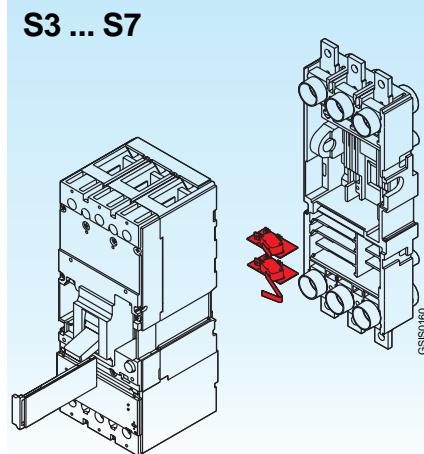
For the fixed part of the SACE S2, S3, S4, S5, S6, and S7 circuit-breakers, these carry out electrical position signalling of the circuit-breaker in relation to the fixed part: racked-in, racked-out. They can only be connected by means of free wires and are available in the following versions:

- Contacts for signalling circuit-breaker racked in
- Contacts for signalling circuit-breaker racked out.

A maximum of three contacts for S2, two contacts for S3, three contacts for S4-S5 and five contacts for S6-S7 can be installed on the fixed part, in any combination.

The circuit-breaker position contacts are also available in the gold-plated version for digital signals also suitable for use with voltages $U_n < 24$ V with the same type of signals and combinations.

S3 ... S7



GSIS0096

S2

Rated voltage U_n V ~ (50-60 Hz)	V -	ohmic load	
		In [A]	inductive In [A]
-	30	4	-
127	-	4	2A ($\cos\varphi = 0,3$)
220	-	4	2A ($\cos\varphi = 0,3$)

S3-S4-S5-S6-S7

Rated voltage U_n V ~ (50-60 Hz)	V -	ohmic load In [A]
-	125	0,3
-	250	0,15
250	-	6
400	-	3



Accessories

Remote controls

These allow remote control of circuit-breaker opening and closing and are particularly suitable for use in electrical network supervision and control systems. They are complete with manual operating lever and emergency opening pushbutton (starting from S3). A selector allows changeover from automatic to manual operation. They are always fitted with a padlock and, on request, can be fitted with a key lock in the open position.

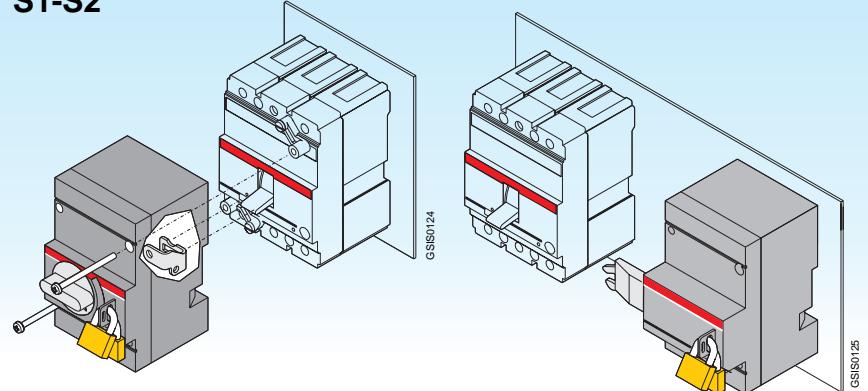
Solenoid operating mechanism for SACE S1-S2 circuit-breakers

This operates both opening and closing of the circuit-breaker, acting directly on its lever.

There are two versions available, one placed "beside" the circuit-breaker (for installation on a panel or DIN EN 50022 rail), the other on the "front", suitable for being installed directly on the front of the circuit-breaker.

Both versions can be used either for S1 or for S2 and in the three- and four-pole version.

S1-S2



Rated voltage, Un	AC	DC
[V]	—	48
[V]	110	60
[V]	220 ... 230	110
[V]	—	220
Operating voltage	85 ... 110% Un	85 ... 110% Un
Inrush power absorption, Ps	2300-2500 [VA]	700-900 [W]
Duration	opening [s]	< 0.1
	closing [s]	< 0.1
Mechanical life	[no. operations]	25000
Degree of protection, on the front		IP 30
Minimum duration of the opening and closing command impulse	[ms]	≥ 100



Accessories

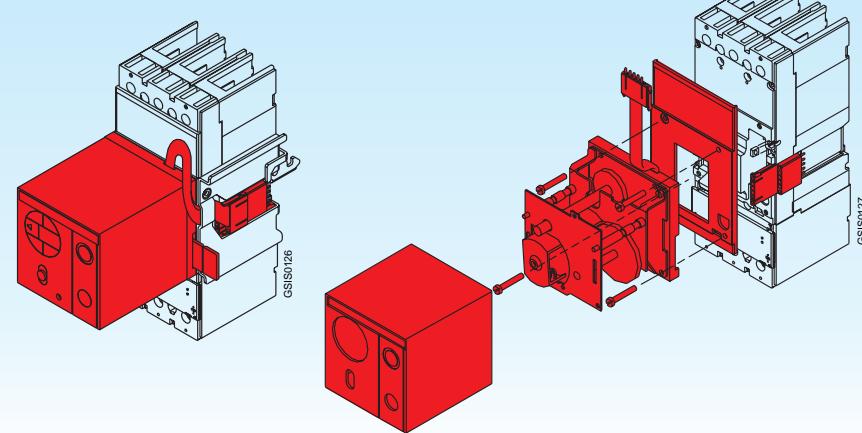
Remote controls

Direct action motor operator for SACE S3-S4 and S5 circuit-breakers

Both the opening and closing command is controlled by the motor, which acts directly on the circuit-breaker lever. The table shows the power supply voltage values Un [V].



S3-S4-S5



Rated voltage, Un	[V]	AC	DC
	—	—	24
	—	—	48-60
	110-127	—	110-125
	220-240	—	220-250
	380	—	—
	440	—	—
Operating voltage		85 ... 110% Un	85 ... 110% Un
Inrush power absorption, Ps		500 [VA]	500 [W]
Service power absorption, Pc		350 [VA]	350 [W]
Operating frequency	[Hz]	50-60	
Time constant	[ms]	18	
Duration	opening [s]	0.1	
	closing [s]	0.1	
Mechanical life	[no. operations]	15000 (S3-S4) / 10000 (S5)	
Degree of protection, on the front		IP 30	
Minimum duration of the opening and closing command impulse	[ms]	≥ 150	

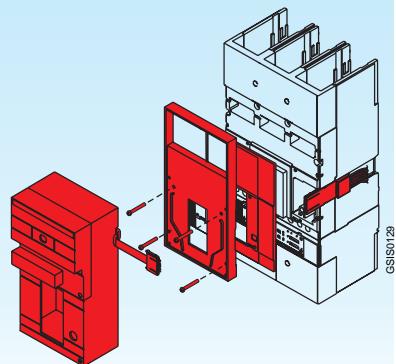
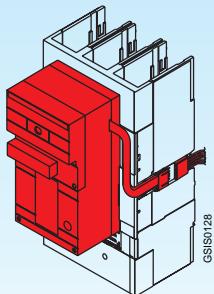
Stored energy motor operator for SACE S6-S7 circuit-breakers

With the stored energy operating mechanism, during circuit-breaker opening the release mechanism automatically pre-charges a system of springs: the stored energy is exploited for closing the circuit-breaker. It is supplied complete with shunt closing release ($P_s = 100\text{VA}\sim/100\text{W}$) and flange for the compartment door. The table shows the power supply voltage values U_n [V].

In the case of interlocked circuit-breakers, the key lock against manual operation is necessary.



S6-S7



Rated voltage, U_n	AC	DC
[V]	—	24
[V]	—	48
[V]	—	60
[V]	110	110
[V]	120-127	120-127
[V]	220-250	220-250
[V]	380	—
[V]	—	—
Operating voltage	85 ... 110% U_n	85 ... 110% U_n
Inrush power absorption, P_s	660 [VA]	600 [W]
Service power absorption, P_c	180 [VA]	180 [W]
Operating frequency	[Hz]	50-60
Time constant	[ms]	22
Duration		
	closing	0.09
	opening	1.2
	resetting	2
Mechanical life	[no. operations]	10000 (S6) / 5000 (S7)
Degree of protection, on the front		IP 30
Minimum duration of the opening and closing command impulse	[ms]	≥ 100



Accessories

Remote controls

Geared motor for SACE S8 circuit-breaker

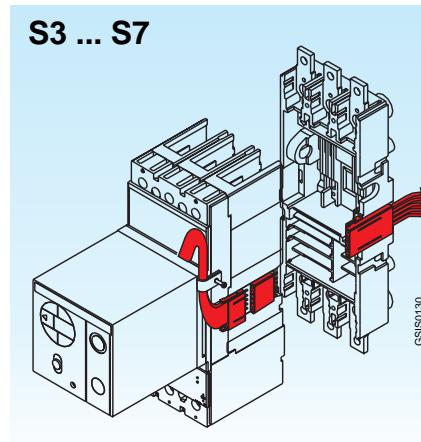
This allows the springs of the circuit-breaker closing mechanism to be charged automatically, immediately following an closing operation. It includes a limit microswitch for electrical signalling of closing springs charged.

Rated voltage, Un	[V]	AC	DC
	[V]	–	24-30
	[V]	–	48-60
	[V]	100-130	100-130
	[V]	220-250	220-250
Inrush power absorption, Ps		1000 [VA]	1000 [W]
Service power absorption, P _c		230 [VA]	230 [W]
Charging time	[s]		7 ... 10
Mechanical life	[no. operations]		5000



Connectors for motor operators

The motor operators, from S3 to S7, can only be supplied by means of the specific connection connectors. They are of the slide type and allow simultaneous connection of both the motor operator and the auxiliary contacts to the relative power supply circuit. They are an alternative to the corresponding connectors for the auxiliary contacts only since they are housed in the same seat. They must be ordered specifying the size and version of the circuit-breaker (fixed or plug-in/withdrawable).



Extension for testing motor operators

For the SACE S3, S4, S5, S6, and S7 circuit-breakers, this allows both motor operators and the auxiliary contacts to be connected to the relative power supply circuit with the circuit-breaker in the racked-out position. With the circuit-breaker in safe conditions, i.e. isolated in relation to the power circuits, blank operating tests of the circuit-breaker can be carried out. It must be ordered specifying the size and version of the circuit-breaker (fixed or plug-in/withdrawable) and automatically excludes the corresponding extension for testing the auxiliary contacts

S3 ... S7

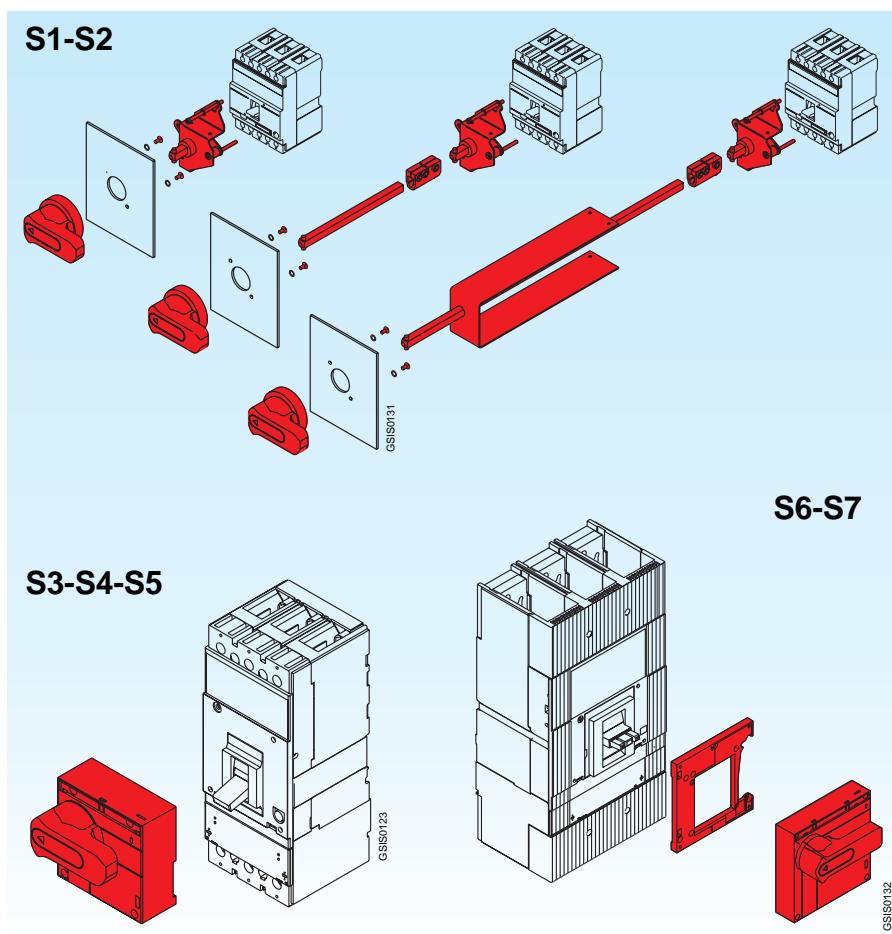


Rotary handle operating mechanism

The rotary handle operating mechanism facilitates operation thanks to its ergonomic handle. It is always fitted with a padlock in the open position, which prevents the circuit-breaker being closed. The lock slot can take up to 3 padlocks – stem Ø 6 mm (not supplied). On request it can be fitted with a compartment door lock or a key lock in the open position. For SACE S2, S3, S4, S5, S6, and S7 circuit-breakers, application of the rotary handle operating mechanism is an alternative to the front flange for the lever operating mechanism and for the motor operator. Different types of rotary handle operating mechanism are available.

The position of the rotary handle indicates with certainty the position of the contacts: open, closed, relay tripped. The release settings and the nameplate data remain accessible to the user. For the SACE S6, S7 circuit-breakers, the direct rotary handle operating mechanism on the circuit-breaker is always supplied complete with flange for the compartment door.

The rotary handle operating mechanism in the emergency version, complete with red-yellow handle and yellow plate, suitable for machine tool control, is also available for all the circuit-breakers.



	S1-S2	S3-S4-S5	S6-S7
	F / P	F / P W	F W
Direct	–	● ●	● ●
Direct emergency	–	● –	● –
Transmitted with fixed distance	119,5 mm	– –	– –
Transmitted with fixed emergency distance	119,5 mm	– –	– –
Transmitted with adjustable distance	–	300 mm 300 mm	500 mm 500 mm
Transmitted with adjustable emergency distance	–	300 mm –	500 mm –
Extension for transmitted handle	180/500 mm	500 mm –	– –



Accessories

Operating mechanisms and locks

Front flange for lever operating mechanism

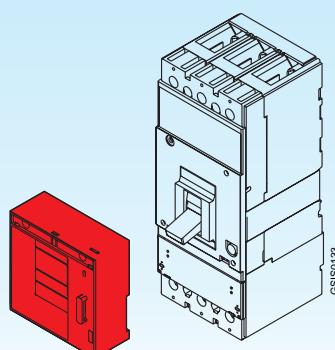
This can be installed on SACE S3, S4, S5, S6, and S7 fixed, plug-in or withdrawable circuit-breakers. In the case of withdrawable circuit-breakers installed in compartments, it allows the IP40 degree of protection to be kept for the whole isolation run of the circuit-breaker. It is always fitted with a padlock in the open position (stem Ø 6 mm - up to three padlocks - not supplied) which prevents closing of the circuit-breaker. On request, it can be fitted with a key lock in the open position for one or more circuit-breakers and with the compartment door lock.

It is available in the following versions:

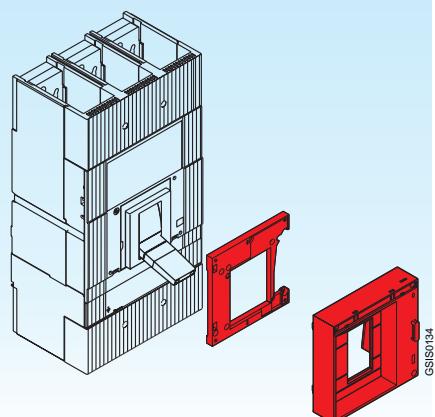
- for fixed or plug-in circuit-breaker.
- for withdrawable circuit-breaker.

For the SACE S6, S7 circuit-breakers, it is always supplied complete with flange for the compartment door, whereas for the SACE S3, S4, and S5 circuit-breakers the flange supplied with the circuit-breaker can be used.

S3-S4-S5



S6-S7



4

Key lock in open position

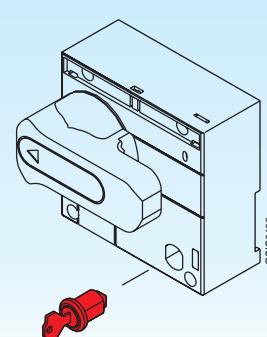
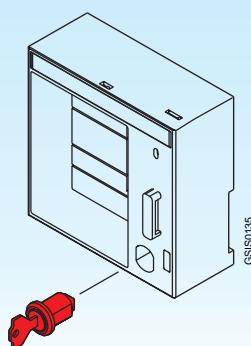
This allows the mechanical closing operation of the circuit-breaker to be locked.

The following versions are available:

- lock with different key for each circuit-breaker
- lock with the same key for groups of circuit-breakers.

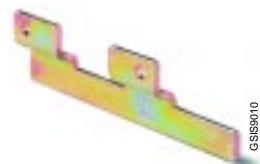
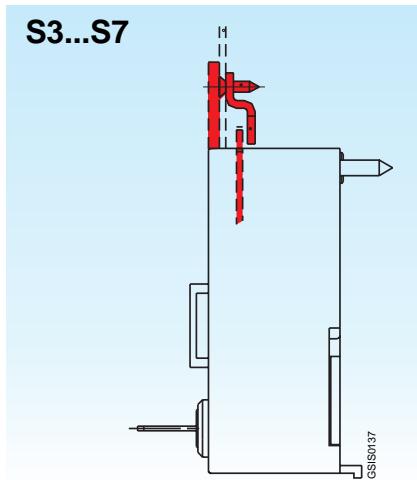
Different locks are supplied for direct action motor operator, for stored energy motor operator, and for rotary handle or front flange for lever operating mechanism. The circuit-breaker lock in the open position ensures circuit isolation in compliance with the IEC 947-2 Standard.

S3 ... S7



Compartment door lock

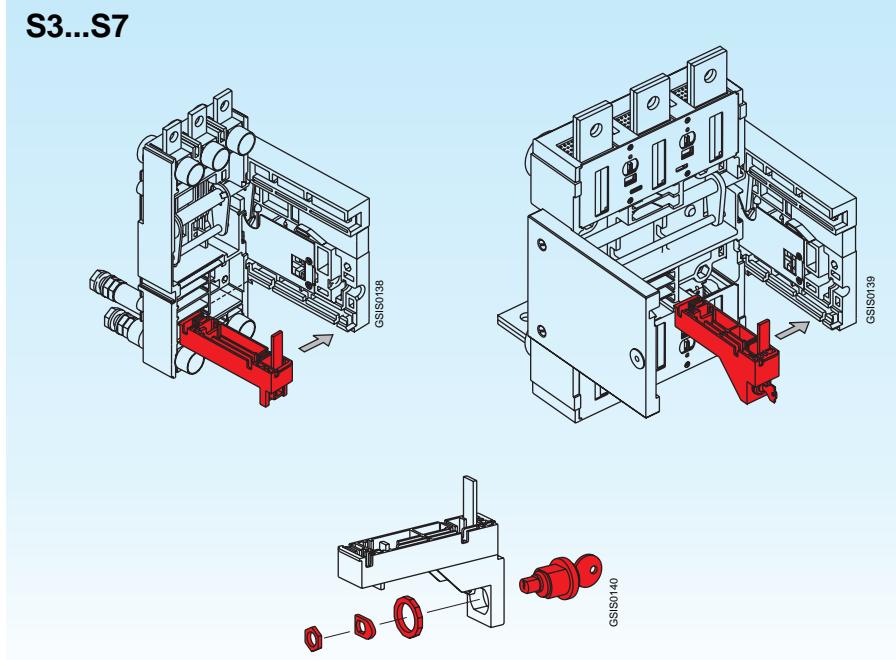
This prevents the compartment door being opened with the circuit-breaker closed. It can be used with the SACE S3, S4, S5, S6, and S7 circuit-breakers in the fixed, plug-in or withdrawable version and fitted with rotary handle operating mechanism or front flange for lever operating mechanism. It consists of two elements: one applied to the rotary handle operating mechanism or to the front flange for the lever operating mechanism, the other, consisting of a metal striker, to be applied onto the compartment door. For the SACE S1-S2 circuit-breakers it is an integral part of the rotary handle operating mechanism.



Lock for fixed part of withdrawable circuit-breaker

Key locks or padlocks are available to be applied to the guide of the fixed part of a withdrawable circuit-breaker to prevent the moving part from being racked-in. The following different versions are available:

- Padlock, which can take up to three padlocks with stem Ø 6 mm (not supplied).
- Key lock in the open position with different key for each circuit-breaker
- Key lock in the open position between two or more circuit-breakers with the same key for groups of circuit-breakers
- Key lock of Ronis type (without key).





Accessories

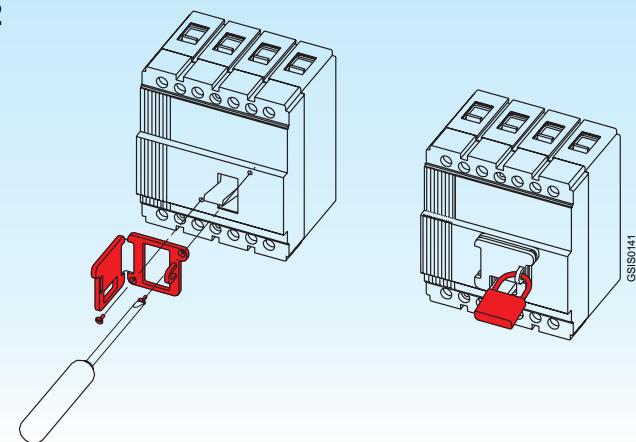
Operating mechanisms and locks

Padlock for operating lever

This is applied on the cover of the SACE S1-S2 circuit-breakers to prevent the operating lever movement. If activated, the circuit-breaker remains locked in the open position, guaranteeing circuit isolation in compliance with the IEC 947-2 Standard.



S1-S2

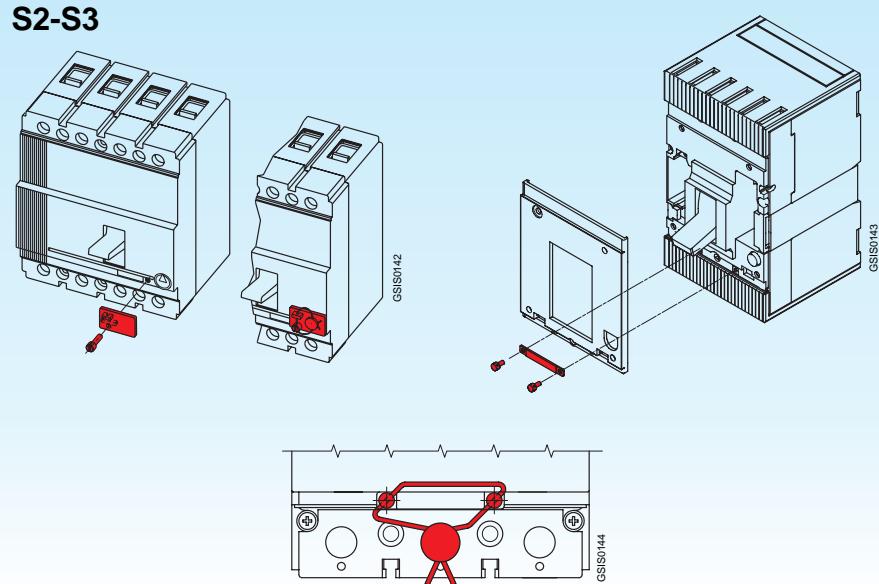


Anti-tampering lock

This is applied on the cover of the SACE S2, S3 circuit-breakers in correspondence with the regulator of the thermal element of the thermomagnetic release and prevents it being tampered with.



S2-S3



Mechanical interlock between two circuit-breakers

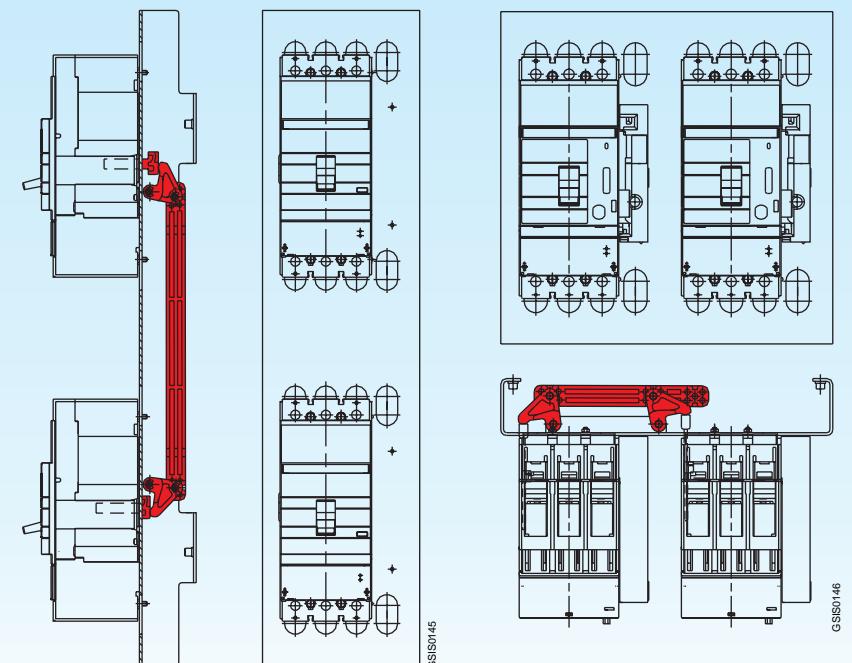
This allows installation of two circuit-breakers on a single support and, by means of special lever mechanism, makes them mechanically inter-dependent. It prevents operation in parallel of two power supply sources (e.g.: normal - emergency). It consists of a kit with levers and assembly accessories and a metallic support.

The circuit-breakers and any operating mechanism accessories must be ordered separately. The mechanical interlock is available for SACE S3, S4, S5, S6, and S7 circuit-breakers in side by side and superimposed versions.

To be able to take the circuit-breakers mounted directly on the interlocking plate, the code "1SDA050093R1" must be specified as an accessory of the second circuit-breaker (or fixed part) which is to be interlocked.

N.B. for the S3X, S4X , S6X circuit-breakers, only the version side by side can be used.

S3 ... S7





Accessories

Residual current releases

All the circuit-breakers in the SACE Isomax S series are preset for combined assembly with residual current releases. In particular, the SACE S1, S2, and S3 circuit-breakers can be combined with residual current releases in the SACE RC210, RC211 or RC212 series, in the version side by side or underneath the circuit-breaker.

Apart from the protection against overloads and short-circuits typical of circuit-breakers, the residual current circuit-breakers which are derived from them also guarantee protection against earth fault currents, thereby ensuring protection against the risk of fire. The residual current releases can also be mounted on the SACE S2D and S3D switch-disconnectors. In that case, the derived apparatus is a "pure" residual-current circuit-breaker, which therefore guarantees only residual current protection and not the protections typical of circuit-breakers. The "pure" residual-current circuit-breakers are only sensitive to the earth fault current and are generally applied as main isolators in small distribution switchboards towards end users.

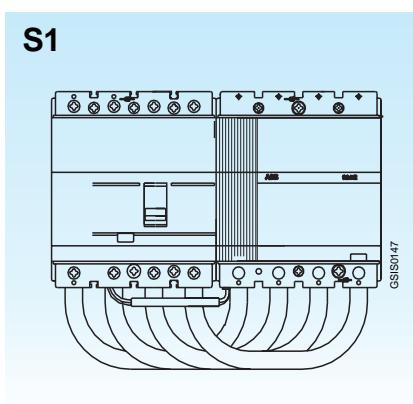
The use of "pure" and "non-pure" residual-current circuit-breakers allows continuous monitoring of the state of insulation of the installation, ensuring effective protection against the risk of fire and explosion and, in the case of devices with $I_{\Delta n} \leq 30mA$, they guarantee protection of people against indirect and direct contacts to integrate the compulsory measures foreseen by the standards and by the accident prevention regulations.

The residual-current releases are constructed in compliance with the following standards:

- IEC 947-2 appendix B
- IEC 255-3 and IEC 1000: for protection against unwarranted trips.

SACE RC210 polarised residual-current release

The SACE RC210/1 polarised residual-current release is available for four-pole SACE Isomax S1 circuit-breakers for assembly side by side on DIN 50022 rail. The release is constructed using polarised type technology and acts directly on the release operating mechanism of the circuit-breaker, by means of a small piston which passes through a pre-cut window on the side of the circuit-breaker. It is fitted with a test button for periodically checking the circuit-breaker.



SACE RC211, RC212 electronic residual current releases

The SACE RC211 and RC212 residual current releases can be installed both on the SACE S1, S2 and S3 circuit-breakers and on the SACE S2D and S3D switch-disconnectors, in the fixed four-pole version, and can be supplied in two versions as follows:

- for assembly in position beside the circuit-breaker
- for assembly in position under the circuit-breaker.

The following releases are available:

- SACE RC211/1, RC212/1 for S1 circuit-breakers

- SACE RC211/2, RC212/2 for S2 circuit-breakers
- SACE RC211/3, RC212/3 for S3 circuit-breakers.

They are constructed using analogue technology and act directly on the circuit-breaker by means of an opening solenoid, supplied with the release, to be housed in the special slot made in the area of the third pole.

They do not require an auxiliary power supply since they are supplied directly from the network and their operation is guaranteed even with only a single phase supplied with voltage and in the

presence of one-direction pulsating currents with continuous components.

The operating conditions of the apparatus can be controlled constantly by means of the test pushbutton of the electronic circuit and the residual current trip magnetic indicator.

The circuit-breaker complete with residual current release can be fitted with the electrical accessories normally available for the circuit-breaker. The opening and undervoltage releases are housed in the special slot made in the fourth pole.

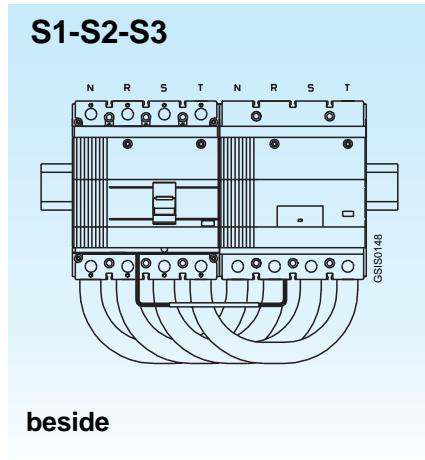
Residual current release beside the four-pole version circuit-breaker

This is supplied complete with:

- power cables for connection to the lower terminals of the circuit-breaker (respecting correspondence with the neutral and phases)
- an opening solenoid to be housed in the area of the third pole, complete with plug-socket connector for connection to the residual current release
- 2 brackets for fixing on DIN rail (one for the circuit-breaker and one for the residual current release)
- plug connector to make the connection of the remote opening pushbutton (to be provided by the customer).

For SACE S1-S2 circuit-breakers the residual current release is fitted with front terminals for cables.

For the SACE S3 circuit-breaker, the residual current release is fitted with front terminals and is also supplied with a front flange H= 45 mm for the circuit-breaker.



beside

On request, the front terminals for cables can be mounted, using the standard circuit-breaker kit.

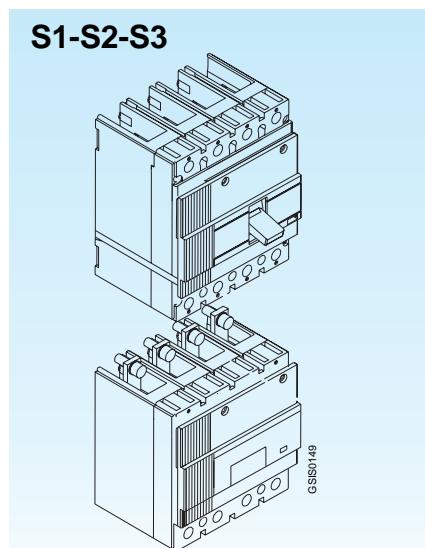
Residual current release under the four-pole version circuit-breaker

This is supplied complete with:

- an opening solenoid to be housed in the area of the third pole, complete with plug-socket connector for connection to the residual current release
- plug connector to make the connection of the remote opening pushbutton (to be provided by the customer) with the SACE RC212 residual current release
- flange for compartment door (one for SACE S1, S2; two for SACE S3)
- protection for assembly in the area between the circuit-breaker and residual current release.

For SACE S1, S2 circuit-breakers, the residual current release is supplied with front terminals for cables. On request, the rear threaded terminals can be mounted, using standard kit of the circuit-breaker.

For SACE S3 circuit-breakers, the residual current release is supplied with front terminals (together with a front flange H= 45mm for circuit-breaker). On request, using the standard kit of the circuit-breaker, front terminals for cables, extended front terminals, or rear terminals



under

nals for cables can be mounted or the rear terminals using the kit with 4 pieces for the circuit-breaker can be mounted (code 1SDA023365R1) and the kit for residual current release (code 1SDA025543R1).



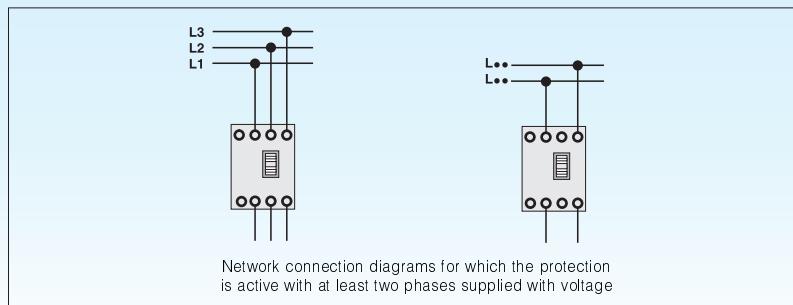
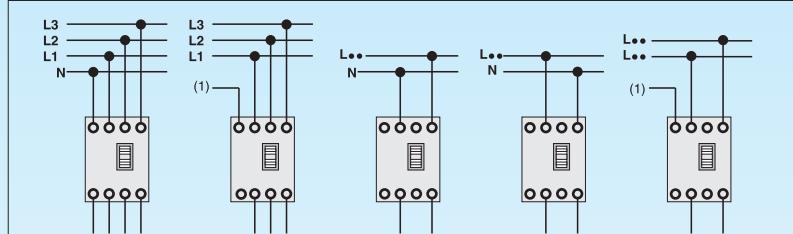
Accessories

Residual current releases

Technical characteristics

Residual current releases	SACE RC210	SACE RC211	SACE RC212
Technology	polarised type	electronic	electronic
Action	direct	with solenoid	with solenoid
Primary operating voltage [V]	up to 500	220 ... 500	50 ... 500
Operation frequency [Hz]	50 ÷ 60 Hz ± 10%	50 ÷ 60 Hz ± 10%	50 ÷ 60 Hz ± 10%
Range of test operation [V]	230 ... 500	220 ... 500	50 ... 500
Rated service current [A]	up to 125	up to 250	up to 250
Trip thresholds $I_{\Delta n}$ [A]	0,3 - 0,5	0,03 - 0,1 - 0,3	0,03 - 0,1 - 0,3 - 0,5 - 3
Tolerance for $I_{\Delta n}$ [%]		+0, -25	+0, -20
Trip times [s]	instantaneous	instantaneous	0 - 0,1 - 0,25 - 0,5 - 1 - 1,5
Tolerance over trip times [%]			± 20
Trip signalling	■	■	■
Self-supply	■	■	■
Input for remote opening			■
Indication of pre-alarm at 50%			■
AC type only for alternating current	■	■	■
Type A for alternating current, pushbutton		■	■
Low sensitivity	■	■	■
High sensitivity		■	■
Mounting under the circuit-breaker		■	■
Mounting beside the circuit-breaker	■	■	■
Dimensions (L x H x P) [mm]	103 x 120 x 70	120 x 120 x 70	140 x 170 x 108

Connection to the residual current circuit-breaker network



GSIS077

(1) Terminal to be connected to the neutral or to the earthing conductor.

SACE RCQ switchboard residual-current relays

The SACE Isomax S4, S5, S6, and S7 circuit-breakers can be combined with the SACE RCQ switchboard residual-current relay with separate toroid (to be installed externally on the line conductors) and satisfies requirements with trip thresholds up to 30 A and times up to 5 s or where the installation conditions are particularly restrictive, such as circuit-breakers already installed, limited space in the circuit-breaker compartment.

Thanks to its wide setting range, the SACE RCQ switchboard residual-current relay is suitable for applications where a coordinated residual current protection system is to be constructed at the various distribution levels, from the main switchboard to the end user. It is particularly suitable where low sensitivity residual current protection is required, for example in partial (current-type) or total (time-type) selective chains, and for high sensitivity applications (with physiological sensitivity) to realise protection of people against direct contacts.

On a drop in the auxiliary power supply voltage, the opening command intervenes after a minimum time of 100 ms and after the time set plus 100 ms.

The SACE RCQ relay is suitable for use in the presence of earth currents of alternating type only (AC Type), for alternating current and/or pushbutton with continuous components (Type A) and is suitable for carrying out residual current selectivity.

The SACE RCQ relay is of the type with indirect action and acts on the release mechanism of the circuit-breaker by means of the circuit-breaker shunt opening release (to be ordered by the user) to be housed in the special slot made on the third pole of the circuit-breaker.



GSIS9046

Residual-current relay	SACE RCQ	
Power supply voltage	AC [V]	80 ... 500
	DC [V]	48 ... 125
Operation frequency	[Hz]	50 ÷ 60 Hz ± 10%
Trip threshold adjustment $I_{\Delta n}$		
- 1 ^a range of adjustments	[A]	0,03 - 0,05 - 0,1 - 0,3 - 0,5
- 2 ^a range of adjustments	[A]	1 - 3 - 5 - 10 - 30
Trip time adjustment	[s]	0 - 0,1 - 0,2 - 0,3 - 0,5 - 0,7 - 1 - 2 - 3 - 5
Pre-alarm threshold adjustment	[%] × $I_{\Delta n}$	25 ... 75% × $I_{\Delta n}$
Range of use of the closed transformers	$I_{\Delta n}$	
- Toroidal transformer Ø 60 [mm]	[A]	0,03 ... 30
- Toroidal transformer Ø 110 [mm]	[A]	0,03 ... 30
- Toroidal transformer Ø 185 [mm]	[A]	0,1 ... 30
Range of use of the transformers which can be opened		$I_{\Delta n}$
- Toroidal transformer Ø 110 [mm]	[A]	0,3 ... 30
- Toroidal transformer Ø 180 [mm]	[A]	0,3 ... 30
- Toroidal transformer Ø 230 [mm]	[A]	1 ... 30
Alarm pre-threshold signalling		Yellow flashing LED 1 N.O. changeover contact 6 A - 250 V AC 50/60 Hz
Residual-current relay trip signalling		Yellow flashing LED 2 changeover contacts (N.O. N.C.; N.O.) 6 A - 250 VAC 50/60 Hz
Remote opening command		N.O. Contact Trip time 15 ms
Connection to the toroidal transformer		By means of 4 twisted conductors Maximum length 5 m
Dimensions L x H x D	[mm]	96 x 96 x 131,5
Drilling for assembly on door	[mm]	92 x 92



Accessories

Accessories for electronic releases

SACE PR212/D-M Modbus and SACE PR212/D-L Lon dialogue unit

The dialogue unit is a device which allows two-way communication from the circuit-breaker to the outside and vice versa. ABB SACE has built two distinct dialogue units able to support two different standard market protocols: SACE PR212/D-M (Modbus RTU protocol) and SACE PR212/D-L (LonTalk protocol by Echelon). Both units are housed in external modules, which can be installed on DIN rails, and can be used with the S4, S5, S6, and S7 circuit-breakers fitted with SACE PR212/P electronic release, both in the LSI and LSIG versions, or SACE PR212/MP release. They must be supplied with a stabilised voltage of 24 VDC ($\pm 20\%$ with maximum ripple $\pm 5\%$) and be earthed. Communication towards the outside is generally addressed to a supervision and control unit, which has the task of collecting and storing the information regarding the part of the plant controlled.

In the case of an error in the serial communication due to a fault in the dialogue unit or lack of auxiliary power supply, the SACE PR212/P protection unit works according to the last parameters set and,

in any case, in accordance with what has been set manually. The SACE PR212/D-M and SACE PR212/D-L dialogue units are always fitted in combination with the SACE PR212/T actuator unit, which allows remote closing or opening operation of the circuit-breaker (Remote Control) by means of two digital outputs which can be disabled thanks to the dip-switch (LOC/REM) positioned on LOC.

Information available

- State of the circuit-breaker: open; closed; tripped
- Installation alarms: pre-alarm L; tripped L-S-I-G-R-V-PTC
- Measurements: currents; N° operations; N° trips
- Reading and writing curves and trip thresholds: only manual reading (MAN), electronic reading and writing (ELT)
- Circuit-breaker commands: opening; closing; reset.

Protocol	PR212/D-M	PR212/D-L
Physical means of transmission	Modbus RTU EIA RS485	LonTalk TP (Twisted Pair)
Speed	9600 – 19200 bit/s	78Kbit/s
Architecture	bus	bus

SACE PR212/T actuator unit

The SACE PR212/T actuator unit allows circuit-breaker opening and closing by means of the motor operator mounted on the circuit-breaker. It is always supplied in combination with the SACE PR212/D dialogue unit. An auxiliary power supply with a stabilised voltage of 24 VDC ($\pm 20\%$, with maximum ripple $\pm 5\%$) and earthed is required for operation of the unit.

The PR212/D dialogue unit sends the digital opening and closing commands, received from the supervision and control system, to the inputs of the SACE PR212/T actuator unit, which carries out circuit-breaker closing and opening by means of a power relay. The motor operator of the circuit-breaker (use the versions with power supply voltage at 110 V AC/DC or 220 V AC) must be connected to these relays.



GSIS9043

SACE TT1 Test unit

This allows control of tripping of the SACE PR211/P, SACE PR212/P, and SACE PR212/MP electronic releases and the trip test of the opening solenoid OS. The device is supplied by means of a 12 V replaceable battery and is fitted with a two-pole polarised connector-tracer point housed on the bottom of the box, which allows connection of the device to the test

input bushings located on the front of the SACE PR211/P, SACE PR212/P, or SACE PR212/MP releases.

The limited dimensions of the accessory make it practically pocket-type. The trip test device can be used on the SACE Isomax S4, S5, S6, S7, and S8 circuit-breakers.



GSIS9031

SACE PR212/K signalling unit

The SACE PR212/K signalling unit, only available for S8, is able to convert the digital signals supplied by the SACE PR212/P - (LSIG) protection unit into electric signals by means of normally open electrical contacts. An auxiliary power supply is needed to operate the unit. It is connected to the internal bus of the protection unit by means of a dedicated serial line over which the information re-

garding the state of activation of the protection functions passes, on the basis of which the relative power contacts are closed to signal:

- pre-alarm for protection function L ($I > 0.9 \times I_1$)
- protection function L, S, I, G trip
- release trip
- communication error with protection unit.



GSIS9041

	PR212/K
Auxiliary power supply	24 V DC $\pm 20\%$ maximum ripple 5%
Maximum current interrupted	5 A
Maximum voltage interrupted	250 V AC / 130 V DC
Breaking capacity – resistive load	50 W / 800 VA (48 V DC and 220 V AC)
Breaking capacity - inductive load	25 W / 500 VA (48 V DC and 220 V AC)
Contact/contact insulation	1000 Veff
Contact/coil insulation	2000 Veff



Accessories

Accessories for electronic releases

SACE PR010/K signalling unit

The SACE PR010/K signalling unit can convert the signals received via the bus from the SACE PR212/P (LSI or LSIG) and SACE PR212/MP (LRIU) protection units into electric signals by means of normally open electrical power contacts.

An auxiliary power supply with a voltage stabilised at 24V DC ($\pm 20\%$ with maximum ripple - $\pm 5\%$) and earthed is needed to operate the unit.

It is connected to the Internal Bus of the protection unit by means of a dedicated serial line over which the information regarding the state of activation of the protection functions passes, on the basis of which the relative power contacts are closed.

In particular, the following signals are available:

Alarm signalling remains active for the whole duration of the overload up to any release trip.

The protection trip signals remain active during the timing phase and remain that way even after release trip.

A Reset pushbutton on the front of the unit allows the state of all signals to be reset.

There are also two LEDs available on the unit for visually signalling the following information:

- "Power ON": auxiliary power supply present
- "TX (Int Bus)": flashing synchronised with the communication activity with the Internal Bus

The table below shows the characteristics of the signalling relays available in the SACE PR010/K unit.



GSI8947

K51	PR212/P (LSI-LSIG)
1	Protection L alarm
2	Protection S alarm
3	Protection I alarm
4	Protection G alarm
5	Bus K.O.
7	Release trip
8	Protection L pre-alarm

	PR010/K
Auxiliary power supply	24 V DC $\pm 20\%$ maximum ripple 5%
Maximum current interrupted	5 A
Maximum voltage interrupted	250 V AC / 130 V DC
Breaking capacity – resistive load	50 W / 800 VA (48 V DC and 220 V AC)
Breaking capacity – inductive load	25 W / 500 VA (48 V DC and 220 V AC)
Contact/contact insulation	1000 Veff
Contact/coil insulation	2000 Veff

K51	PR212/MP (LRIU)
1	Protection L alarm
2	Protection R alarm
3	Protection I alarm
4	Protection U alarm Welded contactor alarm contacts
5	Bus K.O.
6	PTC alarm (temperature sensor on motor) (*) Generic input 0/1
7	Release trip
8	Protection L pre-alarm Back-up protection alarm

(*) alternatively by means of dip-switch

SACE PR010/T Test and Configuration Unit

The SACE PR010/T unit is an instrument able to carry out the Test, programming and parameter readout functions for the protection units which equip the SACE Isomax S moulded-case circuit-breakers and the SACE Emax air circuit-breakers. In particular, for circuit-breakers fitted with SACE PR212/P or SACE PR212/MP releases, the test, programming and readout parameter functions are available.

All the functions mentioned can be carried out ON BOARD by connection of the SACE PR010/T unit to the multipin front flange connector on the protection unit; connection is guaranteed by means of special interfacing cables supplied as standard with the unit.

The man-machine interface is guaranteed by using a membrane keyboard and a multi-line alphanumerical display.

There are also two LEDs on the unit which signal the following respectively:

- POWER-ON and STAND BY situation
- situation of the battery charging state.

Two different types of Test are provided: automatic and manual.

By means of connection to the PC (with software provided by ABB SACE), it is

possible to upgrade the SW of the SACE PR010/T unit to allow adaptation of the Test unit to evolution of new products. The results of most importance regarding the test can also be stored in the unit itself and sent to the Personal Computer on explicit request for "issue of report". Both in automatic and manual mode, the SACE PR010/T unit is able to test the following:

- protection functions L, S, I, G;
- protection functions LRIU for SACE PR212/MP;
- monitoring of correct operation of the microprocessor.

The SACE PR010/T unit is of the portable type and operates with rechargeable batteries and/or with an external power supply.

In its standard supply, the unit includes:

- SACE PR010/T Test unit complete with rechargeable batteries
- SACE TT1 Test unit
- 100...240 V AC/12 V DC external power supply
- connection cables between the unit and the multipin connector present on the ranges of releases which equip the SACE Isomax S and the SACE Emax series



GSIS9045

- connection cable between the unit and the PC (serial RS232)
- power supply cable
- instruction manual and diskette with application SW
- plastic container.

SACE PR212/CI contactor control unit

The SACE PR212/CI accessory unit can be associated with all the circuit-breakers fitted with SACE PR212/MP electronic release for motor protection. When the appropriate dip-switch on the front of the release is positioned on the "Normal mode", it allows the contactor to be opened in the case of fault for overload L, blocked rotor R or phase missing/unbalance U.

The SACE PR212/CI unit can always be installed both on a DIN rail and on the rear of the door.



GSIS9040



Accessories

Accessories for electronic releases

CT for external neutral

This is applied to the neutral conductor and allows protection against earth faults with three-pole circuit-breakers to be realised. The circuit-breaker must be fitted with SACE PR212/P – LSIG release. The transformer must be connected to the release by means of the specific X3-X4 connectors, selected according to the version of the circuit-breaker and the type of protection release used.

S4	S5	S6	S7	S8
[A]	[A]	[A]	[A]	[A]
100	320	630	1000	1600
160	400	800	1250	2000
250	630		1600	2500
				3200

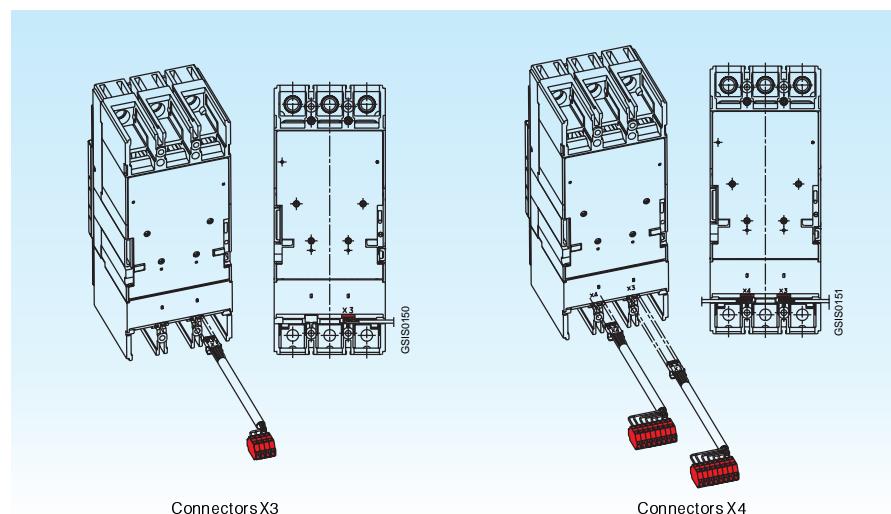


GSIS9005

Connectors

These allow connection of the microprocessor-based release to units or components of external plants. They are, in fact, used to make the relay tripped signal available outside and to connect the protection transformer of the neutral conductor outside the circuit-breaker or to the actuator, dialogue and signalling units, if these are provided.

- Connector X3 for circuit-breaker fixed fitted with releases SACE PR211/P
- Connector X3 for plug-in/withdrawable circuit-breaker (to be applied in the fixed part) fitted with SACE PR211/P release
- Connectors X3-X4 for fixed circuit-breaker fitted with SACE PR212/P release
- Connectors X3-X4 for plug-in/withdrawable circuit-breaker fitted with SACE PR212/P release



Connectors X3

Connectors X4



GSIS9030



Accessories

Installation accessories and spare parts

Bracket for fixing on DIN rail

This is applied to the fixed circuit-breaker and allows installation on standardised DIN rails. It simplifies assembly of circuit-breakers up to 630 A in standard switchboards.

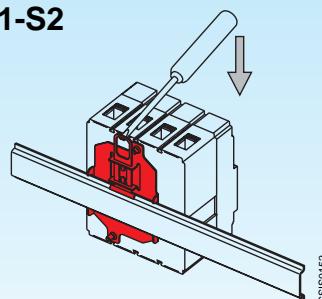
- Bracket for fixing on DIN EN 50022 rail for SACE S1-S2 circuit-breakers.
- Bracket for fixing on DIN EN 50023 rail for SACE S3-S4-S5 circuit-breakers.

The fixing bracket kit for SACE S3-S4-S5 circuit-breakers also includes the front flange H = 45mm.

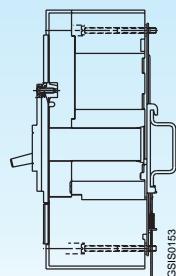
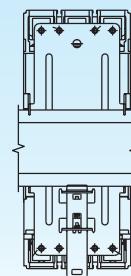


GSIS901

S1-S2



S3-S4-S5



GSIS9153

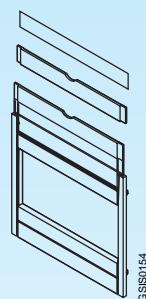
Flange for compartment door

This is always supplied with the circuit-breaker and can also be used with the rotary handle operating mechanism for the SACE S3, S4, S5, S6, and S7 circuit-breakers, the front flange for lever operating mechanism and the motor operator. In case of use of these accessories with SACE S6, S7 circuit-breakers, a flange is supplied to be used instead of the one supplied with the circuit-breaker. It is not supplied for SACE S1, S2, and S3 circuit-breakers which are complete with SACE RC210, RC211, RC212 residual current releases in the version beside the circuit-breaker.

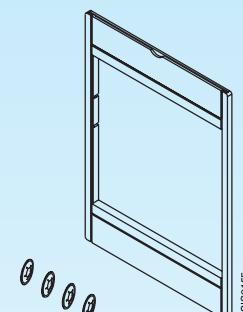


GSIS9018

S1-S2

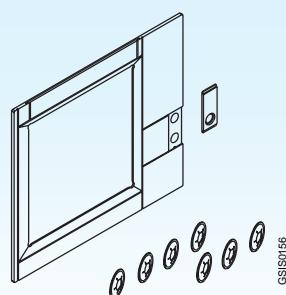


S3 ... S7 fixed

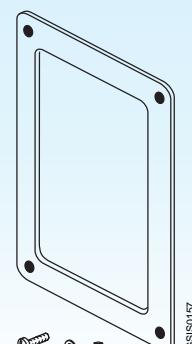


GSIS9155

S3 ... S7 withdrawable



S8



GSIS9157



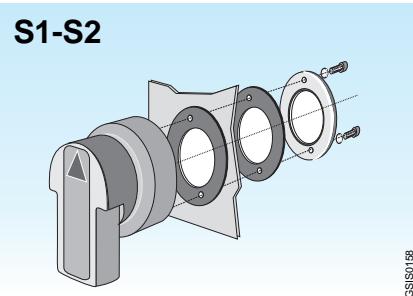
Accessories

Installation accessories and spare parts

IP54 protection for rotary handle

This allows IP54 degree of protection to be attained. It is available in the following versions:

- for rotary handle operating mechanism on compartment door with fixed distance for SACE S1-S2 circuit-breakers
- for rotary handle operating mechanism on compartment door with adjustable distance for circuit-breakers SACE S3-S4-S5-S6 and S7 circuit-breakers.



GSI0158



GSI034

Spare parts

The following spare parts are available:

- operating lever
- cover group
- arcing chambers
- isolating contacts
- opening solenoid for the SACE RC211 and RC212 residual current releases

- kit with washers, screws and dowels for assembly of the connection terminals.

For further details, please ask the Service Division of ABB SACE for the spare parts catalogue.



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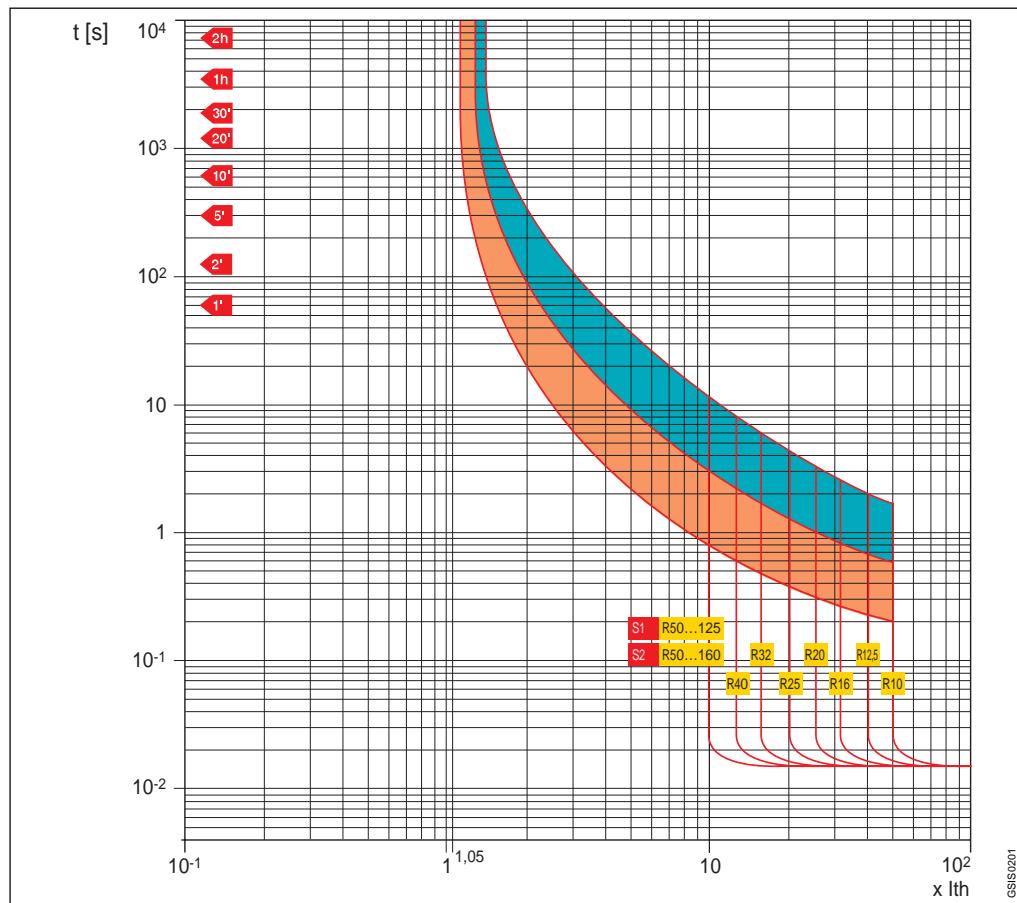


Trip curves for distribution

Circuit-breakers with thermomagnetic releases

SACE
S1 125 - S2 160

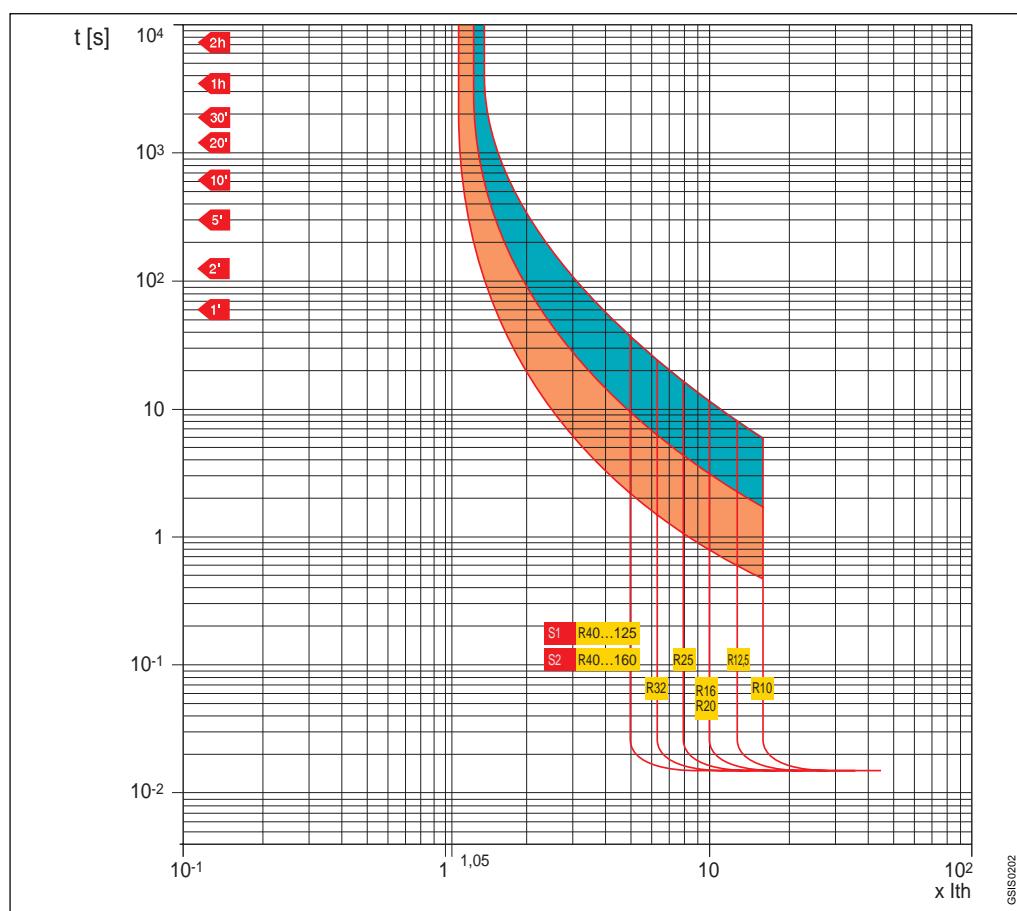
Magnetic tripping threshold
 $I_m = 10 \times I_{th}$



GSIS0201

SACE
S1 125 - S2 160

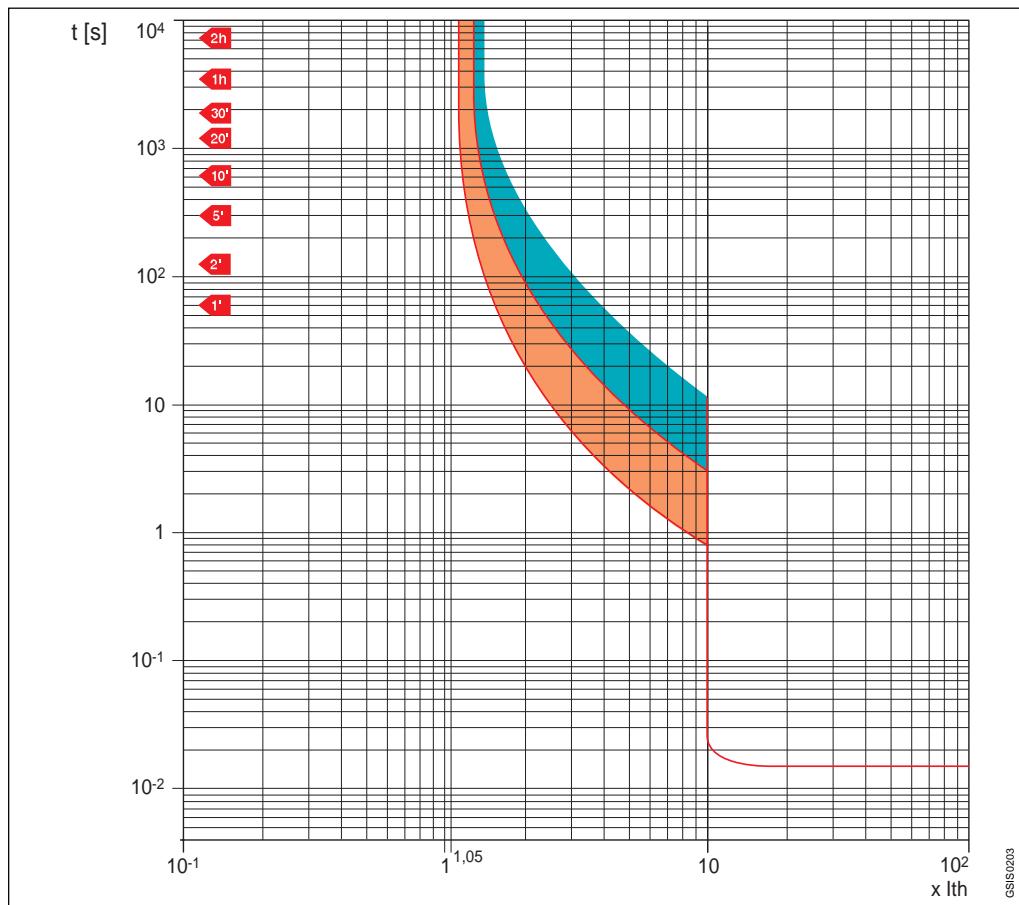
Magnetic tripping threshold
 $I_m = 5 \times I_{th}$



GSIS0202

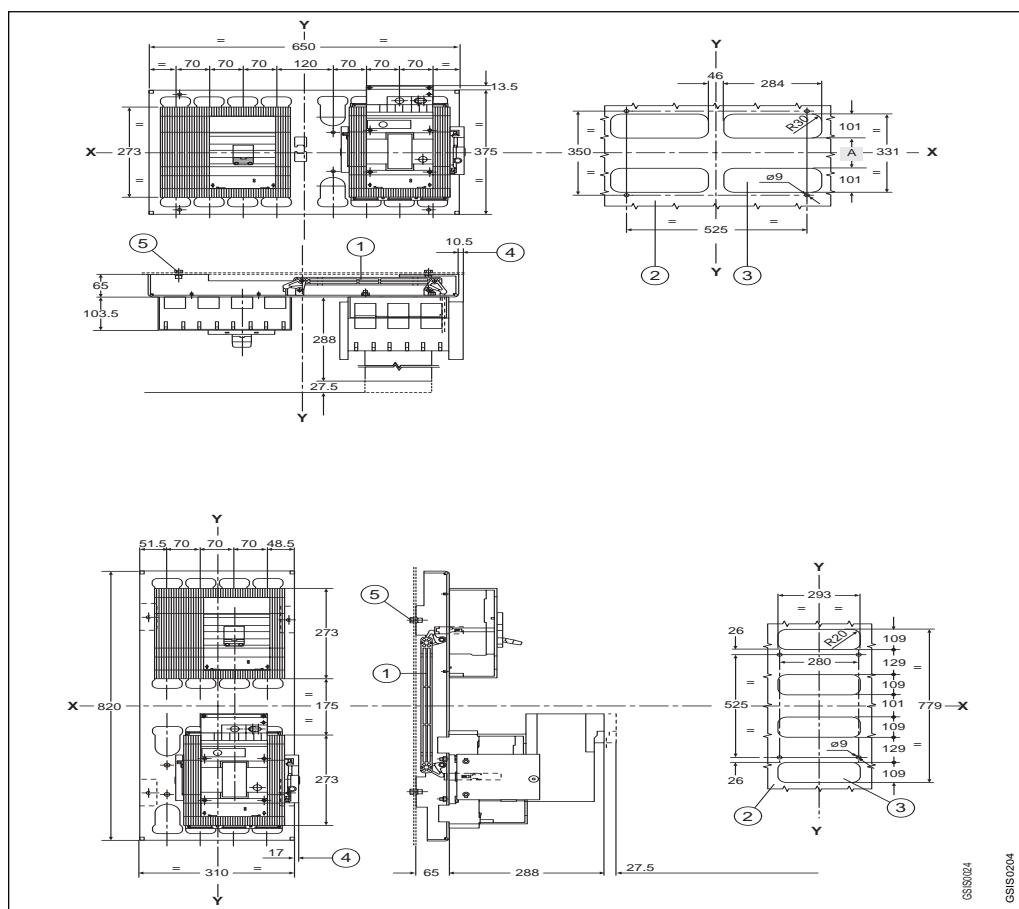
SACE S2X 100

Magnetic tripping threshold
 $I_m = 10 \times I_{th}$



SACE S3 160

Magnetic tripping threshold
 $I_m = 10 \times I_{th}$



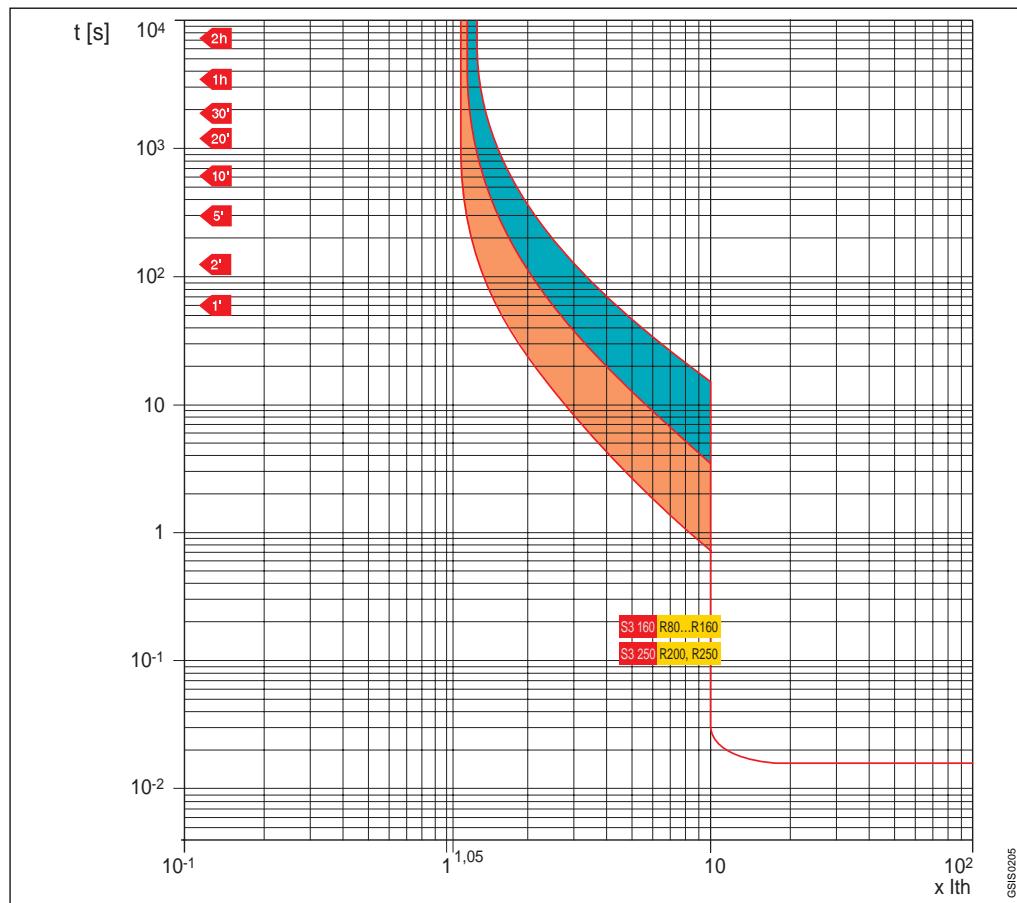


Trip curves for distribution

Circuit-breakers with thermomagnetic releases

SACE
S3 160 - S3 250

Magnetic tripping threshold
 $I_m = 10 \times I_{th}$

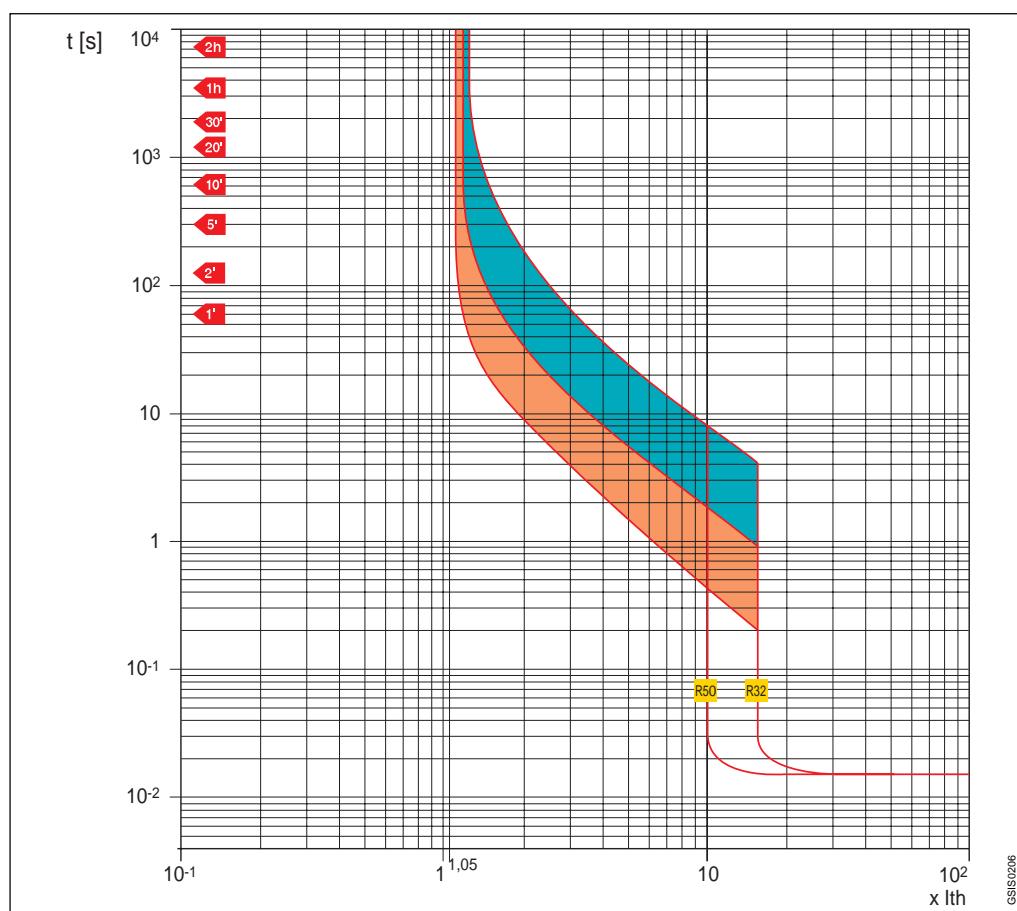


GSIS0205

SACE S3 160

Magnetic tripping threshold
 $I_m = 5 \times I_{th}$

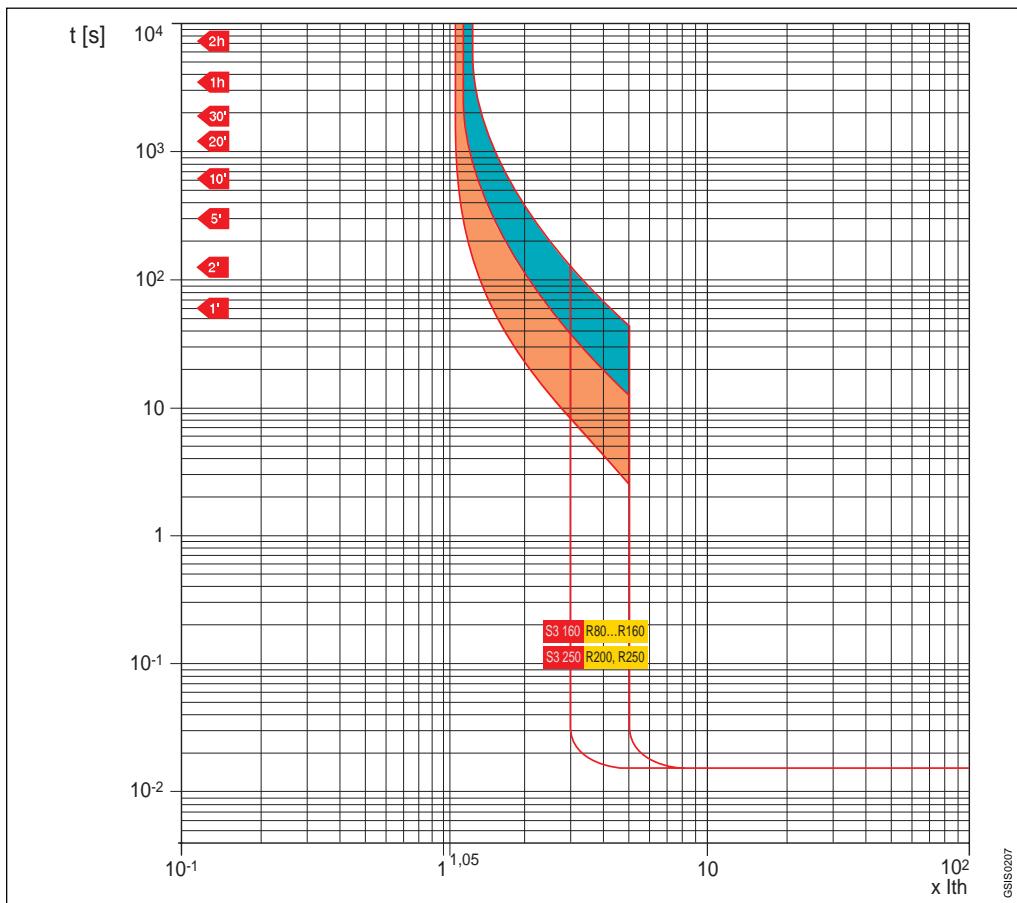
GSIS0206



SACE S3 160 - S3 250

Magnetic tripping threshold
 $I_m = 3 \times I_{th}$

Magnetic tripping threshold
 $I_m = 5 \times I_{th}$

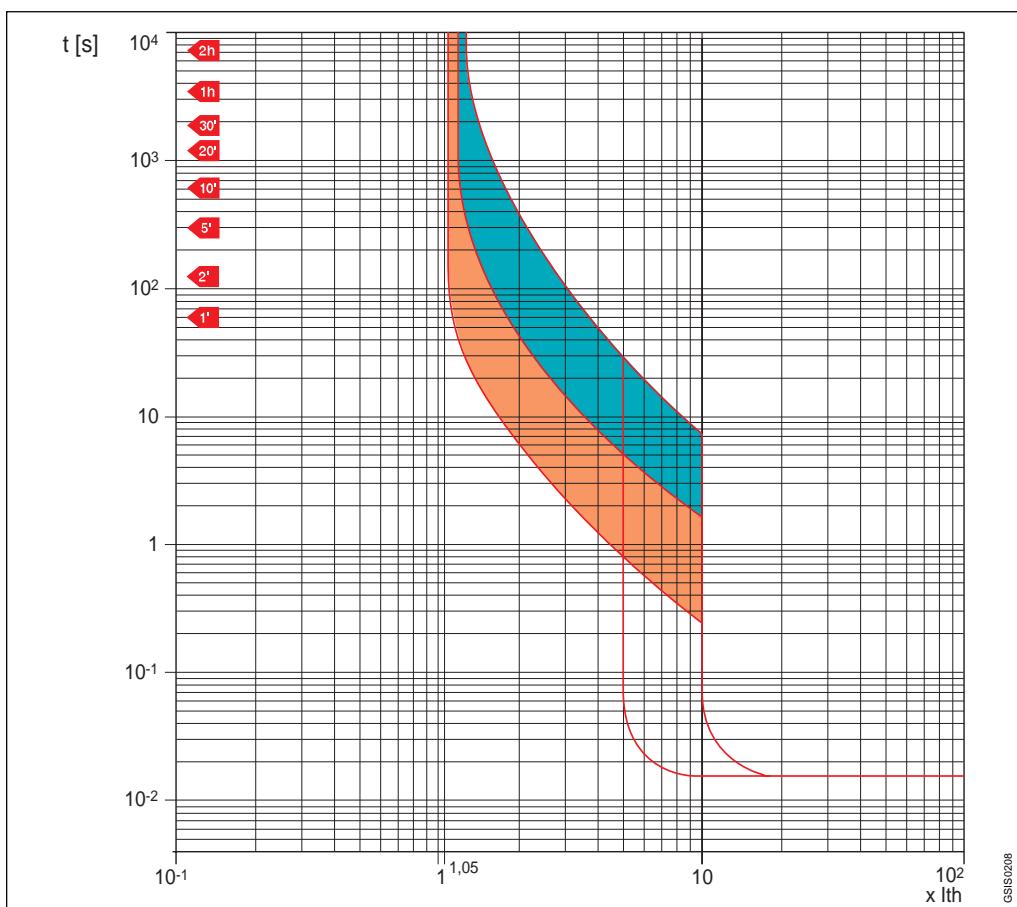


SACE S5 400 (R320-400)

SACE S5 630 (R500)

Thermal tripping threshold
 $I_n = 0.7 \div 1 \times I_{th}$

Magnetic tripping threshold
 $I_m = 5 \div 10 \times I_{th}$





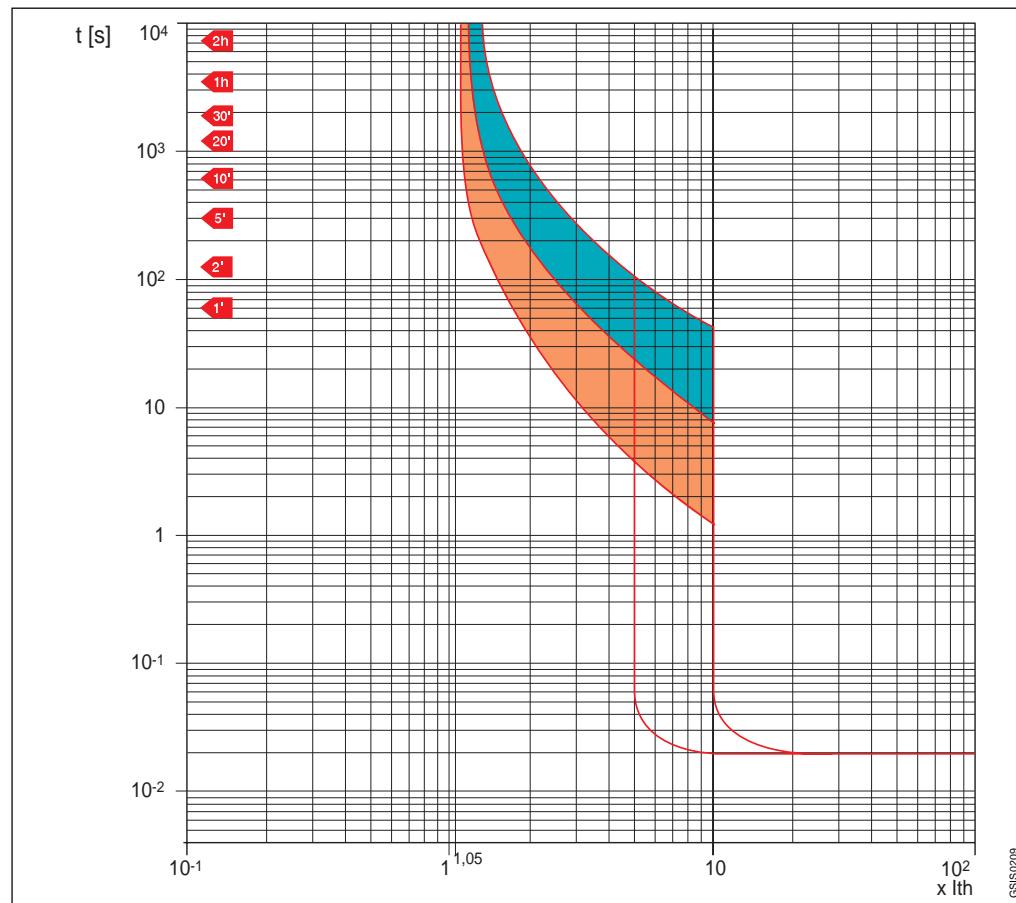
Trip curves for distribution

Circuit-breakers with thermomagnetic releases

SACE S6 630 (R630)

Thermal tripping threshold
 $I_{th} = 0,7 \div 1 \times I_{th}$

Magnetic tripping threshold
 $I_m = 5 \div 10 \times I_{th}$

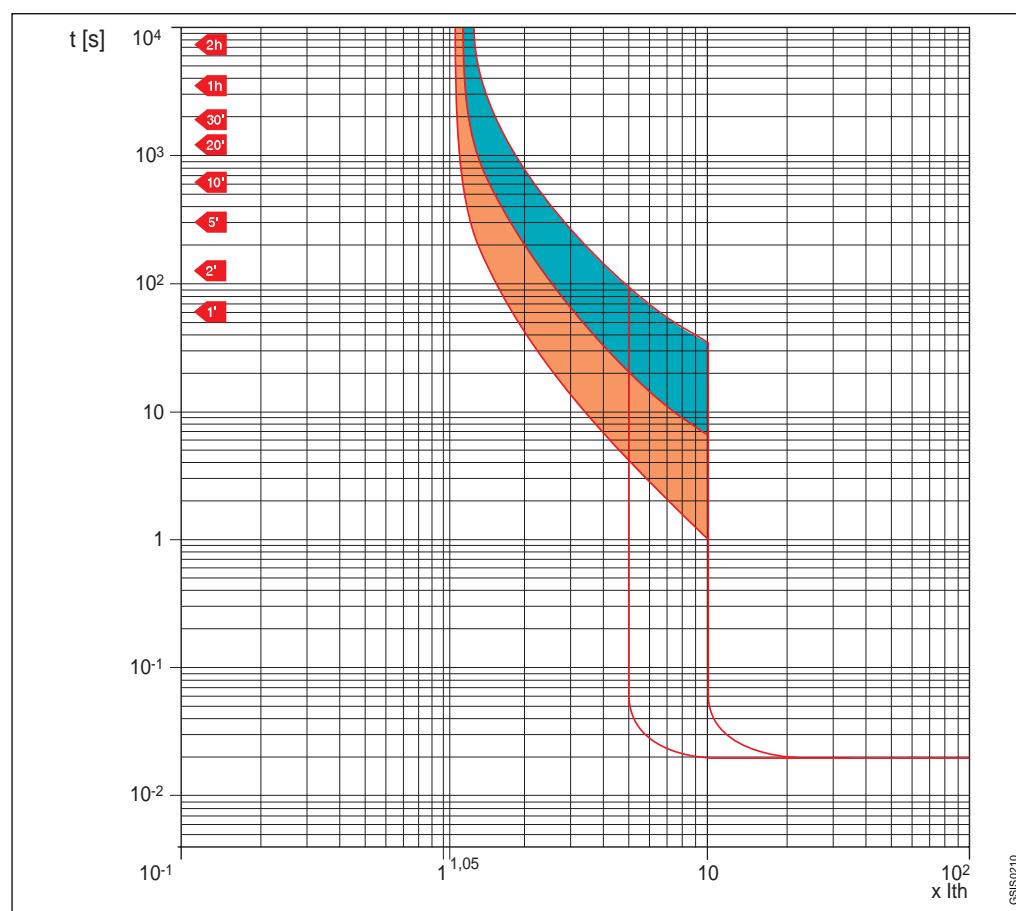


SACE S6 800 (R800)

Thermal tripping threshold
 $I_{th} = 0,7 \div 1 \times I_{th}$

Magnetic tripping threshold
 $I_m = 5 \div 10 \times I_{th}$

5





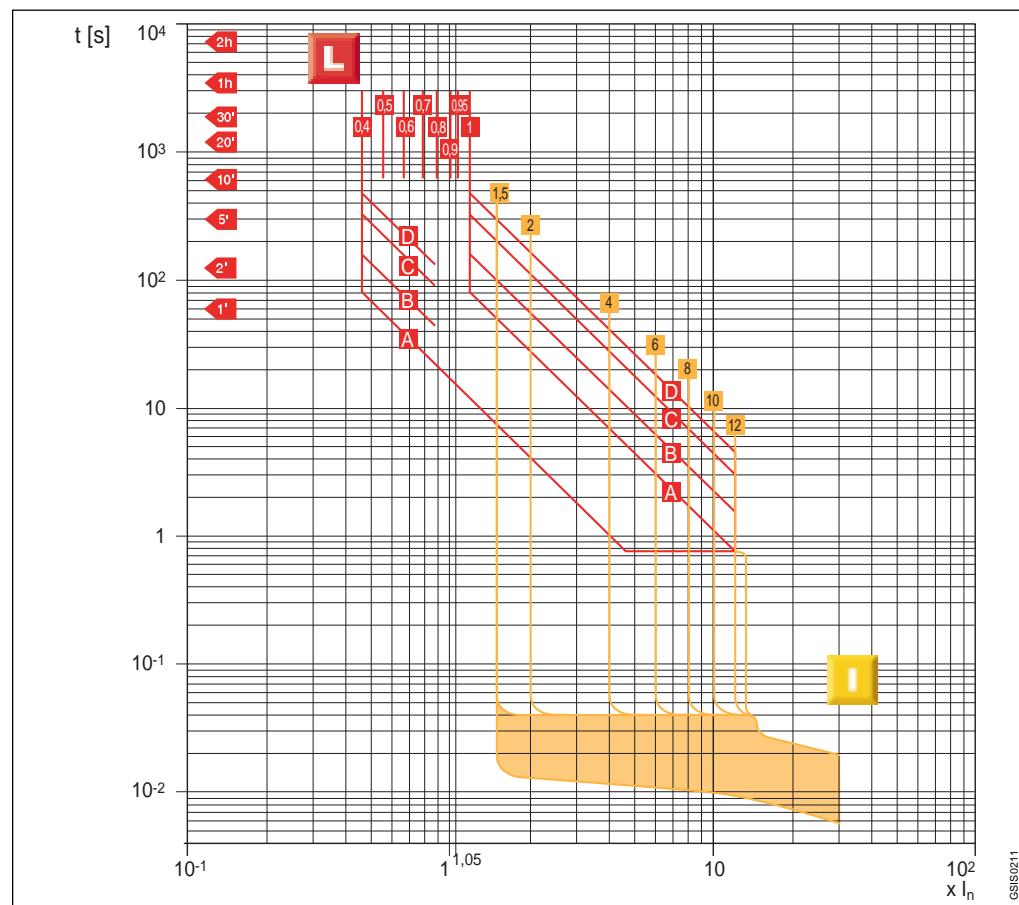
Trip curves for distribution

Circuit-breakers with electronic releases

SACE S4-S5-S6-S7

SACE PR211/P
Functions LI - I

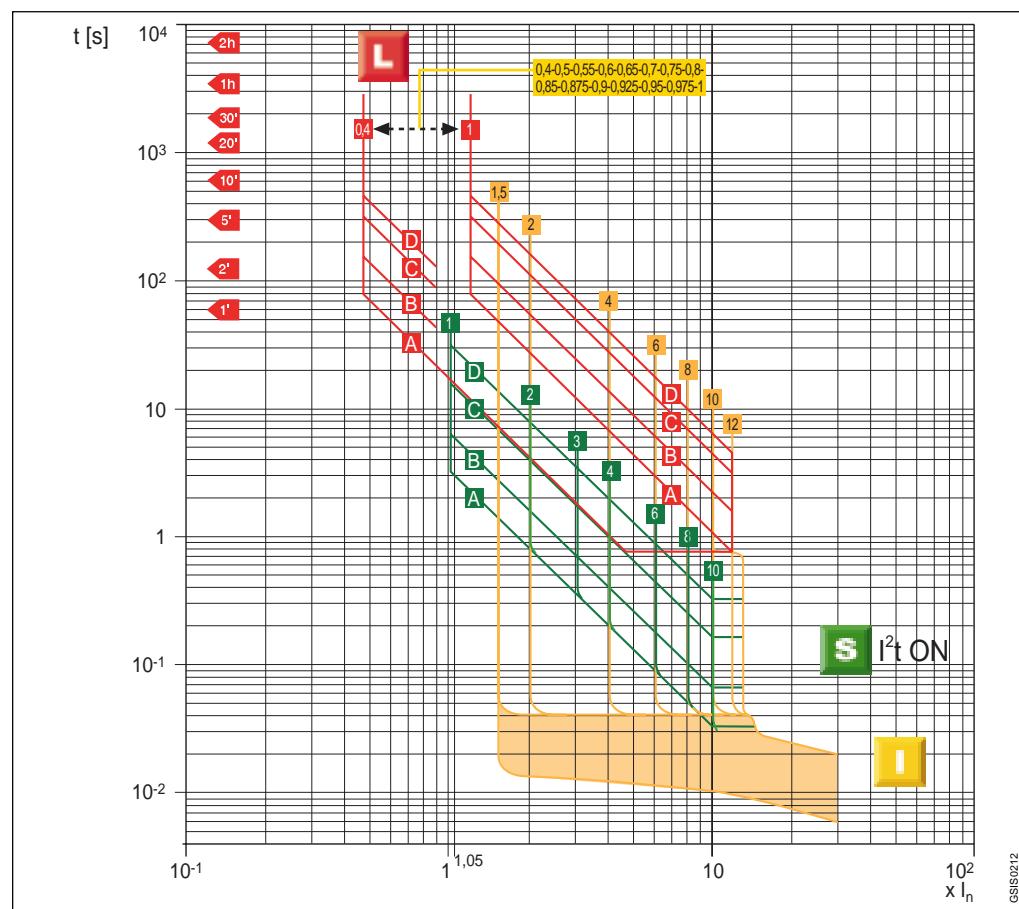
N.B. For **S5 630**
The maximum threshold that
can be set for the I function is
 $8 \times I_n$



SACE
S4-S5-S6-S7-S8

SACE PR212/P
Function LSI,
S inverse short delay
($I^2t = \text{constant ON}$)

N.B. For **S5 630**
The maximum threshold that
can be set for the I function is
 $8 \times I_n$





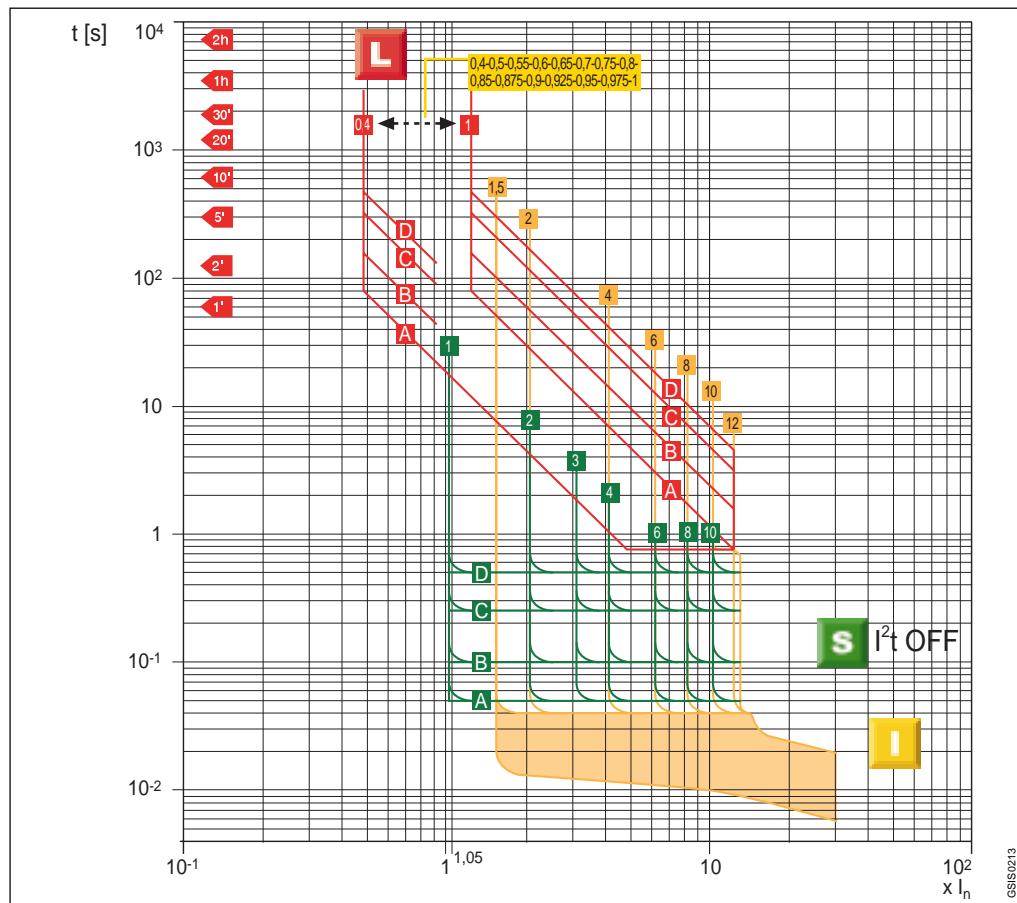
Trip curves for distribution

Circuit-breakers with electronic releases

SACE
S4-S5-S6-S7-S8

SACE PR212/P
Function LSI,
S definite short delay
($I^2t = \text{constant OFF}$)

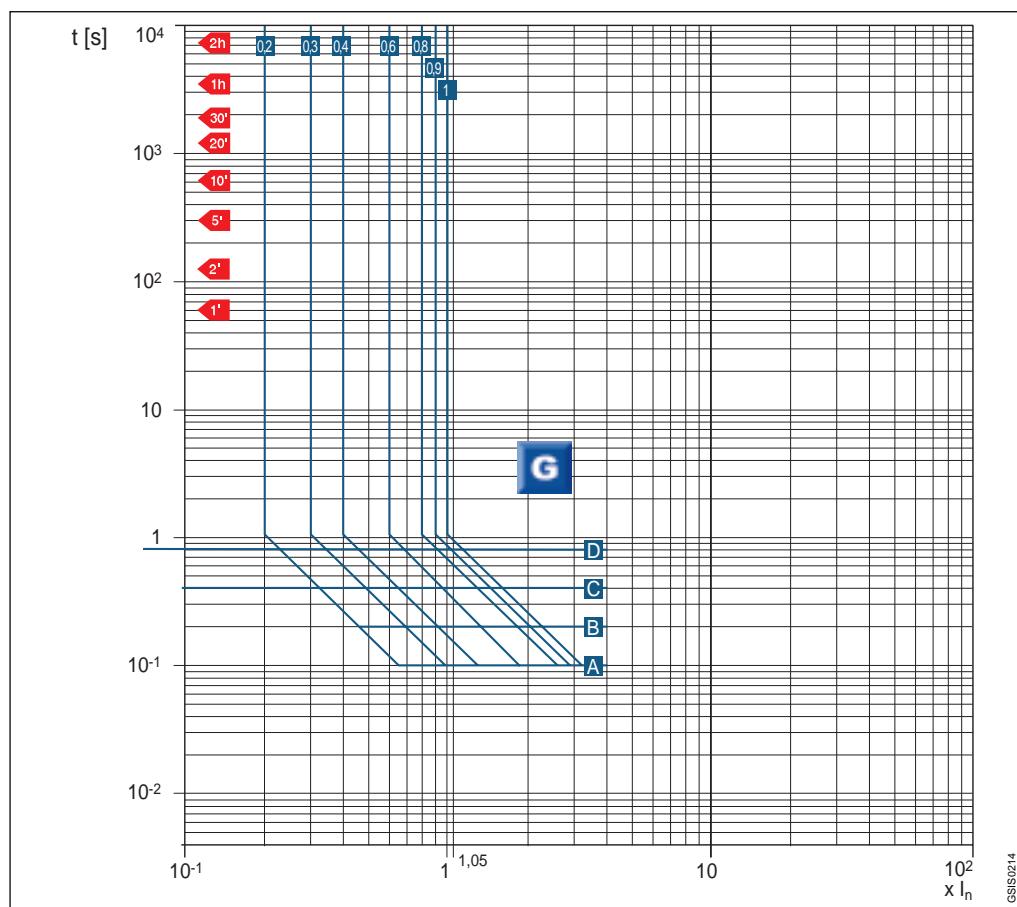
N.B. For S5 630
The maximum threshold that
can be set for the I function is
 $8 \times I_n$



SACE
S4-S5-S6-S7-S8

SACE PR212/P
Function G

5





Trip curves for motor protection

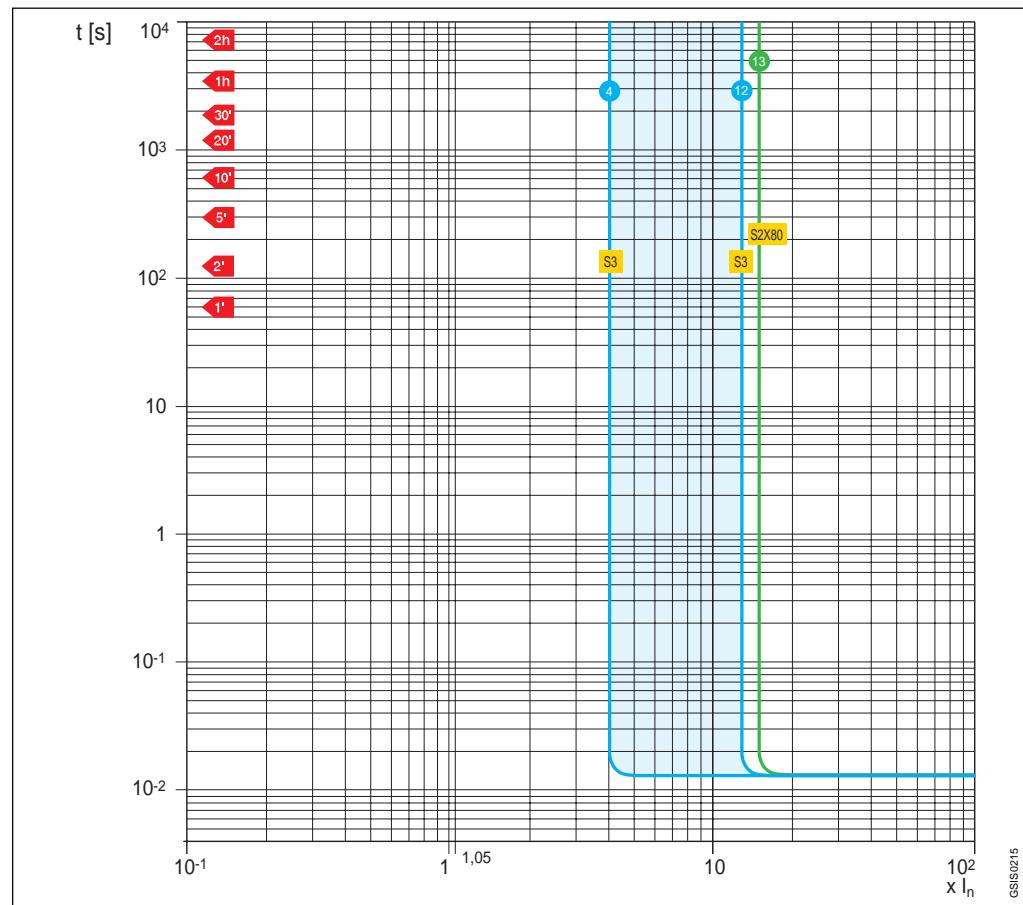
Circuit-breakers with magnetic only releases

SACE S2X 80

Fixed magnetic tripping threshold
 $I_m = 13 \times I_{th}$

SACE S3

Adjustable magnetic tripping threshold
 $I_m = 4 \div 12 \times I_{th}$





Trip curves for motor protection

Use of the trip curves of circuit-breakers with SACE PR212/MP electronic release

For correct parameter setting of the SACE PR212/MP electronic release, it may be useful to compare the overall circuit-breaker curve with the motor starting curve.

For this purpose, with the protection function graphics shown on the following pages, it is possible to draw the overall curve required for the circuit-breaker fitted with SACE PR212/MP release simply and immediately.

N.B. For function L, as for all the other functions, make sure you place a glossy tracing sheet over the curve so that the time s on the axis of the co-ordinates coincide.

- **Function L (cannot be excluded) - Protection against overload**

To protect the motor against any overloads, as a first step it is necessary to adjust function L to a current **I1** higher than or equal to the rated current of the motor i.e. **I1 ≥ Ie**.

For example, if $I_e = 135$ A, an S4H160 circuit-breaker can be selected with $I_n = 160$ A and the following adjustment carried out: $I_1 = 0.85 \times I_n = 136$ A.

The second step is to select the trip class according to the motor starting time **ta**. For a motor with a start-up overload of 6 seconds, class 10 can be selected, with a trip time of 8s at $7.2 \times I_1$.

To trace the curve correctly on the glossy sheet, according to **I/I_n**, simply place the glossy sheet over the graph of function L so that $I/I_n = 0.85$ (on the glossy sheet) corresponds to $I/I_1 = 1$ (on the graph) and draw the curve relative to class 10.

- **Function R (can be excluded) - Protection against rotor blockage**

Protection against rotor blockage can be set both with regard to the trip current **I5 = 3 ... 10xI1** (in this case $I_5 = 3 \dots 10 \times 0.85 \times 160$), and with regard to the trip time **t5**.

To trace the curve correctly on the glossy sheet, simply place the glossy sheet over the graph of function R so that $I/I_n = I_1/I_n$ (on the glossy sheet) corresponds to $I/I_1 = 1$ (on the graph). In this case $I/I_n = I_1/I_n = 0.85$, and draw the desired curve.

- **Function I (cannot be excluded) - Protection against short-circuit**

This protection function against short-circuit recognises whether the motor is in the starting phase, thereby avoiding unwarranted trips; the trip threshold can be set from $6 \times I_n$ to $13 \times I_n$.

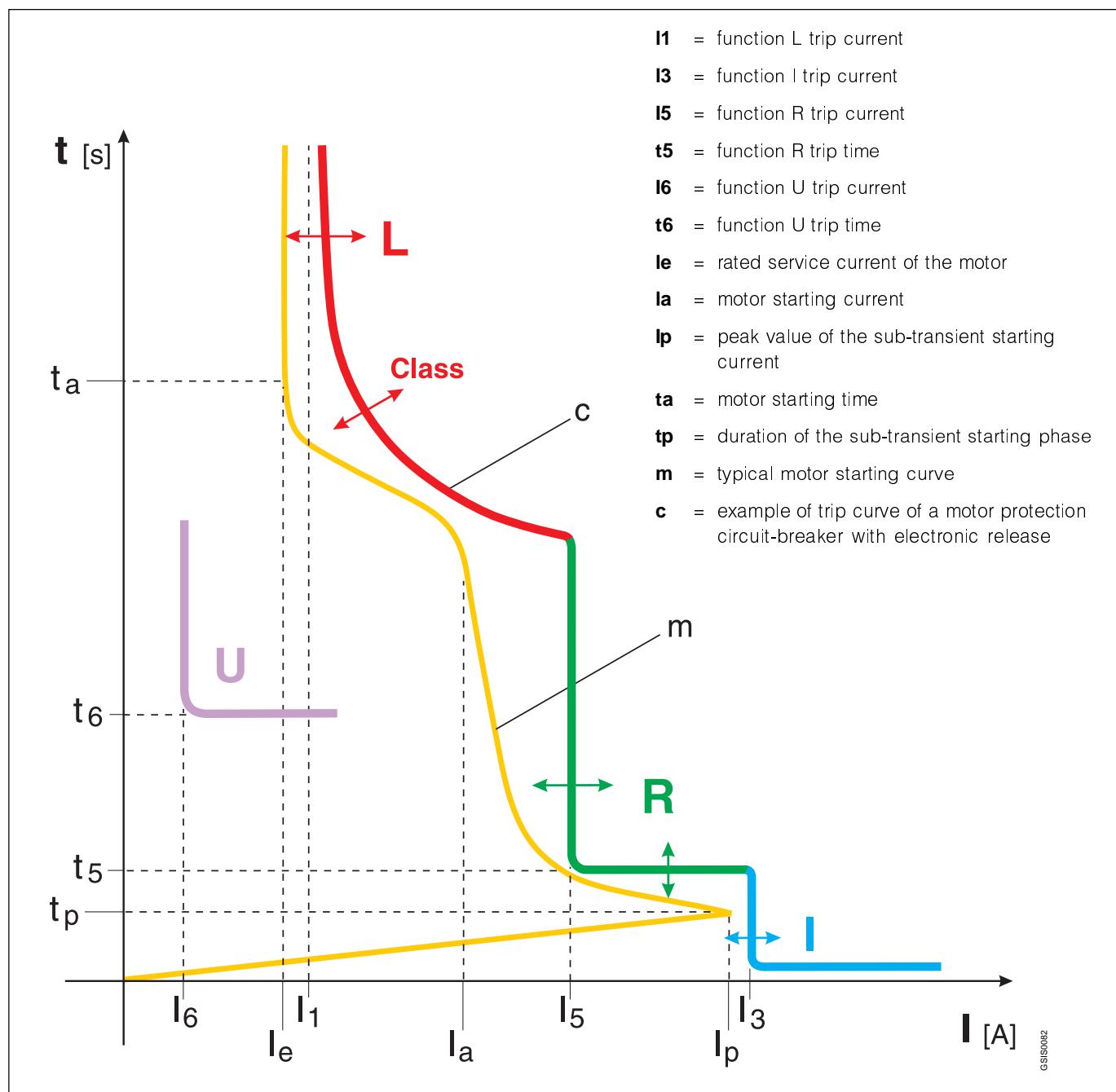
To trace the curve correctly on the glossy sheet, simply place the glossy sheet over the graph of function I so that $I/I_n = 1$ (on the glossy sheet) corresponds to $I/I_n = 1$ (on the graph) and draw the desired curve.

- **Function U (can be excluded) - Protection against loss and/or unbalance of a phase**

Protection against loss or unbalance of a phase, if set to ON, intervenes when one or two phases have a current lower than $0.4 \times I_1$ ($0.4 \times 0.85 \times I_n = 0.4 \times 0.85 \times 160$ A = 54.4A in this case).

To trace the curve correctly on the glossy sheet, simply place the glossy sheet over the graph of function U so that $I/I_n = I_1/I_n$ (on the glossy sheet) corresponds to $I/I_1 = 1$ (on the graph). In this case $I/I_n = I_1/I_n = 0.85$, and draw the desired curve.

Typical operating characteristic of an asynchronous motor





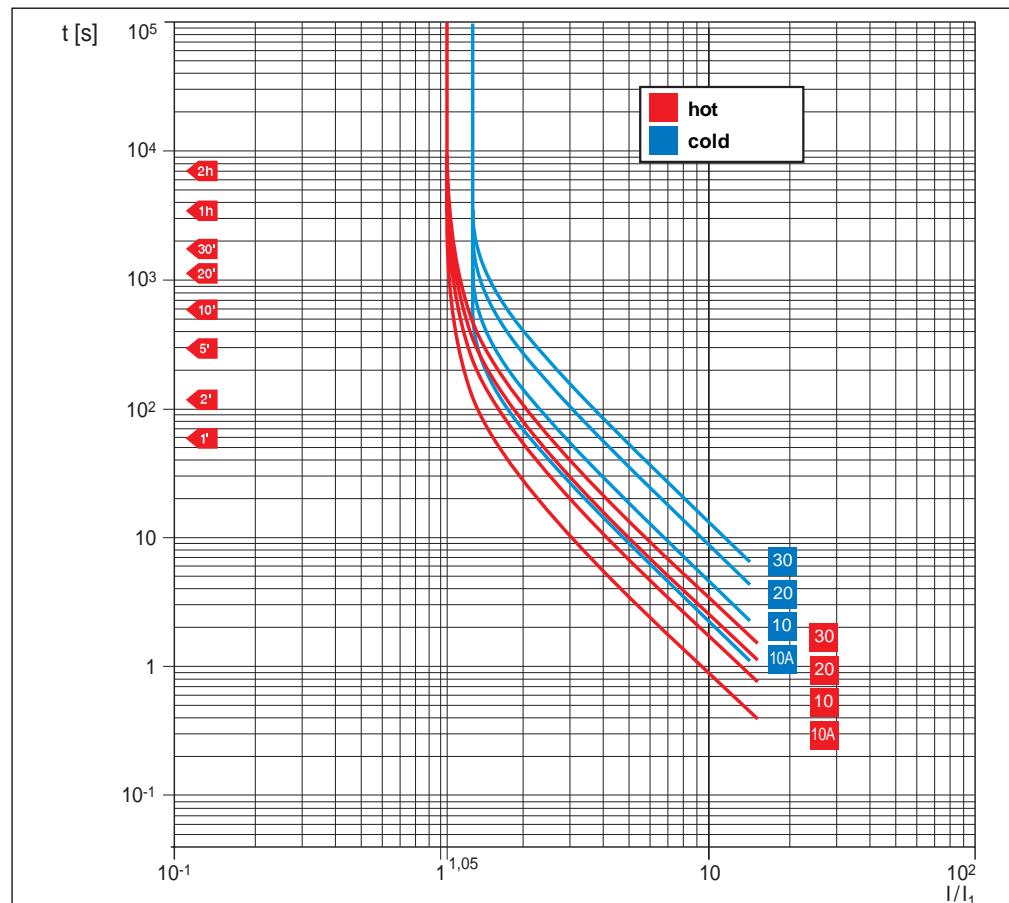
Trip curves for motor protection

Circuit-breakers with electronic releases SACE PR212/MP

SACE S4-S5-S6-S7

SACE PR212/MP

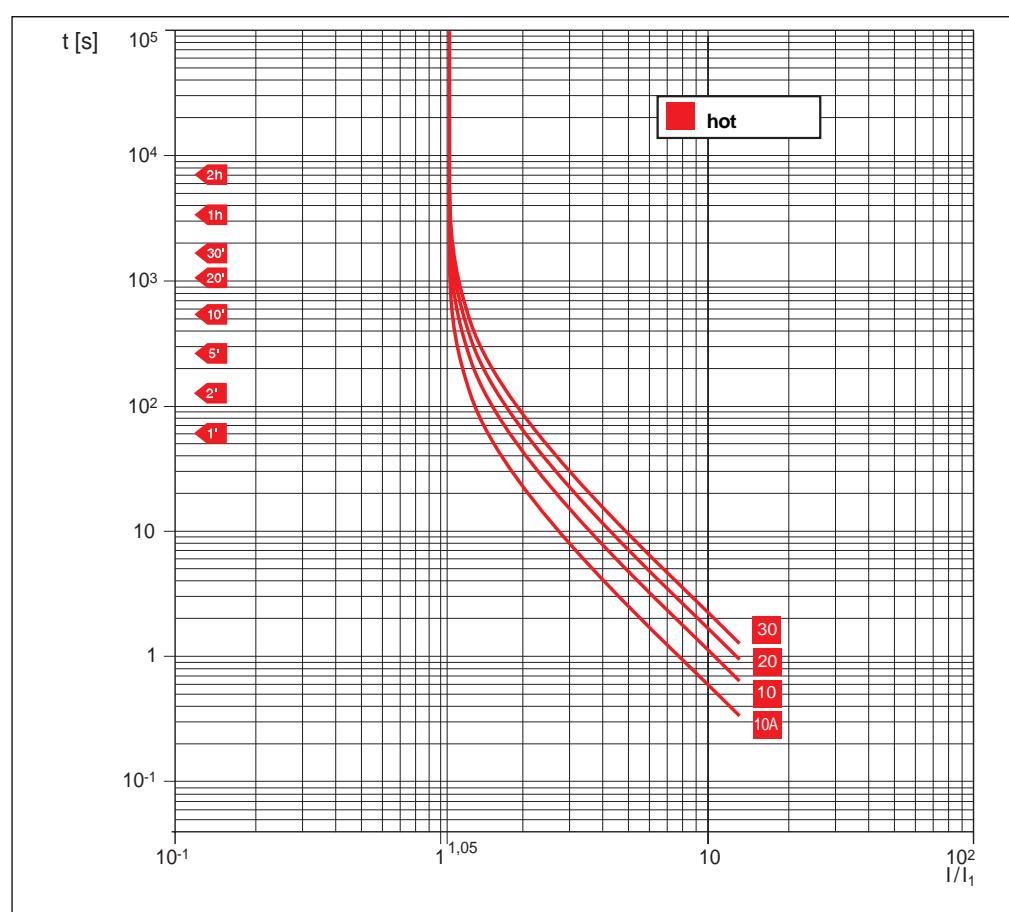
Function L (hot and cold trip)



SACE S4-S5-S6-S7

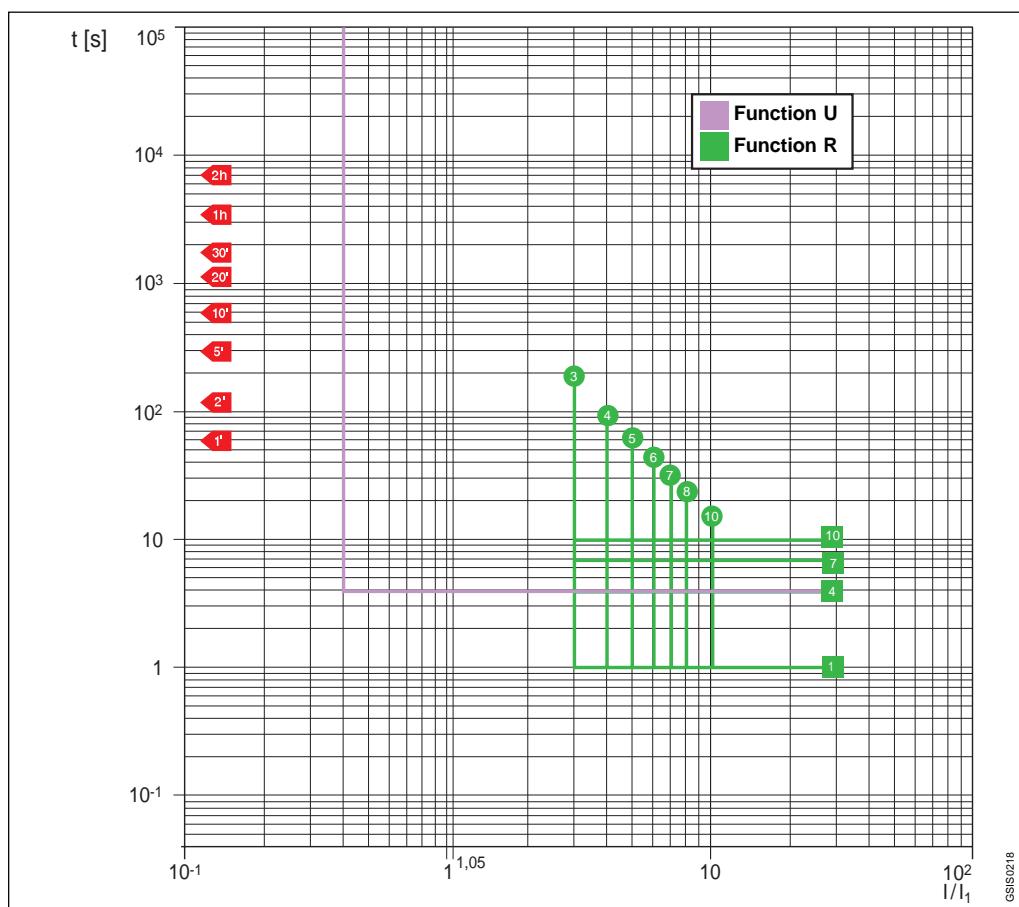
SACE PR212/MP

Function L (hot trip with 1 or 2 phases supplied)



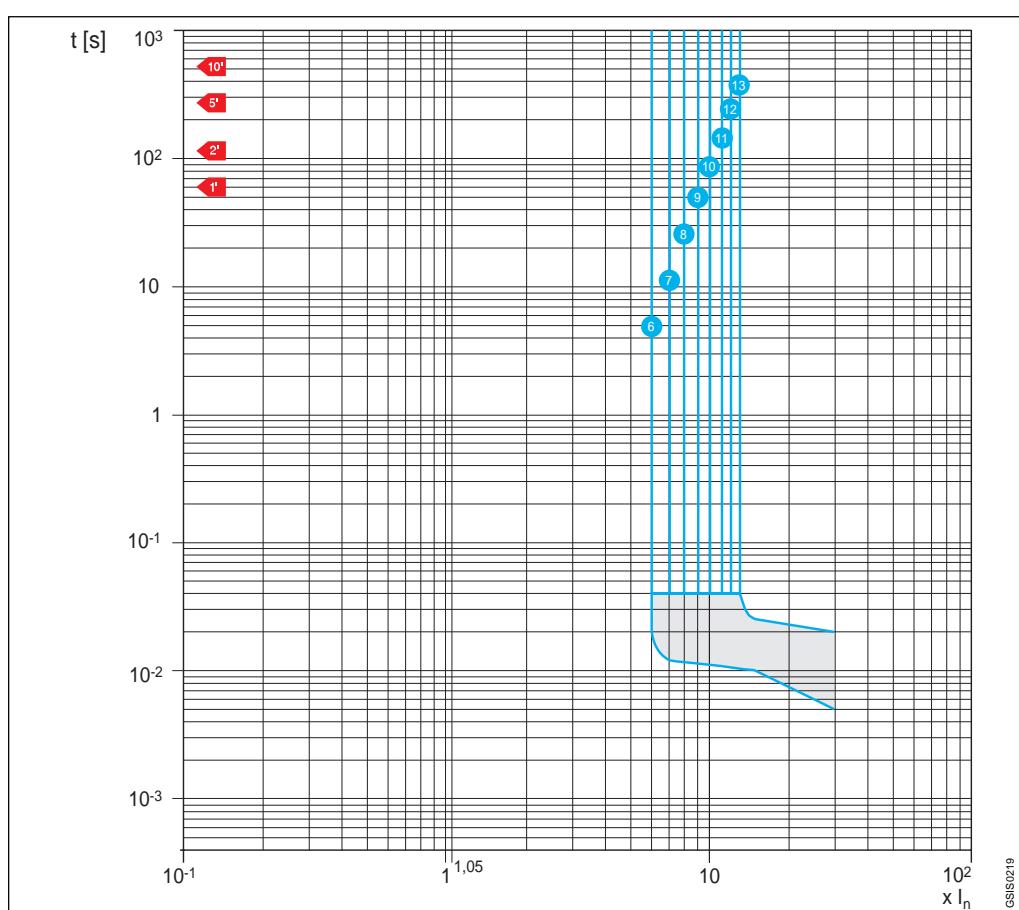
SACE S4-S5-S6-S7

SACE PR212/MP
Function R - U



SACE S4-S5-S6-S7

SACE PR212/MP
Function I

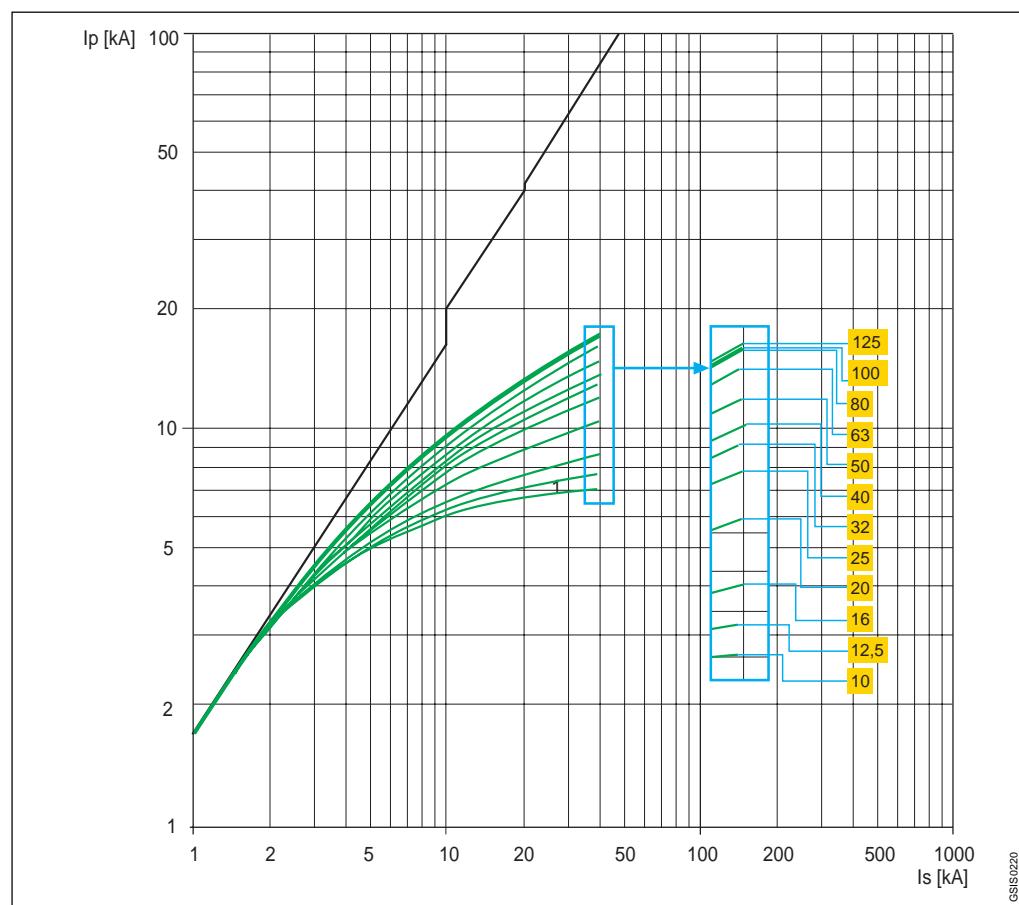




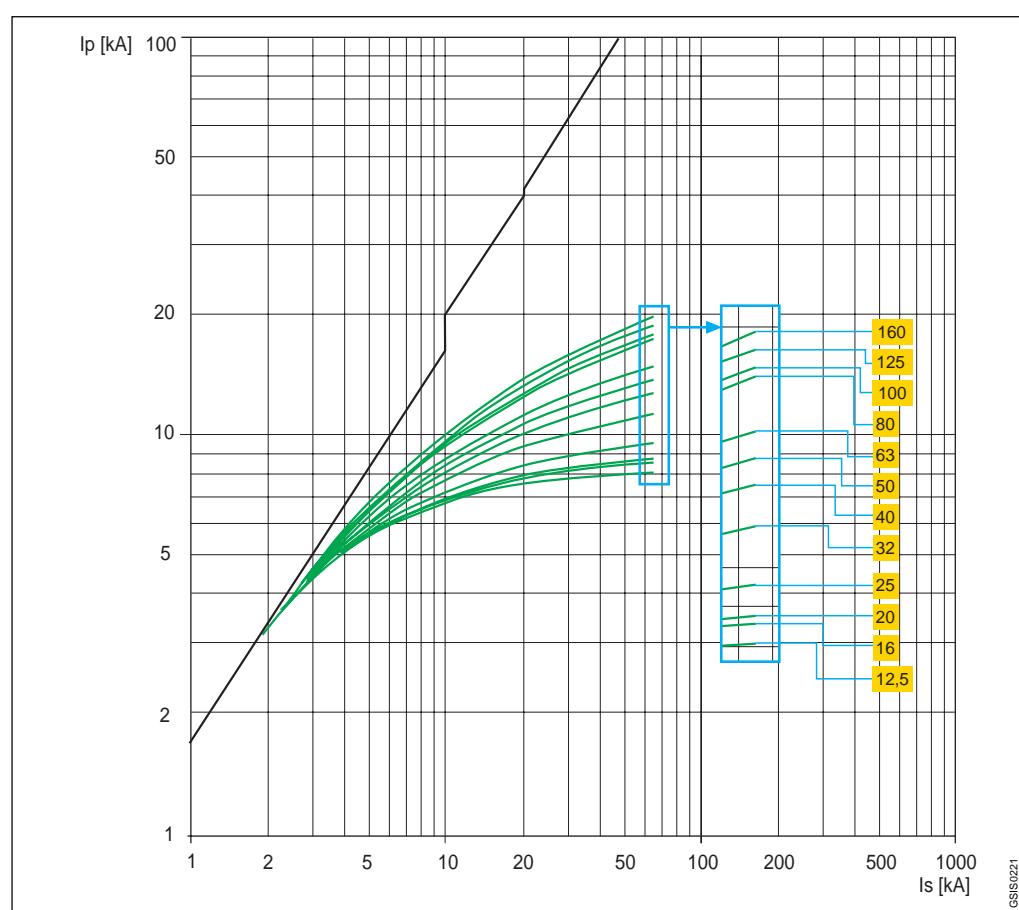
Limitation curves

230 V

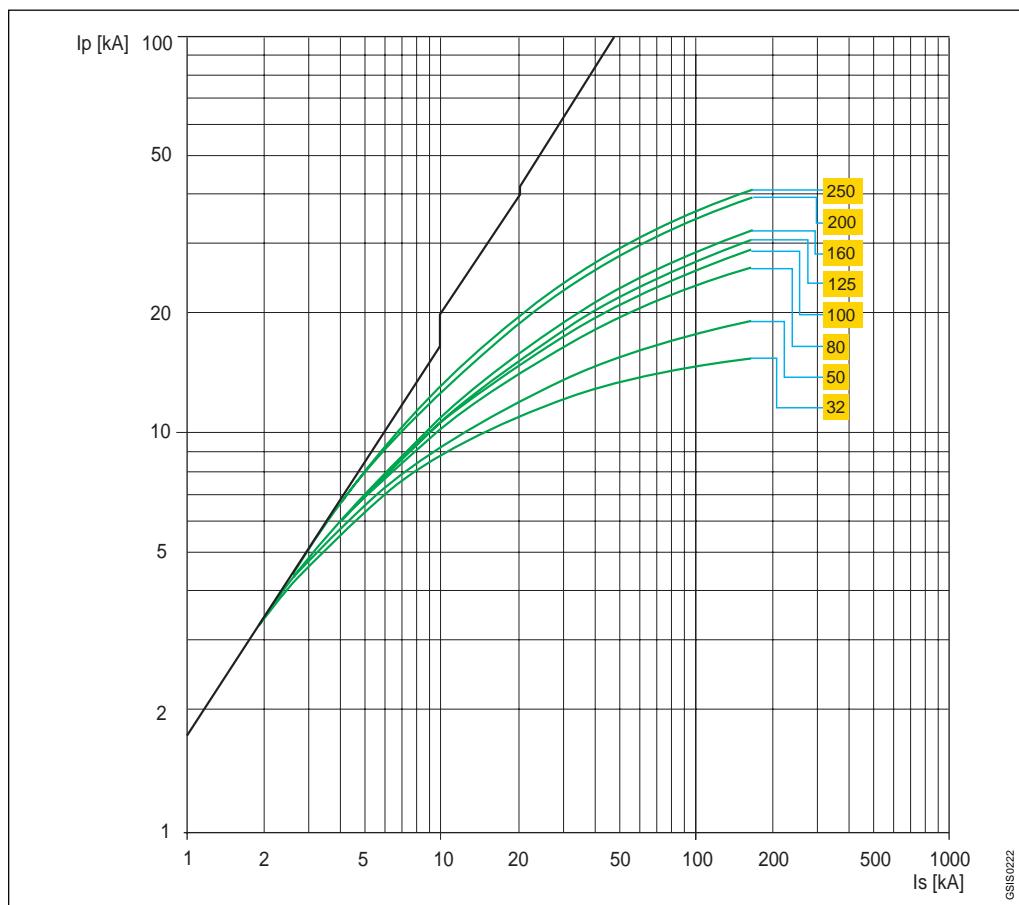
SACE S1



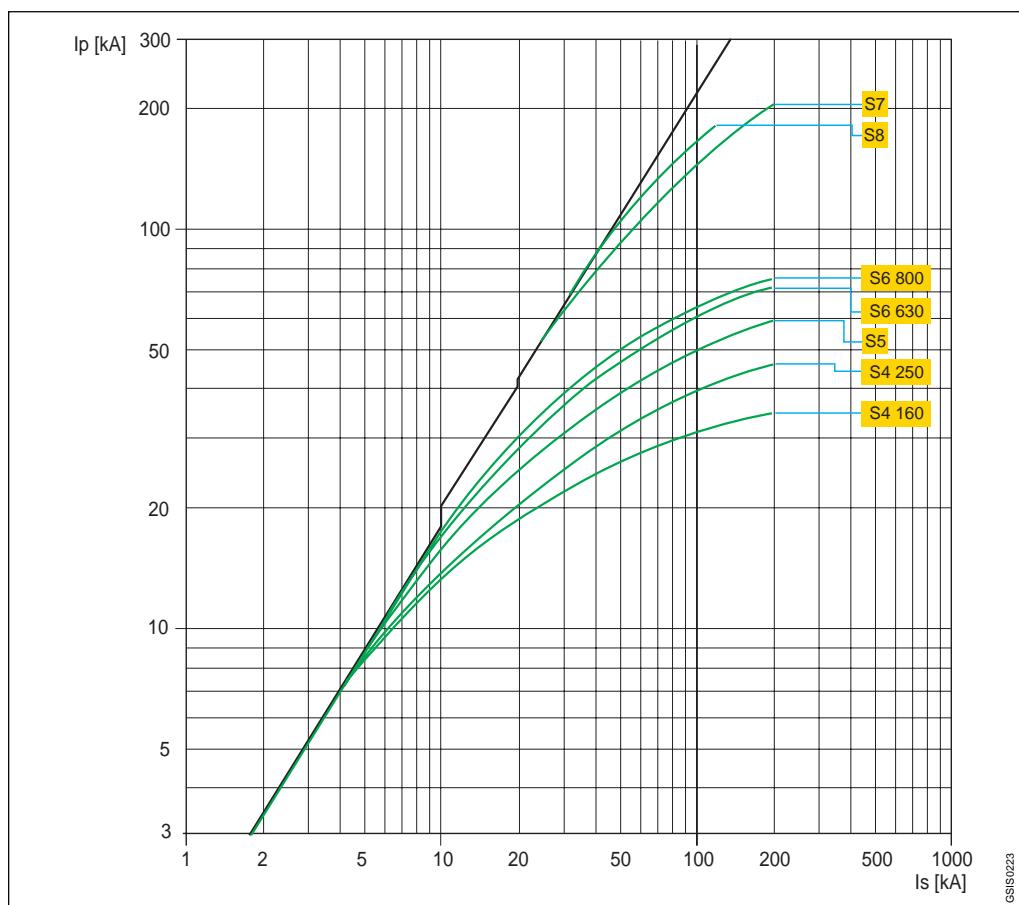
SACE S2



**SACE S3 160,
S3 250**



**SACE S4 160,
S4 250, S5, S6 630,
S6 800, S7, S8**

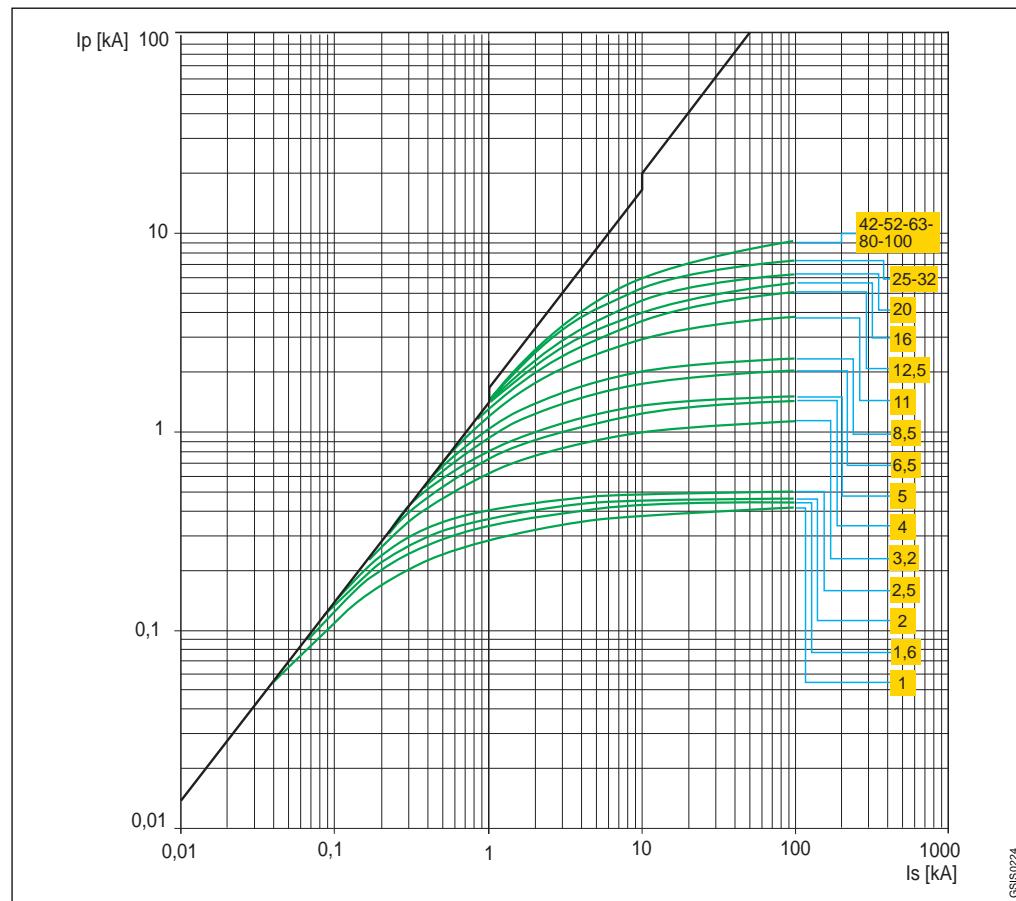




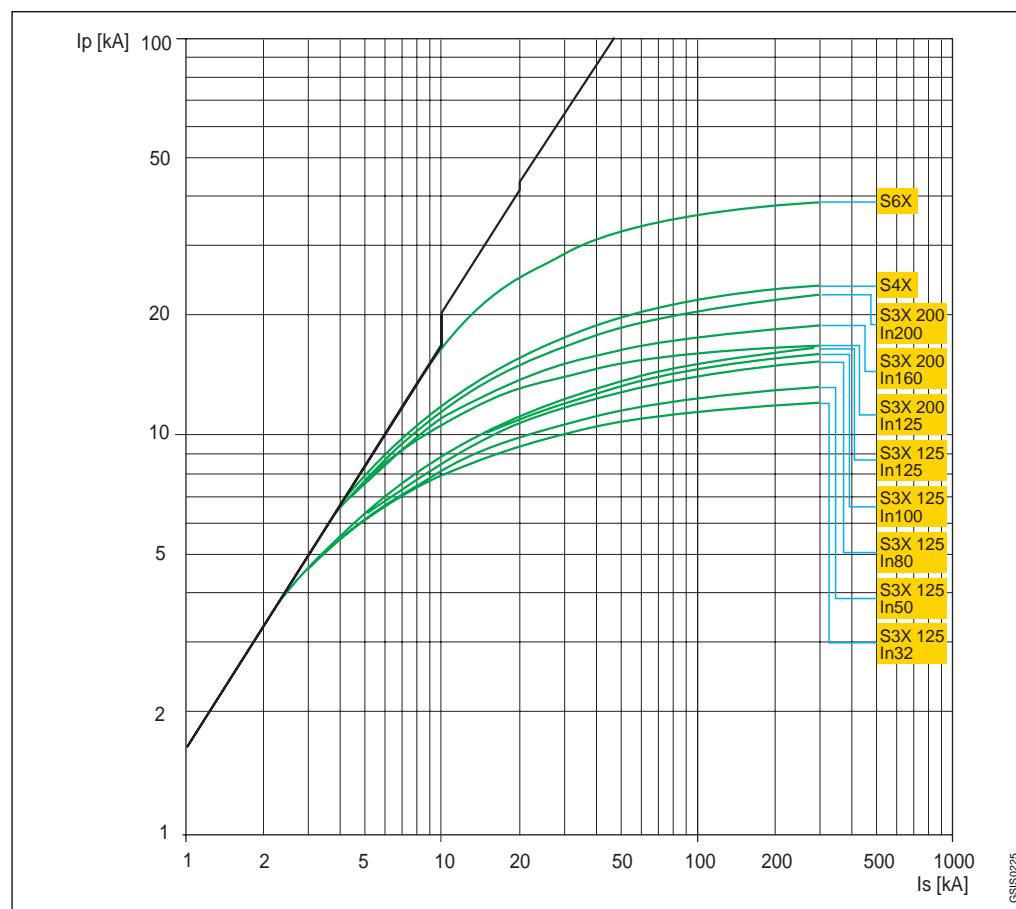
Limitation curves

230 V

SACE S2X 80,
S2X 100



SACE S3X 125,
S3X 200, S4X, S6X

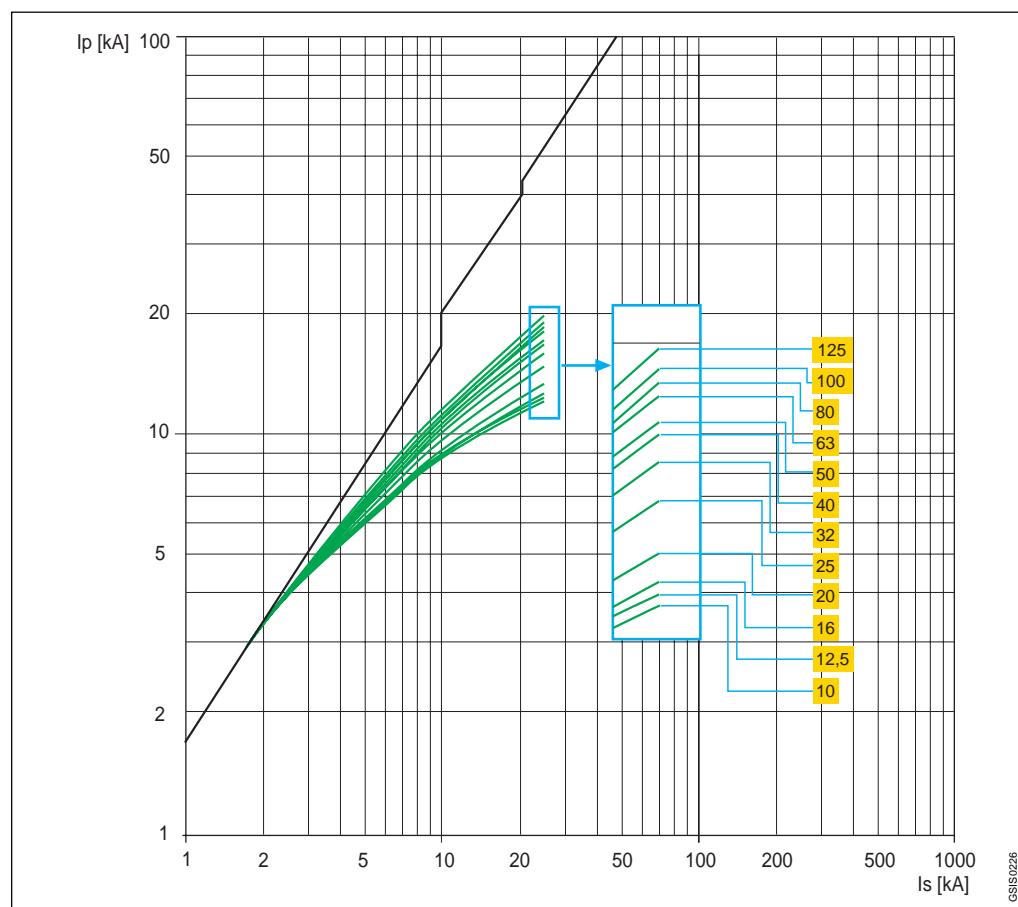




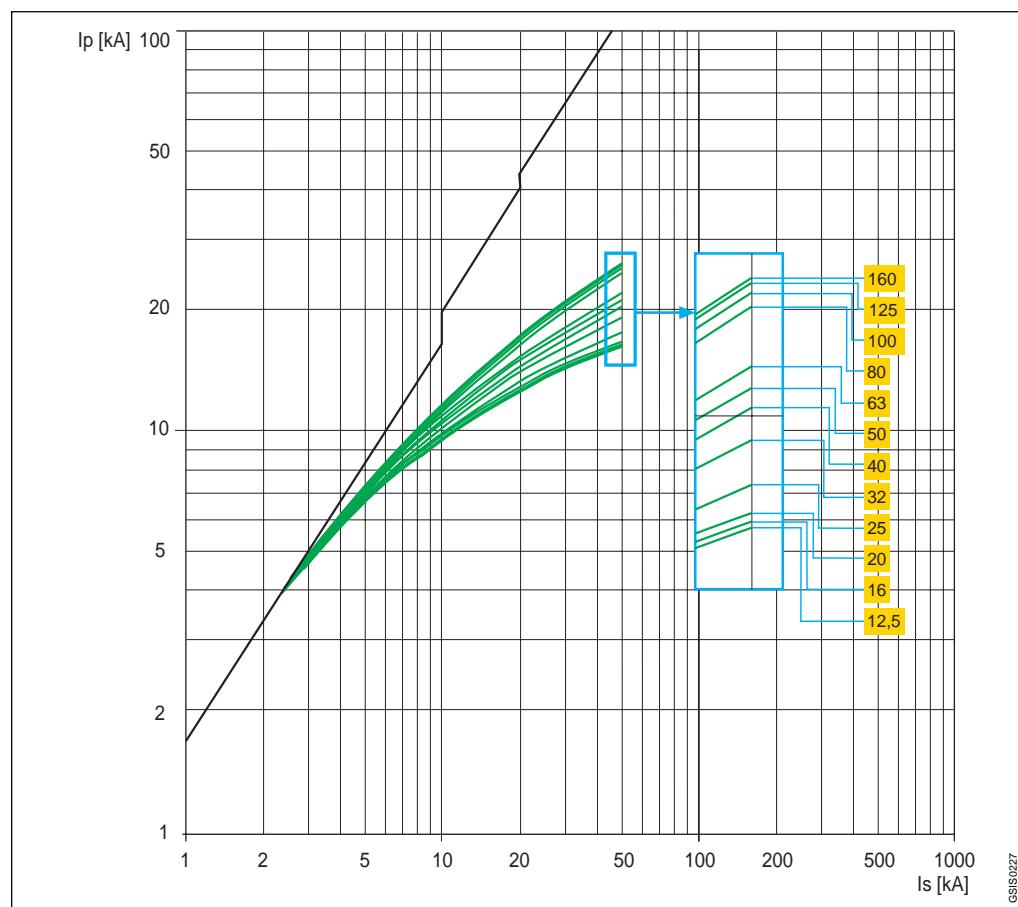
Limitation curves

400-440 V

SACE S1



SACE S2

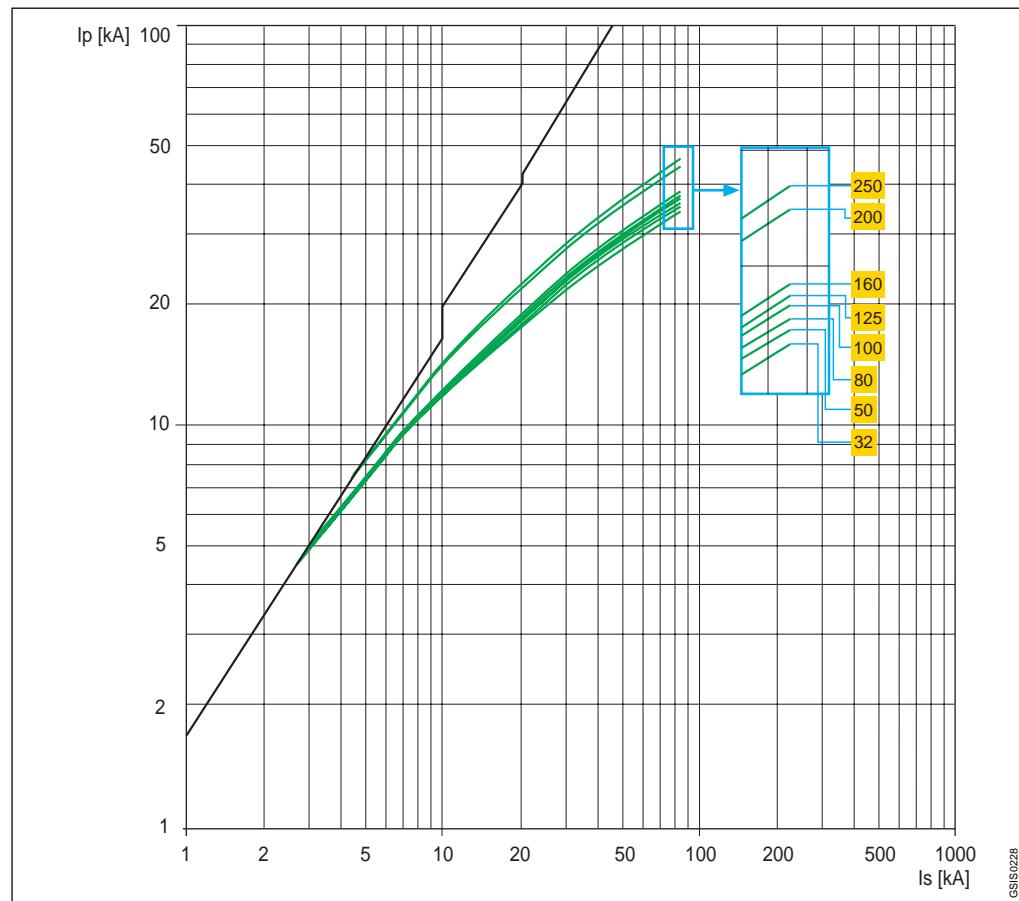




Limitation curves

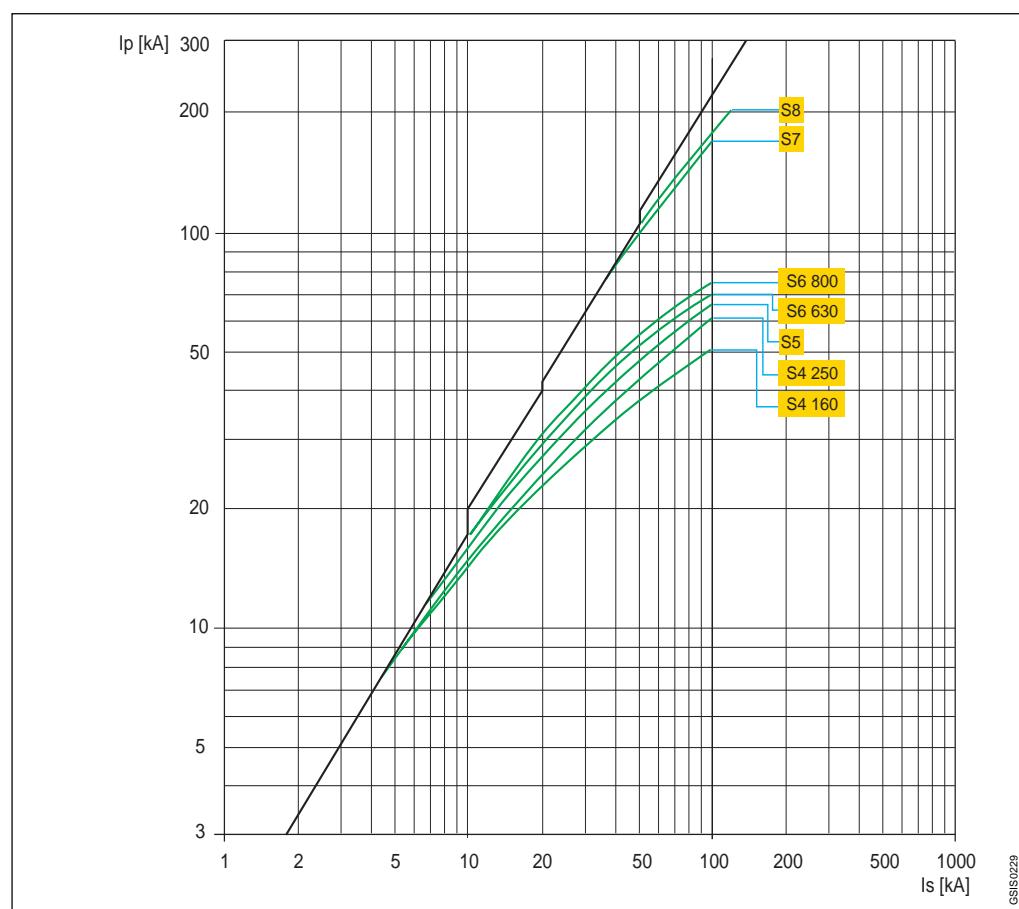
400-440 V

SACE S3 160,
S3 250

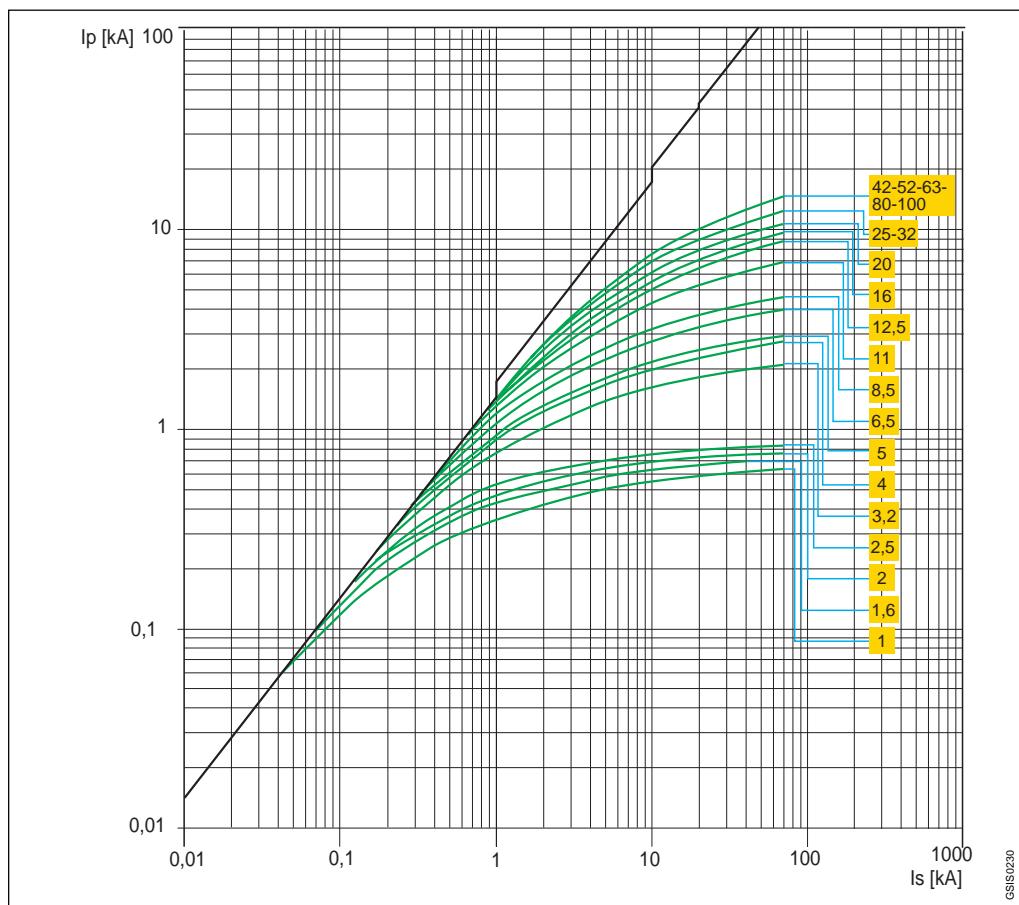


SACE
S4 160, S4 250,
S5, S6 630, S6 800,
S7, S8

5

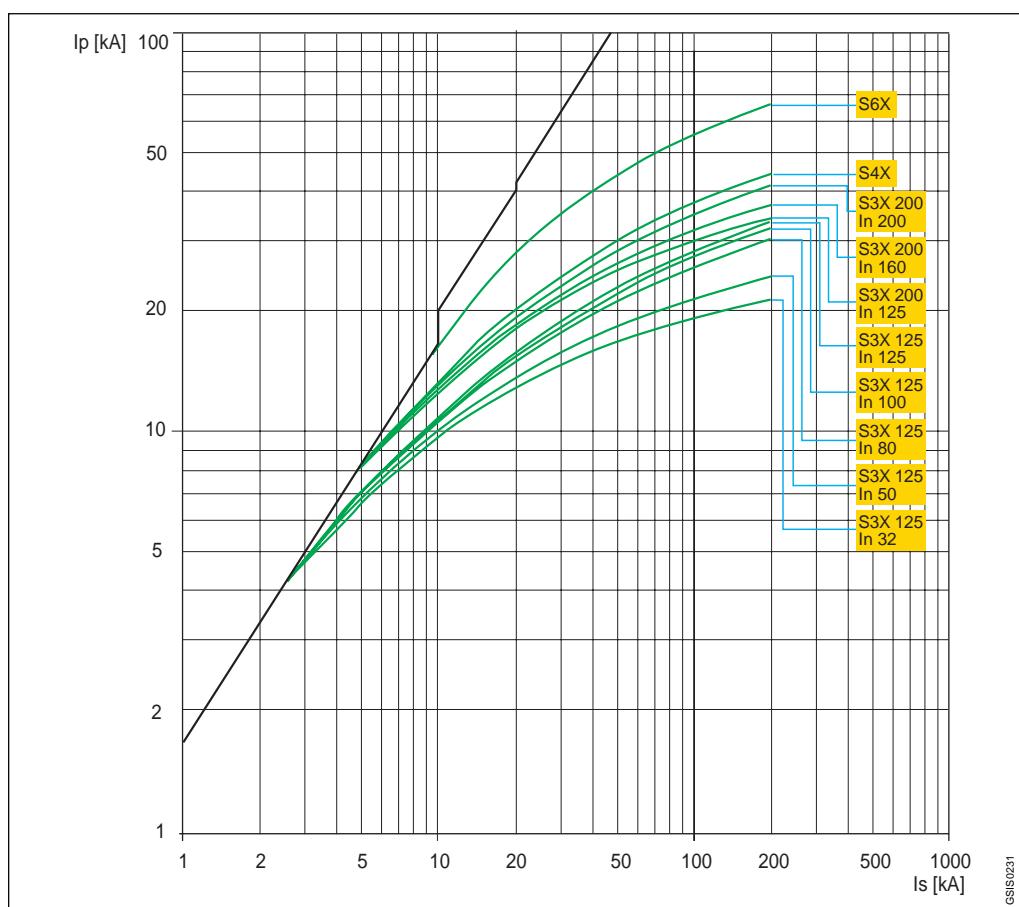


**SACE S2X 80,
S2X 100**



GSIIS0230

**SACE S3X 125,
S3X 200, S4X, S6X**



GSIIS0231

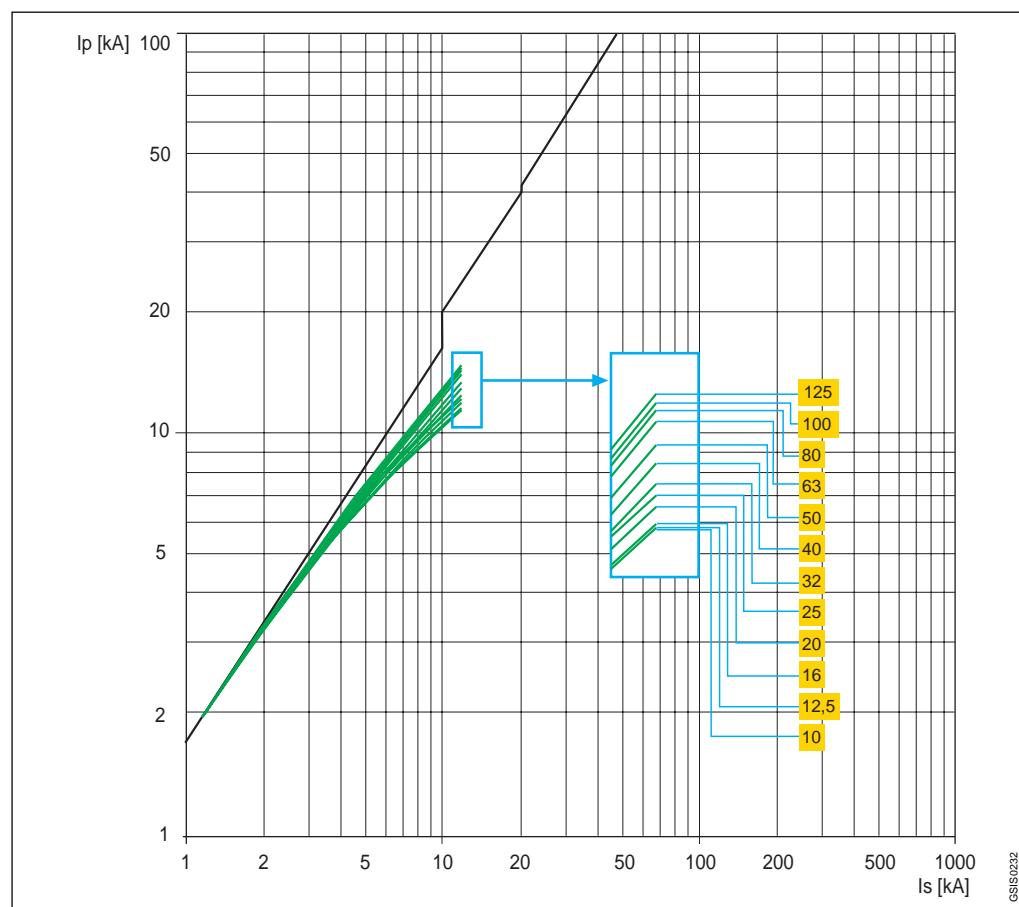
5



Limitation curves

500 V

SACE S1

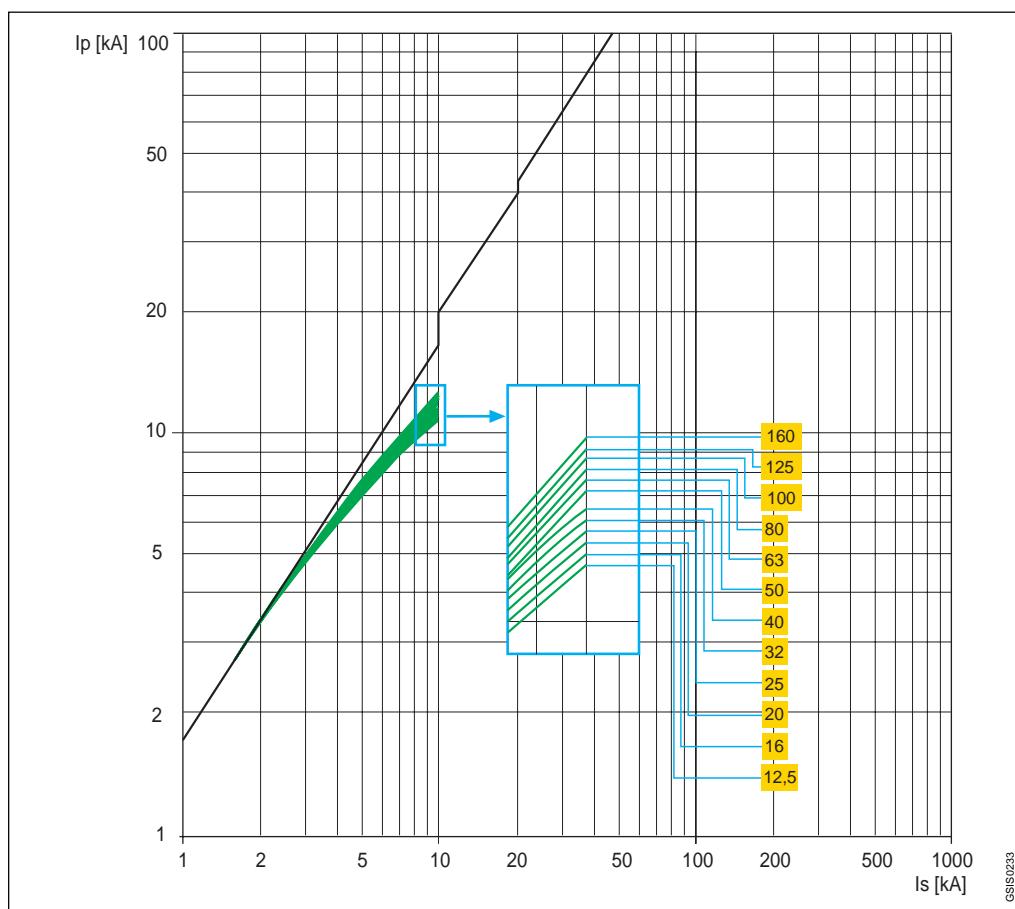




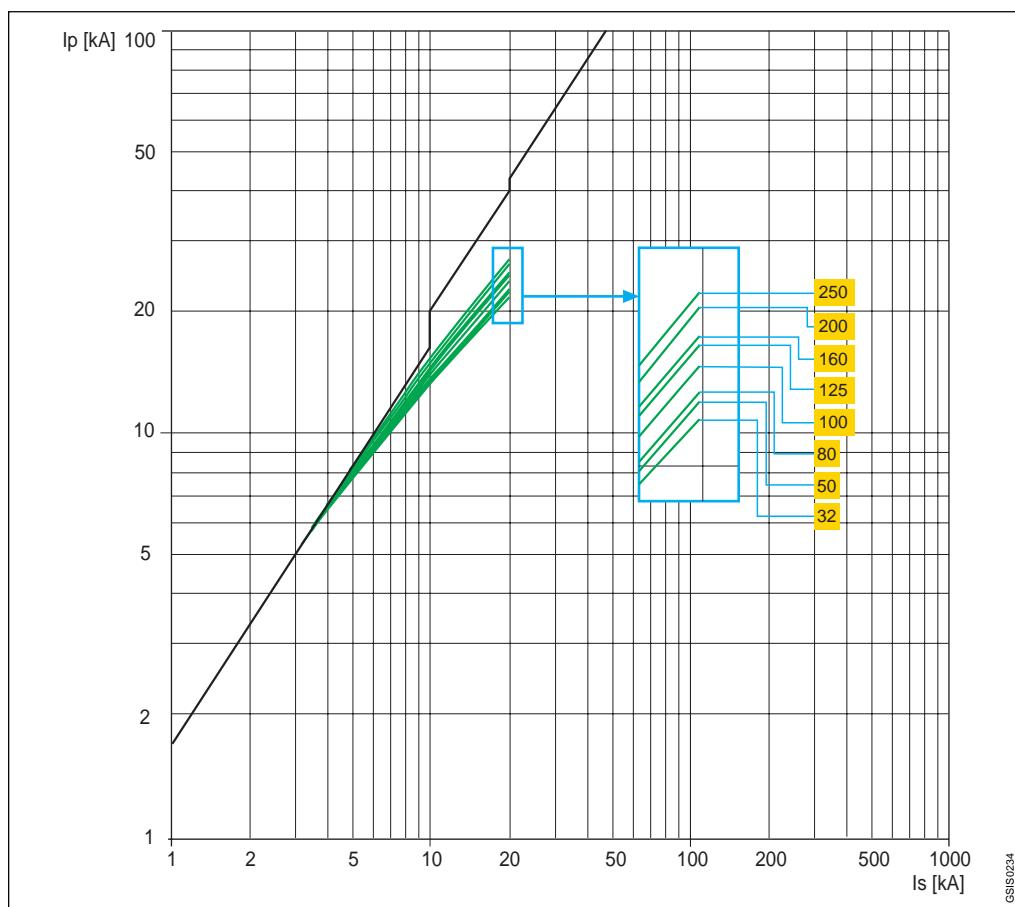
Limitation curves

690 V

SACE S2



SACE S3 160,
S3 250

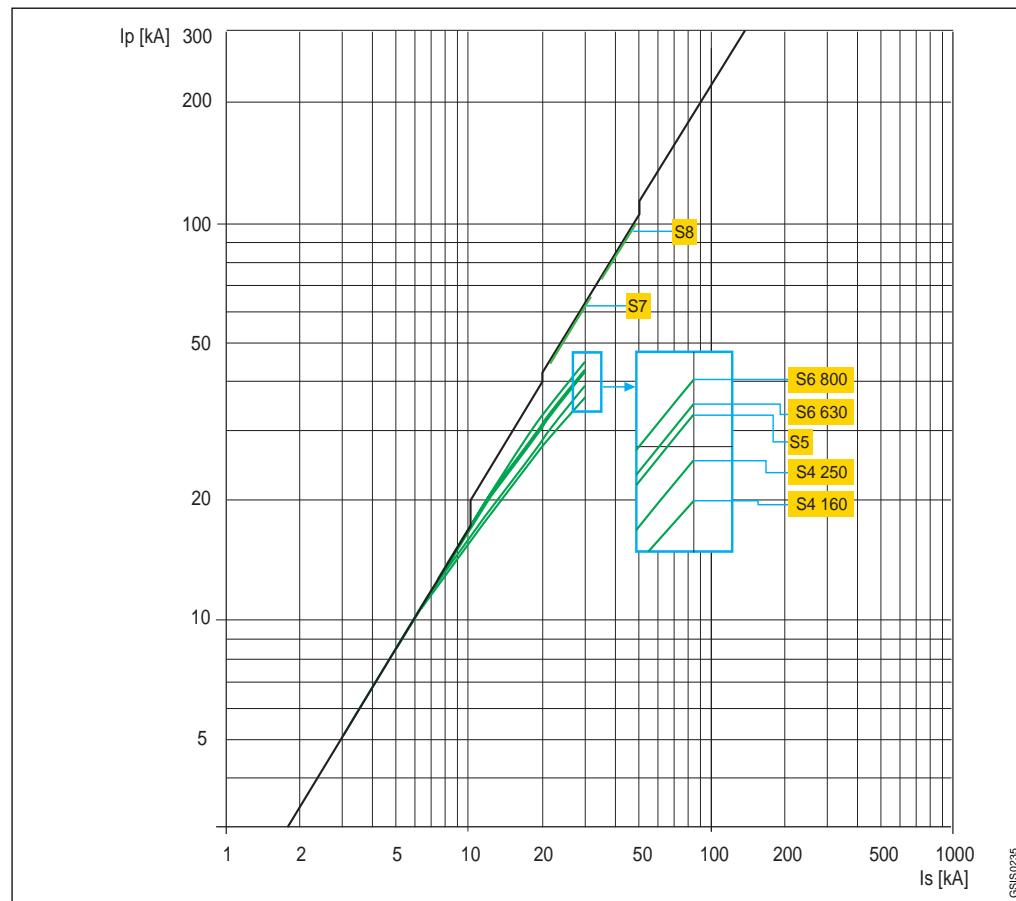




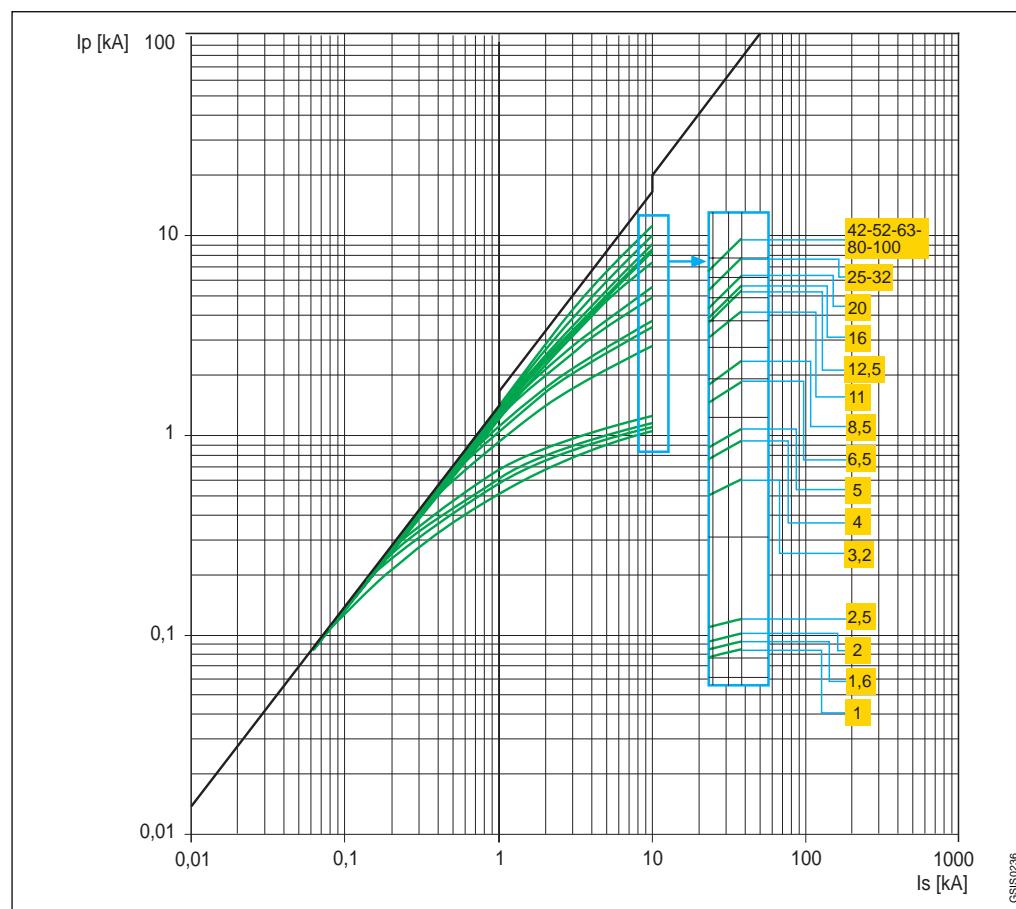
Limitation curves

690 V

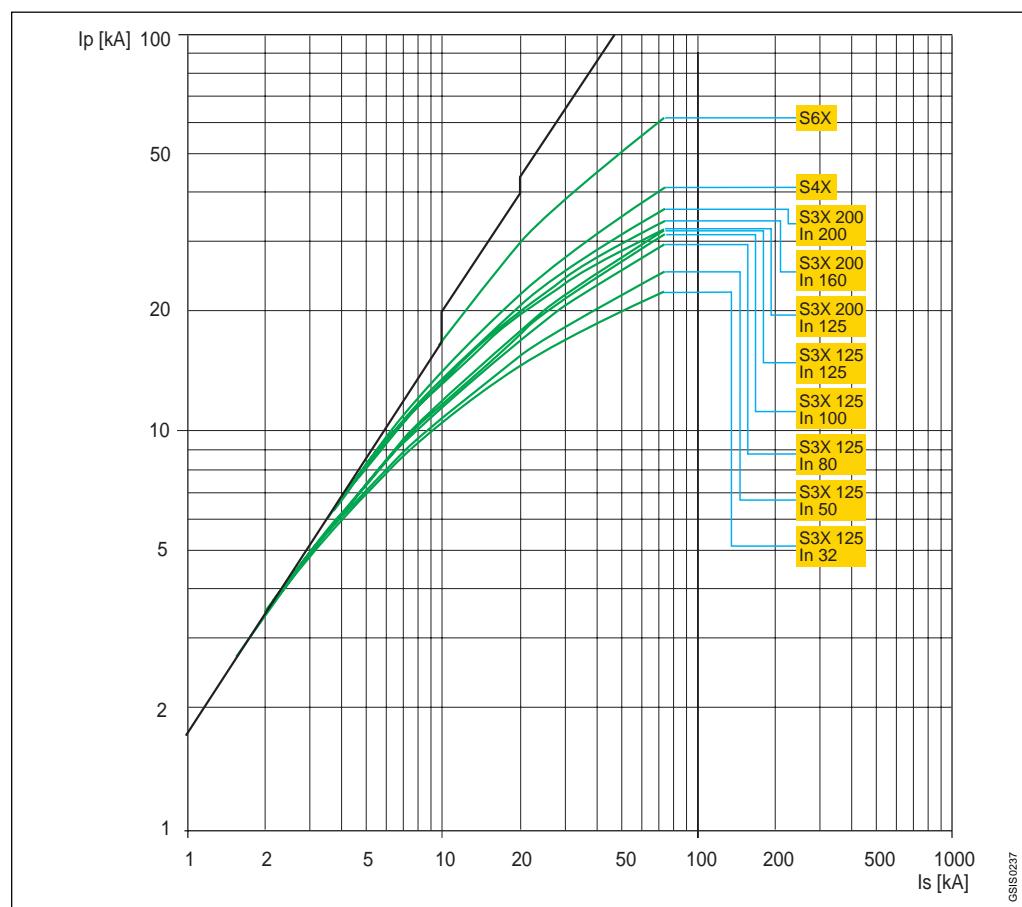
SACE
S4 160, S4 250, S5,
S6 630, S6 800, S7,
S8



SACE S2X 80,
S2X 100



**SACE S3X 125,
S3X 200, S4X, S6X**



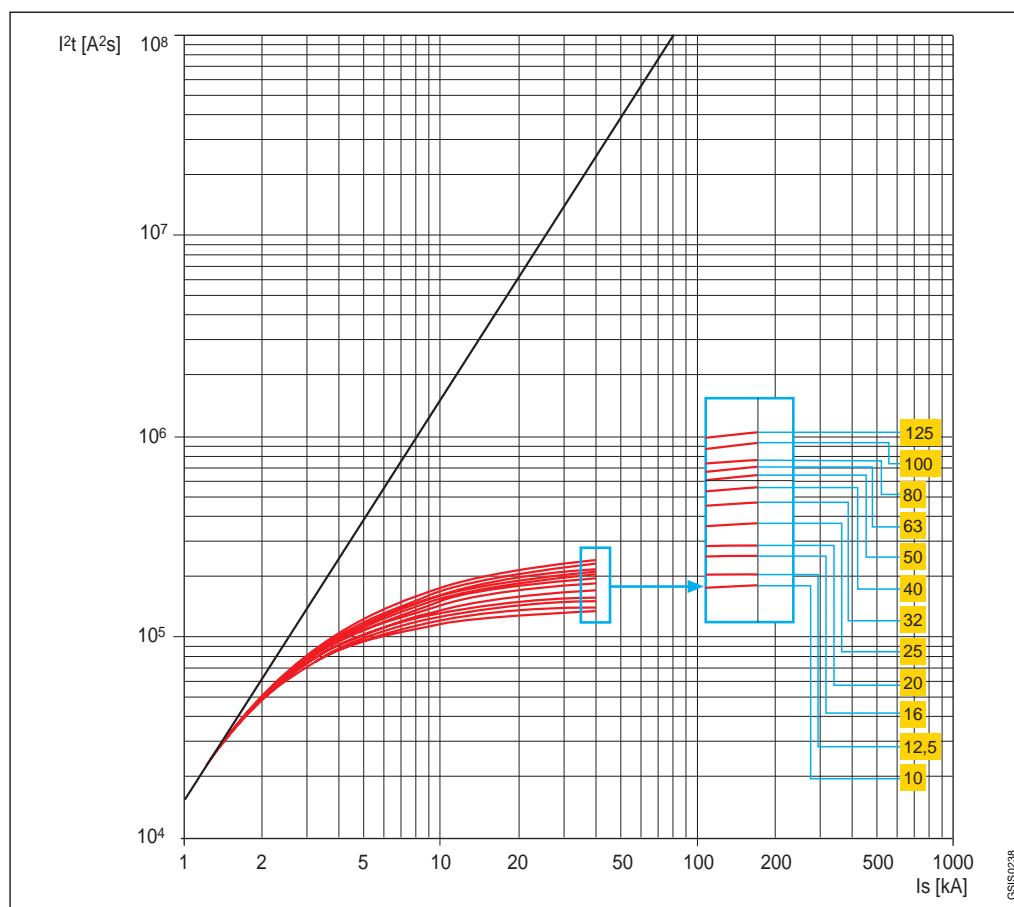
GSI0237



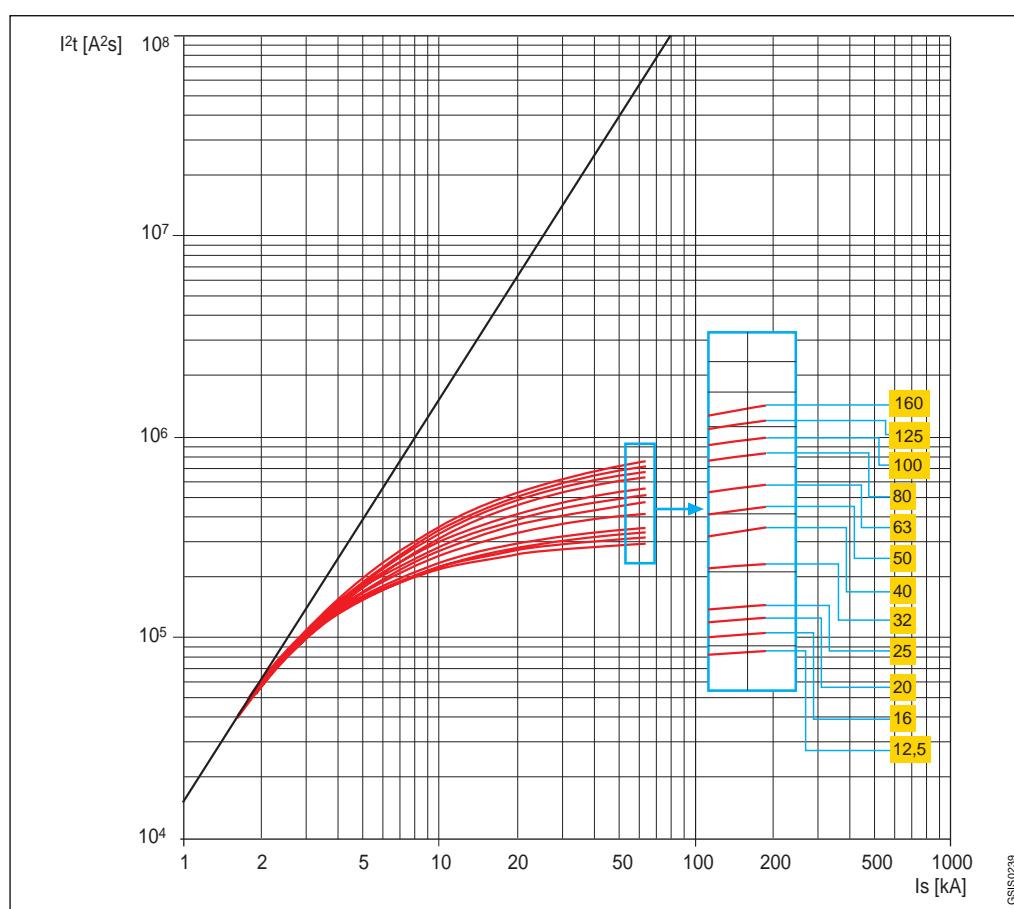
Specific let-through energy curves

230 V

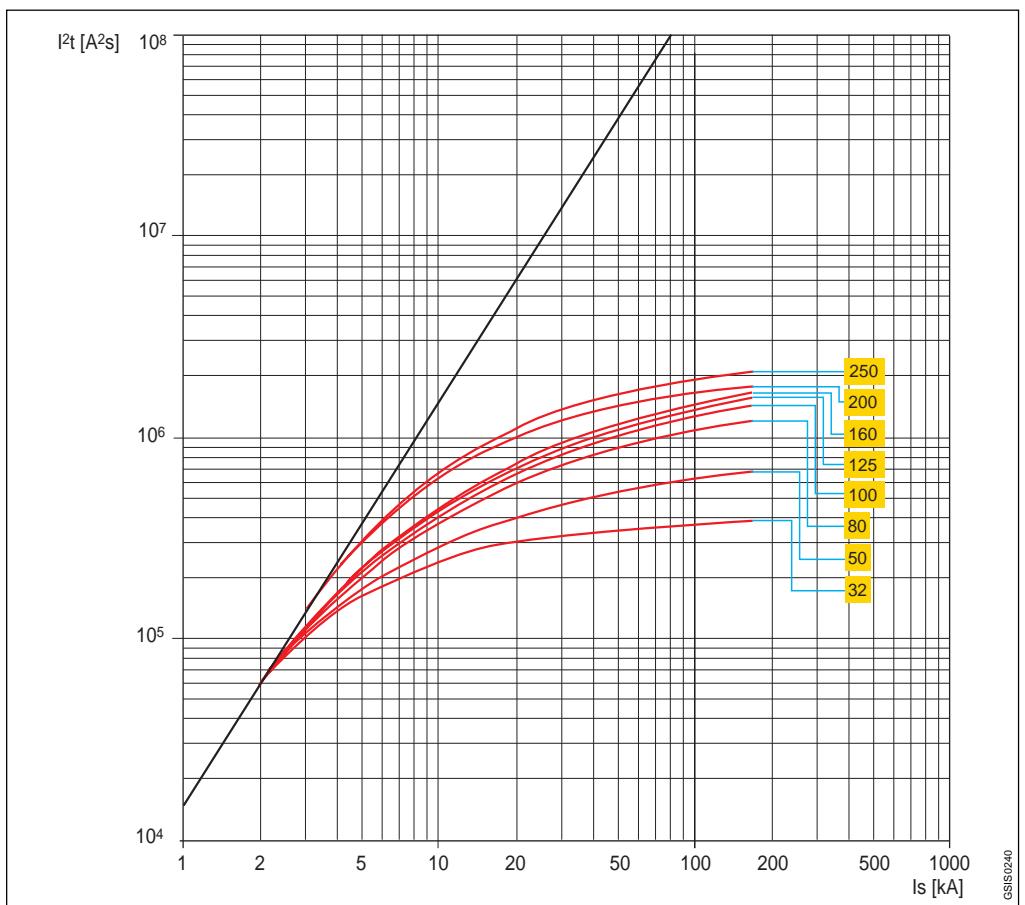
SACE S1



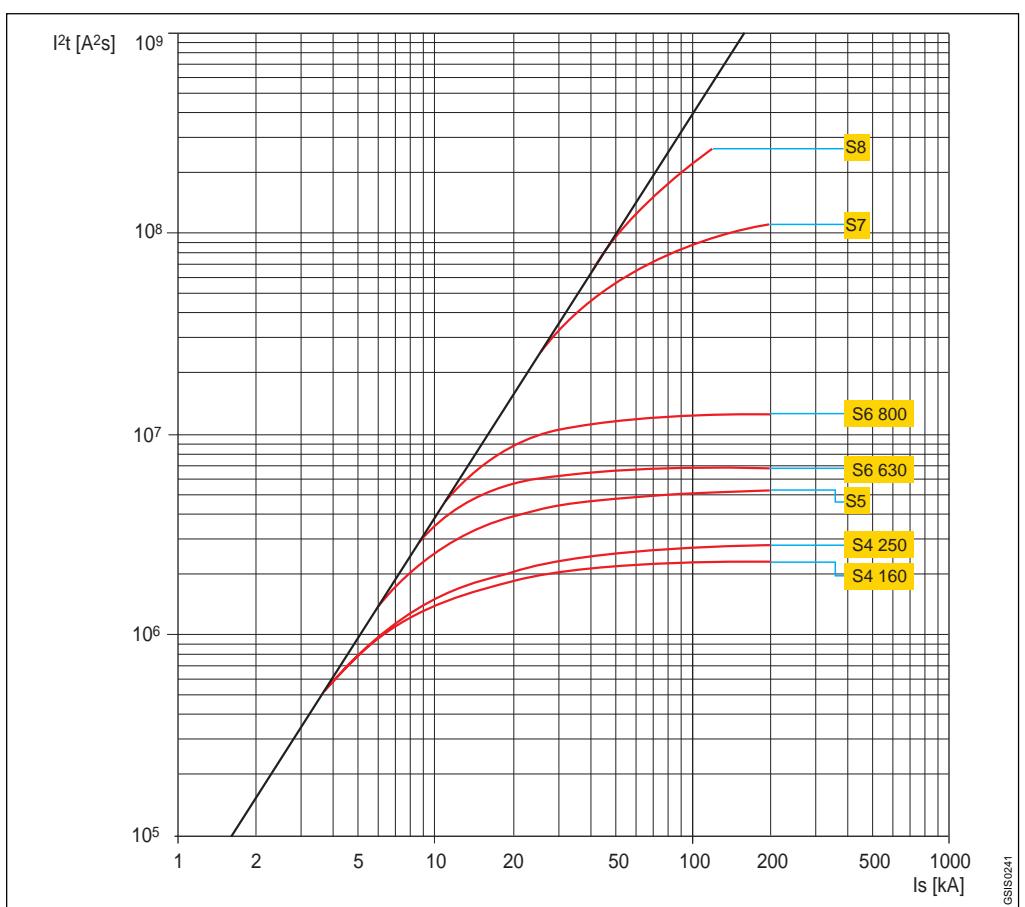
SACE S2



**SACE S3 160,
S3 250**



**SACE S4 160,
S4 250, S5, S6 630,
S6 800, S7, S8**

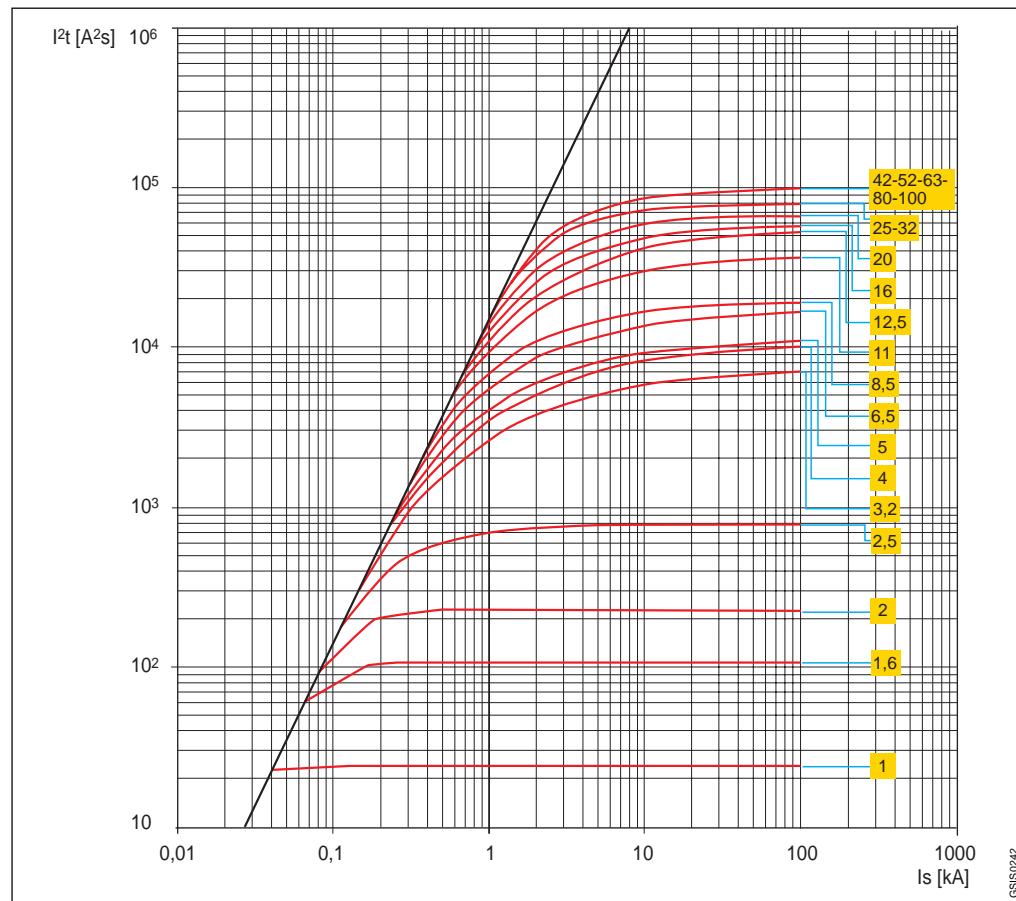




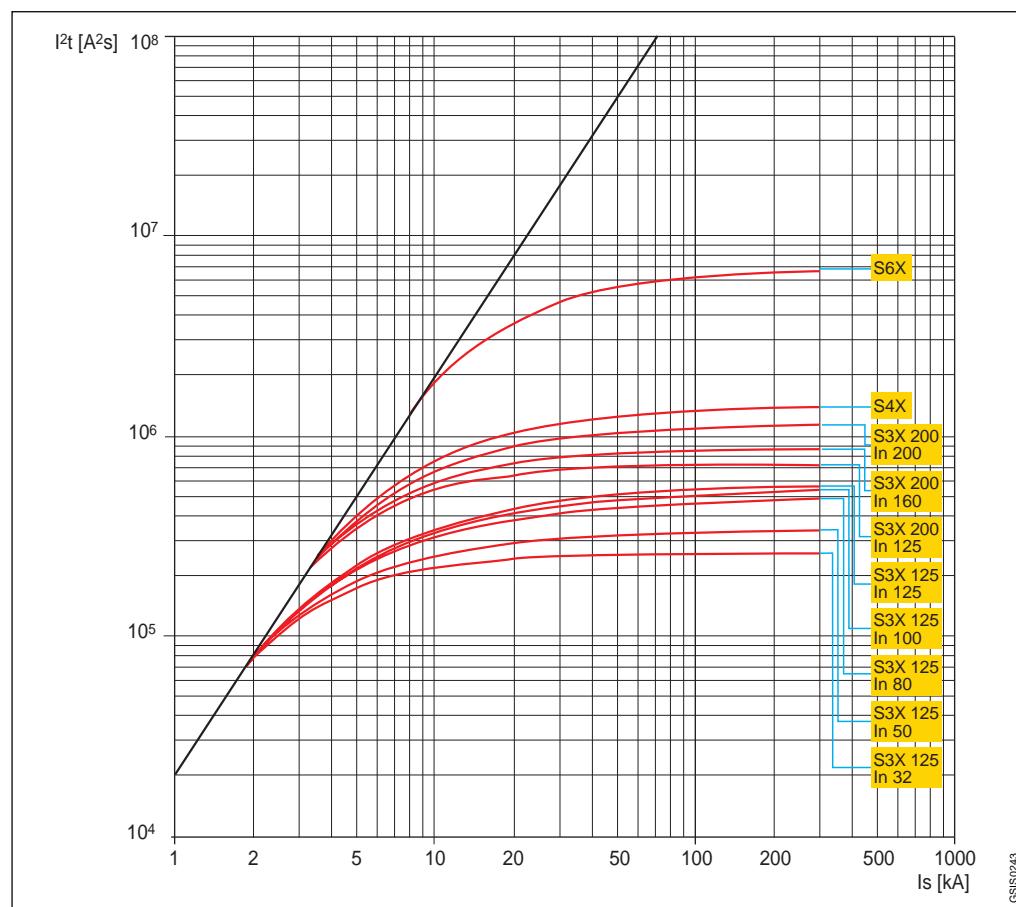
Specific let-through energy curves

230 V

SACE S2X 80,
S2X 100



SACE S3X 125,
S3X 200, S4X, S6X

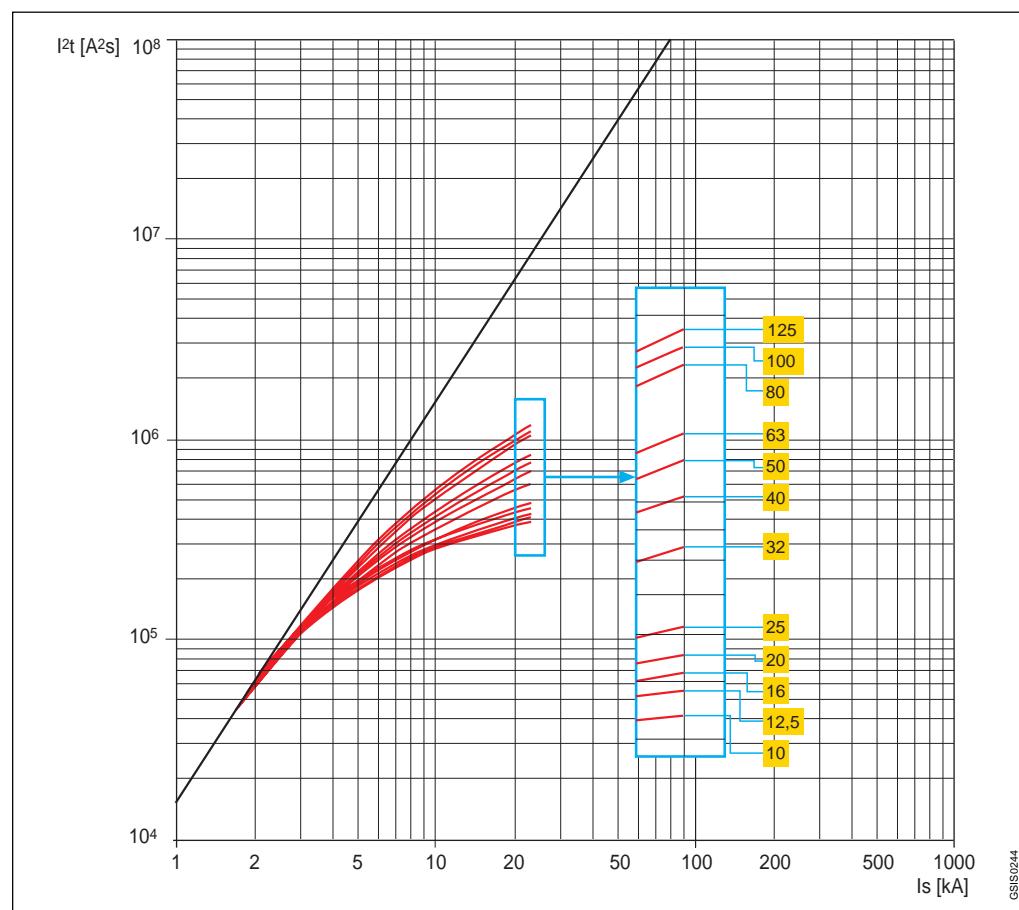




Specific let-through energy curves

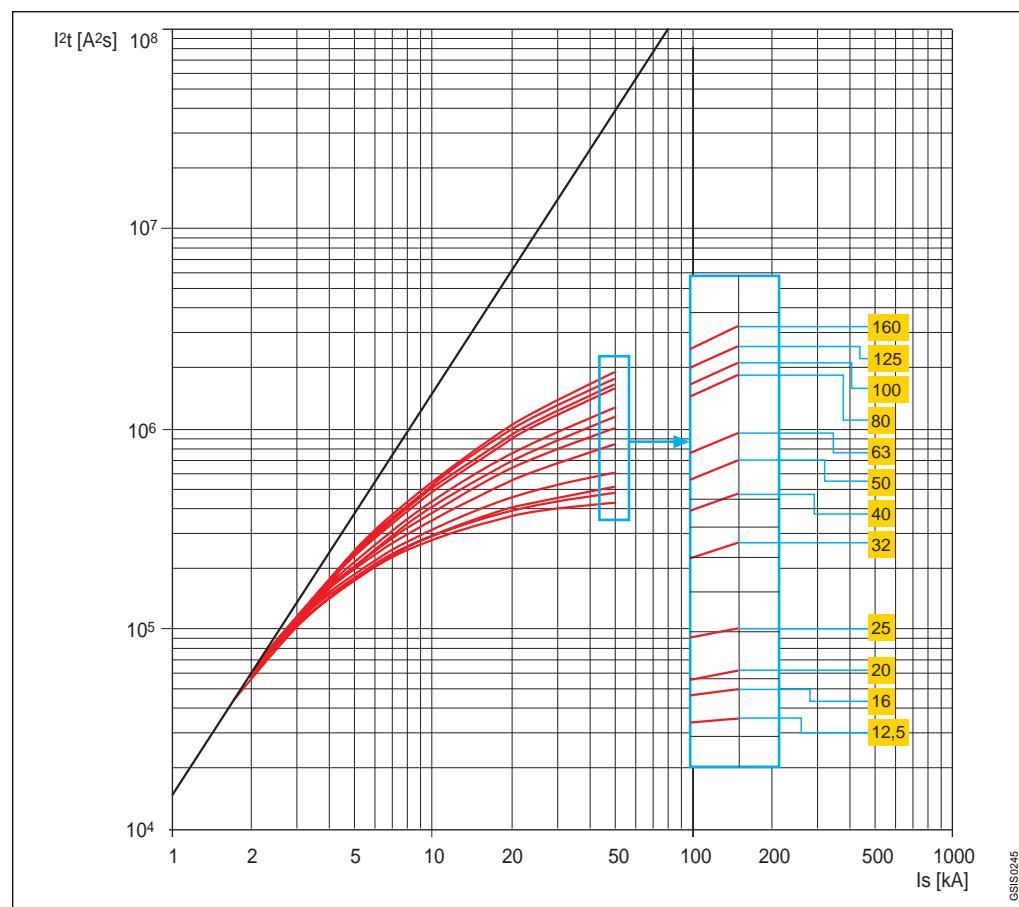
400-440 V

SACE S1



GSIIS0244

SACE S2



GSIIS0245

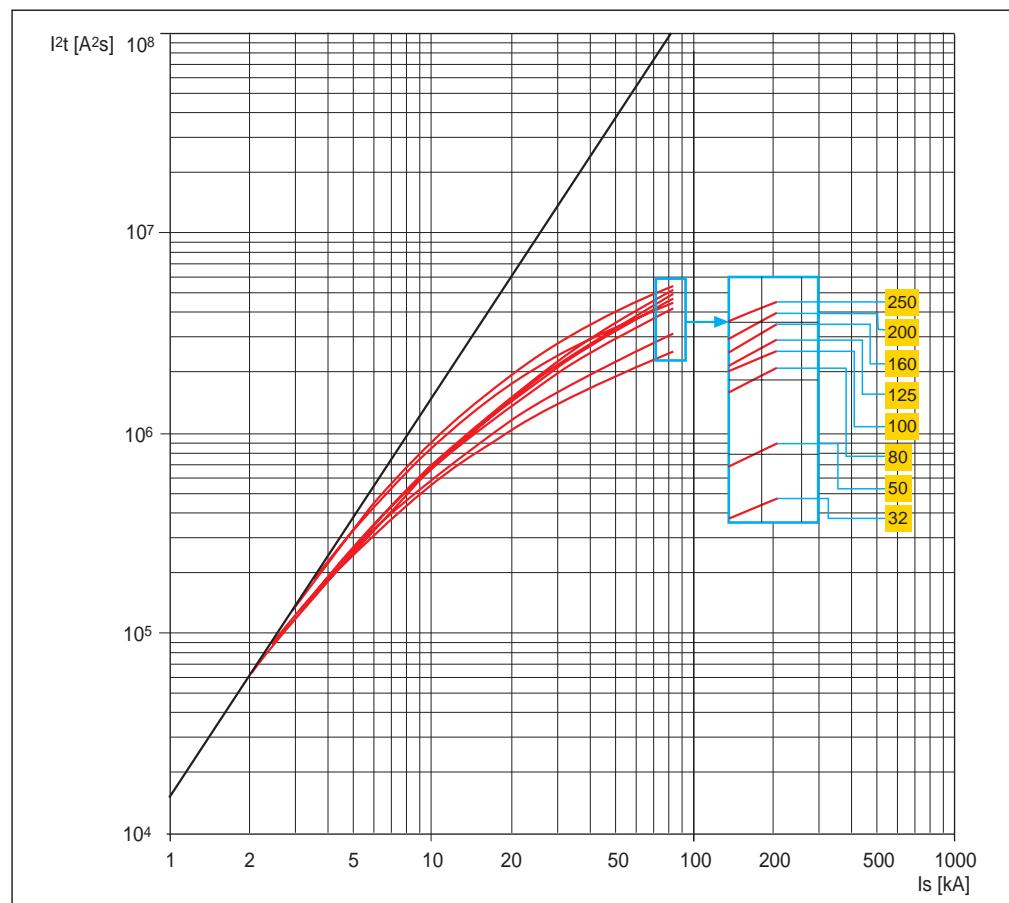
5



Specific let-through energy curves

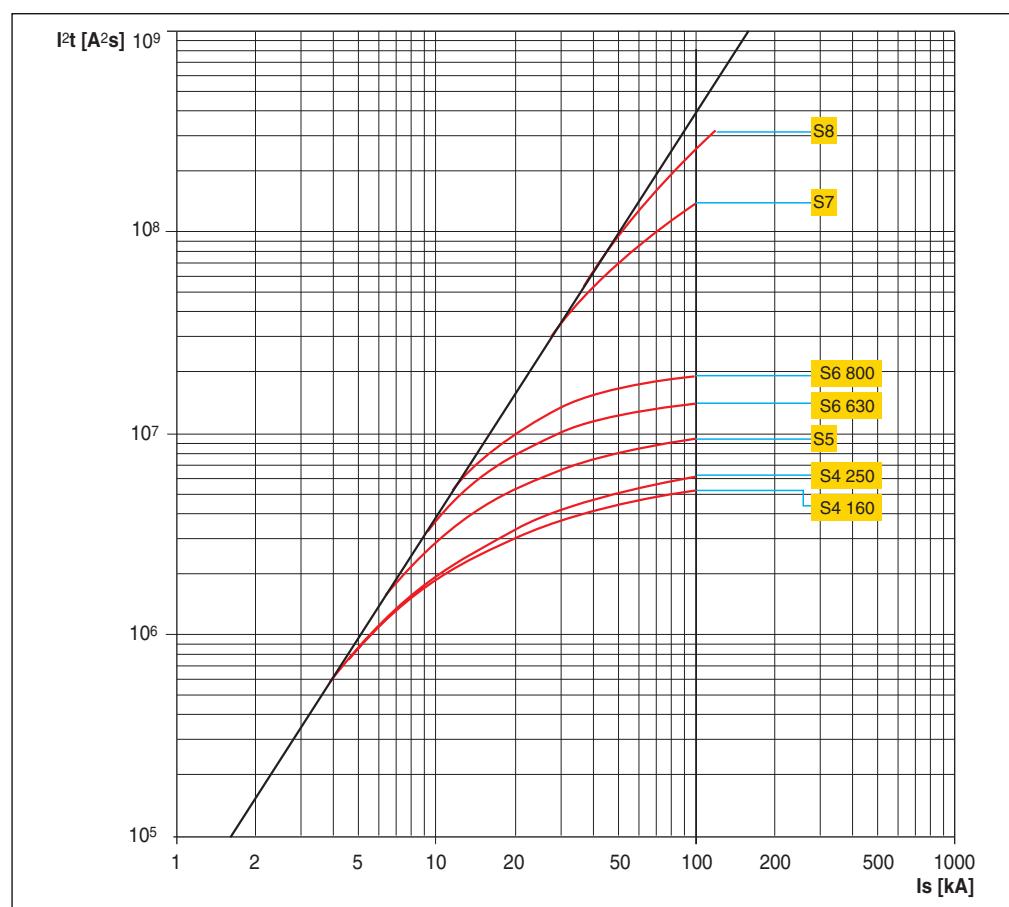
400-440 V

SACE S3 160,
S3 250



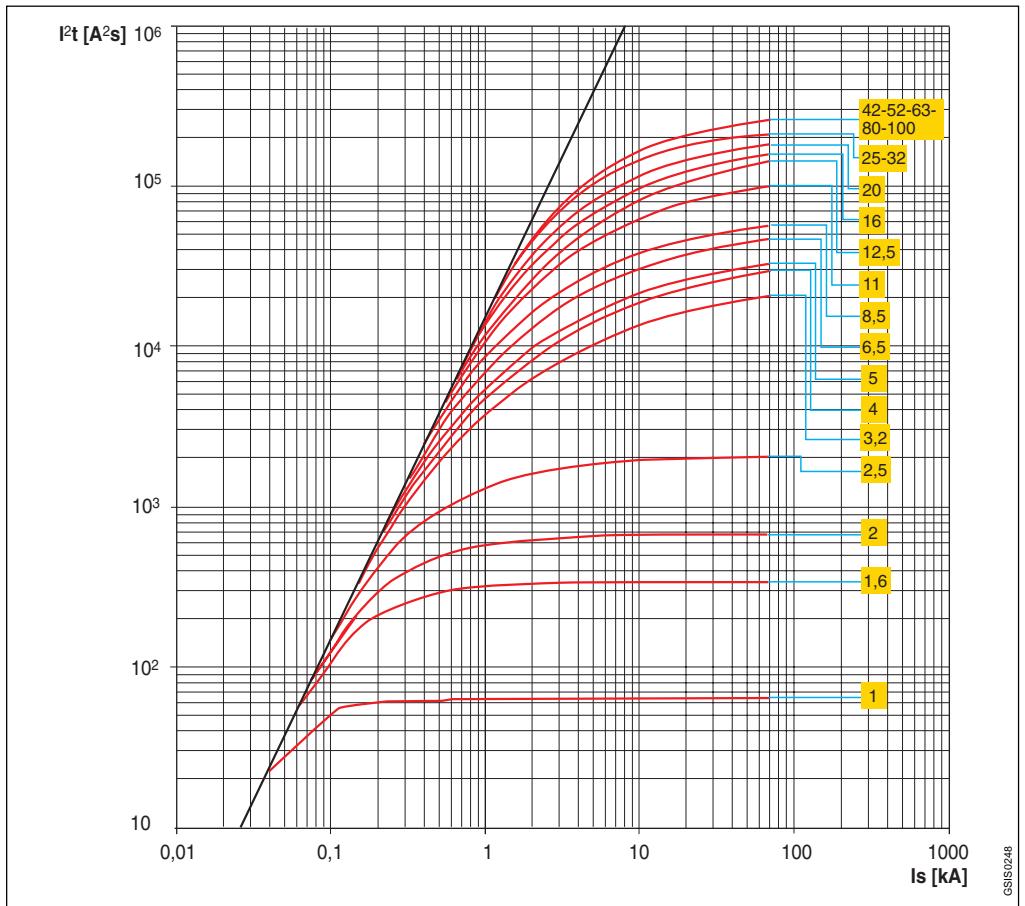
GSIS0246

SACE S4 160,
S4 250, S5, S6 630,
S6 800, S7, S8

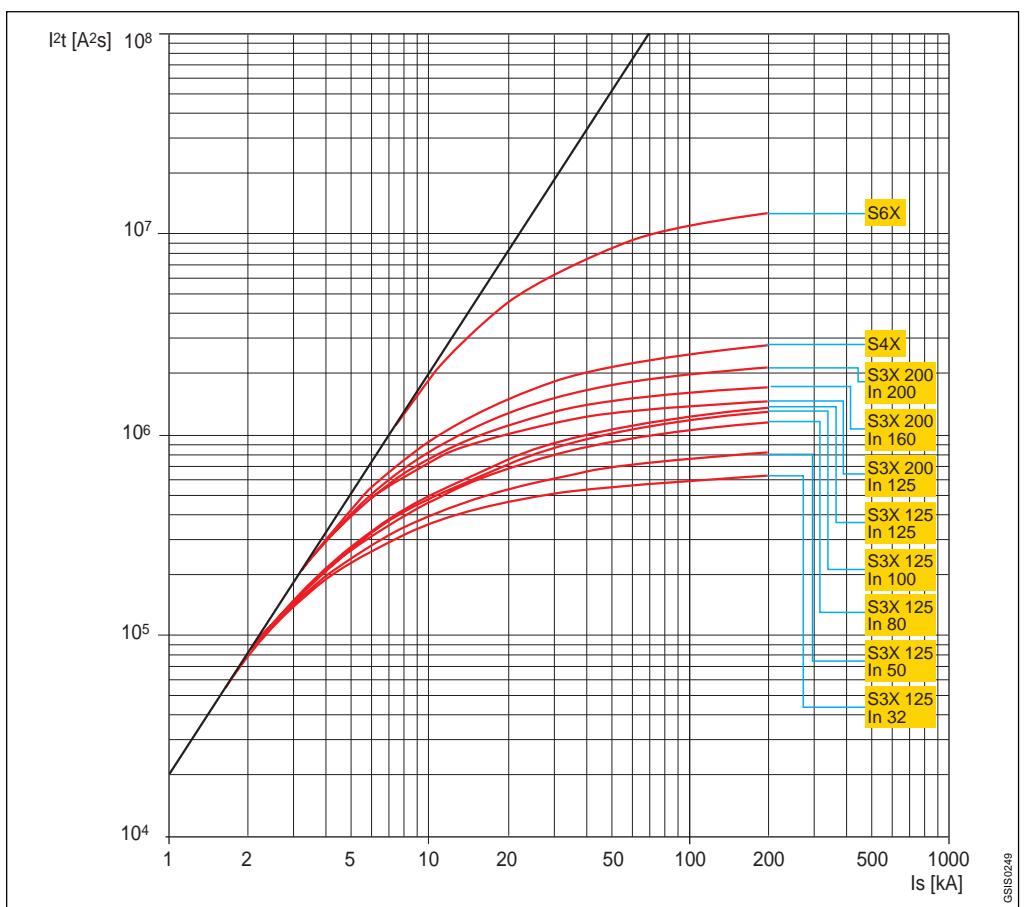


GSIS0247

**SACE S2X 80,
S2X 100**



**SACE S3X 125,
S3X 200, S4X, S6X**

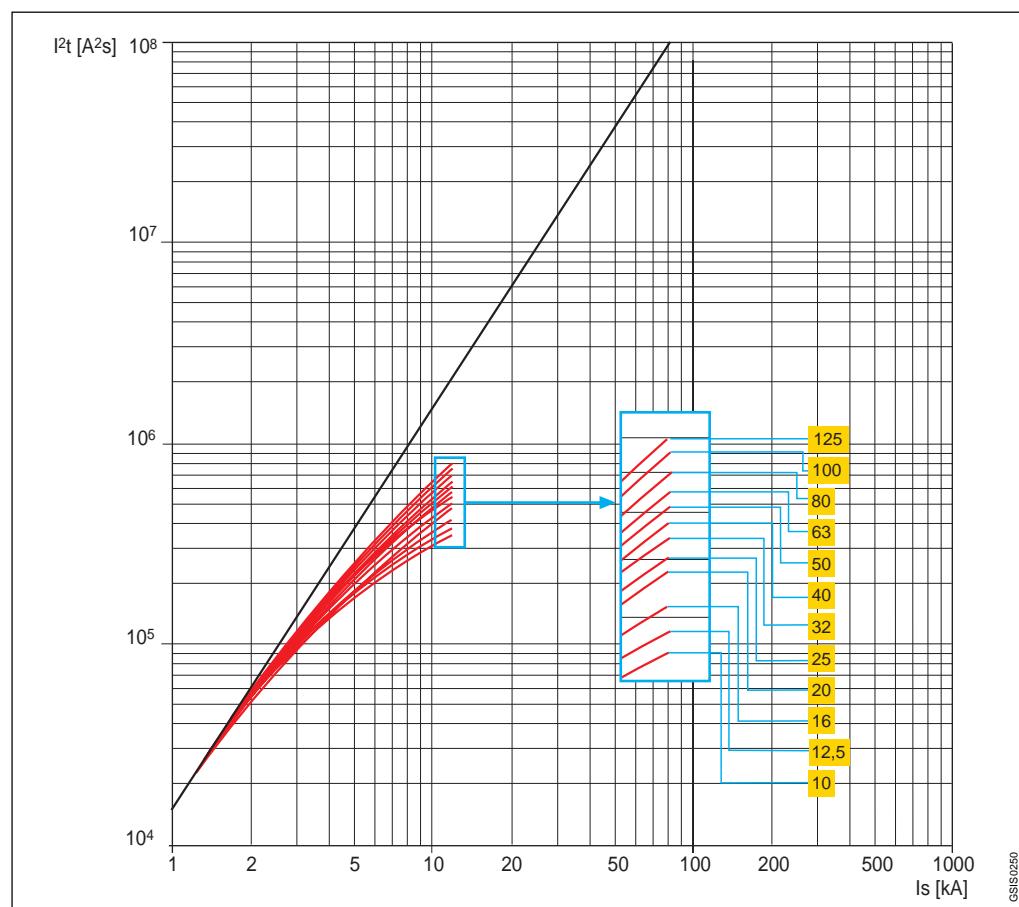




Specific let-through energy curves

500 V

SACE S1

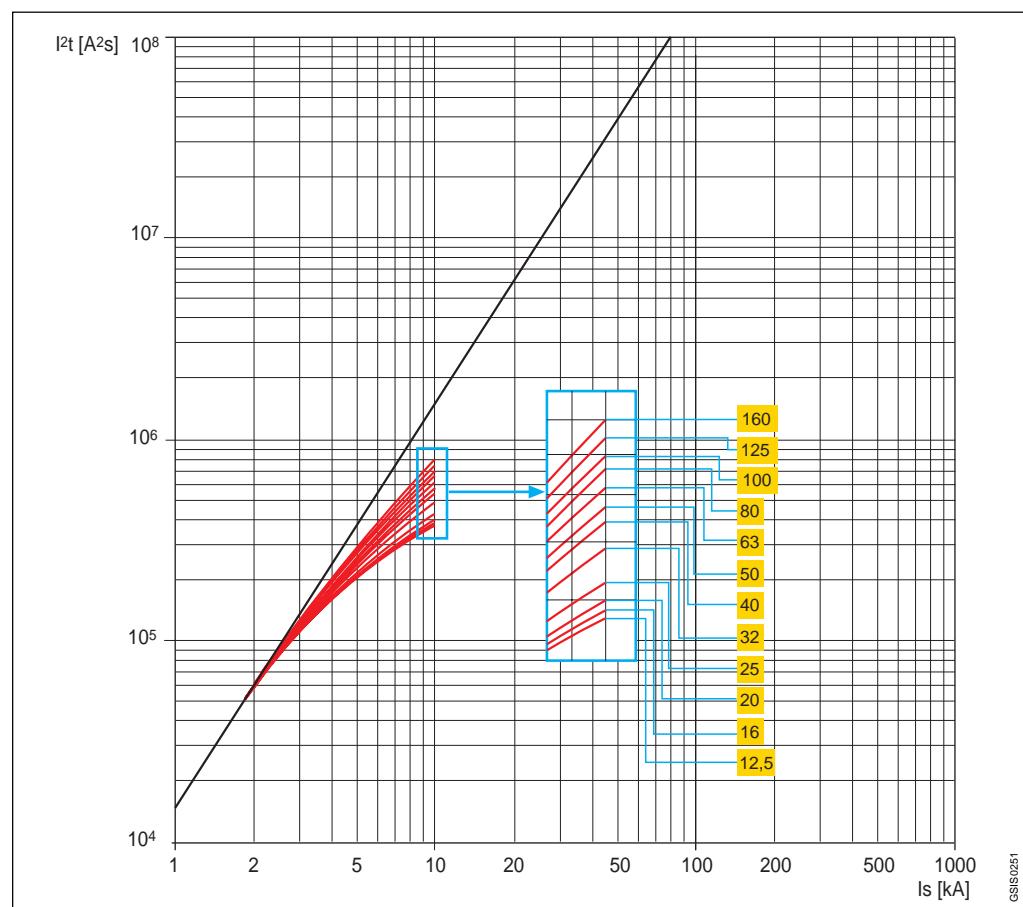




Specific let-through energy curves

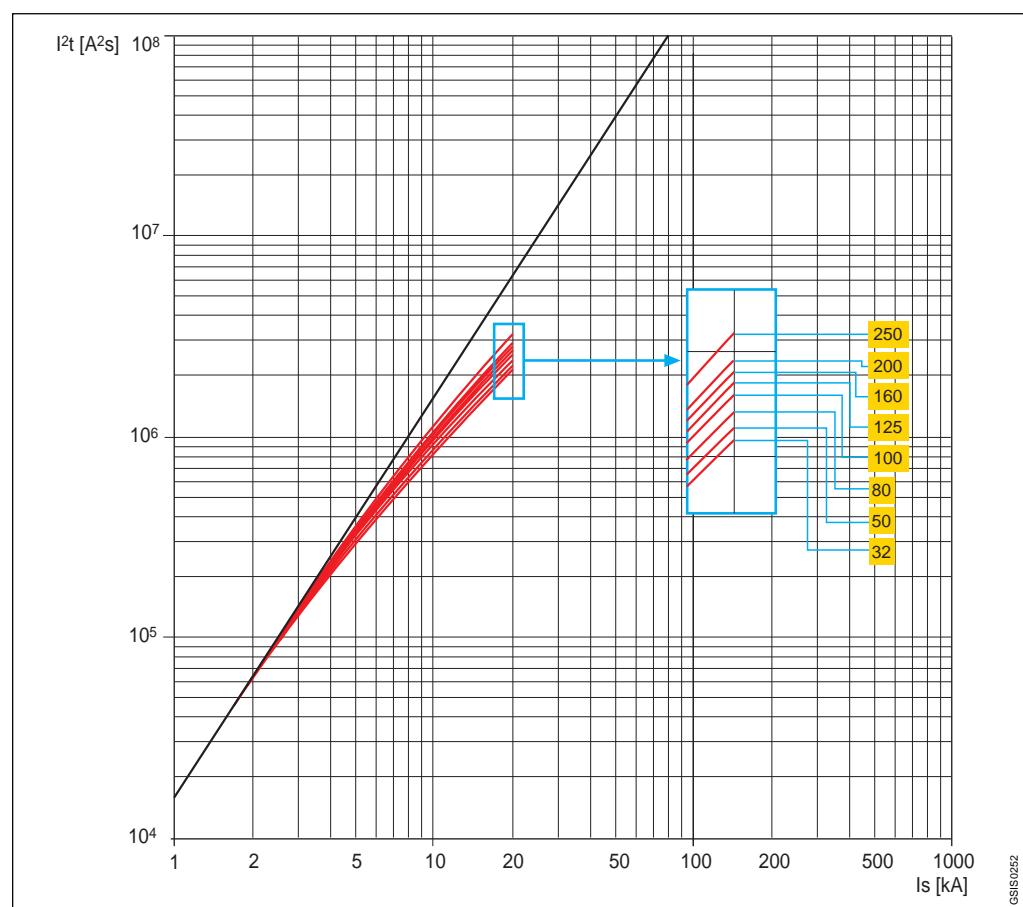
690 V

SACE S2



GSIS0251

SACE S3 160,
S3 250



GSIS0252

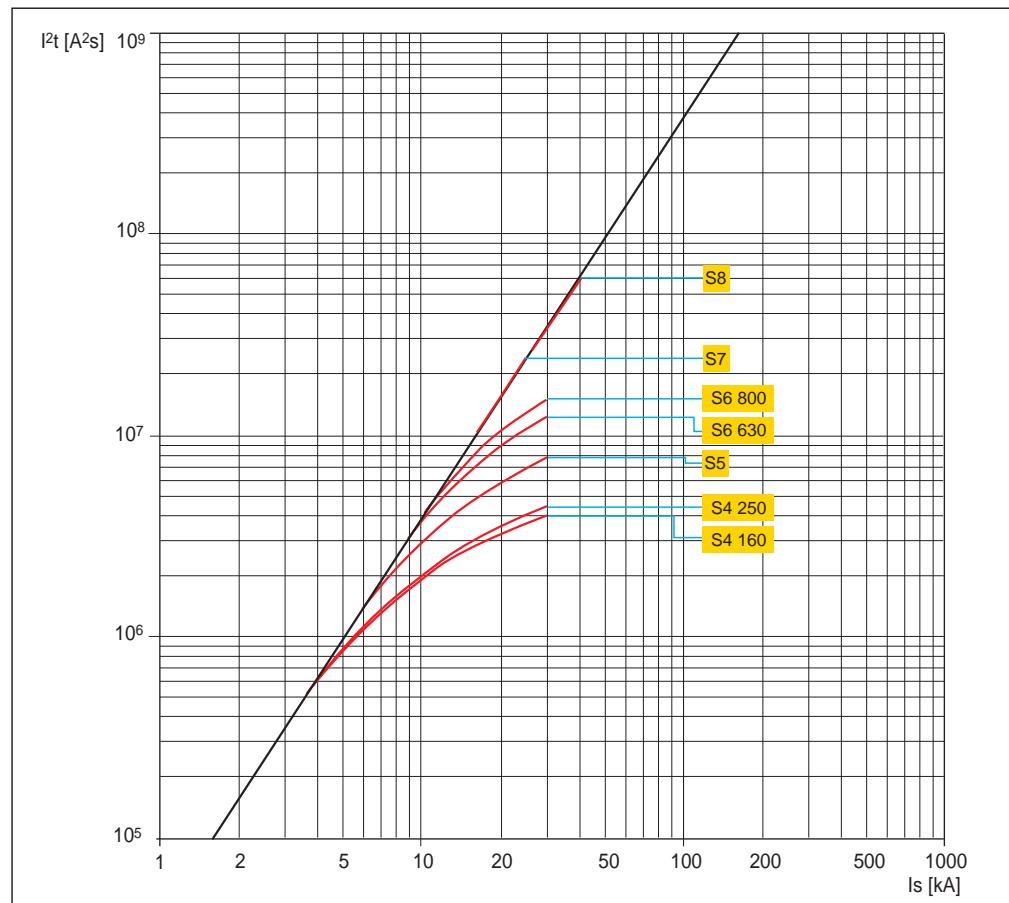
5



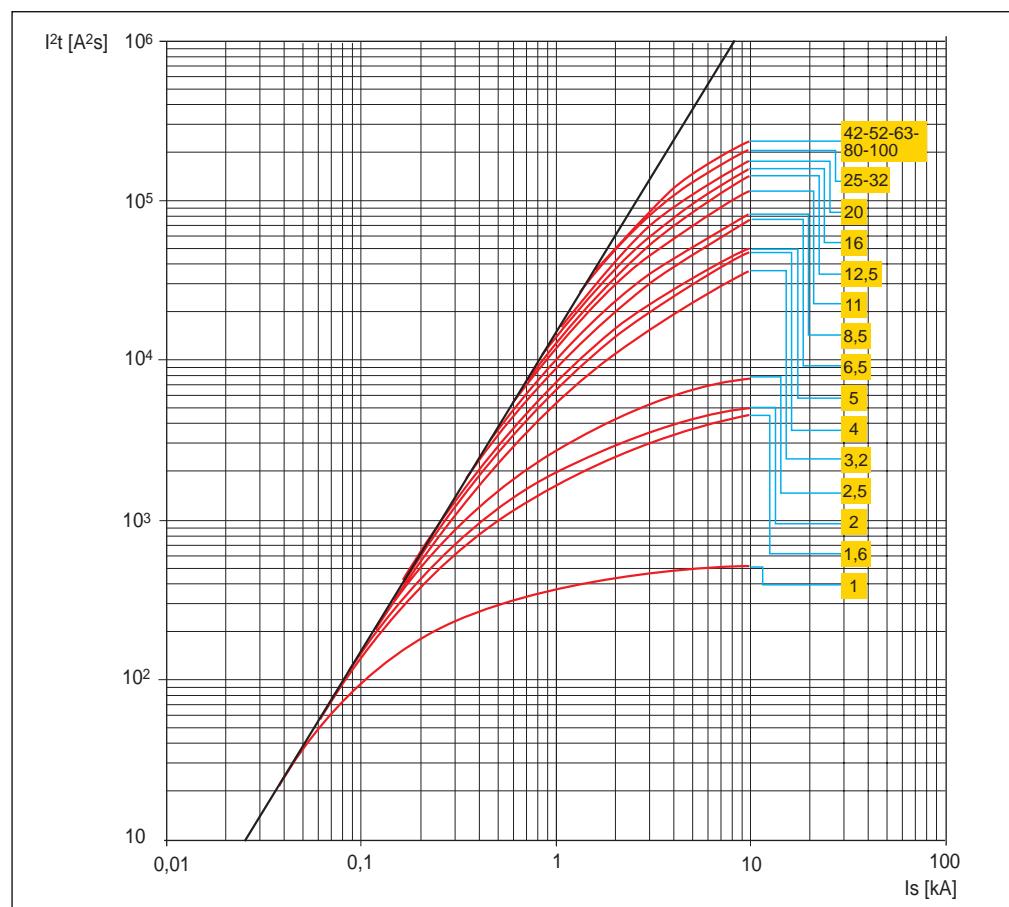
Specific let-through energy curves

690 V

SACE S4 160,
S4 250, S5, S6 630,
S6 800, S7, S8

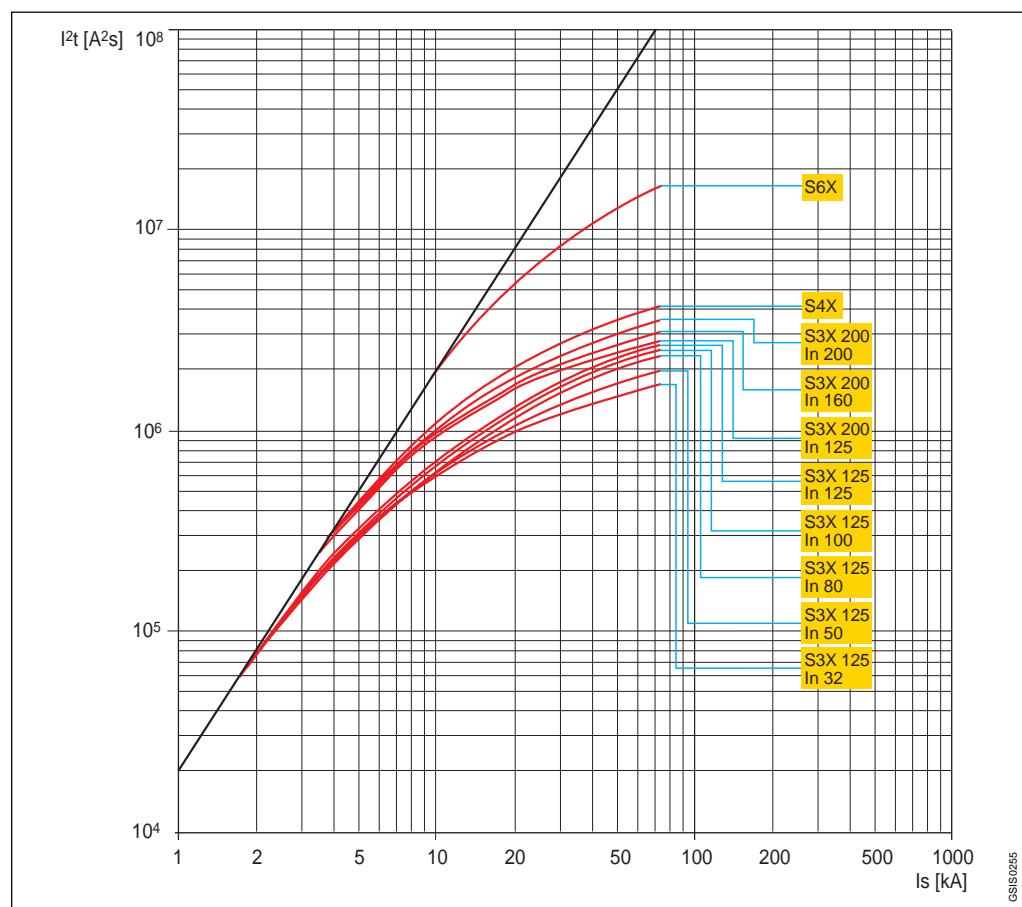


SACE S2X 80,
S2X 100





SACE S3X 125, S3X 200, S4X, S6X





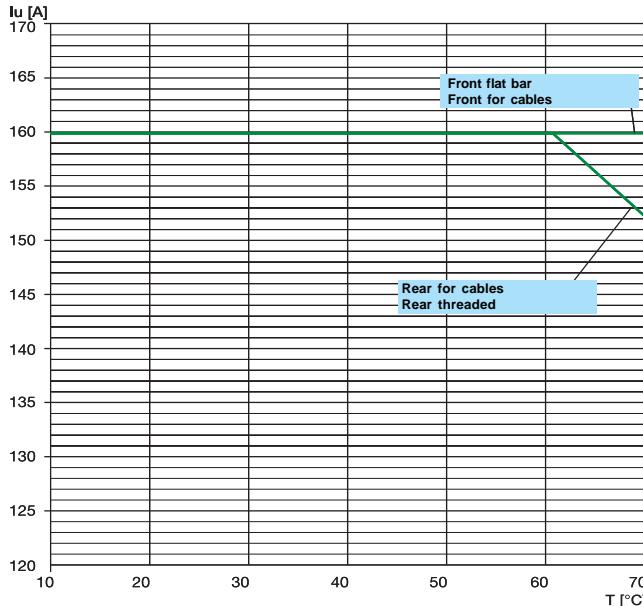
Temperature performance

Circuit-breakers with electronic releases

SACE S4 160

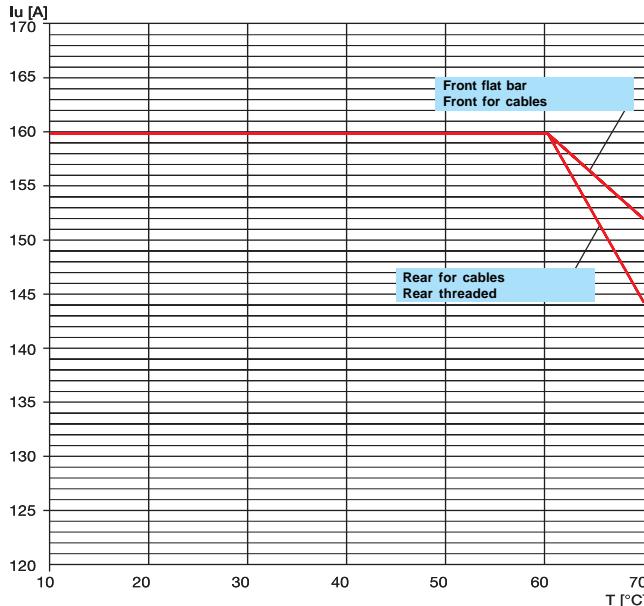
Fixed

	up to 40 °C		50 °C		60 °C		70 °C	
	I_{max} [A]	I_1	$I_{max}$ [A]	$I_1$	$I_{max}$ [A]	$I_1$	$I_{max}$ [A]	$I_1$
Front flat bar	160	1	160	1	160	1	160	1
Front for cables	160	1	160	1	160	1	160	1
Rear for cables	160	1	160	1	160	1	152	0.95
Rear threaded	160	1	160	1	160	1	152	0.95



Plug-in - Withdrawable

	up to 40 °C		50 °C		60 °C		70 °C	
	I_{max} [A]	I_1	$I_{max}$ [A]	$I_1$	$I_{max}$ [A]	$I_1$	$I_{max}$ [A]	$I_1$
Front flat bar	160	1	160	1	160	1	152	0.95
Front for cables	160	1	160	1	160	1	152	0.95
Rear for cables	160	1	160	1	160	1	144	0.9
Rear threaded	160	1	160	1	160	1	144	0.9

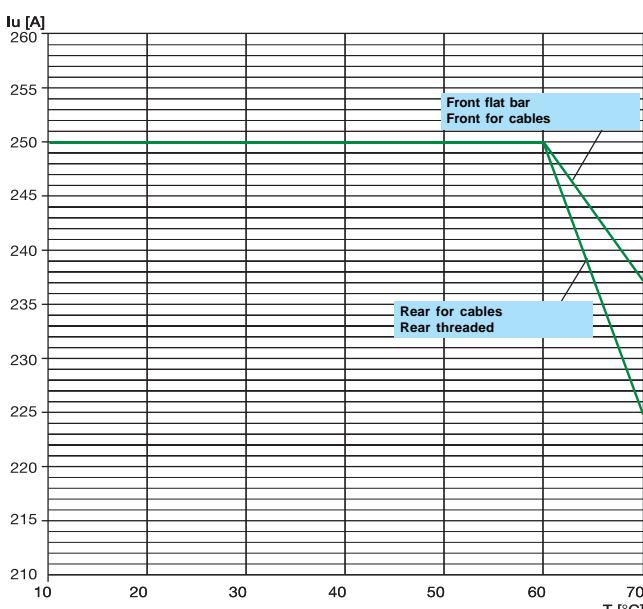


GSIS0256

SACE S4 250

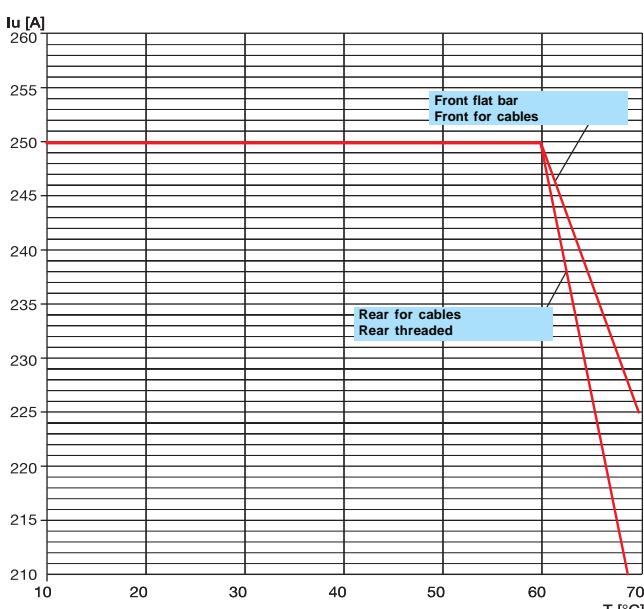
Fixed

	up to 40 °C		50 °C		60 °C		70 °C	
	I_{max} [A]	I_1	$I_{max}$ [A]	$I_1$	$I_{max}$ [A]	$I_1$	$I_{max}$ [A]	$I_1$
Front flat bar	250	1	250	1	250	1	237.5	0.95
Front for cables	250	1	250	1	250	1	237.5	0.95
Rear for cables	250	1	250	1	250	1	225	0.9
Rear threaded	250	1	250	1	250	1	225	0.9



Plug-in - Withdrawable

	up to 40 °C		50 °C		60 °C		70 °C	
	I_{max} [A]	I_1	$I_{max}$ [A]	$I_1$	$I_{max}$ [A]	$I_1$	$I_{max}$ [A]	$I_1$
Front flat bar	250	1	250	1	250	1	225	0.9
Front for cables	250	1	250	1	250	1	225	0.9
Rear for cables	250	1	250	1	250	1	200	0.8
Rear threaded	250	1	250	1	250	1	200	0.8

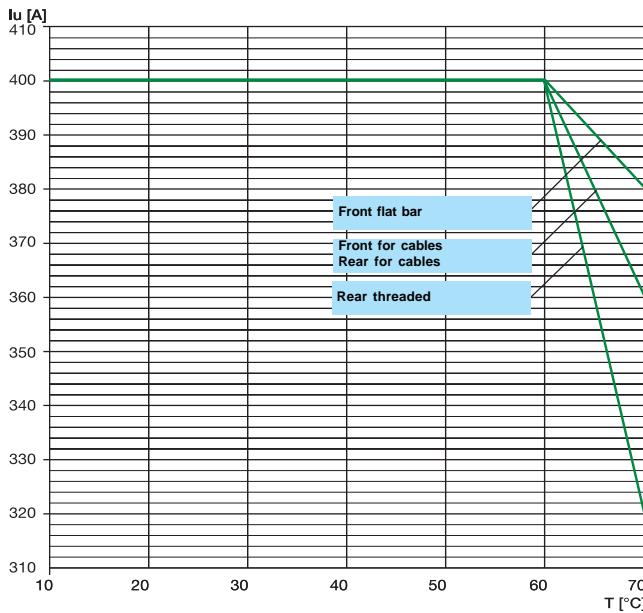


GSIS0257

SACE S5 400

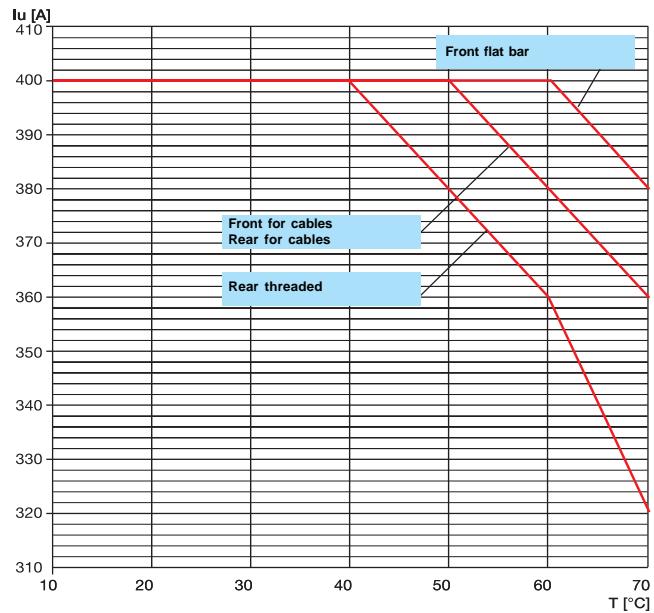
Fixed

	up to 40 °C		50 °C		60 °C		70 °C	
	I _{max} [A]	I ₁	I_{max} [A]	I_{1}	I_{max} [A]	I_{1}	I_{max} [A]	I_{1}
Front flat bar	400	1	400	1	400	1	380	0.95
Front for cables	400	1	400	1	400	1	380	0.9
Rear for cables	400	1	400	1	400	1	360	0.9
Rearthreaded	400	1	400	1	400	1	320	0.8



Plug-in - Withdrawable

	up to 40 °C		50 °C		60 °C		70 °C	
	I _{max} [A]	I ₁	I_{max} [A]	I_{1}	I_{max} [A]	I_{1}	I_{max} [A]	I_{1}
Front flat bar	400	1	400	1	400	1	380	0.95
Front for cables	400	1	400	1	380	0.95	360	0.9
Rear for cables	400	1	400	1	380	0.95	360	0.9
Rearthreaded	400	1	380	0.95	360	0.9	320	0.8

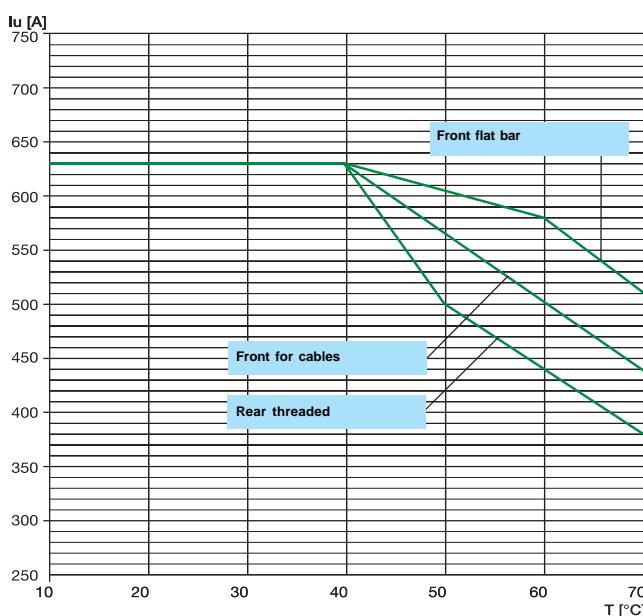


GSIS0288

SACE S5 630

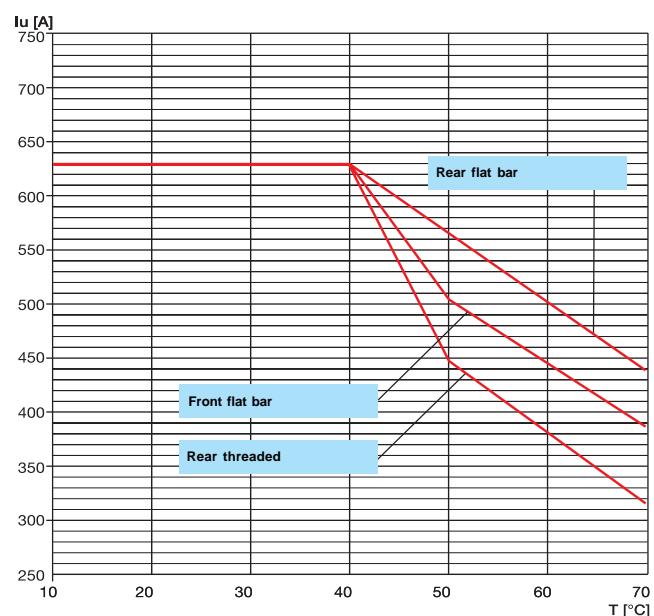
Fixed

	up to 40 °C		50 °C		60 °C		70 °C	
	I _{max} [A]	I ₁	I_{max} [A]	I_{1}	I_{max} [A]	I_{1}	I_{max} [A]	I_{1}
Front flat bar	630	1	598.5	0.95	567	0.9	504	0.8
Front for cables	630	1	567	0.9	504	0.8	441	0.7
Rearthreaded	630	1	504	0.8	441	0.7	378	0.6



Withdrawable

	up to 40 °C		50 °C		60 °C		70 °C	
	I _{max} [A]	I ₁	I_{max} [A]	I_{1}	I_{max} [A]	I_{1}	I_{max} [A]	I_{1}
Front flat bar	630	1	504	0.8	441	0.7	378	0.6
Rear flat bar	630	1	567	0.9	504	0.8	441	0.7
Rearthreaded	630	1	441	0.7	378	0.6	315	0.5



GSIS0288



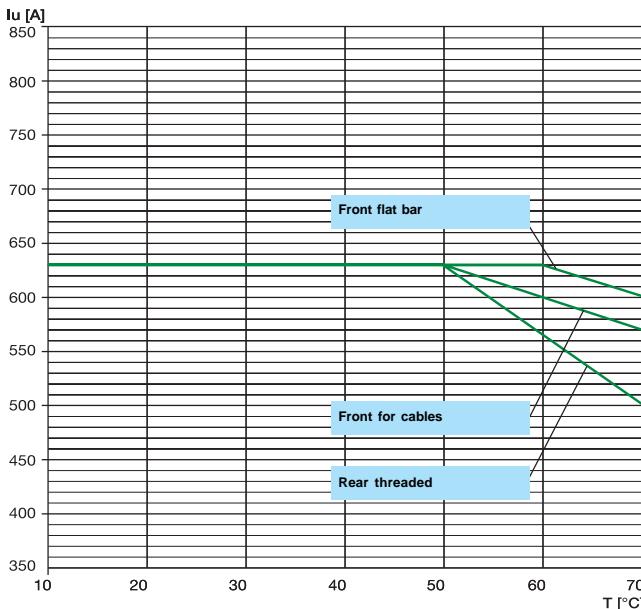
Temperature performance

Circuit-breakers with electronic releases

SACE S6 630

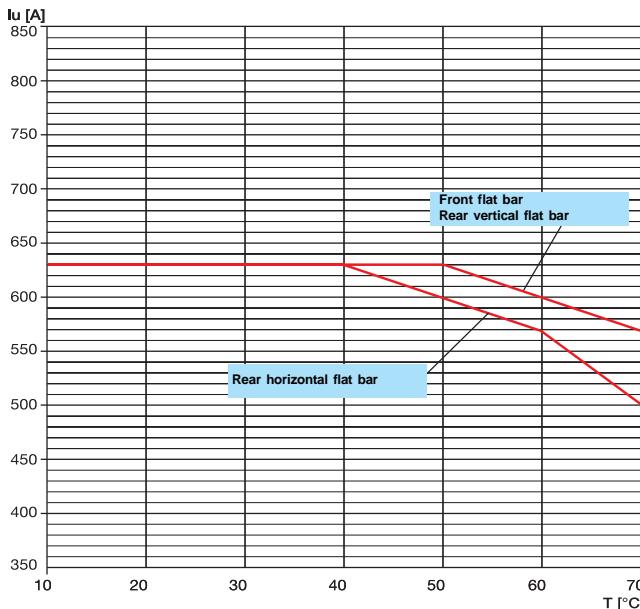
Fixed

	up to 40 °C		50 °C		60 °C		70 °C	
	I_{max} [A]	I_1	$I_{max}$ [A]	$I_1$	$I_{max}$ [A]	$I_1$	$I_{max}$ [A]	$I_1$
Front flat bar	630	1	630	1	630	1	598.5	0.95
Front for cables	630	1	630	1	598.5	0.95	567	0.9
Rear for cables	630	1	630	1	598.5	0.95	567	0.9
Rear threaded	630	1	630	1	567	0.9	504	0.8



Withdrawable

	up to 40 °C		50 °C		60 °C		70 °C	
	I_{max} [A]	I_1	$I_{max}$ [A]	$I_1$	$I_{max}$ [A]	$I_1$	$I_{max}$ [A]	$I_1$
Front flat bar	630	1	630	1	598.5	0.95	567	0.9
Rear vertical flat bar	630	1	630	1	598.5	0.95	567	0.9
Rear horizontal flat bar	630	1	598.5	0.95	567	0.9	504	0.8

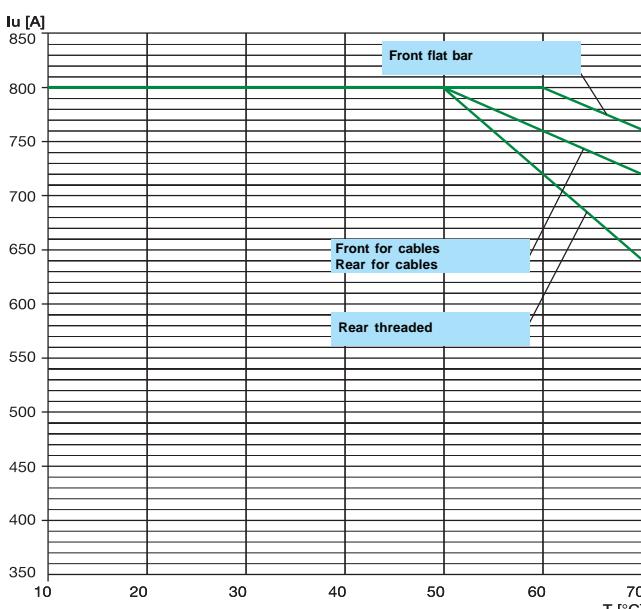


GSIS0261

SACE S6 800

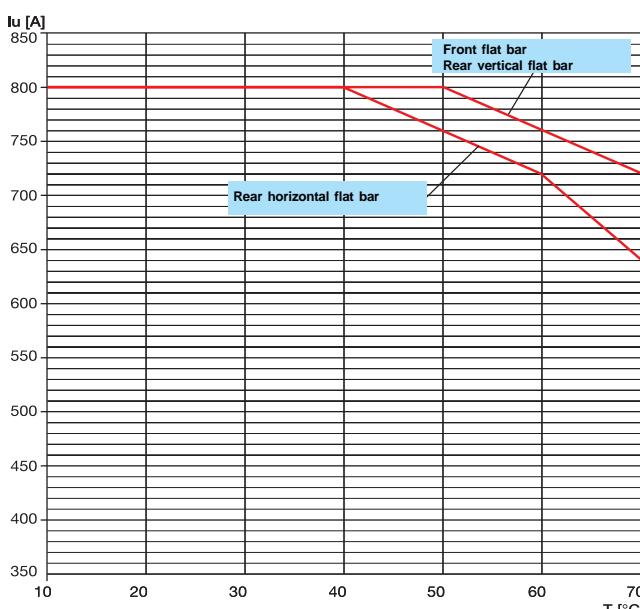
Fixed

	up to 40 °C		50 °C		60 °C		70 °C	
	I_{max} [A]	I_1	$I_{max}$ [A]	$I_1$	$I_{max}$ [A]	$I_1$	$I_{max}$ [A]	$I_1$
Front flat bar	800	1	800	1	800	1	760	0.95
Front for cables	800	1	800	1	760	0.95	720	0.9
Rear for cables	800	1	800	1	760	0.95	720	0.9
Rear threaded	800	1	800	1	720	0.9	640	0.8



Plug-in - Withdrawable

	up to 40 °C		50 °C		60 °C		70 °C	
	I_{max} [A]	I_1	$I_{max}$ [A]	$I_1$	$I_{max}$ [A]	$I_1$	$I_{max}$ [A]	$I_1$
Front flat bar	800	1	800	1	760	0.95	720	0.9
Rear vertical flat bar	800	1	800	1	760	0.95	720	0.9
Rear horizontal flat bar	800	1	760	0.95	720	0.9	640	0.8

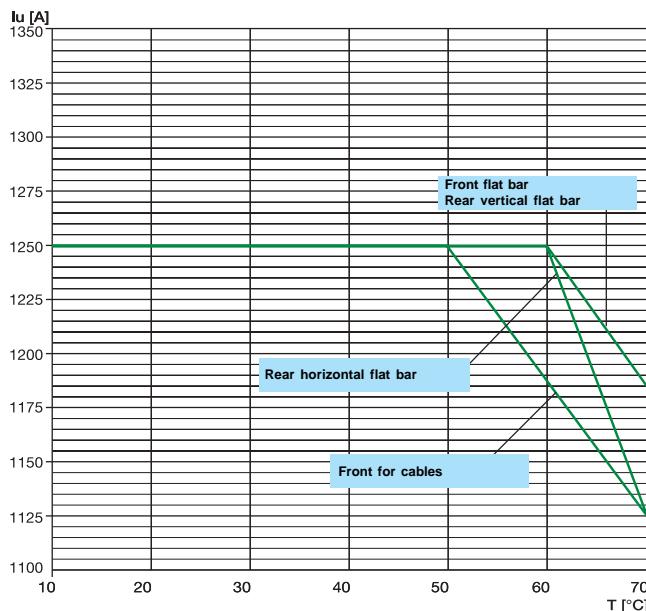


GSIS0261

SACE S7 1250

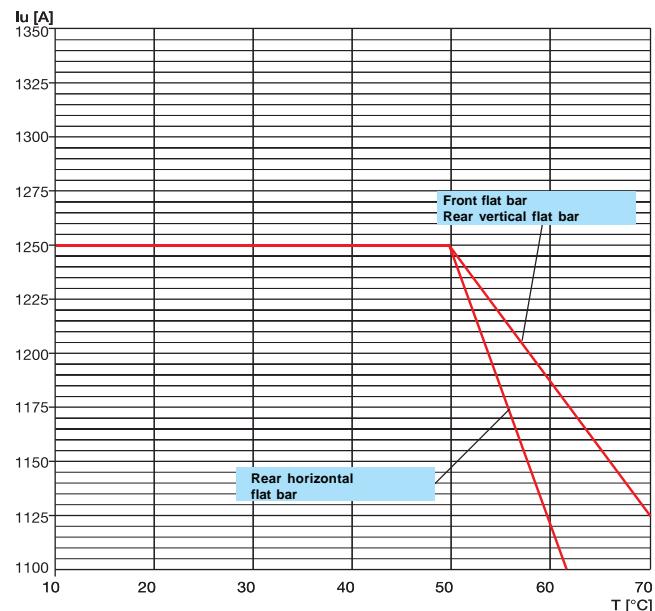
Fixed

	up to 40 °C		50 °C		60 °C		70 °C	
	I _{max} [A]	I ₁	I_{max} [A]	I_{1}	I_{max} [A]	I_{1}	I_{max} [A]	I_{1}
Front flat bar	1250	1	1250	1	1250	1	1187.5	0.95
Rear vertical flat bar	1250	1	1250	1	1250	1	1187.5	0.95
Front for cables	1250	1	1250	1	1187.5	0.95	1125	0.9
Rear horizontal flat bar	1250	1	1250	1	1250	1	1125	0.9



Drawable

	up to 40 °C		50 °C		60 °C		70 °C	
	I _{max} [A]	I ₁	I_{max} [A]	I_{1}	I_{max} [A]	I_{1}	I_{max} [A]	I_{1}
Front flat bar	1250	1	1250	1	1187.5	0.95	1125	0.9
Rear vertical flat bar	1250	1	1250	1	1187.5	0.95	1125	0.9
Rear horizontal flat bar	1250	1	1250	1	1125	0.9	1000	0.8

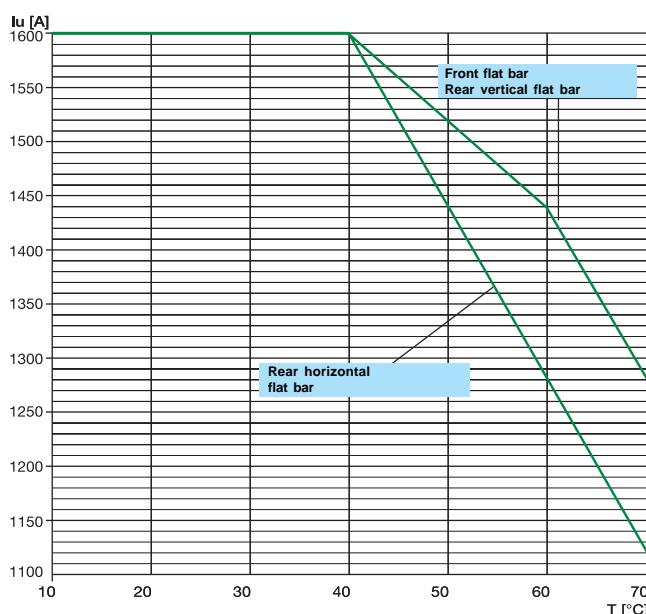


GSIS0262

SACE S7 1600

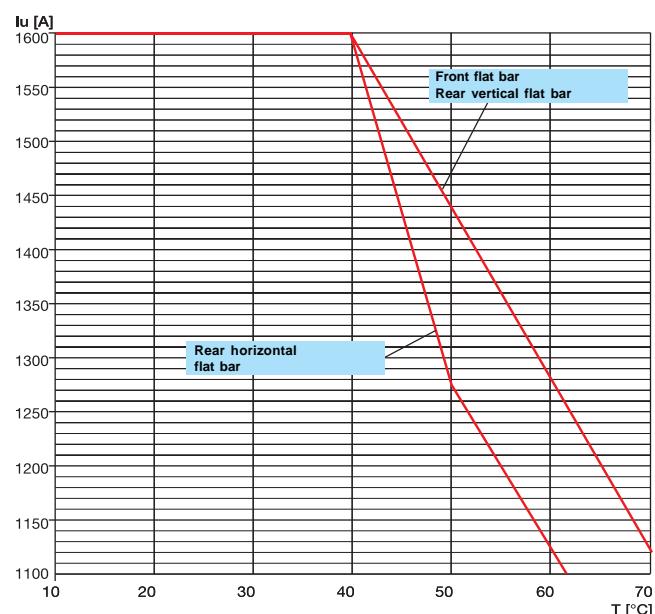
Fixed

	up to 40 °C		50 °C		60 °C		70 °C	
	I _{max} [A]	I ₁	I_{max} [A]	I_{1}	I_{max} [A]	I_{1}	I_{max} [A]	I_{1}
Front flat bar	1600	1	1520	0.95	1440	0.9	1280	0.8
Rear vertical flat bar	1600	1	1520	0.95	1440	0.9	1280	0.8
Rear horizontal flat bar	1600	1	1440	0.9	1280	0.8	1120	0.7



Drawable

	up to 40 °C		50 °C		60 °C		70 °C	
	I _{max} [A]	I ₁	I_{max} [A]	I_{1}	I_{max} [A]	I_{1}	I_{max} [A]	I_{1}
Front flat bar	1600	1	1440	0.9	1280	0.8	1120	0.7
Rear vertical flat bar	1600	1	1440	0.9	1280	0.8	1120	0.7
Rear horizontal flat bar	1600	1	1280	0.8	1120	0.7	906	0.6



GSIS0263



Temperature performance

Circuit-breakers with electronic releases

SACE S8 2000

Fixed

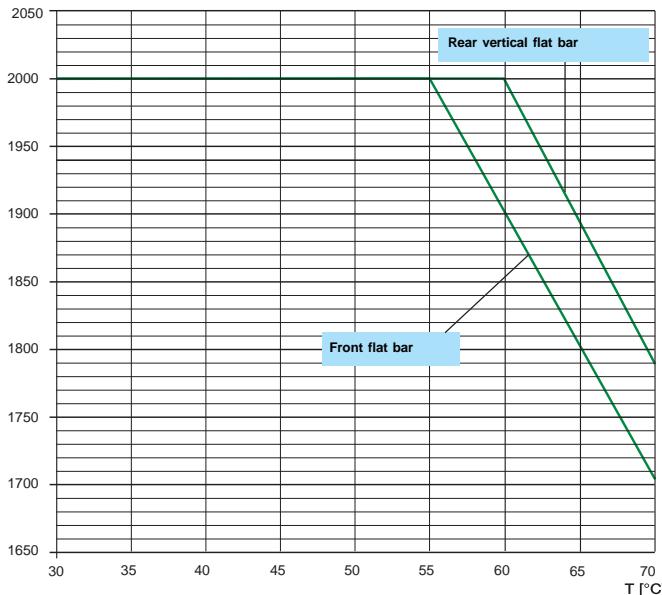
	up to 40 °C		50 °C		60 °C		70 °C	
	I _{max} [A]	I_{t}	I_{max} [A]	I_{t}	I_{max} [A]	I_{t}	I_{max} [A]	I _t
Front flat bar	2000	1	2000	1	1900	0,95	1715	0,85
Rear vertical flat bar	2000	1	2000	1	2000	1	1785	0,9

SACE S8 2500

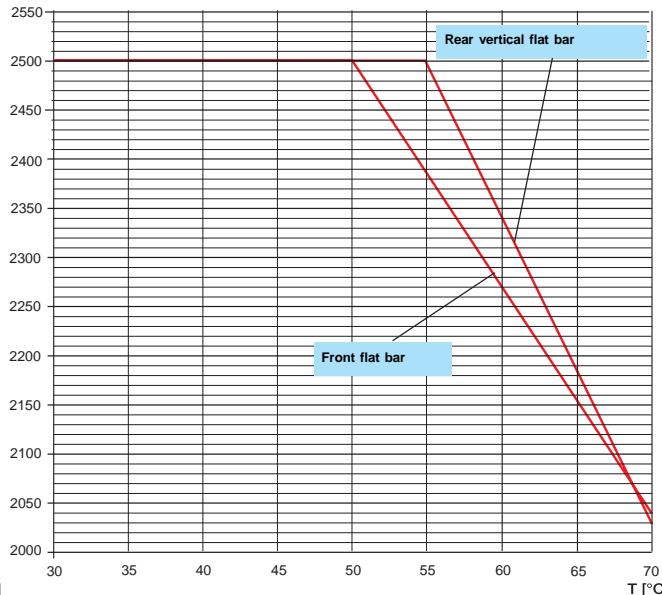
Fixed

	up to 40 °C		50 °C		60 °C		70 °C	
	I _{max} [A]	I_{t}	I_{max} [A]	I_{t}	I_{max} [A]	I_{t}	I_{max} [A]	I _t
Front flat bar	2500	1	2500	1	2270	0,9	2040	0,8
Rear vertical flat bar	2500	1	2500	1	2375	0,95	2130	0,85

I_u [A]



I_u [A]



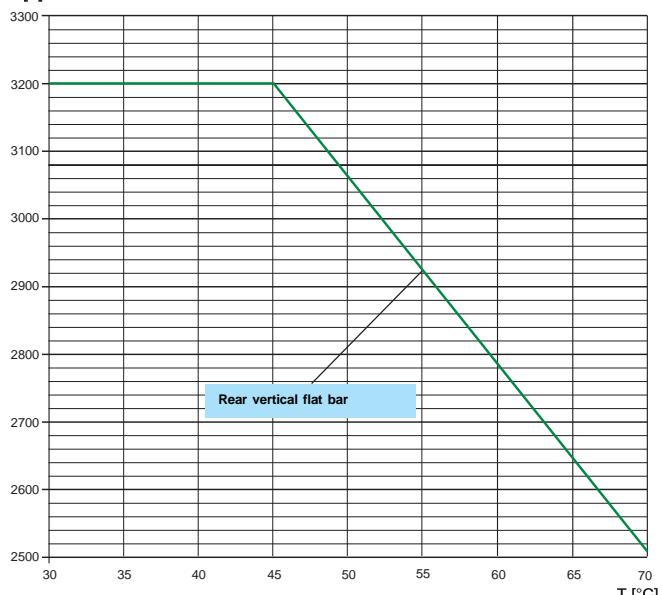
GSIS0264

SACE S8 3200

Fixed

	up to 45 °C		50 °C		60 °C		70 °C	
	I _{max} [A]	I_{t}	I_{max} [A]	I_{t}	I_{max} [A]	I_{t}	I_{max} [A]	I _t
Rear vertical flat bar	3200	1	3060	0,95	2780	0,85	2510	0,8

I_u [A]



GSIS0265



Temperature performance

Circuit-breakers with thermomagnetic releases

SACE S1

	10 °C	20 °C	30 °C	40 °C	50 °C	60 °C	70 °C
R 10	13	12	11	10	9	8	7
R 12,5	13	12	11	10	9	8	7
R 16	20	18,5	17	16	15	14	13
R 20	24	22,5	21	20	19	18	17
R 25	30	28	26,5	25	23	21	19
R 32	38	36	34	32	30	28	26
R 40	49	45	43	40	37	35	34
R 50	60	56	53	50	47	44	41
R 63	75	71	67	63	59	55	51
R 80	96	91	86	80	74	68	62
R 100	120	114	108	100	94	88	82
R 125	145	138	132	125	120	112	104

SACE S2

R 12,5	11...15,5	10...14,5	9,5...13	9...12,5	8...11,5	7,5...10,5	6,5...9,5
R 16	14...19	13...18	11,5...17	11...16	10,5...15	9,5...14	8,5...13
R 20	18...24,5	16,5...23	15...21,5	14...20	13...18	12...17	11...16
R 25	21...30	19,5...28	18,5...26,5	17,5...25	16,5...23	15...21	13...19
R 32	28...38	25,5...36	24...34	22,5...32	20,5...29	19...27	17...25
R 40	33...47	32...45	30...42	28...40	26...37	24...34	21...31
R 50	44...58	39...56	38...53	35...50	33...47	30...43	27...40
R 63	53...74	50...70	47...66	44...63	42...60	38...56	34...52
R 80	66...94	63...90	59...85	56...80	52...75	49...70	44...65
R 100	84...118	80...112	76...106	70...100	65...94	59...85	49...75
R 125	102...145	100...140	93...133	88...125	81...116	75...108	58...101
R 160	130...184	125...176	120...168	112...160	106...150	100...140	90...130

SACE S3

R 32	26...43	24...39	22...36	19...32	16...27	14...24	11...21
R 50	37...62	35...58	33...54	30...50	27...46	25...42	22...39
R 80	59...98	55...92	52...86	48...80	44...74	40...66	32...58
R 100	83...118	80...113	74...106	70...100	66...95	59...85	49...75
R 125	103...145	100...140	94...134	88...125	80...115	73...105	63...95
R 160	130...185	124...176	118...168	112...160	106...150	100...104	90...130
R 200	162...230	155...220	147...210	140...200	133...190	122...175	107...160
R 250	200...285	193...275	183...262	175...250	168...240	160...230	150...220

SACE S5 400/630

R 320	260...368	245...350	234...335	224...320	212...305	200...285	182...263
R 400	325...465	310...442	295...420	280...400	265...380	250...355	230...325
R 500	435...620	405...580	380...540	350...500	315...450	280...400	240...345

SACE S6 630/800

R 630	520...740	493...705	462...660	441...630	405...580	380...540	350...500
R 800	685...965	640...905	605...855	560...800	520...740	470...670	420...610



Power loss values

Power [W]		S1		S2		S3		S4		S5		S6		S7		S8	
Setting	I _u [A]	F	P	F	P	F	P-W	F	P-W	F	P-W	F	W	F	W	F	
R 10	10	4	4,5														
R 12,5	12,5	6	6,5	6	6,5												
R 16	16	8	8,5	7,5	8,5												
R 20	20	8	8,5	8	9												
R 25	25	9	9,5	10	11												
R 32	32	13	14	14	15	12	13										
R 40	40	11	12	10	11												
R 50	50	13	14	13	14	16	18										
R 63	63	15	16	16	17												
R 80	80	19	20	21	23	18	21										
R 100	100	16	17	18	20	21	25										
R 125	125	20	22	24	26	20	26										
R 160	160			30	35	30	40										
R 200	200					36	46										
R 250	250					50	65										
R 320	320									60	90						
R 400	400									65	96						
R 500	500									—	—						
R 630	630											92	117				
R 800	800											93	119				
I _n = 100	100							5	8								
I _n = 160	160							15	22								
I _n = 250	250							40	55								
I _n = 320	320									45	65						
I _n = 400	400									60	90						
I _n = 630	630									170	200	90	115				
I _n = 800	800											96	125				
I _n = 1000	1000													102	140		
I _n = 1250	1250													160	220		
I _n = 1600	1600													260	360		
I _n = 2000	2000															200	
I _n = 2500	2500															315	
I _n = 3200	3200															500	

The values indicated in the table refer to balanced loads, with a current flow equal to the I_u and to both three-pole and fourpole fixed version apparatus. For the latter, the current of the neutral is nil by definition.

Power [W]		S2X 80		S2X 100		S3X		S4X		S6X	
Setting	I _u [A]	F	P	F	P	F	P-W	F	P-W	F	W
R 1	1	8	8,2	8	8,2						
R 1,6	1,6	8	8,2	8	8,2						
R 2,5	2,5	11	11,2	11	11,2						
R 4,3	4,3	11	11,2	11	11,2						
R 6,3	6,3	11	11,2	11	11,2						
R 10	10	16	16,3	16	16,3						
R 12,5	12,5	20	20,3	20	20,3						
R 16	16	10	10,6	10	10,6						
R 20	20	13	13,6	13	13,6						
R 25	25	13	13,7	13	13,7						
R 32	32	26	26,6	26	26,6						
R 40	40	26	26,9	26	26,9						
R 50	50	22	23,3	22	23,3						
R 63	63	22	24,1	22	24,1						
R 80	80	26	29,1	26	29,1						
R 100	100			30	34,4						
R 125	125					30,8	37,8				
R 200	200					48	58				
I _n = 250	250							60	75		
I _n = 400	400									80,4	101
I _n = 630	630									126,6	151,6

The values indicated in the table refer to balanced loads, with a current flow equal to the I_u and to both three-pole and fourpole fixed version apparatus. For the latter, the current of the neutral is nil by definition.

Shock resistance

Tests according to IEC 60068-2-27

Shock value [g]	
S1 **	12
S2 **	12
S3-S3X *	12
S4X-S4X *	12
S5 *	12
S6-S6X *	12
S7 *	12

* for fixed/plug-in/withdrawable circuit-breakers with motor operator, undervoltage release and auxiliary contacts

** for fixed/plug-in circuit-breakers with undervoltage release and auxiliary contacts

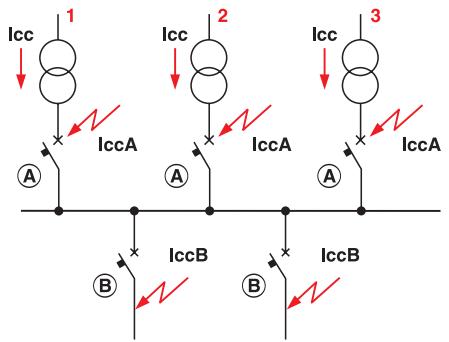


Operation and protection of the low-voltage side of three-phase transformers

In order to choose the SACE Isomax S circuit-breakers to install both on the transformer risers and on the lines branching downstream of them, reference can be made to the following table dealing with transformers with no-load voltage on the secondary equal to 400 V which is the most common condition

of use. The table has been drawn up considering infinite power upstream and the most unfavourable case has been assumed, that is, that the short circuit occurs on the transformer clamps. As regards users, the short circuit is considered downstream of the user circuit-breaker clamps.

Power supply transformers				Circuit-breaker "A"(secondary of transformer)			
P [kVA]	U _{cc} %	I _b riser [A]	I _b total [A]	I _{cc} riser [kA]	SACE Isomax S	Release TM / PR211-212	
						type	settings
1 x 63	4	91	91	2,2	S1B125	R100	0,95
2 x 63		91	182	2,2	S1B125	R100	0,95
1 x 100	4	144	144	3,6	S2B160	R160	0,95
2 x 100		144	288	3,6	S2B160	R160	0,95
1 x 125	4	180	180	4,5	S3N/S4N250	R200/I _n = 250 A	0,95/0,8
2 x 125		180	360	4,5	S3N/S4N250	R200/I _n = 250 A	0,95/0,8
1 x 160	4	231	231	5,8	S3N/S4N250	R250/I _n = 250 A	0,95/0,95
2 x 160		231	462	5,8	S3N/S4N250	R250/I _n = 250 A	0,95/0,95
1 x 200	4	289	289	7,2	S5N400	I _n = 320 A	0,95
2 x 200		289	578	7,2	S5N400	I _n = 320 A	0,95
1 x 250	4	361	361	9	S5N400	I _n = 400 A	0,95
2 x 250		361	722	9	S5N400	I _n = 400 A	0,95
1 x 315	4	455	455	11,3	S6N630	I _n = 630 A	0,8
2 x 315		455	910	11,3	S6N630	I _n = 630 A	0,8
1 x 400	4	577	577	14,4	S6N630/S6N800	I _n = 630/800 A	0,95/0,8
2 x 400		577	1154	14,4	S6N630/S6N800	I _n = 630/800 A	0,95/0,8
1 x 500	4	722	722	18	S6N800/S7S1250	I _n = 800/1000 A	0,95/0,8
2 x 500		722	1444	18	S6N800/S7S1250	I _n = 800/1000 A	0,95/0,8
1 x 630	4	909	909	23	S7S1250	I _n = 1000 A	0,95
2 x 630		909	1818	23	S7S1250	I _n = 1000 A	0,95
3 x 630		909	2727	46	S7S1250	I _n = 1000 A	0,95
1 x 800	5	1155	1155	23	S7S1250/S7S1600	I _n = 1250/1600 A	0,95/0,8
2 x 800		1155	2310	23	S7S1250/S7S1600	I _n = 1250/1600 A	0,95/0,8
3 x 800		1155	3465	46	S7S1250/S7S1600	I _n = 1250/1600 A	0,95/0,8
1 x 1000	5	1443	1443	29	S7S1600	I _n = 1600 A	0,95
2 x 1000		1443	2886	29	S7S1600	I _n = 1600 A	0,95
3 x 1000		1443	4329	58	S7H1600	I _n = 1600 A	0,95
1 x 1250	5	1804	1804	36	S8H2000	I _n = 2000 A	0,95
2 x 1250		1804	3608	36	S8H2000	I _n = 2000 A	0,95
3 x 1250		1804	5412	72	S8H2000	I _n = 2000 A	0,95
1 x 1600	6,25	2309	2309	37	S8H2500	I _n = 2500 A	0,95
2 x 1600		2309	4618	37	S8H2500	I _n = 2500 A	0,95
3 x 1600		2309	6927	74	S8H2500	I _n = 2500 A	0,95
1 x 2000	6,25	2887	2887	46	S8H3200	I _n = 3200 A	0,95
2 x 2000		2887	5774	46	S8H3200	I _n = 3200 A	0,95
3 x 2000		2887	8661	92	S8V3200	I _n = 3200 A	0,95



GSIS0272

Circuit-breaker "B" (user outgoing)

I_{cu} user [kA]	User rated current and type of circuit-breaker									
	32 A	63 A	125 A	160 A	250 A	400 A	630 A	800 A	1250 A	1600 A
2,2	S250	S250								
4,4	S250	S250	S1B125							
3,6	S250	S250	S1B125							
7,2	S250	S250	S1B125							
4,5	S250	S250	S1B125	S2B160						
9	S250	S250	S1B125	S2B160						
5,8	S250	S250	S1B125	S2B160						
11,6	S1B125	S1B125	S1B125	S2B160	S3N250					
7,2	S250	S250	S1B125	S2B160	S3N250					
14,4	S1B125	S1B125	S1B125	S2B160	S3N250	S5N400				
9	S250	S250	S1B125	S2B160	S3N250	–				
18	S1N125	S1N125	S1N125	S2N160	S3N250	S5N400				
11,3	S1B125	S1B125	S1B125	S2B160	S3N250	S5N400				
22,6	S1N125	S1N125	S1N125	S2N160	S3N250	S5N400	S5N / S6N630			
14,4	S1B125	S1B125	S1B125	S2B160	S3N250	S5N400	–			
28,8	S2N160	S2N160	S2N160	S2N160	S3N250	S5N400	S5N / S6N630			
18	S1N125	S1N125	S1N125	S2N160	S3N250	S5N400	S5N / S6N630			
36	S2N160	S2N160	S2N160	S2N160	S3N250	S5N400	S5N / S6N630	S6N800		
23	S1N125	S1N125	S1N125	S2N160	S3N250	S5N400	S5N / S6N630	S6N800		
46	S2S160	S2S160	S2S160	S2S160	S3H250	S5H400	S5H / S6S630	S6S800	S7S1250	
69	S2X100	S2X100	S3L160	S3L160	S3L250	S5L400	S5L / S6L630	S6L800	S7L1250	
23	S1N125	S1N125	S1N125	S2N160	S3N250	S5N400	S5N / S6N630	S6N800	–	
46	S2S160	S2S160	S2S160	S2S160	S3H250	S5H400	S5H / S6S630	S6S800	S7S1250	
69	S2X100	S2X100	S3L160	S3L160	S3L250	S5L400	S5L / S6L630	S6L800	S7L1250	
29	S2N160	S2N160	S2N160	S2N160	S3N250	S5N400	S5N / S6N630	S6N800	S7S1250	
58	S2X100	S2X100	S3H160	S3H160	S3H250	S5H400	S5H / S6H630	S6H800	S7H1250	S7H1250
87	S4L160	S4L160	S4L160	S4L160	S4L250	S5L400	S5L/S6L630	S6L800	S7L1250	S7L1250
36	S2N160	S2N160	S2N160	S2N160	S3N250	S5N400	S5N/S6N630	S6N800	S7S1250	S7S1600
72	S3L160	S4L160	S3L160	S3L160	S3L250	S5L400	S5L/S6L630	S6L800	S7L1250	S7L1250
108	S3X125	S3X125(R80)	S3X125	S3X200	S4X250	S6X400	S6X630	S8V2000	S8V2000	S8V2000
37	S2S160	S2S160	S2S160	S2S160	S3H250	S5H400	S5H/S6S630	S6S800	S7S1250	S7S1600
74	S3L160	S3L160(R80)	S3L160	S3L160	S3L250	S5L400	S5L/S6L630	S6L800	S7L1250	S7L1600
111	S3X125	S3X125(R80)	S3X125	S3X200	S4X250	S6X400	S6X630	S8V2000	S8V2000	S8V2000
46	S2S160	S2S160	S2S160	S2S160	S3H250	S5H400	S5H/S6S630	S6S800	S7S1250	S7S1600
92	S4L160	S4L160	S4L160	S4L160	S4L250	S5L400	S5L/S6L630	S6L800	S7L1250	S7L1600
138	S3X125	S3X125(R80)	S3X125	S3X200	S4X250	S6X400	S6X630	–	–	–



Operation and protection of three-phase AC capacitors

Table for choosing SACE Isomax S circuit-breakers in relation to the rated current of the bank and the power of the transformer installed.

Circuit-breaker	Icu 380/415 V	Rated current of release	Rated current of capacitor	Max electronic/ magnetic release setting	Maximum rating of capacitor bank in kVAR-50 Hz				Mechanical endurance		Electrical endurance	
					400	440	500	690	man	man/h	man	man/h
Type	[kA]	[A]	[A]	PR... / TM	[V]	[V]	[V]	[V]	man	man/h	man	man/h
S1 B/N 125	16 / 25	125	83	- / Im=10 In	58	64	72	100	25000	240	8000	120
S2 B/N/S 160	16 / 35 / 50	160	107	- / Im=10 In	74	81	92	127	25000	240	8000	120
S3 N/H/L 160	35 / 65 / 85	160	107	- / Im=10 In	74	81	92	127	25000	120	10000	120
S3 N/H/L 250	35 / 65 / 85	250	167	- / Im=10 In	115	127	144	199	25000	120	8000	120
S4 N/H/L 160	35 / 65 / 100	160	107	I ₃ =OFF / -	74	81	92	127	20000	120	10000	120
S4 N/H/L 250	35 / 65 / 100	250	167	I ₃ =OFF / -	115	127	144	199	20000	120	8000	120
S5 N/H/L 400	35 / 65 / 100	400	267	I ₃ =OFF / Im=10 In	185	203	231	319	20000	120	7000	60
S5 N/H/L 630	35 / 65 / 100	500/630	333	I ₃ =OFF / Im=10 In	231	254	288	398	20000	120	5000	60
S6 N/S/H/L 630	35/50/65/100	630	420	I ₃ =OFF / Im=10 In	291	320	364	502	20000	120	7000	60
S6 N/S/H/L 800	35/50/65/100	800	533	I ₃ =OFF / Im=10 In	369	406	462	637	20000	120	5000	60
S7 S/H/L 1250	50 / 65 / 100	1250	833	I ₃ =OFF / -	577	635	722	996	10000	120	7000	20
S7 S/H/L 1600	50 / 65 / 100	1600	1067	I ₃ =OFF / -	739	813	924	1275	10000	120	5000	20
S8 H/V 2000	85 / 120	2000	1333	I ₃ =OFF / -	924	1016	1155	1593	10000	120	3000	20
S8 H/V 2500	85 / 120	2500	1667	I ₃ =OFF / -	1155	1270	1443	1992	10000	120	2500	20
S8 H/V 3200	85 / 120	3200	2133	I ₃ =OFF / -	1478	1626	1847	2550	10000	120	1500	10

Coefficient for calculating capacitor bank power in kVAR/kW
to increase the $\cos\varphi$ value.

Initial $\cos\varphi$	$\cos\varphi$ to be obtained												
	0,81	0,85	0,9	0,91	0,92	0,93	0,94	0,95	0,96	0,97	0,98	0,99	1
0,60	0,584	0,714	0,849	0,878	0,905	0,939	0,971	1,005	1,043	1,083	1,131	1,192	1,334
0,61	0,549	0,679	0,815	0,843	0,870	0,904	0,936	0,970	1,008	1,048	1,096	1,157	1,299
0,62	0,515	0,645	0,781	0,809	0,836	0,870	0,902	0,936	0,974	1,014	1,062	1,123	1,265
0,63	0,483	0,613	0,749	0,777	0,804	0,838	0,870	0,904	0,942	0,982	1,030	1,091	1,0233
0,64	0,450	0,580	0,716	0,744	0,771	0,805	0,837	0,871	0,909	0,949	0,997	1,058	1,200
0,65	0,419	0,549	0,685	0,713	0,740	0,774	0,806	0,840	0,878	0,918	0,966	1,007	1,169
0,66	0,388	0,518	0,654	0,682	0,709	0,743	0,775	0,809	0,847	0,887	0,935	0,996	1,138
0,67	0,358	0,488	0,624	0,652	0,679	0,713	0,745	0,779	0,817	0,857	0,905	0,966	1,108
0,68	0,329	0,459	0,595	0,623	0,650	0,684	0,716	0,750	0,788	0,828	0,876	0,937	1,079
0,69	0,299	0,429	0,565	0,593	0,620	0,654	0,686	0,720	0,758	0,798	0,840	0,907	1,049
0,70	0,270	0,400	0,536	0,564	0,591	0,625	0,657	0,691	0,729	0,769	0,811	0,878	1,020
0,71	0,242	0,372	0,508	0,536	0,563	0,597	0,629	0,663	0,701	0,741	0,783	0,850	0,992
0,72	0,213	0,343	0,479	0,507	0,534	0,568	0,600	0,634	0,672	0,712	0,754	0,821	0,963
0,73	0,186	0,316	0,452	0,400	0,507	0,541	0,573	0,607	0,645	0,685	0,727	0,794	0,936
0,74	0,159	0,289	0,425	0,453	0,480	0,514	0,546	0,580	0,618	0,658	0,700	0,767	0,909
0,75	0,132	0,262	0,398	0,426	0,453	0,487	0,519	0,553	0,591	0,631	0,673	0,740	0,882
0,76	0,105	0,235	0,371	0,399	0,426	0,460	0,492	0,526	0,564	0,604	0,652	0,713	0,855
0,77	0,079	0,209	0,345	0,373	0,400	0,434	0,466	0,500	0,538	0,578	0,620	0,687	0,829
0,78	0,053	0,182	0,319	0,347	0,374	0,408	0,440	0,474	0,512	0,552	0,594	0,661	0,803
0,79	0,026	0,156	0,292	0,320	0,347	0,381	0,413	0,447	0,485	0,525	0,567	0,634	0,776
0,80		0,130	0,266	0,294	0,321	0,355	0,387	0,421	0,459	0,499	0,541	0,608	0,750
0,81		0,104	0,240	0,268	0,295	0,329	0,361	0,395	0,433	0,473	0,515	0,582	0,724
0,82		0,078	0,214	0,242	0,269	0,303	0,335	0,369	0,407	0,447	0,489	0,556	0,698
0,83		0,052	0,188	0,216	0,243	0,277	0,309	0,343	0,381	0,421	0,462	0,530	0,672
0,84		0,026	0,162	0,190	0,217	0,251	0,283	0,317	0,355	0,395	0,437	0,504	0,645
0,85			0,136	0,164	0,191	0,225	0,257	0,291	0,329	0,369	0,417	0,478	0,620
0,86			0,109	0,140	0,167	0,198	0,230	0,264	0,301	0,343	0,390	0,450	0,593
0,87			0,083	0,114	0,141	0,172	0,204	0,238	0,275	0,317	0,364	0,424	0,567
0,88			0,054	0,085	0,112	0,143	0,175	0,209	0,246	0,288	0,335	0,395	0,538
0,89			0,028	0,059	0,086	0,117	0,149	0,183	0,230	0,262	0,309	0,369	0,512
0,90				0,031	0,058	0,089	0,121	0,155	0,192	0,234	0,281	0,341	0,484



Protection of three-phase AC generators (Ue = 400 V)

Power generator [kVA]	In [A]	S1 125	S2 160	S3 160	S3 250	S4 160	S4 250	S5 400	S5 630	S6 630	S6 800	S7 1250	S7 1600	S8 2000	S8 2500	S8 3200
[kVA]	[A]	R	R	R	R	In [A]	In [A]	In [A]	In [A]	In [A]	In [A]	In [A]	In [A]	In [A]	In [A]	In [A]
40						100										
50						100										
63	91	100	100	100		100										
100	144,5		160	160	200	160	250	320								
160	231,2				250		250	320								
200	289							320	630	630						
250	361							400	630	630	800					
315	455								630	630	800	1000				
400	578								630	630	800	1000				
500	723										800	1000	1600			
630	910											1000	1600			
800	1156											1250	1600			
1000	1445												1600			
1120	1617												1600			
1250	1804													2000		
1400	2021														2500	
1600	2309														2500	
2000	2887															3200



Applications in direct current

Connection diagrams

Suitable connection arrangements must be adopted to obtain the number of poles in series necessary to guarantee the

breaking capacity required at the various operating voltages.

Circuit protection and isolation with three-pole circuit-breakers

Diagram A: breaking with 1 pole per polarity

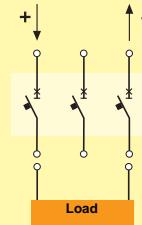


Diagram B: breaking with 2 poles in series per polarity and 1 pole for the other polarity

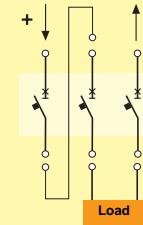
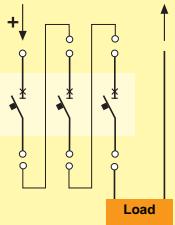


Diagram C: breaking with 3 poles in series per polarity



Poles in parallel

Diagram D: breaking with 2 poles in parallel per polarity

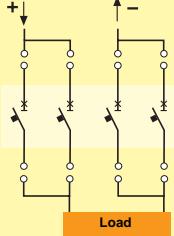
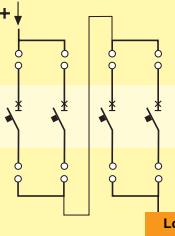


Diagram E: breaking with series of 2 poles in parallel per polarity



Use at 1000 V DC with four-pole circuit-breakers

Diagram F: breaking with 4 poles in series for one polarity

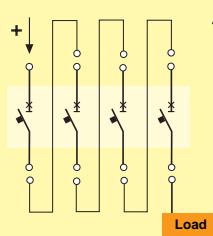


Diagram G: 3+1 poles in series

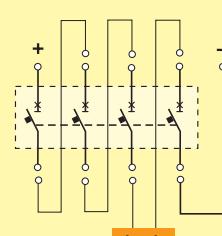
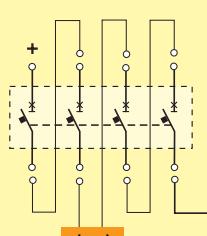


Diagram H: 2+2 poles in series



SS/IS/271

The following table shows which connection arrangement to adopt according to the number of poles to connect in series

to obtain the required breaking capacity for the type of distribution network.

Rated voltage	Function		Distribution network			Notes
	Protection	Isolation	isolated from earth	with one polarity* to earth	with median point to earth	
≤ 250	■	■	A, D	A, D	A, D	* The negative pole is assumed to be earthed.
≤ 500	■	■	A, D	E	-	
≤ 750	■	■	B	B	A, D	Notes
≤ 1000	■	■	G, H	C, E	H	1) The risk of a double fault to earth being sufficient for the fault current to affect only one side of the circuit breaking poles is considered negligible.
			-	G	-	2) For rated voltages greater than 750V the 1000 VDC range is required.
				C		3) Diagram D and diagram E only for S6.
				F		



Applications in direct current

Connection diagrams

Example of tripping threshold adjustment in DC - diagram A

Setting	S1 125			S2 160			S3 160			S3 250		
	I_{th}	$I_m = 10_{th}$	$I_m = 5_{th}$	I_{th}	$I_m = 10_{th}$	$I_m = 5_{th}$	I_{th}	$I_m = 10_{th}$	$I_m = 5_{th}$	I_{th}	$I_m = 10_{th}$	$I_m = 5_{th}$
R 10	10		208									
R 12,5	12,5		208	9÷12,5		208						
R 16	16		208	11,2÷16		208						
R 20	20	650	260	14÷20	650	260						
R 25	25	650	260	17,5÷25	650	260						
R 32	32	650	260	22,5÷32	650	260	19÷32	650	390			
R 40	40	650	260	28÷40	650	260						
R 50	50	650	325	35÷50	650	325	30÷50	650	390			
R 63	63	819	416	44÷63	819	416						
R 80	80	1040	520	56÷80	1040	520	48÷80	1040	520			
R 100	100	1300	650	70÷100	1300	650	70÷100	1300	650			
R 125	125	1625	819	87,5÷125	1625	819	87,5÷125	1625	819			
R 160				112÷160	2080	1040	112÷160	2080	1040			
R 200										140÷200	2600	1300
R 250										175÷250	3250	1625

N.B. For the lower settings R10, R12,5, R16 only the version $I_m = 5_{th}$ can be used

The correction value to adopt for the protection thresholds of each circuit-breaker is shown in the following table.

Circuit-breaker	Diagram A	Diagram B	Diagram C	Diagram F	Diagram G	Diagram H
S1	$k_m = 1$	$k_m = 1$	$k_m = 1$	—	—	—
S2	$k_m = 1$	$k_m = 1$	$k_m = 1$	—	—	—
S3	$k_m = 1$	$k_m = 1,15$	$k_m = 1,15$	$k_m = 1$	$k_m = 1$	$k_m = 1$
S5	$k_m = 1,1$	$k_m = 1$	$k_m = 1$	$k_m = 1,1$	$k_m = 1,1$	$k_m = 1,1$
S6	$k_m = 1,1$	$k_m = 1$	$k_m = 1$	$k_m = 0,9$	$k_m = 0,9$	$k_m = 0,9$

Setting	S5 400		S5 630		S6 630		S6 800	
	$I_{th} = 0,7 \div 1 \times I_n$	$I_m = 5 \div 10 \times I_n$	$I_{th} = 0,7 \div 1 \times I_n$	$I_m = 5 \div 10 \times I_n$	$I_{th} = 0,7 \div 1 \times I_n$	$I_m = 5 \div 10 \times I_n$	$I_{th} = 0,7 \div 1 \times I_n$	$I_m = 5 \div 10 \times I_n$
R 320	225÷320	1760÷3520						
R 400	280÷400	2200÷4400						
R 500			350÷500	2750÷5500				
R 630					440÷630	3065÷6930		
R 800							560÷800	4400÷8800

Using these the correction factors means that the tripping current values will be higher for the same tripping threshold, or, vice versa, that having identified the tripping value one needs to set the tripping threshold following the reclassified scale range.

Example

- Operating current: $I_b = 600 \text{ A}$
- Magnetic protection required: $I_m = 5000 \text{ A}$
- Magnetic protection required to set:

$$\text{set} = \frac{I_m}{k_m \times I_n}$$

therefore in this specific case, having chosen circuit-breaker S6 R630 ($I_n = 630 \text{ A}$), the magnetic threshold setting value will be:

$$\text{set} = \frac{5000}{1,1 \times 630} \approx 7$$



Backup protection

(backup table with $U_e = 400 \text{ V} \sim$)

The table below shows the backup protection available, with the related breaking capacities for the rated voltage $U_e=400\text{V}\sim$, between ABB moulded-case and air low voltage

circuit-breakers (SACE Isomax S, SACE Limitor LNA and SACE Emax) and pro M system modular circuit-breakers.

CIRCUIT-BREAKER UPSTREAM																
In [A] ≤	S270	S280/20	S280/20	S290	S500	S1B	S2B	S1N	S2N	S3N	S4N	S5N	S6N	S2S	S6S	S7S
Icu [kA]	15	20	25	15	50	125	160	125	160	250	250	630	800	160	800	1600
CIRCUIT-BREAKER DOWNSTREAM																
10						S240	S240	S240	S240					S240		
15	S240		S240													
	S250		S250													
16				S250	S250				S250	S250	S250	S250		S1B	S1B	
20		S240				S250	S250	S250	S270	S270	S270	S270	S270	S250	S250	S2B
	S250													S2B	S2B	S2B
	S270															
25		S240				S270	S270	S270	S280/20					S270		
	S250		S250			S280/20	S280/20	S1B								
	S270		S270			S280/25	S280/25	S2B								
30			S240			S280/20	S280/25	S280/25					S280/20			
35						S280/25	S1B	S1N	S1N	S1N	S1N	S1N	S280/25			
						S1B	S1N							S1N	S3N	
			S250											S4N		
40														S5N		
														S6N		
50				S270	S280/20									S1B	S2N	
				S280/25										S1N	S3N	
				S1B										S2B	S4N	
				S1N										S2N	S5N	
65																
85																
100																
130																
150																
170																
200																

In the interest of facilitating clear representation, the latter must be read using the follow key:

S250: S250, S260, S270K
S270: S270 (B-C-D), S280 ($ln = 3 \dots 8 \text{ A}$),
 S280 ($ln = 50 \dots 63 \text{ A}$), S290
S280/20: S280 ($ln = 32 \dots 40 \text{ A}$)
S280/25: S280 ($ln = 10 \dots 25 \text{ A}$)

	S3H 250 65	S4H 250 65	S5H 630 65	S6H 800 65	S7H 1600 70	S2X 100 85	S3L 250 100	S4L 250 100	S5L 630 100	S6L 800 100	S7L 1600 100	S3X 125 200	S3X 200 200	S4X 250 200	S6X 630 200	E2L 1600 130	E3L 2500 130
S240																	
S250 S270 S2B	S250 S1B S2B	S250 S1B S2B	S250 S270 S2B	S250 S1B S2B	S250 S270 S2B	S250 S1B S2B	S250 S270 S2B	S250 S270 S2B	S250 S270 S2B	S250 S270 S2B	S250 S270 S2B	S250 S280/20 S2B	S250 S280/20 S2B	S250 S280/20 S2B	S250 S280/20 S2B	S250 S280/20 S2B	
S270 S280/20			S250 S280/20		S270 S280/20		S270 S280/20		S270 S280/20		S270 S280/20		S270 S280/20		S270 S280/20		
S280/25 S280/25			S240		S280/25 S280/25		S280/25 S280/25		S280/20		S280/20		S280/25 S280/25		S280/25 S280/25		
S1B S2B													S280/25 S280/25		S280/25 S280/25		
S1B S2B																	
S1B S2B																	
S1B S2B																	
S1N S2N			S1N S2N		S1N S2N		S1N S2N		S1N S2N		S1N S2N		S1N S2N		S1N S2N		
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			S6S S6S		S6S S6S												



Overall dimensions and circuit diagrams

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Overall dimensions

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Distances to be respected

Minimum distance between centres	6/38
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Circuit diagrams

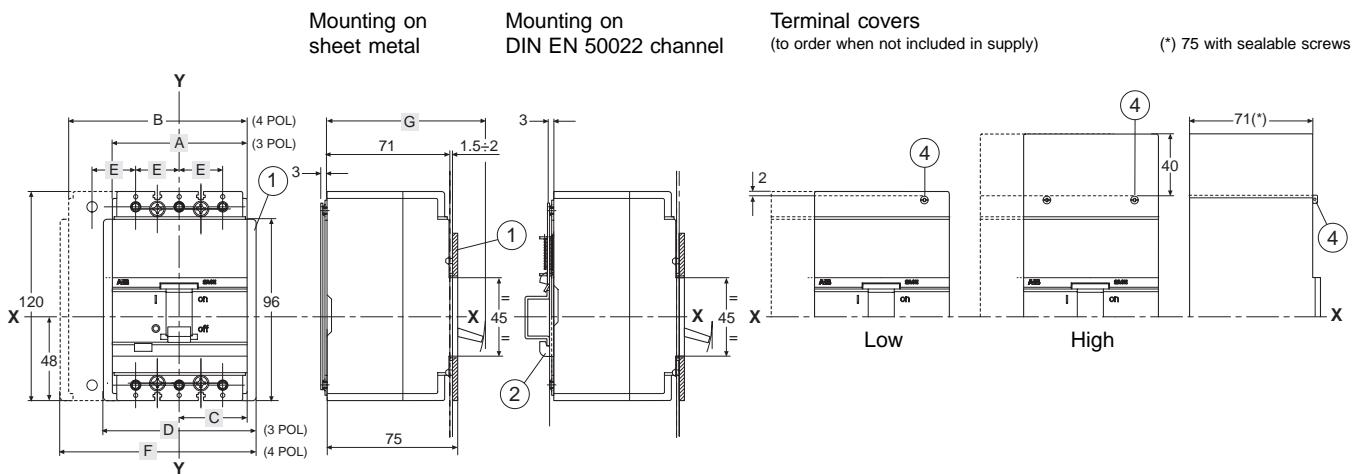
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Overall dimensions

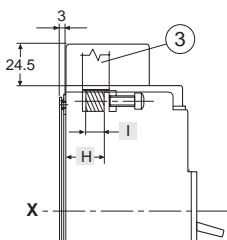
SACE S1-S2

Fixed circuit-breaker

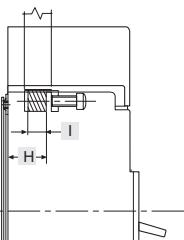


Terminals

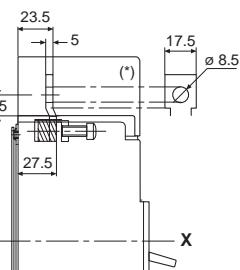
Front for Cu cables or flat bars
(with separator plates between the phases)



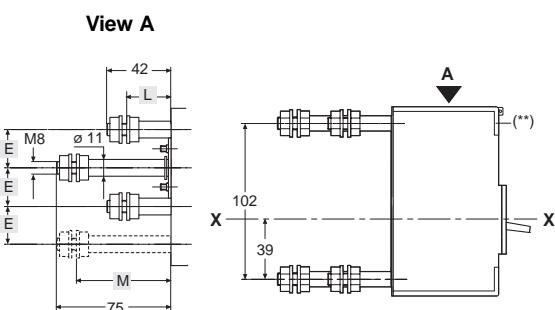
Front for Cu cables or flat bars
(with high or low terminal covers)



Extended front for S2
(*) high terminal covers included in supply



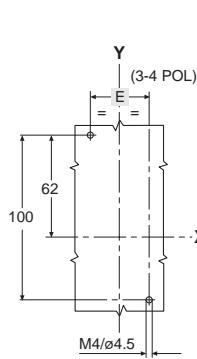
Threaded rear
(**) low terminal covers included in supply (protection class IP20)



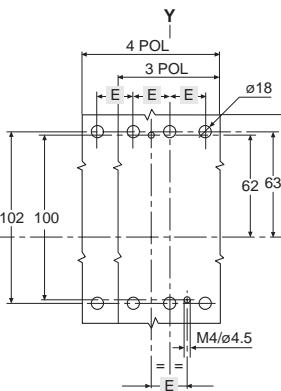
Template for drilling sheet metal support

(minimum thickness of sheet metal: 3 mm)

For front terminals

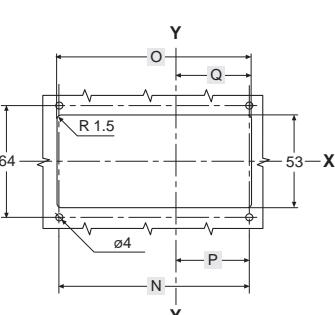


For threaded rear terminals



Template for drilling compartment door and fitting flange

(thickness of sheet metal: 1.5 - 2 mm)



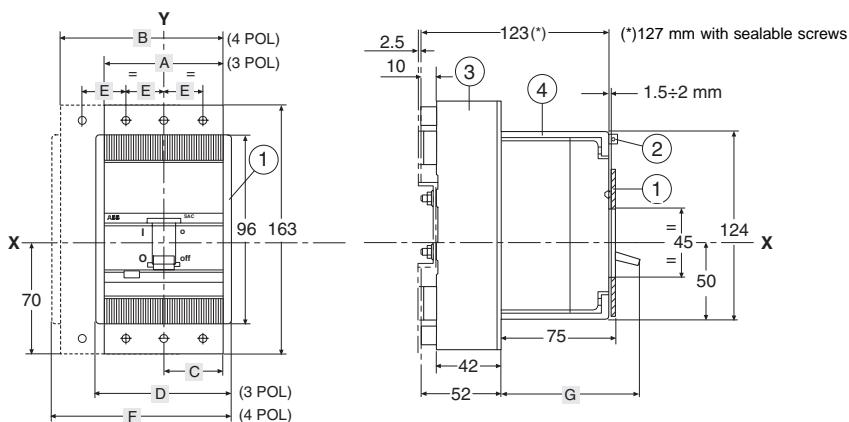
Key

- (1) Flange for compartment door
- (2) Bracket for fitting circuit-breaker on DIN channel (to order)
- (3) Separator plate
- (4) Sealable screws

	A	B	C	D	E	F	G	H	I	L	M	N	O	P	Q	...	...	...
S1	78	103	39	91	25	116	91	25.5	10.5 x 11	29	62	83.5 108.5	86 111	42	43	...	...	...
S2	90	120	45	103	30	133	93	27.5	12.5 x 12.5	27	60	95.5 125.5	98 128	48	49	...	...	...

Plug-in circuit-breaker

Fixed parts mounted on sheet metal or channel
(terminal covers for mobile part with IP20 always included in supply)

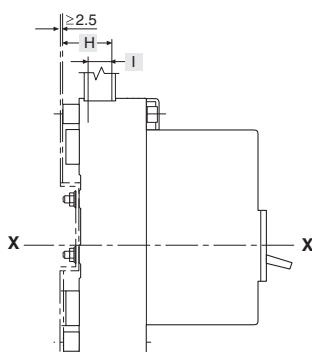


Key

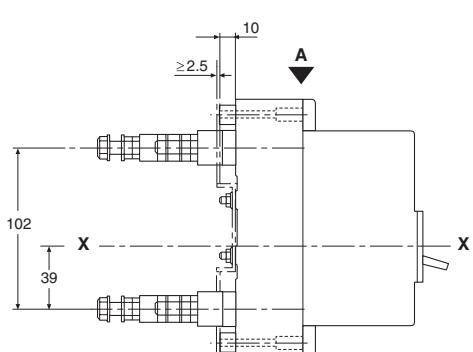
- ① Flange for compartment door
- ② Sealable screws
- ③ Fixed part
- ④ Moving part complete with terminal covers

Terminals

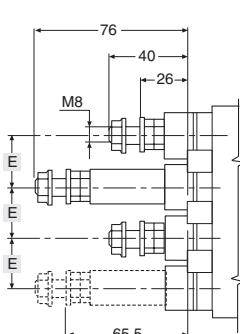
Front



Threaded rear



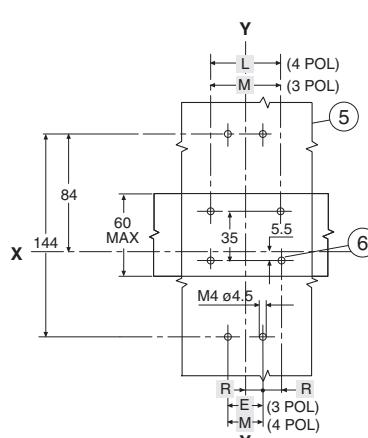
View A



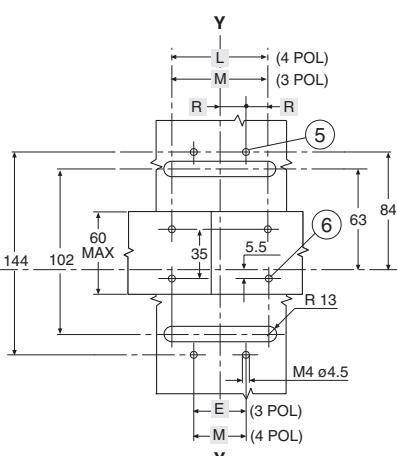
Drilling template for support (5) or channel (6)

(minimum thickness of sheet metal: 2.5 mm)

For front terminals

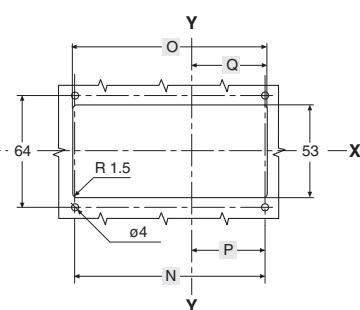


For threaded rear terminals



Template for drilling compartment door and fitting flange

(thickness of sheet metal: 1.5 - 2 mm)



GSI002

	A	B	C	D	E	F	G	H	I	L	M	N	O	P	Q	R	...	...
S1	78	103	39	91	25	116	91	28	10.5 x 11	75	50	83.5 108.5	86 111	42	43	12.5	...	...
S2	90	120	45	103	30	133	93	28	12.5 x 12.5	90	60	95.5 125.5	98 128	48	49	15	...	...



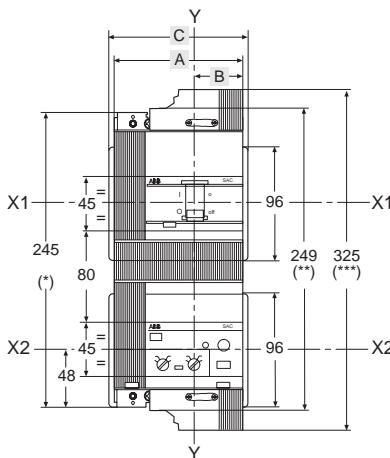
Overall dimensions

SACE S1-S2

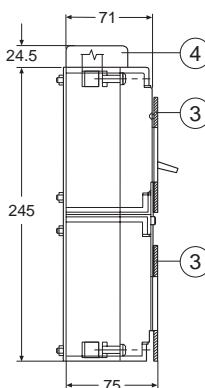
Circuit-breaker with SACE RC210-RC211-RC212 residual current release

Vertical installation RC211-RC212 (mounting on sheet metal)

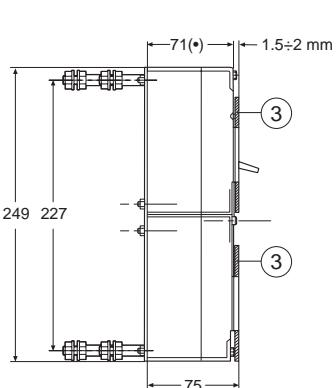
(*) Without terminal covers
 (**) With low terminal covers
 (***) With high terminal covers



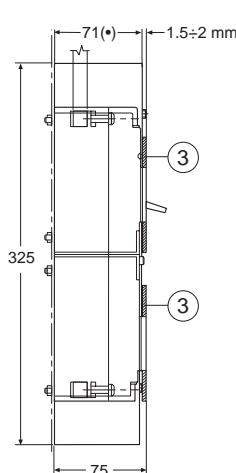
Front terminals for Cu cables or flat bars
 (high terminal covers to order)



Threaded rear terminals
 (low terminal covers included in supply)

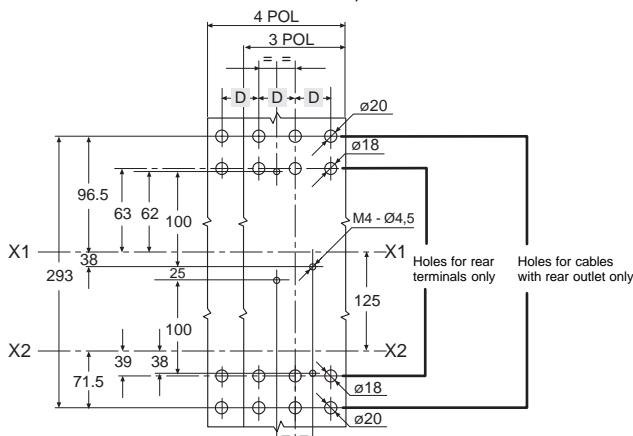


Version with high terminal covers:
 front or rear output cables



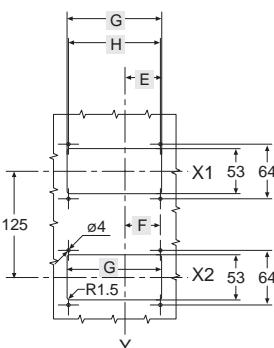
Template for drilling sheet metal support

(minimum thickness of sheet metal: 3 mm)

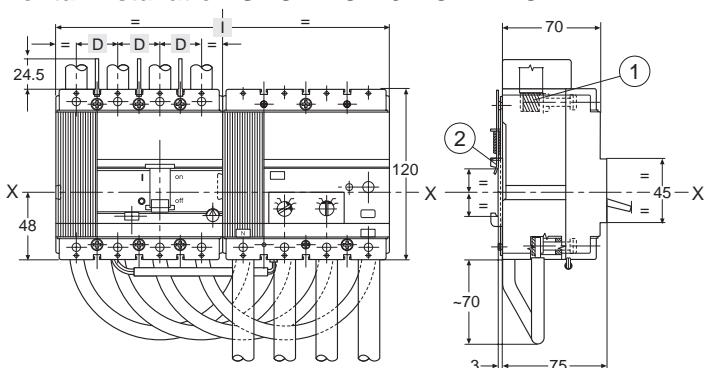


Template for drilling compartment door and fitting flange

(thickness of sheet metal: 1.5 - 2 mm)



Horizontal installation SACE RC210-RC211-RC212



Key

- ① Front terminals for cables and flat bars
- ② Bracket for mounting on DIN EN 50022 channel
- ③ Flange for compartment door
- ④ Separator plate

Note

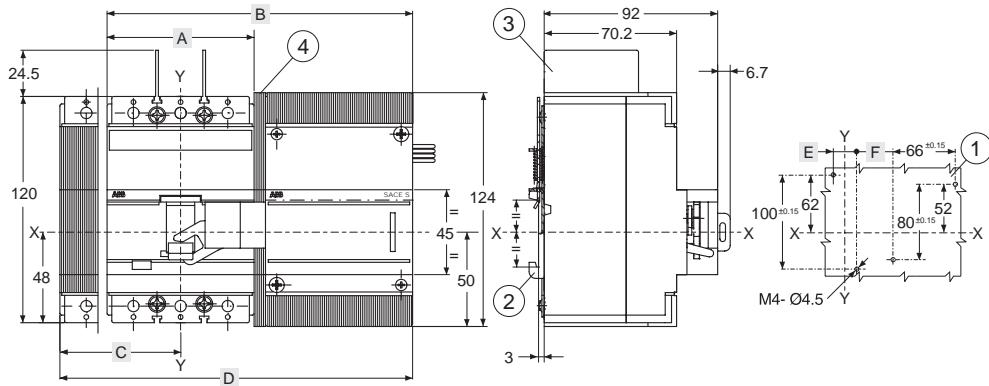
See the various different versions for the dimensions of the terminals

GSIS0003

	A	B	C	D	E	F	G	H	I
S1 - RC210	-	-	-	25	-	-	-	-	206
S1 - RC211/RC212	103	39	116	25	43	41.7	111	108.5	206
S2 - RC211/RC212	120	45	133	30	49	47.7	128	125.5	240

Accessories

Solenoid operator at the side of the circuit-breaker

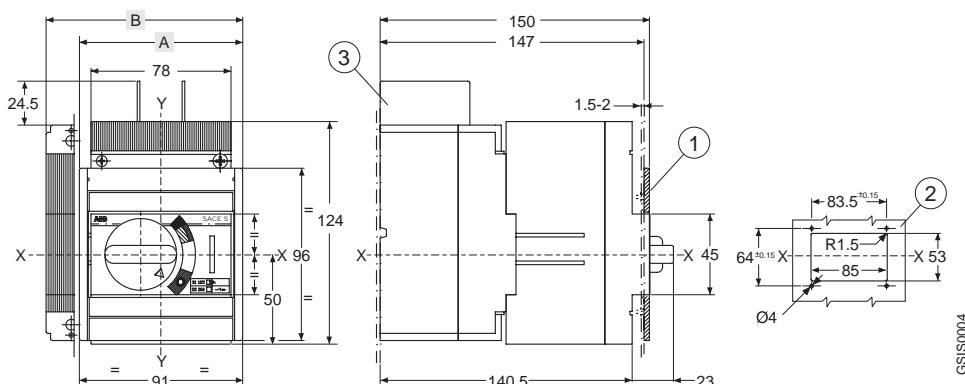


	A 3 POL	B 3 POL	C 4 POL	D 4 POL	E	F
S1	78	162	64	187	25 ± 0.15	38.5 ± 0.2
S2	90	168	75	198	30 ± 0.1	36 ± 0.2

Key

- (1) Drilling for fixing the circuit-breaker and solenoid operator assembly onto sheet
- (2) Plate for fixing circuit-breaker onto DIN EN 50022 rail (a richiesta)
- (3) Separator plates between the phases
- (4) Spacer (for SACE S1 only)

Solenoid operator on the front of the circuit-breaker

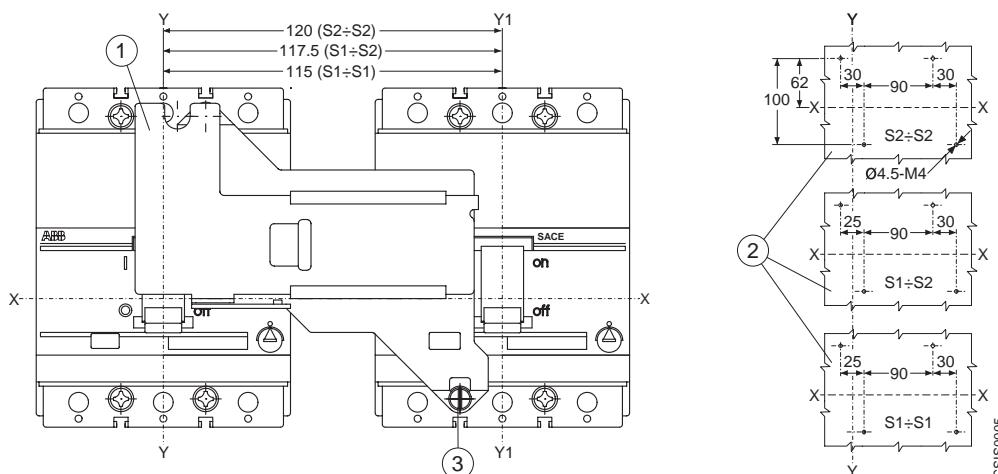


Key

- (1) Flange for compartment door
- (2) Template for drilling compartment door and fitting flange
- (3) Separator plates between the phases

	A 3 POL	B 4 POL
S1	78	103
S2	90	120

Interlock across two horizontally-installed circuit-breakers



Key

- (1) Interlock device
- (2) Template for drilling sheet metal support
- (3) Tightening torque 1,1 Nm
Remove the screws for stirring the cover and replace them with the ones in the KIT.

Note

See the various different versions for the dimensions of the circuit-breakers



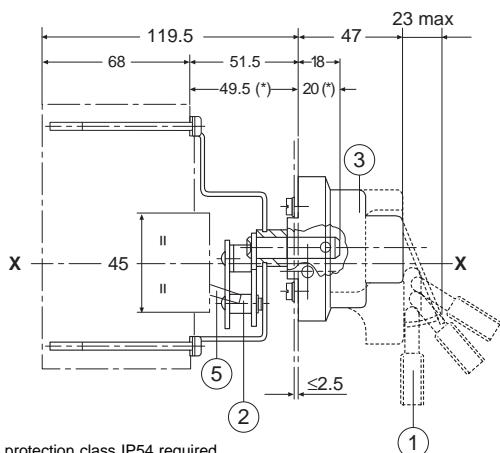
Overall dimensions

SACE S1-S2

Accessories

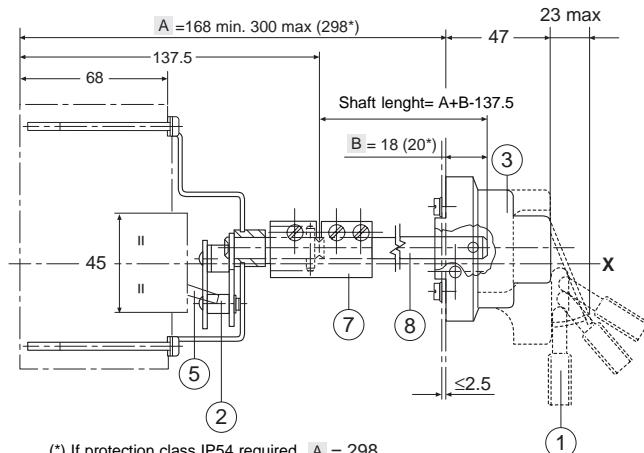
Compartment door-mounted rotary handle operating mechanism for fixed or plug-in circuit-breakers

Fixed depth

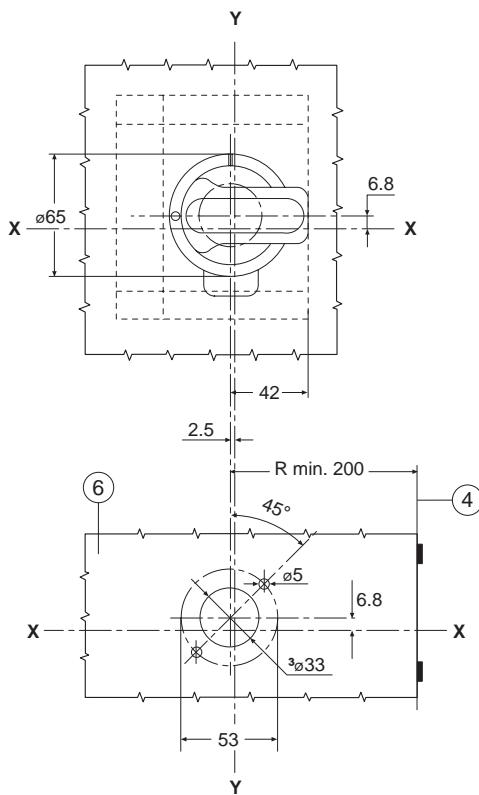


(*) If protection class IP54 required

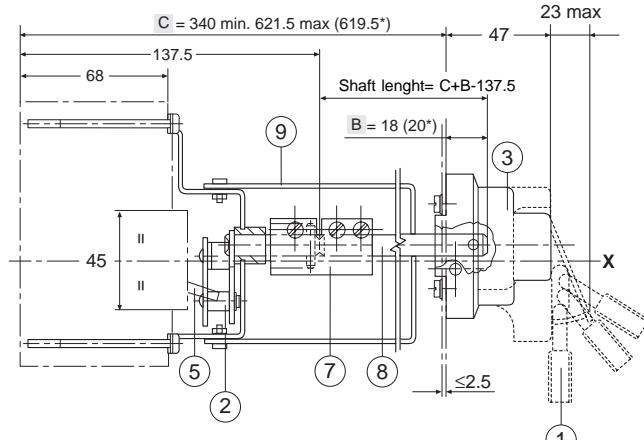
Adjustable depth (max 300 mm)



(*) If protection class IP54 required
A = 298
B = 20



Adjustable depth (max 621,5 mm)



(*) If protection class IP54 required
C max = 619.5
B = 20

GSI0006

Key

- (1) Padlock device for open position (max 3 padlocks with ø 6 to be provided by customer)
- (2) Transmission assembly
- (3) Rotary handle assembly
- (4) Minimum radius of rotation for fulcrum of compartment door
- (5) Circuit-breaker operating lever
- (6) Drilling of compartment door
- (7) Joint
- (8) Shaft
- (9) Support

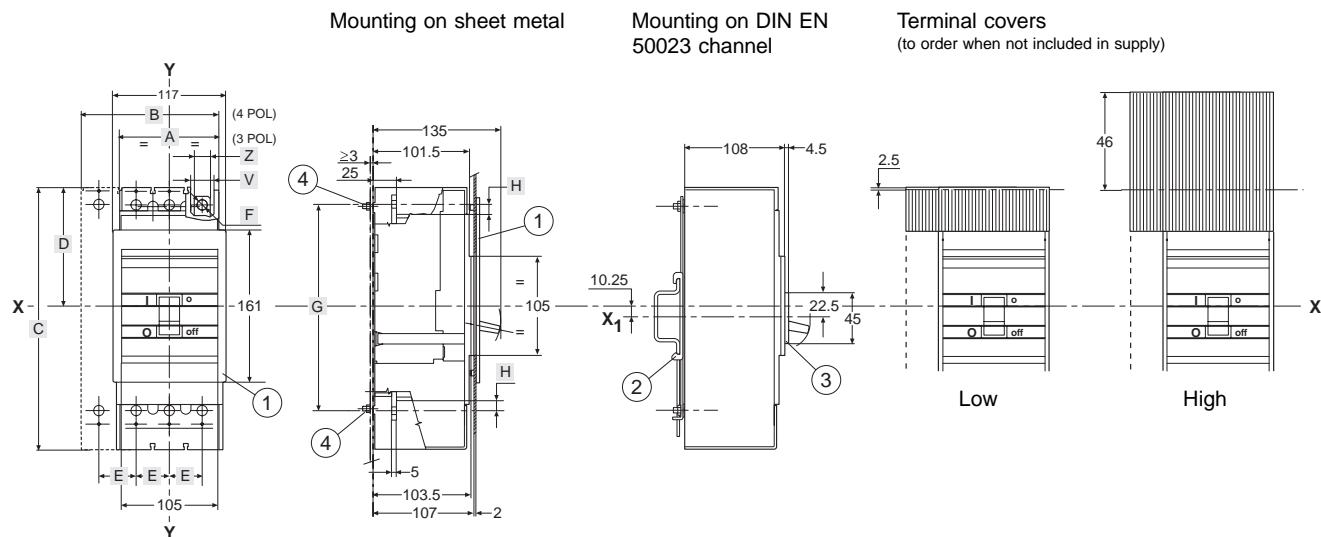
Note

See the various different versions for the circuit-breaker mounting holes



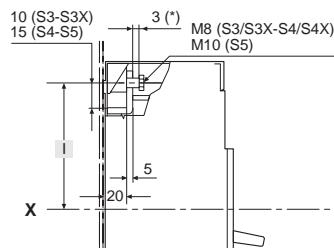
Overall dimensions SACE S3-S4-S5-S3X-S4X

Fixed circuit-breaker



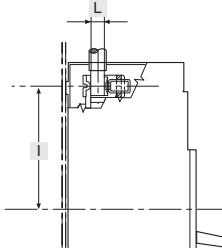
Terminals

Front for flat bars

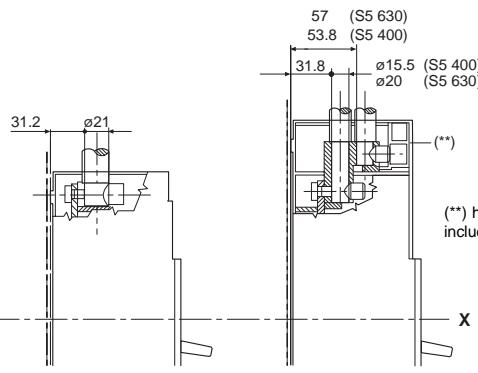


(*) 3 mm = minimum admissible thickness for S5 400

Front for cables



For SACE S3 - S4
S5 400 - S3X - S4X only



GSI0007

Key

- ① Flange for compartment door
- ② Bracket for mounting on DIN EN 50023 channel
- ③ 45 mm front flange
- ④ Tightening torque 2 Nm

	A	B	C	D	E	F	G	H	I	L	V	Z
S3	105	140	170	87.25	35	Ø 8	143	10	73.75	18x18	24	17.5
S4	105	140	254	125.25	35	Ø 8	218	11	107.25	18x18	24	17.5
S5 400	140	183.75	254	125.25	43.75	Ø 10	218	12	107.25	24x24	31	19.5
S5 630	140	183.75	254	125.25	43.75	Ø 10	218	12	107.25	-	31	19.5
S3X	100	140	255	175.25	35	Ø 8	228	10	158.75	18x18	24	17.5
S4X	105	140	359	210.25	35	Ø 8	307.5	11	196.75	18x18	24	17.5

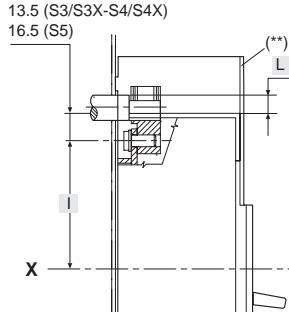


Overall dimensions SACE S3-S4-S5-S3X-S4X

Fixed circuit-breaker

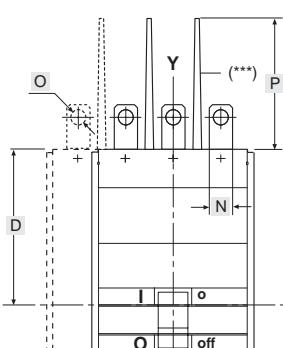
Terminals

For rear Cu/Al cables

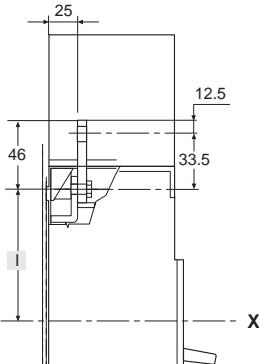


(**) high terminal covers included in supply

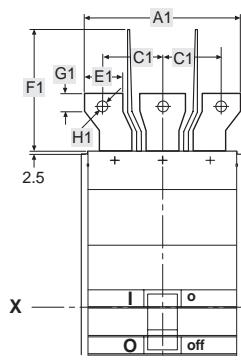
Extended front



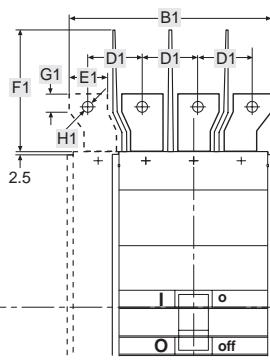
(***) Separator plates between the phases to order



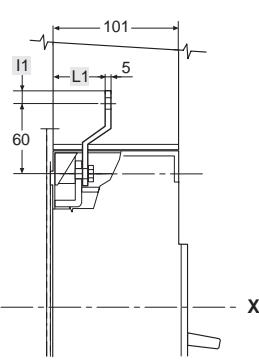
Extended front spreaded



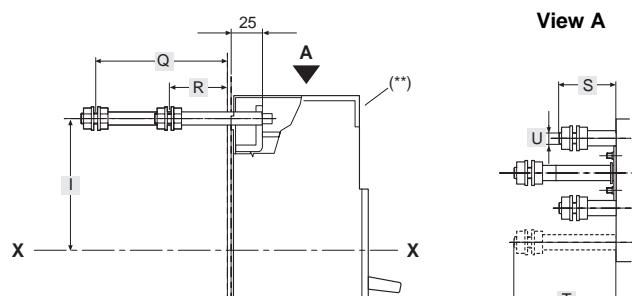
3 POL



4 POL



Threaded rear



(**) low terminal covers included in supply

GSI0008

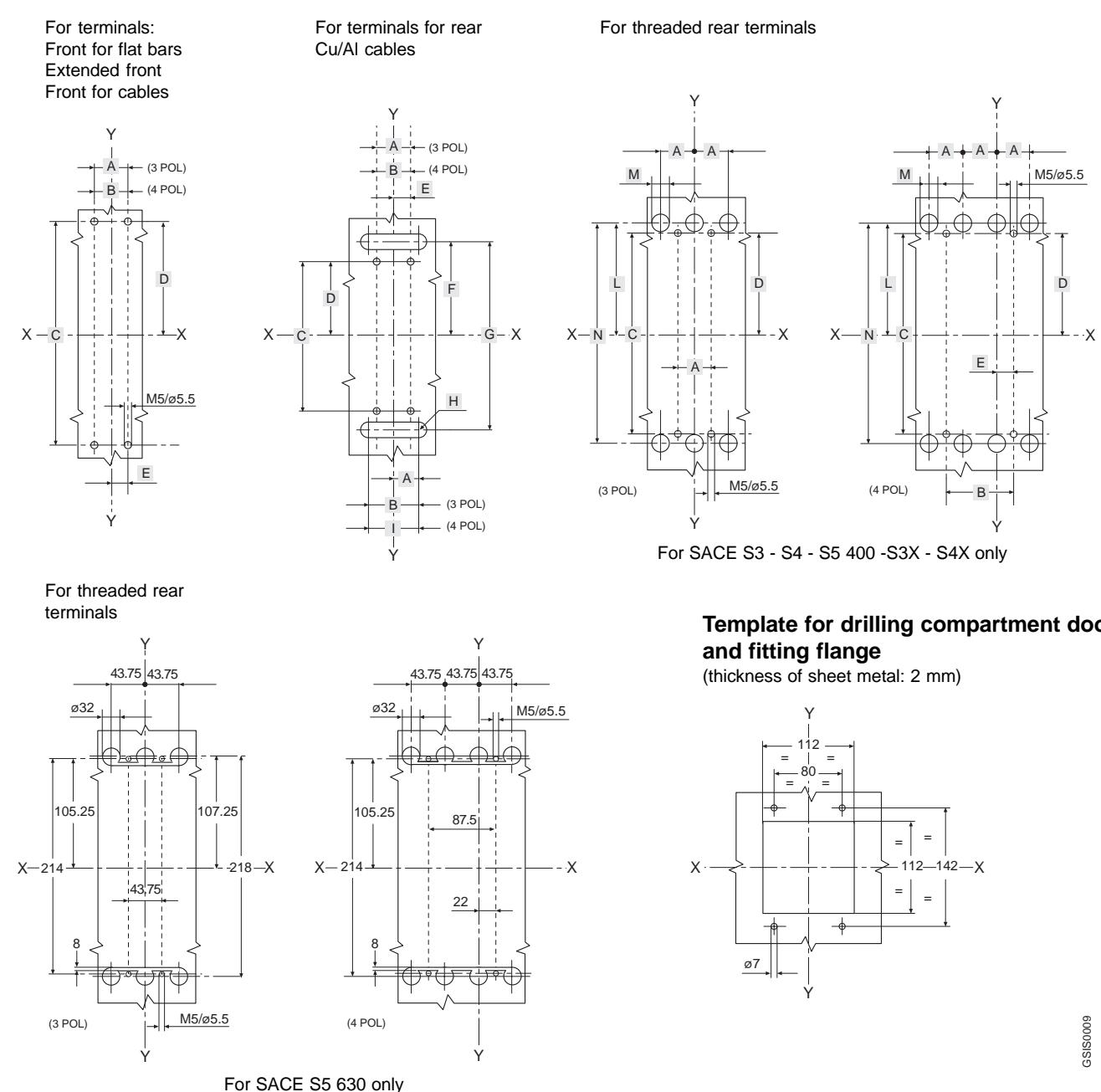
View A

	D	I	L	N	O	P	Q	R	S	T	U	A1	B1	C1	D1	E1	F1	G1	H1	I1	L1
S3	87.25	73.75	Ø 16	20	Ø 8.5	100	81.5	36.5	55	100	M 12	130	165	50	45	30	155	...	Ø 8.5	12.5	45
S4	125.25	107.25	Ø 16	20	Ø 8.5	100	81.5	36.5	55	100	M 12	130	165	50	45	30	155	...	Ø 8.5	12.5	45
S5 400	125.25	107.25	Ø 21	25	Ø 11	100	86.5	39.5	62	108	M 16	...	...	...	...	...	...	...	...	...	...
S5 630	125.25	107.25	—	—	—	—	106	41	70	135	M 24	158	202	59	54	40	189 max	...	Ø 11	15	49
S3X	175.25	158.75	Ø 16	20	Ø 8.5	100	81.5	36.5	55	100	M 12	130	165	50	45	30	155	...	Ø 8.5	12.5	45
S4X	210.25	196.75	Ø 16	20	Ø 8.5	100	81.5	36.5	55	100	M 12	130	165	50	45	30	155	...	Ø 8.5	12.5	45

Mounting parts for fixed circuit-breaker

Template for drilling sheet metal support

(minimum thickness of sheet metal: 3 mm)



GSI0009

	A	B	C	D	E	F	G	H	I	L	M	N
S3	35	70	139	71.75	17.5	94.75	185	R15	105	73.75	Ø 24	143
S4	35	70	214	105.25	17.5	128.25	260	R15	105	107.25	Ø 24	218
S5	43.75	87.5	214	105.25	22	134.25	272	R20	131.25	107.25	Ø 30	218
S3X	35	70	224	156.75	17.5	179.75	270	R15	105	158.5	Ø 24	228
S4X	35	70	303.5	194.75	17.5	218	350	R15	105	196.75	Ø 24	307.5

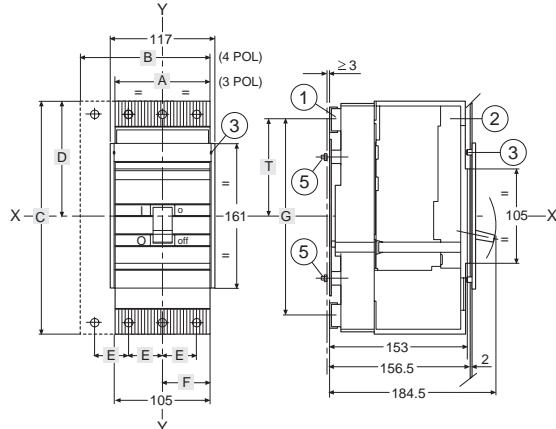


Overall dimensions

SACE S3-S4-S5-S3X-S4X

Plug-in circuit-breaker - withdrawable circuit-breaker

Plug-in SACE S3-S4-S5 400-S3X-S4X



Key

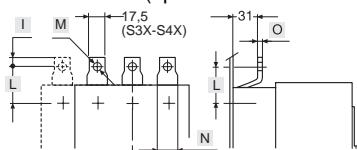
- (1) Fixed part
- (2) Moving part complete with IP20 protection class terminal covers
- (3) Flange for compartment door (included in supply)
- (4) Lock for compartment door (to order)
- (5) Tightening torque 1,1 Nm (S3-S4-S3X-S4X) - 2 Nm (S5)

Note The withdrawable circuit-breaker must be completed with one of the following accessories:

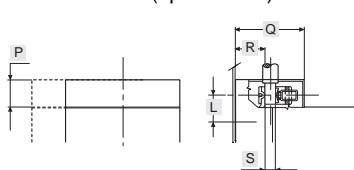
- front flange for operating lever mechanism
- rotary handle operating mechanism
- motor operator

Terminals

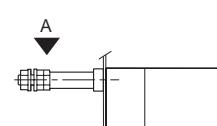
Front for flat bars (up to 400 A and S5 630-400A)



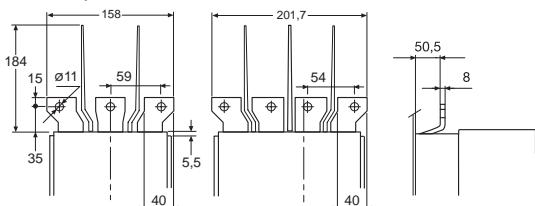
Front for cables (up to 400 A)



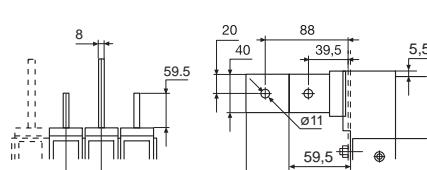
Threaded rear



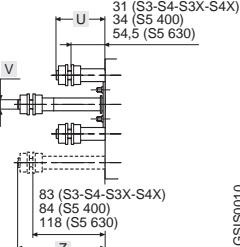
Front spreaded for SACE S5 630



Vertical flat bar rear terminals for SACE S5 630



View A



GSI/S010

	A	B	C	D	E	F	G	H	I	L	M	N	O	P	Q	R	S	T	U	V	Z
S3	105	140	175	89.75	35	52.5	143	84	10	33.5	Ø 8.2	20	5	37.5	79.5	36	18x18	73.75	48	M12	100
S4	105	140	259	127.75	35	52.5	218	84	10	33.5	Ø 8.2	20	5	37.5	79.5	36	18x18	107.25	48	M12	100
S5 400	140	183.75	259	127.75	43.75	70	218	101.5	14	43.5	Ø 10.2	25	6	47.5	91.5	37	24x24	107.25	58	M16	108
S5 630	140	183.75	259	127.75	43.75	70	218	101.5	14	49	Ø 10.2	25	6	55.75	91.5	37	24x24	109.25	80	M24x2	143
S3X	105	140	260	174.5	35	52.5	143	84	10	33.5	Ø 8.2	20	5	—	—	—	73.75	48	M12	100	
S4X	105	140	344	212.75	35	52.5	218	84	10	33.5	Ø 8.2	20	5	—	—	—	107.25	48	M12	100	

Mounting parts for plug-in circuit-breaker - withdrawable circuit-breaker

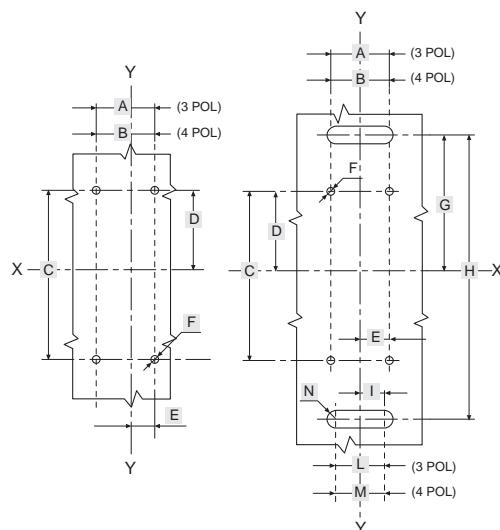
Template for drilling sheet metal support

(minimum thickness of sheet metal: 3 mm)

SACE S3-S4-S5 400-S3X-S4X

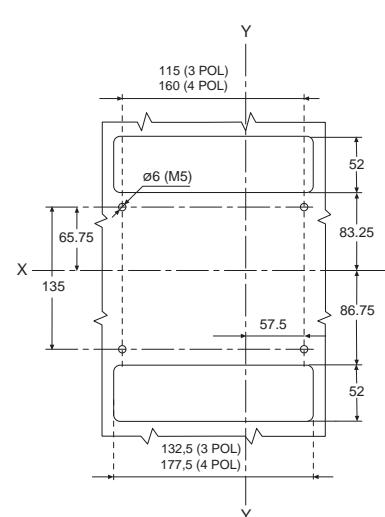
For terminals:
Front for flat bars
Front for cables

For terminals:
Threaded rear

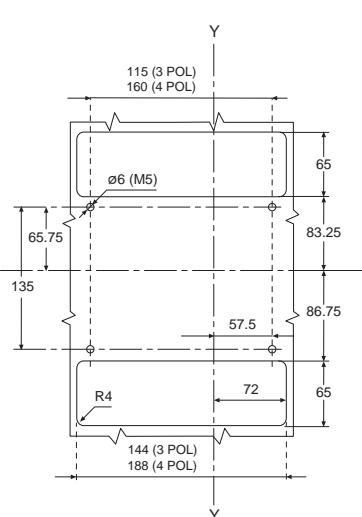


SACE S5 630

For terminals:
Vertical flat bar rear terminals
Threaded rear

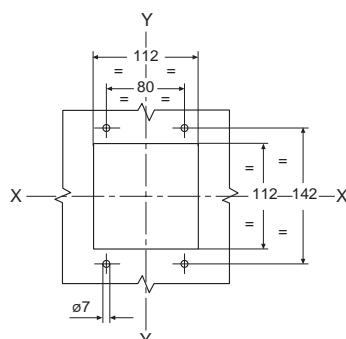


For terminals:
Front
Front for Cu cables
Front spreaded

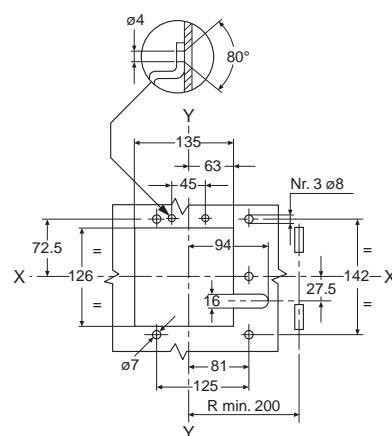


Template for drilling compartment door and fitting flange

(thickness of sheet metal: 2 mm)



For plug in circuit-breaker



For withdrawable circuit-breaker

GSISS011

	A	B	C	D	E	F	G	H	I	L	M	N
S3 - S3X	70	105	100	52.25	25	M4-Ø5	73.75	143	35	70	105	R14
S4 - S4X	82	117	135	65.75	41	M4-Ø5	107.25	218	35	70	105	R14
S5	115	160	135	65.75	58	M5-Ø6	107.25	218	43.75	87.5	131.25	R18

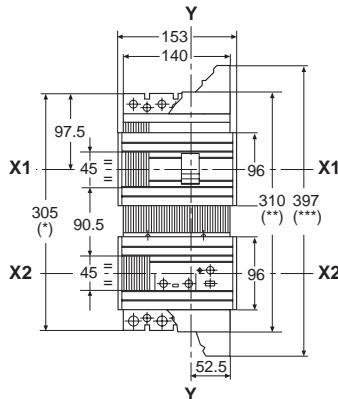


Overall dimensions SACE S3-S4-S5-S3X-S4X

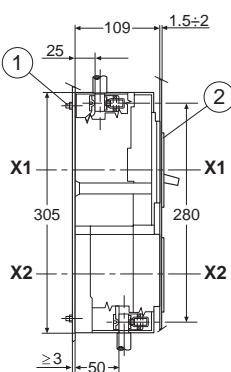
SACE S3 circuit-braker with SACE RC211/3 - RC212/3 residual current release

Vertical installation (mounting on sheet metal)

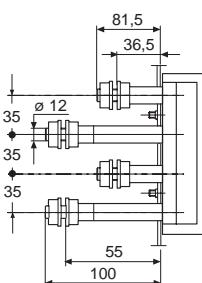
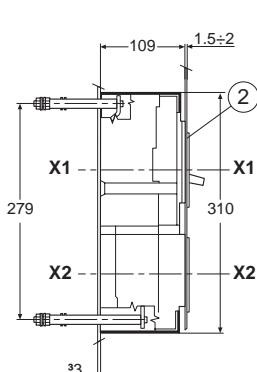
(*) Without terminal covers
(**) with low terminal covers
(***) with high terminal covers



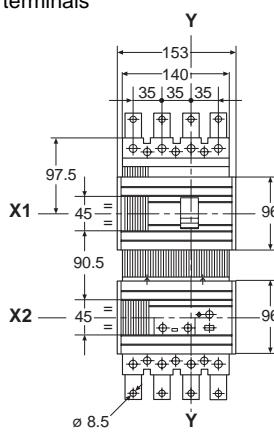
Front terminals for cables
(terminal covers to order)



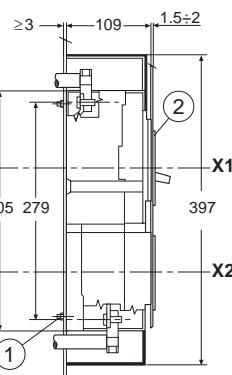
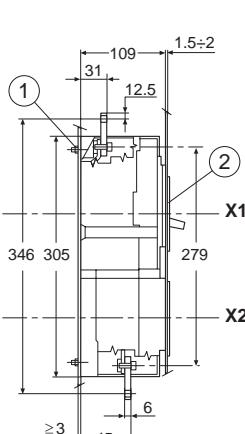
Rear terminals
(low terminal covers included in supply)



Version with extended front terminals



Terminals for rear Cu/Al cables
(high terminal covers included in supply)



Key

① Tightening torque 2 Nm

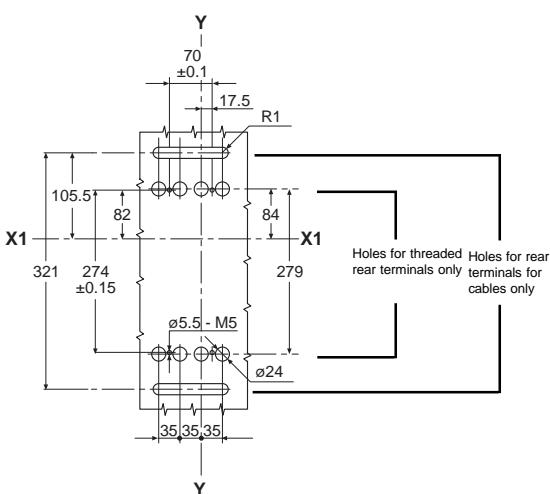
② Flange for compartment door

Note

See the various different versions for the dimensions of the terminals

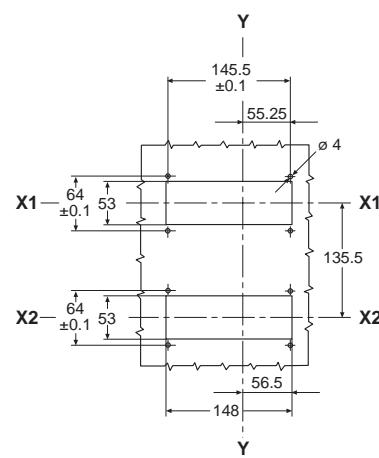
Template for drilling sheet metal support

(minimum thickness of sheet metal: 3 mm)



Template for drilling compartment door and fitting flange

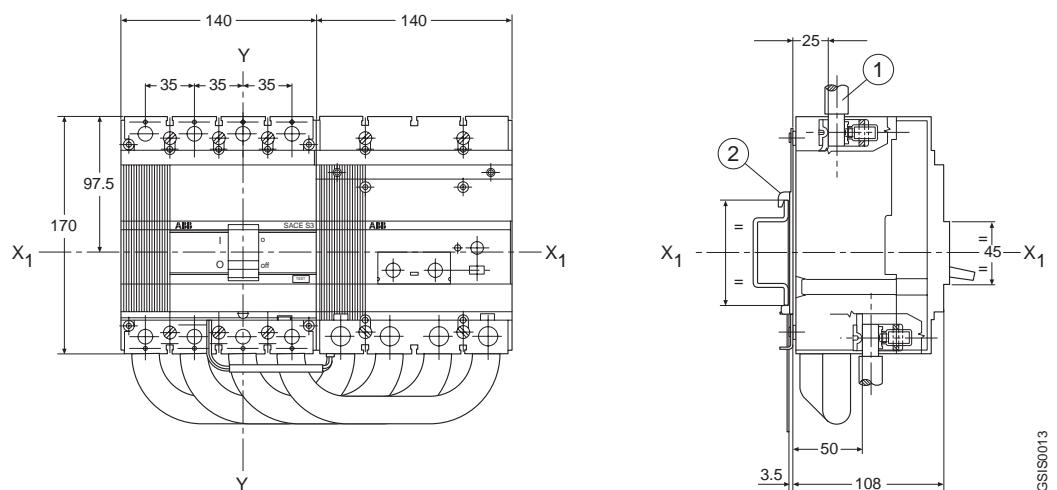
(thickness of sheet metal: 1.5 - 2 mm)



GSI0012

SACE S3 circuit-braker with SACE RC211/3 - RC212/3 residual current release

Horizontal installation



Key

- (1) Front terminals for cables
- (2) Bracket for mounting on DIN EN 50023 channel

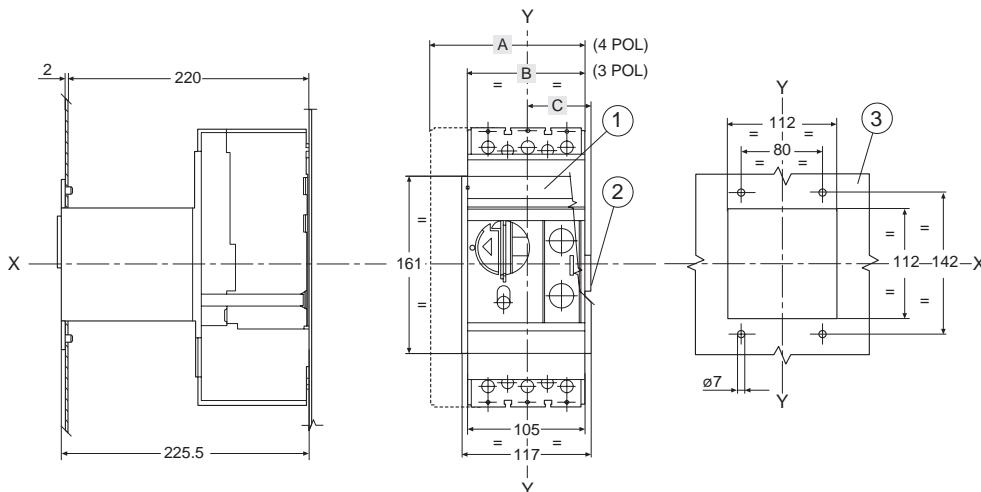


Overall dimensions

SACE S3-S4-S5-S3X-S4X

Accessories

Motor operator for fixed circuit-breaker

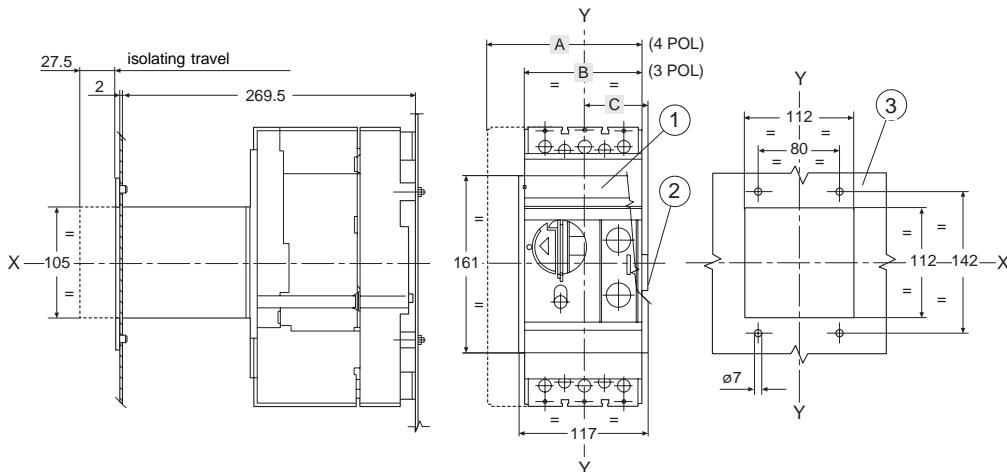


Note

See the various different versions for the circuit-breaker mounting holes

	A	B	C
S3-S4 S3X-S4X	140	105	58
S5	183.75	140	75.5

Motor operator for plug in circuit-breakers

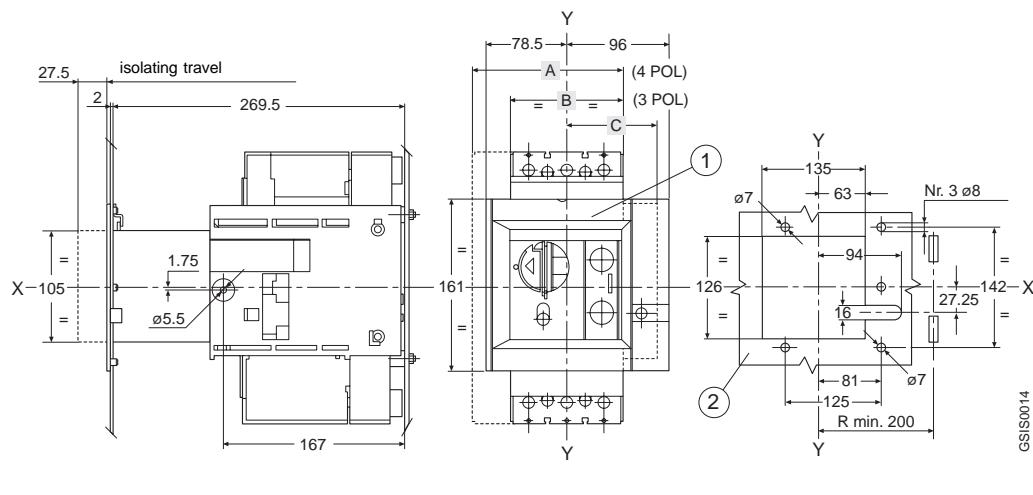


Note

See the various different versions for the circuit-breaker mounting holes

	A	B	C
S3-S4 S3X-S4X	140	105	58
S5	183.75	140	75.5

Motor operator for withdrawable circuit-breaker



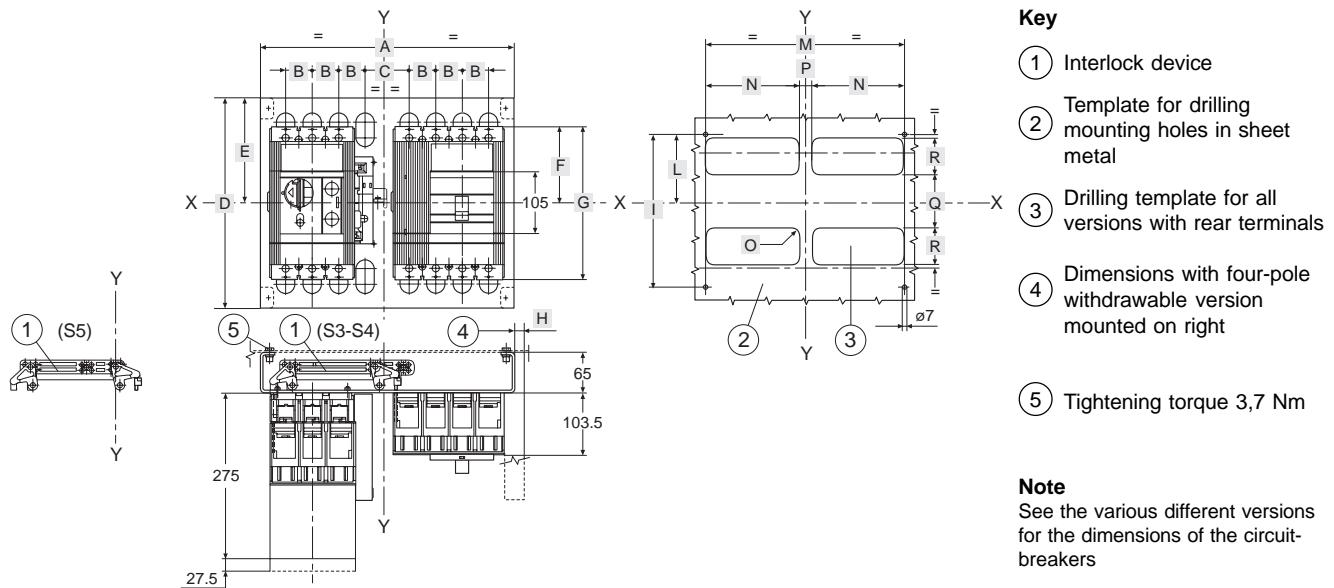
Note

See the various different versions for the circuit-breaker mounting holes

	A	B	C
S3-S4 S3X-S4X	140	105	58
S5	183.75	140	101.5

Accessories

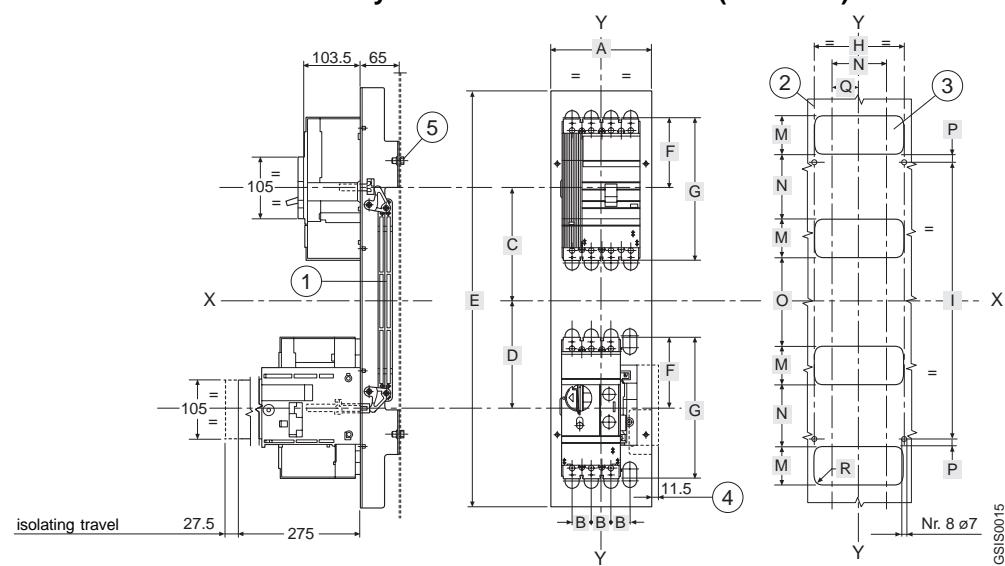
Interlock across two horizontally-installed circuit-breakers



	A	B	C	D	E	F	G	H	I	L	M	N	O	P	Q	R
S3	350	35	66	265	134.5	87.2	170	12	227.5	116	324	155	R15	16	68	75
S4	350	35	66	350	173.5	125.3	254	12	315	156	324	155	R15	16	143	75
S5	500	43.75	119	350	173.3	125.3	254	16	315	156	472	202	R15	48	114	117
S3X	350	35	66	265	135	172	255	12	227.5	116	324	155	R15	16	68*, 153**	75
S4X	350	35	66	350	173.3	210	339	12	315	156	324	155	R15	16	143*, 232.5**	75

* Per interruttore estraibile con terminali posteriori
** Per interruttore fisso con terminali posteriori (uscita posteriore)

Interlock across two vertically-installed circuit-breakers (S3-S4-S5)



	A	B	C	D	E	F	G	H	I	L	M	N	O	P	Q	R
S3	180	35	152.5	157.5	578	87.5	170	157.5	350	155	75	68	92	14	77.5	R15
S4	180	35	198.5	195.5	750	125.3	254	157.5	490	155	75	143	101	23.5	77.5	R15
S5	220	43.75	198.5	195.5	750	125.3	254	201	490	202	107	114	66	9	98.5	R15

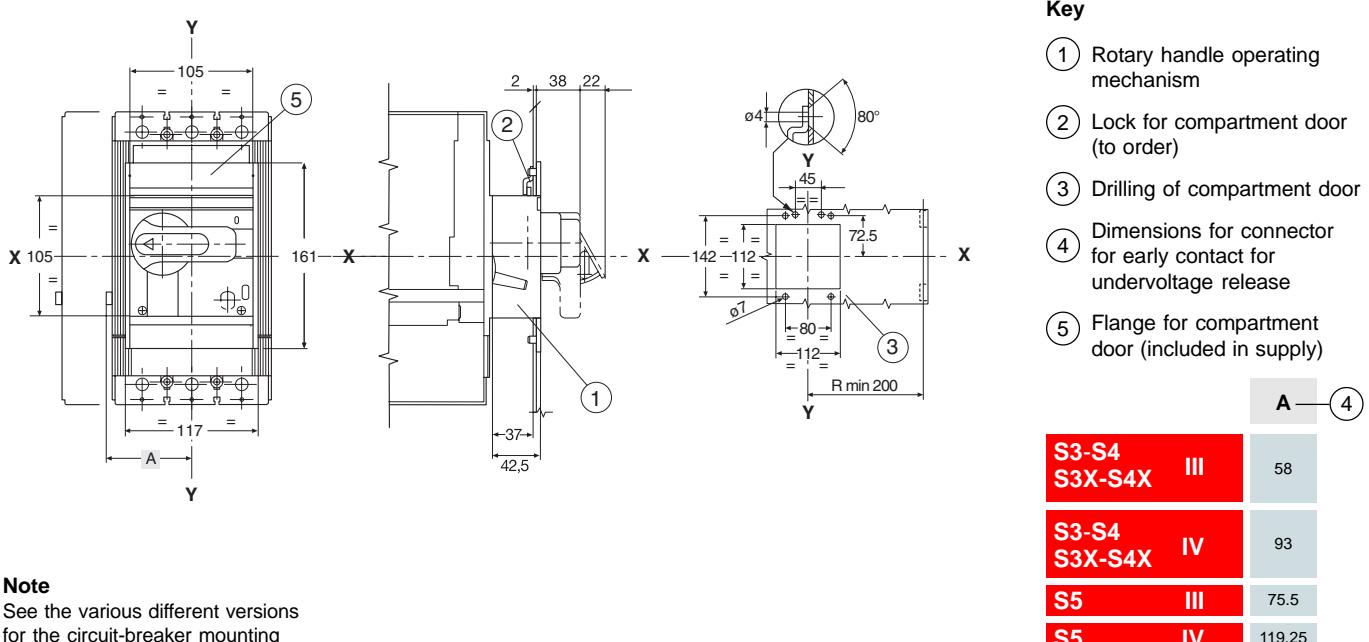


Overall dimensions

SACE S3-S4-S5-S3X-S4X

Accessories

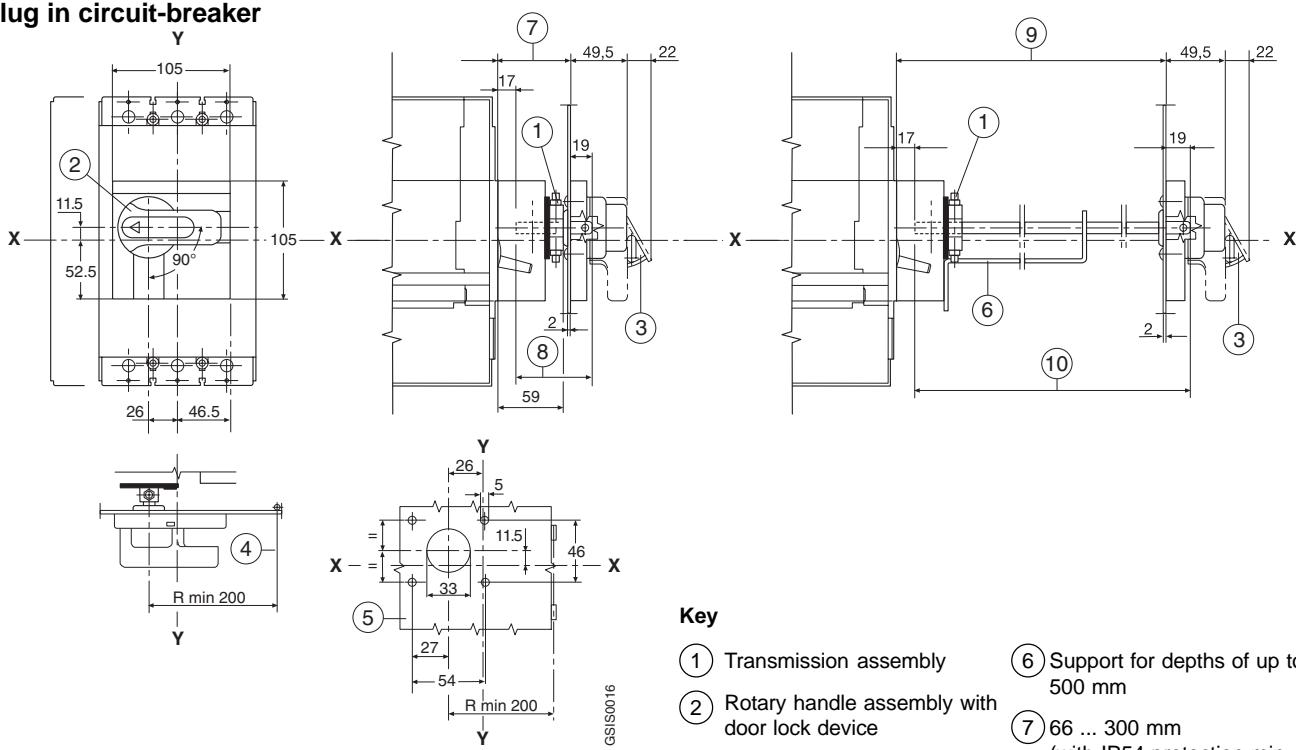
Rotary handle operating mechanism on fixed or plug in circuit-breaker



Note

See the various different versions for the circuit-breaker mounting holes

Compartment door-mounted rotary handle operating mechanism with adjustable depth for fixed or plug in circuit-breaker

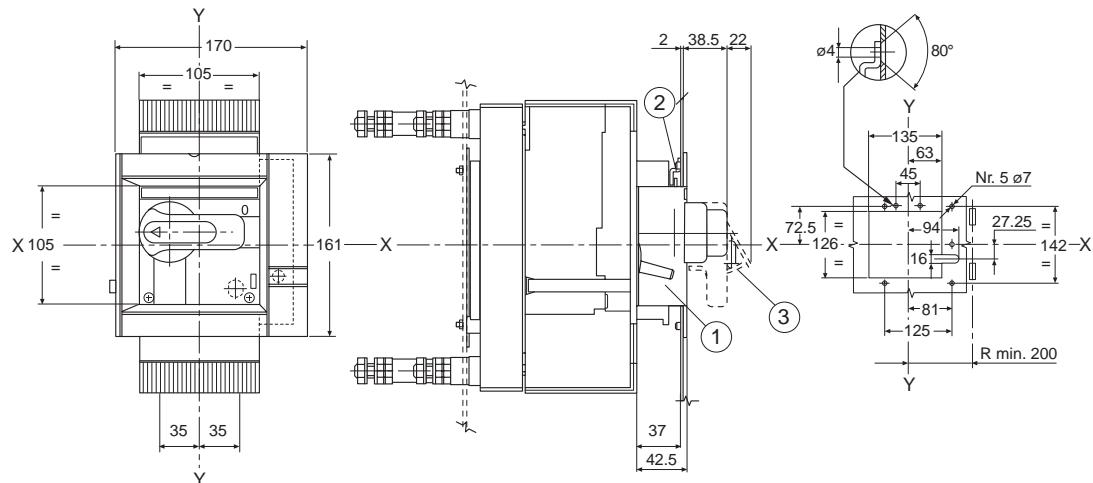


Note

See the various different versions for the circuit-breaker mounting holes

Accessories

Rotary handle operating mechanism on withdrawable circuit-breaker



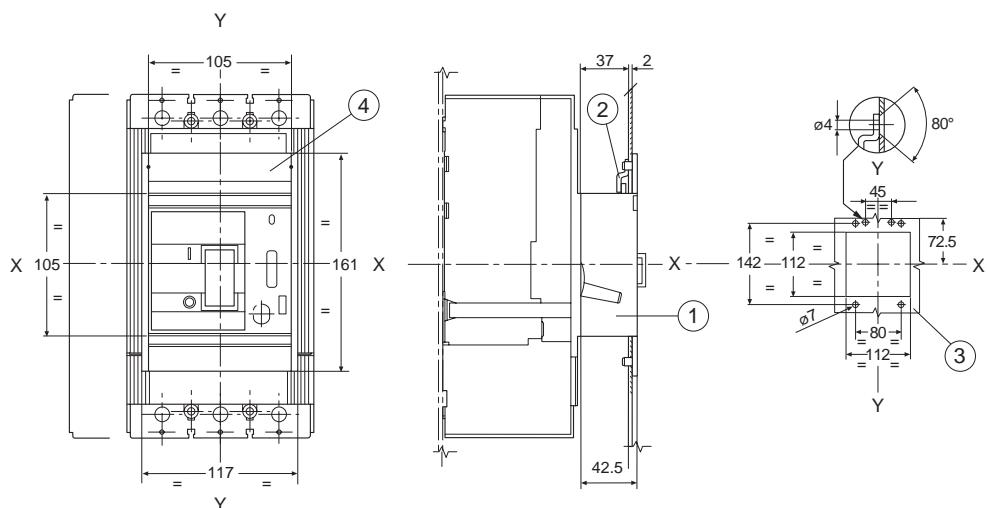
Key

- (1) Rotary handle operating mechanism
- (2) Lock for compartment door (to order)
- (3) Padlock device for open position (maximum 3 padlocks max. ø 6 mm to be provided by user)

Note

See the various different versions for the circuit-breaker mounting holes

Front flange for operating lever mechanism



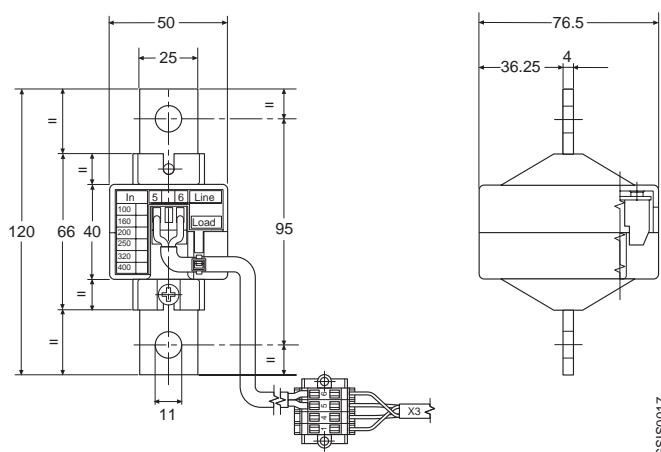
Key

- (1) Front flange for lever operating mechanism
- (2) Lock for compartment door (to order)
- (3) Drilling of compartment door
- (4) Flange for compartment door (included in supply)

Note

See the various different versions for the circuit-breaker mounting holes

External neutral for SACE S4-S5 circuit-breakers



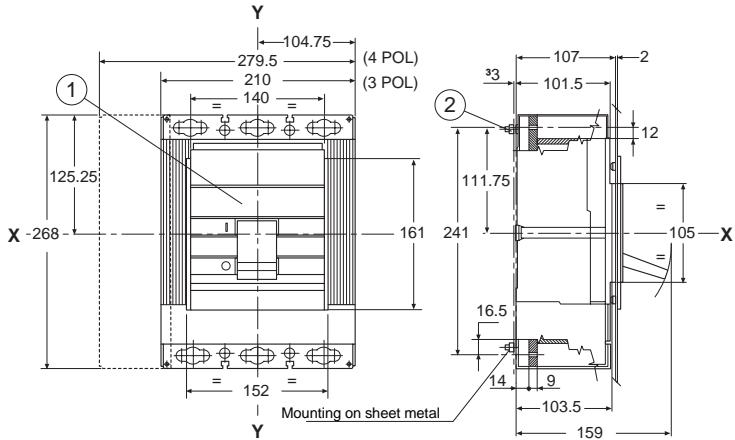
GSI50017



Overall dimensions

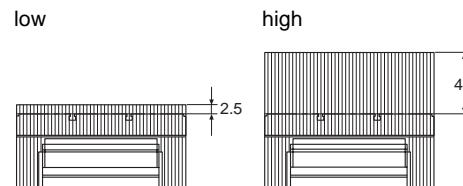
SACE S6 - S6X

Fixed circuit-breaker (S6)



Terminal covers

(to order when not included in the supply)

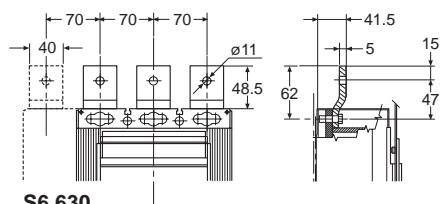


Key

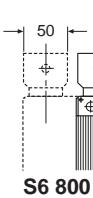
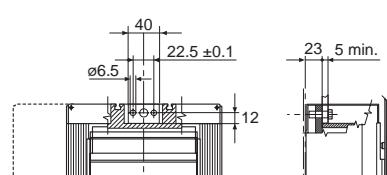
- ① Flange for compartment door (included in supply)
- ② Tightening torque 2 Nm

Terminals

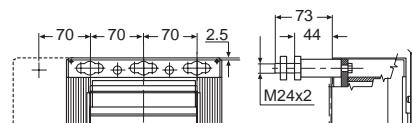
Front extended



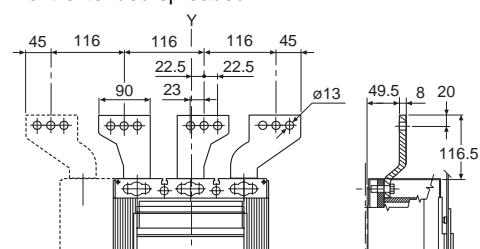
Front



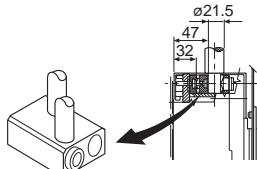
Threaded rear (low terminal covers included in supply)



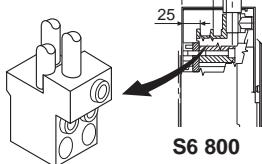
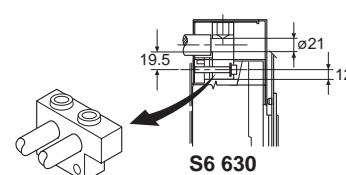
Front extended spreaded



Front for Cu/Al cables (IP20 high terminal covers included in the supply for S6 800)

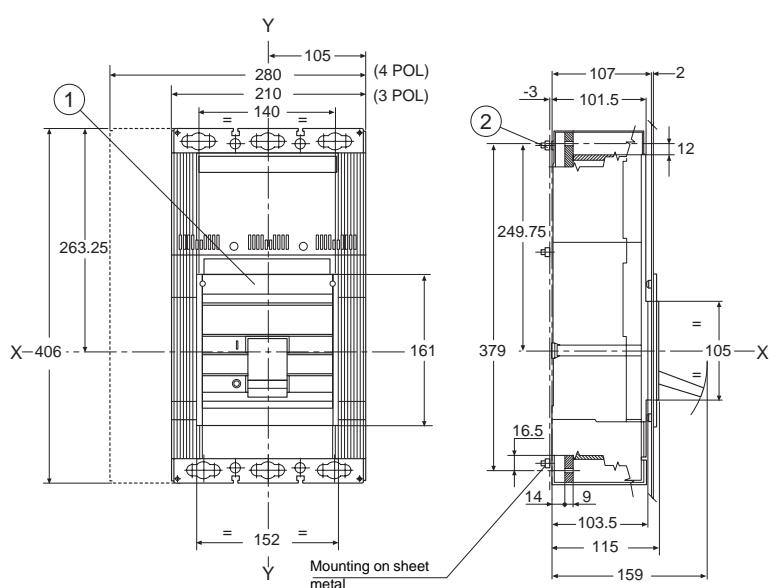


For rear Cu/Al cables (IP20 high terminal covers included in the supply)



GSS0018

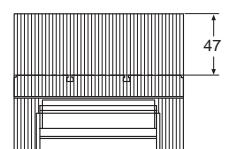
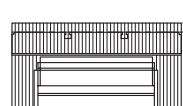
Fixed circuit-breaker (S6X)



Terminal covers

(to order when not included in the supply)

low high

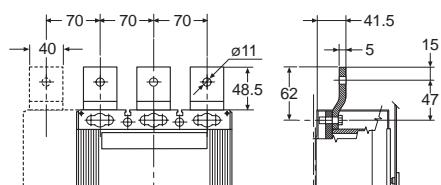


Key

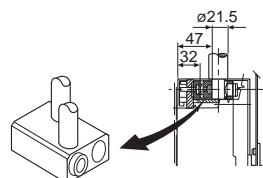
- ① Flange for compartment door (included in supply)
- ② Tightening torque 2 Nm

Terminals

Extended front

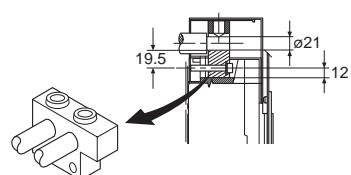


Front for Cu/Al cables

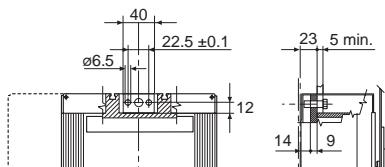


For rear Cu/Al cables

(IP54 high terminal covers included in the supply)

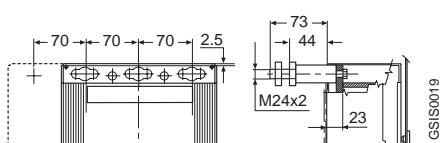


Front



Threaded rear

(low terminal covers included in supply)





Overall dimensions

SACE S6 - S6X

Mounting parts for fixed circuit-breaker (S6)

Template for drilling sheet metal support

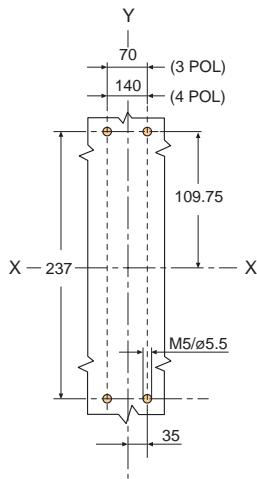
(minimum thickness of sheet metal: 3 mm)

For terminals:

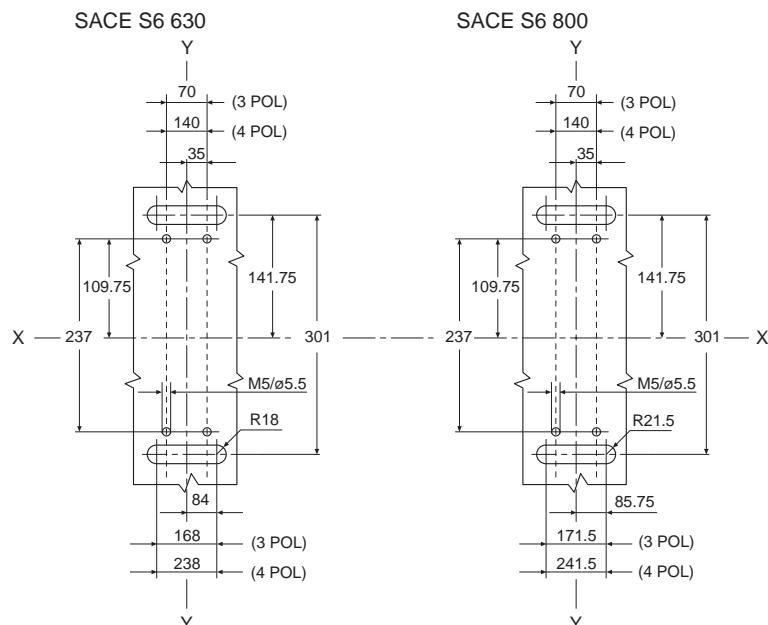
Front for flat bars

Front extended

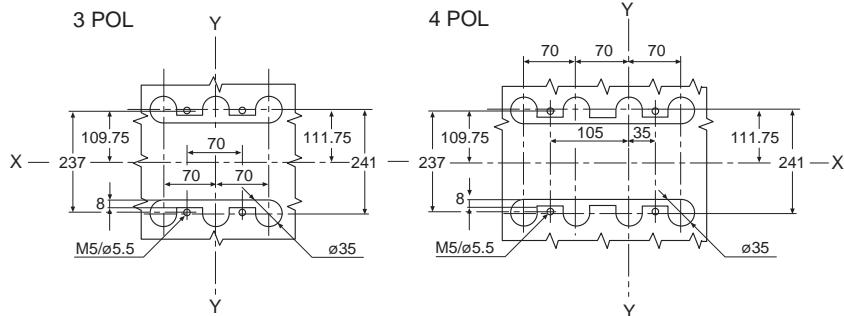
Front for cables



For terminals for rear Cu/Al cables

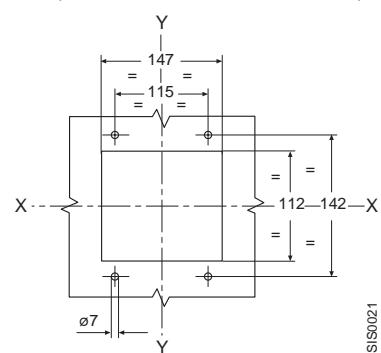


For terminals threaded rear



Template for drilling compartment door and fitting flange

(thickness of sheet metal: 2 mm)



GSSIS021

Mounting parts for fixed circuit-breaker (S6X)

Template for drilling sheet metal support

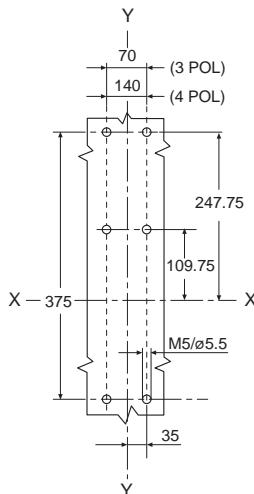
(minimum thickness of sheet metal: 3 mm)

For terminals:

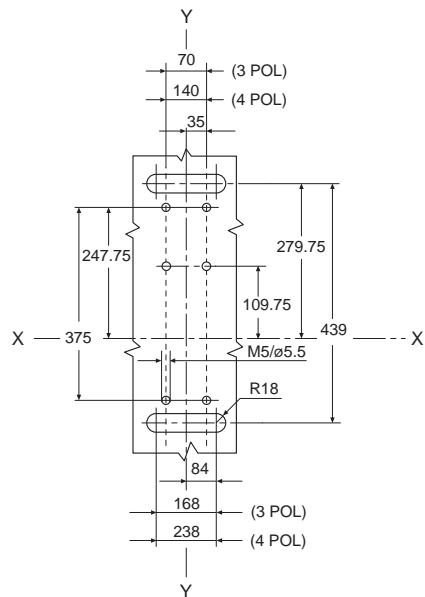
Front for flat bars

Front extended

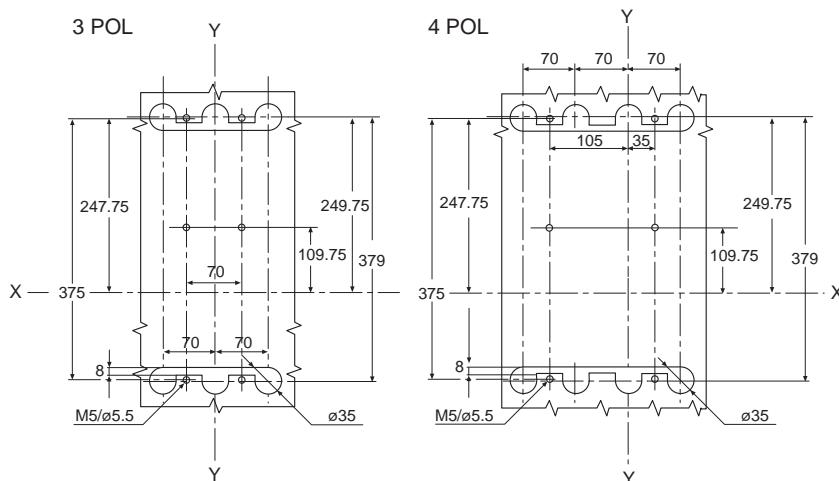
Front for cables



For terminals for rear Cu/Al cables

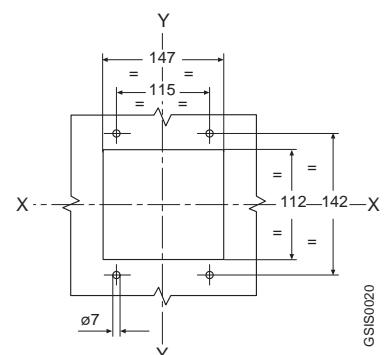


For terminals threaded rear



Template for drilling compartment door and fitting flange

(thickness of sheet metal: 2 mm)

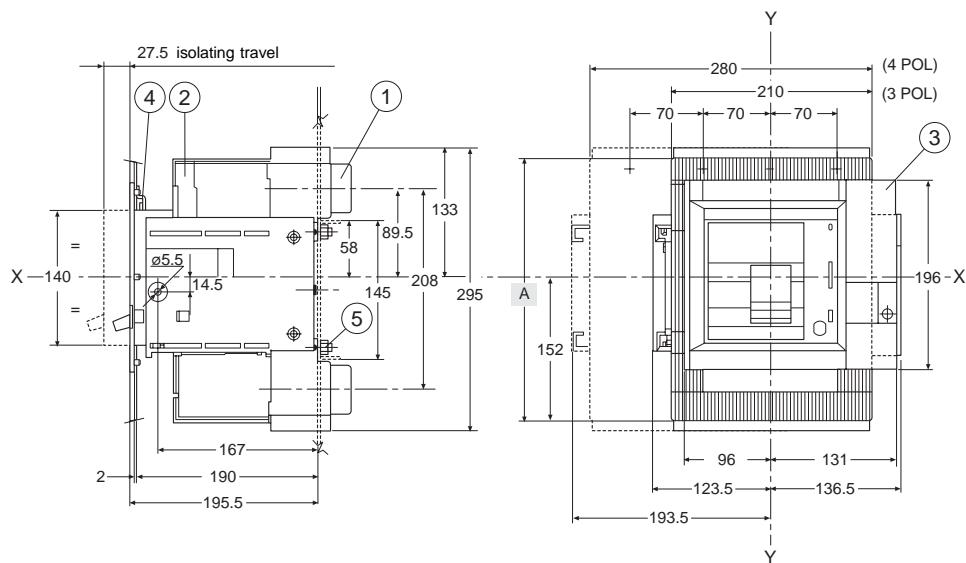




Overall dimensions

SACE S6 - S6X

Withdrawable circuit-breaker



Key

- ① Fixed part
- ② Moving part
- ③ Flange for compartment door (included in supply)
- ④ Lock for compartment door (to order)
- ⑤ Tightening torque 9 Nm

A

S6

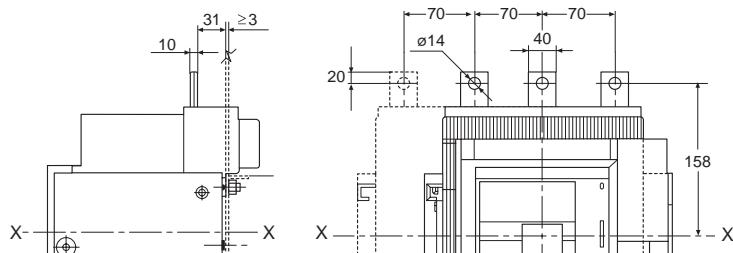
273

S6X

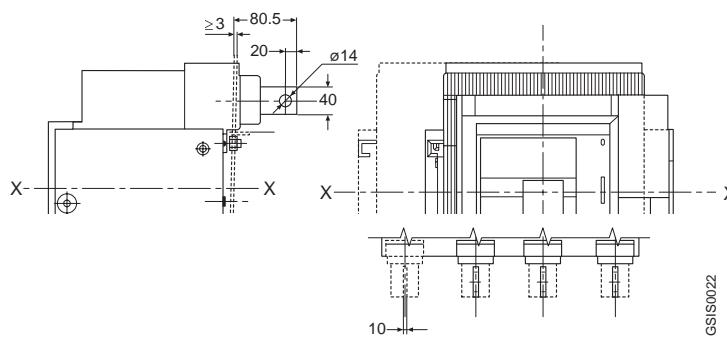
411

Terminals

Front for SACE S6 630, S6 800



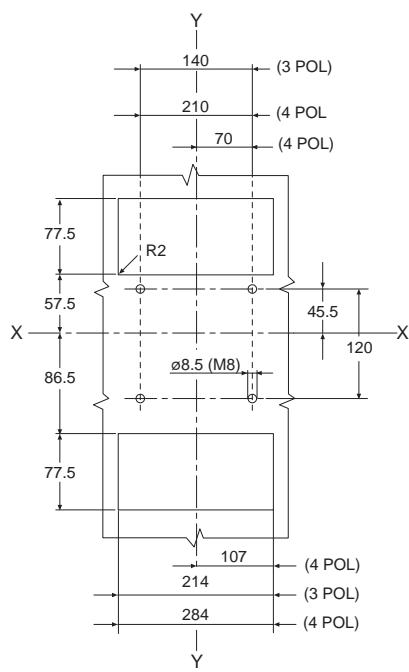
Horizontal or vertical rear flat bar for SACE S6 630, S6 800



Mounting parts for withdrawable circuit-breaker

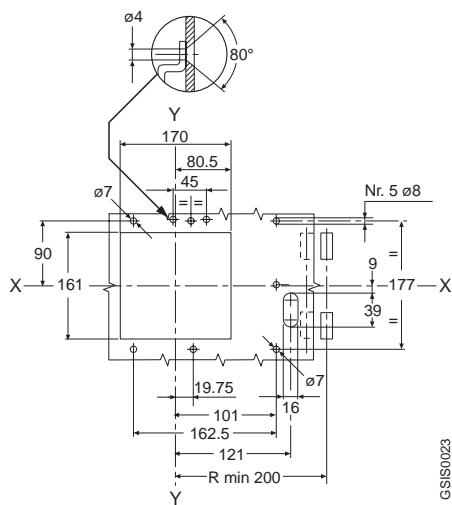
Template for drilling sheet metal support

(minimum thickness of sheet metal: 3 mm)



Template for drilling compartment door and fitting flange

(thickness of sheet metal: 2 mm)



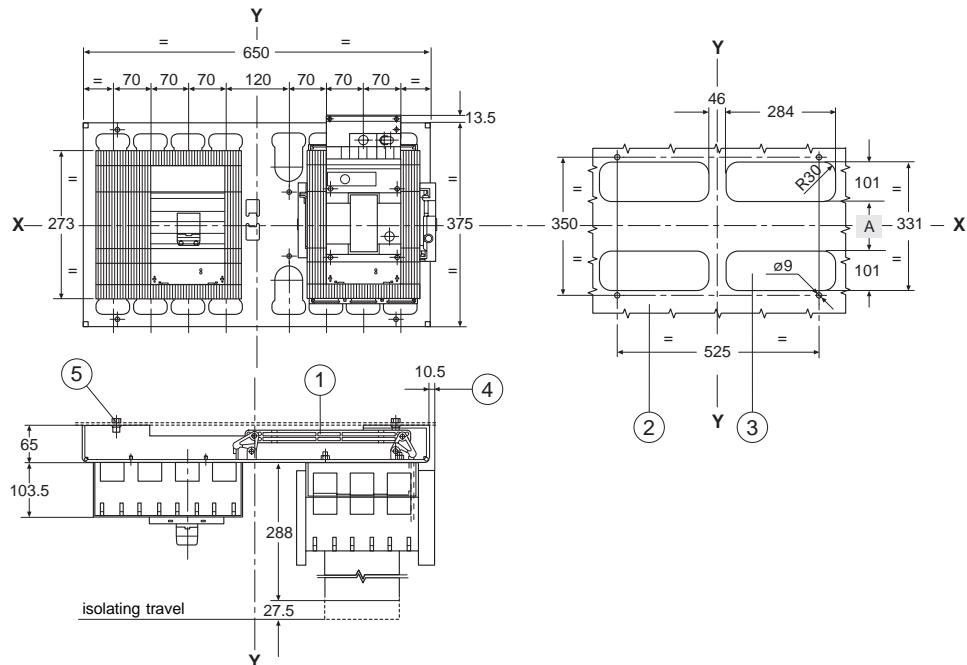


Overall dimensions

SACE S6 - S6X

Accessories

Interlock across two horizontally-installed circuit-breakers

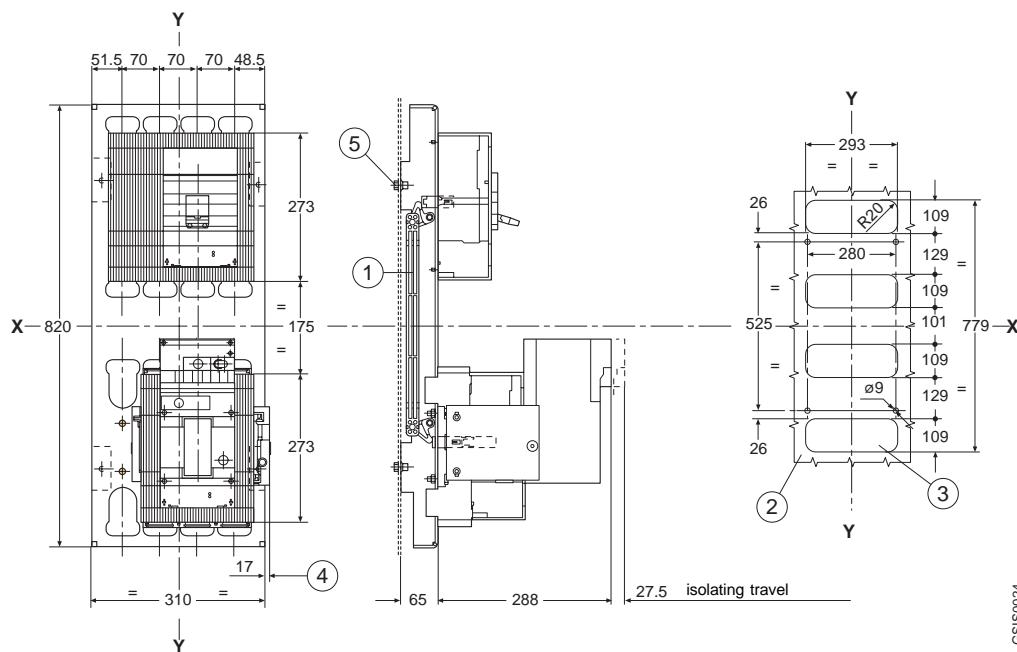


Note

See the various different versions for the dimensions of the circuit-breakers

A mm	
S6	129 (fixed, withdrawable)
S6X	267 (fixed) 129 (withdrawable)

Interlock across two vertically-installed circuit-breakers (for S6 only)



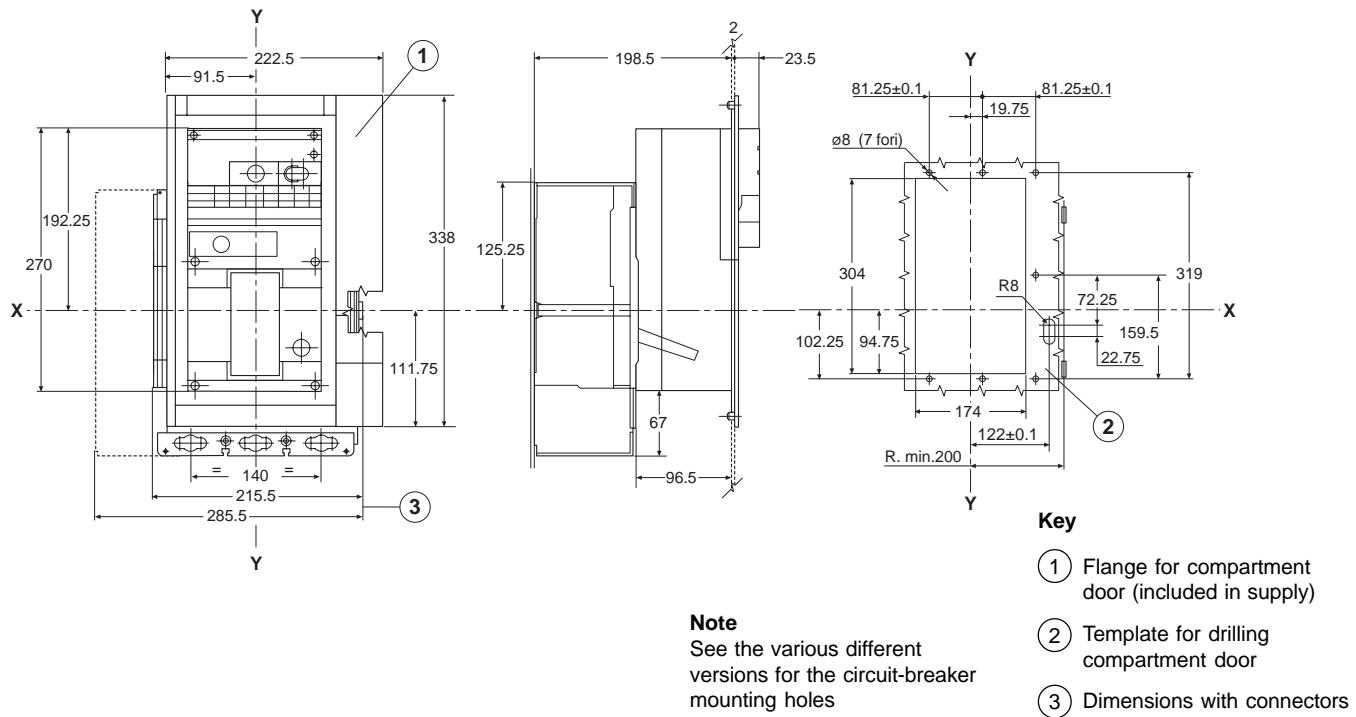
Note

See the various different versions for the dimensions of the circuit-breakers

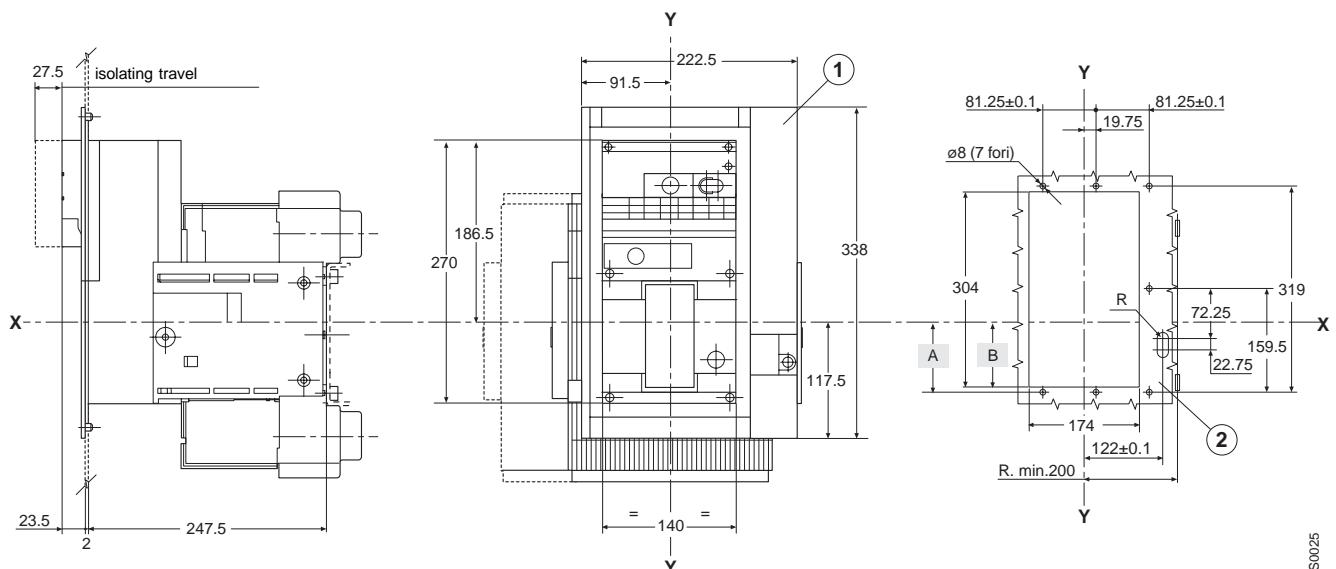
GSIS0024

Accessories

Motor operator for fixed circuit-breaker



Motor operator for withdrawable circuit-breakers



GSIS025

Key

- ① Flange for compartment door (included in supply)
- ② Template for drilling compartment door

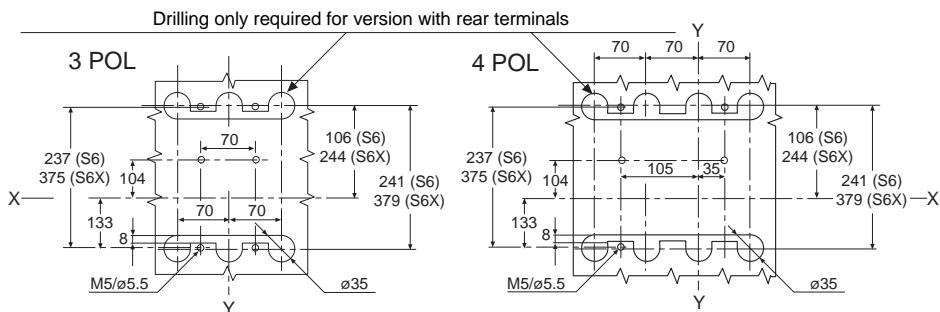
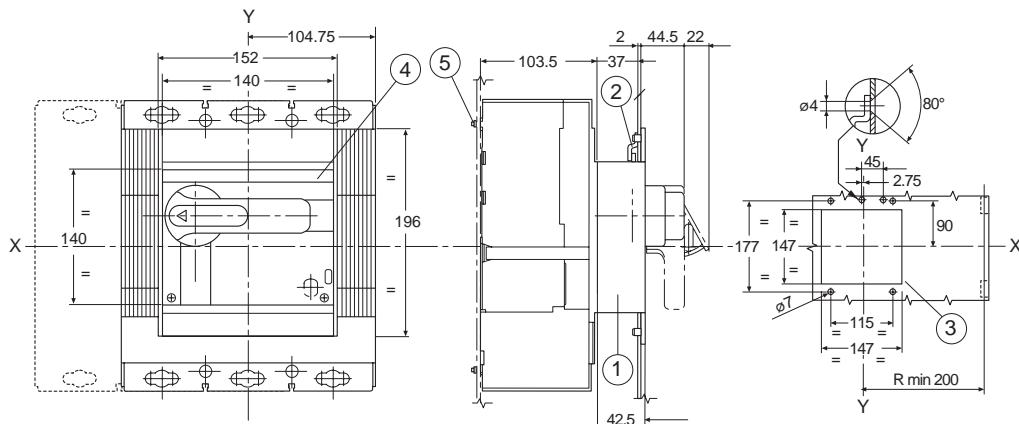


Overall dimensions

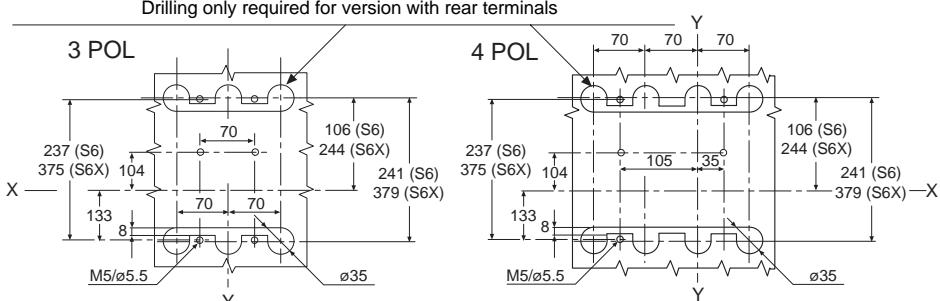
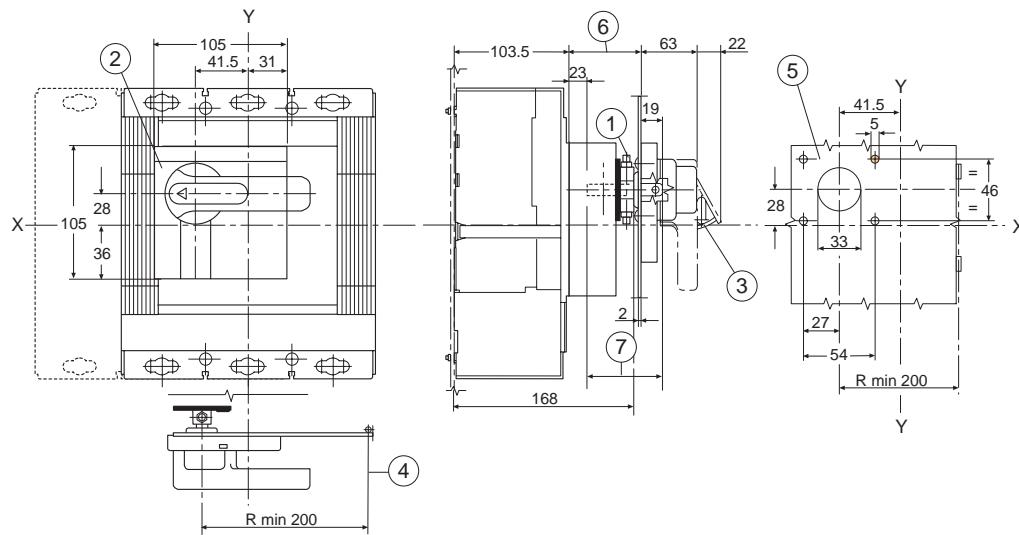
SACE S6 - S6X

Accessories

Rotary handle operating mechanism on fixed circuit-breaker



Compartment door-mounted rotary handle mechanism with adjustable depth for fixed circuit-breaker



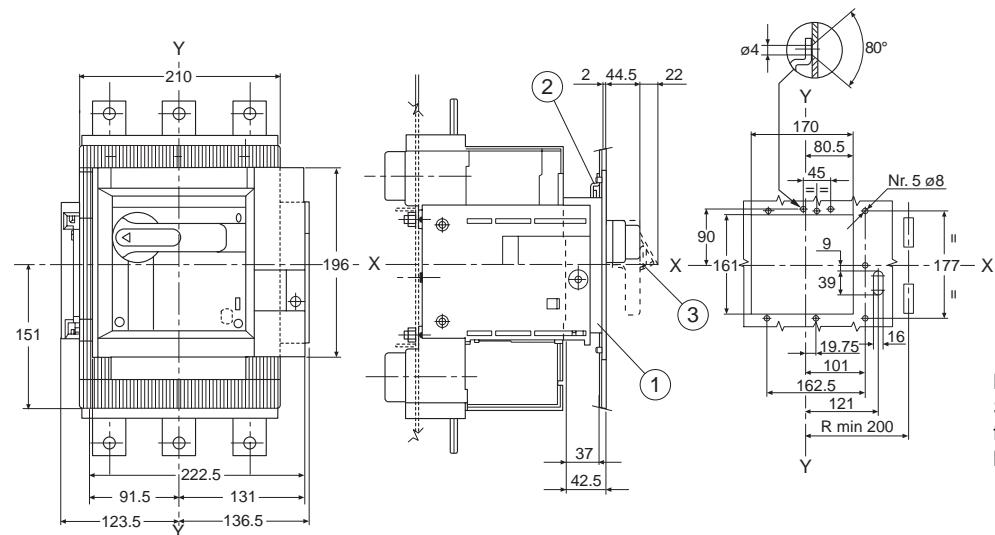
GSI/S026

Note

See the various different versions for the circuit-breaker mounting holes

Accessories

Rotary handle operating mechanism on withdrawable circuit-breaker



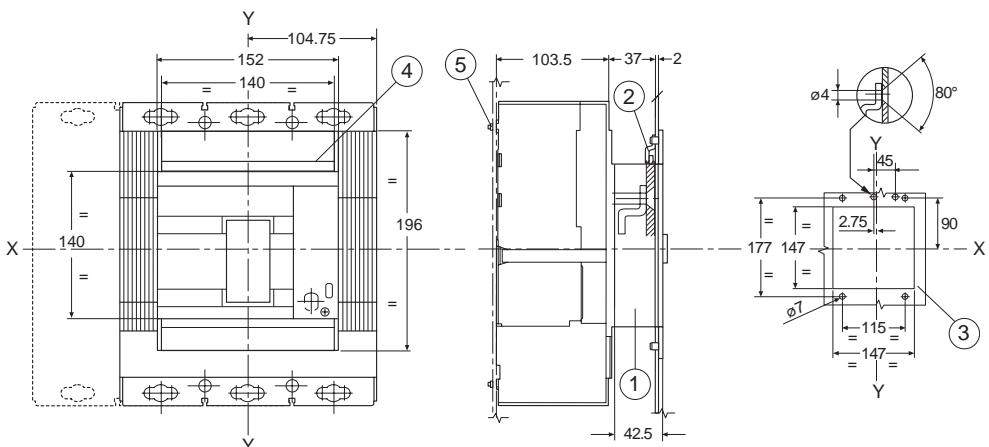
Key

- ① Rotary handle on circuit-breaker
- ② Lock for compartment door (to order)
- ③ Padlock device for open position (maximum 3 padlocks max. Ø 6 mm to be provided by user)

Note

See the various different versions for the circuit-breaker mounting holes

Front flange for operating lever mechanism

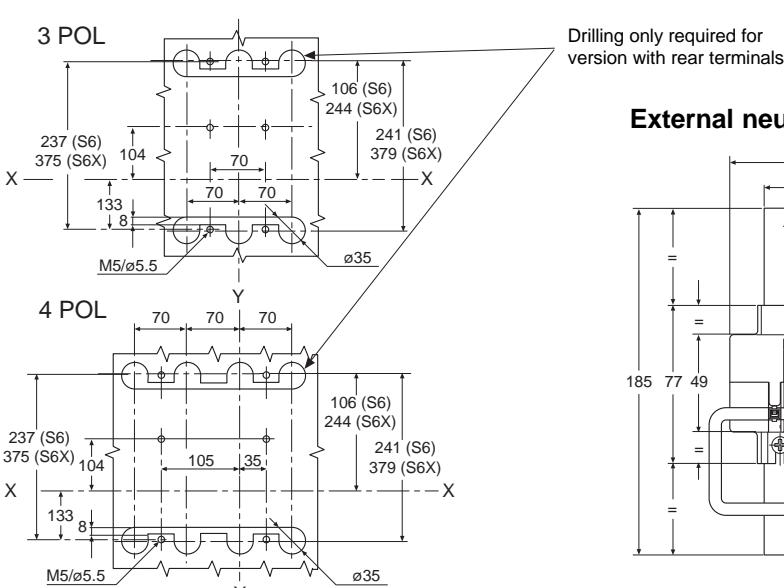


Key

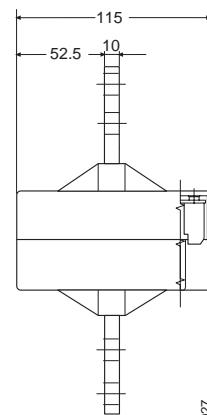
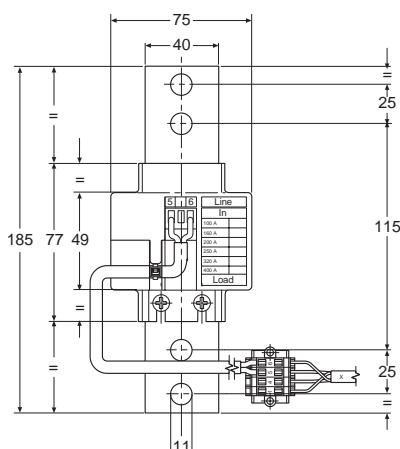
- ① Front flange for operating lever mechanism
- ② Lock for compartment door (to order)
- ③ Drilling of compartment door
- ④ Flange for compartment door (included in supply)
- ⑤ Tightening torque 2 Nm

Note

See the various different versions for the circuit-breaker mounting holes



External neutral



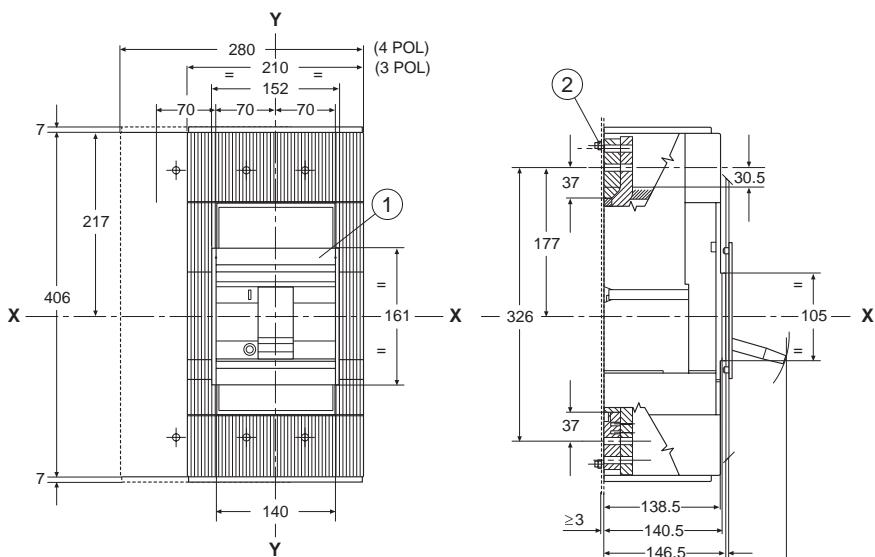
GSS0027



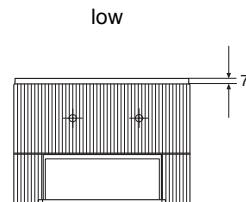
Overall dimensions

SACE S7

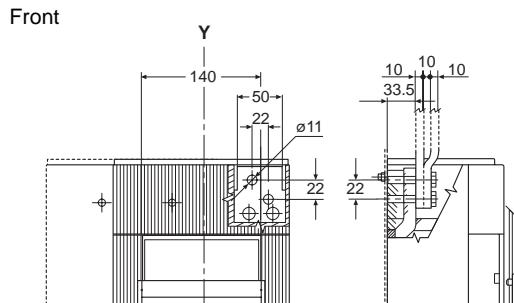
Fixed circuit-breaker



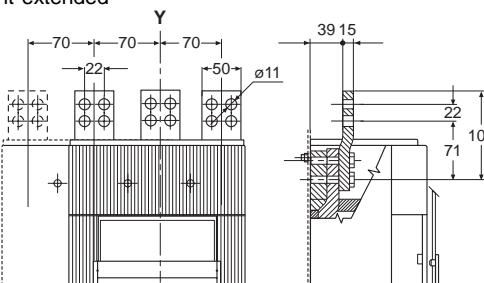
Terminal covers



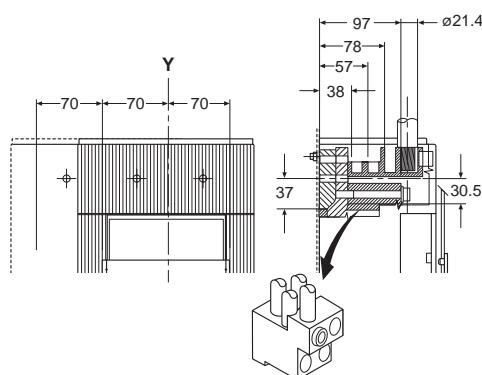
Terminals



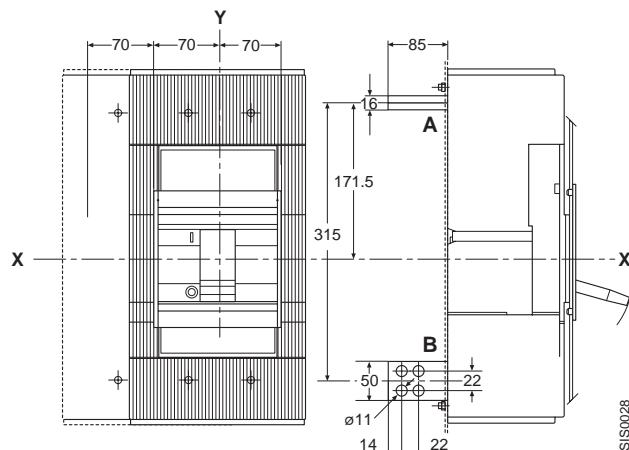
Front extended



Front for Cu/Al cables for S7 1250

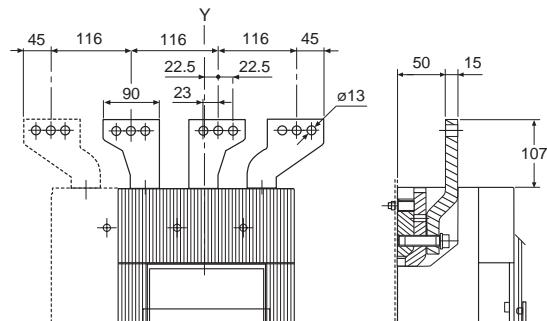


Horizontal or vertical flat bar rear terminals



GSI0028

Front extended spreaded



A = horizontal installation
B = vertical installation

Mounting parts for fixed circuit-breaker

Template for drilling sheet metal support

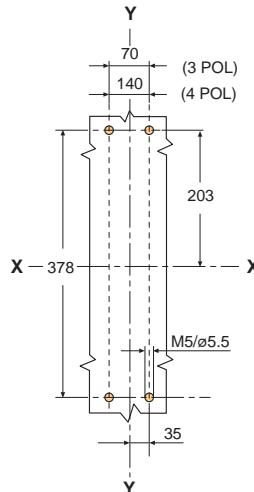
(Minimum thickness of sheet metal: 3 mm)

For terminals:

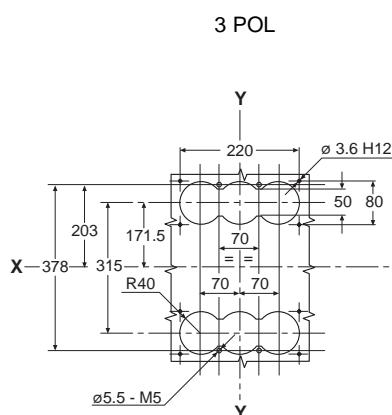
Front

Front extended

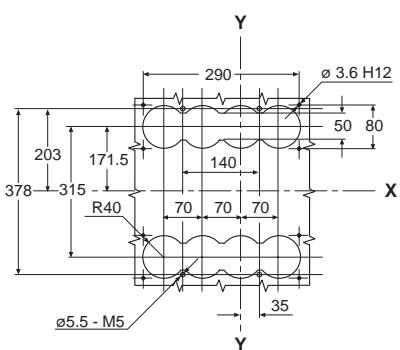
Front for Cu/Al cables



For flat bar rear terminals

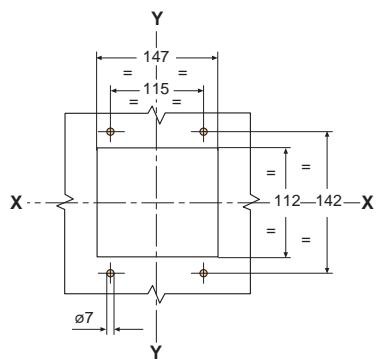


4 POL



Template for drilling compartment door and fitting flange

(thickness of sheet metal: 2 mm)



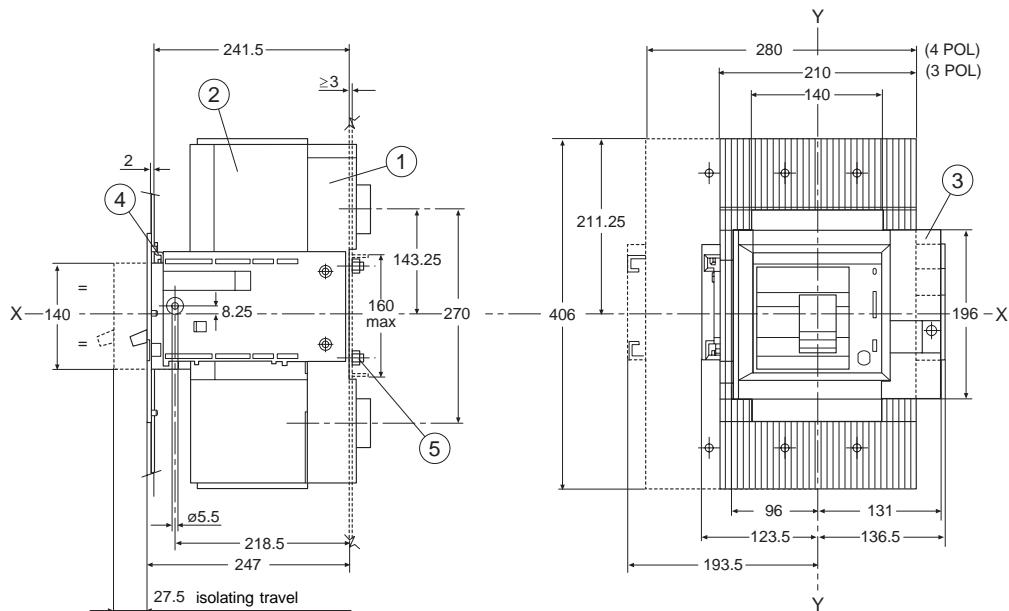
GSI S0029



Overall dimensions

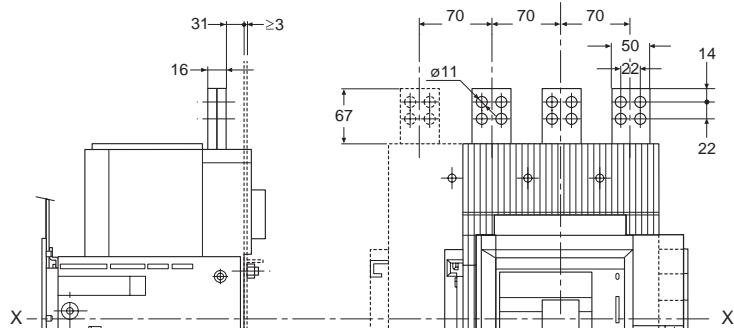
SACE S7

Withdrawable circuit-breaker

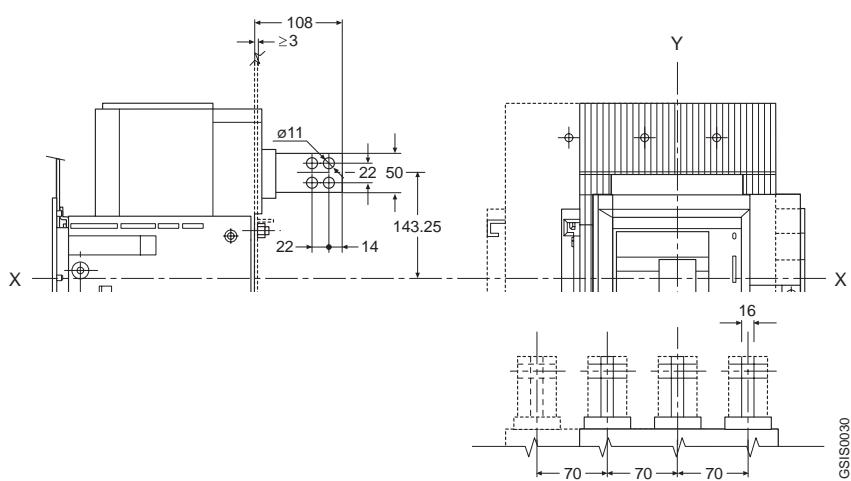


Terminals

Front



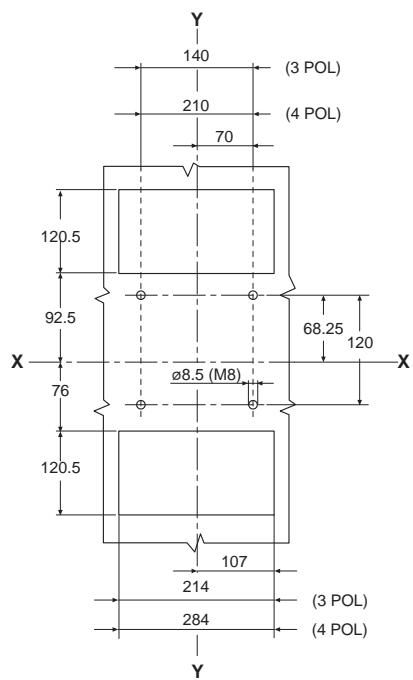
Horizontal or vertical flat bar rear terminals



Mounting parts for withdrawable circuit-breaker

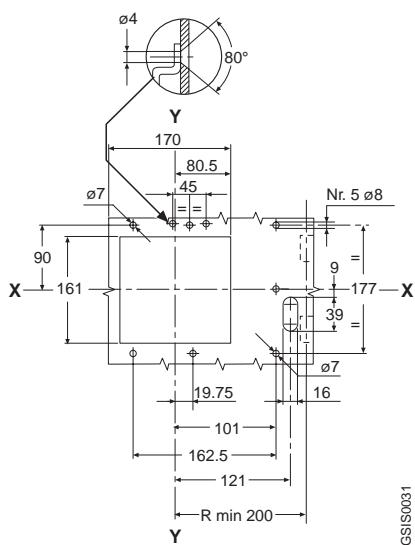
Template for drilling sheet metal support or channel

(Minimum thickness of sheet metal: 3 mm)



Template for drilling compartment door and fitting flange

(thickness of sheet metal: 2 mm)



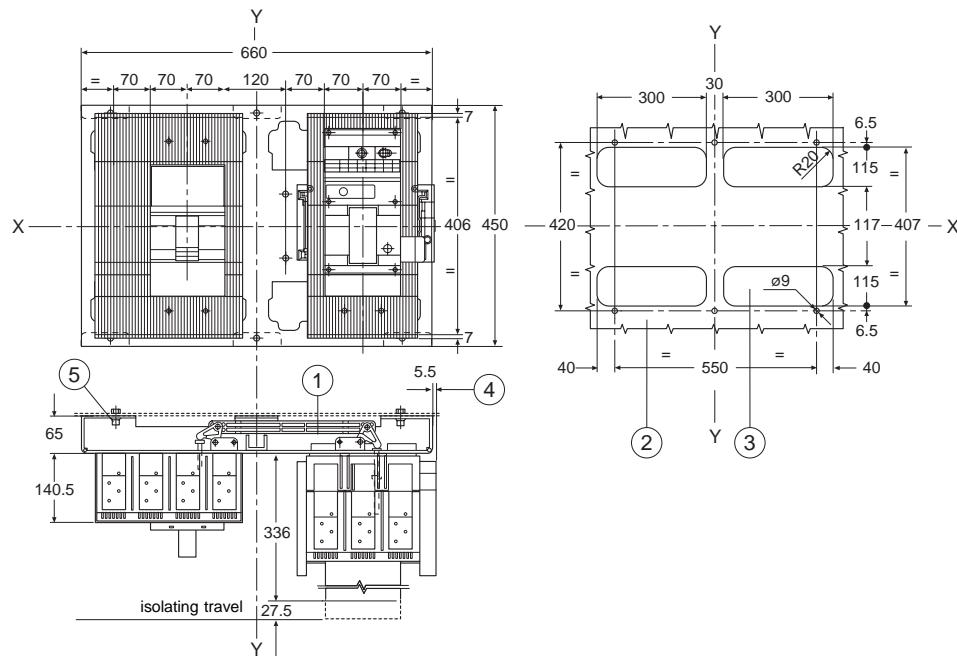


Overall dimensions

SACE S7

Accessories

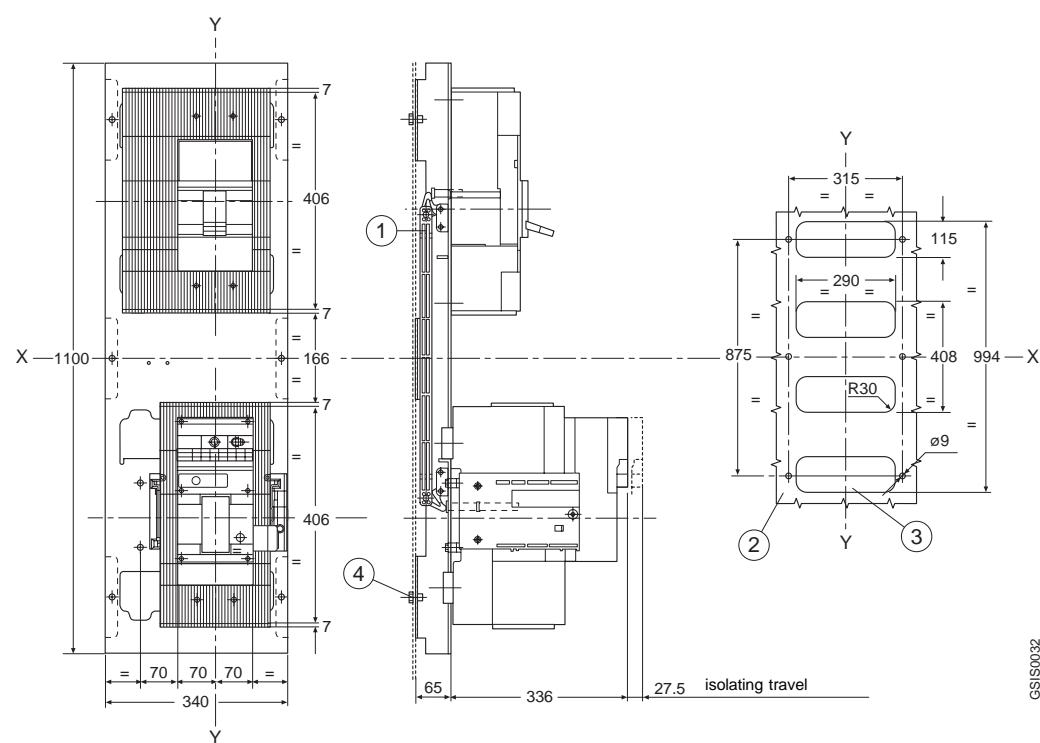
Interlock across two horizontally-installed circuit-breakers



Note

See the various different versions for the dimensions of the circuit-breakers

Interlock across two vertically-installed circuit-breakers



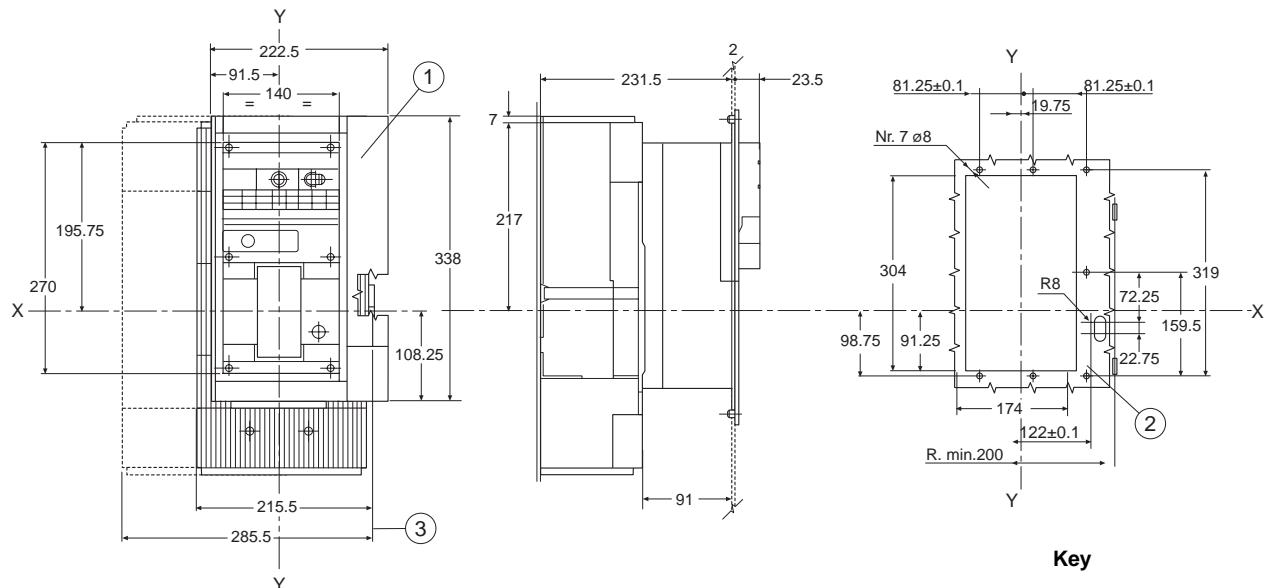
GSI0092

Note

See the various different versions for the dimensions of the circuit-breakers

Accessories

Motor operator for fixed circuit-breaker



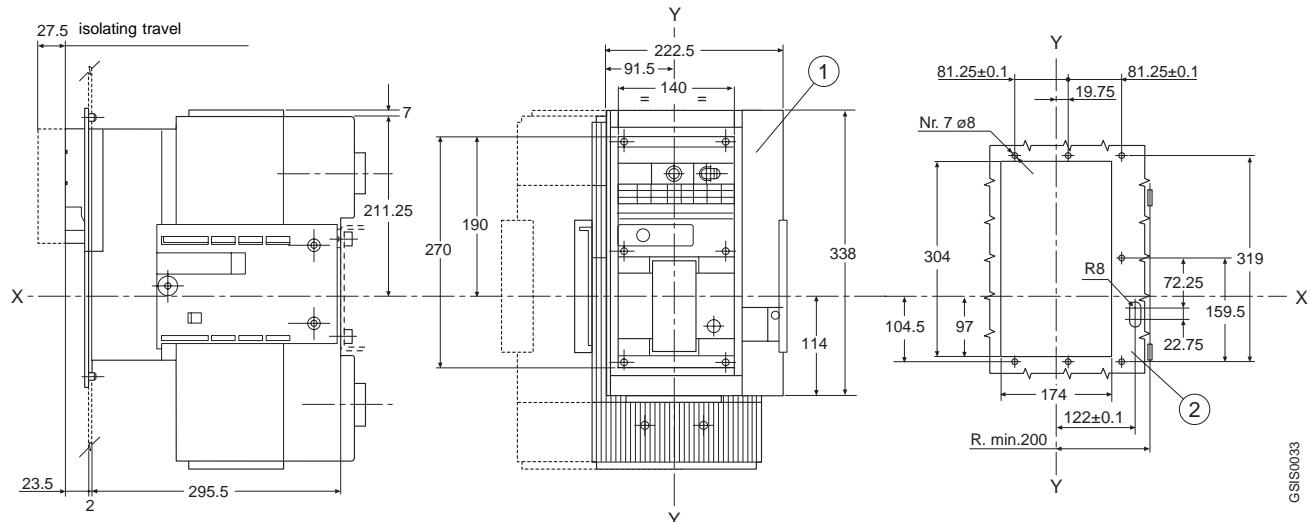
Note

See the various different versions for the circuit-breaker mounting holes

Key

- (1) Flange for compartment door (included in supply)
- (2) Template for drilling compartment door
- (3) Dimensions with connectors

Motor operator for withdrawable circuit-breaker



Key

- (1) Flange for compartment door (included in supply)
- (2) Template for drilling compartment door

Note

See the various different versions for the circuit-breaker mounting holes

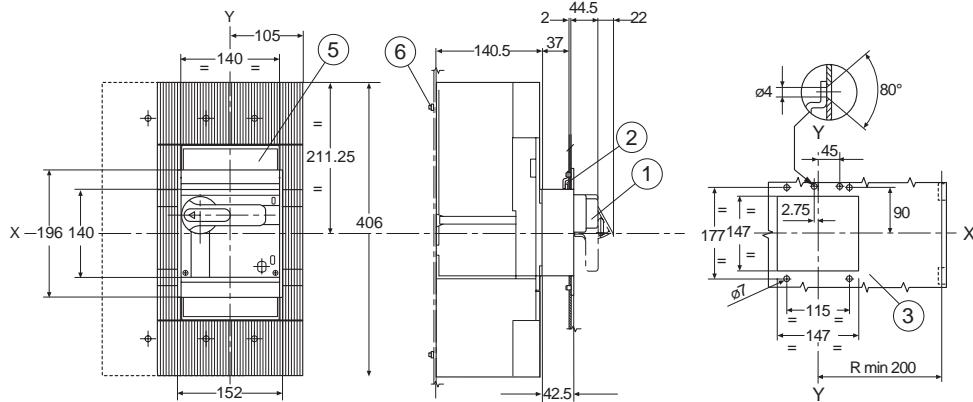


Overall dimensions

SACE S7

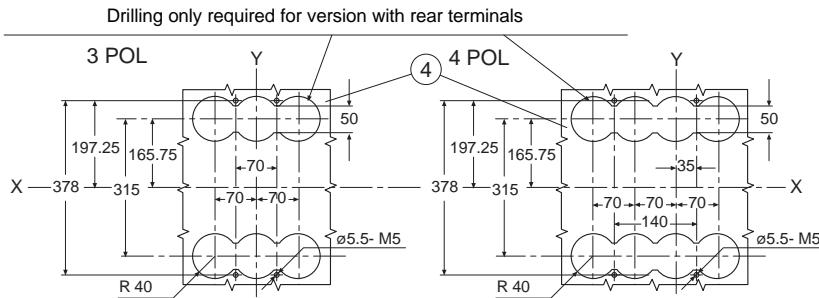
Accessories

Rotary handle operating mechanism on fixed circuit-breaker



Key

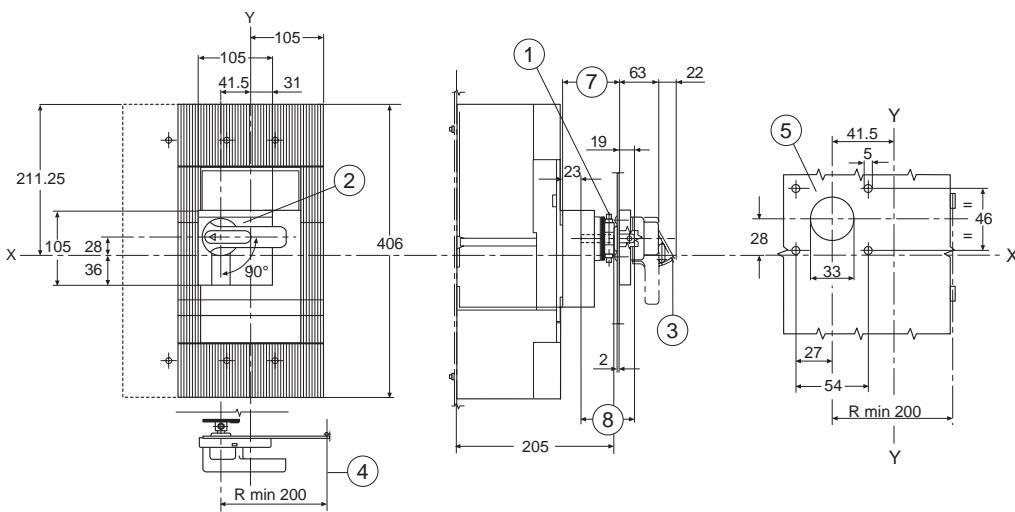
- (1) Rotary handle operating mechanism on circuit-breaker
- (2) Lock for compartment door (to order)
- (3) Drilling of compartment door
- (4) Drilling template for mounting circuit-breaker on sheet metal
- (5) Flange for compartment door (included in supply)
- (6) Tightening torque 2 Nm



Note

See the various different versions for the dimensions of the circuit-breakers

Compartment door-mounted rotary handle operating mechanism for fixed circuit-breaker



Key

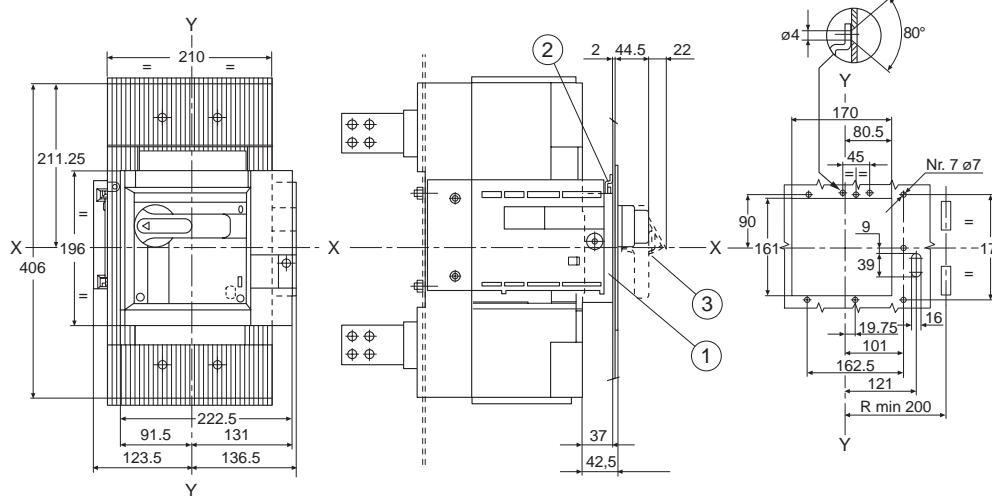
- (1) Transmission assembly
- (2) Rotary handle assembly with door lock device
- (3) Padlock device (maximum 3 padlocks max Ø 6 mm to be provided by customer only for circuit-breaker open position)
- (4) Minimum radius of rotation for fulcrum of door
- (5) Template for drilling compartment door
- (6) Drilling template for mounting circuit-breaker on sheet metal
- (7) 72 ... 506 mm (with IP54 protection min. 96)
- (8) Distance (7) - 4 mm (shaft length)

Note

See the various different versions for the dimensions of the circuit-breakers

Accessories

Rotary handle operating mechanism on withdrawable circuit-breaker



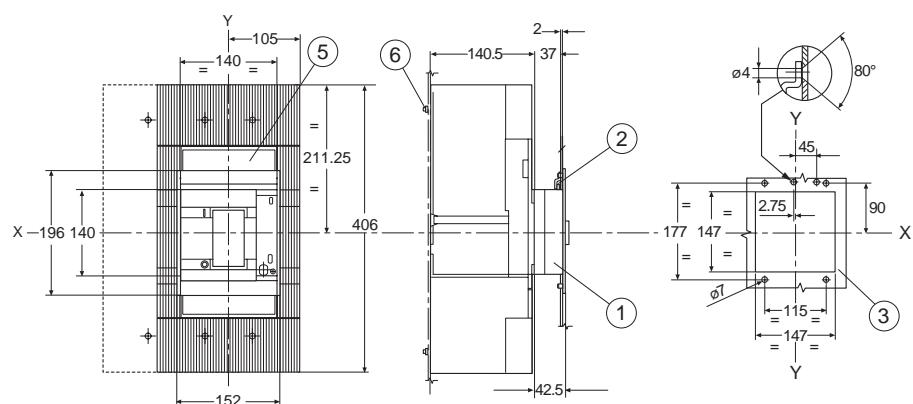
Key

- (1) Rotary handle operating mechanism on circuit-breaker
- (2) Lock for compartment door (to order)
- (3) Padlock device for open position (maximum 3 padlocks max. Ø 6 mm to be provided by user)

Note

See the various different versions for the circuit-breaker mounting holes

Front flange for operating lever mechanism



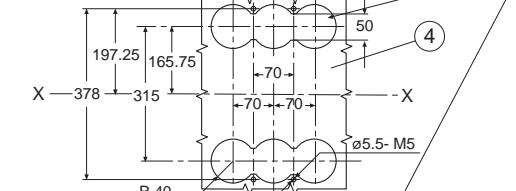
Key

- (1) Front flange for lever operating mechanism
- (2) Lock for compartment door (to order)
- (3) Drilling of compartment door
- (4) Drilling template for mounting circuit-breaker on sheet metal
- (5) Flange for compartment door (included in supply)
- (6) Tightening torque 2 Nm

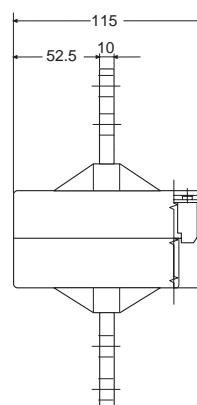
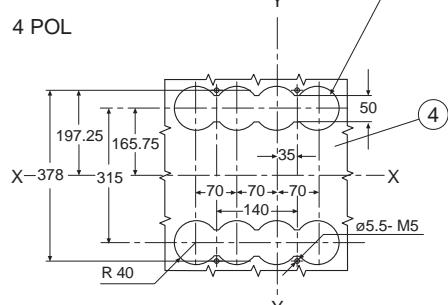
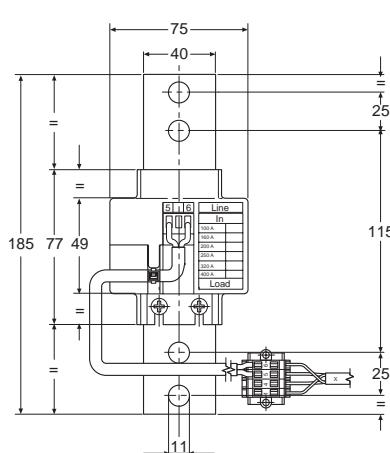
Note

See the various different versions for the circuit-breaker mounting holes

3 POL
Drilling only required for version with rear terminals



External neutral



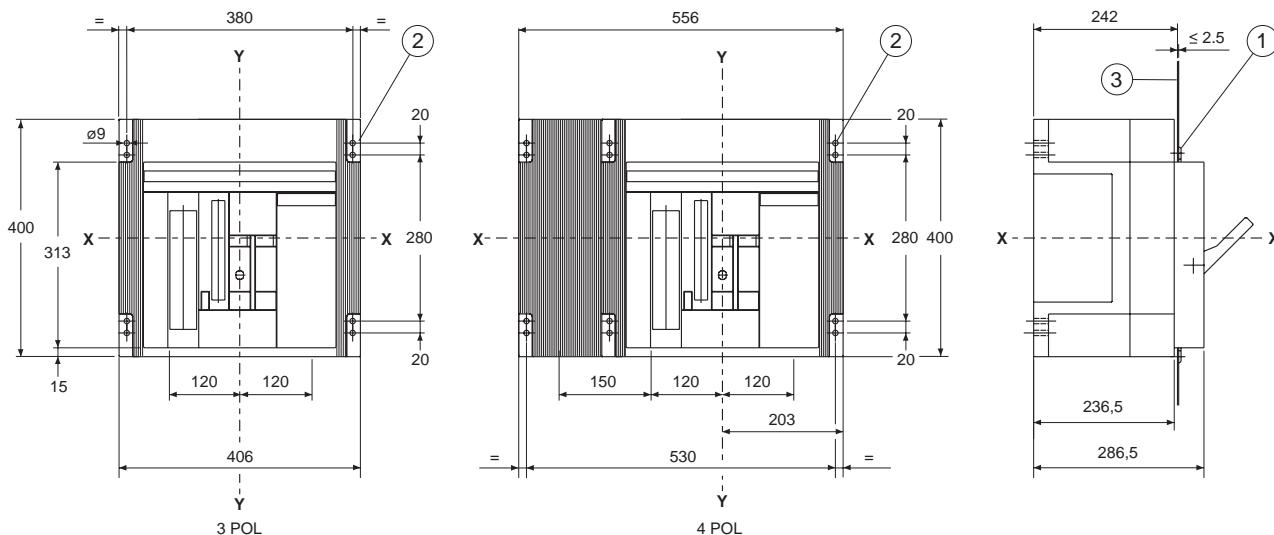
GSSIS0035



Overall dimensions

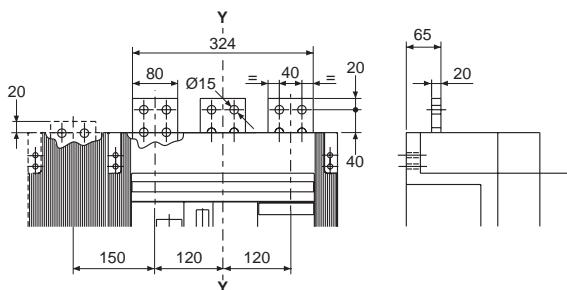
SACE S8

Fixed circuit-breaker

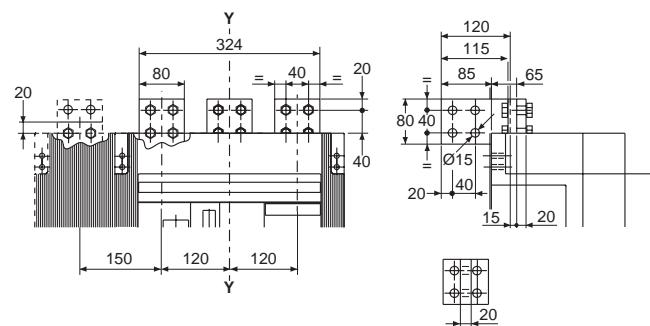


Terminals

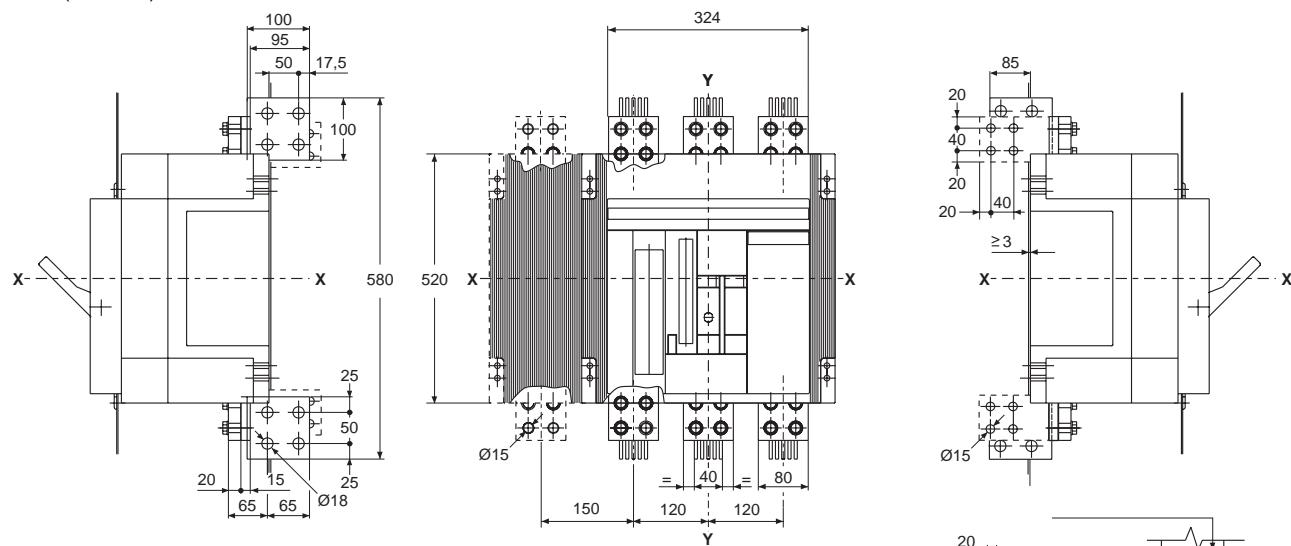
Front (S8 2000-2500)



Rear (S8 2000-2500)



Rear (S8 3200)



Key

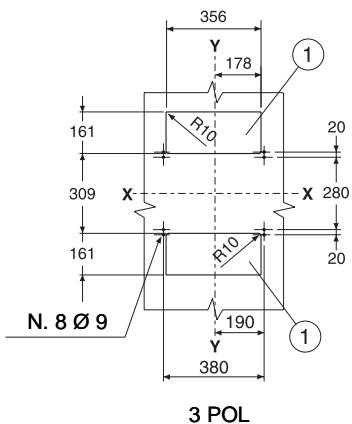
- (1) Flange for compartment door
- (2) Circuit-breaker mounting holes
- (3) Internal side of compartment door

GSI0036

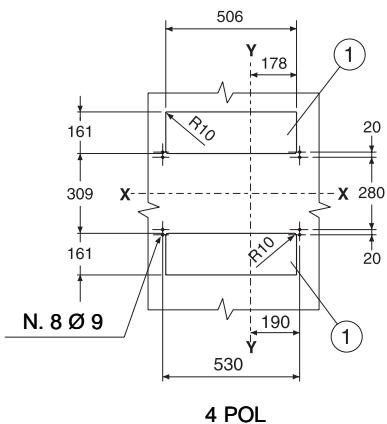
Mounting parts for fixed circuit-breaker

Template for drilling sheet metal support

(Minimum thickness of sheet metal: 3mm)



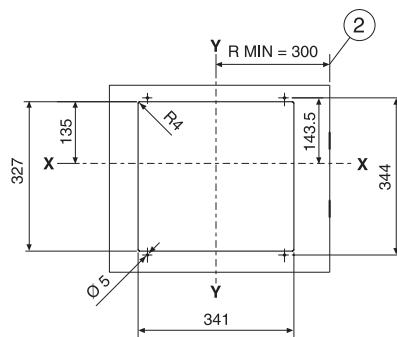
3 POL



4 POL

Template for drilling compartment door and fitting flange

(Minimum thickness of sheet metal: < 2,5mm)



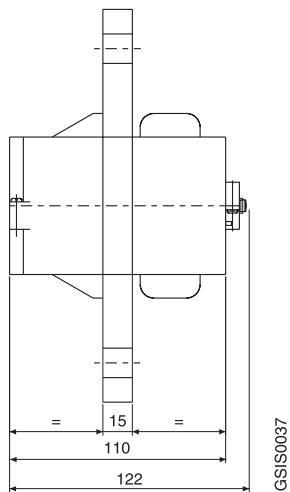
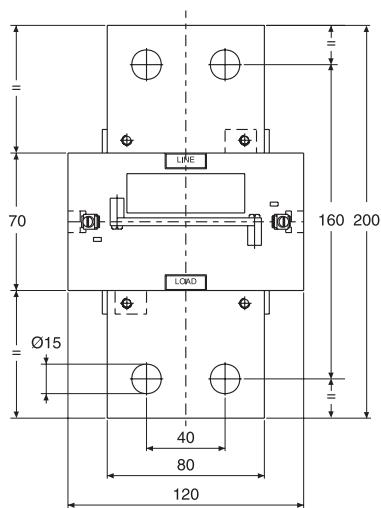
Key

(1) Hole for rear terminals only

(2) Minimum radius of rotation of compartment door

Accessories

External neutral



GSI0037



Overall dimensions

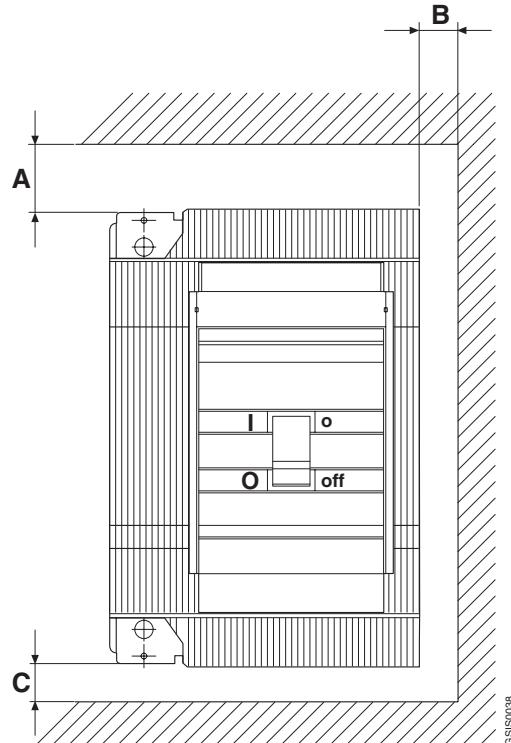
Distances to be respected

Insulation distances for installation in metal compartment with wall to chassis ground or wall to chassis ground protected with insulating plate

Wall to chassis ground [mm]

	A ($U_b \leq 415V$)	A(*) ($U_b \geq 440V$)	B	C
S1	25	50	20	20
S2	25	50	20	20
S3	35	100	25	20
S4	35	100	25	20
S5	35	100	25	20
S6	35	100	25	20
S7	50	100	30	20
S8	200	200	30	120

(*) these distances are valid for operating voltages of > 440 V and for circuit-breakers with breaking capacity level L.



	A	B	C	D	E	F
			3 POL		3 POL	
S2X100	25	20	20	169	135	—
S3X	50	25.5	30	340	161	196
S4X	60	25.5	30	430	161	196
S6X	60	30.5	30	500	275	345
						152

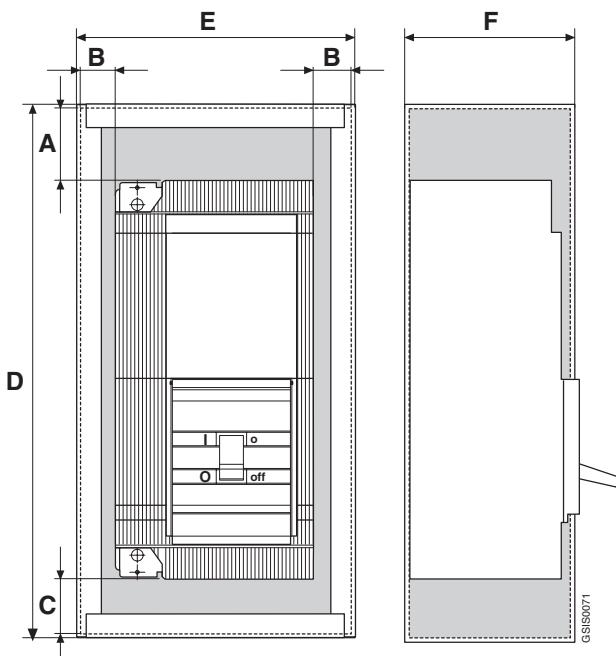
A - B - C = Distances inside compartment walls

D - E - F = Distances outside compartment

Insulation distances for installation in insulated compartment

Insulated wall [mm]

	A	B	C
S1	25	0	20
S2	25	0	20
S3	35	0	20
S4	35	0	20
S5	35	0	20
S6	35	10	20
S7	50	10	20
S8	120	15	120



The dimensions shown apply for operating voltages U_b of up to 690 V.

The dimensions to be respected must be added to the maximum dimensions of the various different versions of the circuit-breakers, including the terminals.

Minimum distance between centres for two horizontally or vertically-installed circuit-breakers

For horizontal or vertical installation, make sure that the connection busbars or cables don't reduce the air insulation distances.

Minimum distance between centres for horizontally-installed circuit-breakers

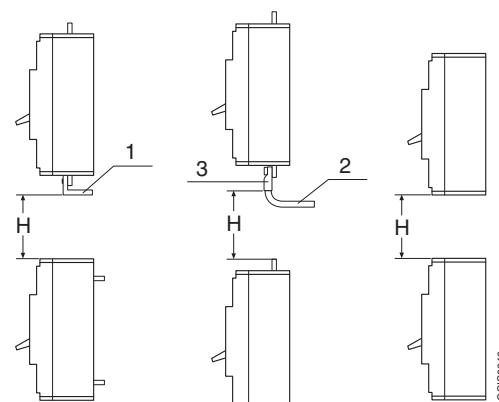
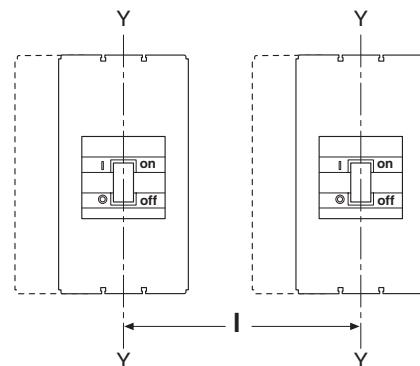
	Circuit-breaker width [mm]		I [mm]	
	3 POL	4 POL	3 POL	4 POL
S1	78	103	78/93 ^(*)	103/118 ^(*)
S2	90	120	90/105 ^(*)	120/135 ^(*)
S3	105	140	105/119 ^(*)	140
S4	105	140	105/119 ^(*)	140
S5	140	184	140	185
S6	210	280	210	280
S7	210	280	210	280
S8	435	585	435	585

(*) these are the distances to be respected for circuit-breakers fitted with a flange for the compartment door or side conductor outlets.

The distances between centres are for the installation of fixed and plug in circuit-breakers. When installing withdrawable SACE S3, S4, S5, S6, S7 circuit-breakers you should also take into account the dimensions of the metal supporting channel that needs to be fitted between the guides of the fixed parts of two adjacent circuit-breakers.

Minimum distance between centres for vertically-installed circuit-breakers

	H [mm]
S1	60
S2	90
S3	140
S4	140
S5	140
S6	180
S7	180
S8	300



- 1 Connection not insulated
- 2 Insulated cable
- 3 Cable terminals



Index

Operating status shown	6/42
Duty releases	6/44
Auxiliary contacts	6/46
Position contacts	6/48
Auxiliary circuits of electronic releases	6/50
Motor operators	6/53
Graphic symbols for circuit-diagrams (IEC 617 and CEI 3-14 ... 3-26)	6/54
Key and reference notes	6/55



Circuit diagrams

Operating status shown

The circuit is shown in the following conditions:

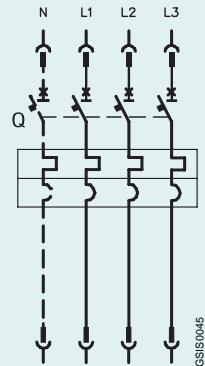
- fixed, plug in or withdrawable circuit-breaker (depending on type of circuit-breaker), open and racked in
- circuits de-energised
- releases not tripped

- motor operator with springs loaded (for S6-S7 circuit-breakers)

The circuit-breaker is only fitted with those accessories specified in the ABB SACE confirmation of order. Consult this catalogue for information on how to make out an order.

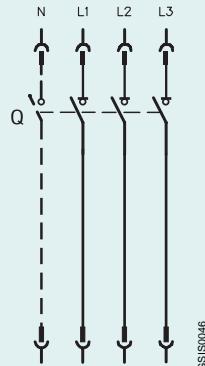
SACE S1-S2-S3-S5-S6

Three-pole or four-pole circuit-breaker
with thermomagnetic release



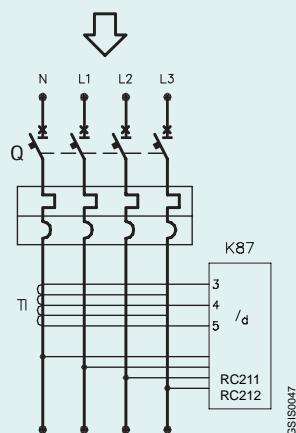
SACE S3D-S6D-S7D-S8D

Three-pole or four-pole
switch-disconnector

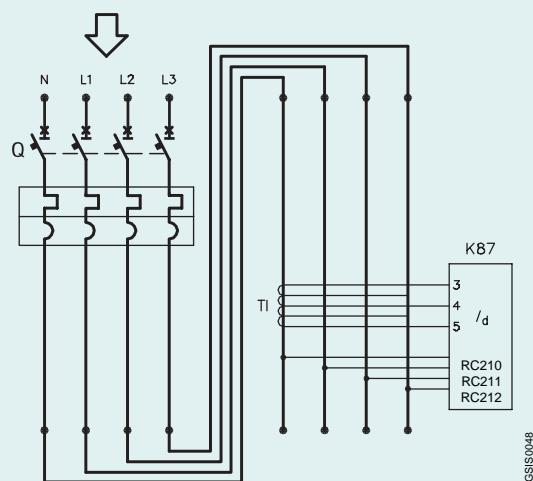


SACE S1-S2-S3

Four-pole fixed circuit-breaker
with vertically-installed residual-current release
SACE RC211 o RC212

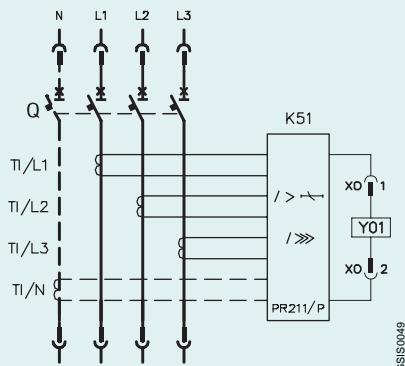


Four-pole fixed circuit-breaker with
horizontally-installed residual-current release
SACE RC210, RC211 o RC212

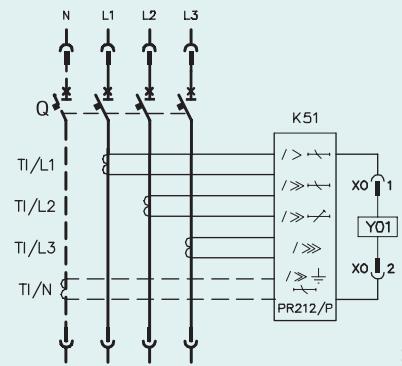


SACE S4-S5-S6-S7

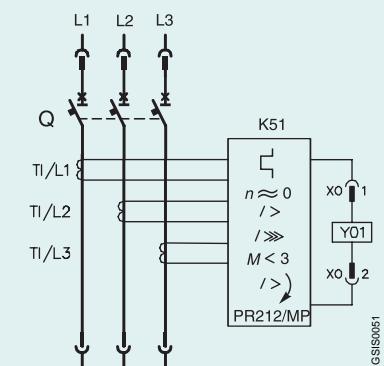
Three-pole or four-pole circuit-breaker
with SACE PR211/P
microprocessor-based release



Three-pole or four-pole circuit-breaker
with SACE PR212/P
microprocessor-based release

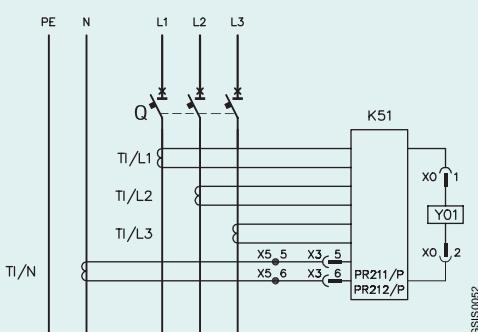


Three-pole circuit-breaker
with SACE PR212/MP
microprocessor-based release

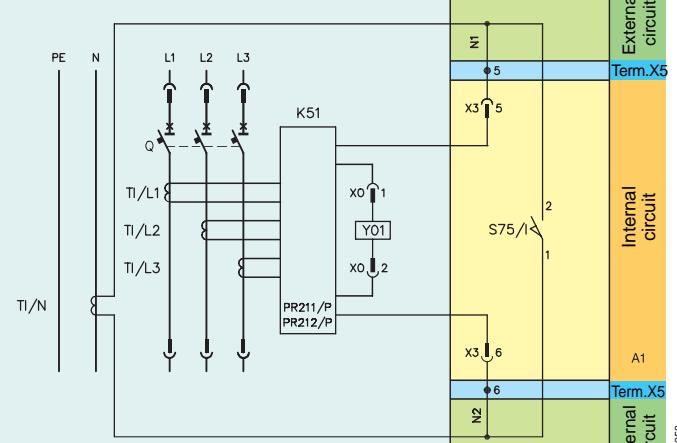


SACE S4-S5-S6-S7

Three-pole fixed circuit-breaker
with current transformer on neutral
conductor outside circuit-breaker



Three-pole plug-in or withdrawable
circuit-breaker with current transformer on
neutral conductor outside circuit-breaker



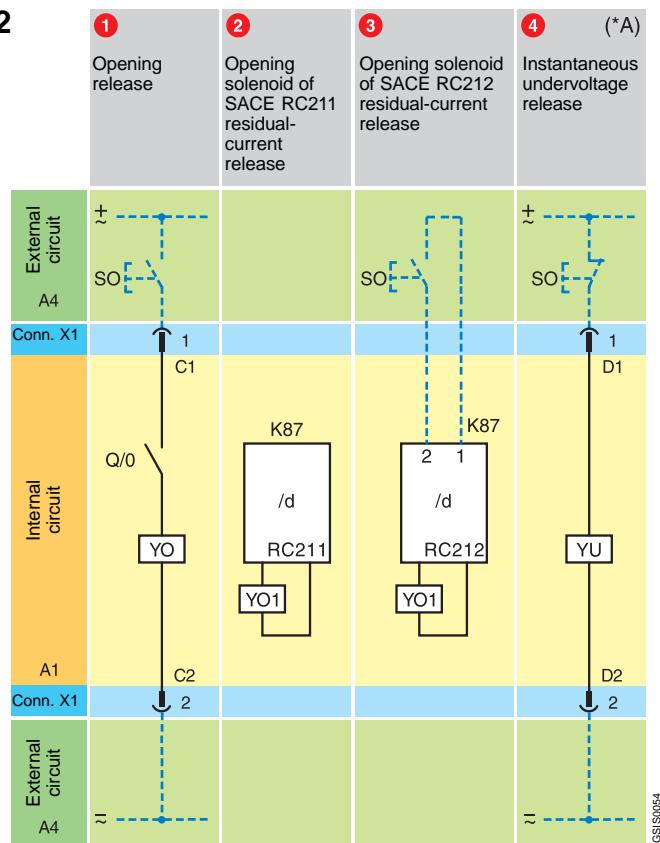
N.B. If using a fixed circuit-breaker with a current transformer on the neutral conductor outside the circuit-breaker, you must short-circuit the terminals of the TI/N transformer when you want to remove the circuit-breaker.



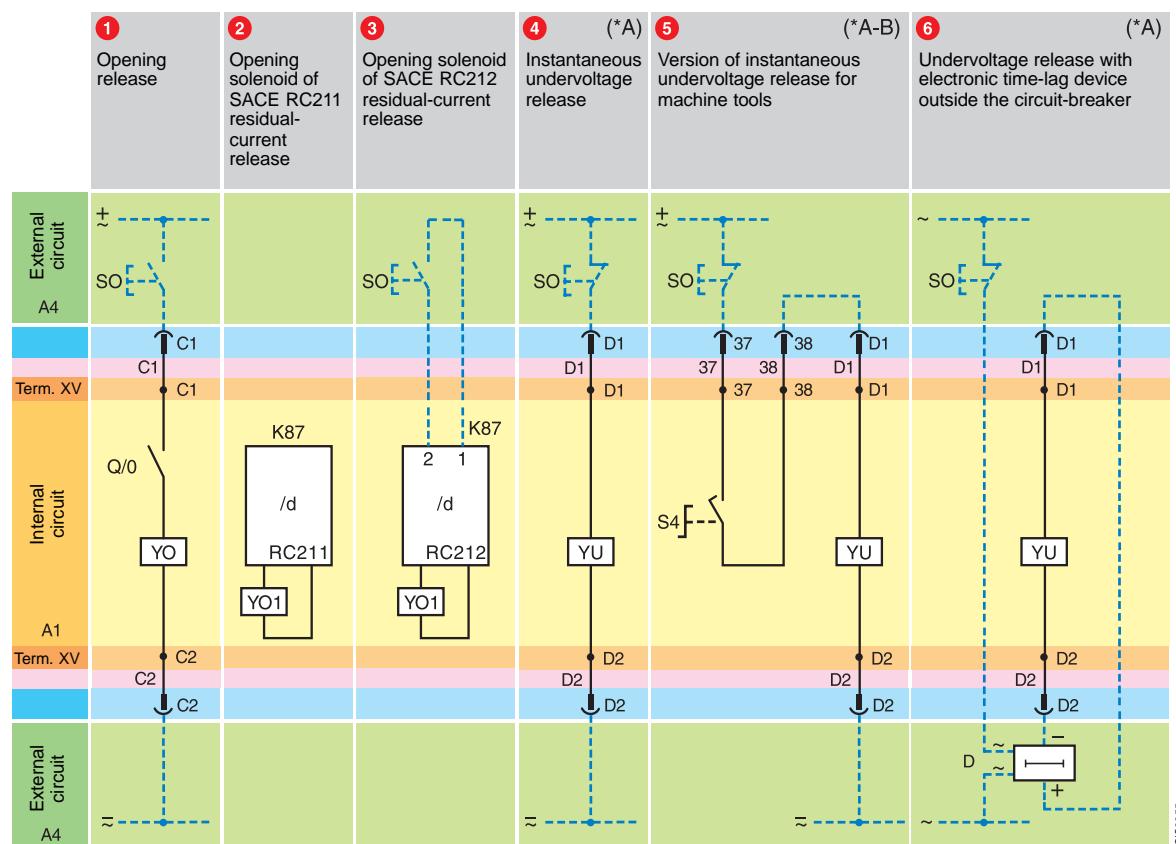
Circuit diagrams

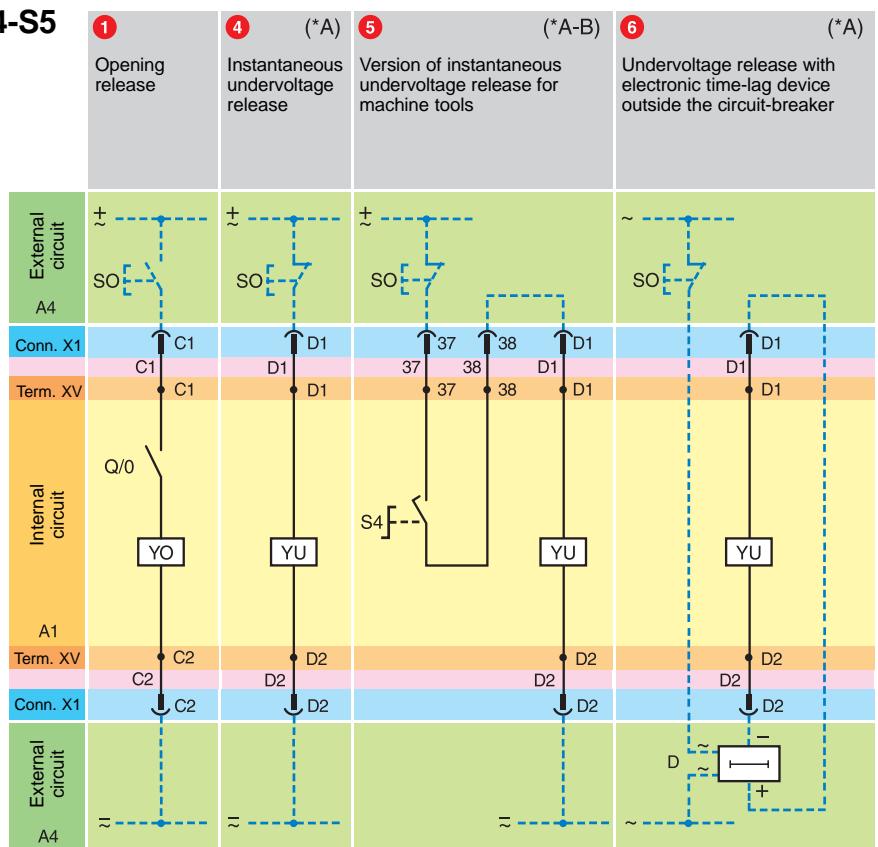
Duty releases

SACE S1-S2



SACE S3



SACE S4-S5**Incompatibility**

The circuits indicated in the following figures cannot be powered simultaneously on the same circuit-breaker

1 - 4 - 5 - 6 2 - 3

Availability

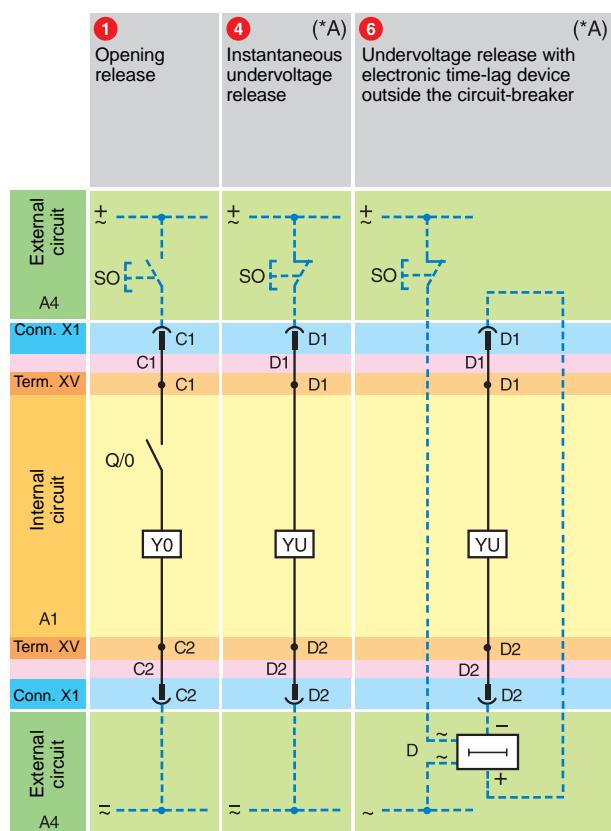
Connectors X1 and X2 are only supplied to order for circuit-breakers S1 - S2.

Notes

(*A) The undervoltage release is powered from upstream of the circuit-breaker or by an independent power supply: closing of the circuit-breaker is only allowed when the release is energised (the closing lock is implemented mechanically).

(*B) Contact S4 shown in Fig. 5 opens the circuit when the circuit-breaker is open and closes it again upon a manual closing command from the rotary handle, in conformity with the Standards governing machine tools (the circuit-breaker will not close, however, if the undervoltage release is not powered).

GSI0056

SACE S6-S7

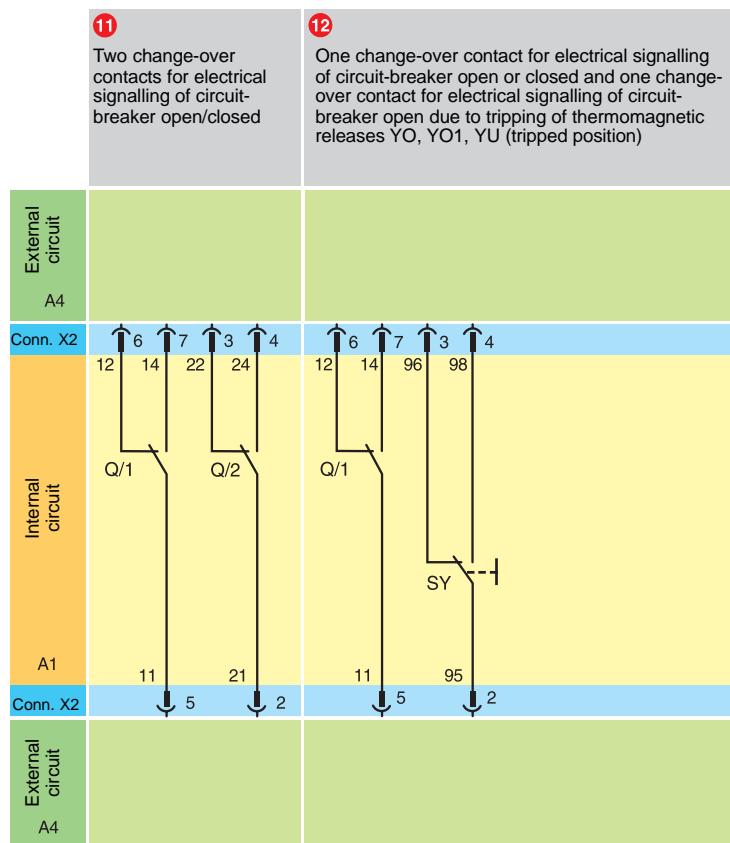
GSI0057



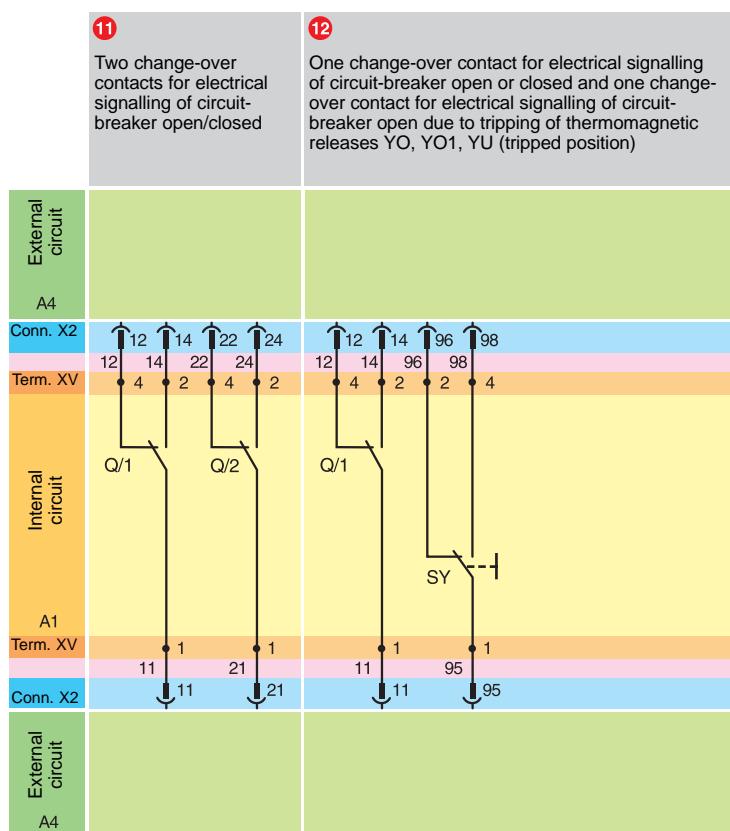
Circuit diagrams

Auxiliary contacts

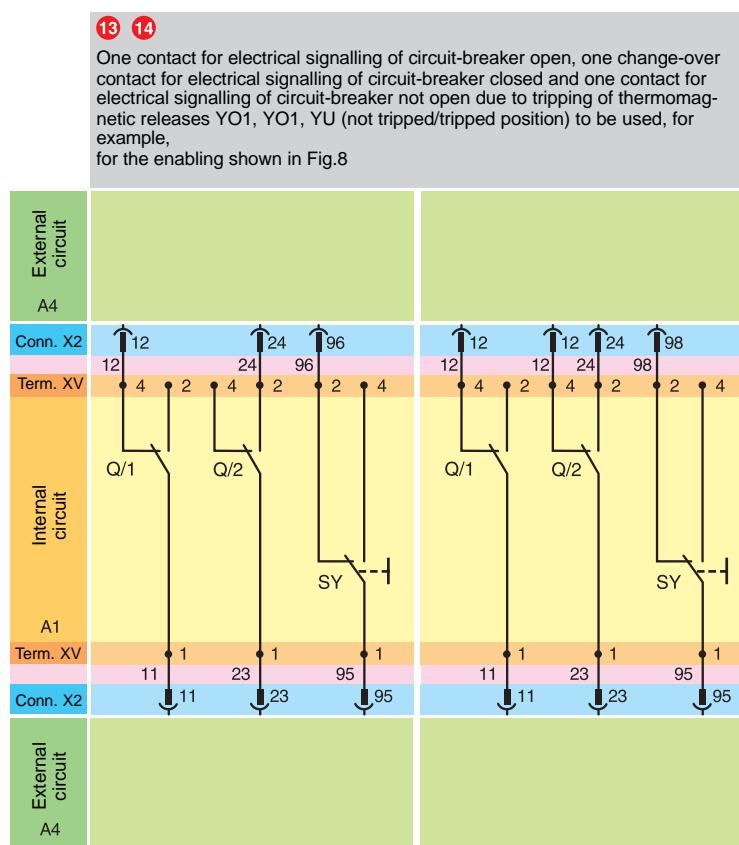
SACE S1-S2



SACE S3-S4-S5-S6-S7



SACE S6-S7



Incompatibility

The circuits indicated in the following figures cannot be powered simultaneously on the same circuit-breaker:

11-12-13-14

Availability

Connectors X1 and X2 are only supplied to order for circuit-breakers S1 - S2.

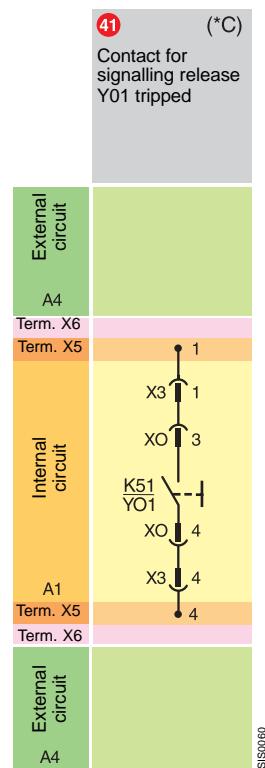
Notes

(*C) The electrical signalling contact for the microprocessor-based overcurrent release, shown in Fig. 41, has the following electrical characteristics:

- rated voltage = 125V AC / 30V DC
- breaking capacity (resistive load = 3 W/WA)
- maximum interrupted current = 0.5 A

GSI0080

SACE S4-S5-S6-S7

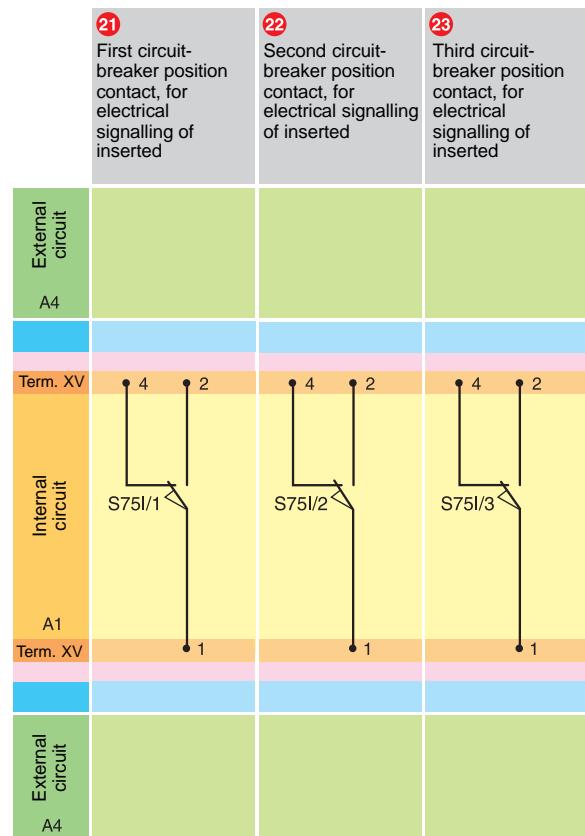




Circuit diagrams

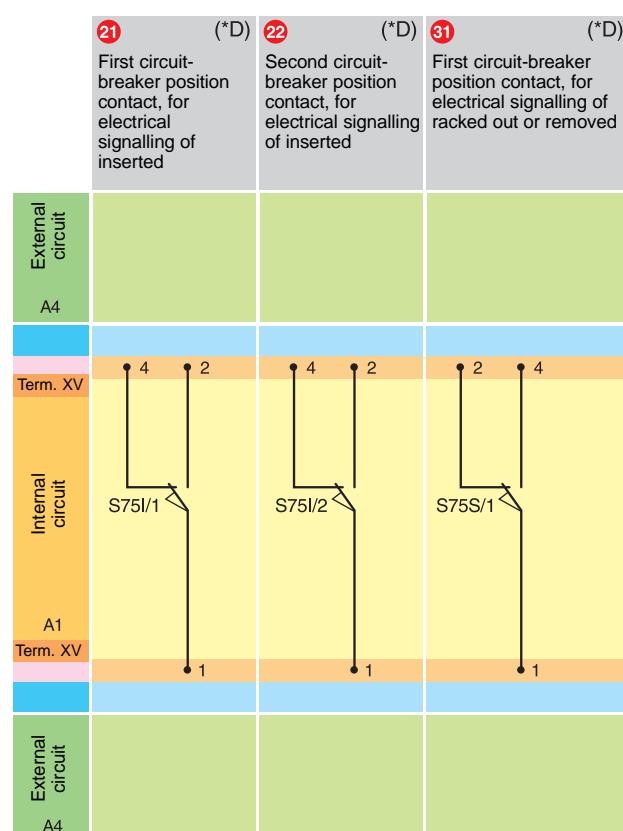
Position contacts

SACE S2



GSS0061

SACE S3



GSS0062

SACE S4-S5

	21 First circuit-breaker position contact, for electrical signalling of inserted (*D)	22 Second circuit-breaker position contact, for electrical signalling of inserted (*D)	23 Third circuit-breaker position contact, for electrical signalling of inserted (*D)	31 First circuit-breaker position contact, for electrical signalling of racked out or removed (*D)	32 Second circuit-breaker position contact, for electrical signalling of racked out or removed (*D)	33 Third circuit-breaker position contact, for electrical signalling of racked out or removed (*D)
External circuit						
A4						
Term. XV						
Internal circuit						
A1						
Term. XV						
External circuit						
A4						

GSIS0083

SACE S6-S7

	21 First circuit-breaker position contact, for electrical signalling of inserted (*D)	22 Second circuit-breaker position contact, for electrical signalling of inserted (*D)	23 Third circuit-breaker position contact, for electrical signalling of inserted (*D)	24 Fourth circuit-breaker position contact, for electrical signalling of inserted (*D)	25 Fifth circuit-breaker position contact, for electrical signalling of inserted (*D)	31 First circuit-breaker position contact, for electrical signalling of racked out (*D)	32 Second circuit-breaker position contact, for electrical signalling of racked out (*D)	33 Third circuit-breaker position contact, for electrical signalling of racked out (*D)	34 Fourth circuit-breaker position contact, for electrical signalling of racked out (*D)	35 Fifth circuit-breaker position contact, for electrical signalling of racked out (*D)
Internal circuit										
A1										
Term. XV										
External circuit										
Term. XV										

Incompatibility

The circuits indicated in the following figures cannot be powered simultaneously on the same circuit-breaker:
 20 - 21 - 31
 22 - 32 23 - 33
 24 - 34 25 - 35

Notes

(*D) The circuit-breaker can be fitted with position contacts S75I and S75S in any combination up to a maximum of
 - total of 2 contacts for S3
 - total of 3 contacts for S4, S5
 - total of 5 contacts for S6, S7

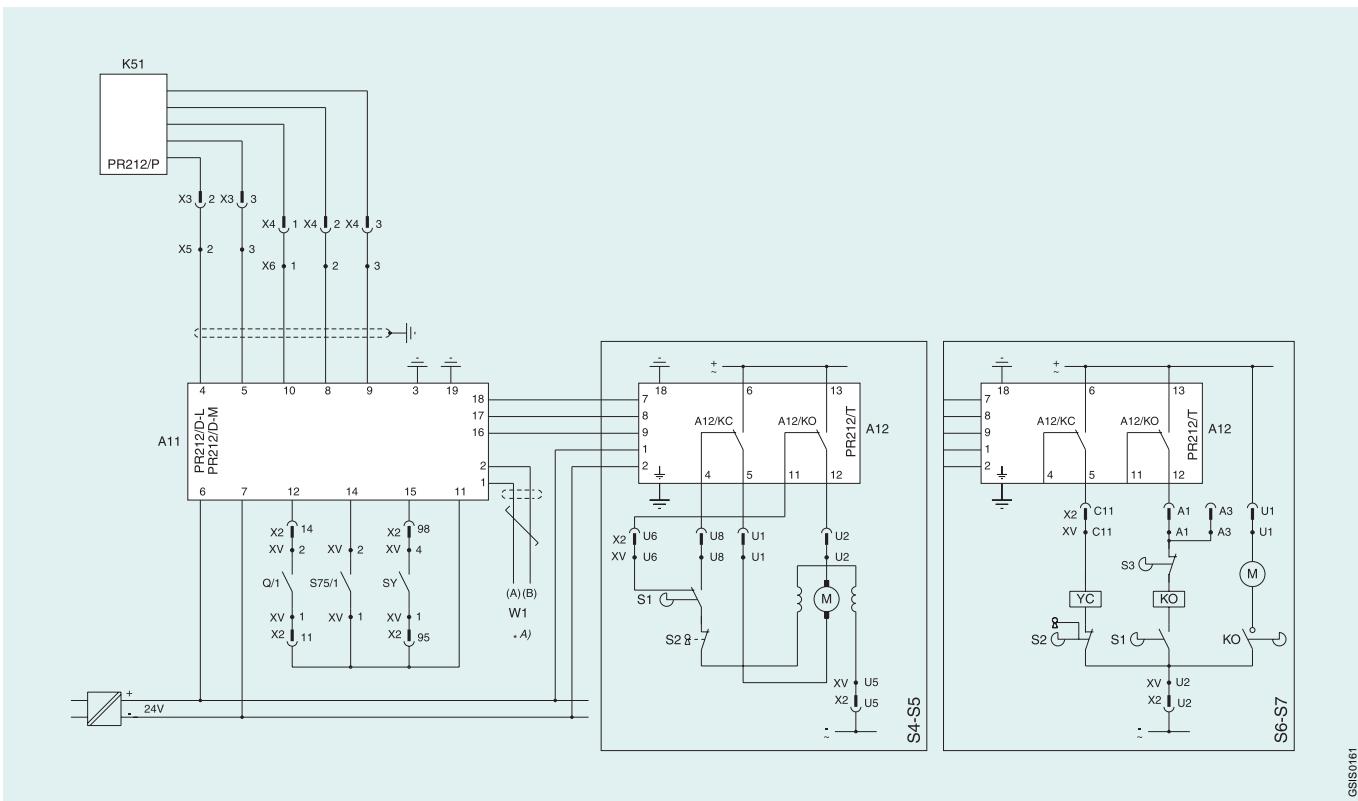


Circuit diagrams

Auxiliary circuits of SACE PR212/P electronic releases

SACE S4-S5-S6-S7

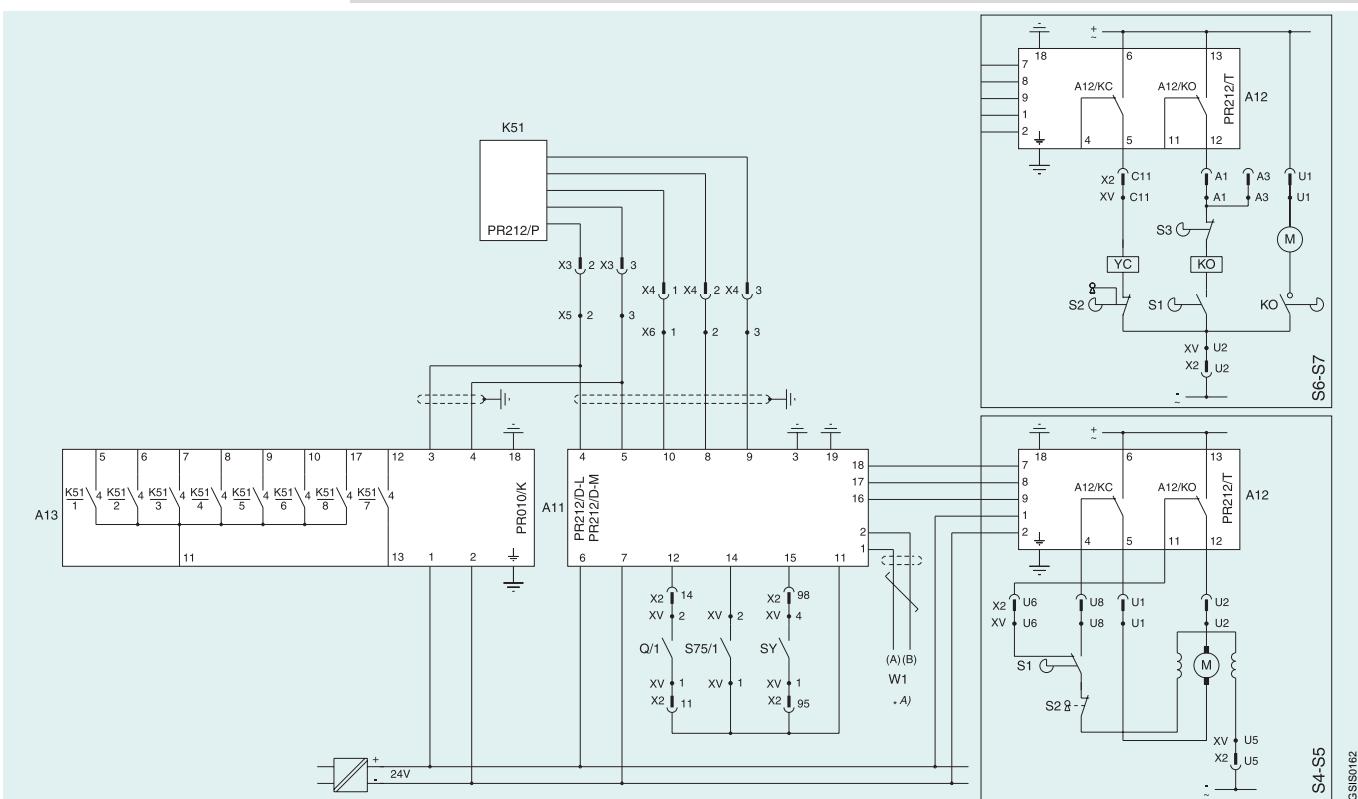
SACE PR212/P release connected to the dialogue unit SACE PR212/D and actuator unit SACE PR212/T



GSIS0161

SACE S4-S5-S6-S7

SACE PR212/P release connected to the dialogue unit SACE PR212/D, signalling unit SACE PR010/K and actuator unit SACE PR212/T



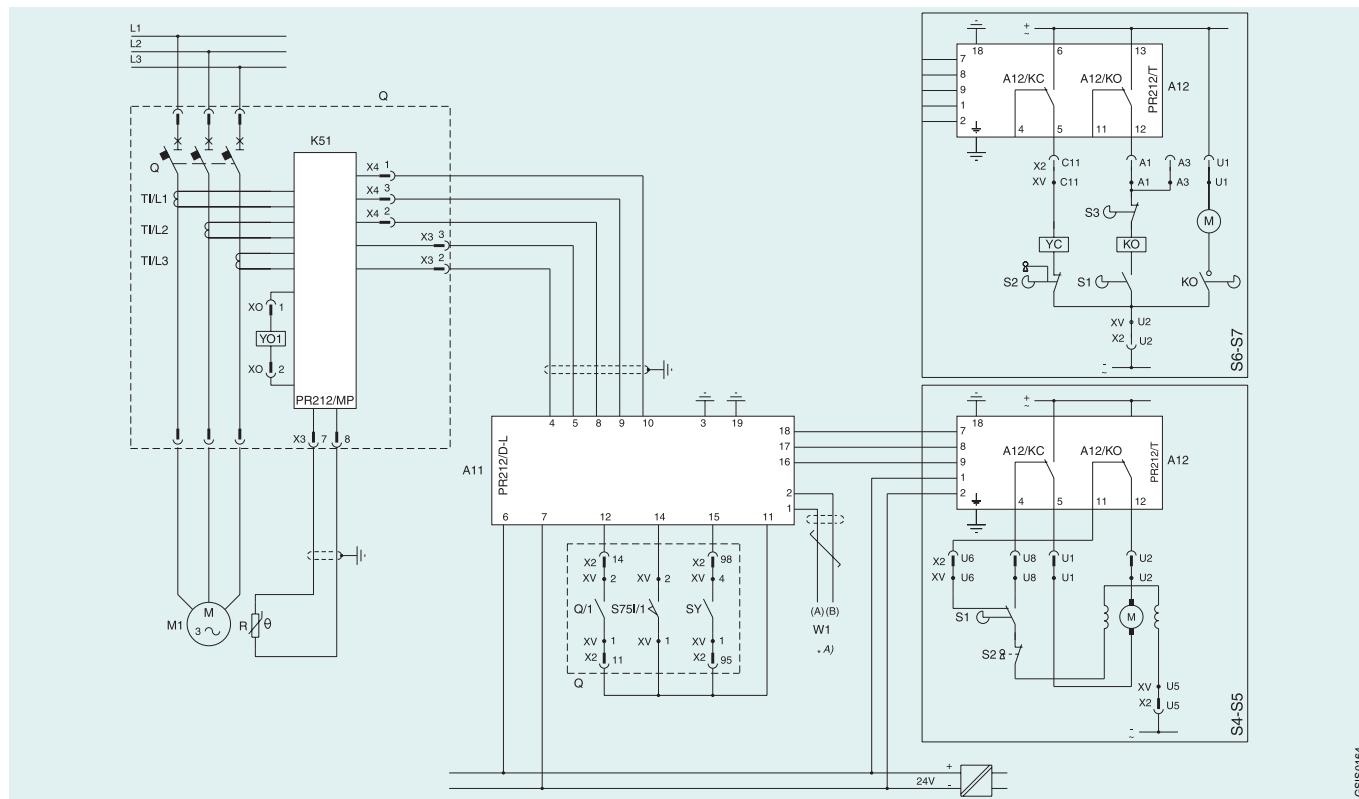
GSIS0162

Circuit diagrams

Auxiliary circuits of SACE PR212/MP electronic releases
for motor protection

SACE S4-S5-S6-S7

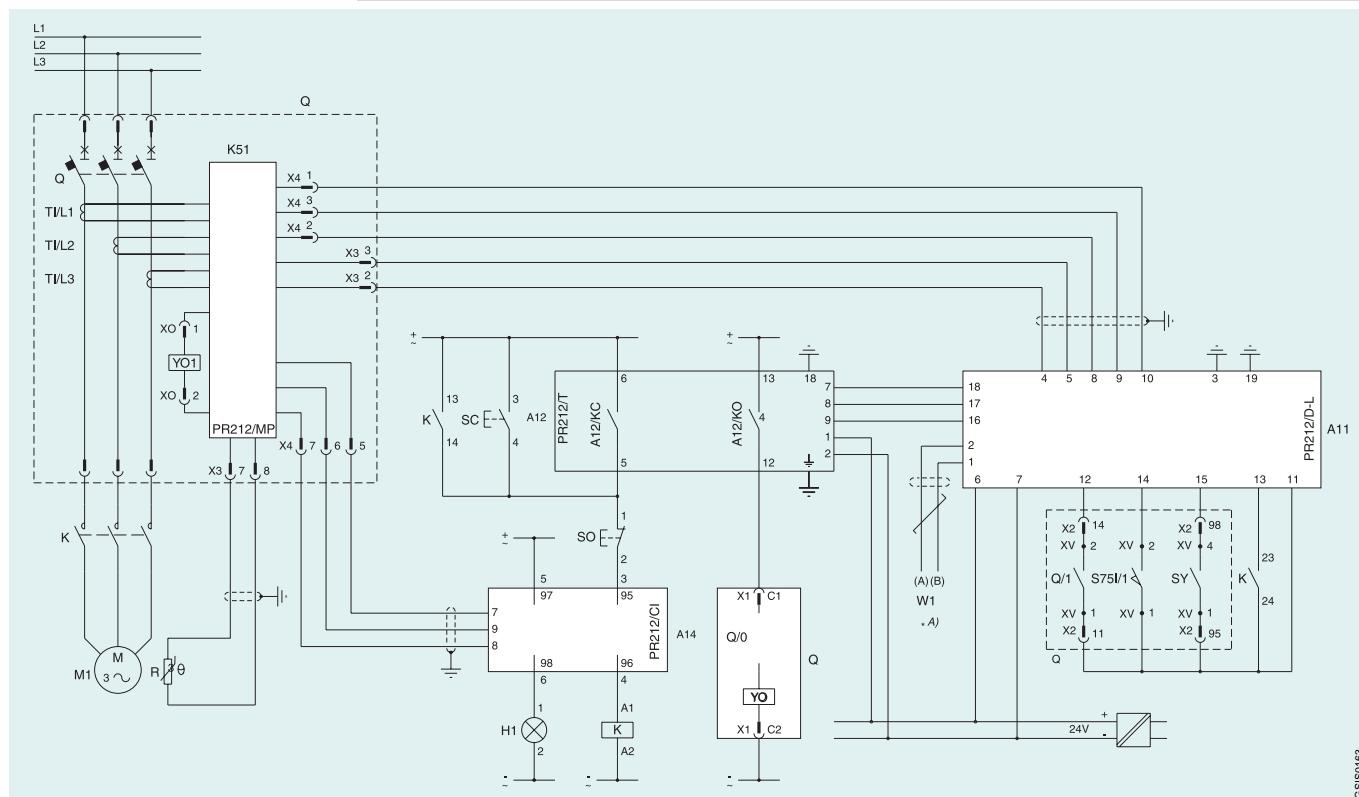
SACE PR212/MP release connected to the dialogue unit SACE PR212/D-L and actuator unit SACE PR212/T



GSI0164

SACE S4-S5-S6-S7

SACE PR212/MP release connected to the dialogue unit SACE PR212/D-L, actuator unit SACE PR212/T and contactor operator unit SACE PR212/CI



6

GSI0163

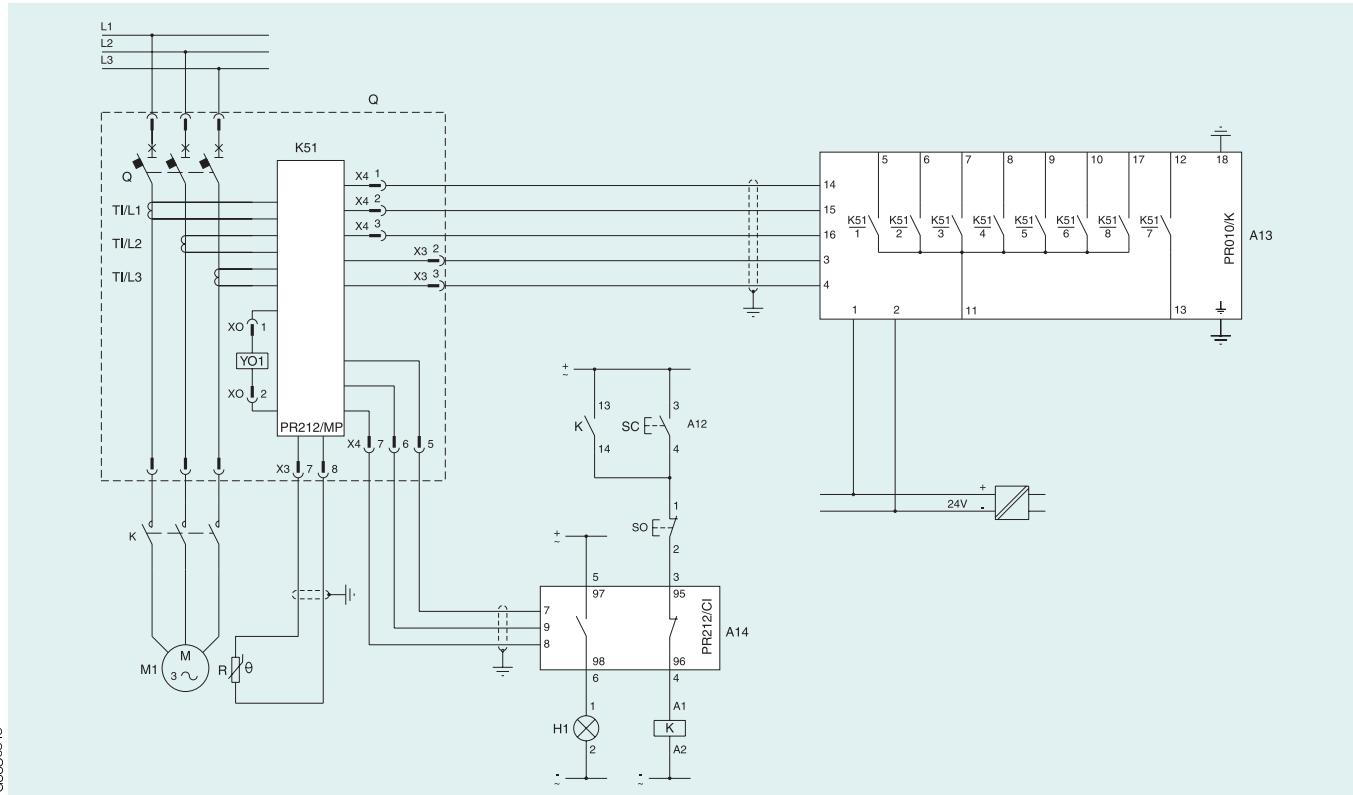


Circuit diagrams

Auxiliary circuits of SACE PR212/MP electronic releases
for motor protection

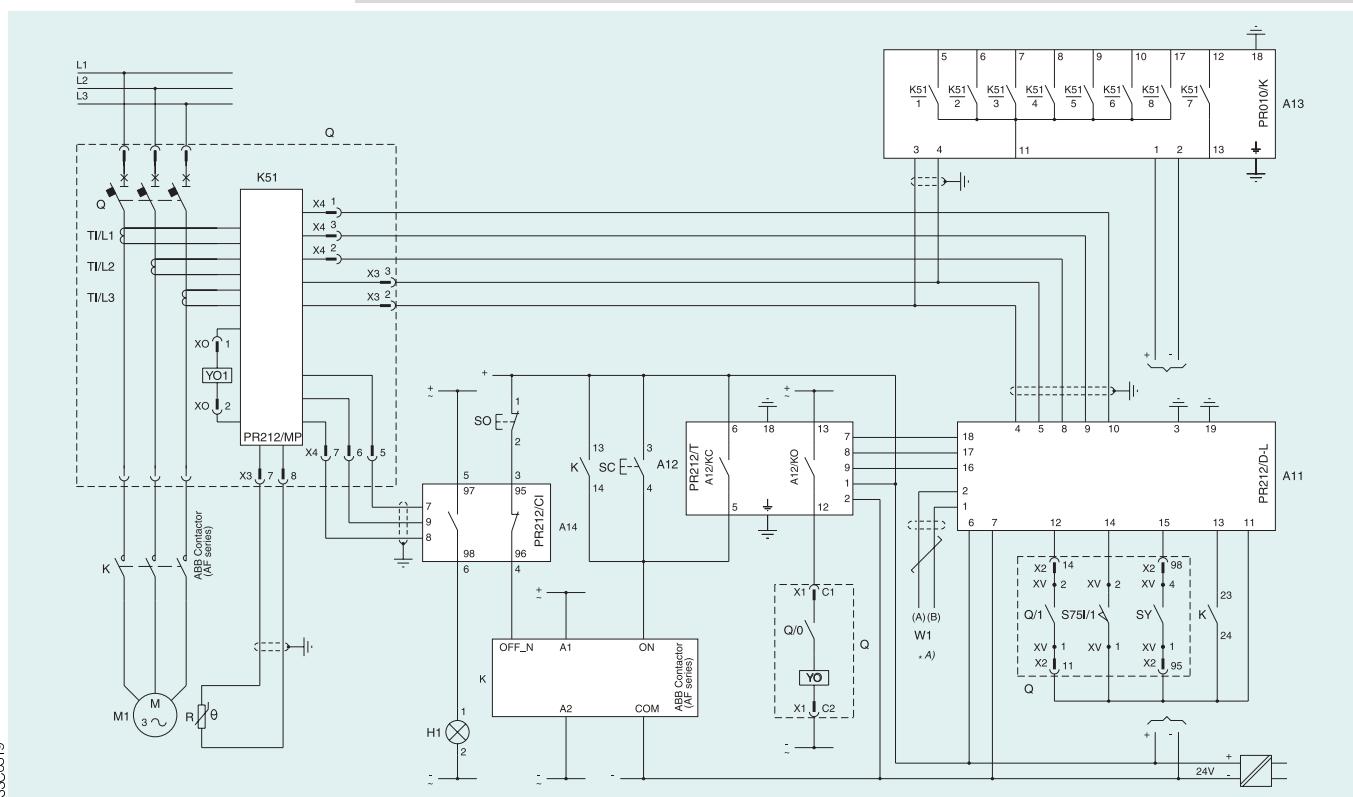
SACE S4-S5-S6-S7

SACE PR212/MP release connected to the signalling unit SACE PR010/K and contactor operator unit SACE PR212/CI



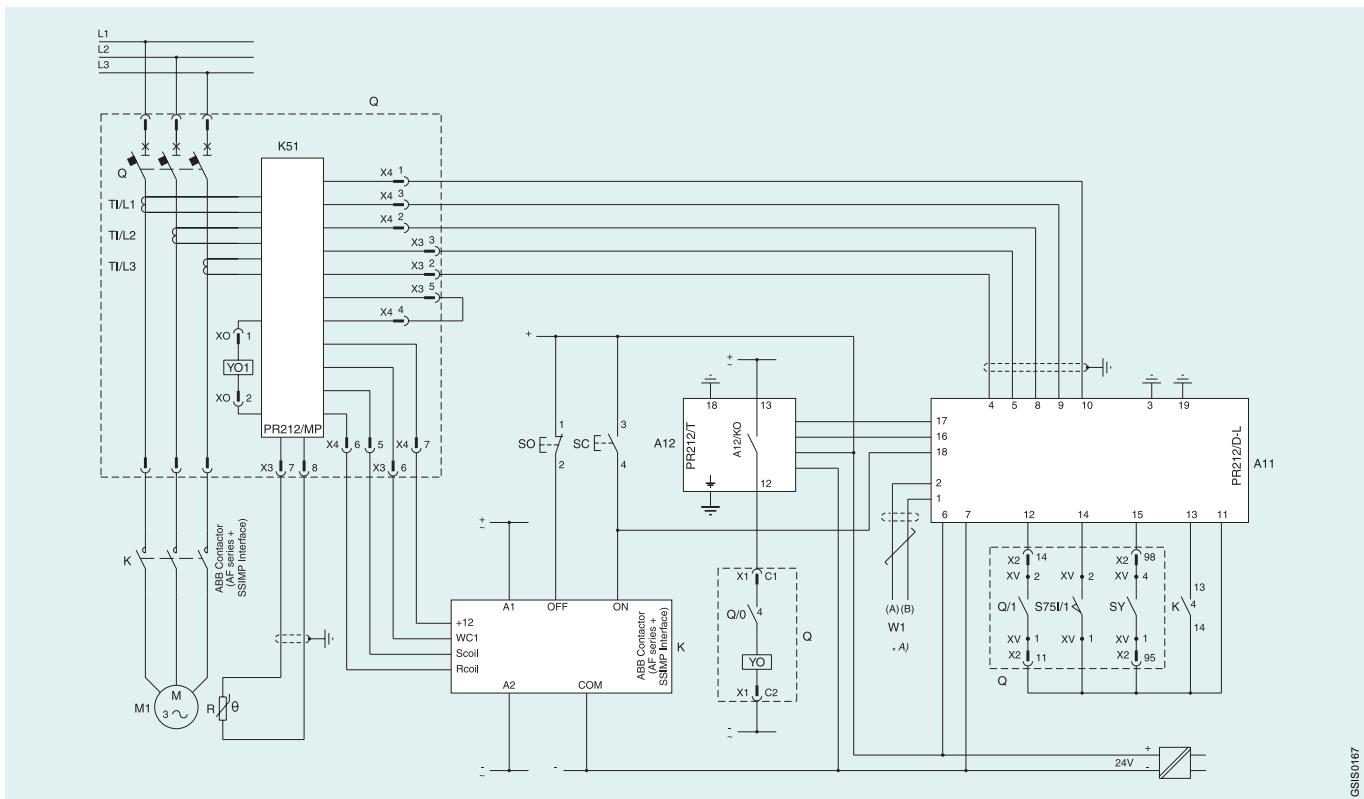
SACE S4-S5-S6-S7

SACE PR212/MP release connected to the dialogue unit SACE PR212/D-L, actuator unit SACE PR212/T, signalling unit SACE PR010/K and contactor operator unit SACE PR212/CI



SACE S4-S5-S6-S7

SACE PR212/MP release connected to the dialogue unit SACE PR212/D-L and actuator unit SACE PR212/T

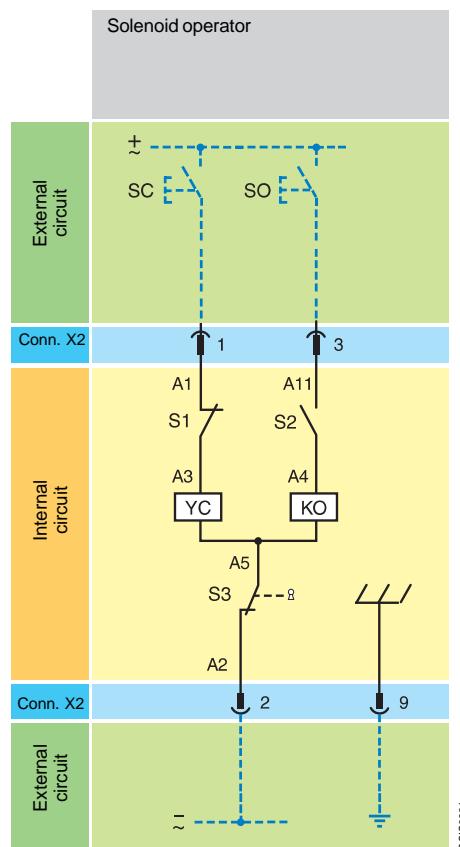




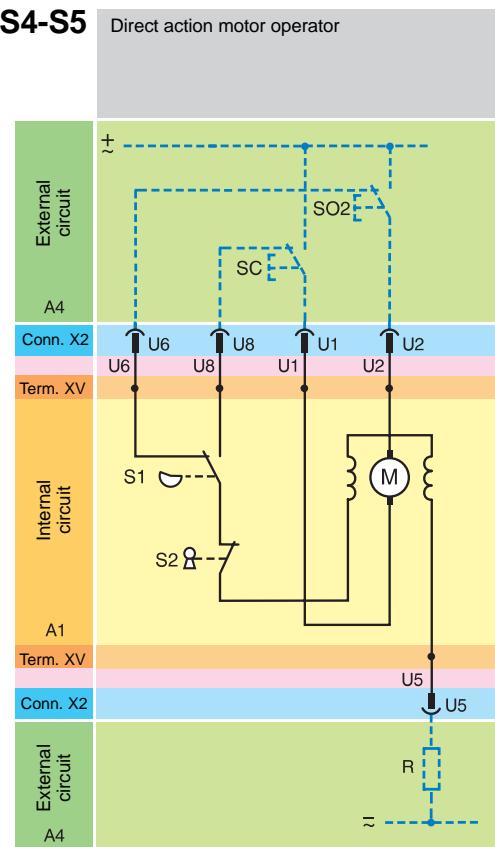
Circuit diagrams

Motor operators

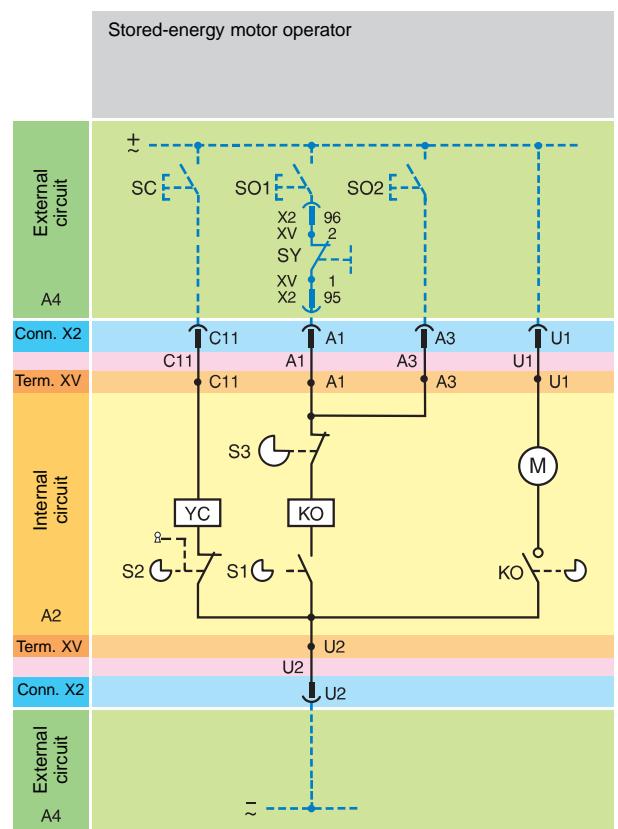
SACE S1-S2



SACE S3-S4-S5



SACE S6-S7





Circuit diagrams

Graphic symbols for circuit diagrams
(Standards IEC 617 and CEI 3-14...3-26)

	Thermal effect		Terminal or clamp		Make contact with held position
	Electromagnetic effect		Socket (female) or pole of a socket		Make position contact (limit contact)
	Time delay		Socket and plug (female and male)		Opening position contact (limit contact)
	Mechanical connection		Temperature dependent resistor		Change-over position contact with temporary interruption (limit contact)
	Manual mechanical control (general case)		Resistor (general symbol)		Switch-disconnector
	Pushbutton actuator		Induction motor, threephase, squirrel cage		Contactor (closing contact)
	Key control		Motor (general symbol)		Circuit-breaker with automatic release
	Cam control		Brush		Control coil (general symbol)
	Earth (general symbol)		Motor energised in series		Instantaneous overcurrent relay
	Equipotentiality		Current transformer with primary formed by 4 through conductors and wound secondary, with socket		Overcurrent relay with adjustable short time-delay trip
	Galvanically separated converter		Current transformer		Overcurrent relay with short inverse time-delay trip
	Shielded cable conductors (example: two conductors)		Make contact		Overcurrent relay with inverse long time delay
	Conductors or stranded cables (example: two conductors)		Break contact		Earth fault overcurrent relay with inverse short time-delay trip
	Connection of conductors		Change-over contact with temporary interruption		Residual current relay



Circuit diagrams

Key and notes

●	= Figure number of diagram	Q	= Main switch
*	= See the note indicated by the letter	Q/0 ... 2	= Auxiliary contacts of the circuit-breaker
A1	= Applications of the circuit-breaker	R	= Resistor outside the circuit-breaker, supplied for motor power supply voltages of more than 220 V
A2	= Applications of the motor operators	S1	= For S3 - S4 - S5: position contact operated by a circuit-breaker cam For S6 - S7: contact controlled by the motor operator cam: closes when the circuit-breaker reaches its closed position and opens when the circuit-breaker reaches its open position (doesn't switch when the circuit-breaker goes into its tripped position)
A4	= Example switchgear and connections for control and signalling, outside the circuit-breaker	S2	= For S3 - S4 - S5: safety contact operated by: - key lock (if fitted) - padlock device - manual control selector. For S6 - S7: contact controlled by the motor operator cam: opens when the circuit-breaker reaches its closed position and closes when the circuit-breaker reaches its open position (doesn't switch when the circuit-breaker goes into its tripped position).The contact is also operated by the key lock device (if present)
A11	= PR212/D-L dialogue unit, for connection to a centralised control system	S3	= Contact controlled by the motor operator cam: opens after contact KO has closed and closes when the circuit-breaker reaches its open position (doesn't switch when the circuit-breaker goes into its tripped position)
A12	= PR212/T actuator unit, with auxiliary relays for executing commands from the dialogue unit	S4	= Contact operated by the circuit-breaker rotary handle
A12/KC	= Actuator unit closing control	S75I/1...5	= Contacts for electrical signalling of circuit-breaker in inserted position (only for plug in or withdrawable circuit-breakers)
A12/KO	= Actuator unit opening control	S75S/1...5	= Contacts for electrical signalling of circuit-breaker in removed or racked-out position (only for plug in or withdrawable circuit-breakers)
A13	= PR010/K signalling unit with auxiliary relays for electrical signalling of the protection functions of the microprocessor-based overcurrent release	SC	= Pushbutton or contact for closing the circuit-breaker or for motor start. For circuit-breakers S3 - S4 - S5, the operating mechanism must have a time of not less than 100ms
A14	= Interface unit with SACE PR212/CI operator unit	SO	= Pushbutton or contact for opening the circuit-breaker or for motor stop
D	= Electronic time-lag device of undervoltage release (outside the circuit-breaker)	SO1, SO2	= Pushbuttons or contacts for opening the circuit-breaker. For circuit-breakers S3 - S4 - S5, the operating mechanism must have a time of not less than 100 ms (see "Instructions for resetting the circuit-breaker after the releases have tripped")
K51	= PR211, PR212/P or PR212/MP microprocessor-based overcurrent release with the following protection functions: - L overload protection with inverse long time-delay trip - S short-circuit protection with inverse or definite short time-delay trip (only available with PR212/P release) - I short-circuit protection with instantaneous trip - G earth fault protection with inverse short time-delay trip (only available with PR212/P release)	SY	= Contact for electrical signalling of circuit-breaker open due to tripping of thermomagnetic releases, YO, YO1, YU (trip position)
K51/X	= Electrical signalling of alarm for internal communication fault	TI	= Toroidal current transformer
K51/X	= Electrical signalling of alarm for protection function G in tripping zone	TI/L1	= Current transformer located on phase L1
K51/X	= Electrical signalling of alarm for protection function I in tripping zone	TI/L2	= Current transformer located on phase L2
K51/X	= Electrical signalling of alarm for protection function L in tripping zone	TI/L3	= Current transformer located on phase L3
K51/X	= Electrical signalling for protection function L in pre-alarm zone	TI/N	= Current transformer located on neutral
K51/X	= Electrical signalling of alarm for protection function S in tripping zone		
K51/X	= Electrical signalling of alarm for release YO1 tripped due to overcurrent or 'trip test' (Fig. 41)		
K87	= RC211-RC212 residual-current release (for circuit-breakers S1-S2-S3) or RC210 (for circuit-breaker S1)		
KO	= For S3 - S4 - S5: auxiliary opening relay. For S6 - S7: opening and spring-loading relay with held-position make contact, released by a cam of the motor operator when the circuit-breaker reaches its open position and the closing springs have been loaded		
M	= For S3 - S4 - S5: motor with energising in series for opening and closing of the circuit-breaker. For S6 - S7: motor for opening the circuit-breaker and loading the closing springs of the circuit-breaker		
M1	= Three-phase asynchronous motor		



Circuit diagrams

Graphic symbols for circuit diagrams (Standards IEC 617 and CEI 3-14...3-26)

W1	= Serial interface with monitoring system (EIA RS485 interface)
X1, X2	= Connectors for the auxiliary circuits of the circuit-breaker. For circuit-breakers S1 - S2 supplied to order only.
X3, X4	= Connectors for the circuits of the microprocessor-based overcurrent release (with plug in or withdrawable circuit-breakers, the connectors are pulled out at the same time as the circuit-breaker)
X5, X6	= Terminal delivery block for microprocessor-based overcurrent release circuits
XO	= Connector for the opening solenoid YO1
XV	= Terminal blocks for accessories
YC	= Closing release
YO	= Opening release
YO1	= Opening solenoid of the RC211 or RC212 residual current release (for S1 - S2 - S3) and of the overcurrent release (for S4 ... S8)
YU	= Undervoltage release

3) Electrical resetting always enabled

The electrical opening control (contact SO2) is connected in series directly to relay KO for S3 - S4 - S5 or connected directly to pole A3 of connector X2 (for S6 - S7) and is therefore always enabled.

Example of use: automatic resetting of the circuit-breaker immediately after the releases have been tripped

N.B. If an overcurrent release is fitted, it will be necessary to identify the causes that brought it to its tripped position in order to prevent it from closing again in short-circuit conditions.

Manual resetting is always allowed in each of these examples.

Instructions for resetting the circuit-breaker after the releases have tripped

The circuit-breaker can open both through the action of the motor operator and due to the following releases tripping:

- overcurrent
- undervoltage
- opening

with consequent opening of contact SY (if fitted) in series with relay KO.

A reset operation involving manual or electric opening will have to be carried out in order to close the circuit-breaker again after tripping. Contact SY closes again at the end of the operation. The type of resetting should be chosen to suit the design requirements and duty conditions. A number of possible solutions are suggested below:

1) Manual resetting only

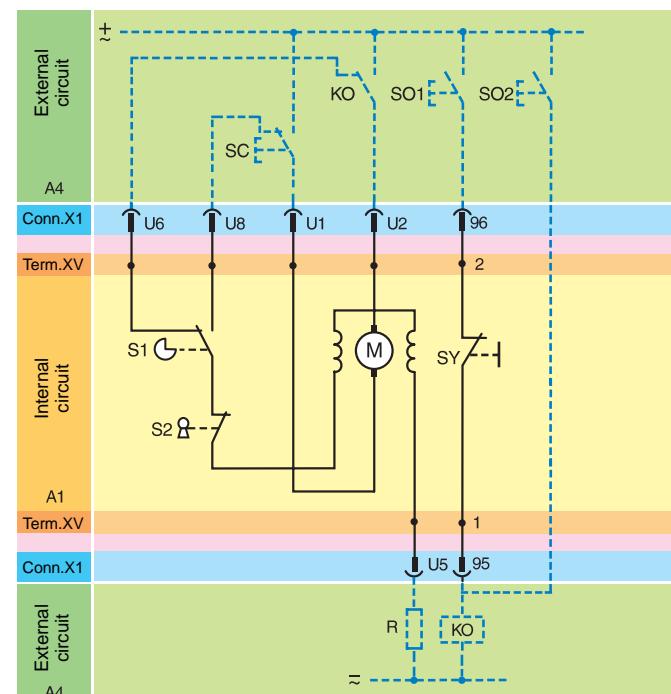
The electrical opening control (contact SO1) must be connected in series with contact SY. Opening (for S3 - S4 - S5 using the auxiliary relay KO) is therefore prevented until the circuit-breaker is in its tripped position. To reset the circuit-breaker one needs to operate the related lever until the circuit-breaker is in its open position and the closing springs are fully loaded.

2) Electrical resetting, responsibility of the operator

The normal electric opening control (contact SO1) must be connected in series with contact SY.

Another opening control is provided (contact SO2), connected in series directly to relay KO for S3 - S4 - S5 or connected directly to pole A3 of connector X2 for S6 - S7.

This control must be protected by, for example, a pushbutton keyswitch. It should only be used if the information relayed to the control station manager allows one to rule out the possibility of the tripping having been caused by a short circuit, or if the causes of the short circuit have been removed.





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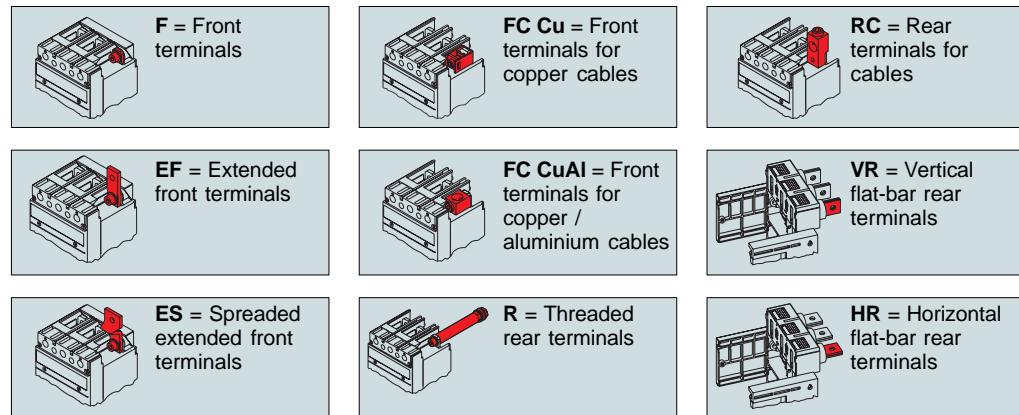
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Order codes

General information

Interpretation of abbreviations used for article description



I_m	Magnetic trip current	I_{th}	Rated current of thermomagnetic release
$I_m = 3 I_{th}$		I_{th}	
$I_m = 5 I_{th}$		I_{thw}	Rated short-time withstand current
$I_m = 10 I_{th}$		I_{cu}	Rated ultimate short-circuit breaking capacity
$I_m = 5 \dots 10 I_{th}$		I_{cm}	Rated duty short-circuit making capacity (peak value)
		I_u	Rated uninterrupted current of the circuit-breaker
		I_n	Rated current of electronic release
		I_{th}	
		I_{cw}	
		I_{cu}	
		I_{cm}	



Order codes

SACE Isamax S1 circuit-breaker

F = FIXED



PS39001

S1B 125 $I_{u} (40^{\circ}\text{C}) = 125 \text{ A}$ $I_{cu} (415 \text{ V}) = 16 \text{ kA}$

Thermomagnetic release		$I_{m} = 5 \text{ lth}$	code 1SDA0 R1	$I_{m} = 10 \text{ lth}$	code 1SDA0 R1	
			3 poles	4 poles	3 poles	4 poles
<i>FC Cu = Front terminals for copper cables</i>						
S1B 125 F FC Cu	R 10	160A	23645	24245	500A	00002
S1B 125 F FC Cu	R 12.5	160A	23647	24247	500A	00004
S1B 125 F FC Cu	R 16	160A	23649	24249	500A	00006
S1B 125 F FC Cu	R 20	200A	23651	24251	500A	00008
S1B 125 F FC Cu	R 25	200A	23653	24253	500A	00010
S1B 125 F FC Cu	R 32	200A	23655	24255	500A	00012
S1B 125 F FC Cu	R 40	200A	23657	24257	500A	00014
S1B 125 F FC Cu	R 50	250A	23659	24259	500A	00016
S1B 125 F FC Cu	R 63	320A	23661	24261	630A	00018
S1B 125 F FC Cu	R 80	400A	23663	24263	800A	00020
S1B 125 F FC Cu	R 100	500A	23665	24265	1000A	00022
S1B 125 F FC Cu	R 125	630A	23667	24267	1250A	00024
<i>R = Terminali posteriori filettati</i>						
S1B 125 F R	R 10	160A	23765	23885	500A	00027
S1B 125 F R	R 12.5	160A	23767	23887	500A	00029
S1B 125 F R	R 16	160A	23769	23889	500A	00031
S1B 125 F R	R 20	200A	23771	23891	500A	00033
S1B 125 F R	R 25	200A	23773	23893	500A	00035
S1B 125 F R	R 32	200A	23775	23895	500A	00037
S1B 125 F R	R 40	200A	23777	23897	500A	00039
S1B 125 F R	R 50	250A	23779	23899	500A	00041
S1B 125 F R	R 63	320A	23781	23901	630A	00043
S1B 125 F R	R 80	400A	23783	23903	800A	00045
S1B 125 F R	R 100	500A	23785	23905	1000A	00047
S1B 125 F R	R 125	630A	23787	23907	1250A	00049



Order codes

SACE Isomax S1 circuit-breaker

F = FIXED



PSI9601

S1N 125 $I_{u\text{ (40 °C)}} = 125 \text{ A}$ $I_{cu\text{ (415 V)}} = 25 \text{ kA}$

Thermomagnetic release	$I_m = 5 \text{ lth}$	code 1SDA0 R1	$I_m = 10 \text{ lth}$	code 1SDA0 R1	
		3 poles	4 poles	3 poles	4 poles
<i>FC Cu = Front terminals for copper cables</i>					
S1N 125 F FC Cu	R 10	160A 23669	24269	500A 00152	00202
S1N 125 F FC Cu	R 12.5	160A 23671	24271	500A 00154	00204
S1N 125 F FC Cu	R 16	160A 23673	24273	500A 00156	00206
S1N 125 F FC Cu	R 20	200A 23675	24275	500A 00158	00208
S1N 125 F FC Cu	R 25	200A 23677	24277	500A 00160	00210
S1N 125 F FC Cu	R 32	200A 23679	24279	500A 00162	00212
S1N 125 F FC Cu	R 40	200A 23681	24281	500A 00164	00214
S1N 125 F FC Cu	R 50	250A 23683	24283	500A 00166	00216
S1N 125 F FC Cu	R 63	320A 23685	24285	630A 00168	00218
S1N 125 F FC Cu	R 80	400A 23687	24287	800A 00170	00220
S1N 125 F FC Cu	R 100	500A 23689	24289	1000A 00172	00222
S1N 125 F FC Cu	R 125	630A 23691	24291	1250A 00174	00224
<i>R = Threaded rear terminals</i>					
S1N 125 F R	R 10	160A 23789	23909	500A 00177	00227
S1N 125 F R	R 12.5	160A 23791	23911	500A 00179	00229
S1N 125 F R	R 16	160A 23793	23913	500A 00181	00231
S1N 125 F R	R 20	200A 23795	23915	500A 00183	00233
S1N 125 F R	R 25	200A 23797	23917	500A 00185	00235
S1N 125 F R	R 32	200A 23799	23919	500A 00187	00237
S1N 125 F R	R 40	200A 23801	23921	500A 00189	00239
S1N 125 F R	R 50	250A 23803	23923	500A 00191	00241
S1N 125 F R	R 63	320A 23805	23925	630A 00193	00243
S1N 125 F R	R 80	400A 23807	23927	800A 00195	00245
S1N 125 F R	R 100	500A 23809	23929	1000A 00197	00247
S1N 125 F R	R 125	630A 23811	23931	1250A 00199	00249

Magnetic release	$I_m = 5 \text{ lth}$	code 1SDA0 R1	$I_m = 10 \text{ lth}$	code 1SDA0 R1	
		3 poles	4 poles	3 poles	4 poles
<i>FC Cu = Front terminals for copper cables</i>					
S1N 125 F FC Cu	In 16A	160A 33676	33772		
S1N 125 F FC Cu	In 40A	200A 33684	33780		
S1N 125 F FC Cu	In 50A	250A 33686	33782	500A 33662	33758
S1N 125 F FC Cu	In 63A	320A 33688	33784	630A 33664	33760
S1N 125 F FC Cu	In 80A	400A 33690	33786	800A 33666	33762
S1N 125 F FC Cu	In 100A			1000A 33668	33764
S1N 125 F FC Cu	In 125A			1250A 33670	33766
<i>R = Threaded rear terminals</i>					
S1N 125 F R	In 16A	160A 33724	33820		
S1N 125 F R	In 40A	200A 33732	33828		
S1N 125 F R	In 50A	250A 33734	33830	500A 33710	33806
S1N 125 F R	In 63A	320A 33736	33832	630A 33712	33808
S1N 125 F R	In 80A	400A 33738	33834	800A 33714	33810
S1N 125 F R	In 100A			1000A 33716	33812
S1N 125 F R	In 125A			1250A 33718	33814

S1N 125 Curva D $I_{u\text{ (40 °C)}} = 125 \text{ A}$ $I_{cu\text{ (415 V)}} = 25 \text{ kA}$

Thermomagnetic release	$I_m = 10 \text{ lth}$	code 1SDA0 R1
		4 poles
<i>FC Cu = Front terminals for copper cables</i>		
S1N 125 F FC Cu	R 63A	1250A 45084
S1N 125 F FC Cu	R 80A	1250A 45087
S1N 125 F FC Cu	R 100A	1400A 45089
S1N 125 F FC Cu	R 125A	1500A 45091
<i>R = Threaded rear terminals</i>		
S1N 125 F R	R 63A	1250A 45093
S1N 125 F R	R 80A	1250A 45095
S1N 125 F R	R 100A	1400A 45097
S1N 125 F R	R 125A	1500A 45099

Order codes

SACE Isomax S1 circuit-breaker

P = PLUG-IN



PSI600

Moving part

S1B 125 $I_{u\text{ (40 °C)}} = 125 \text{ A}$ $I_{cu\text{ (415 V)}} = 16 \text{ kA}$

Thermomagnetic release		$I_m = 5 \text{ lth}$	code 1SDA0 R1	$I_m = 10 \text{ lth}$	code 1SDA0 R1
		3 poles	4 poles	3 poles	4 poles
S1B 125 P MP	R 10	160A	24005	24125	500A 00102
S1B 125 P MP	R 12.5	160A	24007	24127	500A 00104
S1B 125 P MP	R 16	160A	24009	24129	500A 00106
S1B 125 P MP	R 20	200A	24011	24131	500A 00108
S1B 125 P MP	R 25	200A	24013	24133	500A 00110
S1B 125 P MP	R 32	200A	24015	24135	500A 00112
S1B 125 P MP	R 40	200A	24017	24137	500A 00114
S1B 125 P MP	R 50	250A	24019	24139	500A 00116
S1B 125 P MP	R 63	320A	24021	24141	630A 00118
S1B 125 P MP	R 80	400A	24023	24143	800A 00120
S1B 125 P MP	R 100	500A	24025	24145	1000A 00122
S1B 125 P MP	R 125	630A	24027	24147	1250A 00124

S1N 125 $I_{u\text{ (40 °C)}} = 125 \text{ A}$ $I_{cu\text{ (415 V)}} = 25 \text{ kA}$

Thermomagnetic release		$I_m = 5 \text{ lth}$	code 1SDA0 R1	$I_m = 10 \text{ lth}$	code 1SDA0 R1
		3 poles	4 poles	3 poles	4 poles
S1N 125 P MP	R 10	160A	24029	24149	500A 00252
S1N 125 P MP	R 12.5	160A	24031	24151	500A 00254
S1N 125 P MP	R 16	160A	24033	24153	500A 00256
S1N 125 P MP	R 20	200A	24035	24155	500A 00258
S1N 125 P MP	R 25	200A	24037	24157	500A 00260
S1N 125 P MP	R 32	200A	24039	24159	500A 00262
S1N 125 P MP	R 40	200A	24041	24161	500A 00264
S1N 125 P MP	R 50	250A	24043	24163	500A 00266
S1N 125 P MP	R 63	320A	24045	24165	630A 00268
S1N 125 P MP	R 80	400A	24047	24167	800A 00270
S1N 125 P MP	R 100	500A	24049	24169	1000A 00272
S1N 125 P MP	R 125	630A	24051	24171	1250A 00274

Magnetic release		$I_m = 5 \text{ lth}$	code 1SDA0 R1	$I_m = 10 \text{ lth}$	code 1SDA0 R1
		3 poles	4 poles	3 poles	4 poles
S1N 125 P MP	In 16A	160A	33964	34012	
S1N 125 P MP	In 40A	200A	33972	34020	
S1N 125 P MP	In 50A	250A	33974	34022	500A 33950
S1N 125 P MP	In 63A	320A	33976	34024	630A 33952
S1N 125 P MP	In 80A	400A	33978	34026	800A 33954
S1N 125 P MP	In 100A				1000A 33956
S1N 125 P MP	In 125A				1250A 33958

S1N 125 Curva D $I_{u\text{ (40 °C)}} = 125 \text{ A}$ $I_{cu\text{ (415 V)}} = 25 \text{ kA}$

Thermomagnetic release		$I_m = 10 \text{ lth}$	code 1SDA0 R1
		4 poles	4 poles
<i>FC Cu = Front terminals for copper cables</i>			
S1N 125 P MP	R 63A		1250A 45101
S1N 125 P MP	R 80A		1250A 45103
S1N 125 P MP	R 100A		1400A 45105
S1N 125 P MP	R 125A		1500A 45107



Order codes

SACE Isomax S2 circuit-breaker

F = FIXED



PSIS604

S2B 160 $I_{u\text{ (40 °C)}} = 160 \text{ A}$ $I_{cu\text{ (415 V)}} = 16 \text{ kA}$

Thermomagnetic release	$I_m = 5 \text{ lth}$	code 1SDA0 R1	$I_m = 10 \text{ lth}$	code 1SDA0 R1
	3 poles	4 poles	3 poles	4 poles
<i>EF = Extended front terminals</i>				
S2B 160 F EF	R 12.5	160A 34056	34440	500A 34032
S2B 160 F EF	R 16	160A 34058	34442	500A 34034
S2B 160 F EF	R 20	200A 34060	34444	500A 34036
S2B 160 F EF	R 25	200A 34062	34446	500A 34038
S2B 160 F EF	R 32	200A 34064	34448	500A 34040
S2B 160 F EF	R 40	200A 34066	34450	500A 34042
S2B 160 F EF	R 50	250A 34068	34452	500A 34044
S2B 160 F EF	R 63	320A 34070	34454	630A 34046
S2B 160 F EF	R 80	400A 34072	34456	800A 34048
S2B 160 F EF	R 100	500A 34074	34458	1000A 34050
S2B 160 F EF	R 125	630A 34076	34460	1250A 34052
S2B 160 F EF	R 160	800A 34078	34462	1600A 34054
<i>FC Cu = Front terminals for copper cables</i>				
S2B 160 F FC Cu	R 12.5	160A 23693	24293	500A 00302
S2B 160 F FC Cu	R 16	160A 23695	24295	500A 00304
S2B 160 F FC Cu	R 20	200A 23697	24297	500A 00306
S2B 160 F FC Cu	R 25	200A 23699	24299	500A 00308
S2B 160 F FC Cu	R 32	200A 23701	24301	500A 00310
S2B 160 F FC Cu	R 40	200A 23703	24303	500A 00312
S2B 160 F FC Cu	R 50	250A 23705	24305	500A 00314
S2B 160 F FC Cu	R 63	320A 23707	24307	630A 00316
S2B 160 F FC Cu	R 80	400A 23709	24309	800A 00318
S2B 160 F FC Cu	R 100	500A 23711	24311	1000A 00320
S2B 160 F FC Cu	R 125	630A 23713	24313	1250A 00322
S2B 160 F FC Cu	R 160	800A 23715	24315	1600A 00324
<i>FC CuAl = Front terminals for copper/aluminium cables</i>				
S2B 160 F FC CuAl*	R 12.5	160A 34200	34584	500A 34176
S2B 160 F FC CuAl*	R 16	160A 34202	34586	500A 34178
S2B 160 F FC CuAl*	R 20	200A 34204	34588	500A 34180
S2B 160 F FC CuAl*	R 25	200A 34206	34590	500A 34182
S2B 160 F FC CuAl*	R 32	200A 34208	34592	500A 34184
S2B 160 F FC CuAl*	R 40	200A 34210	34594	500A 34186
S2B 160 F FC CuAl*	R 50	250A 34212	34596	500A 34188
S2B 160 F FC CuAl*	R 63	320A 34214	34598	630A 34190
S2B 160 F FC CuAl*	R 80	400A 34216	34600	800A 34192
S2B 160 F FC CuAl*	R 100	500A 34218	34602	1000A 34194
S2B 160 F FC CuAl*	R 125	630A 34220	34604	1250A 34196
S2B 160 F FC CuAl*	R 160	800A 34222	34606	1600A 34198
S2B 160 F FC CuAl**	R 12.5	160A 34296	34680	500A 34272
S2B 160 F FC CuAl**	R 16	160A 34298	34682	500A 34274
S2B 160 F FC CuAl**	R 20	200A 34300	34684	500A 34276
S2B 160 F FC CuAl**	R 25	200A 34302	34686	500A 34278
S2B 160 F FC CuAl**	R 32	200A 34304	34688	500A 34280
S2B 160 F FC CuAl**	R 40	200A 34306	34690	500A 34282
S2B 160 F FC CuAl**	R 50	250A 34308	34692	500A 34284
S2B 160 F FC CuAl**	R 63	320A 34310	34694	630A 34286
S2B 160 F FC CuAl**	R 80	400A 34312	34696	800A 34288
S2B 160 F FC CuAl**	R 100	500A 34314	34698	1000A 34290
S2B 160 F FC CuAl**	R 125	630A 34316	34700	1250A 34292
S2B 160 F FC CuAl**	R 160	800A 34318	34702	1600A 34294
<i>R = Threaded rear terminals</i>				
S2B 160 F R	R 12.5	160A 23813	23933	500A 00327
S2B 160 F R	R 16	160A 23815	23935	500A 00329
S2B 160 F R	R 20	200A 23817	23937	500A 00331
S2B 160 F R	R 25	200A 23819	23939	500A 00333
S2B 160 F R	R 32	200A 23821	23941	500A 00335
S2B 160 F R	R 40	200A 23823	23943	500A 00337
S2B 160 F R	R 50	250A 23825	23945	500A 00339
S2B 160 F R	R 63	320A 23827	23947	630A 00341
S2B 160 F R	R 80	400A 23829	23949	800A 00343
S2B 160 F R	R 100	500A 23831	23951	1000A 00345
S2B 160 F R	R 125	630A 23833	23953	1250A 00347
S2B 160 F R	R 160	800A 23835	23955	1600A 00349

* Cable section = 1 x 2.5...50 mm²

** Cable section = 1 x 35...95 mm²

Order codes

SACE Isomax S2 circuit-breaker

F = FIXED



PSI9004

S2N 160

I_u (40 °C) = **160 A**

I_{cu} (415 V) = **35 kA**

Thermomagnetic release	I _m = 5 lth	code 1SDA0 R1 3 poles	code 1SDA0 R1 4 poles	I _m = 10 lth	code 1SDA0 R1 3 poles	code 1SDA0 R1 4 poles
<i>EF = Extended front terminals</i>						
S2N 160 F EF	R 12.5	160A 34826	35210	500A 34802	35186	
S2N 160 F EF	R 16	160A 34828	35212	500A 34804	35188	
S2N 160 F EF	R 20	200A 34830	35214	500A 34806	35190	
S2N 160 F EF	R 25	200A 34832	35216	500A 34808	35192	
S2N 160 F EF	R 32	200A 34834	35218	500A 34810	35194	
S2N 160 F EF	R 40	200A 34836	35220	500A 34812	35196	
S2N 160 F EF	R 50	250A 34838	35222	500A 34814	35198	
S2N 160 F EF	R 63	320A 34840	35224	630A 34816	35200	
S2N 160 F EF	R 80	400A 34842	35226	800A 34818	35202	
S2N 160 F EF	R 100	500A 34844	35228	1000A 34820	35204	
S2N 160 F EF	R 125	630A 34846	35230	1250A 34822	35206	
S2N 160 F EF	R 160	800A 34848	35232	1600A 34824	35208	
<i>FC Cu = Front terminals for copper cables</i>						
S2N 160 F FC Cu	R 12.5	160A 23717	24317	500A 00452	00502	
S2N 160 F FC Cu	R 16	160A 23719	24319	500A 00454	00504	
S2N 160 F FC Cu	R 20	200A 23721	24321	500A 00456	00506	
S2N 160 F FC Cu	R 25	200A 23723	24323	500A 00458	00508	
S2N 160 F FC Cu	R 32	200A 23725	24325	500A 00460	00510	
S2N 160 F FC Cu	R 40	200A 23727	24327	500A 00462	00512	
S2N 160 F FC Cu	R 50	250A 23729	24329	500A 00464	00514	
S2N 160 F FC Cu	R 63	320A 23731	24331	630A 00466	00516	
S2N 160 F FC Cu	R 80	400A 23733	24333	800A 00468	00518	
S2N 160 F FC Cu	R 100	500A 23735	24335	1000A 00470	00520	
S2N 160 F FC Cu	R 125	630A 23737	24337	1250A 00472	00522	
S2N 160 F FC Cu	R 160	800A 23739	24339	1600A 00474	00524	
<i>FC CuAl = Front terminals for copper/aluminium cables</i>						
S2N 160 F FC CuAl*	R 12.5	160A 34970	35354	500A 34946	35330	
S2N 160 F FC CuAl*	R 16	160A 34972	35356	500A 34948	35332	
S2N 160 F FC CuAl*	R 20	200A 34974	35358	500A 34950	35334	
S2N 160 F FC CuAl*	R 25	200A 34976	35360	500A 34952	35336	
S2N 160 F FC CuAl*	R 32	200A 34978	35362	500A 34954	35338	
S2N 160 F FC CuAl*	R 40	200A 34980	35364	500A 34956	35340	
S2N 160 F FC CuAl*	R 50	250A 34982	35366	500A 34958	35342	
S2N 160 F FC CuAl*	R 63	320A 34984	35368	630A 34960	35344	
S2N 160 F FC CuAl*	R 80	400A 34986	35370	800A 34962	35346	
S2N 160 F FC CuAl*	R 100	500A 34988	35372	1000A 34964	35348	
S2N 160 F FC CuAl*	R 125	630A 34990	35374	1250A 34966	35350	
S2N 160 F FC CuAl*	R 160	800A 34992	35376	1600A 34968	35352	
S2N 160 F FC CuAl**	R 12.5	160A 35066	35450	500A 35042	35426	
S2N 160 F FC CuAl**	R 16	160A 35068	35452	500A 35044	35428	
S2N 160 F FC CuAl**	R 20	200A 35070	35454	500A 35046	35430	
S2N 160 F FC CuAl**	R 25	200A 35072	35456	500A 35048	35432	
S2N 160 F FC CuAl**	R 32	200A 35074	35458	500A 35050	35434	
S2N 160 F FC CuAl**	R 40	200A 35076	35460	500A 35052	35436	
S2N 160 F FC CuAl**	R 50	250A 35078	35462	500A 35054	35438	
S2N 160 F FC CuAl**	R 63	320A 35080	35464	630A 35056	35440	
S2N 160 F FC CuAl**	R 80	400A 35082	35466	800A 35058	35442	
S2N 160 F FC CuAl**	R 100	500A 35084	35468	1000A 35060	35444	
S2N 160 F FC CuAl**	R 125	630A 35086	35470	1250A 35062	35446	
S2N 160 F FC CuAl**	R 160	800A 35088	35472	1600A 35064	35448	
<i>R = Threaded rear terminals</i>						
S2N 160 F R	R 12.5	160A 23837	23957	500A 00477	00527	
S2N 160 F R	R 16	160A 23839	23959	500A 00479	00529	
S2N 160 F R	R 20	200A 23841	23961	500A 00481	00531	
S2N 160 F R	R 25	200A 23843	23963	500A 00483	00533	
S2N 160 F R	R 32	200A 23845	23965	500A 00485	00535	
S2N 160 F R	R 40	200A 23847	23967	500A 00487	00537	
S2N 160 F R	R 50	250A 23849	23969	500A 00489	00539	
S2N 160 F R	R 63	320A 23851	23971	630A 00491	00541	
S2N 160 F R	R 80	400A 23853	23973	800A 00493	00543	
S2N 160 F R	R 100	500A 23855	23975	1000A 00495	00545	
S2N 160 F R	R 125	630A 23857	23977	1250A 00497	00547	
S2N 160 F R	R 160	800A 23859	23979	1600A 00499	00549	

* Cable section = 1 x 2.5...50 mm²

** Cable section = 1 x 35...95 mm²



Order codes

SACE Isomax S2 circuit-breaker

F = FIXED



PGS604

Thermomagnetic release		Im = 5 lth		code 1SDA0 R1		Im = 10 lth		code 1SDA0 R1	
		3 poles	4 poles			3 poles	4 poles		
<i>EF = Extended front terminals</i>									
S2N 160 F EF	In 16A	160A	34876	35260					
S2N 160 F EF	In 40A	200A	34884	35268					
S2N 160 F EF	In 50A	250A	34886	35270	500A	34862	35246		
S2N 160 F EF	In 63A	320A	34888	35272	630A	34864	35248		
S2N 160 F EF	In 80A	400A	34890	35274	800A	34866	35250		
S2N 160 F EF	In 100A				1000A	34868	35252		
S2N 160 F EF	In 125A				1250A	34870	35254		
S2N 160 F EF	In 160A				1600A	34872	35256		
<i>FC Cu = Front terminals for copper cables</i>									
S2N 160 F FC Cu	In 16A	160A	34924	35308					
S2N 160 F FC Cu	In 40A	200A	34932	35316					
S2N 160 F FC Cu	In 50A	250A	34934	35318	500A	34910	35294		
S2N 160 F FC Cu	In 63A	320A	34936	35320	630A	34912	35296		
S2N 160 F FC Cu	In 80A	400A	34938	35322	800A	34914	35298		
S2N 160 F FC Cu	In 100A				1000A	34916	35300		
S2N 160 F FC Cu	In 125A				1250A	34918	35302		
S2N 160 F FC Cu	In 160A				1600A	34920	35304		
<i>FC CuAl = Front terminals for copper/aluminium cables</i>									
S2N 160 F FC CuAl*	In 16A	160A	35020	35404					
S2N 160 F FC CuAl*	In 40A	200A	35028	35412					
S2N 160 F FC CuAl*	In 50A	250A	35030	35414	500A	35006	35390		
S2N 160 F FC CuAl*	In 63A	320A	35032	35416	630A	35008	35392		
S2N 160 F FC CuAl*	In 80A	400A	35034	35418	800A	35010	35394		
S2N 160 F FC CuAl*	In 100A				1000A	35012	35396		
S2N 160 F FC CuAl*	In 125A				1250A	35014	35398		
S2N 160 F FC CuAl*	In 160A				1600A	35016	35400		
S2N 160 F FC CuAl**	In 16A	160A	35116	35500					
S2N 160 F FC CuAl**	In 40A	200A	35124	35508					
S2N 160 F FC CuAl**	In 50A	250A	35126	35510	500A	35102	35486		
S2N 160 F FC CuAl**	In 63A	320A	35128	35512	630A	35104	35488		
S2N 160 F FC CuAl**	In 80A	400A	35130	35514	800A	35106	35490		
S2N 160 F FC CuAl**	In 100A				1000A	35108	35492		
S2N 160 F FC CuAl**	In 125A				1250A	35110	35494		
S2N 160 F FC CuAl**	In 160A				1600A	35112	35496		
<i>R = Threaded rear terminals</i>									
S2N 160 F R	In 16A	160A	35164	35548					
S2N 160 F R	In 40A	200A	35172	35556					
S2N 160 F R	In 50A	250A	35174	35558	500A	35150	35534		
S2N 160 F R	In 63A	320A	35176	35560	630A	35152	35536		
S2N 160 F R	In 80A	400A	35178	35562	800A	35154	35538		
S2N 160 F R	In 100A				1000A	35156	35540		
S2N 160 F R	In 125A				1250A	35158	35542		
S2N 160 F R	In 160A				1600A	35160	35544		

* Cable section = 1 x 2.5...50 mm²

** Cable section = 1 x 35...95 mm²

Order codes

SACE Isomax S2 circuit-breaker

F = FIXED



PSIS004

S2S 160

I_u (40 °C) = 160 A

I_{cu} (415 V) = 50 kA

Im = 10 I_{th} code 1SDA0 R1
3 poles 4 poles

Thermomagnetic release

EF = Extended front terminals

S2S 160 F EF	R 12.5	500A	35570	35762
S2S 160 F EF	R 16	500A	35572	35764
S2S 160 F EF	R 20	500A	35574	35766
S2S 160 F EF	R 25	500A	35576	35768
S2S 160 F EF	R 32	500A	35578	35770
S2S 160 F EF	R 40	500A	35580	35772
S2S 160 F EF	R 50	500A	35582	35774
S2S 160 F EF	R 63	630A	35584	35776
S2S 160 F EF	R 80	800A	35586	35778
S2S 160 F EF	R 100	1000A	35588	35780
S2S 160 F EF	R 125	1250A	35590	35782
S2S 160 F EF	R 160	1600A	35592	35784

FC Cu = Front terminals for copper cables

S2S 160 F FC Cu	R 12.5	500A	00602	00652
S2S 160 F FC Cu	R 16	500A	00604	00654
S2S 160 F FC Cu	R 20	500A	00606	00656
S2S 160 F FC Cu	R 25	500A	00608	00658
S2S 160 F FC Cu	R 32	500A	00610	00660
S2S 160 F FC Cu	R 40	500A	00612	00662
S2S 160 F FC Cu	R 50	500A	00614	00664
S2S 160 F FC Cu	R 63	630A	00616	00666
S2S 160 F FC Cu	R 80	800A	00618	00668
S2S 160 F FC Cu	R 100	1000A	00620	00670
S2S 160 F FC Cu	R 125	1250A	00622	00672
S2S 160 F FC Cu	R 160	1600A	00624	00674

FC CuAl = Front terminals for copper/aluminium cables

S2S 160 F FC CuAl*	R 12.5	500A	36197	35834
S2S 160 F FC CuAl*	R 16	500A	36199	35836
S2S 160 F FC CuAl*	R 20	500A	36201	35838
S2S 160 F FC CuAl*	R 25	500A	36203	35840
S2S 160 F FC CuAl*	R 32	500A	36205	35842
S2S 160 F FC CuAl*	R 40	500A	36207	35844
S2S 160 F FC CuAl*	R 50	500A	36209	35846
S2S 160 F FC CuAl*	R 63	630A	36211	35848
S2S 160 F FC CuAl*	R 80	800A	36213	35850
S2S 160 F FC CuAl*	R 100	1000A	36215	35852
S2S 160 F FC CuAl*	R 125	1250A	36217	35854
S2S 160 F FC CuAl*	R 160	1600A	36219	35856

S2S 160 F FC CuAl**	R 12.5	500A	36221	35882
S2S 160 F FC CuAl**	R 16	500A	36223	35884
S2S 160 F FC CuAl**	R 20	500A	36225	35886
S2S 160 F FC CuAl**	R 25	500A	36227	35888
S2S 160 F FC CuAl**	R 32	500A	36229	35890
S2S 160 F FC CuAl**	R 40	500A	36231	35892
S2S 160 F FC CuAl**	R 50	500A	36233	35894
S2S 160 F FC CuAl**	R 63	630A	36235	35896
S2S 160 F FC CuAl**	R 80	800A	36237	35898
S2S 160 F FC CuAl**	R 100	1000A	36239	35900
S2S 160 F FC CuAl**	R 125	1250A	36241	35902
S2S 160 F FC CuAl**	R 160	1600A	36243	35904

R = Threaded rear terminals

S2S 160 F R	R 12.5	500A	00627	00677
S2S 160 F R	R 16	500A	00629	00679
S2S 160 F R	R 20	500A	00631	00681
S2S 160 F R	R 25	500A	00633	00683
S2S 160 F R	R 32	500A	00635	00685
S2S 160 F R	R 40	500A	00637	00687
S2S 160 F R	R 50	500A	00639	00689
S2S 160 F R	R 63	630A	00641	00691
S2S 160 F R	R 80	800A	00643	00693
S2S 160 F R	R 100	1000A	00645	00695
S2S 160 F R	R 125	1250A	00647	00697
S2S 160 F R	R 160	1600A	00649	00699

* Cable section = 1 x 2.5...50 mm²

** Cable section = 1 x 35...95 mm²



Order codes

SACE Isomax S2 circuit-breaker

F = FIXED



PSS6604

Magnetic release	Im = 10 lth	code 1SDA0 R1
		3 poles 4 poles

EF = Extended front terminals

S2S 160 F EF	In 50A	500A	35631	35798
S2S 160 F EF	In 63A	630A	35633	35800
S2S 160 F EF	In 80A	800A	35635	35802
S2S 160 F EF	In 100A	1000A	35636	35804
S2S 160 F EF	In 125A	1250A	35638	35806
S2S 160 F EF	In 160A	1600A	35640	35808

FC Cu = Front terminals for copper cables

S2S 160 F FC Cu	In 50A	500A	35678	35822
S2S 160 F FC Cu	In 63A	630A	35680	35824
S2S 160 F FC Cu	In 80A	800A	35682	35826
S2S 160 F FC Cu	In 100A	1000A	35684	35828
S2S 160 F FC Cu	In 125A	1250A	35686	35830
S2S 160 F FC Cu	In 160A	1600A	35688	35832

FC CuAl = Front terminals for copper/aluminium cables

S2S 160 F FC CuAl*	In 50A	500A	35702	35870
S2S 160 F FC CuAl*	In 63A	630A	35704	35872
S2S 160 F FC CuAl*	In 80A	800A	35706	35874
S2S 160 F FC CuAl*	In 100A	1000A	35708	35876
S2S 160 F FC CuAl*	In 125A	1250A	35710	35878
S2S 160 F FC CuAl*	In 160A	1600A	35712	35880

S2S 160 F FC CuAl**	In 50A	500A	35726	35918
S2S 160 F FC CuAl**	In 63A	630A	35728	35920
S2S 160 F FC CuAl**	In 80A	800A	35730	35922
S2S 160 F FC CuAl**	In 100A	1000A	35732	35924
S2S 160 F FC CuAl**	In 125A	1250A	35734	35926
S2S 160 F FC CuAl**	In 160A	1600A	35736	35928

R = Threaded rear terminals

S2S 160 F R	In 50A	500A	35750	35942
S2S 160 F R	In 63A	630A	35752	35944
S2S 160 F R	In 80A	800A	35754	35946
S2S 160 F R	In 100A	1000A	35756	35948
S2S 160 F R	In 125A	1250A	35758	35950
S2S 160 F R	In 160A	1600A	35760	35952

* Cable section = 1 x 2.5...50 mm²

** Cable section = 1 x 35...95 mm²

Order codes

SACE Isomax S2 circuit-breaker

P = PLUG-IN



PJS6004

Moving part

S2B 160

I_u (40 °C) = 160 A

I_{cu} (415 V) = 16 kA

Thermomagnetic release	Im = 5 lth	code 1SDA0 R1		Im = 10 lth	code 1SDA0 R1	
		3 poles	4 poles		3 poles	4 poles
S2B 160 P MP	R 12.5	160A	24053	24173	500A	00402
S2B 160 P MP	R 16	160A	24055	24175	500A	00404
S2B 160 P MP	R 20	200A	24057	24177	500A	00406
S2B 160 P MP	R 25	200A	24059	24179	500A	00408
S2B 160 P MP	R 32	200A	24061	24181	500A	00410
S2B 160 P MP	R 40	200A	24063	24183	500A	00412
S2B 160 P MP	R 50	250A	24065	24185	500A	00414
S2B 160 P MP	R 63	320A	24067	24187	630A	00416
S2B 160 P MP	R 80	400A	24069	24189	800A	00418
S2B 160 P MP	R 100	500A	24071	24191	1000A	00420
S2B 160 P MP	R 125	630A	24073	24193	1250A	00422
S2B 160 P MP	R 160	800A	24075	24195	1600A	00424

S2N 160

I_u (40 °C) = 160 A

I_{cu} (415 V) = 35 kA

Thermomagnetic release	Im = 5 lth	code 1SDA0 R1		Im = 10 lth	code 1SDA0 R1	
		3 poles	4 poles		3 poles	4 poles
S2N 160 P MP	R 12.5	160A	24077	24197	500A	00552
S2N 160 P MP	R 16	160A	24079	24199	500A	00554
S2N 160 P MP	R 20	200A	24081	24201	500A	00556
S2N 160 P MP	R 25	200A	24083	24203	500A	00558
S2N 160 P MP	R 32	200A	24085	24205	500A	00560
S2N 160 P MP	R 40	200A	24087	24207	500A	00562
S2N 160 P MP	R 50	250A	24089	24209	500A	00564
S2N 160 P MP	R 63	320A	24091	24211	630A	00566
S2N 160 P MP	R 80	400A	24093	24213	800A	00568
S2N 160 P MP	R 100	500A	24095	24215	1000A	00570
S2N 160 P MP	R 125	630A	24097	24217	1250A	00572
S2N 160 P MP	R 160	800A	24099	24219	1600A	00574

Magnetic release	Im = 5 lth	code 1SDA0 R1		Im = 10 lth	code 1SDA0 R1	
		3 poles	4 poles		3 poles	4 poles
S2N 160 P MP	In 16A	160A	36076	36124		
S2N 160 P MP	In 40A	200A	36084	36132		
S2N 160 P MP	In 50A	250A	36086	36134	500A	36062
S2N 160 P MP	In 63A	320A	36088	36136	630A	36064
S2N 160 P MP	In 80A	400A	36090	36138	800A	36066
S2N 160 P MP	In 100A				1000A	36068
S2N 160 P MP	In 125A				1250A	36070
S2N 160 P MP	In 150A				1600A	36072



Order codes

SACE Isomax S2 circuit-breaker

P = PLUG-IN



PSS6604

Moving part

S2S 160 $I_{\text{u}}(40^{\circ}\text{C}) = 160 \text{ A}$ $I_{\text{cu}}(415 \text{ V}) = 50 \text{ kA}$

Thermomagnetic release		Im=10 lth	code 1SDA0 R1	
		3 poles	4 poles	
S2S 160 P MP	R 12.5	500A	00702	00727
S2S 160 P MP	R 16	500A	00704	00729
S2S 160 P MP	R 20	500A	00706	00731
S2S 160 P MP	R 25	500A	00708	00733
S2S 160 P MP	R 32	500A	00710	00735
S2S 160 P MP	R 40	500A	00712	00737
S2S 160 P MP	R 50	500A	00714	00739
S2S 160 P MP	R 63	630A	00716	00741
S2S 160 P MP	R 80	800A	00718	00743
S2S 160 P MP	R 100	1000A	00720	00745
S2S 160 P MP	R 125	1250A	00722	00747
S2S 160 P MP	R 160	1600A	00724	00749

Magnetic release		code 1SDA0 R1	
		3 poles	4 poles
S2S 160 P MP	In 50A	500A	36158
S2S 160 P MP	In 63A	630A	36160
S2S 160 P MP	In 80A	800A	36162
S2S 160 P MP	In 100A	1000A	36164
S2S 160 P MP	In 125A	1250A	36166
S2S 160 P MP	In 150A	1600A	36168
			36192

Order codes

SACE Isomax S2 circuit-breaker

F = FIXED



S3N 160 I_u (40 °C) = 160 A I_{cu} (415 V) = 35 kA

Thermomagnetic release		I _m = 3 lth	code 1SDA0 R1			
			3 poles	4 poles		
<i>F = Front terminals</i>						
S3N 160 F F	R 100	300A	48539	48549		
S3N 160 F F	R 125	375A	48540	48550		
S3N 160 F F	R 160	I480A	48541	48551		
S3N 160 F F (N50%)	R 160	I480A		48559		

Thermomagnetic release		I _m = 5 lth	code 1SDA0 R1		I _m = 10 lth	code 1SDA0 R1	
			3 poles	4 poles		3 poles	4 poles
<i>F = Front terminals</i>							
S3N 160 F F	R 32	250A	13359	13383	500A	13346	13371
S3N 160 F F	R 50	250A	13361	13385	500A	13348	13373
S3N 160 F F	R 80	400A	13363	13387	800A	13350	13375
S3N 160 F F	R 100	500A	13365	13389	1000A	13352	13377
S3N 160 F F	R 125	625A	13367	13391	1250A	13354	13379
S3N 160 F F	R 160	800A	13369	13393	1600A	13356	13381

EF = Extended front terminals		I _m = 5 lth	code 1SDA0 R1		I _m = 10 lth	code 1SDA0 R1	
			3 poles	4 poles		3 poles	4 poles
<i>S3N 160 F EF</i>							
S3N 160 F EF	R 32	250A	00764	01389	500A	00752	01377
S3N 160 F EF	R 50	250A	00766	01391	500A	00754	01379
S3N 160 F EF	R 80	400A	00768	01393	800A	00756	01381
S3N 160 F EF	R 100	500A	00770	01395	1000A	00758	01383
S3N 160 F EF	R 125	625A	00772	01397	1250A	00760	01385
S3N 160 F EF	R 160	800A	00774	01399	1600A	00762	01387

FC Cu = Front terminals for copper cables		I _m = 5 lth	code 1SDA0 R1		I _m = 10 lth	code 1SDA0 R1	
			3 poles	4 poles		3 poles	4 poles
<i>S3N 160 F FC Cu</i>							
S3N 160 F FC Cu	R 32	250A	00914	01539	500A	00902	01527
S3N 160 F FC Cu	R 50	250A	00916	01541	500A	00904	01529
S3N 160 F FC Cu	R 80	400A	00918	01543	800A	00906	01531
S3N 160 F FC Cu	R 100	500A	00920	01545	1000A	00908	01533
S3N 160 F FC Cu	R 125	625A	00922	01547	1250A	00910	01535
S3N 160 F FC Cu	R 160	800A	00924	01549	1600A	00912	01537

FC CuAl = Front terminals for copper/aluminium cables		I _m = 5 lth	code 1SDA0 R1		I _m = 10 lth	code 1SDA0 R1	
			3 poles	4 poles		3 poles	4 poles
<i>S3N 160 F FC CuAl</i>							
S3N 160 F FC CuAl	R 32	250A	01064	01689	500A	01052	01677
S3N 160 F FC CuAl	R 50	250A	01066	01691	500A	01054	01679
S3N 160 F FC CuAl	R 80	400A	01068	01693	800A	01056	01681
S3N 160 F FC CuAl	R 100	500A	01070	01695	1000A	01058	01683
S3N 160 F FC CuAl	R 125	625A	01072	01697	1250A	01060	01685
S3N 160 F FC CuAl	R 160	800A	01074	01699	1600A	01062	01687

R = Threaded rear terminals		I _m = 5 lth	code 1SDA0 R1		I _m = 10 lth	code 1SDA0 R1	
			3 poles	4 poles		3 poles	4 poles
<i>S3N 160 F R</i>							
S3N 160 F R	R 32	250A	01364	14243	500A	01352	14231
S3N 160 F R	R 50	250A	01366	14245	500A	01354	14233
S3N 160 F R	R 80	400A	01368	14247	800A	01356	14235
S3N 160 F R	R 100	500A	01370	14249	1000A	01358	14237
S3N 160 F R	R 125	625A	01372	14251	1250A	01360	14239
S3N 160 F R	R 160	800A	01374	14253	1600A	01362	14241

RC = Rear terminals for cables		I _m = 5 lth	code 1SDA0 R1		I _m = 10 lth	code 1SDA0 R1	
			3 poles	4 poles		3 poles	4 poles
<i>S3N 160 F RC</i>							
S3N 160 F RC	R 32	250A	01214	01839	500A	01202	01827
S3N 160 F RC	R 50	250A	01216	01841	500A	01204	01829
S3N 160 F RC	R 80	400A	01218	01843	800A	01206	01831
S3N 160 F RC	R 100	500A	01220	01845	1000A	01208	01833
S3N 160 F RC	R 125	625A	01222	01847	1250A	01210	01835
S3N 160 F RC	R 160	800A	01224	01849	1600A	01212	01837

R Res. Cur = Threaded rear terminals + kit of threaded rear terminals for residual-current release installed below the circuit-breaker		I _m = 5 lth	code 1SDA0 R1		I _m = 10 lth	code 1SDA0 R1	
			3 poles	4 poles		3 poles	4 poles
<i>S3N 160 F R Res. Cur</i>							
S3N 160 F R Res. Cur	R 32	250A	25459	500A			25447
S3N 160 F R Res. Cur	R 50	250A	25461	500A			25449
S3N 160 F R Res. Cur	R 80	400A	25463	800A			25451
S3N 160 F R Res. Cur	R 100	500A	25465	1000A			25454
S3N 160 F R Res. Cur	R 125	625A	25467	1250A			25455
S3N 160 F R Res. Cur	R 160	800A	25469	1600A			25457



Order codes

SACE Isomax S2 circuit-breaker

F = FIXED



PSI8607

Magnetic release	Im = 5 lth	code 1SDA0 R1			Im = 10 lth	code 1SDA0 R1		
		3 poles	4 poles		3 poles	4 poles		
F = Front terminals								
S3N 160 F F	In 50A	250A	25817	25889	500A	25804	25877	
S3N 160 F F	In 80A	400A	25819	25891	800A	25807	25879	
S3N 160 F F	In 100A				1000A	25809	25881	
S3N 160 F F	In 125A	625A	25823	25895	1250A	25811	25883	
S3N 160 F F	In 160A				1600A	25813	25885	
EF = Extended front terminals								
S3N 160 F EF	In 50A	250A	27930	29706	500A	27918	29694	
S3N 160 F EF	In 80A	400A	27932	29708	800A	27920	29696	
S3N 160 F EF	In 100A				1000A	27922	29698	
S3N 160 F EF	In 125A	625A	27936	29712	1250A	27924	29700	
S3N 160 F EF	In 160A				1600A	27926	29702	
FC Cu = Front terminals for copper cables								
S3N 160 F FC Cu	In 50A	250A	28074	29850	500A	28062	29838	
S3N 160 F FC Cu	In 80A	400A	28076	29852	800A	28064	29840	
S3N 160 F FC Cu	In 100A				1000A	28066	29842	
S3N 160 F FC Cu	In 125A	625A	28080	29856	1250A	28068	29844	
S3N 160 F FC Cu	In 160A				1600A	28070	29846	
FC CuAl = Front terminals for copper/aluminium cables								
S3N 160 F FC CuAl	In 50A	250A	28218	29994	500A	28206	29982	
S3N 160 F FC CuAl	In 80A	400A	28220	29996	800A	28208	29984	
S3N 160 F FC CuAl	In 100A				1000A	28210	29986	
S3N 160 F FC CuAl	In 125A	625A	28224	30000	1250A	28212	29988	
S3N 160 F FC CuAl	In 160A				1600A	28214	29990	
R = Threaded rear terminals								
S3N 160 F R	In 50A	250A	28506	30282	500A	28494	30270	
S3N 160 F R	In 80A	400A	28508	30284	800A	28496	30272	
S3N 160 F R	In 100A				1000A	28498	30274	
S3N 160 F R	In 125A	625A	28512	30288	1250A	28500	30276	
S3N 160 F R	In 160A				1600A	28502	30278	
RC = Rear terminals for cables								
S3N 160 F RC	In 50A	250A	28362	30138	500A	28350	30126	
S3N 160 F RC	In 80A	400A	28364	30140	800A	28352	30128	
S3N 160 F RC	In 100A				1000A	28354	30130	
S3N 160 F RC	In 125A	625A	28368	30144	1250A	28356	30132	
S3N 160 F RC	In 160A				1600A	28358	30134	

Order codes

SACE Isomax S3 circuit-breaker

F = FIXED



S3H 160 I_u (40 °C) = 160 A I_c (415 V) = 65 kA

Thermomagnetic release		I _m = 3 lth	code 1SDA0 R1	3 poles	4 poles
<i>F = Front terminals</i>					
S3H 160 F F	R 100	300A	48542	48552	
S3H 160 F F	R 125	375A	48543	48553	
S3H 160 F F	R 160	480A	48544	48554	
S3H 160 F F (N50%)	R 160	480A		48560	

Thermomagnetic release		I _m = 5 lth	code 1SDA0 R1	3 poles	4 poles	I _m = 10 lth	code 1SDA0 R1	3 poles	4 poles
<i>F = Front terminals</i>									
S3H 160 F F	R 32	250A	13407	13431		500A	13395	13419	
S3H 160 F F	R 50	250A	13409	13433		500A	13397	13421	
S3H 160 F F	R 80	400A	13411	13435		800A	13399	13423	
S3H 160 F F	R 100	500A	13413	13437		1000A	13401	13425	
S3H 160 F F	R 125	625A	13415	13439		1250A	13403	13427	
S3H 160 F F	R 160	800A	13417	13441		1600A	13405	13429	

EF = Extended front terminals

S3H 160 F EF	R 32	250A	02089	02689		500A	02077	02677
S3H 160 F EF	R 50	250A	02091	02691		500A	02079	02679
S3H 160 F EF	R 80	400A	02093	02693		800A	02081	02681
S3H 160 F EF	R 100	500A	02095	02695		1000A	02083	02683
S3H 160 F EF	R 125	625A	02097	02697		1250A	02085	02685
S3H 160 F EF	R 160	800A	02099	02699		1600A	02087	02687

FC Cu = Front terminals for copper cables

S3H 160 F FC Cu	R 32	250A	02239	14268		500A	02227	14256
S3H 160 F FC Cu	R 50	250A	02241	14270		500A	02229	14258
S3H 160 F FC Cu	R 80	400A	02243	14272		800A	02231	14260
S3H 160 F FC Cu	R 100	500A	02245	14274		1000A	02233	14262
S3H 160 F FC Cu	R 125	625A	02247	14276		1250A	02235	14264
S3H 160 F FC Cu	R 160	800A	02249	14278		1600A	02237	14266

FC CuAl = Front terminals for copper/aluminium cables

S3H 160 F FC CuAl	R 32	250A	02364	14343		500A	02352	14331
S3H 160 F FC CuAl	R 50	250A	02366	14345		500A	02354	14333
S3H 160 F FC CuAl	R 80	400A	02368	14347		800A	02356	14335
S3H 160 F FC CuAl	R 100	500A	02370	14349		1000A	02358	14337
S3H 160 F FC CuAl	R 125	625A	02372	14351		1250A	02360	14339
S3H 160 F FC CuAl	R 160	800A	02374	14353		1600A	02362	14341

R = Threaded rear terminals

S3H 160 F R	R 32	250A	02664	03139		500A	02652	03127
S3H 160 F R	R 50	250A	02666	03141		500A	02654	03129
S3H 160 F R	R 80	400A	02668	03143		800A	02656	03131
S3H 160 F R	R 100	500A	02670	03145		1000A	02658	03133
S3H 160 F R	R 125	625A	02672	03147		1250A	02660	03135
S3H 160 F R	R 160	800A	02674	03149		1600A	02662	03137

RC = Rear terminals for cables

S3H 160 F RC	R 32	250A	02514	02989		500A	02502	02977
S3H 160 F RC	R 50	250A	02516	02991		500A	02504	02979
S3H 160 F RC	R 80	400A	02518	02993		800A	02506	02981
S3H 160 F RC	R 100	500A	02520	02995		1000A	02508	02983
S3H 160 F RC	R 125	625A	02522	02997		1250A	02510	02985
S3H 160 F RC	R 160	800A	02524	02999		1600A	02512	02987

R Res. Cur = Threaded rear terminals + kit of threaded rear terminals for residual-current release installed below the circuit-breaker

S3H 160 F R Res. Cur	R 32	250A	25483	500A		25471
S3H 160 F R Res. Cur	R 50	250A	25485	500A		25473
S3H 160 F R Res. Cur	R 80	400A	25487	800A		25475
S3H 160 F R Res. Cur	R 100	500A	25489	1000A		25477
S3H 160 F R Res. Cur	R 125	625A	25491	1250A		25479
S3H 160 F R Res. Cur	R 160	800A	25493	1600A		25481



Order codes

SACE Isomax S3 circuit-breaker

F = FIXED



PSI8607

Magnetic release	Im = 5 lth	code 1SDA0 R1		Im = 10 lth	code 1SDA0 R1	
		3 poles	4 poles		3 poles	4 poles
F = Front terminals						
S3H 160 F F	In 50A	250A	25841	25913	500A	25829
S3H 160 F F	In 80A	400A	25843	25915	800A	25831
S3H 160 F F	In 100A			1000A	25833	25905
S3H 160 F F	In 125A	625A	25847	25919	1250A	25835
S3H 160 F F	In 160A			1600A	25837	25909
EF = Extended front terminals						
S3H 160 F EF	In 50A	250A	28530	30306	500A	28518
S3H 160 F EF	In 80A	400A	28532	30308	800A	28520
S3H 160 F EF	In 100A			1000A	28522	30298
S3H 160 F EF	In 125A	625A	28536	30312	1250A	28524
S3H 160 F EF	In 160A			1600A	28526	30302
FC Cu = Front terminals for copper cables						
S3H 160 F FC Cu	In 50A	250A	28674	30450	500A	28662
S3H 160 F FC Cu	In 80A	400A	28676	30452	800A	28664
S3H 160 F FC Cu	In 100A			1000A	28666	30442
S3H 160 F FC Cu	In 125A	625A	28680	30456	1250A	28668
S3H 160 F FC Cu	In 160A			1600A	28670	30446
FC CuAl = Front terminals for copper/aluminium cables						
S3H 160 F FC CuAl	In 50A	250A	28818	30594	500A	28806
S3H 160 F FC CuAl	In 80A	400A	28820	30596	800A	28808
S3H 160 F FC CuAl	In 100A			1000A	28810	30586
S3H 160 F FC CuAl	In 125A	625A	28824	30600	1250A	28812
S3H 160 F FC CuAl	In 160A			1600A	28814	30590
R = Threaded rear terminals						
S3H 160 F R	In 50A	250A	29106	30882	500A	29094
S3H 160 F R	In 80A	400A	29108	30884	800A	29096
S3H 160 F R	In 100A			1000A	29098	30874
S3H 160 F R	In 125A	625A	29112	30888	1250A	29100
S3H 160 F R	In 160A			1600A	29102	30878
RC = Rear terminals for cables						
S3H 160 F RC	In 50A	250A	28962	30738	500A	28950
S3H 160 F RC	In 80A	400A	28964	30740	800A	28952
S3H 160 F RC	In 100A			1000A	28954	30730
S3H 160 F RC	In 125A	625A	28968	30744	1250A	28956
S3H 160 F RC	In 160A			1600A	28958	30734

Order codes

SACE Isomax S3 circuit-breaker

F = FIXED



F3L160F

S3L 160

I_u (40 °C) = 160 A

I_{cu} (415 V) = 85 kA

Thermomagnetic release		I _m = 5 I _{th}	code 1SDA0 R1 3 poles	code 1SDA0 R1 4 poles		I _m = 10 I _{th}	code 1SDA0 R1 3 poles	code 1SDA0 R1 4 poles
<i>F = Front terminals</i>								
S3L 160 F F	R 32	250A	13455	13479	500A	13443	13467	
S3L 160 F F	R 50	250A	13457	13481	500A	13445	13469	
S3L 160 F F	R 80	400A	13459	13483	800A	13447	13471	
S3L 160 F F	R 100	500A	13461	13485	1000A	13449	13473	
S3L 160 F F	R 125	625A	13463	13487	1250A	13451	13475	
S3L 160 F F	R 160	800A	13465	13489	1600A	13453	13477	
<i>EF = Extended front terminals</i>								
S3L 160 F EF	R 32	250A	03264	03864	500A	03252	03852	
S3L 160 F EF	R 50	250A	03266	03866	500A	03254	03854	
S3L 160 F EF	R 80	400A	14486	14511	800A	03256	03856	
S3L 160 F EF	R 100	500A	03269	03869	1000A	03258	03858	
S3L 160 F EF	R 125	625A	03271	03871	1250A	03260	03860	
S3L 160 F EF	R 160	800A	03273	03873	1600A	03262	03862	
<i>FC Cu = Front terminals for copper cables</i>								
S3L 160 F FC Cu	R 32	250A	03408	04008	500A	03396	03996	
S3L 160 F FC Cu	R 50	250A	03410	04010	500A	03398	03998	
S3L 160 F FC Cu	R 80	400A	14492	14517	800A	03400	04000	
S3L 160 F FC Cu	R 100	500A	03413	04013	1000A	03402	04002	
S3L 160 F FC Cu	R 125	625A	03415	04015	1250A	03404	04004	
S3L 160 F FC Cu	R 160	800A	03417	04017	1600A	03406	04006	
<i>FC CuAl = Front terminals for copper/aluminium cables</i>								
S3L 160 F FC CuAl	R 32	250A	03552	04152	500A	03540	04140	
S3L 160 F FC CuAl	R 50	250A	03554	04154	500A	03542	04142	
S3L 160 F FC CuAl	R 80	400A	14498	14523	800A	03544	04144	
S3L 160 F FC CuAl	R 100	500A	03557	04157	1000A	03546	04146	
S3L 160 F FC CuAl	R 125	625A	03559	04159	1250A	03548	04148	
S3L 160 F FC CuAl	R 160	800A	03561	04161	1600A	03550	04150	
<i>R = Threaded rear terminals</i>								
S3L 160 F R	R 32	250A	03840	04440	500A	03828	04428	
S3L 160 F R	R 50	250A	03842	04442	500A	03830	04430	
S3L 160 F R	R 80	400A	14510	14535	800A	03832	04432	
S3L 160 F R	R 100	500A	03845	04445	1000A	03834	04434	
S3L 160 F R	R 125	625A	03847	04447	1250A	03836	04436	
S3L 160 F R	R 160	800A	03849	04449	1600A	03838	04438	
<i>RC = Rear terminals for cables</i>								
S3L 160 F RC	R 32	250A	03696	04296	500A	03684	04284	
S3L 160 F RC	R 50	250A	03698	04298	500A	03686	04286	
S3L 160 F RC	R 80	400A	14504	14529	800A	03688	04288	
S3L 160 F RC	R 100	500A	03701	04301	1000A	03690	04290	
S3L 160 F RC	R 125	625A	03703	04303	1250A	03692	04292	
S3L 160 F RC	R 160	800A	03705	04305	1600A	03694	04294	
<i>R Res. Cur = Threaded rear terminals + kit of threaded rear terminals for residual-current release installed below the circuit-breaker</i>								
S3L 160 F R Res. Cur	R 32	250A	25507		500A	25495		
S3L 160 F R Res. Cur	R 50	250A	25509		500A	25497		
S3L 160 F R Res. Cur	R 80	400A	25511		800A	25499		
S3L 160 F R Res. Cur	R 100	500A	25513		1000A	25501		
S3L 160 F R Res. Cur	R 125	625A	25515		1250A	25503		
S3L 160 F R Res. Cur	R 160	800A	25517		1600A	25505		



Order codes

SACE Isomax S3 circuit-breaker

F = FIXED



Magnetic release	In	50A	250A	Im = 5 lth code 1SDA0 R1	3 poles	4 poles	Im = 10 lth code 1SDA0 R1	3 poles	4 poles
F = Front terminals									
S3L 160 F F	In	50A	250A	25865	25937		500A	25853	25925
S3L 160 F F	In	80A	400A	25867	25939		800A	25855	25927
S3L 160 F F	In	100A					1000A	25857	25929
S3L 160 F F	In	125A	625A	25871	25943		1250A	25859	25931
S3L 160 F F	In	160A					1600A	25861	25933
EF = Extended front terminals									
S3L 160 F EF	In	50A	250A	29130	30906		500A	29118	30894
S3L 160 F EF	In	80A	400A	29132	30908		800A	29120	30896
S3L 160 F EF	In	100A					1000A	29122	30898
S3L 160 F EF	In	125A	625A	29136	30912		1250A	29124	30900
S3L 160 F EF	In	160A					1600A	29126	30902
FC Cu = Front terminals for copper cables									
S3L 160 F FC Cu	In	50A	250A	29274	31050		500A	29262	31038
S3L 160 F FC Cu	In	80A	400A	29276	31052		800A	29264	31040
S3L 160 F FC Cu	In	100A					1000A	29266	31042
S3L 160 F FC Cu	In	125A	625A	29280	31056		1250A	29268	31044
S3L 160 F FC Cu	In	160A					1600A	29270	31046
FC CuAl = Front terminals for copper/aluminium cables									
S3L 160 F FC CuAl	In	50A	250A	29418	31170		500A	29406	31158
S3L 160 F FC CuAl	In	80A	400A	29420	31172		800A	29408	31160
S3L 160 F FC CuAl	In	100A					1000A	29410	31162
S3L 160 F FC CuAl	In	125A	625A	29424	31176		1250A	29412	31164
S3L 160 F FC CuAl	In	160A					1600A	29414	31166
R = Threaded rear terminals									
S3L 160 F R	In	50A	250A	44388	31458		500A	44376	31446
S3L 160 F R	In	80A	400A	44390	31460		800A	44378	31448
S3L 160 F R	In	100A					1000A	44380	31450
S3L 160 F R	In	125A	625A	44394	31464		1250A	44382	31452
S3L 160 F R	In	160A					1600A	44384	31454
RC = Rear terminals for cables									
S3L 160 F RC	In	50A	250A	29562	31314		500A	29550	31302
S3L 160 F RC	In	80A	400A	29564	31316		800A	29552	31304
S3L 160 F RC	In	100A					1000A	29554	31306
S3L 160 F RC	In	125A	625A	29568	31320		1250A	29556	31308
S3L 160 F RC	In	160A					1600A	29558	31310

Order codes

SACE Isomax S3 circuit-breaker

P = PLUG-IN



Moving part

S3N 160

I_u (40 °C) = 160 A

I_{cu} (415 V) = 35 kA

Thermomagnetic release		Im = 5 lth	code 1SDA0 R1	Im = 10 lth	code 1SDA0 R1
		3 poles	4 poles	3 poles	4 poles
S3N 160 P MP	R 32	250A	01989	02039	500A
S3N 160 P MP	R 50	250A	01991	02041	500A
S3N 160 P MP	R 80	400A	01993	02043	800A
S3N 160 P MP	R 100	500A	01995	02045	1000A
S3N 160 P MP	R 125	625A	01997	02047	1250A
S3N 160 P MP	R 160	800A	01999	02049	1600A

Magnetic release		Im = 5 lth	code 1SDA0 R1	Im = 10 lth	code 1SDA0 R1
		3 poles	4 poles	3 poles	4 poles
S3N 160 P MP	In 50A	250A	31482	31530	500A
S3N 160 P MP	In 80A	400A	31484	31532	800A
S3N 160 P MP	In 100A				1000A
S3N 160 P MP	In 125A	625A	31488	31536	1250A
S3N 160 P MP	In 160A				1600A

S3H 160

I_u (40 °C) = 160 A

I_{cu} (415 V) = 65 kA

Thermomagnetic release		Im = 5 lth	code 1SDA0 R1	Im = 10 lth	code 1SDA0 R1
		3 poles	4 poles	3 poles	4 poles
S3H 160 P MP	R 32	250A	03164	03214	500A
S3H 160 P MP	R 50	250A	03166	03216	500A
S3H 160 P MP	R 80	400A	03168	03218	800A
S3H 160 P MP	R 100	500A	03170	03220	1000A
S3H 160 P MP	R 125	625A	03172	03222	1250A
S3H 160 P MP	R 160	800A	03174	03224	1600A

Magnetic release

Im = 5 lth code 1SDA0 R1

3 poles 4 poles

Im = 10 lth code 1SDA0 R1

3 poles 4 poles

S3H 160 P MP	In 50A	250A	31578	31626	500A
S3H 160 P MP	In 80A	400A	31580	31628	800A
S3H 160 P MP	In 100A				1000A
S3H 160 P MP	In 125A	625A	31584	31632	1250A
S3H 160 P MP	In 160A				1600A

S3L 160

I_u (40 °C) = 160 A

I_{cu} (415 V) = 85 kA

Thermomagnetic release		Im = 5 lth	code 1SDA0 R1	Im = 10 lth	code 1SDA0 R1
		3 poles	4 poles	3 poles	4 poles
S3L 160 P MP	R 32	250A	04464	04512	500A
S3L 160 P MP	R 50	250A	04466	04514	500A
S3L 160 P MP	R 80	400A	14536	14538	800A
S3L 160 P MP	R 100	500A	04469	04517	1000A
S3L 160 P MP	R 125	625A	04471	04519	1250A
S3L 160 P MP	R 160	800A	04473	04521	1600A

Magnetic release

Im = 5 lth code 1SDA0 R1

3 poles 4 poles

Im = 10 lth code 1SDA0 R1

3 poles 4 poles

S3L 160 P MP	In 50A	250A	31674	31722	500A
S3L 160 P MP	In 80A	400A	31676	31724	800A
S3L 160 P MP	In 100A				1000A
S3L 160 P MP	In 125A	625A	31680	31728	1250A
S3L 160 P MP	In 160A				1600A



Order codes

SACE Isomax S3 circuit-breaker

W = WITHDRAWABLE



Moving part

S3N 160 $I_{u\text{ (40 °C)}} = 160 \text{ A}$ $I_{cu\text{ (415 V)}} = 35 \text{ kA}$

Thermomagnetic release		$I_m = 5 \text{ lth}$	code 1SDA0 R1	$I_m = 10 \text{ lth}$	code 1SDA0 R1
		3 poles	4 poles	3 poles	4 poles
S3N 160 W MP	R 32	250A	02014	02064	500A 02002
S3N 160 W MP	R 50	250A	02016	02066	500A 02004
S3N 160 W MP	R 80	400A	02018	02068	800A 02006
S3N 160 W MP	R 100	500A	02020	02070	1000A 02008
S3N 160 W MP	R 125	625A	02022	02072	1250A 02010
S3N 160 W MP	R 160	800A	02024	02074	1600A 02012

Magnetic release		$I_m = 5 \text{ lth}$	code 1SDA0 R1	$I_m = 10 \text{ lth}$	code 1SDA0 R1
		3 poles	4 poles	3 poles	4 poles
S3N 160 W MP	In 50A	250A	31506	31554	500A 31494
S3N 160 W MP	In 80A	400A	31508	31556	800A 31496
S3N 160 W MP	In 100A				1000A 31498
S3N 160 W MP	In 125A	625A	31512	31560	1250A 31500
S3N 160 W MP	In 160A				1600A 31502

S3H 160 $I_{u\text{ (40 °C)}} = 160 \text{ A}$ $I_{cu\text{ (415 V)}} = 65 \text{ kA}$

Thermomagnetic release		$I_m = 5 \text{ lth}$	code 1SDA0 R1	$I_m = 10 \text{ lth}$	code 1SDA0 R1
		3 poles	4 poles	3 poles	4 poles
S3H 160 W MP	R 32	250A	03189	03239	500A 03177
S3H 160 W MP	R 50	250A	03191	03241	500A 03179
S3H 160 W MP	R 80	400A	03193	03243	800A 03181
S3H 160 W MP	R 100	500A	03195	03245	1000A 03183
S3H 160 W MP	R 125	625A	03197	03247	1250A 03185
S3H 160 W MP	R 160	800A	03199	03249	1600A 03187

Magnetic release		$I_m = 5 \text{ lth}$	code 1SDA0 R1	$I_m = 10 \text{ lth}$	code 1SDA0 R1
		3 poles	4 poles	3 poles	4 poles
S3H 160 W MP	In 50A	250A	31602	31650	500A 31590
S3H 160 W MP	In 80A	400A	31604	31652	800A 31592
S3H 160 W MP	In 100A				1000A 31594
S3H 160 W MP	In 125A	625A	31608	31656	1250A 31596
S3H 160 W MP	In 160A				1600A 31598

S3L 160 $I_{u\text{ (40 °C)}} = 160 \text{ A}$ $I_{cu\text{ (415 V)}} = 85 \text{ kA}$

Thermomagnetic release		$I_m = 5 \text{ lth}$	code 1SDA0 R1	$I_m = 10 \text{ lth}$	code 1SDA0 R1
		3 poles	4 poles	3 poles	4 poles
S3L 160 W MP	R 32	250A	04488	04536	500A 04476
S3L 160 W MP	R 50	250A	04490	04538	500A 04478
S3L 160 W MP	R 80	400A	14537	14539	800A 04480
S3L 160 W MP	R 100	500A	04493	04541	1000A 04482
S3L 160 W MP	R 125	625A	04495	04543	1250A 04484
S3L 160 W MP	R 160	800A	04497	04545	1600A 04486

Magnetic release		$I_m = 5 \text{ lth}$	code 1SDA0 R1	$I_m = 10 \text{ lth}$	code 1SDA0 R1
		3 poles	4 poles	3 poles	4 poles
S3L 160 W MP	In 50A	250A	31698	31746	500A 31686
S3L 160 W MP	In 80A	400A	31700	31748	800A 31688
S3L 160 W MP	In 100A				1000A 31690
S3L 160 W MP	In 125A	625A	31704	31752	1250A 31692
S3L 160 W MP	In 160A				1600A 31694

Order codes

SACE Isomax S3 circuit-breaker

F = FIXED



S3N 250 $I_{u} (40^{\circ}\text{C}) = 250 \text{ A}$ $I_{cu} (415 \text{ V}) = 35 \text{ kA}$

Thermomagnetic release		$I_{m} = 3 \text{ lth}$	code 1SDA0 R1			
			3 poles	4 poles		
<i>F = Front terminals</i>						
S3N 250 F F	R 200	600A	48545	48555		
S3N 250 F F	R 250	750A	48546	48556		
S3N 250 F F (N50%)	R 200	600A	48561			
S3N 250 F F (N50%)	R 250	750A	48562			

Thermomagnetic release		$I_{m} = 5 \text{ lth}$	code 1SDA0 R1		$I_{m} = 10 \text{ lth}$	code 1SDA0 R1	
			3 poles	4 poles		3 poles	4 poles
<i>F = Front terminals</i>							
S3N 250 F F	R 200	1000A	13495	13503	2000A	13491	13499
S3N 250 F F	R 250	1250A	13497	13505	2500A	13493	13501
<i>EF = Extended front terminals</i>							
S3N 250 F EF	R 200	1000A	04552	04777	2000A	04548	04773
S3N 250 F EF	R 250	1250A	04554	04779	2500A	04550	04775
<i>FC Cu = Front terminals for copper cables</i>							
S3N 250 F FC Cu	R 200	1000A	04606	14419	2000A	04602	14415
S3N 250 F FC Cu	R 250	1250A	04608	14421	2500A	04604	14417
<i>FC CuAl = Front terminals for copper/aluminium cables</i>							
S3N 250 F FC CuAl	R 200	1000A	04660	14455	2000A	04656	14451
S3N 250 F FC CuAl	R 250	1250A	04662	14457	2500A	04658	14453
<i>R = Threaded rear terminals</i>							
S3N 250 F R	R 200	1000A	04768	04912	2000A	04764	04908
S3N 250 F R	R 250	1250A	04770	04914	2500A	04766	04910
<i>RC = Rear terminals for cables</i>							
S3N 250 F RC	R 200	1000A	04714	04858	2000A	04710	04854
S3N 250 F RC	R 250	1250A	04716	04860	2500A	04712	04856

<i>R Res. Cur = Threaded rear terminals + kit of threaded rear terminals for residual-current release installed below the circuit-breaker</i>	$I_{m} = 10 \text{ lth}$	code 1SDA0 R1	
		3 poles	4 poles
S3N 250 F R Res. Cur R 200	1000A	25523	2000A
S3N 250 F R Res. Cur R 250	1250A	25525	2500A

<i>Magnetic release</i>	$I_{m} = 10 \text{ lth}$	code 1SDA0 R1	
		3 poles	4 poles
<i>F = Front terminals</i>			
S3N 250 F F	In 200A		27388
S3N 250 F F	In 250A		27390
<i>EF = Extended front terminals</i>			
S3N 250 F EF	In 200A	2000A	31756
S3N 250 F EF	In 250A	2500A	31758
<i>FC Cu = Front terminals for copper cables</i>			
S3N 250 F FC Cu	In 200A	2000A	31804
S3N 250 F FC Cu	In 250A	2500A	31806
<i>FC CuAl = Front terminals for copper/aluminium cables</i>			
S3N 250 F FC CuAl	In 200A	2000A	31844
S3N 250 F FC CuAl	In 250A	2500A	31846
<i>R = Threaded rear terminals</i>			
S3N 250 F R	In 200A	2000A	31940
S3N 250 F R	In 250A	2500A	31942
<i>RC = Rear terminals for cables</i>			
S3N 250 F RC	In 200A	2000A	31892
S3N 250 F RC	In 250A	2500A	31894



Order codes

SACE Isomax S3 circuit-breaker

F = FIXED



S3H 250 I_{u} (40 °C) = 250 A I_{cu} (415 V) = 65 kA

Thermomagnetic release	Im = 3 lth	code 1SDA0 R1			
		3 poles 4 poles			
F = Front terminals					
S3H 250 F F R 200 600A 48547 48557					
S3H 250 F F	R 250	750A	48548	48558	
S3H 250 F F (N50%)	R 200	600A		48563	
S3H 250 F F (N50%)	R 250	750A		48564	

Thermomagnetic release	Im = 5 lth	code 1SDA0 R1	Im = 10 lth	code 1SDA0 R1			
		3 poles 4 poles		3 poles 4 poles			
F = Front terminals							
S3H 250 F F R 200 1000A 13511 13519 2000A 13507 13515							
S3H 250 F F	R 250	1250A	13513	13521	2500A	13509	13517
EF = Extended front terminals							
S3H 250 F EF	R 200	1000A	04957	05182	2000A	04953	05178
S3H 250 F EF	R 250	1250A	04959	05184	2500A	04955	05180
FC Cu = Front terminals for copper cables							
S3H 250 F FC Cu	R 200	1000A	05011	05236	2000A	05007	05232
S3H 250 F FC Cu	R 250	1250A	05013	05238	2500A	05009	05234
FC CuAl = Front terminals for copper/aluminium cables							
S3H 250 F FC CuAl	R 200	1000A	05065	05290	2000A	05061	05286
S3H 250 F FC CuAl	R 250	1250A	05067	05292	2500A	05063	05288
R = Threaded rear terminals							
S3H 250 F R	R 200	1000A	05173	05398	2000A	05169	05394
S3H 250 F R	R 250	1250A	05175	05400	2500A	05171	05396
RC = Rear terminals for cables							
S3H 250 F RC	R 200	1000A	05119	05344	2000A	05115	05340
S3H 250 F RC	R 250	1250A	05121	05346	2500A	05117	05342
R Res. Cur = Threaded rear terminals + kit of threaded rear terminals for residual-current release installed below the circuit-breaker							
S3H 250 F R Res. Cur	R 200	1000A		25531	2000A		25527
S3H 250 F R Res. Cur	R 250	1250A		25533	2500A		25529

Magnetic release	Im = 10 lth	code 1SDA0 R1			
		3 poles 4 poles			
F = Front terminals					
S3H 250 F F In 200A 2000A 27564 27652					
S3H 250 F F	In 250A		2500A	27566	27654
EF = Extended front terminals					
S3H 250 F EF	In 200A		2000A	31948	32537
S3H 250 F EF	In 250A		2500A	31950	32539
FC Cu = Front terminals for copper cables					
S3H 250 F FC Cu	In 200A		2000A	31996	32585
S3H 250 F FC Cu	In 250A		2500A	31998	32587
FC CuAl = Front terminals for copper/aluminium cables					
S3H 250 F FC CuAl	In 200A		2000A	32044	32633
S3H 250 F FC CuAl	In 250A		2500A	32046	32635
R = Threaded rear terminals					
S3H 250 F R	In 200A		2000A	32097	32729
S3H 250 F R	In 250A		2500A	32099	32732
RC = Rear terminals for cables					
S3H 250 F RC	In 200A		2000A	32089	32681
S3H 250 F RC	In 250A		2500A	32091	32683

Order codes

SACE Isomax S3 circuit-breaker

F = FIXED



S3L 250 I_u (40 °C) = 250 A I_{cu} (415 V) = 85 kA

Thermomagnetic release		Im = 5 lth	code 1SDA0 R1 3 poles 4 poles		Im = 10 lth	code 1SDA0 R1 3 poles 4 poles	
<i>F = Front terminals</i>							
S3L 250 F F	R 200	1000A	13527	13535	2000A	13523	13531
S3L 250 F F	R 250	1250A	13529	13537	2500A	13525	13533
<i>EF = Extended front terminals</i>							
S3L 250 F EF	R 200	1000A	05443	05668	2000A	05439	05664
S3L 250 F EF	R 250	1250A	05445	05670	2500A	05441	05666
<i>FC Cu = Front terminals for copper cables</i>							
S3L 250 F FC Cu	R 200	1000A	05497	05722	2000A	05493	05718
S3L 250 F FC Cu	R 250	1250A	05499	05724	2500A	05495	05720
<i>FC CuAl = Front terminals for copper/aluminium cables</i>							
S3L 250 F FC CuAl	R 200	1000A	05551	05776	2000A	05547	05772
S3L 250 F FC CuAl	R 250	1250A	05553	05778	2500A	05549	05774
<i>R = Threaded rear terminals</i>							
S3L 250 F R	R 200	1000A	05659	05884	2000A	05655	05880
S3L 250 F R	R 250	1250A	05661	05886	2500A	05657	05882
<i>RC = Rear terminals for cables</i>							
S3L 250 F RC	R 200	1000A	05605	05830	2000A	05601	05826
S3L 250 F RC	R 250	1250A	05607	05832	2500A	05603	05828
<i>R Res. Cur = Threaded rear terminals + kit of threaded rear terminals for residual-current release installed below the circuit-breaker</i>							
S3L 250 F R Res. Cur	R 200	1000A		25539	2000A		25535
S3L 250 F R Res. Cur	R 250	1250A		25541	2500A		25537

Magnetic release		Im = 10 lth	code 1SDA0 R1 3 poles 4 poles	
<i>F = Front terminals</i>				
S3L 250 F F	In 200A		2000A	27748 27828
S3L 250 F F	In 250A		2500A	27750 27830
<i>EF = Extended front terminals</i>				
S3L 250 F EF	In 200A		2000A	32137 32737
S3L 250 F EF	In 250A		2500A	32139 32739
<i>FC Cu = Front terminals for copper cables</i>				
S3L 250 F FC Cu	In 200A		2000A	32185 32785
S3L 250 F FC Cu	In 250A		2500A	32187 32787
<i>FC CuAl = Front terminals for copper/aluminium cables</i>				
S3L 250 F FC CuAl	In 200A		2000A	32233 32833
S3L 250 F FC CuAl	In 250A		2500A	32235 32835
<i>R = Threaded rear terminals</i>				
S3L 250 F R	In 200A		2000A	32329 32921
S3L 250 F R	In 250A		2500A	32331 32923
<i>RC = Rear terminals for cables</i>				
S3L 250 F RC	In 200A		2000A	32281 32761
S3L 250 F RC	In 250A		2500A	32283 32763



Order codes

SACE Isomax S3 circuit-breaker

P = PLUG-IN



Moving part

S3N 250 $I_{u\text{ (40 °C)}} = 250 \text{ A}$ $I_{cu\text{ (415 V)}} = 35 \text{ kA}$

Thermomagnetic release		$I_m = 5 \text{ lth}$	code 1SDA0 R1	$I_m = 10 \text{ lth}$	code 1SDA0 R1
		3 poles	4 poles	3 poles	4 poles
S3N 250 P MP	R 200	1000A	04921	04939	2000A
S3N 250 P MP	R 250	1250A	04923	04941	2500A

Magnetic release		$I_m = 10 \text{ lth}$	code 1SDA0 R1	3 poles	4 poles
S3N 250 P MP	In 200A		2000A	32929	32945
S3N 250 P MP	In 250A		2500A	32931	32947

S3H 250 $I_{u\text{ (40 °C)}} = 250 \text{ A}$ $I_{cu\text{ (415 V)}} = 65 \text{ kA}$

Thermomagnetic release		$I_m = 5 \text{ lth}$	code 1SDA0 R1	$I_m = 10 \text{ lth}$	code 1SDA0 R1
		3 poles	4 poles	3 poles	4 poles
S3H 250 P MP	R 200	1000A	05407	05425	2000A
S3H 250 P MP	R 250	1250A	05409	05427	2500A

Magnetic release		$I_m = 10 \text{ lth}$	code 1SDA0 R1	3 poles	4 poles
S3H 250 P MP	In 200A		2000A	32961	32977
S3H 250 P MP	In 250A		2500A	32963	32979

S3L 250 $I_{u\text{ (40 °C)}} = 250 \text{ A}$ $I_{cu\text{ (415 V)}} = 85 \text{ kA}$

Thermomagnetic release		$I_m = 5 \text{ lth}$	code 1SDA0 R1	$I_m = 10 \text{ lth}$	code 1SDA0 R1
		3 poles	4 poles	3 poles	4 poles
S3L 250 P MP	R 200	1000A	05893	05911	2000A
S3L 250 P MP	R 250	1250A	05895	05913	2500A

Magnetic release		$I_m = 10 \text{ lth}$	code 1SDA0 R1	3 poles	4 poles
S3L 250 P MP	In 200A		2000A	32993	33009
S3L 250 P MP	In 250A		2500A	32995	33011

Order codes

SACE Isomax S3 circuit-breaker

W = WITHDRAWABLE Moving part



S3N 250 $I_{u} (40^{\circ}\text{C}) = 250 \text{ A}$ $I_{cu} (415 \text{ V}) = 35 \text{ kA}$

Thermomagnetic release		$I_m = 5 \text{ lth}$	code 1SDA0 R1	$I_m = 10 \text{ lth}$	code 1SDA0 R1
		3 poles	4 poles	3 poles	4 poles
S3N 250 W MP	R 200	1000A	04930	04948	2000A
	R 250	1250A	04932	04950	2500A

Magnetic release		$I_m = 10 \text{ lth}$	code 1SDA0 R1
		3 poles	4 poles
S3N 250 W MP	In 200A		32937
	In 250A		32939

S3H 250 $I_{u} (40^{\circ}\text{C}) = 250 \text{ A}$ $I_{cu} (415 \text{ V}) = 65 \text{ kA}$

Thermomagnetic release		$I_m = 5 \text{ lth}$	code 1SDA0 R1	$I_m = 10 \text{ lth}$	code 1SDA0 R1
		3 poles	4 poles	3 poles	4 poles
S3H 250 W MP	R 200	1000A	05416	05434	2000A
	R 250	1250A	05418	05436	2500A

Magnetic release		$I_m = 10 \text{ lth}$	code 1SDA0 R1
		3 poles	4 poles
S3H 250 W MP	In 200A		32969
	In 250A		32971

S3L 250 $I_{u} (40^{\circ}\text{C}) = 250 \text{ A}$ $I_{cu} (415 \text{ V}) = 85 \text{ kA}$

Thermomagnetic release		$I_m = 5 \text{ lth}$	code 1SDA0 R1	$I_m = 10 \text{ lth}$	code 1SDA0 R1
		3 poles	4 poles	3 poles	4 poles
S3L 250 W MP	R 200	1000A	05902	05920	2000A
	R 250	1250A	05904	05922	2500A

Magnetic release		$I_m = 10 \text{ lth}$	code 1SDA0 R1
		3 poles	4 poles
S3L 250 W MP	In 200A		33001
	In 250A		33003



Order codes

SACE Isomax S4 circuit-breaker

F = FIXED



PSI59510

S4N 160 I_u (40 °C) = 160 A I_{cu} (415 V) = 35 kA

Microprocessor-based release	PR211 P	code 1SDA0 R1 3 poles 4 poles		PR212 P	code 1SDA0 R1 3 poles 4 poles		
<i>F = Front terminals</i>							
S4N 160 F F	In 100 A	I	15548	15836	LSI	15553	15841
		LI	15550	15838	LSIG	15558	15846
S4N 160 F F	In 160 A	I	15549	15837	LSI	15554	15842
		LI	15551	15839	LSIG	15559	15847
<i>EF = Extended front terminals</i>							
S4N 160 F EF	In 100 A	I	15632	15920	LSI	15635	15923
		LI	15633	15921	LSIG	15637	15925
S4N 160 F EF	In 160 A	I	05924	06080	LSI	05926	06082
		LI	05925	06081	LSIG	05929	06085
<i>FC Cu = Front terminals for copper cables</i>							
S4N 160 F FC Cu	In 100 A	I	15680	15968	LSI	15683	15971
		LI	15681	15969	LSIG	15685	15973
S4N 160 F FC Cu	In 160 A	I	05960	06116	LSI	05962	06118
		LI	05961	06117	LSIG	05965	06121
<i>FC CuAl = Front terminals for copper/aluminium cables</i>							
S4N 160 F FC CuAl	In 100 A	I	15728	16016	LSI	15731	16019
		LI	15729	16017	LSIG	15733	16021
S4N 160 F FC CuAl	In 160 A	I	05996	06152	LSI	05998	06154
		LI	05997	06153	LSIG	06001	06157
<i>R = Threaded rear terminals</i>							
S4N 160 F R	In 100 A	I	15830	16112	LSI	15833	16115
		LI	15831	16113	LSIG	15835	16117
S4N 160 F R	In 160 A	I	06074	06224	LSI	06076	06226
		LI	06075	06225	LSIG	06079	06229
<i>RC = Rear terminals for cables</i>							
S4N 160 F RC	In 100 A	I	15782	16064	LSI	15785	16067
		LI	15783	16065	LSIG	15787	16069
S4N 160 F RC	In 160 A	I	06038	06188	LSI	06040	06190
		LI	06039	06189	LSIG	06043	06193

S4H 160 I_u (40 °C) = 160 A I_{cu} (415 V) = 65 kA

Microprocessor-based release	PR211 P	code 1SDA0 R1 3 poles 4 poles		PR212 P	code 1SDA0 R1 3 poles 4 poles		
<i>F = Front terminals</i>							
S4H 160 F F	In 100 A	I	16142	16424	LSI	16146	16428
		LI	16144	16426	LSIG	16152	16434
S4H 160 F F	In 160 A	I	16143	16425	LSI	16147	16429
		LI	16145	16427	LSIG	16153	16435
<i>EF = Extended front terminals</i>							
S4H 160 F EF	In 100 A	I	16226	16508	LSI	16228	16510
		LI	16227	16509	LSIG	16231	16513
S4H 160 F EF	In 160 A	I	06254	06404	LSI	06256	06406
		LI	06255	06405	LSIG	06259	06409
<i>FC Cu = Front terminals for copper cables</i>							
S4H 160 F FC Cu	In 100 A	I	16274	16556	LSI	16276	16558
		LI	16275	16557	LSIG	16279	16561
S4H 160 F FC Cu	In 160 A	I	06290	06440	LSI	06292	06442
		LI	06291	06441	LSIG	06295	06445
<i>FC CuAl = Front terminals for copper/aluminium cables</i>							
S4H 160 F FC CuAl	In 100 A	I	16322	16604	LSI	16324	16606
		LI	16323	16605	LSIG	16327	16609
S4H 160 F FC CuAl	In 160 A	I	06326	06476	LSI	06328	06478
		LI	06327	06477	LSIG	06331	06481

Order codes

SACE Isomax S4 circuit-breaker

F = FIXED



Microprocessor-based release		PR211 P	code 1SDA0 R1 3 poles 4 poles	PR212 P	code 1SDA0 R1 3 poles 4 poles
<i>R = Threaded rear terminals</i>					
S4H 160 F R	In 100 A	I	16418 16700	LSI	16420 16702
		LI	16419 16701	LSIG	16423 16705
S4H 160 F R	In 160 A	I	06398 06548	LSI	06400 06550
		LI	06399 06549	LSIG	06403 06553
<i>RC = Rear terminals for cables</i>					
S4H 160 F RC	In 100 A	I	16370 16652	LSI	16372 16654
		LI	16371 16653	LSIG	16375 16657
S4H 160 F RC	In 160 A	I	06362 06512	LSI	06364 06514
		LI	06363 06513	LSIG	06367 06517

S4L 160 I_u (40 °C) = 160 A I_{cu} (415 V) = 100 kA

Microprocessor-based release		PR211 P	code 1SDA0 R1 3 poles 4 poles	PR212 P	code 1SDA0 R1 3 poles 4 poles
<i>F = Front terminals</i>					
S4L 160 F F	In 100 A	I	16730 17012	LSI	16734 17016
		LI	16732 17014	LSIG	16740 17022
S4L 160 F F	In 160 A	I	16731 17013	LSI	16735 17017
		LI	16733 17015	LSIG	16741 17023
<i>EF = Extended front terminals</i>					
S4L 160 F EF	In 100 A	I	16814 17096	LSI	16816 17098
		LI	16815 17097	LSIG	16819 17101
S4L 160 F EF	In 160 A	I	06578 06728	LSI	06580 06730
		LI	06579 06729	LSIG	06583 06733
<i>FC Cu = Front terminals for copper cables</i>					
S4L 160 F FC Cu	In 100 A	I	16862 17144	LSI	16864 17146
		LI	16863 17145	LSIG	16867 17149
S4L 160 F FC Cu	In 160 A	I	06614 06764	LSI	06616 06766
		LI	06615 06765	LSIG	06619 06769
<i>FC CuAl = Front terminals for copper/aluminium cables</i>					
S4L 160 F FC CuAl	In 100 A	I	16910 17192	LSI	16912 17194
		LI	16911 17193	LSIG	16915 17197
S4L 160 F FC CuAl	In 160 A	I	06650 06800	LSI	06652 06802
		LI	06651 06801	LSIG	06655 06805
<i>R = Threaded rear terminals</i>					
S4L 160 F R	In 100 A	I	17006 17288	LSI	17008 17290
		LI	17007 17289	LSIG	17011 17293
S4L 160 F R	In 160 A	I	06722 06872	LSI	06724 06874
		LI	06723 06873	LSIG	06727 06877
<i>RC = Rear terminals for cables</i>					
S4L 160 F RC	In 100 A	I	16958 17240	LSI	16960 17242
		LI	16959 17241	LSIG	16963 17245
S4L 160 F RC	In 160 A	I	06686 06836	LSI	06688 06838
		LI	06687 06837	LSIG	06691 06841



Order codes

SACE Isomax S4 circuit-breaker

P = PLUG-IN



PS65610

Moving part

S4N 160 $I_{u\ (40\ ^\circ C)} = 160\ A$ $I_{cu\ (415\ V)} = 35\ kA$

Microprocessor-based release		PR211 P	code 1SDA0 R1 3 poles 4 poles	PR212 P	code 1SDA0 R1 3 poles 4 poles
S4N 160 P MP	In 100 A	I	16118 16130	LSI	16121 16133
		LI	16119 16131	LSIG	16123 16135
S4N 160 P MP	In 160 A	I	06230 06242	LSI	06232 06244
		LI	06231 06243	LSIG	06235 06247

S4H 160 $I_{u\ (40\ ^\circ C)} = 160\ A$ $I_{cu\ (415\ V)} = 65\ kA$

Microprocessor-based release		PR211 P	code 1SDA0 R1 3 poles 4 poles	PR212 P	code 1SDA0 R1 3 poles 4 poles
S4H 160 P MP	In 100 A	I	16706 16718	LSI	16708 16720
		LI	16707 16719	LSIG	16711 16723
S4H 160 P MP	In 160 A	I	06554 06566	LSI	06556 06568
		LI	06555 06567	LSIG	06559 06571

S4L 160 $I_{u\ (40\ ^\circ C)} = 160\ A$ $I_{cu\ (415\ V)} = 100\ kA$

Microprocessor-based release		PR211 P	code 1SDA0 R1 3 poles 4 poles	PR212 P	code 1SDA0 R1 3 poles 4 poles
S4L 160 P MP	In 100 A	I	17294 17306	LSI	17296 17308
		LI	17295 17307	LSIG	17299 17311
S4L 160 P MP	In 160 A	I	06878 06890	LSI	06880 06892
		LI	06879 06891	LSIG	06883 06895

W = WITHDRAWABLE



PS65610

Moving part

S4N 160 $I_{u\ (40\ ^\circ C)} = 160\ A$ $I_{cu\ (415\ V)} = 35\ kA$

Microprocessor-based release		PR211 P	code 1SDA0 R1 3 poles 4 poles	PR212 P	code 1SDA0 R1 3 poles 4 poles
S4N 160 W MP	In 100 A	I	16124 16136	LSI	16127 16139
		LI	16125 16137	LSIG	16129 16141

Microprocessor-based release		PR211 P	code 1SDA0 R1 3 poles 4 poles	PR212 P	code 1SDA0 R1 3 poles 4 poles
S4H 160 W MP	In 100 A	I	16712 16724	LSI	16714 16726
		LI	16713 16725	LSIG	16717 16729

Microprocessor-based release		PR211 P	code 1SDA0 R1 3 poles 4 poles	PR212 P	code 1SDA0 R1 3 poles 4 poles
S4L 160 W MP	In 100 A	I	17300 17312	LSI	17302 17314
		LI	17301 17313	LSIG	17305 17317

Microprocessor-based release		PR211 P	code 1SDA0 R1 3 poles 4 poles	PR212 P	code 1SDA0 R1 3 poles 4 poles
S4L 160 W MP	In 160 A	I	06884 06896	LSI	06886 06898
		LI	06885 06897	LSIG	06889 06901

Order codes

SACE Isomax S4 circuit-breaker

F = FIXED



PSI9410

S4N 250

I_u (40 °C) = **250 A**

I_{cu} (415 V) = **35 kA**

Micropressor-based release	PR211 P	code 1SDA0 R1 3 poles	4 poles	PR212 P	code 1SDA0 R1 3 poles	4 poles
<i>F = Front terminals</i>						
S4N 250 F F	In 250 A	I	17318	17384	LSI	17320
		LI	17319	17385	LSIG	17323
<i>EF = Extended front terminals</i>						
S4N 250 F EF	In 250 A	I	06902	07052	LSI	06904
		LI	06903	07053	LSIG	06907
<i>FC Cu = Front terminals for copper cables</i>						
S4N 250 F FC Cu	In 250 A	I	06938	07088	LSI	06940
		LI	06939	07089	LSIG	06943
<i>FC CuAl = Front terminals for copper/aluminium cables</i>						
S4N 250 F FC CuAl	In 250 A	I	06974	07124	LSI	06976
		LI	06975	07125	LSIG	06979
<i>R = Threaded rear terminals</i>						
S4N 250 F R	In 250 A	I	07046	07196	LSI	07048
		LI	07047	07197	LSIG	07051
<i>RC = Rear terminals for cables</i>						
S4N 250 F RC	In 250 A	I	07010	07160	LSI	07012
		LI	07011	07161	LSIG	07015

S4H 250

I_u (40 °C) = **250 A**

I_{cu} (415 V) = **65 kA**

Micropressor-based release	PR211 P	code 1SDA0 R1 3 poles	4 poles	PR212 P	code 1SDA0 R1 3 poles	4 poles
<i>F = Front terminals</i>						
S4H 250 F F	In 250 A	I	17450	17516	LSI	17452
		LI	17451	17517	LSIG	17455
<i>EF = Extended front terminals</i>						
S4H 250 F EF	In 250 A	I	07226	07376	LSI	07228
		LI	07227	07377	LSIG	07231
<i>FC Cu = Front terminals for copper cables</i>						
S4H 250 F FC Cu	In 250 A	I	07262	07412	LSI	07264
		LI	07263	07413	LSIG	07267
<i>FC CuAl = Front terminals for copper/aluminium cables</i>						
S4H 250 F FC CuAl	In 250 A	I	07298	07448	LSI	07300
		LI	07299	07449	LSIG	07303
<i>R = Threaded rear terminals</i>						
S4H 250 F R	In 250 A	I	07370	07520	LSI	07372
		LI	07371	07521	LSIG	07375
<i>RC = Rear terminals for cables</i>						
S4H 250 F RC	In 250 A	I	07334	07484	LSI	07336
		LI	07335	07485	LSIG	07339



Order codes

SACE Isomax S4 circuit-breaker

F = FIXED



PSI59510

S4L 250 $I_{u\ (40\ ^\circ C)} = 250\ A$ $I_{cu\ (415\ V)} = 100\ kA$

Microprocessor-based release	PR211 P	code 1SDA0 R1	PR212 P	code 1SDA0 R1
	3 poles	4 poles	3 poles	4 poles
<i>F = Front terminals</i>				
S4L 250 F F	In 250 A	I 17582 17648 LI 17583 17649	LSI 17584 17650 LSIG 17587 17653	
<i>EF = Extended front terminals</i>				
S4L 250 F EF	In 250 A	I 07550 07700 LI 07551 07701	LSI 07552 07702 LSIG 07555 07705	
<i>FC Cu = Front terminals for copper cables</i>				
S4L 250 F FC Cu	In 250 A	I 07586 07736 LI 07587 07737	LSI 07588 07738 LSIG 07591 07741	
<i>FC CuAl = Front terminals for copper/aluminium cables</i>				
S4L 250 F FC CuAl	In 250 A	I 07622 07772 LI 07623 07773	LSI 07624 07774 LSIG 07627 07777	
<i>R = Threaded rear terminals</i>				
S4L 250 F R	In 250 A	I 07694 07844 LI 07695 07845	LSI 07696 07846 LSIG 07699 07849	
<i>RC = Rear terminals for cables</i>				
S4L 250 F RC	In 250 A	I 07658 07808 LI 07659 07809	LSI 07660 07810 LSIG 07663 07813	

Order codes

SACE Isomax S4 circuit-breaker

P = PLUG-IN



Moving part

S4N 250 $I_{u} (40^{\circ}\text{C}) = 250 \text{ A}$ $I_{cu} (415 \text{ V}) = 35 \text{ kA}$

Microprocessor-based release	PR211 P	code 1SDA0 R1 3 poles 4 poles	PR212 P	code 1SDA0 R1 3 poles 4 poles
S4N 250 P MP	In 250 A	I 07202 07214 LSI 07204 07216 LI 07203 07215 LSIG 07207 07219		

S4H 250 $I_{u} (40^{\circ}\text{C}) = 250 \text{ A}$ $I_{cu} (415 \text{ V}) = 65 \text{ kA}$

Microprocessor-based release	PR211 P	code 1SDA0 R1 3 poles 4 poles	PR212 P	code 1SDA0 R1 3 poles 4 poles
S4H 250 P MP	In 250 A	I 07526 07538 LSI 07528 07540 LI 07527 07539 LSIG 07531 07543		

S4L 250 $I_{u} (40^{\circ}\text{C}) = 250 \text{ A}$ $I_{cu} (415 \text{ V}) = 100 \text{ kA}$

Microprocessor-based release	PR211 P	code 1SDA0 R1 3 poles 4 poles	PR212 P	code 1SDA0 R1 3 poles 4 poles
S4L 250 P MP	In 250 A	I 07850 07862 LSI 07852 07864 LI 07851 07863 LSIG 07855 07867		

W = WITHDRAWABLE



Moving part

S4N 250 $I_{u} (40^{\circ}\text{C}) = 250 \text{ A}$ $I_{cu} (415 \text{ V}) = 35 \text{ kA}$

Microprocessor-based release	PR211 P	code 1SDA0 R1 3 poles 4 poles	PR212 P	code 1SDA0 R1 3 poles 4 poles
S4N 250 W MP	In 250 A	I 07208 07220 LSI 07210 07222 LI 07209 07221 LSIG 07213 07225		

S4H 250 $I_{u} (40^{\circ}\text{C}) = 250 \text{ A}$ $I_{cu} (415 \text{ V}) = 65 \text{ kA}$

Microprocessor-based release	PR211 P	code 1SDA0 R1 3 poles 4 poles	PR212 P	code 1SDA0 R1 3 poles 4 poles
S4H 250 W MP	In 250 A	I 07532 07544 LSI 07534 07546 LI 07533 07545 LSIG 07537 07549		

S4L 250 $I_{u} (40^{\circ}\text{C}) = 250 \text{ A}$ $I_{cu} (415 \text{ V}) = 100 \text{ kA}$

Microprocessor-based release	PR211 P	code 1SDA0 R1 3 poles 4 poles	PR212 P	code 1SDA0 R1 3 poles 4 poles
S4L 250 W MP	In 250 A	I 07856 07868 LSI 07858 07870 LI 07857 07869 LSIG 07861 07873		



Order codes

SACE Isomax S5 circuit-breaker

F = FIXED



PSI0513

S5N 400 I_u (40 °C) = 400 A I_{cu} (415 V) = 35 kA

Thermomagnetic release	<i>I_m = 5...10</i>	<i>I_{th}</i>	code 1SDA0 R1	
		3 poles	4 poles	
<i>F = Front terminals</i>				
S5N 400 F F	R 320	3200A	38438	38440
S5N 400 F F	R 400	4000A	38439	38441
<i>EF = Extended front terminals</i>				
S5N 400 F EF	R 320	3200A	38442	38444
S5N 400 F EF	R 400	4000A	38443	38445
<i>FC Cu = Front terminals for copper cables</i>				
S5N 400 F FC Cu	R 320	3200A	38446	38448
S5N 400 F FC Cu	R 400	4000A	38447	38449
<i>FC CuAl = Front terminals for copper/aluminium cables</i>				
S5N 400 F FC CuAl*	R 320	3200A	38450	38452
S5N 400 F FC CuAl*	R 400	4000A	38451	38453
S5N 400 F FC CuAl**	R 320	3200A	38466	38480
S5N 400 F FC CuAl**	R 400	4000A	38467	38481
<i>R = Threaded rear terminals</i>				
S5N 400 F R	R 320	3200A	38486	38488
S5N 400 F R	R 400	4000A	38487	38489
<i>RC = Rear terminals for cables</i>				
S5N 400 F RC	R 320	3200A	38482	38484
S5N 400 F RC	R 400	4000A	38483	38485

Microprocessor-based release	PR211 P	code 1SDA0 R1	PR212 P	code 1SDA0 R1
		3 poles 4 poles		3 poles 4 poles
<i>F = Front terminals</i>				
S5N 400 F F	In 320 A	I 17714 17846	LSI 17718 17850	
		LI 17716 17848	LSIG 17724 17856	
S5N 400 F F	In 400 A	I 17715 17847	LSI 17719 17851	
		LI 17717 17849	LSIG 17725 17857	
<i>EF = Extended front terminals</i>				
S5N 400 F EF	In 320 A	I 07874 08174	LSI 07878 08178	
		LI 07876 08176	LSIG 07884 08184	
S5N 400 F EF	In 400 A	I 07875 08175	LSI 07879 08179	
		LI 07877 08177	LSIG 07885 08185	
<i>FC Cu = Front terminals for copper cables</i>				
S5N 400 F FC Cu	In 320 A	I 07946 08246	LSI 07950 08250	
		LI 07948 08248	LSIG 07956 08256	
S5N 400 F FC Cu	In 400 A	I 07947 08247	LSI 07951 08251	
		LI 07949 08249	LSIG 07957 08257	
<i>FC CuAl = Front terminals for copper/aluminium cables</i>				
S5N 400 F FC CuAl*	In 320 A	I 08018 08318	LSI 08022 08322	
		LI 08020 08320	LSIG 08028 08328	
S5N 400 F FC CuAl*	In 400 A	I 08019 08319	LSI 08023 08323	
		LI 08021 08321	LSIG 08029 08329	
S5N 400 F FC CuAl**	In 320 A	I 38454 38468	LSI 38458 38472	
		LI 38456 38470	LSIG 38464 38478	
S5N 400 F FC CuAl**	In 400 A	I 38455 38469	LSI 38459 38473	
		LI 38457 38471	LSIG 38465 38479	
<i>R = Threaded rear terminals</i>				
S5N 400 F R	In 320 A	I 08162 08450	LSI 08166 08454	
		LI 08164 08452	LSIG 08172 08460	
S5N 400 F R	In 400 A	I 08163 08451	LSI 08167 08455	
		LI 08165 08453	LSIG 08173 08461	
<i>RC = Rear terminals for cables</i>				
S5N 400 F RC	In 320 A	I 08090 08390	LSI 08094 08394	
		LI 08092 08392	LSIG 08100 08400	
S5N 400 F RC	In 400 A	I 08091 08391	LSI 08095 08395	
		LI 08093 08393	LSIG 08101 08401	

* Cable section = 1 x 240 mm²

** Cable section = 2 x 120 mm²

Order codes

SACE Isomax S5 circuit-breaker

F = FIXED



S5H 400 I_u (40 °C) = 400 A I_{cu} (415 V) = 65 kA

Thermomagnetic release		I _{th}	I _m = 5...10	code 1SDA0 R1	3 poles	4 poles
F = Front terminals						
S5H 400 F F	R 320	3200A	38522	38524		
S5H 400 F F	R 400	4000A	38523	38525		
EF = Extended front terminals						
S5H 400 F EF	R 320	3200A	38526	38528		
S5H 400 F EF	R 400	4000A	38527	38529		
FC Cu = Front terminals for copper cables						
S5H 400 F FC Cu	R 320	3200A	38530	38532		
S5H 400 F FC Cu	R 400	4000A	38531	38533		
FC CuAl = Front terminals for copper/aluminium cables						
S5H 400 F FC CuAl*	R 320	3200A	38534	38536		
S5H 400 F FC CuAl*	R 400	4000A	38535	38537		
S5H 400 F FC CuAl**	R 320	3200A	38550	38564		
S5H 400 F FC CuAl**	R 400	4000A	38551	38565		
R = Threaded rear terminals						
S5H 400 F R	In 320 A	3200A	38570	38572		
S5H 400 F R	In 400 A	4000A	38571	38573		
RC = Rear terminals for cables						
S5H 400 F RC	In 320 A	3200A	38566	38568		
S5H 400 F RC	In 400 A	4000A	38567	38569		
Microprocessor-based release		PR211 P	code 1SDA0 R1	PR212 P	code 1SDA0 R1	
			3 poles		3 poles	4 poles
F = Front terminals						
S5H 400 F F	In 320 A	I	17990	18122	LSI	17994
		LI	17992	18124	LSIG	18000
S5H 400 F F	In 400 A	I	17991	18123	LSI	17995
		LI	17993	18125	LSIG	18001
EF = Extended front terminals						
S5H 400 F EF	In 320 A	I	08510	08810	LSI	08514
		LI	08512	08812	LSIG	08520
S5H 400 F EF	In 400 A	I	08511	08811	LSI	08515
		LI	08513	08813	LSIG	08521
FC Cu = Front terminals for copper cables						
S5H 400 F FC Cu	In 320 A	I	08582	08882	LSI	08586
		LI	08584	08884	LSIG	08592
S5H 400 F FC Cu	In 400 A	I	08583	08883	LSI	08587
		LI	08585	08885	LSIG	08893
FC CuAl = Front terminals for copper/aluminium cables						
S5H 400 F FC CuAl*	In 320 A	I	08654	08954	LSI	08658
		LI	08656	08956	LSIG	08664
S5H 400 F FC CuAl*	In 400 A	I	08655	08955	LSI	08659
		LI	08657	08957	LSIG	08665
S5H 400 F FC CuAl**	In 320 A	I	38538	38552	LSI	38542
		LI	38540	38554	LSIG	38548
S5H 400 F FC CuAl**	In 400 A	I	38539	38553	LSI	38543
		LI	38541	38555	LSIG	38562
R = Threaded rear terminals						
S5H 400 F R	In 320 A	I	08798	09098	LSI	08802
		LI	08800	09100	LSIG	08808
S5H 400 F R	In 400 A	I	08799	09099	LSI	08803
		LI	08801	09101	LSIG	08809
RC = Rear terminals for cables						
S5H 400 F RC	In 320 A	I	08726	09026	LSI	08730
		LI	08728	09028	LSIG	08736
S5H 400 F RC	In 400 A	I	08727	09027	LSI	08731
		LI	08729	09029	LSIG	09037

* Cable section = 1 x 240 mm²

** Cable section = 2 x 120 mm²



Order codes

SACE Isomax S5 circuit-breaker

F = FIXED



PSI0513

S5L 400 $I_{u} (40^{\circ}\text{C}) = 400 \text{ A}$ $I_{cu} (415 \text{ V}) = 100 \text{ kA}$

Thermomagnetic release		Im = 5...10 lth		code 1SDA0 . . . R1	
		3 poles	4 poles		
<i>F = Front terminals</i>					
S5L 400 F F	R 320	3200A	38606	38608	
S5L 400 F F	R 400	4000A	38607	38609	
<i>EF = Extended front terminals</i>					
S5L 400 F EF	R 320	3200A	38610	38612	
S5L 400 F EF	R 400	4000A	38611	38613	
<i>FC Cu = Front terminals for copper cables</i>					
S5L 400 F FC Cu	R 320	3200A	38614	38616	
S5L 400 F FC Cu	R 400	4000A	38615	38617	
<i>FC CuAl = Front terminals for copper/aluminium cables</i>					
S5L 400 F FC CuAl*	R 320	3200A	38618	38620	
S5L 400 F FC CuAl*	R 400	4000A	38619	38621	
S5L 400 F FC CuAl**	R 320	3200A	38634	38648	
S5L 400 F FC CuAl**	R 400	4000A	38635	38649	
<i>R = Threaded rear terminals</i>					
S5L 400 F R	R 320	3200A	38654	38656	
S5L 400 F R	R 400	4000A	38655	38657	
<i>RC = Rear terminals for cables</i>					
S5L 400 F RC	R 320	3200A	38650	38652	
S5L 400 F RC	R 400	4000A	38651	38653	
Microprocessor-based release		PR211 P	code 1SDA0 . . . R1	PR212 P	code 1SDA0 . . . R1
			3 poles		4 poles
<i>F = Front terminals</i>					
S5L 400 F F	In 320 A	I	18254	18386	LSI
		LI	18256	18388	LSIG
S5L 400 F F	In 400 A	I	18255	18387	LSI
		LI	18257	18389	LSIG
<i>EF = Extended front terminals</i>					
S5L 400 F EF	In 320 A	I	09158	09458	LSI
		LI	09160	09460	LSIG
S5L 400 F EF	In 400 A	I	09159	09459	LSI
		LI	09161	09461	LSIG
<i>FC Cu = Front terminals for copper cables</i>					
S5L 400 F FC Cu	In 320 A	I	09230	09530	LSI
		LI	09232	09532	LSIG
S5L 400 F FC Cu	In 400 A	I	09231	09531	LSI
		LI	09233	09533	LSIG
<i>FC CuAl = Front terminals for copper/aluminium cables</i>					
S5L 400 F FC CuAl*	In 320 A	I	09302	09602	LSI
		LI	09304	09604	LSIG
S5L 400 F FC CuAl*	In 400 A	I	09303	09603	LSI
		LI	09305	09605	LSIG
S5L 400 F FC CuAl**	In 320 A	I	38622	38636	LSI
		LI	38624	38638	LSIG
S5L 400 F FC CuAl**	In 400 A	I	38623	38637	LSI
		LI	38625	38639	LSIG
<i>R = Threaded rear terminals</i>					
S5L 400 F R	In 320 A	I	09446	09746	LSI
		LI	09448	09748	LSIG
S5L 400 F R	In 400 A	I	09447	09747	LSI
		LI	09449	09749	LSIG
<i>RC = Rear terminals for cables</i>					
S5L 400 F RC	In 320 A	I	09374	09674	LSI
		LI	09376	09676	LSIG
S5L 400 F RC	In 400 A	I	09375	09675	LSI
		LI	09377	09677	LSIG

* Cable section = 1 x 240 mm²

** Cable section = 2 x 120 mm²

Order codes

SACE Isomax S5 circuit-breaker

P = PLUG-IN



PSI913

Moving part

S5N 400

I_u (40 °C) = 400 A

I_{cu} (415 V) = 35 kA

Thermomagnetic release	Im = 5...10 I_{th}	code 1SDA0 R1
		3 poles 4 poles
S5N 400 P MP	R 320	3200A 43896 43902
S5N 400 P MP	R 400	4000A 43897 43903

Microprocessor-based release	PR211 P	code 1SDA0 R1	PR212 P	code 1SDA0 R1
		3 poles 4 poles		3 poles 4 poles
S5N 400 P MP	In 320 A	I 08462 08486 LSI 08466 08490		
		LI 08464 08488 LSIG 08472 08496		
S5N 400 P MP	In 400 A	I 08463 08487 LSI 08467 08491		
		LI 08465 08489 LSIG 08473 08497		

S5H 400

I_u (40 °C) = 400 A

I_{cu} (415 V) = 65 kA

Thermomagnetic release	Im = 5...10 I_{th}	code 1SDA0 R1
		3 poles 4 poles
S5H 400 P MP	R 320	3200A 43898 43904
S5H 400 P MP	R 400	4000A 43899 43905

Microprocessor-based release	PR211 P	code 1SDA0 R1	PR212 P	code 1SDA0 R1
		3 poles 4 poles		3 poles 4 poles
S5H 400 P MP	In 320 A	I 09110 09134 LSI 09114 09138		
		LI 09112 09136 LSIG 09120 09144		
S5H 400 P MP	In 400 A	I 09111 09135 LSI 09115 09139		
		LI 09113 09137 LSIG 09121 09145		

S5L 400

I_u (40 °C) = 400 A

I_{cu} (415 V) = 100 kA

Thermomagnetic release	Im = 5...10 I_{th}	code 1SDA0 R1
		3 poles 4 poles
S5L 400 P MP	R 320	3200A 43900 43906
S5L 400 P MP	R 400	4000A 43901 43907

Microprocessor-based release	PR211 P	code 1SDA0 R1	PR212 P	code 1SDA0 R1
		3 poles 4 poles		3 poles 4 poles
S5L 400 P MP	In 320 A	I 09758 09782 LSI 09762 09786		
		LI 09760 09784 LSIG 09768 09792		
S5L 400 P MP	In 400 A	I 09759 09783 LSI 09763 09787		
		LI 09761 09785 LSIG 09769 09793		



Order codes

SACE Isomax S5 circuit-breaker

W = WITHDRAWABLE



PS5S5/G

Moving part

S5N 400 I_{u} (40 °C) = 400 A I_{cu} (415 V) = 35 kA

Thermomagnetic release		Im = 5...10 Ith	code 1SDA0 R1	3 poles	4 poles
S5N 400 W MP	R 320	3200A	38414	38416	
S5N 400 W MP	R 400	4000A	38415	38417	
Microprocessor-based release		PR211 P	code 1SDA0 R1	PR212 P	code 1SDA0 R1
S5N 400 W MP	In 320 A	I	08474	08498	LSI 08478 08502
		LI	08476	08500	LSIG 08484 08508
S5N 400 W MP	In 400 A	I	08475	08499	LSI 08479 08503
		LI	08477	08501	LSIG 08485 08509

S5H 400 I_{u} (40 °C) = 400 A I_{cu} (415 V) = 65 kA

Thermomagnetic release		Im = 5...10 Ith	code 1SDA0 R1	3 poles	4 poles
S5H 400 W MP	R 320	3200A	38490	38492	
S5H 400 W MP	R 400	4000A	38491	38493	

Microprocessor-based release		PR211 P	code 1SDA0 R1	PR212 P	code 1SDA0 R1
S5H 400 W MP	In 320 A	I	09122	09146	LSI 09126 09150
		LI	09124	09148	LSIG 09132 09156
S5H 400 W MP	In 400 A	I	09123	09147	LSI 09127 09151
		LI	09125	09149	LSIG 09133 09157

S5L 400 I_{u} (40 °C) = 400 A I_{cu} (415 V) = 100 kA

Thermomagnetic release		Im = 5...10 Ith	code 1SDA0 R1	3 poles	4 poles
S5L 400 W MP	R 320	3200A	38574	38576	
S5L 400 W MP	R 400	4000A	38575	38577	

Microprocessor-based release		PR211 P	code 1SDA0 R1	PR212 P	code 1SDA0 R1
S5L 400 W MP	In 320 A	I	09770	09794	LSI 09774 09798
		LI	09772	09796	LSIG 09780 09804
S5L 400 W MP	In 400 A	I	09771	09795	LSI 09775 09799
		LI	09773	09797	LSIG 09781 09805

Order codes

SACE Isomax S5 circuit-breaker

W = WITHDRAWABLE

Moving part⁽¹⁾



PS6913

S5N 400 I_u (40 °C) = 400 A I_{cu} (415 V) = 35 kA

Thermomagnetic release		Im = 5...10 I _{th}		code 1SDA0 R1	
		3 poles	4 poles		
S5N 400 W MP		R 320	3200A	38426	38436
S5N 400 W MP		R 400	4000A	38427	38437

Microprocessor-based release		PR211 P		code 1SDA0 R1		PR212 P		code 1SDA0 R1	
		3 poles	4 poles			3 poles	4 poles		
S5N 400 W MP	In 320 A	I	38418	38428	LSI	38422	38432	S5N 400 W MP	In 400 A
		LI	38420	38430	LSIG	38424	38434		
S5N 400 W MP	In 400 A	I	38419	51608	LSI	38423	38433	S5N 400 W MP	In 400 A
		LI	38421	38431	LSIG	38425	38435		

S5H 400 I_u (40 °C) = 400 A I_{cu} (415 V) = 65 kA

Thermomagnetic release		Im = 5...10 I _{th}		code 1SDA0 R1	
		3 poles	4 poles		
S5H 400 W MP		R 320	3200A	38506	38520
S5H 400 W MP		R 400	4000A	38507	38521

Microprocessor-based release		PR211 P		code 1SDA0 R1		PR212 P		code 1SDA0 R1	
		3 poles	4 poles			3 poles	4 poles		
S5H 400 W MP	In 320 A	I	38494	38508	LSI	38498	38512	S5H 400 W MP	In 400 A
		LI	38496	38510	LSIG	38504	38518		
S5H 400 W MP	In 400 A	I	38495	38509	LSI	38499	38513	S5H 400 W MP	In 400 A
		LI	38497	38511	LSIG	38505	38519		

S5L 400 I_u (40 °C) = 400 A I_{cu} (415 V) = 100 kA

Thermomagnetic release		Im = 5...10 I _{th}		code 1SDA0 R1	
		3 poles	4 poles		
S5L 400 W MP		R 320	3200A	38590	38604
S5L 400 W MP		R 400	4000A	38591	38605

Microprocessor-based release		PR211 P		code 1SDA0 R1		PR212 P		code 1SDA0 R1	
		3 poles	4 poles			3 poles	4 poles		
S5L 400 W MP	In 320 A	I	38578	38592	LSI	38582	38596	S5L 400 W MP	In 400 A
		LI	38580	38594	LSIG	38588	38602		
S5L 400 W MP	In 400 A	I	38579	38593	LSI	38583	38597	S5L 400 W MP	In 400 A
		LI	38581	38595	LSIG	38589	38603		

(1) The S5 400 mobile parts indicated on this page can be used in conjunction with S5 630 W FP fixed parts. Two different fixed parts are available for circuit-breakers S5 400 and S5 630.

Fixed circuit-breaker S5 400:

- converted into the mobile part of a withdrawable circuit-breaker using kit 1SDA0 13718 R1 (three-pole), 1SDA0 13719 R1 (four-pole) can be used in conjunction with the fixed part for S5 400 (see codes on pages 7/81).
- converted into the mobile part of a withdrawable circuit-breaker using kit 1SDA0 38778 R1 (three-pole), 1SDA0 38779 R1 (four-pole) can be used in conjunction with the fixed part for S5 630. This page shows the codes for the mobile parts of withdrawable circuit-breakers which have already been converted and can be used in conjunction with the fixed parts for S5 630.

Circuit-breaker S5 630 can be converted into the mobile part of a withdrawable circuit-breaker using kit 1SDA0 38778 R1 (three-pole), 1SDA0 38779 R1 (four-pole) and used in conjunction exclusively with the fixed parts for S5 630 (see codes on page 7/81).



Order codes

SACE Isomax S5 circuit-breaker

F = FIXED



P50513

S5N 630 $I_{u\ (40\ ^\circ C)} = 630\ A$ $I_{cu\ (415\ V)} = 35\ kA$

Thermomagnetic release		$I_m = 5...10$ I_{th}	code 1SDA0 R1
		3 poles	4 poles
<i>F = Front terminals</i>			
S5N 630 F F	R 500	5000A	38678 38683
<i>ES = Spreaded extended front terminals</i>			
S5N 630 F ES	R 500	5000A	38684 38685
<i>FC Cu = Front terminals for copper cables</i>			
S5N 630 F FC Cu	R 500	5000A	38686 38687
<i>R = Threaded rear terminals</i>			
S5N 630 F R	R 500	5000A	38690 38691

Microprocessor-based release		PR211 P	code 1SDA0 R1	PR212 P	code 1SDA0 R1
		3 poles	4 poles	3 poles	4 poles
<i>F = Front terminals</i>					
S5N 630 F F	In 630 A	I 38674	38679	LSI 38676	38681
		LI 38675	38680	LSIG 38677	38682
<i>ES = Spreaded extended front terminals</i>					
S5N 630 F ES	In 630 A	I 14575	14725	LSI 14577	14727
		LI 14576	14726	LSIG 14580	14730
<i>FC Cu = Front terminals for copper cables</i>					
S5N 630 F FC Cu	In 630 A	I 14611	14761	LSI 14613	14763
		LI 14612	14762	LSIG 14616	14766
<i>R = Threaded rear terminals</i>					
S5N 630 F R	In 630 A	I 14719	14869	LSI 14721	14871
		LI 14720	14870	LSIG 14724	14874

S5H 630 $I_{u\ (40\ ^\circ C)} = 630\ A$ $I_{cu\ (415\ V)} = 65\ kA$

Thermomagnetic release		$I_m = 5...10$ I_{th}	code 1SDA0 R1
		3 poles	4 poles
<i>F = Front terminals</i>			
S5H 630 F F	R 500	5000A	38708 38713
<i>ES = Spreaded extended front terminals</i>			
S5H 630 F ES	R 500	5000A	38714 38715
<i>FC Cu = Front terminals for copper cables</i>			
S5H 630 F FC Cu	R 500	5000A	38716 38717
<i>R = Threaded rear terminals</i>			
S5H 630 F R	R 500	5000A	38720 38721

Microprocessor-based release		PR211 P	code 1SDA0 R1	PR212 P	code 1SDA0 R1
		3 poles	4 poles	3 poles	4 poles
<i>F = Front terminals</i>					
S5H 630 F F	In 630 A	I 38704	38709	LSI 38706	38711
		LI 38705	38710	LSIG 38707	38712
<i>ES = Spreaded extended front terminals</i>					
S5H 630 F ES	In 630 A	I 14899	15049	LSI 14901	15051
		LI 14900	15050	LSIG 14904	15054
<i>FC Cu = Front terminals for copper cables</i>					
S5H 630 F FC Cu	In 630 A	I 14935	15085	LSI 14937	15087
		LI 14936	15086	LSIG 14940	15090
<i>R = Threaded rear terminals</i>					
S5H 630 F R	In 630 A	I 15043	15193	LSI 15045	15195
		LI 15044	15194	LSIG 15048	15198

Order codes

SACE Isomax S5 circuit-breaker

F = FIXED



PSI9013

S5L 630 $I_{u} (40^{\circ}\text{C}) = 630 \text{ A}$ $I_{cu} (415 \text{ V}) = 100 \text{ kA}$

Thermomagnetic release	Im = 5...10 Ith	code 1SDA0 R1
		3 poles 4 poles

F = Front terminals

S5L 630 F F R 500 5000A 38740 38745

ES = Spreaded extended front terminals

S5L 630 F ES R 500 5000A 38746 38747

FC Cu = Front terminals for copper cables

S5L 630 F FC Cu R 500 5000A 38748 38749

R = Threaded rear terminals

S5L 630 F R R 500 5000A 38752 38753

Microprocessor-based release	PR211 P	code 1SDA0 R1	PR212 P	code 1SDA0 R1
		3 poles 4 poles		3 poles 4 poles

F = Front terminals

S5L 630 F F	In 630 A	I	38736	38741	LSI	38738	38743
		LI	38737	38742	LSIG	38739	38744

ES = Spreaded extended front terminals

S5L 630 F ES	In 630 A	I	15223	15373	LSI	47991	43801
		LI	15224	15374	LSIG	15228	15378

FC Cu = Front terminals for copper cables

S5L 630 F FC Cu	In 630 A	I	15259	15409	LSI	43748	43815
		LI	15260	15410	LSIG	15264	15414

R = Threaded rear terminals

S5L 630 F R	In 630 A	I	15367	15517	LSI	43775	43843
		LI	15368	15518	LSIG	15372	15522



Order codes

SACE Isomax S5 circuit-breaker

W = WITHDRAWABLE



PSS0513

Moving part

S5N 630 I_u (40 °C) = 630 A I_{cu} (415 V) = 35 kA

Thermomagnetic release		Im = 5...10 Ith		code 1SDA0 R1	
		3 poles	4 poles		
S5N 630 W MP	R 500	5000A	38666	38673	

Microprocessor-based release		PR211 P	code 1SDA0 R1		PR212 P	code 1SDA0 R1	
			3 poles	4 poles		3 poles	4 poles
S5N 630 W MP	In 630 A	I	38660	38667	LSI	38662	38669
		LI	38661	38668	LSIG	38665	38672

S5H 630 I_u (40 °C) = 630 A I_{cu} (415 V) = 65 kA

Thermomagnetic release		Im = 5...10 Ith		code 1SDA0 R1	
		3 poles	4 poles		
S5H 630 W MP	R 500	5000A	38697	38703	

Microprocessor-based release		PR211 P	code 1SDA0 R1		PR212 P	code 1SDA0 R1	
			3 poles	4 poles		3 poles	4 poles
S5H 630 W MP	In 630 A	I	38693	38699	LSI	38695	38701
		LI	38694	38700	LSIG	38696	38702

S5L 630 I_u (40 °C) = 630 A I_{cu} (415 V) = 100 kA

Thermomagnetic release		Im = 5...10 Ith		code 1SDA0 R1	
		3 poles	4 poles		
S5L 630 W MP	R 500	5000A	38729	38754	

Microprocessor-based release		PR211 P	code 1SDA0 R1		PR212 P	code 1SDA0 R1	
			3 poles	4 poles		3 poles	4 poles
S5L 630 W MP	In 630 A	I	38723	38730	LSI	38725	38732
		LI	38724	38731	LSIG	38728	38734



Order codes

SACE Isomax S6 circuit-breaker

F = FIXED



PDS616

S6N 630 $I_{u} (40^{\circ}\text{C}) = 630 \text{ A}$ $I_{cu} (415 \text{ V}) = 35 \text{ kA}$

Thermomagnetic release	Im = 5...10 Ith	code 1SDA0 R1
		3 poles 4 poles
F = Front terminals		
S6N 630 F F	R 630	6300A 38787 38788
EF = Extended front terminals		
S6N 630 F EF	R 630	6300A 38789 38790
FC CuAl = Front terminals for copper/aluminium cables		
S6N 630 F FC CuAl*	R 630	6300A 38791 38792
R = Threaded rear terminals		
S6N 630 F R	R 630	6300A 38795 38796
RC = Rear terminals for cables		
S6N 630 F RC	R 630	6300A 38793 38794

Microprocessor-based release	PR211 P	code 1SDA0 R1	PR212 P	code 1SDA0 R1
		3 poles 4 poles		3 poles 4 poles
F = Front terminals				
S6N 630 F F	In 630 A	I 18518 18572 LSI 18520 18574	LI 18519 18573 LSIG 18523 18577	
EF = Extended front terminals				
S6N 630 F EF	In 630 A	I 09806 09902 LSI 09808 09904	LI 09807 09903 LSIG 09811 09907	
FC CuAl = Front terminals for copper/aluminium cables				
S6N 630 F FC CuAl*	In 630 A	I 09836 09932 LSI 09838 09934	LI 09837 09933 LSIG 09841 09937	
R = Threaded rear terminals				
S6N 630 F R	In 630 A	I 09896 09992 LSI 09898 09994	LI 09897 09993 LSIG 09901 09997	
RC = Rear terminals for cables				
S6N 630 F RC	In 630 A	I 09866 09962 LSI 09868 09964	LI 09867 09963 LSIG 09871 09967	

S6S 630 $I_{u} (40^{\circ}\text{C}) = 630 \text{ A}$ $I_{cu} (415 \text{ V}) = 50 \text{ kA}$

Thermomagnetic release	Im = 5...10 Ith	code 1SDA0 R1
		3 poles 4 poles
F = Front terminals		
S6S 630 F F	R 630	6300A 38799 38800
EF = Extended front terminals		
S6S 630 F EF	R 630	6300A 38801 38802
FC CuAl = Front terminals for copper/aluminium cables		
S6S 630 F FC CuAl*	R 630	6300A 38817 38818
R = Threaded rear terminals		
S6S 630 F R	R 630	6300A 38957 38959
RC = Rear terminals for cables		
S6S 630 F RC	R 630	6300A 38819 38820

Microprocessor-based release	PR211 P	code 1SDA0 R1	PR212 P	code 1SDA0 R1
		3 poles 4 poles		3 poles 4 poles
F = Front terminals				
S6S 630 F F	In 630 A	I 18626 18680 LSI 18628 18682	LI 18627 18681 LSIG 18631 18685	
EF = Extended front terminals				
S6S 630 F EF	In 630 A	I 10010 10106 LSI 10012 10108	LI 10011 10107 LSIG 10015 10111	
FC CuAl = Front terminals for copper/aluminium cables				
S6S 630 F FC CuAl*	In 630 A	I 10040 10136 LSI 10042 10138	LI 10041 10137 LSIG 10045 10141	
R = Threaded rear terminals				
S6S 630 F R	In 630 A	I 10100 10196 LSI 10102 10198	LI 10101 10197 LSIG 10105 10201	
RC = Rear terminals for cables				
S6S 630 F RC	In 630 A	I 10070 10166 LSI 10072 10168	LI 10071 10167 LSIG 10075 10171	

* Cable section = 1 x 240 mm²



Order codes

SACE Isomax S6 circuit-breaker

F = FIXED



PSS61616

S6H 630 $I_{u} (40^{\circ}\text{C}) = 630 \text{ A}$ $I_{cu} (415 \text{ V}) = 65 \text{ kA}$

Thermomagnetic release	Im = 5...10 Ith	code 1SDA0 R1
		3 poles 4 poles
F = Front terminals		
S6H 630 F F	R 630	6300A 38823 38824
EF = Extended front terminals		
S6H 630 F EF	R 630	6300A 38825 38826
FC CuAl = Front terminals for copper/aluminium cables		
S6H 630 F FC CuAl*	R 630	6300A 38827 38835
R = Threaded rear terminals		
S6H 630 F R	R 630	6300A 38958 38960
RC = Rear terminals for cables		
S6H 630 F RC	R 630	6300A 38843 38844

Microprocessor-based release	PR211 P	code 1SDA0 R1	PR212 P	code 1SDA0 R1
		3 poles 4 poles		3 poles 4 poles
F = Front terminals				
S6H 630 F F	In 630 A	I 18734 18788 LSI 18736 18790		
		LI 18735 18789 LSIG 18739 18793		
EF = Extended front terminals				
S6H 630 F EF	In 630 A	I 10214 10310 LSI 10216 10312		
		LI 10215 10311 LSIG 10219 10315		
FC CuAl = Front terminals for copper/aluminium cables				
S6H 630 F FC CuAl*	In 630 A	I 10244 10340 LSI 10246 10342		
		LI 10245 10341 LSIG 10249 10345		
R = Threaded rear terminals				
S6H 630 F R	In 630 A	I 10304 10400 LSI 10306 10402		
		LI 10305 10401 LSIG 10309 10405		
RC = Rear terminals for cables				
S6H 630 F RC	In 630 A	I 10274 10370 LSI 10276 10372		
		LI 10275 10371 LSIG 10279 10375		

S6L 630 $I_{u} (40^{\circ}\text{C}) = 630 \text{ A}$ $I_{cu} (415 \text{ V}) = 100 \text{ kA}$

Thermomagnetic release	Im = 5...10 Ith	code 1SDA0 R1
		3 poles 4 poles
F = Front terminals		
S6L 630 F F	R 630	6300A 38847 38848
EF = Extended front terminals		
S6L 630 F EF	R 630	6300A 38849 38850
FC CuAl = Front terminals for copper/aluminium cables		
S6L 630 F FC CuAl*	R 630	6300A 38851 38859
R = Threaded rear terminals		
S6L 630 F R	R 630	6300A 38961 38962
RC = Rear terminals for cables		
S6L 630 F RC	R 630	6300A 38867 38868

Microprocessor-based release	PR211 P	code 1SDA0 R1	PR212 P	code 1SDA0 R1
		3 poles 4 poles		3 poles 4 poles
F = Front terminals				
S6L 630 F F	In 630 A	I 18842 18896 LSI 18844 18898		
		LI 18843 18897 LSIG 18847 18901		
EF = Extended front terminals				
S6L 630 F EF	In 630 A	I 10418 10514 LSI 10420 10516		
		LI 10419 10515 LSIG 10423 10519		
FC CuAl = Front terminals for copper/aluminium cables				
S6L 630 F FC CuAl*	In 630 A	I 10448 10544 LSI 10450 10546		
		LI 10449 10545 LSIG 10453 10549		
R = Threaded rear terminals				
S6L 630 F R	In 630 A	I 10508 10604 LSI 10510 10606		
		LI 10509 10605 LSIG 10513 10609		
RC = Rear terminals for cables				
S6L 630 F RC	In 630 A	I 10478 10574 LSI 10480 10576		
		LI 10479 10575 LSIG 10483 10579		

* Cable section = 2 x 240 mm²

Order codes

SACE Isomax S6 circuit-breaker

W = WITHDRAWABLE

Moving part



PDS616

S6N 630 $I_{u\text{ (40 °C)}} = 630 \text{ A}$ $I_{cu\text{ (415 V)}} = 35 \text{ kA}$

Thermomagnetic release	$I_{m=5...10}^{\text{th}}$	code 1SDA0 R1 3 poles 4 poles
S6N 630 W MP	R 630	6300A 38785 38786
Microprocessor-based release	PR211 P	code 1SDA0 R1 3 poles 4 poles
S6N 630 W MP	In 630 A	I 09998 10004 LSI 10000 10006
		LI 09999 10005 LSIG 10003 10009

S6S 630 $I_{u\text{ (40 °C)}} = 630 \text{ A}$ $I_{cu\text{ (415 V)}} = 50 \text{ kA}$

Thermomagnetic release	$I_{m=5...10}^{\text{th}}$	code 1SDA0 R1 3 poles 4 poles
S6S 630 W MP	R 630	6300A 38797 38798
Microprocessor-based release	PR211 P	code 1SDA0 R1 3 poles 4 poles
S6S 630 W MP	In 630 A	I 10202 10208 LSI 10204 10210
		LI 10203 10209 LSIG 10207 10213

S6H 630 $I_{u\text{ (40 °C)}} = 630 \text{ A}$ $I_{cu\text{ (415 V)}} = 65 \text{ kA}$

Thermomagnetic release	$I_{m=5...10}^{\text{th}}$	code 1SDA0 R1 3 poles 4 poles
S6H 630 W MP	R 630	6300A 38821 38822
Microprocessor-based release	PR211 P	code 1SDA0 R1 3 poles 4 poles
S6H 630 W MP	In 630 A	I 10406 10412 LSI 10408 10414
		LI 10407 10413 LSIG 10411 10417

S6L 630 $I_{u\text{ (40 °C)}} = 630 \text{ A}$ $I_{cu\text{ (415 V)}} = 100 \text{ kA}$

Thermomagnetic release	$I_{m=5...10}^{\text{th}}$	code 1SDA0 R1 3 poles 4 poles
S6L 630 W MP	R 630	6300A 38845 38846
Microprocessor-based release	PR211 P	code 1SDA0 R1 3 poles 4 poles
S6L 630 W MP	In 630 A	I 10610 10616 LSI 10612 10618
		LI 10611 10617 LSIG 10615 10621



Order codes

SACE Isomax S6 circuit-breaker

F = FIXED



PSS61616

S6N 800 $I_{u} (40^{\circ}\text{C}) = 800 \text{ A}$ $I_{cu} (415 \text{ V}) = 35 \text{ kA}$

Thermomagnetic release	Im = 5...10 Ith	code 1SDA0 R1
		3 poles 4 poles
F = Front terminals		
S6N 800 F F	R 800	8000A 38871 38872
EF = Extended front terminals		
S6N 800 F EF	R 800	8000A 38873 38874
FC CuAl = Front terminals for copper/aluminium cables		
S6N 800 F FC CuAl*	R 800	8000A 38875 38876
R = Threaded rear terminals		
S6N 800 F R	R 800	8000A 38879 38880
RC = Rear terminals for cables		
S6N 630 F RC	R 800	8000A 38877 38878
 Microprocessor-based release		
	PR211 P	code 1SDA0 R1
		3 poles 4 poles
	PR212 P	code 1SDA0 R1
		3 poles 4 poles
F = Front terminals		
S6N 800 F F	In 800 A	I 18950 19004 LSI 18952 19006
		LI 18951 19005 LSIG 18955 19009
EF = Extended front terminals		
S6N 800 F EF	In 800 A	I 10622 10718 LSI 10624 10720
		LI 10623 10719 LSIG 10627 10723
FC CuAl = Front terminals for copper/aluminium cables		
S6N 800 F FC CuAl*	In 800 A	I 10652 10748 LSI 10654 10750
		LI 10653 10749 LSIG 10657 10753
R = Threaded rear terminals		
S6N 800 F R	In 800 A	I 10712 10808 LSI 10714 10810
		LI 10713 10809 LSIG 10717 10813
RC = Rear terminals for cables		
S6N 800 F RC	In 800 A	I 10682 10778 LSI 10684 10780
		LI 10683 10779 LSIG 10687 10783

S6S 800 $I_{u} (40^{\circ}\text{C}) = 800 \text{ A}$ $I_{cu} (415 \text{ V}) = 50 \text{ kA}$

Thermomagnetic release	Im = 5...10 Ith	code 1SDA0 R1
		3 poles 4 poles
F = Front terminals		
S6S 800 F F	R 800	8000A 38883 38884
EF = Extended front terminals		
S6S 800 F EF	R 800	8000A 38885 38886
FC CuAl = Front terminals for copper/aluminium cables		
S6S 800 F FC CuAl*	R 800	8000A 38887 38895
R = Threaded rear terminals		
S6S 800 F R	R 800	8000A 38963 38964
RC = Rear terminals for cables		
S6S 800 F RC	R 800	8000A 38903 38904
 Microprocessor-based release		
	PR211 P	code 1SDA0 R1
		3 poles 4 poles
	PR212 P	code 1SDA0 R1
		3 poles 4 poles
F = Front terminals		
S6S 800 F F	In 800 A	I 19058 19112 LSI 19060 19114
		LI 19059 19113 LSIG 19063 19117
EF = Extended front terminals		
S6S 800 F EF	In 800 A	I 10826 10922 LSI 10828 10924
		LI 10827 10923 LSIG 10831 10927
FC CuAl = Front terminals for copper/aluminium cables		
S6S 800 F FC CuAl*	In 800 A	I 10856 10952 LSI 10858 10954
		LI 10857 10953 LSIG 10861 10957
R = Threaded rear terminals		
S6S 800 F R	In 800 A	I 10916 11006 LSI 10918 11008
		LI 10917 11007 LSIG 10921 11011
RC = Rear terminals for cables		
S6S 800 F RC	In 800 A	I 10886 10976 LSI 10888 10978
		LI 10887 10977 LSIG 10891 10981

* Cable section = 3 x 185 mm²

Order codes

SACE Isomax S6 circuit-breaker

F = FIXED



PDS616

S6H 800 I_u (40 °C) = 800 A I_{cu} (415 V) = 65 kA

Thermomagnetic release	Im = 5...10 l_{th}	code 1SDA0 R1
		3 poles 4 poles
F = Front terminals		
S6H 800 F F R 800 8000A 38907 38908		
EF = Extended front terminals		
S6H 800 F EF R 800 8000A 38909 38910		
FC CuAl = Front terminals for copper/aluminium cables		
S6H 800 F FC CuAl* R 800 8000A 38911 38919		
R = Threaded rear terminals		
S6H 800 F R R 800 8000A 38965 38966		
RC = Rear terminals for cables		
S6H 800 F RC R 800 8000A 38927 38928		

Microprocessor-based release	PR211 P	code 1SDA0 R1	PR212 P	code 1SDA0 R1
		3 poles 4 poles		3 poles 4 poles
F = Front terminals				
S6H 800 F F In 800 A I 19166 19220 LSI 19168 19222				
LI 19167 19221 LSIG 19171 19225				
EF = Extended front terminals				
S6H 800 F EF In 800 A I 11024 11120 LSI 11026 11122				
LI 11025 11121 LSIG 11029 11125				
FC CuAl = Front terminals for copper/aluminium cables				
S6H 800 F FC CuAl* In 800 A I 11054 11150 LSIG 11056 11152				
LI 11055 11151 LSIG 11059 11155				
R = Threaded rear terminals				
S6H 800 F R In 800 A I 11114 11210 LSIG 11116 11212				
LI 11115 11211 LSIG 11119 11215				
RC = Rear terminals for cables				
S6H 800 F RC In 800 A I 11084 11180 LSI 11086 11182				
LI 11085 11181 LSIG 11089 11185				

S6L 800 I_u (40 °C) = 800 A I_{cu} (415 V) = 100 kA

Thermomagnetic release	Im = 5...10 l_{th}	code 1SDA0 R1
		3 poles 4 poles
F = Front terminals		
S6L 800 F F R 800 8000A 38931 38932		
EF = Extended front terminals		
S6L 800 F EF R 800 8000A 38933 38934		
FC CuAl = Front terminals for copper/aluminium cables		
S6L 800 F FC CuAl* R 800 8000A 38935 38943		
R = Threaded rear terminals		
S6L 800 F R R 800 8000A 38973 38974		
RC = Rear terminals for cables		
S6L 800 F RC R 800 8000A 38951 38952		

Microprocessor-based release	PR211 P	code 1SDA0 R1	PR212 P	code 1SDA0 R1
		3 poles 4 poles		3 poles 4 poles
F = Front terminals				
S6L 800 F F In 800 A I 19274 19328 LSI 19276 19330				
LI 19275 19329 LSIG 19279 19333				
EF = Extended front terminals				
S6L 800 F EF In 800 A I 11228 11324 LSI 11230 11326				
LI 11229 11325 LSIG 11233 11329				
FC CuAl = Front terminals for copper/aluminium cables				
S6L 800 F FC CuAl* In 800 A I 11258 11354 LSI 11260 11356				
LI 11259 11355 LSIG 11263 11359				
R = Threaded rear terminals				
S6L 800 F R In 800 A I 11318 11414 LSI 11320 11416				
LI 11319 11415 LSIG 11323 11419				
RC = Rear terminals for cables				
S6L 800 F RC In 800 A I 11288 11384 LSI 11290 11386				
LI 11289 11385 LSIG 11293 11389				

* Cable section = 3 x 185 mm²



Order codes

SACE Isomax S6 circuit-breaker

W = WITHDRAWABLE



PSB616

Moving part

S6N 800 $I_{u} (40^{\circ}\text{C}) = 800 \text{ A}$ $I_{cu} (415 \text{ V}) = 35 \text{ kA}$

Thermomagnetic release		$I_m = 5 \dots 10$ I_{th}	code 1SDA0 R1
		3 poles 4 poles	
S6N 800 W MP	R 800	8000A	38869 38870

Microprocessor-based release		$PR211$ P	code 1SDA0 R1	$PR212$ P	code 1SDA0 R1
		3 poles	4 poles	3 poles	4 poles
S6N 800 W MP	In 800 A	I LI	10814 10815 10820 10821	LSI LSIG	10816 10819 10822 10825

S6S 800 $I_{u} (40^{\circ}\text{C}) = 800 \text{ A}$ $I_{cu} (415 \text{ V}) = 50 \text{ kA}$

Thermomagnetic release		$I_m = 5 \dots 10$ I_{th}	code 1SDA0 R1
		3 poles 4 poles	
S6S 800 W MP	R 800	8000A	38881 38882

Microprocessor-based release		$PR211$ P	code 1SDA0 R1	$PR212$ P	code 1SDA0 R1
		3 poles	4 poles	3 poles	4 poles
S6S 800 W MP	In 800 A	I LI	11012 11013 11018 11019	LSI LSIG	11014 11017 11020 11023

S6H 800 $I_{u} (40^{\circ}\text{C}) = 800 \text{ A}$ $I_{cu} (415 \text{ V}) = 65 \text{ kA}$

Thermomagnetic release		$I_m = 5 \dots 10$ I_{th}	code 1SDA0 R1
		3 poles 4 poles	
S6H 800 W MP	R 800	8000A	38905 38906

Microprocessor-based release		$PR211$ P	code 1SDA0 R1	$PR212$ P	code 1SDA0 R1
		3 poles	4 poles	3 poles	4 poles
S6H 800 W MP	In 800 A	I LI	11216 11217 11222 11223	LSI LSIG	11218 11221 11224 11227

S6L 800 $I_{u} (40^{\circ}\text{C}) = 800 \text{ A}$ $I_{cu} (415 \text{ V}) = 100 \text{ kA}$

Thermomagnetic release		$I_m = 5 \dots 10$ I_{th}	code 1SDA0 R1
		3 poles 4 poles	
S6L 800 W MP	R 800	8000A	38929 38930

Microprocessor-based release		$PR211$ P	code 1SDA0 R1	$PR212$ P	code 1SDA0 R1
		3 poles	4 poles	3 poles	4 poles
S6L 800 W MP	In 800 A	I LI	11420 11421 11682 11683	LSI LSIG	11422 11425 11684 11687



F = FIXED



PSIS0620

Order codes SACE Isomax S7 circuit-breaker

S7S 1250 I_u (40 °C) = 1250 A I_{cu} (415 V) = 50 kA

Microprocessor-based release	PR211 P	code 1SDA0 R1 3 poles	4 poles	PR212 P	code 1SDA0 R1 3 poles	4 poles
<i>F = Front terminals</i>						
S7S 1250 F F	In 1000 A I	19382	19490	LSI	19386	19494
	LI	19384	19492	LSIG	19392	19500
S7S 1250 F F	In 1250 A I	19383	19491	LSI	19387	19495
	LI	19385	19493	LSIG	19393	19501
<i>EF = Extended front terminals</i>						
S7S 1250 F EF	In 1000 A I	11432	11624	LSI	11436	11628
	LI	11434	11626	LSIG	11442	11634
S7S 1250 F EF	In 1250 A I	11433	11625	LSI	11437	11629
	LI	11435	11627	LSIG	11443	11635
<i>FC CuAl = Front terminals for copper/aluminium cables</i>						
S7S 1250 F FC CuAl	In 1000 A I	11492	11428	LSI	11496	11688
	LI	11494	11430	LSIG	11502	11694
S7S 1250 F FC CuAl	In 1250 A I	11493	11429	LSI	11497	11689
	LI	11495	11431	LSIG	11503	11695
<i>VR = Vertical flat-bar rear terminals</i>						
S7S 1250 F VR	In 1000 A I	11612	11804	LSI	11616	11808
	LI	11614	11806	LSIG	11622	11814
S7S 1250 F VR	In 1250 A I	11613	11805	LSI	11617	11809
	LI	11615	11807	LSIG	11623	11815
<i>HR = Horizontal flat-bar rear terminals</i>						
S7S 1250 F HR	In 1000 A I	11552	11744	LSI	11556	11748
	LI	11554	11746	LSIG	11562	11754
S7S 1250 F HR	In 1250 A I	11553	11745	LSI	11557	11749
	LI	11555	11747	LSIG	11563	11755

S7H 1250 I_u (40 °C) = 1250 A I_{cu} (415 V) = 65 kA

Microprocessor-based release	PR211 P	code 1SDA0 R1 3 poles	4 poles	PR212 P	code 1SDA0 R1 3 poles	4 poles
<i>F = Front terminals</i>						
S7H 1250 F F	In 1000 A I	19598	19706	LSI	19602	19710
	LI	19600	19708	LSIG	19608	19716
S7H 1250 F F	In 1250 A I	19599	19707	LSI	19603	19711
	LI	19601	19709	LSIG	19609	19717
<i>EF = Extended front terminals</i>						
S7H 1250 F EF	In 1000 A I	11840	12032	LSI	11844	12036
	LI	11842	12034	LSIG	11850	12042
S7H 1250 F EF	In 1250 A I	11841	12033	LSI	11845	12037
	LI	11843	12035	LSIG	11851	12043
<i>FC CuAl = Front terminals for copper/aluminium cables</i>						
S7H 1250 F FC CuAl	In 1000 A I	11900	12092	LSI	11904	12096
	LI	11902	12094	LSIG	11910	12102
S7H 1250 F FC CuAl	In 1250 A I	11901	12093	LSI	11905	12097
	LI	11903	12095	LSIG	11911	12103
<i>VR = Vertical flat-bar rear terminals</i>						
S7H 1250 F VR	In 1000 A I	12020	12212	LSI	12024	12216
	LI	12022	12214	LSIG	12030	12222
S7H 1250 F VR	In 1250 A I	12021	12213	LSI	12025	12217
	LI	12023	12215	LSIG	12031	12223
<i>HR = Horizontal flat-bar rear terminals</i>						
S7H 1250 F HR	In 1000 A I	11960	12152	LSI	11964	12156
	LI	11962	12154	LSIG	11970	12162
S7H 1250 F HR	In 1250 A I	11961	12153	LSI	11965	12157
	LI	11963	12155	LSIG	11971	12163



Order codes

SACE Isomax S7 circuit-breaker

F = FIXED



PSI9620

S7L 1250 I_u (40 °C) = 1250 A I_{cu} (415 V) = 100 kA

Microprocessor-based release	PR211 P	code 1SDA0 R1 3 poles 4 poles	PR212 P	code 1SDA0 R1 3 poles 4 poles
<i>F = Front terminals</i>				
S7L 1250 F F	In 1000 A I LI	19814 19922 19816 19924	LSI	19818 19926 LSIG 19824 19932
S7L 1250 F F	In 1250 A I LI	19815 19923 19817 19925	LSI	19819 19927 LSIG 19825 19933
<i>EF = Extended front terminals</i>				
S7L 1250 F EF	In 1000 A I LI	12248 12440 12250 12442	LSI	12252 12444 LSIG 12258 12450
S7L 1250 F EF	In 1250 A I LI	12249 12441 12251 12443	LSI	12253 12445 LSIG 12259 12451
<i>FC CuAl = Front terminals for copper/aluminium cables</i>				
S7L 1250 F FC CuAl	In 1000 A I LI	12308 12500 12310 12502	LSI	12312 12504 LSIG 12318 12510
S7L 1250 F FC CuAl	In 1250 A I LI	12309 12501 12311 12503	LSI	12313 12505 LSIG 12319 12511
<i>VR = Vertical flat-bar rear terminals</i>				
S7L 1250 F VR	In 1000 A I LI	12428 12620 12430 12622	LSI	12432 12624 LSIG 12438 12630
S7L 1250 F VR	In 1250 A I LI	12429 12621 12431 12623	LSI	12433 12625 LSIG 12439 12631
<i>HR = Horizontal flat-bar rear terminals</i>				
S7L 1250 F HR	In 1000 A I LI	12368 12560 12370 12562	LSI	12372 12564 LSIG 12378 12570
S7L 1250 F HR	In 1250 A I LI	12369 12561 12371 12563	LSI	12373 12565 LSIG 12379 12571

W = WITHDRAWABLE

Moving part

S7S 1250 I_u (40 °C) = 1250 A I_{cu} (415 V) = 50 kA

Microprocessor-based release	PR211 P	code 1SDA0 R1 3 poles 4 poles	PR212 P	code 1SDA0 R1 3 poles 4 poles
S7S 1250 W MP	In 1000 A I LI	11816 11828 11818 11830	LSI	11820 11832 LSIG 11826 11838
S7S 1250 W MP	In 1250 A I LI	11817 11829 11819 11831	LSI	11821 11833 LSIG 11827 11839

S7H 1250 I_u (40 °C) = 1250 A I_{cu} (415 V) = 65 kA

Microprocessor-based release	PR211 P	code 1SDA0 R1 3 poles 4 poles	PR212 P	code 1SDA0 R1 3 poles 4 poles
S7H 1250 W MP	In 1000 A I LI	12224 12236 12226 12238	LSI	12228 12240 LSIG 12234 12246
S7H 1250 W MP	In 1250 A I LI	12225 12237 12227 12239	LSI	12229 12241 LSIG 12235 12247

S7L 1250 I_u (40 °C) = 1250 A I_{cu} (415 V) = 100 kA

Microprocessor-based release	PR211 P	code 1SDA0 R1 3 poles 4 poles	PR212 P	code 1SDA0 R1 3 poles 4 poles
S7L 1250 W MP	In 1000 A I LI	12632 12644 12634 12646	LSI	12636 12648 LSIG 12642 12654
S7L 1250 W MP	In 1250 A I LI	12633 12645 12635 12647	LSI	12637 12649 LSIG 12643 12655

PSI9620

Order codes

SACE Isomax S7 circuit-breaker

F = FIXED



S7S 1600 I_u (40 °C) = 1600 A I_{cu} (415 V) = 50 kA

Microprocessor-based release	PR211 P	code 1SDA0 R1 3 poles	4 poles	PR212 P	code 1SDA0 R1 3 poles	4 poles
<i>F = Front terminals</i>						
S7S 1600 F F	In 1600 A I	20030	20072	LSI	20032	20074
	LI	20031	20073	LSIG	20035	20077
<i>EF = Extended front terminals</i>						
S7S 1600 F EF	In 1600 A I	12656	12710	LSI	12658	12712
	LI	12657	12711	LSIG	12661	12715
<i>VR = Vertical flat-bar rear terminals</i>						
S7S 1600 F VR	In 1600 A I	12704	12758	LSI	12706	12760
	LI	12705	12759	LSIG	12709	12763
<i>HR = Horizontal flat-bar rear terminals</i>						
S7S 1600 F HR	In 1600 A I	12680	12734	LSI	12682	12736
	LI	12681	12735	LSIG	12685	12739

S7H 1600 I_u (40 °C) = 1600 A I_{cu} (415 V) = 65 kA

Microprocessor-based release	PR211 P	code 1SDA0 R1 3 poles	4 poles	PR212 P	code 1SDA0 R1 3 poles	4 poles
<i>F = Front terminals</i>						
S7H 1600 F F	In 1600 A I	20114	20156	LSI	20116	20158
	LI	20115	20157	LSIG	20119	20161
<i>EF = Extended front terminals</i>						
S7H 1600 F EF	In 1600 A I	12776	12830	LSI	12778	12832
	LI	12777	12831	LSIG	12781	12835
<i>VR = Vertical flat-bar rear terminals</i>						
S7H 1600 F VR	In 1600 A I	12824	12878	LSI	12826	12880
	LI	12825	12879	LSIG	12829	12883
<i>HR = Horizontal flat-bar rear terminals</i>						
S7H 1600 F HR	In 1600 A I	12800	12854	LSI	12802	12856
	LI	12801	12855	LSIG	12805	12859

S7L 1600 I_u (40 °C) = 1600 A I_{cu} (415 V) = 100 kA

Microprocessor-based release	PR211 P	code 1SDA0 R1 3 poles	4 poles	PR212 P	code 1SDA0 R1 3 poles	4 poles
<i>F = Front terminals</i>						
S7L 1600 F F	In 1600 A I	20198	20240	LSI	20200	20242
	LI	20199	20241	LSIG	20203	20245
<i>EF = Extended front terminals</i>						
S7L 1600 F EF	In 1600 A I	12896	12962	LSI	12898	12964
	LI	12897	12963	LSIG	12901	12967
<i>VR = Vertical flat-bar rear terminals</i>						
S7L 1600 F VR	In 1600 A I	12956	13010	LSI	12958	13012
	LI	12957	13011	LSIG	12961	13015
<i>HR = Horizontal flat-bar rear terminals</i>						
S7L 1600 F HR	In 1600 A I	12932	12986	LSI	12934	12988
	LI	12933	12987	LSIG	12937	12991



Order codes

SACE Isomax S7 circuit-breaker

W = WITHDRAWABLE



PSI9620

Moving part

S7S 1600 $I_{u} (40^{\circ}\text{C}) = 1600 \text{ A}$ $I_{cu} (415 \text{ V}) = 50 \text{ kA}$

Microprocessor-based release	PR211 P	code 1SDA0 R1 3 poles 4 poles	PR212 P	code 1SDA0 R1 3 poles 4 poles
S7S 1600 W MP	In 1600 A I	12764 12770 LI 12765 12771	LSI 12766 12772 LSIG 12769 12775	

S7H 1600 $I_{u} (40^{\circ}\text{C}) = 1600 \text{ A}$ $I_{cu} (415 \text{ V}) = 65 \text{ kA}$

Microprocessor-based release	PR211 P	code 1SDA0 R1 3 poles 4 poles	PR212 P	code 1SDA0 R1 3 poles 4 poles
S7H 1600 W MP	In 1600 A I	12884 12890 LI 12885 12891	LSI 12886 12892 LSIG 12889 12895	

S7L 1600 $I_{u} (40^{\circ}\text{C}) = 1600 \text{ A}$ $I_{cu} (415 \text{ V}) = 100 \text{ kA}$

Microprocessor-based release	PR211 P	code 1SDA0 R1 3 poles 4 poles	PR212 P	code 1SDA0 R1 3 poles 4 poles
S7L 1600 W MP	In 1600 A I	13016 13022 LI 13017 13023	LSI 13018 13024 LSIG 13021 13027	



F = FIXED



Order codes SACE Isomax S8 circuit-breaker

S8H 2000 $I_{u\ (40\ ^\circ C)} = 2000\ A$

$I_{cu\ (415\ V)} = 85\ kA$

Microprocessor-based release

PR212 P

code 1SDA0 R1
3 poles 4 poles

F = Front terminals

S8H 2000 F F In 1600 A

LSI

44861

44877

LSIG

44863

44879

S8H 2000 F F In 2000 A

LSI

44862

44878

LSIG

44864

44880

VR = Vertical flat-bar rear terminals

S8H 2000 F VR In 1600 A

LSI

44869

44885

LSIG

44871

44887

S8H 2000 F VR In 2000 A

LSI

44870

44886

LSIG

44872

44888

S8V 2000 $I_{u\ (40\ ^\circ C)} = 2000\ A$

$I_{cu\ (415\ V)} = 120\ kA$

Microprocessor-based release

PR212 P

code 1SDA0 R1
3 poles 4 poles

F = Front terminals

S8V 2000 F F In 1600 A

LSI

44918

44934

LSIG

44920

44936

S8V 2000 F F In 2000 A

LSI

44919

44935

LSIG

44921

44937

VR = Vertical flat-bar rear terminals

S8V 2000 F VR In 1600 A

LSI

44926

44942

LSIG

44928

44944

S8V 2000 F VR In 2000 A

LSI

44927

44943

LSIG

44929

44945

S8H 2500 $I_{u\ (40\ ^\circ C)} = 2500\ A$

$I_{cu\ (415\ V)} = 85\ kA$

Microprocessor-based release

PR212 P

code 1SDA0 R1
3 poles 4 poles

F = Front terminals

S8H 2500 F F In 2500 A

LSI

44891

44899

LSIG

44892

44900

VR = Vertical flat-bar rear terminals

S8H 2500 F VR In 2500 A

LSI

44895

44903

LSIG

44896

44904

S8V 2500 $I_{u\ (40\ ^\circ C)} = 2500\ A$

$I_{cu\ (415\ V)} = 120\ kA$

Microprocessor-based release

PR212 P

code 1SDA0 R1
3 poles 4 poles

F = Front terminals

S8V 2500 F F In 2500 A

LSI

44948

44956

LSIG

44949

44957

VR = Vertical flat-bar rear terminals

S8V 2500 F VR In 2500 A

LSI

44952

44960

LSIG

44953

44961

S8H 3200 $I_{u\ (40\ ^\circ C)} = 3200\ A$

$I_{cu\ (415\ V)} = 85\ kA$

Microprocessor-based release

PR212 P

code 1SDA0 R1
3 poles 4 poles

VR = Vertical flat-bar rear terminals

S8H 3200 F VR In 3200 A

LSI

44908

44912

LSIG

44909

44913

S8V 3200 $I_{u\ (40\ ^\circ C)} = 3200\ A$

$I_{cu\ (415\ V)} = 120\ kA$

Microprocessor-based release

PR212 P

code 1SDA0 R1
3 poles 4 poles

VR = Vertical flat-bar rear terminals

S8V 3200 F VR In 3200 A

LSI

44964

44968

LSIG

44965

44969



Order codes

SACE Isomax S2X 100 current-limiting circuit-breaker

F = FIXED



S2X 100 $I_{u\text{ (40 °C)}} = 100 \text{ A}$ $I_{cu\text{ (415 V)}} = 70 \text{ kA}$

Thermomagnetic release I_m code 1SDA0 R1
3 poles

<i>FC Cu = Front terminals for copper cables</i>	
S2X 100 F FC Cu	R 1
S2X 100 F FC Cu	R 1.6
S2X 100 F FC Cu	R 2.5
S2X 100 F FC Cu	R 4
S2X 100 F FC Cu	R 6.3
S2X 100 F FC Cu	R 10
S2X 100 F FC Cu	R 12.5
S2X 100 F FC Cu	R 16
S2X 100 F FC Cu	R 20
S2X 100 F FC Cu	R 25
S2X 100 F FC Cu	R 32
S2X 100 F FC Cu	R 40
S2X 100 F FC Cu	R 50
S2X 100 F FC Cu	R 63
S2X 100 F FC Cu	R 80
S2X 100 F FC Cu	R 100

<i>R = Threaded rear terminals</i>	
S2X 100 F R	R 1
S2X 100 F R	R 1.6
S2X 100 F R	R 2.5
S2X 100 F R	R 4
S2X 100 F R	R 6.3
S2X 100 F R	R 10
S2X 100 F R	R 12.5
S2X 100 F R	R 16
S2X 100 F R	R 20
S2X 100 F R	R 25
S2X 100 F R	R 32
S2X 100 F R	R 40
S2X 100 F R	R 50
S2X 100 F R	R 63
S2X 100 F R	R 80
S2X 100 F R	R 100

P = PLUG-IN



Moving part

S2X 100 $I_{u\text{ (40 °C)}} = 100 \text{ A}$ $I_{cu\text{ (415 V)}} = 70 \text{ kA}$

Thermomagnetic release I_m code 1SDA0 R1
3 poles

<i>S2X 100 P MP</i>	
S2X 100 P MP	R 1
S2X 100 P MP	R 1.6
S2X 100 P MP	R 2.5
S2X 100 P MP	R 4
S2X 100 P MP	R 6.3
S2X 100 P MP	R 10
S2X 100 P MP	R 12.5
S2X 100 P MP	R 16
S2X 100 P MP	R 20
S2X 100 P MP	R 25
S2X 100 P MP	R 32
S2X 100 P MP	R 40
S2X 100 P MP	R 50
S2X 100 P MP	R 63
S2X 100 P MP	R 80
S2X 100 P MP	R 100



F = FIXED



Order codes

SACE Isomax S3X current-limiting circuit-breaker

S3X 125 $I_{\text{u}} (40^{\circ}\text{C}) = 125 \text{ A}$ $I_{\text{cu}} (415 \text{ V}) = 200 \text{ kA}$

		I_m	code 1SDA0	R1
			3 poles	4 poles
Thermomagnetic release				
<i>F = Front terminals</i>				
S3X 125 F F	R 32	500A	45197	45207
S3X 125 F F	R 50	500A	45199	45209
S3X 125 F F	R 80	800A	45201	45211
S3X 125 F F	R 100	1000A	45203	45213
S3X 125 F F	R 125	1250A	45205	45215
<i>EF = Extended front terminals</i>				
S3X 125 F EF	R 32	500A	45217	45267
S3X 125 F EF	R 50	500A	45219	45269
S3X 125 F EF	R 80	800A	45221	45271
S3X 125 F EF	R 100	1000A	45223	45273
S3X 125 F EF	R 125	1250A	45225	45275
<i>FC Cu = Front terminals for copper cables</i>				
S3X 125 F FC Cu	R 32	500A	45227	45277
S3X 125 F FC Cu	R 50	500A	45229	45279
S3X 125 F FC Cu	R 80	800A	45231	45281
S3X 125 F FC Cu	R 100	1000A	45233	45283
S3X 125 F FC Cu	R 125	1250A	45235	45285
<i>FC CuAl = Front terminals for copper/aluminium cables</i>				
S3X 125 F FC CuAl	R 32	500A	45237	45287
S3X 125 F FC CuAl	R 50	500A	45239	45289
S3X 125 F FC CuAl	R 80	800A	45241	45291
S3X 125 F FC CuAl	R 100	1000A	45243	45293
S3X 125 F FC CuAl	R 125	1250A	45245	45295
<i>R = Threaded rear terminals</i>				
S3X 125 F R	R 32	500A	45257	45307
S3X 125 F R	R 50	500A	45259	45309
S3X 125 F R	R 80	800A	45261	45311
S3X 125 F R	R 100	1000A	45263	45313
S3X 125 F R	R 125	1250A	45265	45315
<i>RC = Rear terminals for cables</i>				
S3X 125 F RC	R 32	500A	45247	45297
S3X 125 F RC	R 50	500A	45249	45299
S3X 125 F RC	R 80	800A	45251	45301
S3X 125 F RC	R 100	1000A	45253	45303
S3X 125 F RC	R 125	1250A	45255	45305



Order codes

SACE Isomax S3X current-limiting circuit-breaker

F = FIXED



GS9151

S3X 200 $I_{u} (40^{\circ}\text{C}) = 200 \text{ A}$ $I_{cu} (415 \text{ V}) = 200 \text{ kA}$

Thermomagnetic release		I_m	code 1SDA0 R1
		3 poles	4 poles
<i>F = Front terminals</i>			
S3X 200 F F	R 125	1250A	46039 46045
S3X 200 F F	R 160	1600A	46041 46047
S3X 200 F F	R 200	2000A	46043 46049
<i>EF = Extended front terminals</i>			
S3X 200 F EF	R 125	1250A	46051 46081
S3X 200 F EF	R 160	1600A	46053 46083
S3X 200 F EF	R 200	2000A	46055 46085
<i>FC Cu = Front terminals for copper cables</i>			
S3X 200 F FC Cu	R 125	1250A	46057 46087
S3X 200 F FC Cu	R 160	1600A	46059 46089
S3X 200 F FC Cu	R 200	2000A	46061 46091
<i>FC CuAl = Front terminals for copper/aluminium cables</i>			
S3X 200 F FC CuAl	R 125	1250A	46063 46093
S3X 200 F FC CuAl	R 160	1600A	46065 46095
S3X 200 F FC CuAl	R 200	2000A	46067 46097
<i>R = Threaded rear terminals</i>			
S3X 200 F R	R 125	1250A	46075 46105
S3X 200 F R	R 160	1600A	46077 46107
S3X 200 F R	R 200	2000A	46079 46109
<i>RC = Rear terminals for cables</i>			
S3X 200 F RC	R 125	1250A	46069 46099
S3X 200 F RC	R 160	1600A	46071 46101
S3X 200 F RC	R 200	2000A	46073 46103

P = PLUG-IN



GS9151

Moving part

S3X 125 $I_{u} (40^{\circ}\text{C}) = 125 \text{ A}$ $I_{cu} (415 \text{ V}) = 200 \text{ kA}$

Thermomagnetic release		I_m	code 1SDA0 R1
		3 poles	4 poles
<i>S3X 125 P MP</i>			
S3X 125 P MP	R 32	500A	45317 45327
S3X 125 P MP	R 50	500A	45319 45329
S3X 125 P MP	R 80	800A	45321 45331
S3X 125 P MP	R 100	1000A	45323 45333
S3X 125 P MP	R 125	1250A	45325 45335

S3X 200 $I_{u} (40^{\circ}\text{C}) = 200 \text{ A}$ $I_{cu} (415 \text{ V}) = 200 \text{ kA}$

Thermomagnetic release		I_m	code 1SDA0 R1
		3 poles	4 poles
<i>S3X 200 P MP</i>			
S3X 200 P MP	R 125	1250A	46111 46117
S3X 200 P MP	R 160	1600A	46113 46119
S3X 200 P MP	R 200	2000A	46115 46121

Order codes

SACE Isomax S3X current-limiting circuit-breaker

W = WITHDRAWABLE

Moving part

S3X 125

I_u (40 °C) = 125 A

I_{cu} (415 V) = 200 kA



Thermomagnetic release

		I_m	code 1SDA0 R1
		3 poles	4 poles
S3X 125 W MP	R 32	500A	45337
S3X 125 W MP	R 50	500A	45339
S3X 125 W MP	R8 0	800A	45341
S3X 125 W MP	R 100	1000A	45343
S3X 125 W MP	R 125	1250A	45345

S3X 200

I_u (40 °C) = 200 A

I_{cu} (415 V) = 200 kA

Thermomagnetic release

		I_m	code 1SDA0 R1
		3 poles	4 poles
S3X 200 W MP	R 125	1250A	46123
S3X 200 W MP	R 160	1600A	46125
S3X 200 W MP	R 200	2000A	46127



Order codes

SACE Isomax S4X current-limiting circuit-breaker

F = FIXED



GSE9152

S4X 250 I_u (40 °C) = 250 A I_{cu} (415 V) = 200 kA

Microprocessor-based release	PR211 P	code 1SDA0 R1	PR212 P	code 1SDA0 R1	3 poles	4 poles	3 poles	4 poles
<i>F = Front terminals</i>								
S4X 250 F F	I _n =100	I	46582	46592	LSI	46586	46596	
		LI	46584	46594	LSIG	46588	46598	
S4X 250 F F	I _n =160	I	46583	46593	LSI	46587	46597	
		LI	46585	46595	LSIG	46589	46599	
S4X 250 F F	I _n =250	I	46524	46528	LSI	46526	46530	
		LI	46525	46529	LSIG	46527	46531	
<i>EF = Extended front terminals</i>								
S4X 250 F EF	I _n =100	I	46657	46707	LSI	46663	46713	
		LI	46660	46710	LSIG	46668	46716	
S4X 250 F EF	I _n =160	I	46658	46708	LSI	46664	46714	
		LI	46661	46711	LSIG	46669	46717	
S4X 250 F EF	I _n =250	I	46659	46709	LSI	46665	46715	
		LI	46662	46712	LSIG	46670	46718	
<i>FC Cu = Front terminals for copper cables</i>								
S4X 250 F FC Cu	I _n =100	I	46671	46719	LSI	46677	46725	
		LI	46674	46722	LSIG	46680	46728	
S4X 250 F FC Cu	I _n =160	I	46672	46720	LSI	46678	46726	
		LI	46675	46723	LSIG	46681	46729	
S4X 250 F FC Cu	I _n =250	I	46673	46721	LSI	46679	46727	
		LI	46676	46724	LSIG	46682	46730	
<i>FC CuAl = Front terminals for copper/aluminium cables</i>								
S4X 250 F FC CuAl	I _n =100	I	46830	46842	LSI	46836	46848	
		LI	46833	46845	LSIG	46839	46851	
S4X 250 F FC CuAl	I _n =160	I	46831	46843	LSI	46837	46849	
		LI	46834	46846	LSIG	46840	46852	
S4X 250 F FC CuAl	I _n =250	I	46832	46844	LSI	46838	46850	
		LI	46835	46847	LSIG	46841	46853	
<i>R = Threaded rear terminals</i>								
S4X 250 F R	I _n =100	I	46695	46743	LSI	46701	46749	
		LI	46698	46746	LSIG	46704	46752	
S4X 250 F R	I _n =160	I	46696	46744	LSI	46702	46750	
		LI	46699	46747	LSIG	46705	46753	
S4X 250 F R	I _n =250	I	46697	46745	LSI	46703	46751	
		LI	46700	46748	LSIG	46706	46754	
<i>RC = Rear terminals for cables</i>								
S4X 250 F RC	I _n =100	I	46683	46731	LSI	46689	46737	
		LI	46686	46734	LSIG	46692	46740	
S4X 250 F RC	I _n =160	I	46684	46732	LSI	46690	46738	
		LI	46687	46735	LSIG	46693	46741	
S4X 250 F RC	I _n =250	I	46685	46733	LSI	46691	46739	
		LI	46688	46736	LSIG	46694	46742	

Order codes

SACE Isomax S4X current-limiting circuit-breaker

P = PLUG-IN



GSI9152

Moving part

S4X 250

I_u (40 °C) = 250 A

I_{cu} (415 V) = 200 kA

Microprocessor-based release		PR211 P	code 1SDA0 R1	PR212 P	code 1SDA0 R1	
			3 poles	4 poles	3 poles	4 poles
S4X 250 P MP	In=100	I	46755	46767	LSI	46761
		LI	46758	46770	LSIG	46764
S4X 250 P MP	In=160	I	46756	46768	LSI	46762
		LI	46759	46771	LSIG	46765
S4X 250 P MP	In=250	I	46757	46769	LSI	46763
		LI	46760	46772	LSIG	46766

W = WITHDRAWABLE



GSI9152

Moving part

S4X 250

I_u (40 °C) = 250 A

I_{cu} (415 V) = 200 kA

Microprocessor-based release		PR211 P	code 1SDA0 R1	PR212 P	code 1SDA0 R1	
			3 poles	4 poles	3 poles	4 poles
S4X 250 W MP	In=100	I	46779	46791	LSI	46785
		LI	46782	46794	LSIG	46788
S4X 250 W MP	In=160	I	46780	46792	LSI	46786
		LI	46783	46795	LSIG	46789
S4X 250 W MP	In=250	I	46781	46793	LSI	46787
		LI	46784	46796	LSIG	46790



Order codes

SACE Isomax S6X current-limiting circuit-breaker

F = FIXED



GS8153

S6X 400 I_u (40 °C) = 400 A I_{cu} (415 V) = 200 kA

Microprocessor-based release	PR211 P	code 1SDA0 R1	PR212 P	code 1SDA0 R1	
		3 poles	4 poles	3 poles	4 poles
<i>F = Front terminals</i>					
S6X 400 F F	$I_n=320$	I 47595	47601	LSI 47597	47603
		LI 47596	47602	LSIG 47598	47604
S6X 400 F F	$I_n=400$	I 46534	46538	LSI 46536	46540
		LI 46535	46539	LSIG 46537	46541
<i>EF = Extended front terminals</i>					
S6X 400 F EF	$I_n=320$	I 47661	47693	LSI 47665	47697
		LI 47663	47695	LSIG 47667	47699
S6X 400 F EF	$I_n=400$	I 47660	47692	LSI 47664	47696
		LI 47662	47694	LSIG 47666	47698
<i>FC CuAl = Front terminals for copper/aluminium cables</i>					
S6X 400 F FC CuAl	$I_n=320$	I 47669	47701	LSI 47673	47704
		LI 47671	47703	LSIG 47675	47707
S6X 400 F FC CuAl	$I_n=400$	I 47668	47700	LSI 47672	47705
		LI 47670	47702	LSIG 47674	47706
<i>R = Threaded rear terminals</i>					
S6X 400 F R	$I_n=320$	I 47685	47717	LSI 47689	47721
		LI 47687	47719	LSIG 47691	47723
S6X 400 F R	$I_n=400$	I 47684	47716	LSI 47688	47720
		LI 47686	47718	LSIG 47690	47722
<i>RC = Rear terminals for cables</i>					
S6X 400 F RC	$I_n=320$	I 47677	47709	LSI 47681	47713
		LI 47679	47711	LSIG 47683	47715
S6X 400 F RC	$I_n=400$	I 47676	47708	LSI 47680	47712
		LI 47678	47710	LSIG 47682	47714

S6X 630 I_u (40 °C) = 630 A I_{cu} (415 V) = 200 kA

Microprocessor-based release	PR211 P	code 1SDA0 R1	PR212 P	code 1SDA0 R1	
		3 poles	4 poles	3 poles	4 poles
<i>F = Front terminals</i>					
S6X 630 F F	$I_n=630$	I 46560	46564	LSI 46562	46566
		LI 46561	46565	LSIG 46563	46567
<i>EF = Extended front terminals</i>					
S6X 630 F EF	$I_n=630$	I 47724	47744	LSI 47726	47746
		LI 47725	47745	LSIG 47727	47747
<i>FC CuAl = Front terminals for copper/aluminium cables</i>					
S6X 630 F FC CuAl	$I_n=630$	I 47729	47749	LSI 47731	47751
		LI 47730	47750	LSIG 47732	47752
<i>R = Threaded rear terminals</i>					
S6X 630 F R	$I_n=630$	I 47739	47759	LSI 47741	47761
		LI 47740	47760	LSIG 47742	47762
<i>RC = Rear terminals for cables</i>					
S6X 630 F RC	$I_n=630$	I 47734	47754	LSI 47736	47756
		LI 47735	47755	LSIG 47737	47757

Order codes

SACE Isomax S6X current-limiting circuit-breaker

W = WITHDRAWABLE

Moving part



S6X 400 $I_{u} (40^{\circ}\text{C}) = 400 \text{ A}$ $I_{cu} (415 \text{ V}) = 200 \text{ kA}$

Microprocessor-based release		PR211 P	code 1SDA0 R1 3 poles 4 poles	PR212 P	code 1SDA0 R1 3 poles 4 poles
S6X 400 W MP	In=320	I	47633 47643	LSI	47637 47647
		LI	47635 47645	LSIG	47641 47649
S6X 400 W MP	In=400	I	47632 47642	LSI	47636 47646
		LI	47634 47644	LSIG	47640 47648

S6X 630 $I_{u} (40^{\circ}\text{C}) = 630 \text{ A}$ $I_{cu} (415 \text{ V}) = 200 \text{ kA}$

Microprocessor-based release		PR211 P	code 1SDA0 R1 3 poles 4 poles	PR212 P	code 1SDA0 R1 3 poles 4 poles
S6X 630 W MP	In=630	I	47650 47655	LSI	47652 47657
		LI	47651 47656	LSIG	47653 47658



Order codes

SACE Isomax S2X 80 circuit-breaker for motor protection

F = FIXED



GS9154

S2X 80 $I_{u\text{ (40 °C)}} = 80 \text{ A}$ $I_{cu\text{ (415 V)}} = 70 \text{ kA}$

Magnetic only release

I_m code 1SDA0 R1
3 poles

FC Cu = Front terminals for copper cables

S2X 80 F FC Cu	R 1	13A	50231
S2X 80 F FC Cu	R 1.6	21A	50232
S2X 80 F FC Cu	R 2	26A	50233
S2X 80 F FC Cu	R 2.5	32A	50234
S2X 80 F FC Cu	R 3.2	42A	50235
S2X 80 F FC Cu	R 4	52A	50236
S2X 80 F FC Cu	R 5	65A	50237
S2X 80 F FC Cu	R 6.5	84A	50238
S2X 80 F FC Cu	R 8.5	110A	50239
S2X 80 F FC Cu	R 11	145A	50240
S2X 80 F FC Cu	R 12.5	163A	50241
S2X 80 F FC Cu	R 16	210A	50242
S2X 80 F FC Cu	R 20	260A	50243
S2X 80 F FC Cu	R 25	325A	50244
S2X 80 F FC Cu	R 32	415A	50245
S2X 80 F FC Cu	R 42	545A	50246
S2X 80 F FC Cu	R 52	680A	50247
S2X 80 F FC Cu	R 63	820A	50248
S2X 80 F FC Cu	R 80	1040A	50249

R = Threaded rear terminals

S2X 80 F R	R 1	13A	50250
S2X 80 F R	R 1.6	21A	50251
S2X 80 F R	R 2	26A	50252
S2X 80 F R	R 2.5	32A	50253
S2X 80 F R	R 3.2	42A	50254
S2X 80 F R	R 4	52A	50255
S2X 80 F R	R 5	65A	50256
S2X 80 F R	R 6.5	84A	50257
S2X 80 F R	R 8.5	110A	50258
S2X 80 F R	R 11	145A	50259
S2X 80 F R	R 12.5	163A	50260
S2X 80 F R	R 16	210A	50261
S2X 80 F R	R 20	260A	50262
S2X 80 F R	R 25	325A	50263
S2X 80 F R	R 32	415A	50264
S2X 80 F R	R 42	545A	50265
S2X 80 F R	R 52	680A	50266
S2X 80 F R	R 63	820A	50267
S2X 80 F R	R 80	1040A	50268

P = PLUG-IN



GS9154

S2X 80 $I_{u\text{ (40 °C)}} = 80 \text{ A}$ $I_{cu\text{ (415 V)}} = 70 \text{ kA}$

Magnetic only release

I_m code 1SDA0 R1
3 poles

S2X 80 P MP	R 1	13A	50269
S2X 80 P MP	R 1.6	21A	50270
S2X 80 P MP	R 2	26A	50271
S2X 80 P MP	R 2.5	32A	50272
S2X 80 P MP	R 3.2	41A	50273
S2X 80 P MP	R 4	52A	50274
S2X 80 P MP	R 5	65A	50275
S2X 80 P MP	R 6.5	84A	50276
S2X 80 P MP	R 8.5	110A	50277
S2X 80 P MP	R 11	145A	50278
S2X 80 P MP	R 12.5	163A	50279
S2X 80 P MP	R 16	210A	50280
S2X 80 P MP	R 20	260A	50281
S2X 80 P MP	R 25	325A	50282
S2X 80 P MP	R 32	415A	50283
S2X 80 P MP	R 42	545A	50284
S2X 80 P MP	R 52	680A	50285
S2X 80 P MP	R 63	820A	50286
S2X 80 P MP	R 80	1040A	50287



F = FIXED



PSI9807

Order codes

SACE Isomax S3 circuit-breaker for motor protection

S3N 160

I_u (40 °C) = 160 A

I_{cu} (415 V) = 35 kA

Magnetic only release

I_m

code 1SDA0 R1
3 poles

F = Front terminals

S3N 160 F F	R 3	12 ... 36A	47782
S3N 160 F F	R 5	20 ... 60A	47783
S3N 160 F F	R 10	40 ... 120A	47784
S3N 160 F F	R 25	100 ... 300A	47785
S3N 160 F F	R 50	200 ... 600A	47786
S3N 160 F F	R 100	400 ... 1200A	47787
S3N 160 F F	R 125	500 ... 1500A	47788
S3N 160 F F	R 160	640 ... 1600A	47789

S3H 160

I_u (40 °C) = 160 A

I_{cu} (415 V) = 65 kA

Magnetic only release

I_m

code 1SDA0 R1
3 poles

F = Front terminals

S3H 160 F F	R 50	200 ... 600A	45185
S3H 160 F F	R 100	400 ... 1200A	45186
S3H 160 F F	R 125	500 ... 1500A	45187
S3H 160 F F	R 160	640 ... 1600A	45188

S3L 160

I_u (40 °C) = 160 A

I_{cu} (415 V) = 85 kA

Magnetic only release

I_m

code 1SDA0 R1
3 poles

F = Front terminals

S3L 160 F F	R 50	200 ... 600A	50544
S3L 160 F F	R 100	400 ... 1200A	50545
S3L 160 F F	R 125	500 ... 1500A	50546
S3L 160 F F	R 160	640 ... 1600A	50547

S3N 250

I_u (40 °C) = 250 A

I_{cu} (415 V) = 35 kA

Magnetic only release

I_m

code 1SDA0 R1
3 poles

F = Front terminals

S3N 250 F F	R 160	640 ... 1920A	48651
S3N 250 F F	R 200	800 ... 2400A	48654

S3H 250

I_u (40 °C) = 250 A

I_{cu} (415 V) = 65 kA

Magnetic only release

I_m

code 1SDA0 R1
3 poles

F = Front terminals

S3H 250 F F	R 160	640 ... 1920A	48657
S3H 250 F F	R 200	800 ... 2400A	48658

S3L 250

I_u (40 °C) = 250 A

I_{cu} (415 V) = 85 kA

Magnetic only release

I_m

code 1SDA0 R1
3 poles

F = Front terminals

S3L 250 F F	R 160	640 ... 1920A	50548
S3L 250 F F	R 200	800 ... 2400A	50549

Note

Plug-in and withdrawable version are taken from the corresponding fixed version by means of the conversion kits indicated on page 80.



Order codes

SACE Isomax S4 circuit-breaker for motor protection

F = FIXED



PS5510

S4N 160 $I_{u\ (40\ ^\circ C)} = 160\ A$ $I_{cu\ (415\ V)} = 35\ kA$

Microprocessor-based release PR212
MP code 1SDA0 R1
3 poles

F = Front terminals

S4N 160 F F	$I_n = 100A$	LRIU	50139
S4N 160 F F	$I_n = 160A$	LRIU	50140

S4H 160 $I_{u\ (40\ ^\circ C)} = 160\ A$ $I_{cu\ (415\ V)} = 65\ kA$

Microprocessor-based release PR212
MP code 1SDA0 R1
3 poles

F = Front terminals

S4H 160 F F	$I_n = 100A$	LRIU	45049
S4H 160 F F	$I_n = 160A$	LRIU	45050

S4L 160 $I_{u\ (40\ ^\circ C)} = 160\ A$ $I_{cu\ (415\ V)} = 100\ kA$

Microprocessor-based release PR212
MP code 1SDA0 R1
3 poles

F = Front terminals

S4L 160 F F	$I_n = 100A$	LRIU	50550
S4L 160 F F	$I_n = 160A$	LRIU	50551

S4N 250 $I_{u\ (40\ ^\circ C)} = 250\ A$ $I_{cu\ (415\ V)} = 35\ kA$

Microprocessor-based release PR212
MP code 1SDA0 R1
3 poles

F = Front terminals

S4N 250 F F	$I_n = 200A$	LRIU	50141
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S4H 250 $I_{u\ (40\ ^\circ C)} = 250\ A$ $I_{cu\ (415\ V)} = 65\ kA$

Microprocessor-based release PR212
MP code 1SDA0 R1
3 poles

F = Front terminals

S4H 250 F F	$I_n = 200A$	LRIU	48662
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S4L 250 $I_{u\ (40\ ^\circ C)} = 250\ A$ $I_{cu\ (415\ V)} = 100\ kA$

Microprocessor-based release PR212
MP code 1SDA0 R1
3 poles

F = Front terminals

S4L 250 F F	$I_n = 200A$	LRIU	50552
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Note

Plug-in and withdrawable version are taken from the corresponding fixed version by means of the conversion kits indicated on page 80.



Order codes

SACE Isomax S5-S6-S7 circuit-breakers for motor protection

F = FIXED



PSS9613

S5N 400 $I_{u\ (40\ ^\circ C)} = 400\ A$ $I_{cu\ (415\ V)} = 35\ kA$

Microprocessor-based release

PR212 MP code 1SDA0 R1
3 poles

F = Front terminals

S5N 400 F F $I_n = 320A$

LRIU 50142

S5H 400 $I_{u\ (40\ ^\circ C)} = 400\ A$ $I_{cu\ (415\ V)} = 65\ kA$

Microprocessor-based release

PR212 MP code 1SDA0 R1
3 poles

F = Front terminals

S5H 400 F F $I_n = 320A$

LRIU 45051

S5L 400 $I_{u\ (40\ ^\circ C)} = 400\ A$ $I_{cu\ (415\ V)} = 100\ kA$

Microprocessor-based release

PR212 MP code 1SDA0 R1
3 poles

F = Front terminals

S5L 400 F F $I_n = 320A$

LRIU 50553

S6N 800 $I_{u\ (40\ ^\circ C)} = 800\ A$ $I_{cu\ (415\ V)} = 35\ kA$

Microprocessor-based release

PR212 MP code 1SDA0 R1
3 poles

F = Front terminals

S6N 800 F F $I_n = 630A$

LRIU 50143

S6H 800 $I_{u\ (40\ ^\circ C)} = 800\ A$ $I_{cu\ (415\ V)} = 65\ kA$

Microprocessor-based release

PR212 MP code 1SDA0 R1
3 poles

F = Front terminals

S6H 800 F F $I_n = 630A$

LRIU 45052

S6L 800 $I_{u\ (40\ ^\circ C)} = 800\ A$ $I_{cu\ (415\ V)} = 100\ kA$

Microprocessor-based release

PR212 MP code 1SDA0 R1
3 poles

F = Front terminals

S6L 800 F F $I_n = 630A$

LRIU 50554

S7S 1250 $I_{u\ (40\ ^\circ C)} = 1250\ A$ $I_{cu\ (415\ V)} = 50\ kA$

Microprocessor-based release

PR212 MP code 1SDA0 R1
3 poles

F = Front terminals

S7S 1250 F F $I_n = 1000A$

LRIU 50144

S7H 1250 $I_{u\ (40\ ^\circ C)} = 1250\ A$ $I_{cu\ (415\ V)} = 65\ kA$

Microprocessor-based release

PR212 MP code 1SDA0 R1
3 poles

F = Front terminals

S7H 1250 F F $I_n = 1000A$

LRIU 45053

Note

Withdrawable version are taken from the corresponding fixed version by means of the conversion kits indicated on page 80.



PSS9620



Order codes

SACE Isomax S3X-S4X-S6X current-limiting circuit-breakers for motor protection

F = FIXED



GSIS151

S3X 125 $I_{u\ (40\ ^\circ C)} = 125\ A$ $I_{cu\ (415\ V)} = 200\ kA$

Magnetic only release

I_m code 1SDA0 R1
3 poles

F = Front terminals

S3X 125 F F	R 25	100 ... 300A	45387
S3X 125 F F	R 50	200 ... 600A	45388
S3X 125 F F	R 100	400 ... 1200A	45389
S3X 125 F F	R 125	500 ... 1500A	45390

S3X 200 $I_{u\ (40\ ^\circ C)} = 200\ A$ $I_{cu\ (415\ V)} = 200\ kA$

Magnetic only release

I_m code 1SDA0 R1
3 poles

F = Front terminals

S3X 200 F F	R 125	500 ... 1500A	46135
S3X 200 F F	R 160	640 ... 1920A	48659
S3X 200 F F	R 200	800 ... 2400A	48660

S4X 250 $I_{u\ (40\ ^\circ C)} = 250\ A$ $I_{cu\ (415\ V)} = 200\ kA$

Microprocessor-based release

PR212 MP code 1SDA0 R1
3 poles

F = Front terminals

S4X 250 F F	In = 100A	LRIU	46590
S4X 250 F F	In = 160A	LRIU	46591
S4X 250 F F	In = 200A	LRIU	48661

S6X 400 $I_{u\ (40\ ^\circ C)} = 400\ A$ $I_{cu\ (415\ V)} = 200\ kA$

Microprocessor-based release

PR212 MP code 1SDA0 R1
3 poles

F = Front terminals

S6X 400 F F	In = 320A	LRIU	47780
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S6X 630 $I_{u\ (40\ ^\circ C)} = 630\ A$ $I_{cu\ (415\ V)} = 200\ kA$

Microprocessor-based release

PR212 MP code 1SDA0 R1
3 poles

F = Front terminals

S6X 630 F F	In = 400A	LRIU	47781
S6X 630 F F	In = 630A	LRIU	48663



GSIS152



GSIS153

Note

Plug-in and withdrawable version are taken from the corresponding fixed version by means of the conversion kits indicated on page 80.



F = FIXED



PSI907

Order codes

SACE Isomax S circuit-breakers for applications up to 1000V

S3L 160 $I_{u(40\text{ }^{\circ}\text{C})} = 160 \text{ A}$ $I_{cu(1000\text{ V})} = 6 \text{ kA}$

Thermomagnetic release		AC ~	code 1SDA0 R1 3 poles	
<i>F = Front terminals</i>				
S3L 160 F F	R 32	Im	500A	50436
S3L 160 F F	R 50	Im	500A	50437
S3L 160 F F	R 80	Im	800A	50438
S3L 160 F F	R 100	Im	1000A	50439
S3L 160 F F	R 125	Im	1250A	50441
S3L 160 F F	R 160	Im	1600A	50442

S3L 160 $I_{u(40\text{ }^{\circ}\text{C})} = 160 \text{ A}$ $I_{cu(1000\text{ V})} = 40 \text{ kA}$

Thermomagnetic release		DC -	code 1SDA0 R1 4 poles	
<i>F = Front terminals</i>				
S3L 160 F F (N100%)	R 32	Im	500A	50443
S3L 160 F F (N100%)	R 50	Im	500A	50444
S3L 160 F F (N100%)	R 80	Im	800A	50445
S3L 160 F F (N100%)	R 100	Im	1000A	50446
S3L 160 F F (N100%)	R 125	Im	1250A	50447
S3L 160 F F (N100%)	R 160	Im	1600A	50448

S3L 250 $I_{u(40\text{ }^{\circ}\text{C})} = 250 \text{ A}$ $I_{cu(1000\text{ V})} = 40 \text{ kA}$

Thermomagnetic release		DC -	code 1SDA0 R1 4 poles	
<i>F = Front terminals</i>				
S3L 250 F F (N100%)	R 200	Im	2000A	50449
S3L 250 F F (N100%)	R 250	Im	2500A	50450

S3X 125 $I_{u(40\text{ }^{\circ}\text{C})} = 125 \text{ A}$ $I_{cu(1000\text{ V})} = 30 \text{ kA}$

Thermomagnetic release		AC ~	code 1SDA0 R1 3 poles	
<i>F = Front terminals</i>				
S3X 125 F F	R 32	Im	500A	50451
S3X 160 F F	R 50	Im	500A	50452
S3X 160 F F	R 80	Im	800A	50453
S3X 160 F F	R 100	Im	1000A	50454
S3X 160 F F	R 125	Im	1250A	50455



PSI9610

S4L 160 $I_{u(40\text{ }^{\circ}\text{C})} = 160 \text{ A}$ $I_{cu(1000\text{ V})} = 8 \text{ kA}$

Microprocessor-based release	PR211 P	code 1SDA0 R1 3 poles	PR212 P	code 1SDA0 R1 3 poles
<i>F = Front terminals</i>				
S4L 160 F F	In 100 A LI	50547	LSI	50458
			LSIG	50459

S4L 250 $I_{u(40\text{ }^{\circ}\text{C})} = 250 \text{ A}$ $I_{cu(1000\text{ V})} = 8 \text{ kA}$

Microprocessor-based release	PR211 P	code 1SDA0 R1 3 poles	PR212 P	code 1SDA0 R1 3 poles
<i>F = Front terminals</i>				
S4L 250 F F	In 250 A LI	50460	LSI	50461
			LSIG	50462

S4X 250 $I_{u(40\text{ }^{\circ}\text{C})} = 250 \text{ A}$ $I_{cu(1000\text{ V})} = 30 \text{ kA}$

Microprocessor-based release	PR211 P	code 1SDA0 R1 3 poles	PR212 P	code 1SDA0 R1 3 poles
<i>F = Front terminals</i>				
S4X 250 F F	In 250 A LI	50463	LSI	50464
			LSIG	50465



Order codes

SACE Isomax S circuit-breakers for applications up to 1000V

F = FIXED



S5L 400 $I_{u\ (40\ ^\circ C)} = 400\ A$ $I_{cu\ (1000\ V)} = 40\ kA$

Thermomagnetic release DC — code 1SDA0 R1
4 poles

F = Front terminals

S5L 400 F F (N100%)	R 400	Im 4000A	50466
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S6L 630 $I_{u\ (40\ ^\circ C)} = 630\ A$ $I_{cu\ (1000\ V)} = 40\ kA$

Thermomagnetic release DC — code 1SDA0 R1
4 poles

F = Front terminals

S6L 630 F F (N100%)	R 630	Im 6300A	50467
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S6L 800 $I_{u\ (40\ ^\circ C)} = 800\ A$ $I_{cu\ (1000\ V)} = 50\ kA$

Thermomagnetic release DC — code 1SDA0 R1
4 poles

F = Front terminals

S6L 800 F F (N100%)	R 800	Im 8000A	50468
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S5L 400 $I_{u\ (40\ ^\circ C)} = 400\ A$ $I_{cu\ (1000\ V)} = 8\ kA$

Microprocessor-based release PR211 P code 1SDA0 R1
3 poles PR212 P code 1SDA0 R1
3 poles

S5L 400 F F	In 400 A LI	50582	LSI	50583
			LSIG	50584

S6L 630 $I_{u\ (40\ ^\circ C)} = 630\ A$ $I_{cu\ (1000\ V)} = 12\ kA$

Microprocessor-based release PR211 P code 1SDA0 R1
3 poles PR212 P code 1SDA0 R1
3 poles

S6L 630 F F	In 630 A LI	50469	LSI	50470
			LSIG	50471



S6L 800 $I_{u\ (40\ ^\circ C)} = 800\ A$ $I_{cu\ (1000\ V)} = 12\ kA$

Microprocessor-based release PR211 P code 1SDA0 R1
3 poles PR212 P code 1SDA0 R1
3 poles

F = Front terminals

S6L 800 F F	In 800 A LI	50534	LSI	50535
			LSIG	50536

S6X 630 $I_{u\ (40\ ^\circ C)} = 630\ A$ $I_{cu\ (1000\ V)} = 30\ kA$

Microprocessor-based release PR211 P code 1SDA0 R1
3 poles PR212 P code 1SDA0 R1
3 poles

F = Front terminals

S6X 630 F F	In 630 A LI	50472	LSI	50473
			LSIG	50474



S3D/S6D/S7D $I_{u\ (40\ ^\circ C)} = 320/800/1600\ A$

Switch-disconnector code 1SDA0 R1
3 poles

F = Front terminals

S3D 320 F F		50446
S6D 800 F F		50475
S7D 1600 F F		50479



F = FIXED



Order codes

SACE Isomax S2D switch-disconnectors

S2D 125 $I_{u\ (40\ ^\circ C)} = 125\ A$ $I_{cw\ (1s)} = 2.2\ kA$ $I_{cm\ (415\ V)} = 3.1\ kA$

Switch-disconnector	code 1SDA0 R1 3 poles 4 poles
<i>FC Cu = Front terminals for copper cables</i>	
S2D 125 F FC Cu	45057 45063
<i>FC CuAl = Front terminals for copper/aluminium cables</i>	
S2D 125 F FC CuAl*	45058 45064
S2D 125 F FC CuAl**	45059 45065
<i>EF = Extended front terminals</i>	
S2D 125 F EF	45056 45062
<i>R = Threaded rear terminals</i>	
S2D 125 F R	45060 45066

S2D 160 $I_{u\ (40\ ^\circ C)} = 160\ A$ $I_{cw\ (1s)} = 2.2\ kA$ $I_{cm\ (415\ V)} = 3.1\ kA$

Switch-disconnector	code 1SDA0 R1 3 poles 4 poles
<i>FC Cu = Front terminals for copper cables</i>	
S2D 160 F FC Cu	20632 45071
<i>FC CuAl = Front terminals for copper/aluminium cables</i>	
S2D 160 F FC CuAl*	45068 45072
S2D 160 F FC CuAl**	20633 45074
<i>EF = Extended front terminals</i>	
S2D 160 F EF	20630 45070
<i>R = Threaded rear terminals</i>	
S2D 160 F R	20634 45073

P = PLUG-IN



Moving part

S2D 125 $I_{u\ (40\ ^\circ C)} = 125\ A$ $I_{cw\ (1s)} = 2.2\ kA$ $I_{cm\ (415\ V)} = 3.1\ kA$

Switch-disconnector	code 1SDA0 R1 3 poles 4 poles
S2D 125 P MP	45061 45067

S2D 160 $I_{u\ (40\ ^\circ C)} = 160\ A$ $I_{cw\ (1s)} = 2.2\ kA$ $I_{cm\ (415\ V)} = 3.1\ kA$

Switch-disconnector	code 1SDA0 R1 3 poles 4 poles
S2D 160 P MP	45069 45075

* Cable section = 1 x 2.5...50 mm²

** Cable section = 1 x 35...95 mm²



Order codes

SACE Isomax S3D switch-disconnectors

F = FIXED



PSIS007

S3D 100 $I_{u\ (40\ ^\circ C)} = 100\ A$ $I_{cw\ (1s)} = 6.5\ kA$ $I_{cm\ (415\ V)} = 10\ kA$

Switch-disconnector	code 1SDA0 R1 3 poles 4 poles
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F = Front terminals

S3D 100 F F	20906 20907
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EF = Extended front terminals

S3D 100 F EF	20329 20354
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*FC Cu = Front terminals
for copper cables*

S3D 100 F FC Cu	20335 20360
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*FC CuAl = Front terminals
for copper/aluminium cables*

S3D 100 F FC CuAl	20341 20366
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R = Threaded rear terminals

S3D 100 F R	20353 20378
-------------	------------------

RC = Rear terminals for cables

S3D 100 F RC	20347 20372
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S3D 160 $I_{u\ (40\ ^\circ C)} = 160\ A$ $I_{cw\ (1s)} = 6.5\ kA$ $I_{cm\ (415\ V)} = 10\ kA$

Switch-disconnector	code 1SDA0 R1 3 poles 4 poles
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F = Front terminals

S3D 160 F F	20908 20909
-------------	------------------

EF = Extended front terminals

S3D 160 F EF	20383 20408
--------------	------------------

*FC Cu = Front terminals
for copper cables*

S3D 160 F FC Cu	20389 20414
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*FC CuAl = Front terminals
for copper/aluminium cables*

S3D 160 F FC CuAl	20395 20420
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R = Threaded rear terminals

S3D 160 F R	20407 20432
-------------	------------------

RC = Rear terminals for cables

S3D 160 F RC	20401 20426
--------------	------------------

P = PLUG-IN



PSIS007

S3D 100 $I_{u\ (40\ ^\circ C)} = 100\ A$ $I_{cw\ (1s)} = 6.5\ kA$ $I_{cm\ (415\ V)} = 10\ kA$

Switch-disconnector	code 1SDA0 R1 3 poles 4 poles
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S3D 100 P MP	20379 20381
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S3D 160 $I_{u\ (40\ ^\circ C)} = 160\ A$ $I_{cw\ (1s)} = 6.5\ kA$ $I_{cm\ (415\ V)} = 10\ kA$

Switch-disconnector	code 1SDA0 R1 3 poles 4 poles
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S3D 160 P MP	20433 20435
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W = WITHDRAWABLE



PSIS007

S3D 100 $I_{u\ (40\ ^\circ C)} = 100\ A$ $I_{cw\ (1s)} = 6.5\ kA$ $I_{cm\ (415\ V)} = 10\ kA$

Switch-disconnector	code 1SDA0 R1 3 poles 4 poles
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S3D 100 W MP	20380 20382
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S3D 160 $I_{u\ (40\ ^\circ C)} = 160\ A$ $I_{cw\ (1s)} = 6.5\ kA$ $I_{cm\ (415\ V)} = 10\ kA$

Switch-disconnector	code 1SDA0 R1 3 poles 4 poles
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S3D 160 W MP	20434 20436
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Order codes

SACE Isomax S3D switch-disconnectors

F = FIXED



PSI9807

S3D 250 $I_{u\ (40\ ^\circ C)} = 250\ A$ $I_{cw\ (1s)} = 6.5\ kA$ $I_{cm\ (415\ V)} = 10\ kA$

Switch-disconnector	code 1SDA0 R1 3 poles 4 poles
<i>F = Front terminals</i>	
S3D 250 F F	20910 20911
<i>EF = Extended front terminals</i>	
S3D 250 F EF	20437 20462
<i>FC Cu = Front terminals for copper cables</i>	
S3D 250 F FC Cu	20443 20468
<i>FC CuAl = Front terminals for copper/aluminium cables</i>	
S3D 250 F FC CuAl	20449 20474
<i>R = Threaded rear terminals</i>	
S3D 250 F R	20461 20486
<i>RC = Rear terminals for cables</i>	
S3D 250 F RC	20455 20480

S3D 320 $I_{u\ (40\ ^\circ C)} = 320\ A$ $I_{cw\ (1s)} = 6.5\ kA$ $I_{cm\ (415\ V)} = 10\ kA$

Switch-disconnector	code 1SDA0 R1 3 poles 4 poles
<i>F = Front terminals</i>	
S3D 320 F F	20912 20913
<i>EF = Extended front terminals</i>	
S3D 320 F EF	20491 20516
<i>FC Cu = Front terminals for copper cables</i>	
S3D 320 F FC Cu	20497 20522
<i>FC CuAl = Front terminals for copper/aluminium cables</i>	
S3D 320 F FC CuAl	20503 20528
<i>R = Threaded rear terminals</i>	
S3D 320 F R	20515 20540
<i>RC = Rear terminals for cables</i>	
S3D 320 F RC	20509 20534

P = PLUG-IN



PSI9807

S3D 250 $I_{u\ (40\ ^\circ C)} = 250\ A$ $I_{cw\ (1s)} = 6.5\ kA$ $I_{cm\ (415\ V)} = 10\ kA$

Switch-disconnector	code 1SDA0 R1 3 poles 4 poles
S3D 250 P MP	20487 20489

S3D 320 $I_{u\ (40\ ^\circ C)} = 320\ A$ $I_{cw\ (1s)} = 6.5\ kA$ $I_{cm\ (415\ V)} = 10\ kA$

Switch-disconnector	code 1SDA0 R1 3 poles 4 poles
S3D 320 P MP	20541 20543

W = WITHDRAWABLE



PSI9807

S3D 250 $I_{u\ (40\ ^\circ C)} = 250\ A$ $I_{cw\ (1s)} = 6.5\ kA$ $I_{cm\ (415\ V)} = 10\ kA$

Switch-disconnector	code 1SDA0 R1 3 poles 4 poles
S3D 250 W MP	20488 20490

S3D 320 $I_{u\ (40\ ^\circ C)} = 320\ A$ $I_{cw\ (1s)} = 6.5\ kA$ $I_{cm\ (415\ V)} = 10\ kA$

Switch-disconnector	code 1SDA0 R1 3 poles 4 poles
S3D 320 W MP	20542 20544



Order codes

SACE Isomax S6D switch-disconnectors

F = FIXED



S6D 400 $I_{u\ (40\ ^\circ C)} = 400\ A$ $I_{cw\ (1s)} = 15\ kA$ $I_{cm\ (415\ V)} = 30\ kA$

Switch-disconnector	code 1SDA0 R1 3 poles 4 poles
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F = Front terminals

S6D 400 F F	20545 20581
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EF = Extended front terminals

S6D 400 F EF	20552 20588
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*FC CuAl = Front terminals
for copper/aluminium cables*

S6D 400 F FC CuAl	20566 20601
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R = Threaded rear terminals

S6D 400 F R	20573 20608
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RC = Rear terminals for cables

S6D 400 F RC	23326 23327
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S6D 630 $I_{u\ (40\ ^\circ C)} = 630\ A$ $I_{cw\ (1s)} = 15\ kA$ $I_{cm\ (415\ V)} = 30\ kA$

Switch-disconnector	code 1SDA0 R1 3 poles 4 poles
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F = Front terminals

S6D 630 F F	20674 20699
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EF = Extended front terminals

S6D 630 F EF	20680 20705
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*FC CuAl = Front terminals
for copper/aluminium cables*

S6D 630 F FC CuAl	20686 20711
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R = Threaded rear terminals

S6D 630 F R	20698 20723
-------------	------------------

RC = Rear terminals for cables

S6D 630 F RC	20692 20717
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S6D 800 $I_{u\ (40\ ^\circ C)} = 800\ A$ $I_{cw\ (1s)} = 15\ kA$ $I_{cm\ (415\ V)} = 30\ kA$

Switch-disconnector	code 1SDA0 R1 3 poles 4 poles
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F = Front terminals

S6D 800 F F	20724 20749
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EF = Extended front terminals

S6D 800 F EF	20730 20755
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*FC CuAl = Front terminals
for copper/aluminium cables*

S6D 800 F FC CuAl	20736 20761
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R = Threaded rear terminals

S6D 800 F R	20748 20773
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RC = Rear terminals for cables

S6D 800 F RC	20742 20767
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W = WITHDRAWABLE



S6D 400 $I_{u\ (40\ ^\circ C)} = 400\ A$ $I_{cw\ (1s)} = 15\ kA$ $I_{cm\ (415\ V)} = 30\ kA$

Switch-disconnector	code 1SDA0 R1 3 poles 4 poles
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S6D 400 W MP	20617 20619
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S6D 630 $I_{u\ (40\ ^\circ C)} = 630\ A$ $I_{cw\ (1s)} = 15\ kA$ $I_{cm\ (415\ V)} = 30\ kA$

Switch-disconnector	code 1SDA0 R1 3 poles 4 poles
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S6D 630 W MP	20918 20919
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S6D 800 $I_{u\ (40\ ^\circ C)} = 800\ A$ $I_{cw\ (1s)} = 15\ kA$ $I_{cm\ (415\ V)} = 30\ kA$

Switch-disconnector	code 1SDA0 R1 3 poles 4 poles
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S6D 800 W MP	20920 20921
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Order codes

SACE Isomax S7D switch-disconnectors

F = FIXED



S7D 1000 $I_{u\ (40\ ^\circ C)} = 1000\ A$ $I_{cw\ (1s)} = 25\ kA$ $I_{cm\ (415\ V)} = 52.5\ kA$

Switch-disconnector	code 1SDA0 R1
	3 poles 4 poles

F = Front terminals

S7D 1000 F F	20774	20799
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EF = Extended front terminals

S7D 1000 F EF	20780	20805
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*FC CuAl = Front terminals
for copper/aluminium cables*

S7D 1000 F FC CuAl	20786	20811
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VR = Vertical flat-bar rear terminals

S7D 1000 F VR	20798	20823
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HR = Horizontal flat-bar rear terminals

S7D 1000 F HR	20792	20817
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S7D 1250 $I_{u\ (40\ ^\circ C)} = 1250\ A$ $I_{cw\ (1s)} = 25\ kA$ $I_{cm\ (415\ V)} = 52.5\ kA$

Switch-disconnector	code 1SDA0 R1
	3 poles 4 poles

F = Front terminals

S7D 1250 F F	20824	20849
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EF = Extended front terminals

S7D 1250 F EF	20830	20855
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*FC CuAl = Front terminals
for copper/aluminium cables*

S7D 1250 F FC CuAl	20836	20861
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VR = Vertical flat-bar rear terminals

S7D 1250 F VR	20848	20873
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HR = Horizontal flat-bar rear terminals

S7D 1250 F HR	20842	20867
---------------	-------	-------

S7D 1600 $I_{u\ (40\ ^\circ C)} = 1600\ A$ $I_{cw\ (1s)} = 25\ kA$ $I_{cm\ (415\ V)} = 52.5\ kA$

Switch-disconnector	code 1SDA0 R1
	3 poles 4 poles

F = Front terminals

S7D 1600 F F	20874	20890
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EF = Extended front terminals

S7D 1600 F EF	20879	20895
---------------	-------	-------

VR = Vertical flat-bar rear terminals

S7D 1600 F VR	20889	
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HR = Horizontal flat-bar rear terminals

S7D 1600 F HR	20884	20900
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W = WITHDRAWABLE

S7D 1000 $I_{u\ (40\ ^\circ C)} = 1000\ A$ $I_{cw\ (1s)} = 25\ kA$ $I_{cm\ (415\ V)} = 52.5\ kA$

Switch-disconnector	code 1SDA0 R1
	3 poles 4 poles

S7D 1000 W MP	20922	20923
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S7D 1250 $I_{u\ (40\ ^\circ C)} = 1250\ A$ $I_{cw\ (1s)} = 25\ kA$ $I_{cm\ (415\ V)} = 52.5\ kA$

Switch-disconnector	code 1SDA0 R1
	3 poles 4 poles

S7D 630 W MP	20924	20925
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S7D 1600 $I_{u\ (40\ ^\circ C)} = 1600\ A$ $I_{cw\ (1s)} = 25\ kA$ $I_{cm\ (415\ V)} = 52.5\ kA$

Switch-disconnector	code 1SDA0 R1
	3 poles 4 poles

S7D 1600 W MP	20926	20927
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Order codes

SACE Isomax S8D switch-disconnectors

F = FIXED



S8D 2000 $I_{lu} (40^\circ\text{C}) = 2000 \text{ A}$ $I_{cw} (1\text{s}) = 40 \text{ kA}$ $I_{cm} (415 \text{ V}) = 85 \text{ kA}$

Switch-disconnector

code 1SDA0 R1
3 poles 4 poles

F = Front terminals

45158 45159

VR = Vertical flat-bar rear terminals

S8D 2000 F VR

45160 45161

S8D 2500 $I_{lu} (40^\circ\text{C}) = 2500 \text{ A}$ $I_{cw} (1\text{s}) = 40 \text{ kA}$ $I_{cm} (415 \text{ V}) = 85 \text{ kA}$

Switch-disconnector

code 1SDA0 R1
3 poles 4 poles

F = Front terminals

45162 45163

VR = Vertical flat-bar rear terminals

S8D 2500 F VR

45164 45165

S8D 3200 $I_{lu} (40^\circ\text{C}) = 3200 \text{ A}$ $I_{cw} (1\text{s}) = 40 \text{ kA}$ $I_{cm} (415 \text{ V}) = 85 \text{ kA}$

Switch-disconnector

code 1SDA0 R1
3 poles 4 poles

VR = Vertical flat-bar rear terminals

S8D 3200 F VR

45167 45166



Order codes

SACE Isomax S accessories



Duty releases

Shunt opening releases

Type	code 1SDA0	R1	S1-S2	S3-S4-S5	S6-S7	S8
24...30 V AC	13311					
48 V AC - 60 V DC	13306					
110...130 V AC	13312					
220...250 V AC	13313					
380...400 V AC	13314					
12 V DC	50581					
24 V DC	13304					
48 V DC	13305					
110 V DC	13307					
220 V DC	13309					
250 V DC	13310					
12 V DC		23403		23404		
24 V AC / DC		13781		14136		
48 V AC / DC		13782		14137		
60 V AC / DC			23406			
60 V AC / 60 ... 72 V DC	23405					
110...120 V AC - 110...125 V DC	13783		14138			
220...240 V AC - 220...250 V DC	13785		14140			
380...400 V AC	13786		14141			
480 V AC	37512		37514			
24 V DC			50685			
30 V DC - 24 V AC			46602			
48 V AC / DC			46600			
60 V DC			46603			
100...127 V DC / AC			47564			
127...150 V AC			46605			
160 V DC / 150...180 V AC			47565			
200...250 V DC / 200...255 V AC			46607			
380...500 V AC			46608			



Shunt closing releases

Type	code 1SDA0	R1	S8
24 V AC 50 Hz			46636
30 V AC 50 Hz			46643
48 V AC 50 Hz			46637
60 V AC 50 Hz			46638
127 ...130 V AC 50 Hz			46646
220 V AC 50 Hz			46633
500 V AC 50 Hz			46644
24 V AC 60 Hz			46649
120 V AC 60 Hz			46647
208 ...220 V AC 60 Hz			46641
240 V AC 60 Hz			46648
380 V AC 60 Hz			46645
100 V AC 50 Hz - 110 ...115 V AC 60 Hz			46639
110 ...115 V AC 50 Hz - 125 ...127 V AC 60 Hz			46634
230 ...240 V AC 50 Hz - 277 V AC 60 Hz			46640
380 ...400 V AC 50 Hz - 440 V AC 60 Hz			46635
415 ...440 V AC 50 Hz - 480 V AC 60 Hz			46642
24 V DC			46650
30 V DC			46655
48 V DC			46651
60 V DC			46656
110...125 V DC			46652
220...250 V DC			46653
310 V DC			46654



Order codes

SACE Isomax S accessories



Undervoltage releases

Type	code 1SDA0 R1	S1-S2	S3-S4-S5	S6-S7	S8
24 V AC 50 Hz	23401				46613
30 V AC 50 Hz					46620
48 V AC 50 Hz	23402				46614
60 V AC 50 Hz					46615
110 V AC 50 Hz	13319				
127 ...130 V AC 50 Hz					46623
220 V AC 50 Hz	13320				46609
500 V AC 50 Hz					46621
100 V AC 50 Hz - 110 ...115 V AC 60 Hz					46616
110 ...115 V AC 50 Hz - 125 ...127 V AC 60 Hz					46611
230 ...240 V AC 50 Hz - 277 V AC 60 Hz					46617
380 V AC 50 Hz - 380 ...440 V AC 60 Hz	13321				
380 ...400 V AC 50 Hz - 440 V AC 60 Hz					46612
415 ...440 V AC 50 Hz - 480 V AC 60 Hz					46619
24 V AC	13842		14188		
48 V AC	13843		14189		
60 V AC	23346		23347		
110 V AC 60 Hz	45046				
110 ...127 V AC		13844		14190	
120 V AC 60 Hz					46624
208 ...220 V AC 60 Hz					46618
220 ...250 V AC		13846		14192	
240 V AC 60 Hz					46625
380 V AC 60 Hz					46622
380 ...440 V AC	13847		14193		
480 V AC	37513		37515		
24 V DC	13315	13833	14179		46626
30 V DC					46631
48 V DC	13316	13835	14181		46627
60 V DC	45045	13836	14182		46632
110 V DC	13317				
110...125 V DC		13838		14184	46628
220 V DC	13318				
220...250 V DC		13839		14185	46629

Undervoltage releases + time-lag device

Type	code 1SDA0 R1	S3-S4-S5	S6-S7	S8
110 - 220 V AC	13840		14186	
24 V AC/DC				50737
30 V AC/DC				50738
48 V AC/DC				50739
60 V AC/DC				50740
110/125 V AC/DC				50741
220/250 V AC/DC				50742

Connectors for duty releases

Type	code 1SDA0 R1	S1-S2	S3-S4-S5-S6	S7
for fixed circuit-breakers - L=1m	13865			
for fixed circuit-breakers - L=2m	37523			
for fixed circuit-breakers - L=1m				14209
for fixed circuit-breakers - L=2m				44752
for plug-in or withdrawable circuit-breakers - L=1m	13866			
for withdrawable circuit-breakers - L=1m				14210
for withdrawable circuit-breakers - L=2m				48949
flying 9-pole socket-plug - L=0,6m	13333			
extension for testing auxiliary circuits with the circuit-breaker racked out		25552		25552



Order codes

SACE Isomax S accessories

Electrical signalling



Auxiliary contacts

Type	code 1SDA0 R1			
	S1-S2	S3-S4-S5	S6-S7	S8
2 open/closed change-over contacts	13328	13856	23366	
1 open/closed change-over contacts and 1 release tripped signal	13327	13575	23332	
1 NO, 1 NC and 1 release not tripped signal			25773	
1 NO, 1 NC and 1 release tripped signal			48956	
3 open/closed change-over contacts				47563

Auxiliary contacts for digital signals

Type	code 1SDA0 R1			
	S1-S2	S3-S4-S5	S6-S7	S8
2 open/closed change-over contacts		25544	25774	
1 open/closed change-over contacts and 1 release tripped signal		25545	25775	
1 NO, 1 NC and 1 release not tripped signal			25776	

Early making contacts and connectors

Type	code 1SDA0 R1			
	S1-S2	S3-S4-S5-S6	S7	S8
early making contact and connector for undervoltage release			25551	48106



Connectors for auxiliary contacts

Type	code 1SDA0 R1			
	S1-S2	S3-S4-S5-S6	S7	S8
for fixed circuit-breakers - L=1m		13863		
for fixed circuit-breakers - L=2m		37522		
for fixed circuit-breakers - L=1m			14207	
for fixed circuit-breakers - L=2m			44751	
for plug-in or withdrawable circuit-breakers - L=1m		13864		
for withdrawable circuit-breakers - L=1m			14208	
for withdrawable circuit-breakers - L=2m			48947	
flying 9-pole socket-plug - L=0,6m	13329			
extension for testing auxiliary circuits with the circuit-breaker racked out		25553	25553	

Signally contacts

Type	code 1SDA0 R1			
	S8			
contact for signalling closing springs charged	47562			



Order codes

SACE Isomax S accessories

Motor operating mechanisms

Solenoid operator



Type	code 1SDA0 . . . R1 S1-S2
at the side of the circuit-breaker	
48 V DC	48025
60 V DC - 110 V AC	48026
110 V DC - 220...230 V AC	48027
220 V DC	48028
on the front of the circuit-breaker	
48 V DC	48015
60 V DC - 110 V AC	48016
110 V DC - 220...230 V AC	48017
220 V DC	48018

Direct action motor operating mechanism



Type	code 1SDA0 . . . R1 S3-S4-S5
24 V DC	13873
48...60 V DC	13874
100...127 V AC - 100...125 V DC	13875
220...240 V AC - 220...250 V DC	13876
380 V AC	13877
440 V AC	14545

Stored energy motor operating mechanism



Type	code 1SDA0 . . . R1 S6 S7
24 V DC	14029 14214
48 V DC	14030 14215
60 V DC	23348 23350
110 V AC / DC	23349 23351
120...127 V AC / DC	14031 14216
220...250 V AC / DC	14032 14217
380 V AC	14033 14218

Geared motor for automatic charging of closing springs



Type	code 1SDA0 . . . R1 S8
24/30 V DC	47558
48/60 V DC	47559
100...130 V DC	47560
220...250 V DC	47561

Connectors for motor operating mechanism and auxiliary contacts



Type	code 1SDA0 . . . R1 S1-S2 S3-S4-S5-S6 S7 S8
for fixed circuit-breakers - L=1m	13857
for fixed circuit-breakers - L=2m	37524
for fixed circuit-breakers - L=1m	14203
for fixed circuit-breakers - L=2m	44850
for plug-in or withdrawable circuit-breakers - L=1m	13858
for withdrawable circuit-breakers - L=1m	14204
for withdrawable circuit-breakers - L=2m	48950
flying 9-pole socket-plug - L=0,6m	13329
extension for testing auxiliary circuits with the circuit-breaker racked out	25554 25554

Order codes

SACE Isomax S accessories

Operating mechanism and locks

Direct-mounted rotary handle operating mechanism



GSIS025

Type	code 1SDA0 R1	S1-S2	S3-S4-S5	S6	S7
for fixed/plug-in circuit breakers	13867			14026	14211
for withdrawable circuit breakers	13868			14027	14212
emergency for fixed or plug-in circuit-breakers	13870			46568	46570

Rotary handle operating mechanism with transmission rod



GSIS024

Type	code 1SDA0 R1	S1-S2	S3-S4-S5	S6	S7
compartment door, fixed depth for fixed or plug-in circuit-breakers (L= 119.5 mm)	13326				
compartment door, adjustable depth (L _{max} =300 mm) for fixed or plug-in	13869				
compartment door, adjustable depth (L _{max} =300 mm) for withdrawable	50714				
compartment door, adjustable depth (L _{max} =500 mm) for fixed				14028	14213
compartment door, adjustable depth (L _{max} =500 mm) for withdrawable				50715	50716
compartment door, emergency, fixed depth for fixed or plug-in circuit-breakers (L _{max} = 119.5 mm)	45054				
compartment door, emergency, adjustable depth for fixed or plug-in circuit-breakers (L _{max} = 300 mm)	13871				
compartment door, emergency, adjustable depth for fixed circuit-breakers (L _{max} = 500 mm)				46569	46572
remote transmission rod with adj. depth (L _{max} = 180 mm)	25436				
remote transmission rod with adj. depth (L _{max} = 500 mm)	45055			25427	

Front flange



GSIS026

Type	code 1SDA0 R1	S3...S5	S6	S7	S8
front flange for operating lever mechanism for fixed or plug-in	13889		14035	14227	
front flange for operating lever mechanism for withdrawable	13890		14036	14228	
flange for compartment door				45023	

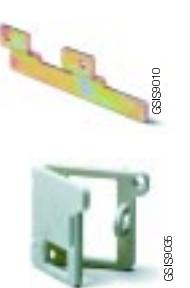
Key lock for open position



GSIS028

Type	code 1SDA0 R1	S3...S5	S6-S7	S8
for motor operating mechanism - a different key for each cb.	13883		13885	
for motor operating mechanism - the same key for sets of cbs	13884		13886	
for motor operating mechanism against manual operation - the same key for each circuit-breaker			36245	
for front flange / rotary handle - a different key for each circuit-breaker	13881		13881	
for front flange / rotary handle - the same key for sets of circuit-breakers	13882		13882	
for front flange				45024
key lock type RONIS	43514		43514	

Locks



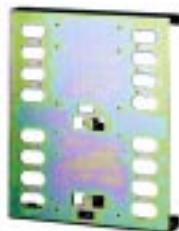
GSIS029

Type	Size	code 1SDA0 R1
compartment door lock for front flange for locks /crank handle operating mechanism	S3-S4-S5-S6-S7	13880
padlock device for operating lever	S1-S2	13332
padlock device on the front of the circuit-breaker	S8	45025
tamper-proof lock for thermal release	S2	36196
tamper-proof lock for thermal release	S3	25548



Order codes

SACE Isomax S accessories



PSIS9640

Mechanical interlock across two circuit-breakers

Type	code 1SDA0 . . . R1 horizontal	vertical
S3	23330	23331
S3X	50524	
S4	13690	13691
S4X	50525	
S5400/630	43453	43454
S6	14024	14025
S7	14205	14206
S3-S4-S5-S6-S7 (circuit-breaker/fixed part for interlocking)	50093	50093

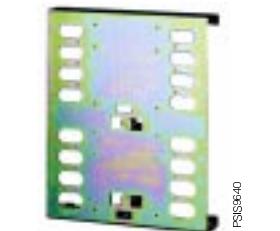
Connection terminals

Type	code 1SDA0 . . . R1 3 pieces	4 pieces	6 pieces	8 pieces
EF=Extended front terminals				
S2		25797	25798	
S3-S4	23353	23359	13596	13597
S5 400	23367	23373	13706	13707
S6 630	23379	23389	13920	13921
S6 800	23383	23393	13954	13955
S7	23399	23396	14079	14080
ES=Spreaded extended front terminals				
S3-S4	46517	46518	46515	46516
S5	47551	47552	47549	47550
S6 (1/2 upper kit)	50692	-	-	-
S6 (1/2 lower kit)	50704	-	-	-
S6	-	50693	50688	50689
S7 (1/2 upper kit)	50694	-	-	-
S7 (1/2 lowerkit)	50705	-	-	-
S7	-	50695	50690	50691
FC Cu=Front terminals for copper cables				
S3-S4	23354	23360	13598	13599
S5 400	23368	23374	13708	13709
S5 630	38769	38770	38767	38768
FC CuAl=Front terminals for copper/aluminium cables				
S2 (2,5-50 mm ²) (*)	50526	50528	36194	36195
S2 (35-95 mm ²) (*)	50527	50530	25801	25802
S3D 100	23355	23361	13600	13601
S3 160 - S4 160 (1x95 mm ²)	23356	23362	13602	13603
S3 250 - S4 250 (1x150 mm ²)	23357	23363	20293	20294
S5 400 (2x120 mm ²)	25766	25765	23295	23296
S5 400 (1x240 mm ²)	23370	23376	13710	13711
S6 630 (2x240 mm ²)	23380	23390	13922	13923
S6 800 (3x185 mm ²)	23384	23394	13956	13957
S7 1250 (4x240 mm ²)	23387	23397	14081	14082
R=Threaded rear terminals				
S1		13268	13269	
S2		13294	13295	
S3-S4	23352	23365	13606	13607
S5 400	23372	23378	13714	13715
S5 630	38776	38777	38968	38775
S6	23382	23392	13960	13961
R Res.Cur.=Threaded rear terminals for residual current-release mounted below				
S3		25543		
HR/VR=Horizontal or vertical flat-bar rear terminals				
S7	23400	23398	14083	14084
S8		46578	46579	
RC = Rear terminals for copper/aluminium cables				
S3-S4 (1x120 mm ²)	23358	23364	13604	13605
S5 400 (1x240 mm ²)	23371	23377	13712	13713
S6 630 (2x150 mm ²)	23381	23391	13924	13925
S6 800 (3x240 mm ²)	23385	23395	13958	13959

(*) Order also the relevant EF extended front terminals



PSIS9640



PSIS9640



PSIS9643



PSIS9642



PSIS9643

Order codes

SACE Isomax S accessories

Insulating terminal covers



Type	code 1SDA0 . . . R1	
	3 poles	4 poles
high for fixed		
S1	13290	13291
S2	13340	13341
S3-S4	13695	13696
S5	13897	13898
S6	14040	14041
low for fixed and for moving part of plug-in or withdrawable circuit-breakers		
S1	13292	13293
S2	13342	13343
S3-S4	13693	13694
S5	13895	13896
S6	14038	14039
S7	23324	23325

Screws for sealing terminal covers

Type	code 1SDA0 . . . R1
S1-S2	13344
S3-S4-S5-S6-S7	13699

Accessories for electronic releases



Type	Model	code 1SDA0 . . . R1
Signalling unit SACE PR010/K	S4-S5-S6-S7	48965
Signalling unit SACE PR212/K	S8	45021
Dialogue unit SACE PR212/D-M Modbus + actuator unit SACE PR212/T for SACE PR212/P (LSI - LSIG)	S4-S5-S6-S7	50718
Dialogue unit SACE PR212/D-L Lon + actuator unit SACE PR212/T for SACE PR212/P (LSI - LSIG)	S4-S5-S6-S7	50719
Dialogue unit SACE PR212/D-L Lon + actuator unit SACE PR212/T for SACE PR212/MP (LRIU)	S4-S5-S6-S7	50720
Dialogue unit SACE PR212/D + Actuator unit SACE PR212/T	S8	45020
Test unit SACE TT1	S4-S5-S6-S7	37121
Test and configuration unit SACE PR010/T	S4-S5-S6-S7	48964
SACE PR212/CI contactor operating unit (with PR212/MP)	S4-S5-S6-S7	50708
Current transformer for neutral conductor outside circuit-breaker	S4 100	37114
Current transformer for neutral conductor outside circuit-breaker	S4 160	37115
Current transformer for neutral conductor outside circuit-breaker	S4 250	37117
Current transformer for neutral conductor outside circuit-breaker	S5 320	37118
Current transformer for neutral conductor outside circuit-breaker	S5 400	37119
Current transformer for neutral conductor outside circuit-breaker	S5 630	37120
Current transformer for neutral conductor outside circuit-breaker	S6 630	25777
Current transformer for neutral conductor outside circuit-breaker	S6 800	25778
Current transformer for neutral conductor outside circuit-breaker	S7 1000	25779
Current transformer for neutral conductor outside circuit-breaker	S7 1250	25780
Current transformer for neutral conductor outside circuit-breaker	S7 1600	25781
Current transformer for neutral conductor outside circuit-breaker	S8 1600	45015
Current transformer for neutral conductor outside circuit-breaker	S8 2000	45016
Current transformer for neutral conductor outside circuit-breaker	S8 2500	45017
Current transformer for neutral conductor outside circuit-breaker	S8 3200	45018
X3 connector for relay tripped signal and neutral protection for fixed circuit-breaker with PR211/P, PR212/P - LSI	S4-S5-S6-S7	13702
X3, X4 connectors for relay tripped signal and neutral protection for fixed circuit-breaker with PR212/P - LSIG	S4-S5-S6-S7	13704
X3 connector for relay tripped signal and neutral protection for plug-in or withdrawable circuit-breaker with PR211/P, PR212/P - LSI	S4-S5-S6-S7	13703
X3, X4 connectors for relay tripped signal and neutral protection for plug-in or withdrawable circuit-breaker with PR212/P - LSIG	S4-S5-S6-S7	13705
electrical/mechanical signalling and lock for PR212/P tripped	S8	46581



Order codes

SACE Isomax S accessories

Conversion kits



from fixed circuit-breaker to moving part of plug-in circuit-breaker

Type	code 1SDA0 R1	
	3 poles	4 poles
S1	13270	13271
S2	13296	13297
S3-S4	13608	13609
S3X	46519	46520
S4X	46511	46512
S5 400	13716	13717



from fixed circuit-breaker to moving part of withdrawable circuit-breaker

Type	code 1SDA0 R1	
	3 poles	4 poles
S3-S4	13610	13611
S3X	46521	46522
S4X	46514	46513
S5 400	13718	13719
S5 630	38778	38779
S6 630 / 800	13962	13963
S6X	47619	47620
S7	23299	14087

from plug-in circuit-breaker to withdrawable circuit-breaker



Type	Size	code 1SDA0 R1
Guide for preparing the fixed part of a plug-in circuit-breaker for use as the fixed part of a withdrawable circuit-breaker	S3-S4	13692
Guide for preparing the fixed part of a plug-in circuit-breaker for use as the fixed part of a withdrawable circuit-breaker	S5	13892

Order codes

SACE Isomax S accessories

Fixed parts



Plug-in circuit-breaker

Type	code 1SDA0 R1 3 poles 4 poles	
EF = Extended front terminals		
S3 P FP EF	13539	13548
S4 P FP EF	13612	13621
S5 400 P FP EF	13720	13729
FC = Front terminals for copper cables		
S1 P FP FC	13272	13274
S2 P FP FC	13298	13300
S3 P FP FC	13543	13550
S4 P FP FC	13616	13625
S5 400 P FP FC	13724	13733
R = Threaded rear terminals		
S1 P FP R	13273	13275
S2 P FP R	13299	13540
S3 P FP R	13547	13554
S4 P FP R	13620	13629
S5 400 P FP R	13728	13737



Withdrawable circuit-breaker

Type	code 1SDA0 R1 3 poles 4 poles	
EF = Extended front terminals		
S3 W FP EF	13555	13564
S4 W FP EF	13630	13639
S5 400 W FP EF	13738	13747
S6 W FP EF	13964	13973
S7 W FP EF	48951	14097
ES = Spreaded extended front terminals		
S5 630 W FP ES	38761	38762
FC = Front terminals for copper cables		
S3 W FP FC	13559	13568
S4 W FP FC	13634	13643
S5 400 W FP FC	13742	13751
R = Threaded rear terminals		
S3 W FP R	13563	13572
S4 W FP R	13638	13647
S5 400 W FP R	13746	13755
S5 630 W FP R	38763	38970
VR = Vertical flat-bar rear terminals		
S5 630 W FP VR	38971	38972
S6 W FP VR	13972	13981
S7 W FP VR	14096	14105
HR = Horizontal flat-bar rear terminals		
S6 W FP HR	13968	13977
S7 W FP HR	14092	14101



Order codes

SACE Isomax S accessories

Accessories for fixed part of plug-in or withdrawable circuit-breakers

Terminals for the fixed parts of plug-in or withdrawable circuit-breakers

Type	code 1SDA0 . . . R1	
	3 poles	4 poles
EF = Extended front terminals		
S3-S4	13650	13651
S5 400	13759	13760
S5 630	38780	38781
S6 (with terminals mounted below for S6X)	13984	13985
S7	14108	14109
FC Cu/AI = Front terminals for copper / aluminium cables		
S3-S4	13652	13653
S5 400	13761	13762
R = Threaded rear terminals		
S3-S4	13654	13655
S5 400	13763	13764
S5 630	38969	38782
HR = Horizontal flat-bar rear terminals		
S6	13986	13987
S7	14110	14111
VR = Vertical flat-bar rear terminals		
S5 630	38763	38784
S6	13988	13989
S7	14112	14113

Insulating covers for fixed parts

Type	code 1SDA0 . . . R1	
	3 poles	4 poles
S3-S4	13697	13698
S5 400	13899	13900

Position contacts

Type	Model	code 1SDA0 . . . R1
contacts for signalling circuit-breaker racked out	S3-S4-S5-S6-S7	13859
contacts for signalling circuit-breaker racked out for digital signals	S3-S4-S5-S6-S7	25546
contacts for signalling circuit-breaker racked in	S3-S4-S5-S6-S7	13860
contacts for signalling circuit-breaker racked in for digital signals	S3-S4-S5-S6-S7	25547

Lock for fixed part of withdrawable circuit-breakers

Type	Model	code 1SDA0 . . . R1
key lock for locking in racked in / out position - different key for each cb.	S3-S4-S5-S6-S7	25434
key lock for locking in racked in / out position - same key for sets of cb.	S3-S4-S5-S6-S7	25435
padlock device	S3-S4-S5-S6-S7	13872

Order codes

SACE Isomax S accessories

Installation accessories

Bracket for mounting on DIN rail



GSIS011

Type	Model	code 1SDA0 R1
DIN EN 50022	S1	23328
DIN EN 50022	S2	23329
DIN EN 50022 (for solenoid operator)	S1	48523
DIN EN 50022 (for solenoid operator)	S2	48524
DIN EN 50023 (complete with DIN front flange H=45 mm)	S3 - 3 poles	13576
DIN EN 50023 (complete with DIN front flange H=45 mm)	S3 - 4 poles	13577
DIN EN 50023 (complete with DIN front flange H=45 mm)	S4 - 3 poles	13700
DIN EN 50023 (complete with DIN front flange H=45 mm)	S4 - 4 poles	13701
DIN EN 50023 (complete with DIN front flange H=45 mm)	S5 - 3 poles	13901
DIN EN 50023 (complete with DIN front flange H=45 mm)	S5 - 4 poles	13902



PSIS067

IP54 protection

Type	Model	code 1SDA0 R1
for fixed-depth rotary handle operating mechanism on door	S1-S2	13339
for adjustable-depth rotary handle operating mechanism on door	S3-S4-S5-S6-S7	13891

Residual-current releases

SACE RC210, RC211, SACE RC212



GSIS027



PSIS068

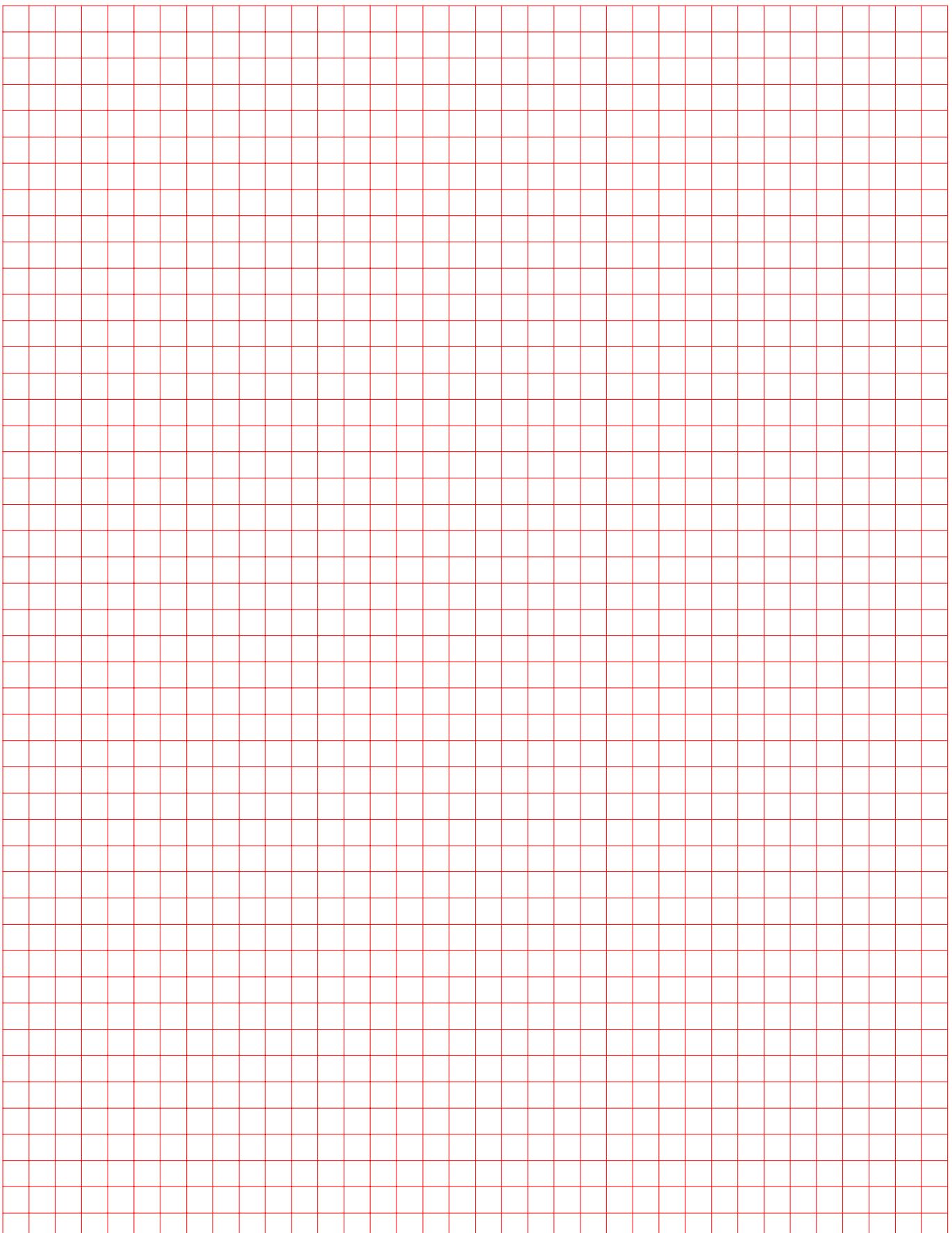
Type	code 1SDA0 R1	side by side	below
RC210/1 for S1 (In=63 A - IΔn=0,3 A)	45076		
RC210/1 for S1 (In=63 A - IΔn=0,5 A)	45077		
RC210/1 for S1 (In=63 A - IΔn=0,3 A)	45079		
RC210/1 for S1 (In=63 A - IΔn=0,5 A)	45080		
RC211/1 for S1	13282		13283
RC211/2 for S2	13222		13323
RC211/3 for S3	20288		20289
RC212/1 for S1	13284		13285
RC212/2 for S2	13324		13325
RC212/3 for S3	20290		20291

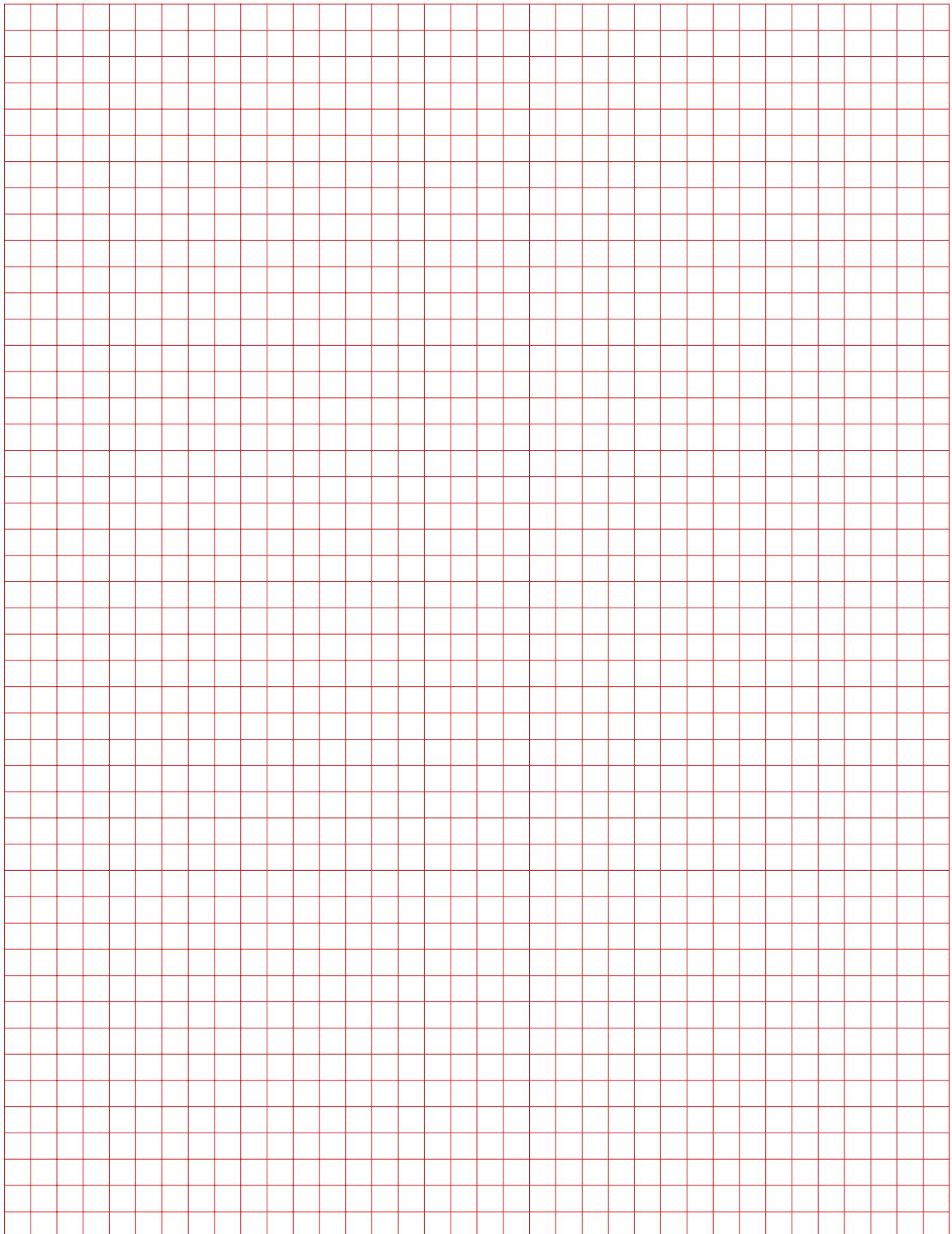
SACE RCQ

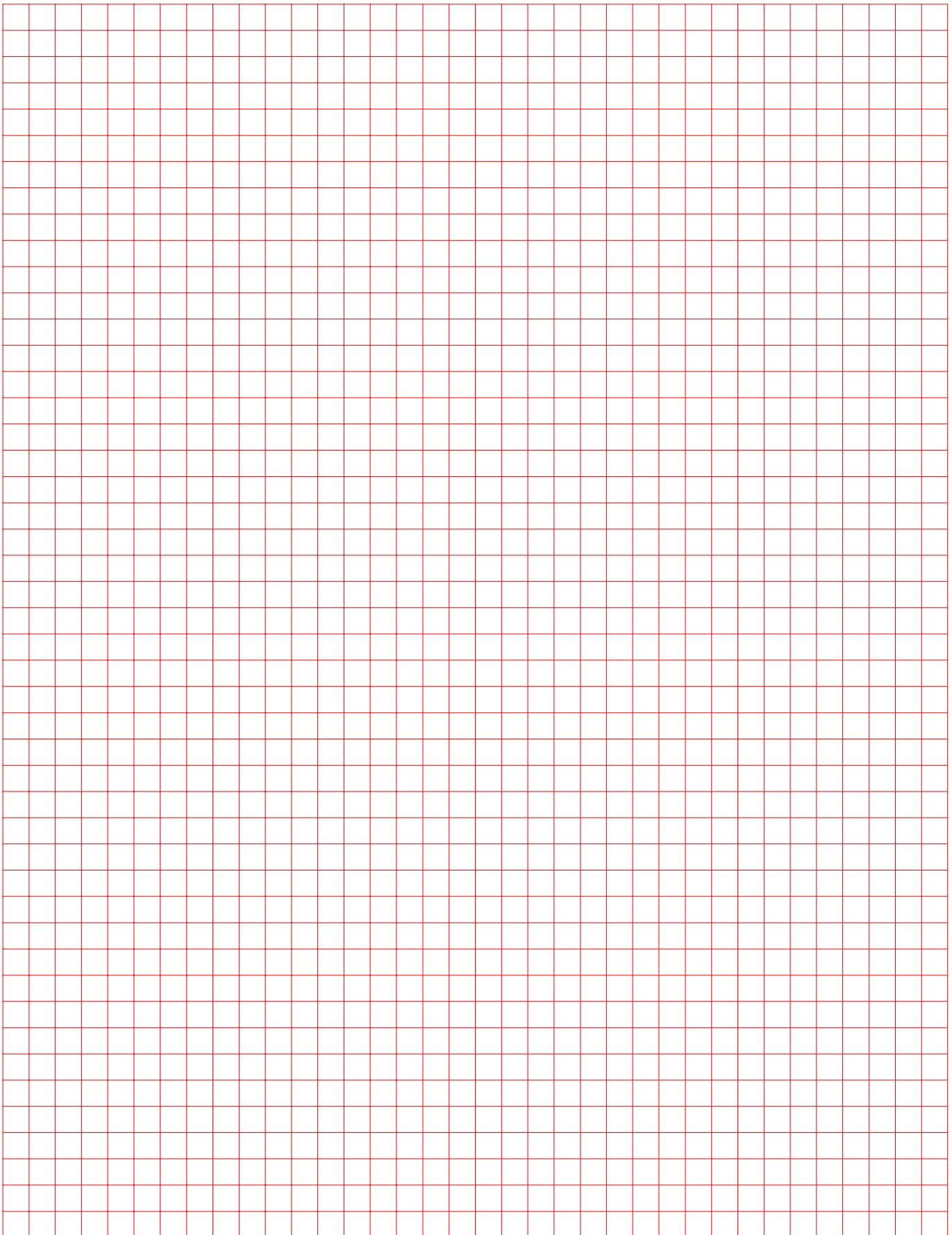


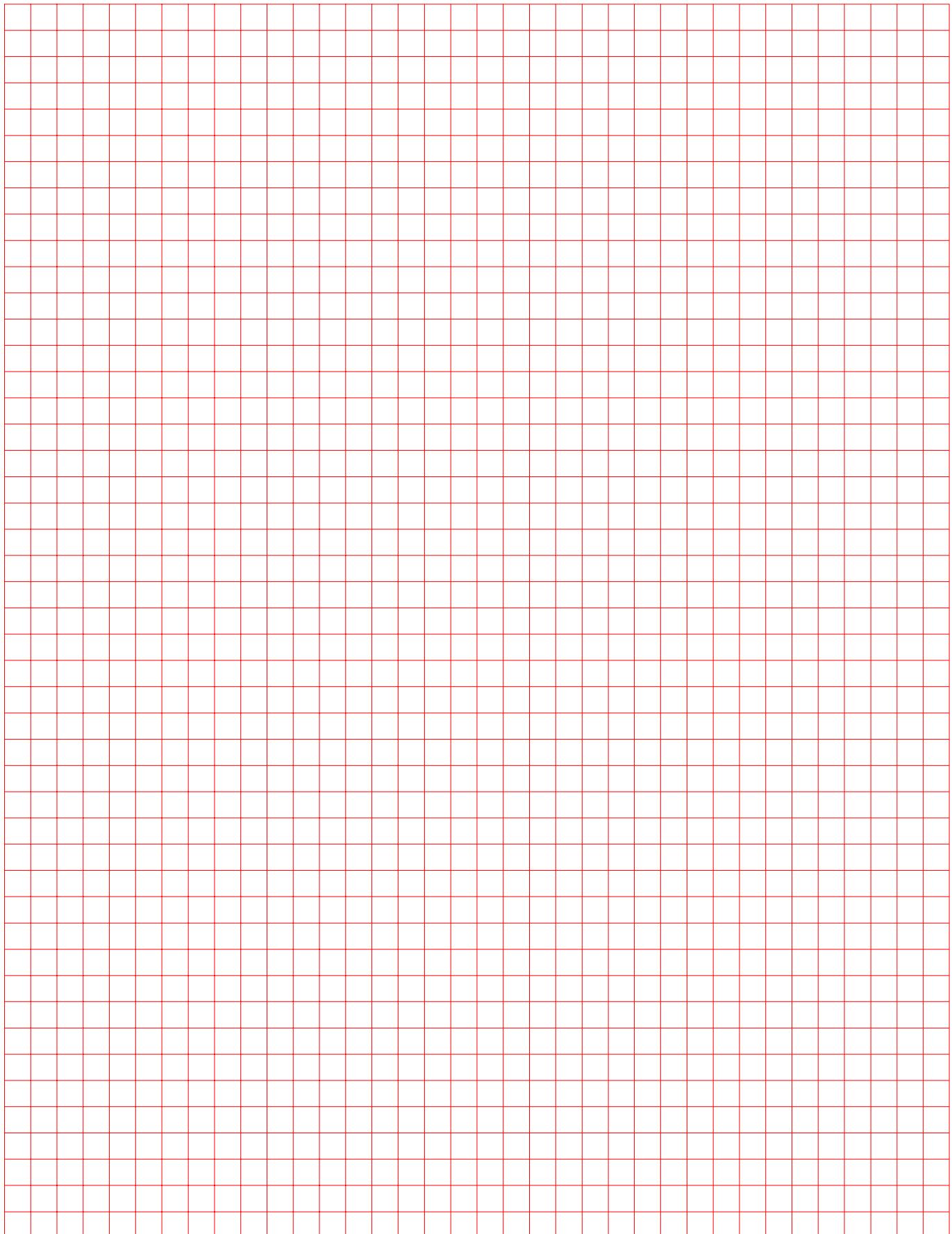
GSIS046

Type	code 1SDA0 R1
release and closed toroid - diameter 60 mm	37388
release and closed toroid - diameter 110 mm	37389
release and closed toroid - diameter 185 mm	50542
release and opening toroid - diameter 110 mm	37390
release and opening toroid - diameter 180 mm	37391
release and opening toroid - diameter 230 mm	37392
release only	37393
closed toroid only - diameter 60 mm	37394
closed toroid only - diameter 110 mm	37395
closed toroid only - diameter 185 mm	50543
opening toroid only - diameter 110 mm	37396
opening toroid only - diameter 180 mm	37397
opening toroid only - diameter 230 mm	37398









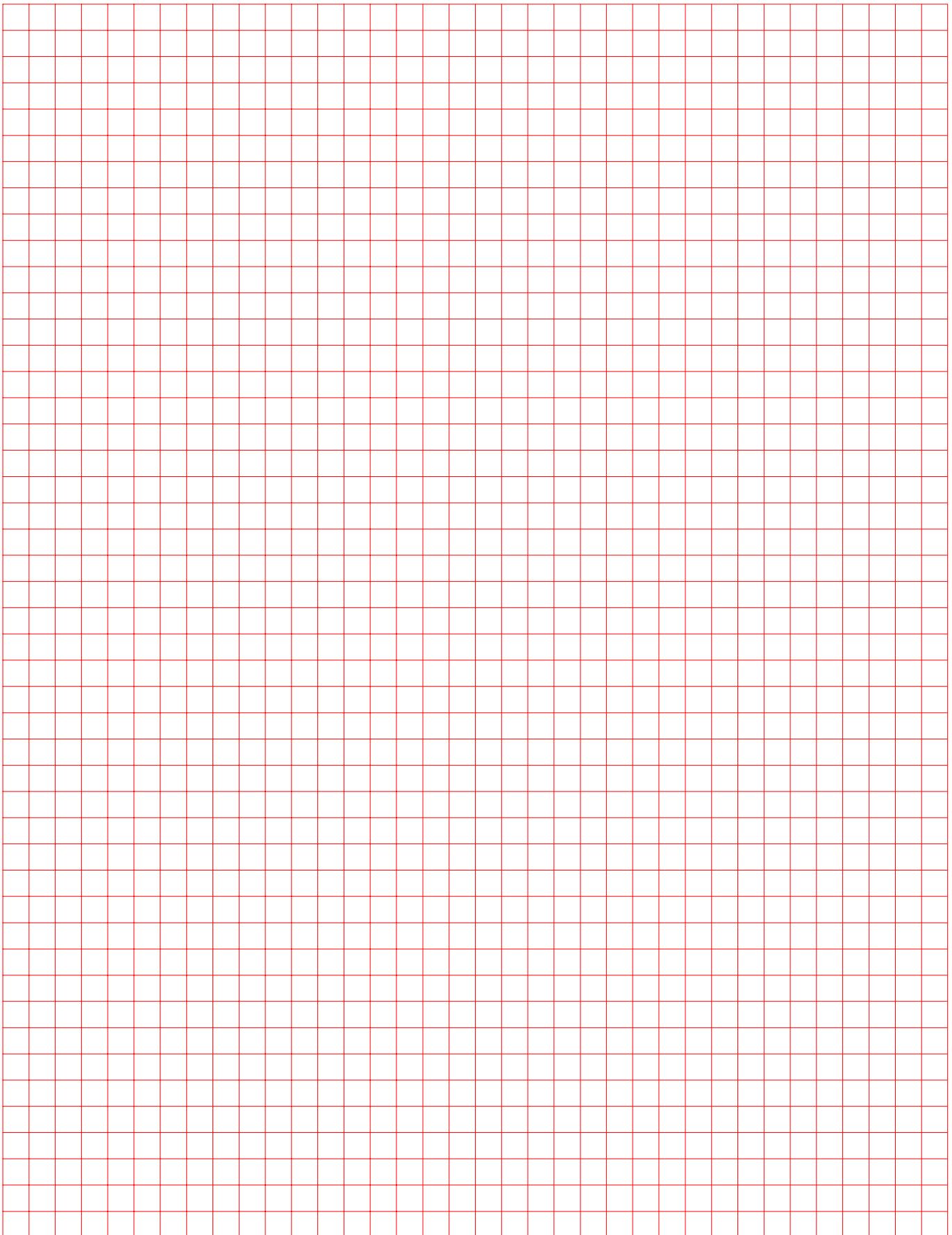




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Due to possible developments of standards as well as of materials,
the characteristics and dimensions specified in the present catalogue
may only be considered binding after confirmation by ABB SACE.

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