

**1P+N miniature
circuit-breakers – 1 module**
S 9 range

603005/011 en



ABB

New-generation 1P+N miniature circuit-breakers in single module

Curve B

$I_n = 6 \dots 40 \text{ A}$
 $I_m = 3 \dots 5 I_n$

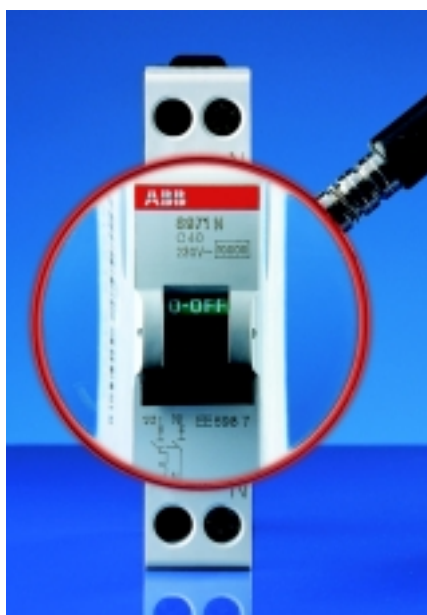
Curve C

$I_n = 2 \dots 40 \text{ A}$
 $I_m = 5 \dots 10 I_n$

ABB SACE has renewed and extended its range of devices in the System pro *M* modular system, a complete system of switchgears designed to satisfy all installation requirements. Particular attention has been dedicated to the miniature circuit-breakers, since their protective function against overloads and short-circuits makes them fundamental devices for safe and reliable plant operation. This is confirmed by the fact that ABB SACE has introduced further important novelties: first of all, the innovative features of the new 1P+N

thermomagnetic circuit-breakers, that give rise to a technologically-advanced and extremely complete range in terms of size, tripping characteristics and breaking capacities. The new circuit-breakers are available with rated currents from 2 to 40A in the version with "C" tripping characteristics and rated currents from 6 to 40A in the version with "B" tripping characteristics. A novelty of considerable importance lies in the breaking capacity of the new circuit-breakers: in addition to the classic 4.5 kA for the S941N range,

there is the 6kA of the S951N range and the 10kA of the S971N range. The last of these represents a significant step forward as concerns the 1P+N offer of thermomagnetic circuit-breakers. The mechanical design of the new circuit-breakers has also been the subject of considerable attention to ensure **that the closing speed of the contacts** in the last closing section **is not affected by the speed at which the knob turns**, with the result that closing is always dependable (**the positive engagement closing is an ABB SACE international patent**).



Auxiliary parts: a complete range of accessories

The circuit-breakers are supported by a whole family of auxiliary elements that enable numerous functions and configurations to be developed.

Auxiliary contacts

The auxiliary contact indicates the "open" or "closed" position of the circuit-breaker; with each change to its open/closed state, be it manual or automatic, the contact enables the tripping of a remote (e.g. luminous) signal by means of its own change-over contact. The auxiliary contact is complete with a green indicator that enables the open/

closed position of the device to be displayed (when the circuit-breaker is in the "open" position, the indicator projects from the housing). The indicator also enables a test (i.e. a momentary change-over of the auxiliary circuit) to be performed by pressing on the indicator itself. Up to a maximum of 3 (signal and/or auxiliary) contacts can be applied to each circuit-breaker in the S9...N range.

Signal contacts

The signal (or tripped-relayed) contact indicates that automatic tripping

has been caused by an overload or short-circuit. In the event of manual circuit-breaker operation, on the other hand, it indicates no change in the state of the circuit-breaker. The signal contact is complete with a yellow indicator that projects from the housing when the circuit-breaker is operated (this indicator also enables a manual reset of the signalling circuit). In addition, the signal contact has a "TEST" button that causes a momentary change-over of the signalling circuit contact, whatever the ON/OFF state of the

thermomagnetic circuit-breaker.

Shunt trips

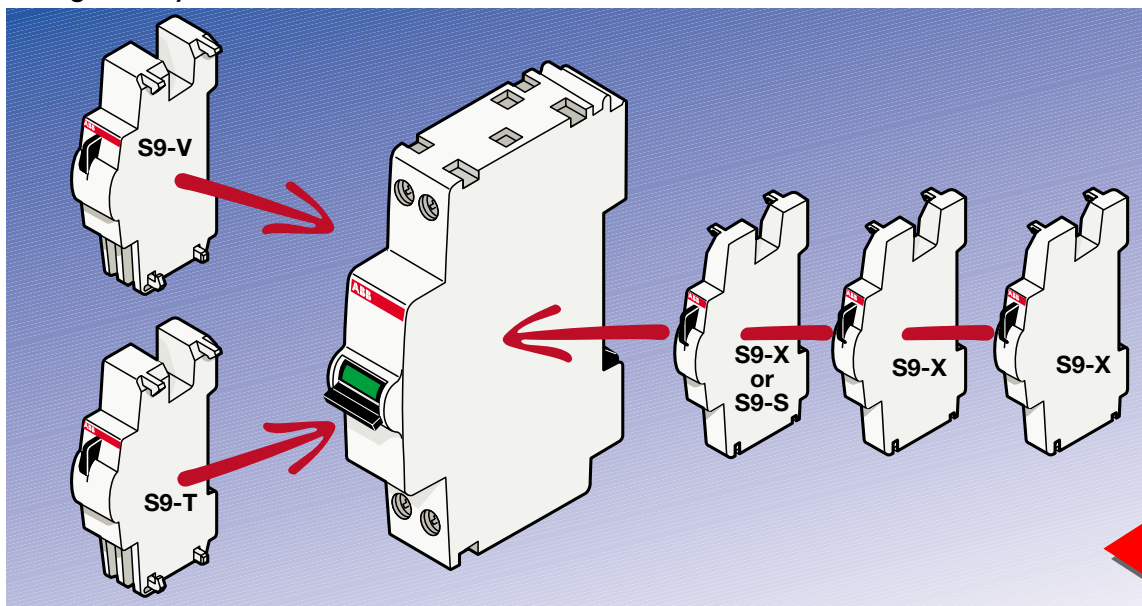
These are used to remotely trip the opening of the circuit-breakers. The shunt trips are fitted both with a self-opening contact (for protecting the coil in the event of a withheld and with an ON/OFF contact for indicating the state of the coil (energized or deenergized). An S9.. circuit-breaker fitted with a shunt trip and 3 auxiliary contacts consequently has 4 indicators available altogether. A projecting red indicator shows that the circuit-breaker has

opened (providing it has been tripped by the coil concerned).

Undervoltage releases

These are intended to protect connected apparatus in the event of a voltage drop between 70% and 35% of its rated value, as established by the standards. In many cases it is used to prompt an emergency outage in positive safety conditions. There are also two versions which have a 100ms tripping time lag (types S9-V24AC and S9-V24DC) to prevent any unwanted operation in the event of micro-interruptions in the mains power supply lasting less than 100ms. A projecting red indicator shows that the circuit-breaker has opened (providing it has been tripped by the coil concerned).

Combinations of the S 9..N range of circuit-breakers with auxiliary elements (maximum configuration)



The position for the assembly of the accessories has been differentiated; the coil (shunt trip or undervoltage release) is installed on the left of the circuit-breaker, while the contacts (up to three, only one of which may be a signal contact) are installed on the right.

Detailed ordering information and ordering codes

Rated current		Code	
In [A]	Characteristic B	Characteristic C	
2		EE 550 8	
4		EE 551 6	
6		EE 552 4	
10		EE 553 2	
16		EE 554 0	
20		EE 555 7	
25		EE 556 5	
32		EE 557 3	
40		EE 558 1	



Electric

S 951N

 Tripping characteristics B (Im = 3...5In) C (Im = 5...10In)	2		EE 570 6	
	4		EE 571 4	
	6	EE 560 7	EE 572 2	
 Breaking capacity according to IEC EN 60898: Icn=6kA according to IEC EN 60947.2: Icu 10kA, Ics=6kA	10	EE 561 5	EE 573 0	
	16	EE 562 3	EE 574 8	
	20	EE 563 1	EE 575 5	
	25	EE 564 9	EE 576 3	
	32	EE 565 6	EE 577 1	
 Applications domestic, commercial and industrial applications	40	EE 566 4	EE 578 9	



Electric

S 971N

 Tripping characteristics B (Im = 3...5In) C (Im = 5...10In)	2		EE 590 4	
	4		EE 591 2	
	6		EE 592 0	
 Breaking capacity according to IEC EN 60898: Icn=10kA according to IEC EN 60947.2: Icu 15kA, Ics=10kA	10		EE 593 8	
	16		EE 594 6	
	20		EE 595 3	
	25		EE 596 1	
	32		EE 597 9	
 Applications commercial and industrial applications	40		EE 598 7	



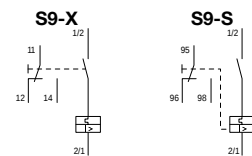
Electric

Code	Type	Description
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Auxiliary elements

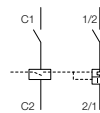
Auxiliary and signal contacts

EE 610 0	S9-X	auxiliary contact 1NO+1NC (1/2 module)
EE 611 8	S9-S	signal contact (1/2 module)



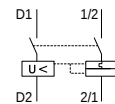
Shunt trips

EE 619 1	S9-T24	shunt trip 12-24V ac/dc (1 module)
EE 620 9	S9-T130	shunt trip 48-130V ac and 48-60V dc (1 module)
EE 621 7	S9-T415	shunt trip 220-415 ac and 110-250V dc (1 module)

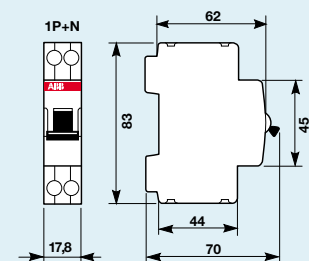


Undervoltage releases

EE 612 6	S9-V24AC	undervoltage release 24V ac with time lag (1 module)
EE 613 4	S9-V24DC	undervoltage release 24V dc with time lag (1 module)
EE 614 2	S9-V48AC	undervoltage release 48V ac (1 module)
EE 615 9	S9-V48DC	undervoltage release 48V dc (1 module)
EE 616 7	S9-V230AC	undervoltage release 230V ac (1 module)



Overall dimensions S 941N-S 951N-S 971N



Further features:

- large terminal size (16 mm² in all versions);
- restyling;
- use of a two-tone red/green toggle for making the ON/OFF conditions immediately recognizable.

Another strong point of the new circuit-breakers in the S 941N, S 951N and S 971N ranges is

represented by the availability of optional accessories including a complete range of dedicated auxiliary elements (undervoltage releases, auxiliary and signal contacts, shunt trips). These elements are coupled directly to the circuit-breaker without the aid of any additional components, such as studs or clips, and

they allow for numerous functions and configurations. This new generation of modular circuit-breakers is naturally designed for wiring with the Unifix rapid system (by means of suitable L1-N, L2-N, L3-N connection bridges).

Technical features S 941N, S 951N, S 971N

Rated current I _n	[A]	2...40 (C); 6...40 (B)
Rated voltage	[V]	230 ac
Minimum operating voltage	[V]	12
Electrical service life	[n°]	10000
Mechanical service life	[n°]	20000
Tropicalization according to DIN 40046		95% RH at 55°C
Dimension of terminals	[mm ²]	16
Number of poles		1P+N
Weight	[g]	110
Protection degree		IP20
Standards		IMQ - UTE KEMA

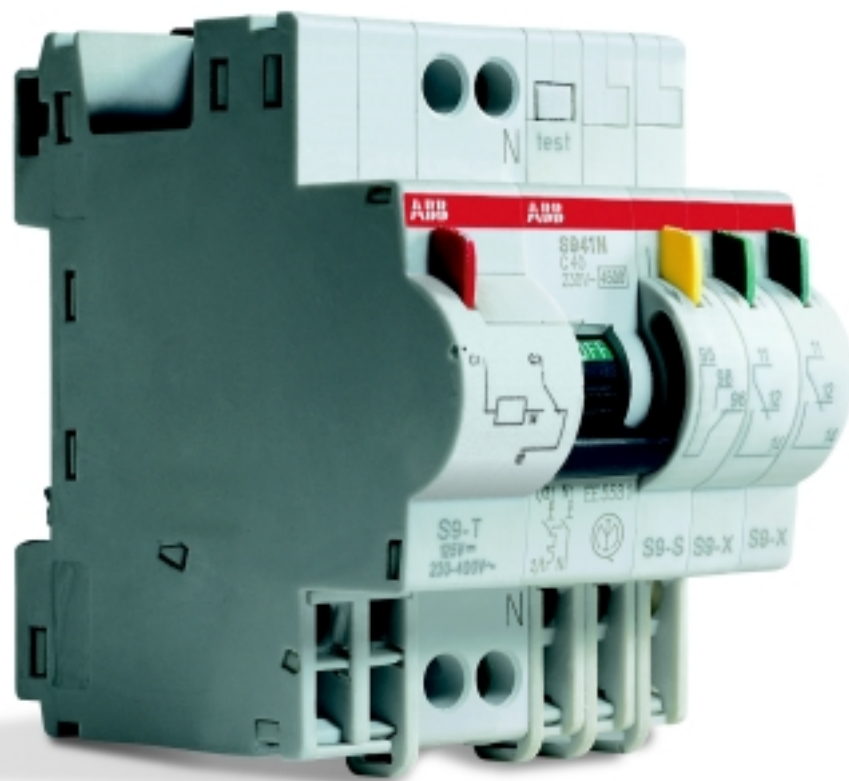




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