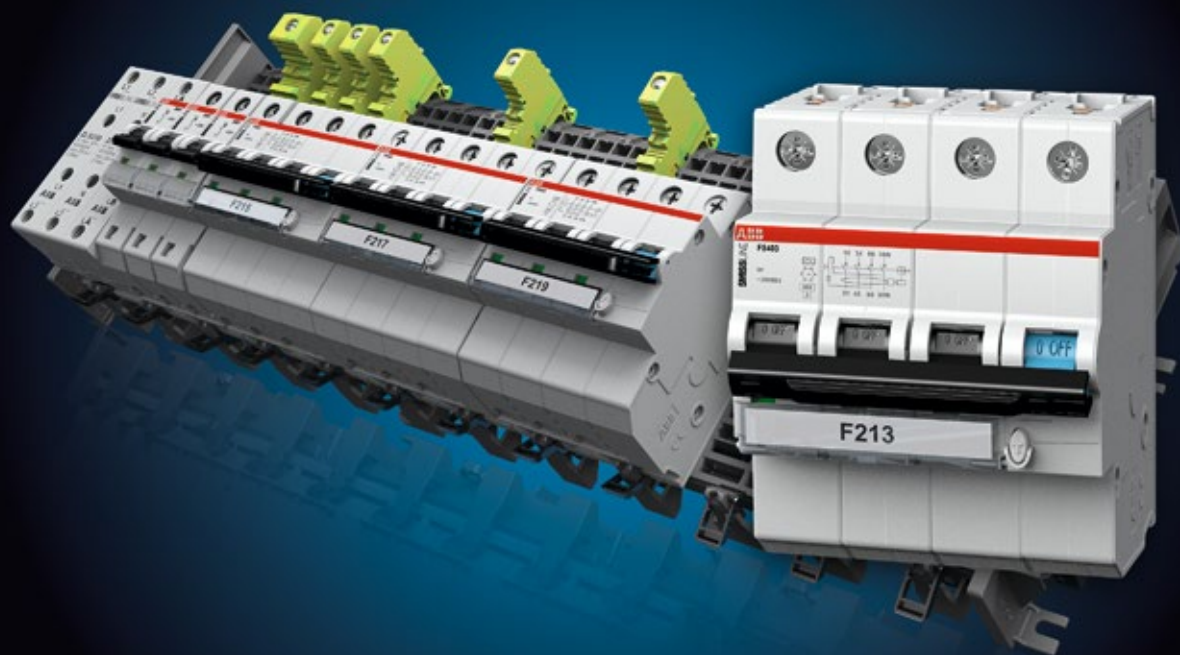




SMISSLINE

New residual current circuit-breakers
with overcurrent protection (RCBO) 3L-N

Power and productivity
for a better world™



SMISSLINE

New generation RCBO

New generation of RCBO devices FS403

With the residual-current line circuit breakers in the FS403 model series, ABB is providing protecting all kinds of multiply-phase AC circuits in modern systems.

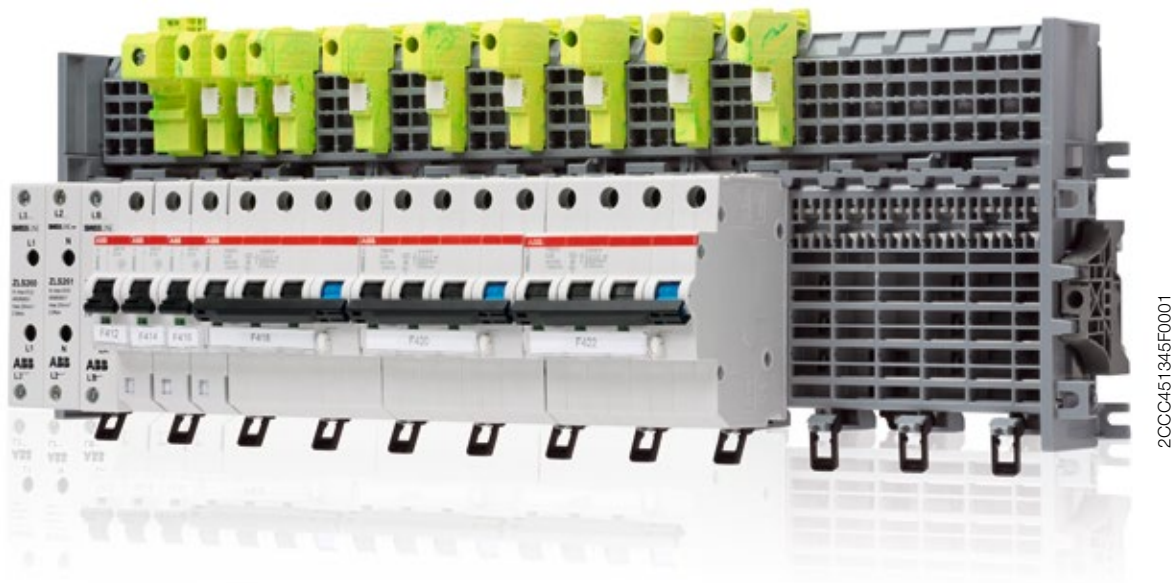
The devices simultaneously provide the following protection:

- Protection of end user single-phase circuits against overload and short-circuit currents
- Protection against the effects of sinusoidal alternating earth fault currents
- Protection against indirect contact
- Additional protection against direct contact ($I_{\Delta n}=30\text{ mA}$)

The FS403 Residual current circuit breaker with overcurrent protection are a technically advanced and comprehensive series with regard to dimensions, triggering characteristics, rated breaking capacity and accessories. The existing auxiliary and signal contacts of the SMISSLINE series are compatible with the new devices.

Device characteristics:

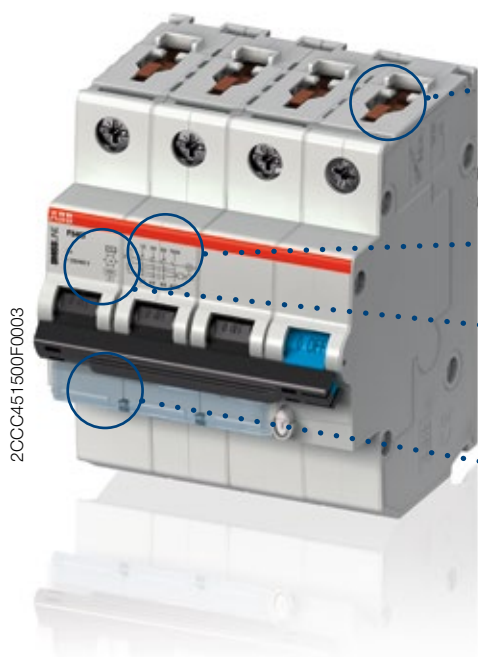
- Rated breaking capacity 6 kA and 10 kA
- Rated current 6 A to 32 A, now continuous with 10 kA in accordance with EN61009-1
- Position indicating device (indication of internal contact position)
- Transparent plastic flap for holding marking labels



SMISSLINE

The details make the difference

A range designed to ensure efficiency and protection



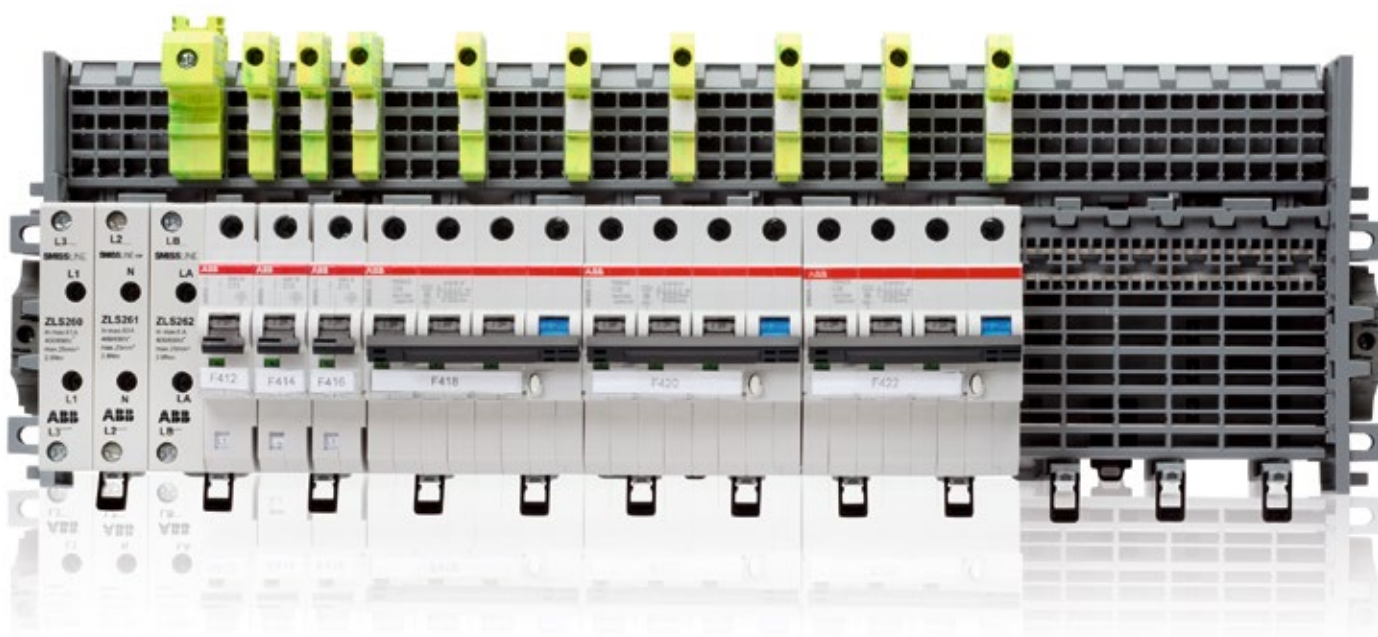
20CC451500F0003

• Bi-directional cylindrical terminals ensure save and easier connecting operations.

• Information on the device is laser printed to ensure readability over time.

• Short-circuit current protection 10 kA up to 32 A according to EN/IEC 61009-1

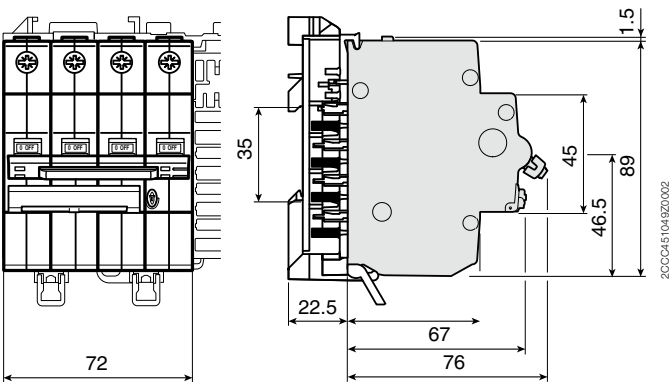
• Label carrier to clearly identify the protected circuit.



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Technical Data, Dimensions (in mm)

	FS403
Rated voltage U_n :	240/415 V
Number of poles:	3PN
Rated frequency f_n :	50/60 Hz
Rated breaking capacity I_{cn} :	10 kA bzw. 6 kA
Current limitation class:	3
Total cut-off time (avarage time) acc. to IEC/EN 61009-1	EN61009
– at $I_{\Delta n}$	40 ms
– at $5I_{\Delta n}$	25 ms
Standed Cross-section of conductors (top/bottom)	Upper terminal part 0,75–35 mm ² Lower terminalpart 0,75–10 mm ²
Tightening torque:	2.8 Nm
Degree of protection:	IP20
Endurance:	> 5000
Resistance to climate:	according to EN61009
Ambient temperature:	–25 °C ... +40 °C
Vibration resistance:	EN 61009-1
Plastic parts:	halogen free, according
contacts:	IEC 61-249-2-21 cadminum free
Approvals and standards:	EN/IEC 61009-1, SEV



Internal resistances and power losses, Derating

Internal resistances and power losses

Internal resistances and power losses per pole (cold resistance at room temperature)

FS403

Typ	R _i mΩ für L	R _i mΩ für N	P _v W
6A B, C	48.1	1.9	3
10A B, C	15.5	2.1	2.69
13A B, C	10.1	1.8	2.96
16A B, C	7.9	1.9	3.52
20A B, C	5.6	1.7	3.94
25A B, C	4.8	1.7	5.19
32A B, C	3.6	1.5	6.38

Performances at different ambient temperatures

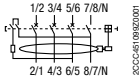
Max. operating current depending on the ambient temperature
of a circuit-breaker in load circuit of characteristics type B, C

Influence of adjacent
devices Correction
factor F_m

B,C	Ambient temperature T (°C)								No. Of adjacent devices	correction factor
I _n (A)	-25	-20	-10	0	10	20	30	40		
6	7.95	7.8	7.4	7.1	6.7	6.4	6	5.6	4	0.86
10	11.8	11.6	11.3	11	10.7	10.3	10	9.7	6	0.8
13	15.65	15.4	14.9	14.4	14	13.5	13	12.5	7	0.78
16	18.65	18.4	17.9	17.4	17	16.5	16	15.5	8	0.77
20	23.1	22.8	22.2	21.7	21.1	20.6	20	19.4	9	0.76
25	30.8	30.3	29.2	28.2	27.1	26.1	25	23.9	10	0.76
32	39.3	38.6	37.3	36	34.7	33.3	32	30.7		

FS403

Ordering codes



2CCC451500F0003

- new
- new
- new

B, 10 kA according to EN 61009-1

I _{Δn} [mA]	I _n [A]	I _{cn} [kA]	Type name	ABB IT number	EAN number 761 227	Pack- aging unit	Module	Weight in grams
30	6	10	FS403M-B6/0.03	2CCL564110E0065	143 4434	1	4	425
30	10	10	FS403M-B10/0.03	2CCL564110E0105	140 7612	1	4	425
30	13	10	FS403M-B13/0.03	2CCL564110E0135	140 7629	1	4	425
30	16	10	FS403M-B16/0.03	2CCL564110E0165	140 7636	1	4	425
30	20	10	FS403M-B20/0.03	2CCL563110E0205	144 2576	1	4	425
30	25	10	FS403M-B25/0.03	2CCL563110E0255	144 2590	1	4	425
30	32	10	FS403M-B32/0.03	2CCL563110E0325	144 2613	1	4	425

C, 6 kA according to EN 61009-1

30	6	6	FS403E-C6/0.03	2CCL564111E0064	141 9141	1	4	425
30	10	6	FS403E-C10/0.03	2CCL564111E0104	143 4489	1	4	425
30	13	6	FS403E-C13/0.03	2CCL564111E0134	143 4519	1	4	425
30	16	6	FS403E-C16/0.03	2CCL564111E0164	143 4601	1	4	425
30	20	6	FS403E-C20/0.03	2CCL564111E0203	140 9609	1	4	425
30	25	6	FS403E-C25/0.03	2CCL564111E0254	140 8770	1	4	425
30	32	6	FS403E-C32/0.03	2CCL564111E0324	140 8787	1	4	425

C, 10 kA according to EN 61009-1

30	6	10	FS403M-C6/0.03	2CCL564110E0064	141 9127	1	4	425
30	10	10	FS403M-C10/0.03	2CCL564110E0104	140 7674	1	4	425
30	13	10	FS403M-C13/0.03	2CCL564110E0134	140 7681	1	4	425
30	16	10	FS403M-C16/0.03	2CCL564110E0164	140 7698	1	4	425
30	20	10	FS403M-C20/0.03	2CCL563110E0204	144 2569	1	4	425
30	25	10	FS403M-C25/0.03	2CCL563110E0254	144 2583	1	4	425
30	32	10	FS403M-C32/0.03	2CCL563110E0324	144 2606	1	4	425

- new
- new
- new

C, 10 kA according to EN 61009-1

100	6	6	FS403M-C6/0.1	2CCL564121E0064	142 4527	1	4	425
100	10	10	FS403M-C10/0.1	2CCL564121E0104	142 4510	1	4	425
100	13	10	FS403M-C13/0.1	2CCL563120E0134	144 2620	1	4	425
100	16	10	FS403M-C16/0.1	2CCL564120E0164	142 0109	1	4	425
100	20	10	FS403M-C20/0.1	2CCL563120E0204	144 2637	1	4	425
100	25	10	FS403M-C25/0.1	2CCL563120E0254	144 2644	1	4	425
100	32	10	FS403M-C32/0.1	2CCL563120E0324	144 2651	1	4	425

- new
- new
- new

FS403

Auxiliary switch and signal contacts



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The auxiliary switch and signal contacts are supplied with one contacting piece. The signal contact collective alarm are supplied with two contacting pieces.

Auxiliary switch

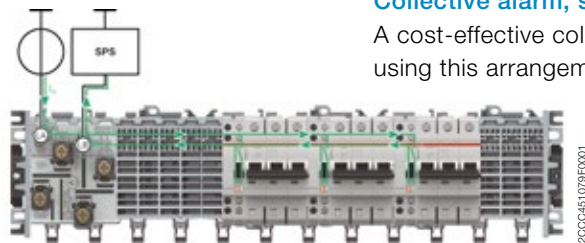
	Type name	ABB IT number	EAN number	Pack-aging unit	Module	Weight in grams
			761 227			
1NO and 1NC	HK40011-L	2CCS500900R0081	010 0910	10	0.5	45
2NO	HK40020-L	2CCF201112R0001	011 1183	10	0.5	40
2NC	HK40002-L	2CCF201114R0001	011 1190	10	0.5	40

Signal contacts

	Type name	ABB IT number	EAN number	Pack-aging unit	Module	Weight in grams
			761 227			
1NO and 1NC	SK40011-L	2CCS500900R0101	010 0934	10	0.5	45
2NO	SK40020-L	2CCF201162R0001	011 1107	10	0.5	40
2NC	SK40002-L	2CCF201164R0001	011 1114	10	0.5	40

Signal contact collective alarm and auxiliary contact

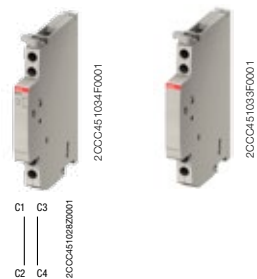
	Type name	ABB IT number	EAN number	Pack-aging unit	Module	Weight in grams
			761 227			
1NO	SK40010-L SA	2CCS500900R0141	010 7964	10	0.5	45
1NO	HK40010-L SA	2CCF201212R0001	140 7902	10	0.5	45



2CCC451079F0001

Collective alarm, signal contact contacts the auxiliary busbars LA, LB

A cost-effective collective alarm solution can be implemented without additional wiring by using this arrangement.



2CCC451034F0001

2CCC451033F0001

Connection support dummy housing

for left or right side mounting on MCB S400, RCCB F402, RCCB F404, RCBO FS401

Connection support	Type name	ABB IT number	EAN number	Pack-aging unit	Module	Weight in grams
			761 227			
Dummy housing						
Compensation to 18 mm	ZLS931	2CCS500900R0161	010 0965	10	0.5	35

Contacting pieces for auxiliary switch and signal contacts

Contacting piece for HK/SK LA, LB	ZLS632	2CCS500900R0171	010 0972	Pack contains 100 items	—	200
Contacting piece for HK/SK LA, LB	ZLS635	2CC5201307R0171	010 9265	Pack contains 10 items	—	20
Contact Pin	ZLS633	2CCS500900R0201	010 8640	Pack contains 10 items		



2CCC451162F0001

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