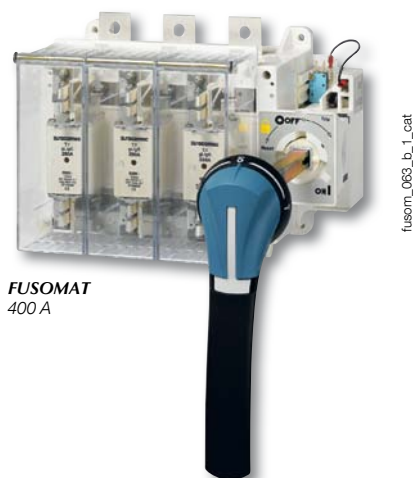


FUSOMAT

Visible breaking and tripping fuse switches
for industrial fuses up to 1250 A



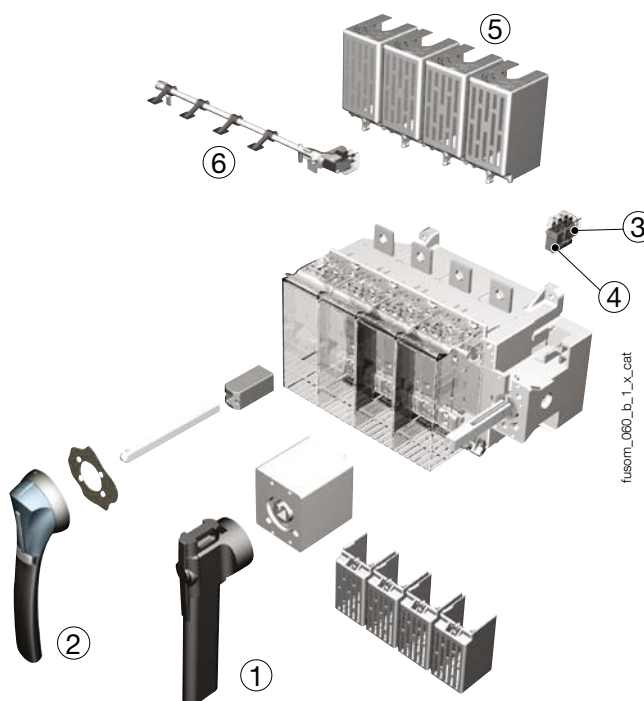
Function

FUSOMAT are manually controlled tri- or tetrapolar fuse combination switches. They can be tripped remotely. They break or switch off on load and provide safety isolation and protection against overcurrent for any low voltage electrical circuit. They can automatically disconnect a circuit in combination with:

- fuse blown indication.
- thermal relay.
- protective relays DIRIS.
- other protective devices.

Functional diagram (for further details see the installation instructions supplied with the product).

1. Direct front operation.
2. External front operation.
3. NO/NC position AC.
4. NO/NC AC wired to ready mounted transmission coil.
5. Terminal shrouds.
6. Fuse blown indication device.



Rating (A)	Nb of poles	Front operation		Side operation	
		NFC/DIN part number	BS88 part number	NFC/DIN part number	BS88 part number
250 ... 1250	3 P	3650 3***	3660 3***	3655 3***	3665 3***
	4 P	3650 4***	3660 4***	3655 4***	3665 4***

** - stands for a two characters of a partnumber depending on the rating of the switch.

Characteristics according to IEC 60947-3

25 to 1250 A

Thermal current I_{th} (40°C)	250 A	400 A	630 A	800 A	1250 A	
NFC/DIN fuse size	1	2	3	4	4	
Rated insulation voltage U_i (V)	1000	1000	1000	1000	1000	
Rated impulse withstand voltage U_{imp} (kV)	12	12	12	12	12	
Rated operational currents I_e (A)						
Rated voltage	Utilisation category	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾
400 VAC	AC-21 A / AC-21 B	250/250	400/400	630/630	800/800	1250/1250
400 VAC	AC-22 A / AC-22 B	250/250	400/400	630/630	800/800	1250/1250
400 VAC	AC-23 A / AC-23 B	250/250	400/400	630/630	800/800	1000/1000
690 VAC ⁽²⁾	AC-21 A / AC-21 B	200/200	315/400	500/630	800/800	800/1250
690 VAC ⁽²⁾	AC-22 A / AC-22 B	200/200	315/400	500/630	800/800	800/1000
690 VAC ⁽²⁾	AC-23 A / AC-23 B	200/200	250/315	315/400	630/630	630/630
220 VDC	DC-21 A / DC-21 B	200/200	315/315	400/630	800/800	800/1250
220 VDC	DC-22 A / DC-22 B	200/200	315/315	315/630	800/800	800/1250
220 VDC	DC-23 A / DC-23 B	200/200	200/315	400/630	800/800	800/1000
440 VDC	DC-21 A / DC-21 B	200/200	315/315	400/630 ⁽³⁾	800/800 ⁽⁴⁾	800/1250 ⁽⁴⁾
440 VDC	DC-22 A / DC-22 B	200/200	315/315 ⁽³⁾	315/630 ⁽³⁾	800/800 ⁽⁴⁾	800/1250 ⁽⁴⁾
440 VDC	DC-23 A / DC-23 B	200/200	200/315 ⁽³⁾	400/630 ⁽³⁾	800/800 ⁽⁴⁾	800/1000 ⁽⁴⁾
Operational power in AC-23 (kW)						
At 400 VAC without pre-break in AC-23 (kW) ⁽¹⁾⁽⁵⁾	132/132	220/220	355/355	450/450	560/560	
At 690 VAC without pre-break in AC-23 (kW) ⁽¹⁾⁽⁵⁾	185/185	220/295	295/400	400/400	600/600	
Reactive power (kvar)						
At 400 VAC (kvar) ⁽⁵⁾	115	185	290	365	575	
Fuse protected short-circuit withstand (kA ms prospective)						
Prospective short-circuit (kA rms) ⁽⁶⁾	80/100	80/100	80/100	80/100	80/100	
Associated fuse rating (A) ⁽⁶⁾	250	400	630	800	1250	
Short-circuit capacity						
Rated peak withstand current (kA peak) ⁽⁶⁾	30	45	60	80	80	
Connection						
Min. connection wire range	95	185	2 x 150			
Minimum Cu busbar section (mm ²)			2 x 30 x 5	2 x 60 x 5	2 x 60 x 5	
Maximum Cu cable section (mm ²)	240	240	2 x 300	4 x 185	4 x 185	
Maximum Cu busbar width (mm)	40	40	50	100	100	
Tightening torque min (Nm)	20	20	40		20	
Mechanical characteristics						
Durability (number of operating cycles)	8000	8000	5000	5000	5000	
Weight of a 3 pole device (kg)	7	8	16	28	28	
Weight of a 4 pole device (kg)	8.5	9.5	19	33	33	

(1) Category with index A = frequent operation - Category with index B = infrequent operation.

(2) With terminal shrouds or phase barrier.

(3) Poles cannot be juxtaposed.

(4) 4-pole device with 2 pole in series by polarity.

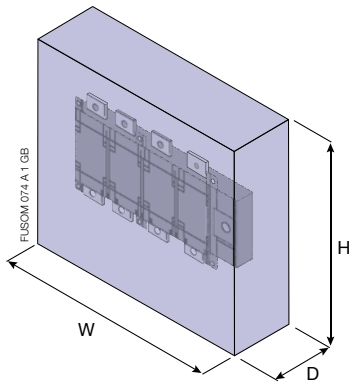
(5) The power value is given for information only, the current values vary from one manufacturer to another.

(6) For a rated operational voltage $U_n = 400$ VAC.

FUSOMAT

Visible breaking and tripping fuse switches
for industrial fuses up to 1250 A

Product integration data in compliance with IEC / EN 61439-1



Below listed data is applicable to:

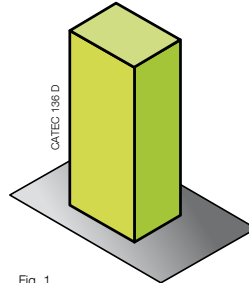


Fig. 1
Enclosure

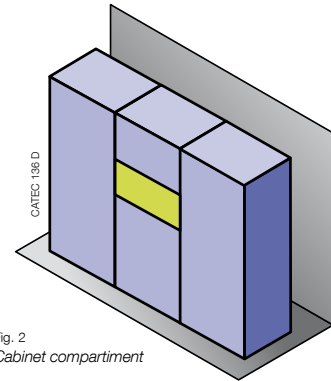


Fig. 2
Cabinet compartment

Dimensions of the Functional Unit			Mounting		Fuse type	Max operational current, I _e (A)				
H (mm)	W (mm)	D (mm)	Enclosure	Orientation	NFC/DIN	250 A	400 A	630 A	800 A	1250 A
					BS88	1	2	3	3	4
350	500	300	Fig. 1	V ⁽¹⁾		200	320			
			Fig. 2	V/H ⁽¹⁾		-/170	315/300			
400	450	300	Fig. 1	V ⁽¹⁾		245	320			
			Fig. 2	V/H ⁽¹⁾		215/200	320/305			
300	600	350	Fig. 1	V ⁽¹⁾		250				
			Fig. 2	V/H ⁽¹⁾		225/205				
450	500	350	Fig. 1	V ⁽¹⁾		250	330	560		
			Fig. 2	V/H ⁽¹⁾		240/235	-	500/440		
500	600	350	Fig. 1	V ⁽¹⁾			400	590	590	890
			Fig. 2	V/H ⁽¹⁾			340/-	560/504	560/504	850/765
800	650	350	Fig. 1	V ⁽¹⁾			400	612	680	1000
			Fig. 2	V/H ⁽¹⁾			-	-	650/590	950/850
1000	800	400	Fig. 1	V ⁽¹⁾				630	800	1125
						Min cross-section, mm²				
Cable (mm ²)						120	240	2 x 185	2 x 240	4 x 185
Cu busbar (mm ²)						> 25 x 4	> 20 x 6	> 32 x 10	> 50 x 10	> 80 x 10

(1) V : vertical position of connection terminals; H : horizontal position of connection terminals

Rating (A)	Heat dissipation - nominal current I _{th}				
	250	400	630	800	1250
Switch heat dissipation W/pole	16	22	57	66	154
NF/DIN fuse link W/pole	23	33	61	70	110
BS88 fuse link W/pole	19	32	55	70	100

Maximum ambient temperature	
External	35°C
Internal	60°C

Fuse derating due to the ambient temperature (ta) surrounding the device

$$I_{th} u \leq Kt \times I_n$$

$I_{th} u$: operation thermal current: maximum permanent current accepted by the device for 8 hours in specific conditions

I_n : fuse rated current

Kt : coefficient given in table below

If the fuse is installed in a ventilated enclosure Kt and Kv values must be multiplied.

- Air speed $V < 5$ m/s $Kv = 1 + 0.05 V$
- Air speed $V \geq 5$ m/s $Kv = 1.25$

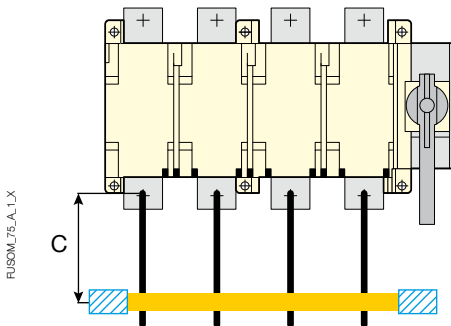
Example: A gG fuse is mounted in a base within a ventilated enclosure

- temperature in the enclosure: 60 °C
- air speed: 2 m/s

$$Kv = 1 + 0.05 \times 2 = 1.1$$

$$Kt = 1.1 \times 0.86 = 0.95$$

Temperature (ta)	Kt		aM Fuse	
	gG Fuse		Fuse base	Equipment and combination
40°C	Fuse base	Equipment and combination	Fuse base	Equipment and combination
40°C	1	1	1	1
45°C	1	0.95	1	1
50°C	0.93	0.90	0.95	0.95
55°C	0.90	0.86	0.93	0.90
60°C	0.86	0.83	0.90	0.86
65°C	0.83	0.79	0.86	0.83
70°C	0.80	0.76	0.84	0.80



Recommended tightening torque	Maximum tightening torque
M6: 4.5 N.m	M6: 5.4 N.m
M8: 8.3 N.m	M8: 13 N.m
M10: 20 N.m	M10: 26 N.m
M12: 40 N.m	M12: 45 N.m

C - Min power connections length	400 mm
C - Min distance to first bus bar support	400 mm