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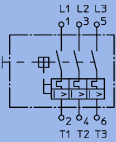
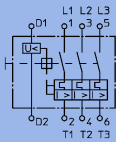
## Motor Protection Circuit-Breakers Series 8527/2

- For use in
  - Zone 1 and Zone 2
  - Zone 21 and Zone 22
- For protection of Ex e- and Ex d motors
- Protects cables and plant equipment
- Adjustable thermal over-current trip, phase failure sensitive
- Fast electromagnetic trip
- Robust enclosure of glass fibre-reinforced polyester resin
- Optionally with
  - Under-voltage trip
  - Shunt short trip
  - Ammeter
  - Auxiliary current switches

Series 8527 motor protection circuits-breakers are used where high short circuit currents are to be controlled and to protect both Ex e- and Ex d-motors. This switches are suitable to protect the installation basically without a back-up fuse. The breakers are actuated by a rotatable grip, which also gives unambiguous switch position identification.

# Zones 1 & 2, 21 & 22

Selection table

Current adjustment range	Auxiliary contacts	without accessories	with undervoltage trip	with undervoltage trip
		without ammeter <b>Ordering code</b>	without ammeter <b>Ordering code</b>	with ammeter <b>Ordering code</b>
0.1 A ... 0.16 A	without	 without ammeter <b>8527/21-01-0001</b>	 without ammeter <b>8527/21-01-10.1</b>	
0.1 A ... 0.16 A	1 NO + 1 NC	<b>8527/22-01-0201</b>	<b>8527/22-01-12.1</b>	
0.16 A ... 0.25 A	without	<b>8527/21-02-0001</b>	<b>8527/21-02-10.1</b>	
0.16 A ... 0.25 A	1 NO + 1 NC	<b>8527/22-02-0201</b>	<b>8527/22-02-12.1</b>	
0.25 A ... 0.4 A	without	<b>8527/21-03-0001</b>	<b>8527/21-03-10.1</b>	
0.25 A ... 0.4 A	1 NO + 1 NC	<b>8527/22-03-0201</b>	<b>8527/22-03-12.1</b>	
0.4 A ... 0.63 A	without	<b>8527/21-04-0001</b>	<b>8527/21-04-10.1</b>	
0.4 A ... 0.63 A	1 NO + 1 NC	<b>8527/22-04-0201</b>	<b>8527/22-04-12.1</b>	<b>8527/26-04-1291</b>
0.63 A ... 1 A	without	<b>8527/21-05-0001</b>	<b>8527/21-05-10.1</b>	
0.63 A ... 1 A	1 NO + 1 NC	<b>8527/22-05-0201</b>	<b>8527/22-05-12.1</b>	<b>8527/26-05-1291</b>
1 A ... 1.6 A	without	<b>8527/21-06-0001</b>	<b>8527/21-06-10.1</b>	
1 A ... 1.6 A	1 NO + 1 NC	<b>8527/22-06-0201</b>	<b>8527/22-06-12.1</b>	<b>8527/26-06-1291</b>
1.6 A ... 2.5 A	without	<b>8527/21-07-0001</b>	<b>8527/21-07-10.1</b>	
1.6 A ... 2.5 A	1 NO + 1 NC	<b>8527/22-07-0201</b>	<b>8527/22-07-12.1</b>	<b>8527/26-07-1291</b>
2.5 A ... 4 A	without	<b>8527/21-08-0001</b>	<b>8527/21-08-10.1</b>	
2.5 A ... 4 A	1 NO + 1 NC	<b>8527/22-08-0201</b>	<b>8527/22-08-12.1</b>	<b>8527/26-08-1291</b>
4 A ... 6.3 A	without	<b>8527/21-09-0001</b>	<b>8527/21-09-10.1</b>	
4 A ... 6.3 A	1 NO + 1 NC	<b>8527/22-09-0201</b>	<b>8527/22-09-12.1</b>	<b>8527/26-09-1291</b>
6.3 A ... 9 A	without	<b>8527/21-10-0001</b>	<b>8527/21-10-10.1</b>	
6.3 A ... 9 A	1 NO + 1 NC	<b>8527/22-10-0201</b>	<b>8527/22-10-12.1</b>	<b>8527/26-10-1291</b>
9 A ... 12.5 A	without	<b>8527/21-11-0001</b>	<b>8527/21-11-10.1</b>	
9 A ... 12.5 A	1 NO + 1 NC	<b>8527/22-11-0201</b>	<b>8527/22-11-12.1</b>	<b>8527/26-11-1291</b>
12.5 A .. 16 A	without	<b>8527/21-12-0001</b>	<b>8527/21-12-10.1</b>	
12.5 A .. 16 A	1 NO + 1 NC	<b>8527/22-12-0201</b>	<b>8527/22-12-12.1</b>	
16 A ... 20 A	without	<b>8527/23-13-0002</b>	<b>8527/23-13-10.2</b>	
16 A ... 20 A	1 NO + 1 NC	<b>8527/24-13-0202</b>	<b>8527/24-13-12.2</b>	
20 A ... 22.5 A	without	<b>8527/23-14-0002</b>	<b>8527/23-14-10.2</b>	
20 A ... 22.5 A	1 NO + 1 NC	<b>8527/24-14-0202</b>	<b>8527/24-14-12.2</b>	

Add. to ordering code

Rated voltage for accessories, undervoltage release AC	40 V; 50 Hz	<b>8527/.....3.</b>
	60 V; 50 Hz	<b>8527/.....4.</b>
	110 V; 50 Hz	<b>8527/.....5.</b>
	230 V; 50 Hz	<b>8527/.....6.</b>
	400 V; 50 Hz	<b>8527/.....7.</b>
	415 V; 50 Hz	<b>8527/.....8.</b>
500 V; 50 Hz	<b>8527/.....9.</b>	



### Technical Data

Explosion protection				
Gas explosion protection	⊕ II 2 G EEx de IIC T.			
	Type	Adjustment range	Temperature class	T <sub>max.</sub>
	8527/21	0.1 A up to 0.25 A	T6	80 °C
	8527/22	0.25 A up to 12.5 A 12.5 A up to 16 A	T5 T4	95 °C 130 °C
	8527/23	0.1 A up to 12.5 A	T6	80 °C
	8527/24	16 A up to 22.5 A	T5	95 °C
Dust explosion protection	⊕ II 2 D IP 65 T80 °C, T95 °C, T130 °C			
Certificates				
Gas explosion protection	DMT 02 ATEX E 026			
Dust explosion protection	LCIE 02 ATEX 6241 (see type 8146/5)			
Enclosure material	Polyester resin, dark grey similar to RAL 7024, Surface resistance ≤ 10 <sup>9</sup> ohms; impact strength ≥ 7 Nm, Material self-extinguishing and flame resistant to IEC-92-1, UL 94, ASTM D 635-77			
Mounting position	any			
Degree of protection	IP 66			
Switch element				
Main contacts	3 pole			
Rated working voltage	max. 690 V, AC, 50 Hz / 60 Hz			
Rated operating current	0.1 A ... 22.5 A			
Switching capacity	according to adjustment range (AC)			
	230 V	400 V	500 V	690 V
	6.4 kW	11.4 kW	14.4	20.0 kW
Thermal overcurrent trip	according to adjustment range, adjustment at switch see current adjustment range table			
Electromagnetic fast trip	Adjustment range	Threshold values set at factory		
	0.16 A ... 0.63 A	7.5 ... 12.0 I <sub>n</sub>		
	1.0 A ... 2.5 A	9.0 ... 14.0 I <sub>n</sub>		
	4.0 A ... 6.0 A	10.0 ... 15.0 I <sub>n</sub>		
	9.0 A ... 25.0 A	12.0 ... 17.5 I <sub>n</sub>		

Technical Data

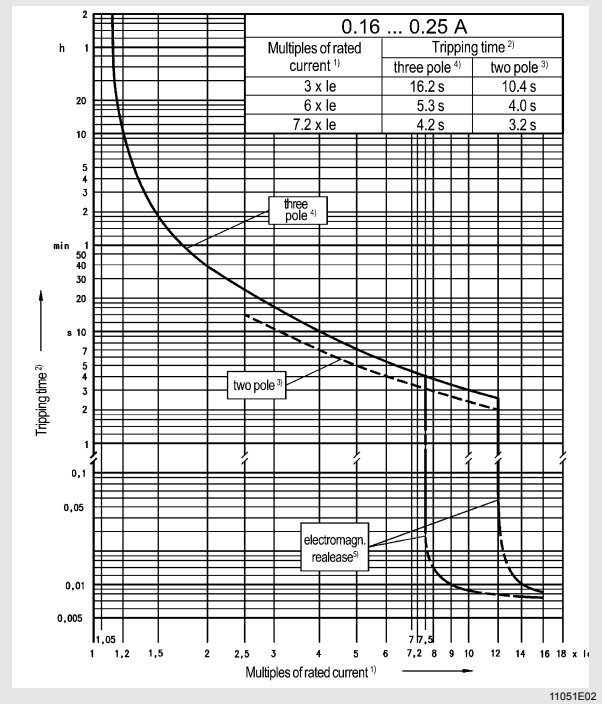
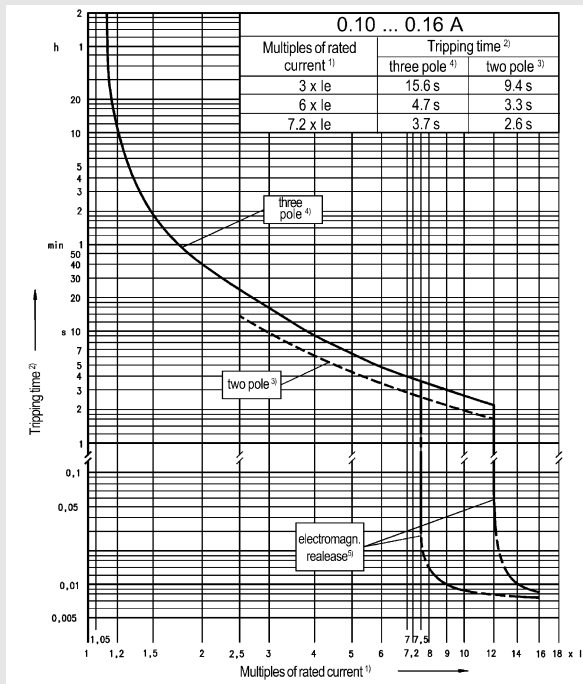
Back-up fuse	Adjustment range from ... to	Highest rated current of the short circuit fuse if $I_{CC} > I_{CS}$									
		at 230 V AC		at 400 V AC		at 440 V AC		at 500 V AC		at 690 V AC	
		$I_{CS}$	gL, aM	$I_{CS}$	gL, aM	$I_{CS}$	gL, aM	$I_{CS}$	gL, aM	$I_{CS}$	gL, aM
	0.1 A ... 0.16 A to 1.0 A ... 1.6 A	short-circuit proof, no fuse needed to $I_{CC} = 100$ kA									
	1.6 A ... 2.5 A								40 kA	25 A	
	2.5 A ... 4.0 A						60 kA	35 A / 40 A	10 kA	40 A	
	4.0 A ... 6.3 A			70 kA	50 A	40 kA	50 A	7 kA	40 A		
	6.3 A ... 9.0 A			50 kA	80 A	30 kA	80 A	5 kA	50 A		
	9.0 A ... 12.5 A		75 kA	80 A	45 kA	80 A	27 kA	80 A	4.5 kA	50 A	
	12.5 A ... 16.0 A		60 kA	100 A	40 kA	100 A	25 kA	100 A	4 kA	50 A	
	16.0 A ... 20.0 A		55 kA	100 A	35 kA	100 A	22 kA	100 A	3.5 kA	50 A	
	20.0 A ... 25.0 A		50 kA	125 A	30 kA	125 A	20 kA	125 A	3 kA	50 A	
		$I_{CS}$ = Breaking capacity of rated operating short circuit $I_{CC}$ = Projected short circuit current at the installation location									
Mechanical life	10 <sup>5</sup> operations										
Ambient temperature	- 20 °C ... + 40 °C - 40 °C ≤ Ta ≤ 55 °C										
Handle	Labeling: 0 - I; in 0-position can be padlocked in 3 positions Colour: Standard: Grip black, collar black Special: Red grip and yellow collar (EM-STOP)										
Accessories											
Auxiliary contacts	Option: None; 1 NC + 1 NO; 2 NC + 2 NO										
Rated working voltage	max. 500 V, AC										
Rated working current	AC 15: 24 V / 2.5 A    230 V / 2 A    400 V / 1 A DC 13: 24 V / 2.5 A    60 V / 2.5 A    110 V / 0.6 A    220 V / 0.25 A    440 V / - A										
Undervoltage trip											
Function	When power is lost, circuit-breaker trips; this prevents unwanted restarting, e.g. of a motor										
Pick-up voltage	≥ 0.85 x U <sub>c</sub>										
Drop-out	0.7 ... 0.35 x U <sub>c</sub>										
Power consumption											
Inrush	0.9 VA										
Holding	0.9 VA										
Shunt trip											
Function	For remote tripping of circuit-breakers by applying actuating voltage										
Pick-up voltage	≥ 0.85 x U <sub>c</sub>										
Relative duty cycle	Switches itself off automatically via integrated contact switch										
Power consumption											
Inrush	24 - 60 V: 14,4 - 90 VA; 110 - 240 V: 13 - 61 VA; 220 - 415 V: 17,6 - 62,3 VA										
Holding	Switches itself off automatically via integrated contact switch										

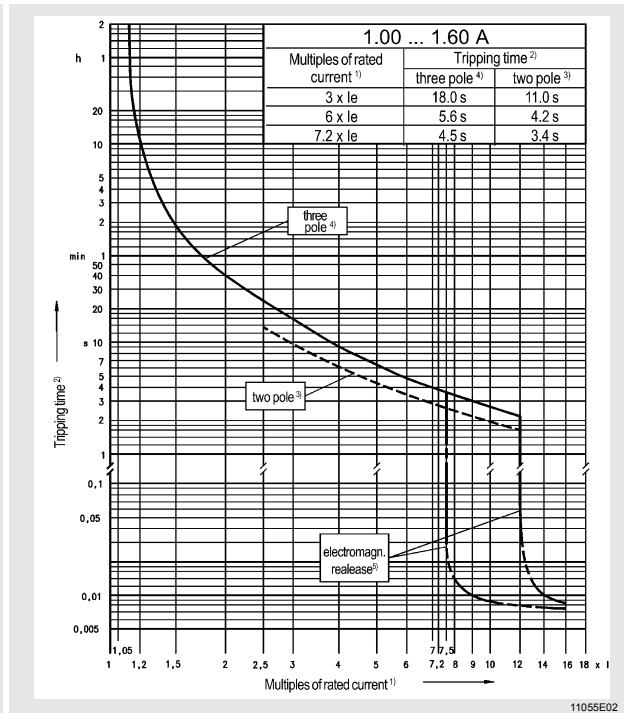
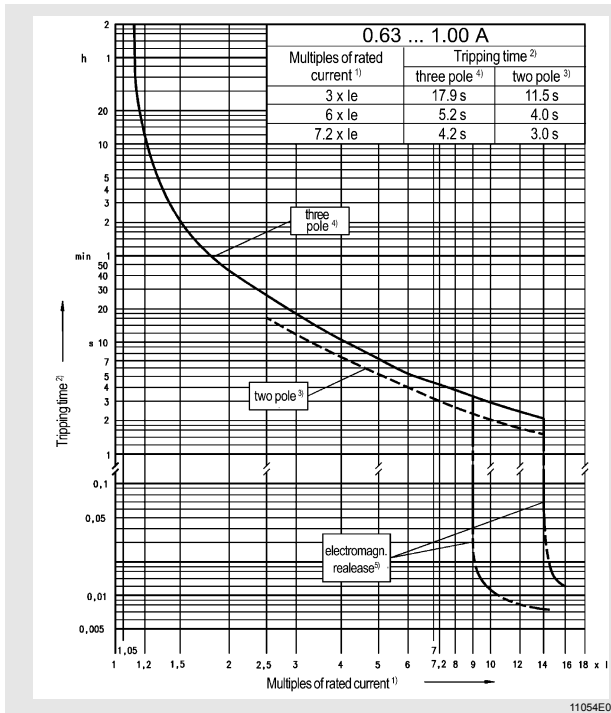
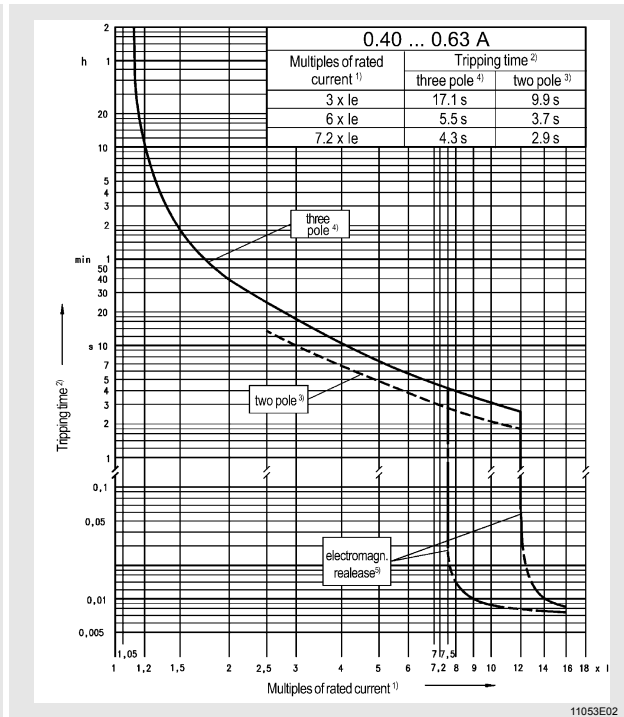
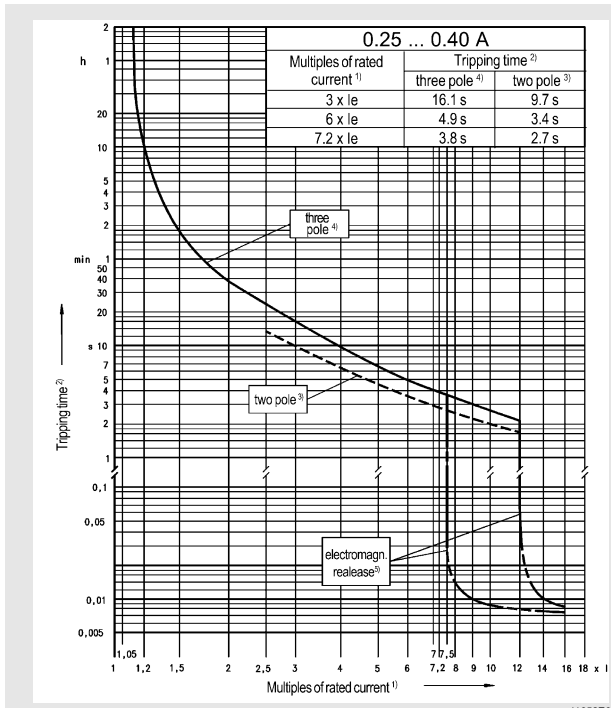


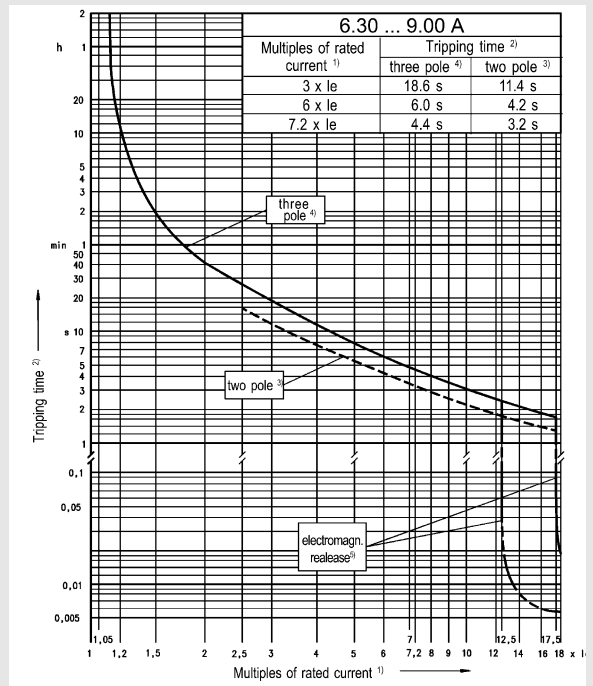
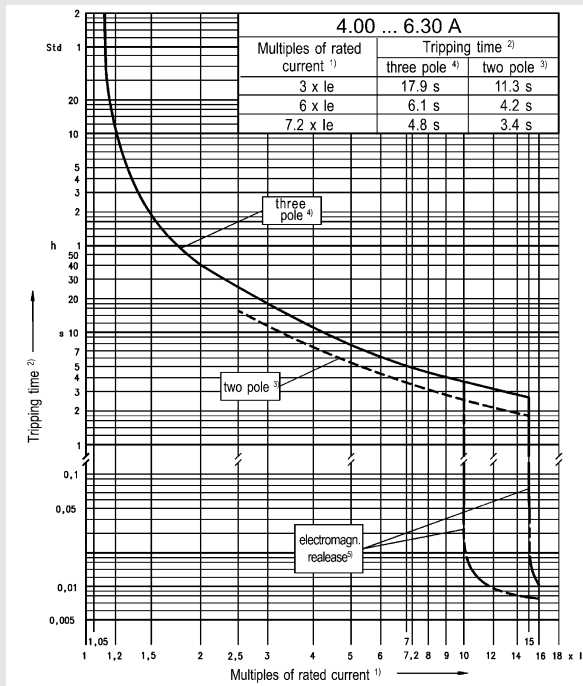
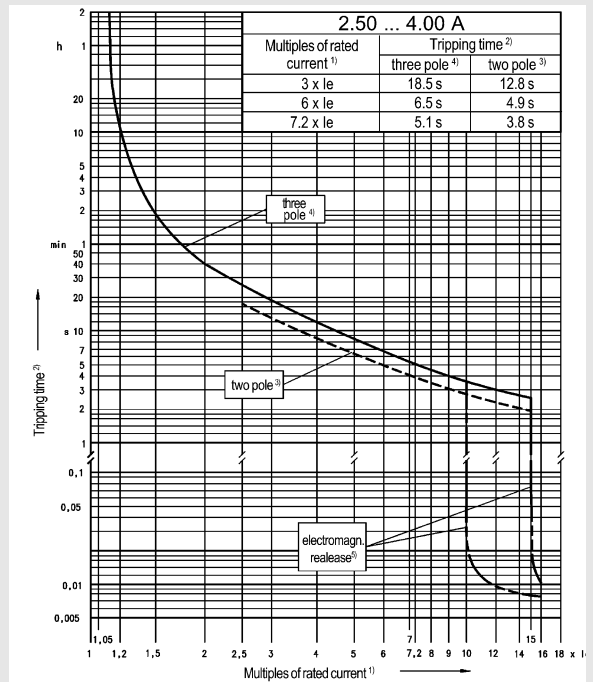
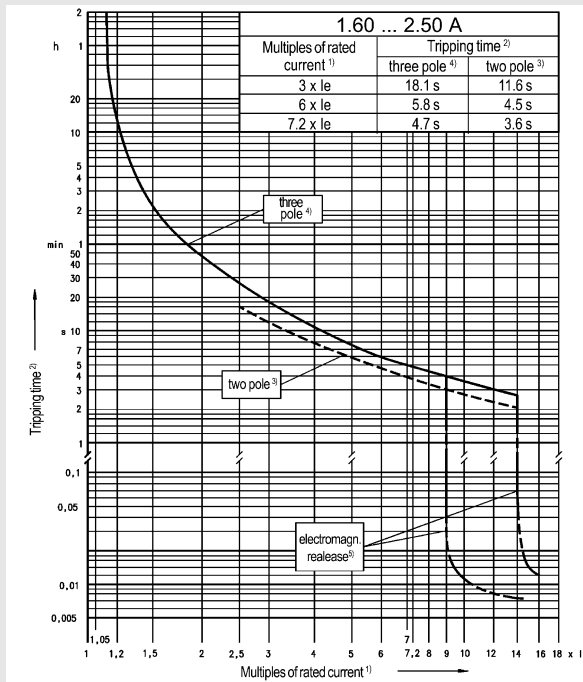
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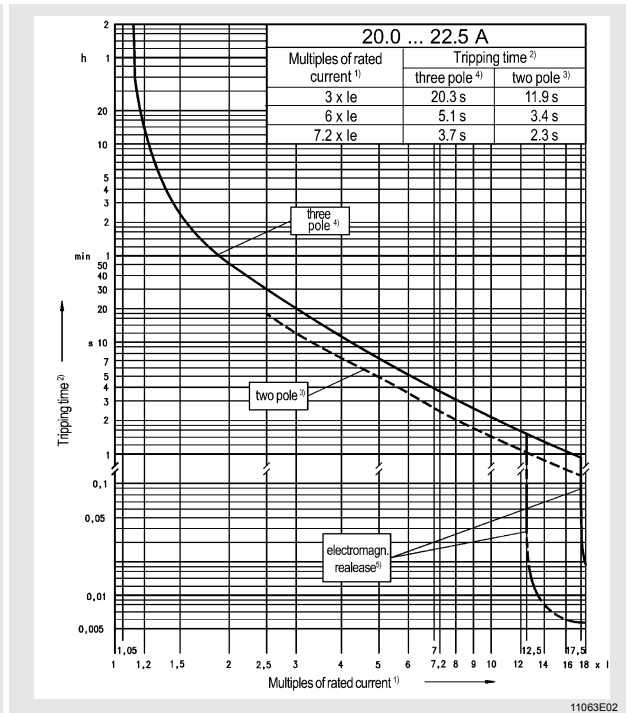
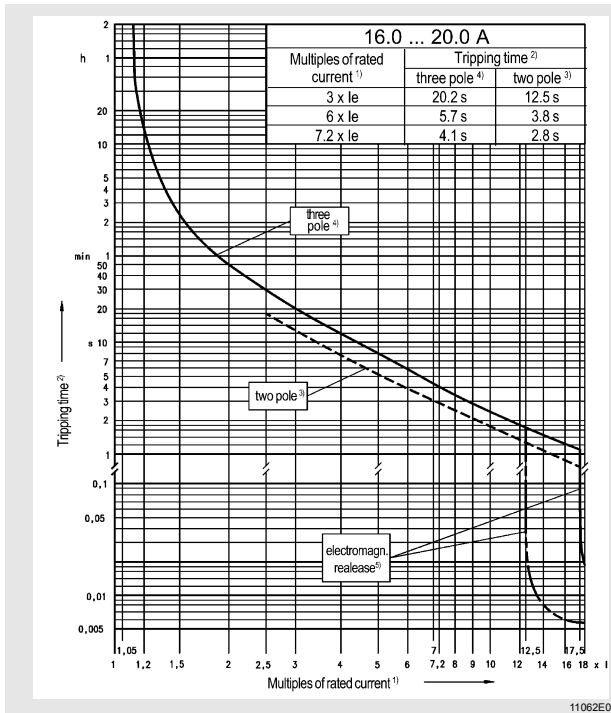
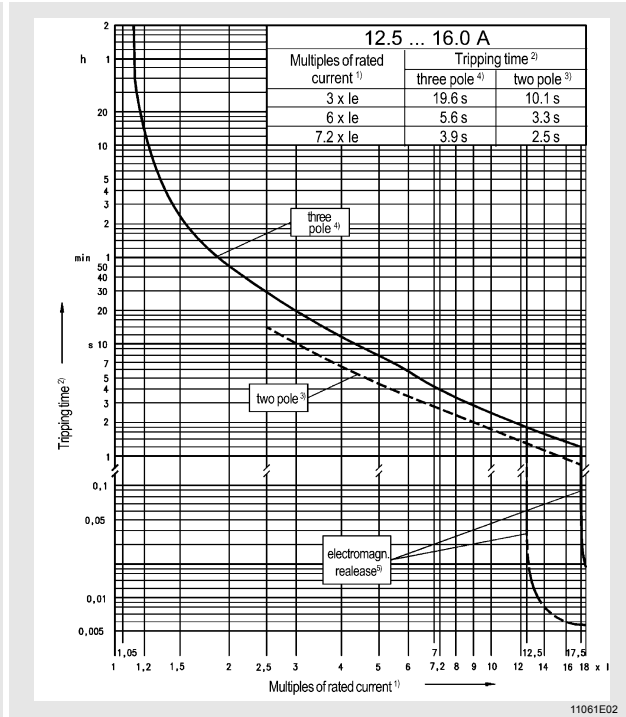
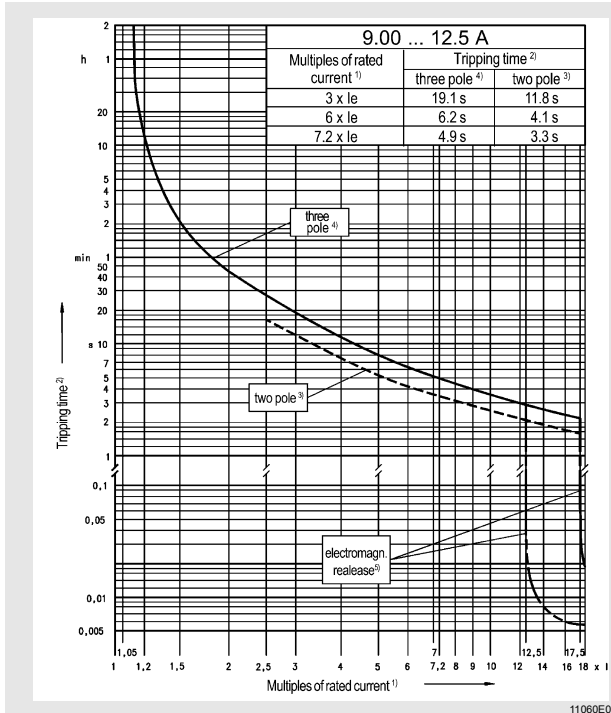
Ammeter					
Version	Type 8405; dimensions 64 mm x 64 mm				
Movement	Moving iron: class 2.5; direct measuring; overload scale 1:2				
Measuring range	Dependent on switch setting range				
Overload capacity	2 x I <sub>e</sub> 25 s; 50 x I <sub>e</sub> 1 s				
Cable entries					
Standard	Type	Accessories <sup>1)</sup>	8161 Cable		8290 Stopping plugs
			M 25 x 1.5	M 32 x 1.5	M 25 x 1.5
	8527/21	without with	2 3	- -	1 -
	8527/22	without with	2 3	- -	1 -
	8527/23; 8527/24	without with	- 1	2 2	1 -
	8527/25; 8527/26				
	0.1 ... 12.5 A	without with	2 3	- -	1 -
	12.5 ... 22.5 A	without with	- 1	2 2	1 -
M 25 x 1.5 for cables $\varnothing$ 12 mm ... 17 mm M 32 x 1.5 for cables $\varnothing$ 10 mm ... 18 mm					
Special	<sup>1)</sup> Accessories: Auxiliary contacts, undervoltage trip, shunt trip on request				
Connections	8527/21	directly to fitted components			
	8527/22	Main contacts	1.5 mm <sup>2</sup> ... 6 mm <sup>2</sup> flexible 1.5 mm <sup>2</sup> ... 10 mm <sup>2</sup> solid		
		Auxiliary contacts	0.75 mm <sup>2</sup> ... 1,5 mm <sup>2</sup> flexible 0.75 mm <sup>2</sup> ... 2,5 mm <sup>2</sup> solid		
	8527/23 8527/24 8527/25 8527/26	on terminals	0.5 mm <sup>2</sup> ... 6 mm <sup>2</sup> flexible 0.5 mm <sup>2</sup> ... 10 mm <sup>2</sup> solid		
	<b>Please note:</b> Compare cable diameter with cable diameter range of cable entries				

Adjustment range of motor protection switch	Trip time of motor protection switch at					
	3	4	5	6	7.2	8
	times the setting current, 3-pin, from cold state.					
A ... A	s	s	s	s	s	s
0.1 ... 0.16	15.0	9.0	6.5	4.8	3.7	3.2
0.16 ... 0.25	16.0	10.0	6.8	5.2	4.0	3.6
0.25 ... 0.4	16.0	9.7	6.5	5.0	3.8	3.3
0.4 ... 0.63	17.0	10.2	7.3	5.7	4.4	3.9
0.63 ... 1.0	17.5	10.2	7.2	5.5	4.2	3.8
1.0 ... 1.6	17.0	10.0	7.1	5.6	4.4	4.0
1.6 ... 2.5	18.0	10.3	7.5	5.9	4.7	4.2
2.5 ... 4.0	18.4	11.5	8.1	6.4	5.0	4.6
4.0 ... 6.3	19.0	12.0	8.5	6.7	5.3	4.9
6.3 ... 9.0	18.2	11.5	7.9	6.0	4.5	3.8
9.0 ... 12.5	19.0	11.5	8.0	6.0	4.6	4.0
12.5 ... 16.0	19.5	11.5	7.5	5.4	4.0	3.3
16.0 ... 20.0	20.0	11.5	7.8	5.7	4.2	3.5
20.0 ... 22.5	20.0	10.4	7.0	5.0	3.7	3.2

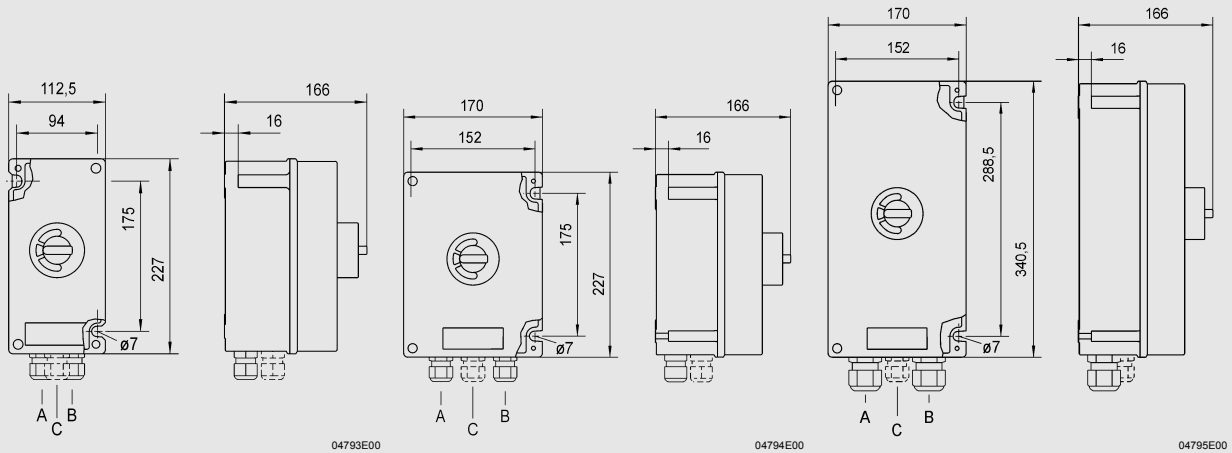








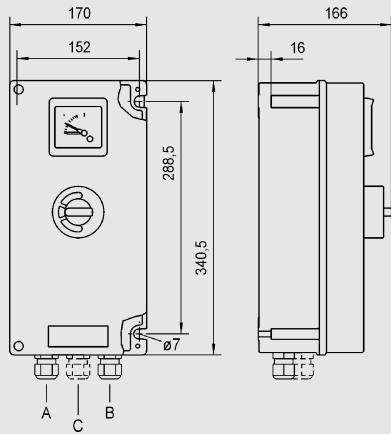
Dimension drawings (all dimensions in mm) - subject to alterations



8527/21

8527/22

8527/23; 8527/24



8527/25; 8527/26

Cable entries

Type	Accessories	Cable glands 8161		Stopping plugs 8290
		M 25 x 1.5	M 32 x 1.5	M 25 x 1.5
8527/21	without	A + B	--	C
	with	A, B, C	--	--
8527/22	without	A + B	--	C
	with	A, B, C	--	--
8527/23; 8527/24	without	--	A + B	C
	with	C	A + B	--
8527/25; 8527/26	without	A + B	--	C
		A, B, C	--	--
0.1 A ... 12.5 A	with	--	A + B	C
		C	A + B	--

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