

■ Datasheet: Miniature Circuit Breakers series AMPARO, 6kA



■ SCHRACK-INFO

- Lift and clamp terminals on both sides
- Terminal guide for secure connection
- Terminal cross-section: 1-25mm²
- Snap-on mounting for DIN rail EN 50 022

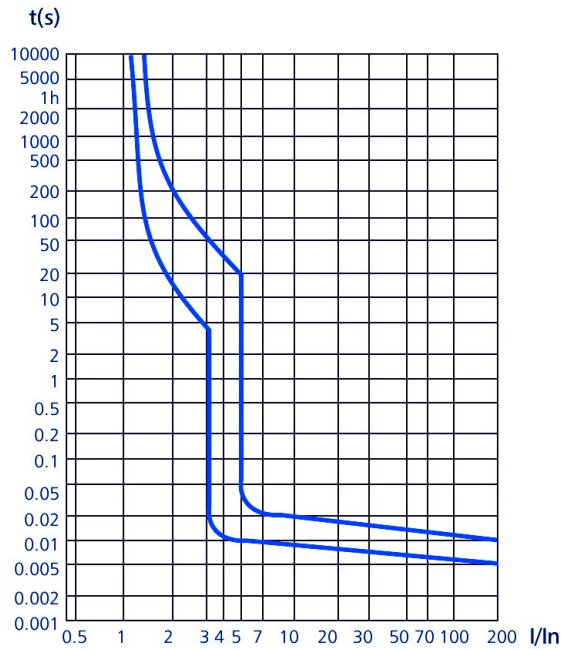
■ Technical data

Standards:	IEC/EN 60898-1
Rated voltage (AC):	230/400 - 240/415V -
Rated frequency (AC):	50/60Hz
Rated current I _n	2, 4, 6, 10, 16, 20, 25, 32, 40A, 50A, 63A
Tripping characteristics:	B, C
Rated breaking capacity:	6 kA acc. to IEC/EN 60898,
Energy limiting class	3
Rated impulse withstand voltage (1,2/50) U _{imp}	4kV
Dielectric test voltage at ind. Freq. For 1 min.	2kV
Polution degree	2

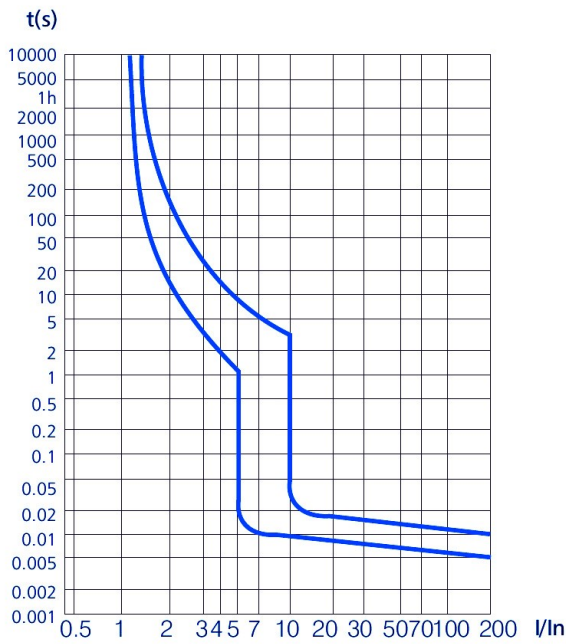
Total powerloss at I _n						
	1P	1+N	2P	3P	3+N	
2A	1,9 W	-	-	-	-	
4A	1,6 W	-	-	-	-	
6A	1,9 W	3,8 W	3,8 W	5,7 W	7,6 W	
10A	1,2 W	2,4 W	2,4 W	3,6 W	4,8 W	
13A	1,9 W	3,8 W	3,8 W	5,7 W	7,6 W	
16A	1,9 W	3,8 W	3,8 W	5,7 W	7,6 W	
20A	1,9 W	3,8 W	3,8 W	5,7 W	7,6 W	
25A	1,9 W	3,8 W	3,8 W	5,7 W	7,6 W	
32A	2,7 W	5,4 W	5,4 W	8,1 W	10,8 W	
40A	3,3 W	6,6 W	6,6 W	9,9 W	13,2 W	
50A	4,2 W	8,4 W	8,4 W	12,6 W	16,8 W	
63A	5 W	10 W	10 W	15 W	20 W	
Inernal resistance	2A	459.8mΩ				
	4A	94.007mΩ				
	6A	51.787mΩ				
	10A	9.989mΩ				
	16A	6.31mΩ				
	20A	3.832mΩ				
	25A	2.671mΩ				
	32A	2.009mΩ				
	40A	1.66mΩ				
	50A	1.226mΩ				
	63A	1.055mΩ				
Certificate	VDE for 1-pole, 2-pole and 3-pole version					
Electrical endurance:	> 4.000 operating cycles					
Mechanical endurance:	> 20.000 operating cycles					
Protection degree	IP 20					
Reference temperature:	30 °C					
Tripping temperature:	-5 °C to +40 °C					
Operating temperature:	-35 °C to +70 °C					
Terminal connection type	Cable/U-type busbar / Pin-type busbar					
Connection	From top and bottom					
Terminal cross-section:	1 - 25mm ²					
Terminal tightening torque:	2.5 Nm					
Terminal size for busbar	10mm ²					
Mounting:	on DIN rail EN 60715 (35mm) by means of fast clip device					

Tripping curves

IEC/EN 60898-1, AC, Characteristic B



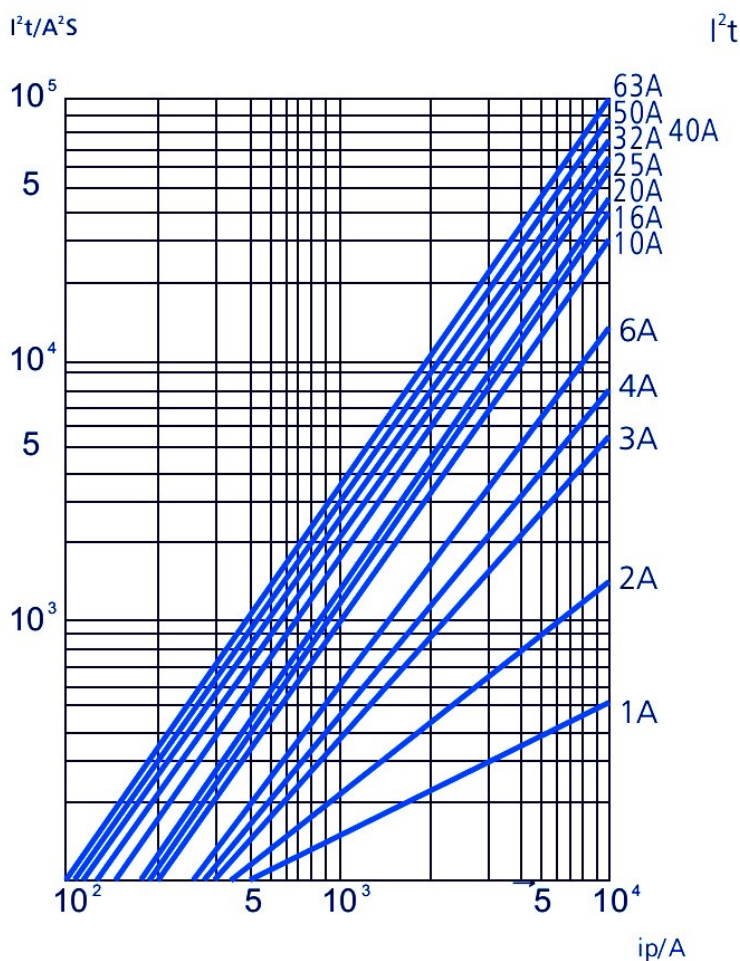
IEC/EN 60898-1, AC, Characteristic B



■ Influence of ambient temperature on tripping current

	-35°C	-30°C	-20°C	-10°C	0°C	10°C	20°C	30°C	40°C	50°C	60°C	70°C
2A	2,60	2,52	2,46	2,38	2,28	2,20	2,08	2,00	1,92	1,86	1,76	1,66
4A	5,20	5,04	4,92	4,76	4,56	4,40	4,16	4,00	3,84	3,76	3,52	3,32
6A	7,80	7,56	7,38	7,14	6,84	6,60	6,24	6,00	5,76	5,64	5,28	4,98
10A	13,20	12,70	12,50	12,00	11,50	11,10	10,60	10,00	9,60	9,30	8,90	8,40
16A	21,12	20,48	20,00	19,20	18,40	17,76	16,96	16,00	15,36	14,88	14,24	13,44
20A	26,40	25,60	25,00	24,00	23,00	22,20	21,20	20,00	19,20	18,60	17,80	16,80
25A	33,00	32,00	31,25	30,00	28,75	27,75	26,50	25,00	24,00	23,25	22,25	21,00
32A	42,56	41,28	40,00	38,72	37,12	35,52	33,92	32,00	30,72	29,76	28,16	26,88
40A	53,20	51,20	50,00	48,00	46,40	44,80	42,40	40,00	38,40	37,20	35,60	33,60
50A	67,00	65,50	63,00	60,50	58,00	56,00	53,00	50,00	48,00	46,50	44,00	41,50
63A	83,79	81,90	80,01	76,86	73,71	70,56	66,78	63,00	60,48	58,90	55,44	52,29

■ Let-through energy



Short-circuit-selectivity

Selectivity to Fuses characteristic gG/gL

		Power supply side: fuse characteristic gG/gL									
		I _N	20A	25A	36A	50A	63A	80A	100A	125A	160A
Load side: MCB, series AMPARO characteristic B, C	2A		1,2 kA	4 kA	6 kA	6 kA	6 kA	6 kA	6 kA	6 kA	6 kA
	4A		0,6 kA	0,9 kA	2,5 kA	3,8 kA	6 kA	6 kA	6 kA	6 kA	6 kA
	6A		0,5 kA	0,8 kA	1,9 kA	2,5 kA	4,5 kA	5 kA	6 kA	6 kA	6 kA
	10A			0,7 kA	1,4 kA	2,2 kA	3,2 kA	3,6 kA	6 kA	6 kA	6 kA
	16A				1,2 kA	1,8 kA	2,6 kA	3 kA	5,6 kA	6 kA	6 kA
	20A					1,5 kA	2,2 kA	2,5 kA	4,6 kA	6 kA	6 kA
	25A					1,3 kA	2 kA	2,2 kA	4,1 kA	5,5 kA	6 kA
	32A						1,7 kA	1,9 kA	3,8 kA	4,5 kA	6 kA
	40A							1,7 kA	3 kA	4 kA	5 kA
50A							1,5 kA	2,6 kA	3,5 kA	4,5 kA	
63A								2,4 kA	3,3 kA	4,5 kA	

Selectivity to MCCB type MC1

		Power supply side: MCCB series MC1					
		I _N	40 A	50 A	63 A	80 A	100 A
Load side: MCB, series AMPARO characteristic B	2A		2 kA	6 kA	6 kA	6 kA	6 kA
	4A		1,2 kA	2 kA	3 kA	3 kA	6 kA
	6A		1,2 kA	2 kA	2,5 kA	3 kA	5 kA
	10A		1,2 kA	1,5 kA	2 kA	2 kA	4 kA
	16A		1 kA	1,2 kA	1,5 kA	2 kA	3 kA
	20A		0,8 kA	1,2 kA	1,5 kA	1,5 kA	3 kA
	25A		0,7 kA	1,2 kA	1,5 kA	1,5 kA	3 kA
	32A		-	1,2 kA	1 kA	1,5 kA	2 kA
	40A		-	-	1 kA	1,5 kA	2 kA
50A		-	-	-	1,2 kA	1,5 kA	
63A		-	-	-	-	1,5 kA	

Selectivity to MCCB type MC1

		Power supply side: MCCB series MC1				
		40 A	50 A	63 A	80 A	100 A
Load side: MCB, series AMPARO characteristic C	I_N					
	2A	2 kA	6 kA	6 kA	6 kA	6 kA
	4A	1,2 kA	2 kA	3 kA	3 kA	6 kA
	6A	1,2 kA	2 kA	2,5 kA	3 kA	5 kA
	10A	1,2 kA	1,5 kA	2 kA	2 kA	4 kA
	16A	1 kA	1,2 kA	1,5 kA	2 kA	3 kA
	20A	0,8 kA	1,2 kA	1,5 kA	1,5 kA	3 kA
	25A	0,7 kA	1,2 kA	1,5 kA	1,5 kA	3 kA
	32A	-	1,2 kA	1 kA	1,5 kA	2 kA
	40A	-	-	1 kA	1,5 kA	2 kA
	50A	-	-	-	1,2 kA	1,5 kA
63A	-	-	-	-	1,5 kA	

		Power supply side: MCCB series MC2				
		40 A	50 A	63 A	80 A	100 A
Load side: MCB, series AMPARO characteristic B	I_N					
	2A	3 kA	6 kA	6 kA	6 kA	6 kA
	4A	1,2 kA	1,5 kA	3 kA	4 kA	6 kA
	6A	1,2 kA	1,5 kA	2,5 kA	3 kA	6 kA
	10A	1 kA	1,5 kA	2,5 kA	3 kA	6 kA
	13A	1 kA	1,2 kA	2 kA	3 kA	6 kA
	16A	1 kA	1,2 kA	1,5 kA	2,5 kA	6 kA
	20A	1 kA	1,2 kA	1,5 kA	2 kA	6 kA
	25A	0,8 kA	1 kA	1,5 kA	2 kA	6 kA
	32A		1 kA	1,5 kA	2 kA	6 kA
	40A			1,2 kA	1,5 kA	6 kA
	50A				1,5 kA	6 kA
	63A					6 kA

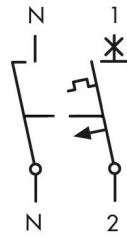
		Power supply side: MCCB series MC2				
		40 A	50 A	63 A	80 A	100 A
Load side: MCB, series AMPARO characteristic C	I_N					
	2A	3 kA	6 kA	6 kA	6 kA	6 kA
	4A	1,5 kA	1,5 kA	3 kA	4 kA	6 kA
	6A	1,2 kA	1,5 kA	2,5 kA	3 kA	6 kA
	10A	1 kA	1,5 kA	2,5 kA	3 kA	6 kA
	13A	1 kA	1,2 kA	2 kA	3 kA	6 kA
	16A	1 kA	1,2 kA	1,5 kA	2,5 kA	6 kA
	20A	1 kA	1,2 kA	1,5 kA	1,5 kA	6 kA
	25A	0,8 kA	1 kA	1,5 kA	2 kA	6 kA
	32A	-	1 kA	1,5 kA	2 kA	6 kA
	40A	-	-	1,2 kA	1,5 kA	6 kA
	50A	-	-	-	1,5 kA	6 kA
	63A	-	-	-	-	6 kA

■ Wiring diagram

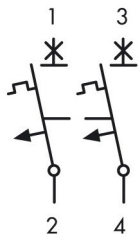
1-pole



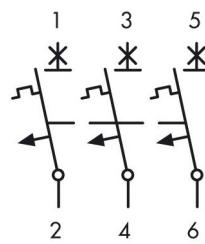
1+N



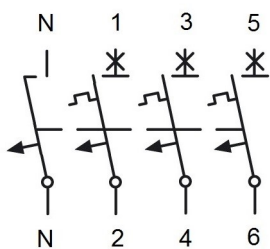
2-pole



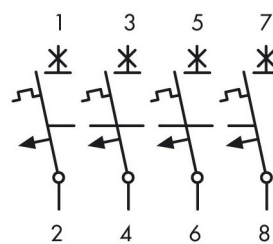
3-pole



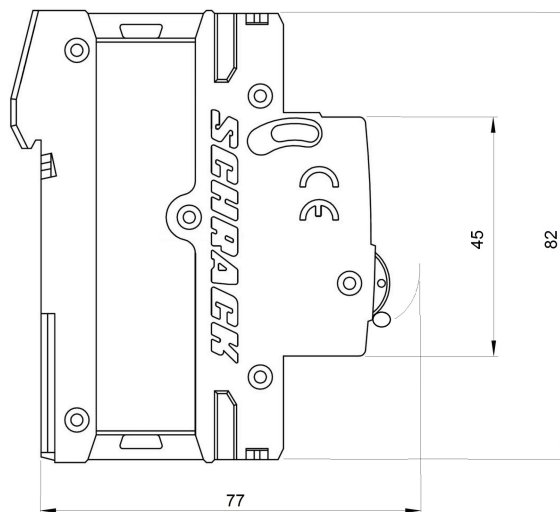
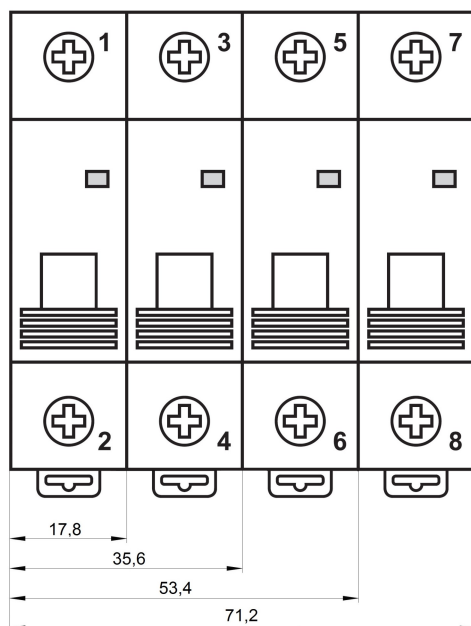
3+N



4-pole



Dimensions



Articles

MCB Miniature Circuit Breakers series AMPARO, 6kA, 1-pole

Description	Order no.
Characteristic B	
Miniature Circuit Breaker (MCB) AMPARO 6kA, B 2A, 1-pole	AM618102--
Miniature Circuit Breaker (MCB) AMPARO 6kA, B 4A, 1-pole	AM618104--
Miniature Circuit Breaker (MCB) AMPARO 6kA, B 6A, 1-pole	AM618106--
Miniature Circuit Breaker (MCB) AMPARO 6kA, B 10A, 1-pole	AM618110--
Miniature Circuit Breaker (MCB) AMPARO 6kA, B 13A, 1-pole	AM618113--
Miniature Circuit Breaker (MCB) AMPARO 6kA, B 16A, 1-pole	AM618116--
Miniature Circuit Breaker (MCB) AMPARO 6kA, B 20A, 1-pole	AM618120--
Miniature Circuit Breaker (MCB) AMPARO 6kA, B 25A, 1-pole	AM618125--
Miniature Circuit Breaker (MCB) AMPARO 6kA, B 32A, 1-pole	AM618132--
Miniature Circuit Breaker (MCB) AMPARO 6kA, B 40A, 1-pole	AM618140--

Characteristic C

Miniature Circuit Breaker (MCB) AMPARO 6kA, C 2A, 1-pole	AM617102--
Miniature Circuit Breaker (MCB) AMPARO 6kA, C 4A, 1-pole	AM617104--
Miniature Circuit Breaker (MCB) AMPARO 6kA, C 6A, 1-pole	AM617106--
Miniature Circuit Breaker (MCB) AMPARO 6kA, C 10A, 1-pole	AM617110--
Miniature Circuit Breaker (MCB) AMPARO 6kA, C 13A, 1-pole	AM617113--
Miniature Circuit Breaker (MCB) AMPARO 6kA, C 16A, 1-pole	AM617116--
Miniature Circuit Breaker (MCB) AMPARO 6kA, C 20A, 1-pole	AM617120--
Miniature Circuit Breaker (MCB) AMPARO 6kA, C 25A, 1-pole	AM617125--
Miniature Circuit Breaker (MCB) AMPARO 6kA, C 32A, 1-pole	AM617132--
Miniature Circuit Breaker (MCB) AMPARO 6kA, C 40A, 1-pole	AM617140--
Miniature Circuit Breaker (MCB) AMPARO 6kA, C 50A, 1-pole	AM617150--
Miniature Circuit Breaker (MCB) AMPARO 6kA, C 63A, 1-pole	AM617163--

MCB Miniature Circuit Breakers series AMPARO, 6kA, 1+N

Description	Order no.
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Characteristic B

Miniature Circuit Breaker (MCB) AMPARO 6kA, B 6A, 1+N	AM618606--
Miniature Circuit Breaker (MCB) AMPARO 6kA, B 10A, 1+N	AM618610--
Miniature Circuit Breaker (MCB) AMPARO 6kA, B 13A, 1+N	AM618613--
Miniature Circuit Breaker (MCB) AMPARO 6kA, B 16A, 1+N	AM618616--
Miniature Circuit Breaker (MCB) AMPARO 6kA, B 20A, 1+N	AM618620--
Miniature Circuit Breaker (MCB) AMPARO 6kA, B 25A, 1+N	AM618625--
Miniature Circuit Breaker (MCB) AMPARO 6kA, B 32A, 1+N	AM618632--
Miniature Circuit Breaker (MCB) AMPARO 6kA, B 40A, 1+N	AM618640--

Characteristic C

Miniature Circuit Breaker (MCB) AMPARO 6kA, C 6A, 1+N	AM617606--
Miniature Circuit Breaker (MCB) AMPARO 6kA, C 10A, 1+N	AM617610--
Miniature Circuit Breaker (MCB) AMPARO 6kA, C 13A, 1+N	AM617613--
Miniature Circuit Breaker (MCB) AMPARO 6kA, C 16A, 1+N	AM617616--
Miniature Circuit Breaker (MCB) AMPARO 6kA, C 20A, 1+N	AM617620--
Miniature Circuit Breaker (MCB) AMPARO 6kA, C 25A, 1+N	AM617625--
Miniature Circuit Breaker (MCB) AMPARO 6kA, C 32A, 1+N	AM617632--
Miniature Circuit Breaker (MCB) AMPARO 6kA, C 40A, 1+N	AM617640--
Miniature Circuit Breaker (MCB) AMPARO 6kA, C 50A, 1+N	AM617650--
Miniature Circuit Breaker (MCB) AMPARO 6kA, C 63A, 1+N	AM617663--

MCB Miniature Circuit Breakers series AMPARO, 6kA, 2-pole

Description	Order no.
Characteristic B	
Miniature Circuit Breaker (MCB) AMPARO 6kA, B 6A, 2-pole	AM618206--
Miniature Circuit Breaker (MCB) AMPARO 6kA, B 10A, 2-pole	AM618210--
Miniature Circuit Breaker (MCB) AMPARO 6kA, B 13A, 2-pole	AM618213--
Miniature Circuit Breaker (MCB) AMPARO 6kA, B 16A, 2-pole	AM618216--
Miniature Circuit Breaker (MCB) AMPARO 6kA, B 20A, 2-pole	AM618220--
Miniature Circuit Breaker (MCB) AMPARO 6kA, B 25A, 2-pole	AM618225--
Miniature Circuit Breaker (MCB) AMPARO 6kA, B 32A, 2-pole	AM618232--
Miniature Circuit Breaker (MCB) AMPARO 6kA, B 40A, 2-pole	AM618240--
Characteristic C	
Miniature Circuit Breaker (MCB) AMPARO 6kA, C 6A, 2-pole	AM617206--
Miniature Circuit Breaker (MCB) AMPARO 6kA, C 10A, 2-pole	AM617210--
Miniature Circuit Breaker (MCB) AMPARO 6kA, C 13A, 2-pole	AM617213--
Miniature Circuit Breaker (MCB) AMPARO 6kA, C 16A, 2-pole	AM617216--
Miniature Circuit Breaker (MCB) AMPARO 6kA, C 20A, 2-pole	AM617220--
Miniature Circuit Breaker (MCB) AMPARO 6kA, C 25A, 2-pole	AM617225--
Miniature Circuit Breaker (MCB) AMPARO 6kA, C 32A, 2-pole	AM617232--
Miniature Circuit Breaker (MCB) AMPARO 6kA, C 40A, 2-pole	AM617240--
Miniature Circuit Breaker (MCB) AMPARO 6kA, C 50A, 2-pole	AM617250--
Miniature Circuit Breaker (MCB) AMPARO 6kA, C 63A, 2-pole	AM617263--

MCB Miniature Circuit Breakers series AMPARO, 6kA, 3-pole

Description	Order no.
Characteristic B	
Miniature Circuit Breaker (MCB) AMPARO 6kA, B 6A, 3-pole	AM618306--
Miniature Circuit Breaker (MCB) AMPARO 6kA, B 10A, 3-pole	AM618310--
Miniature Circuit Breaker (MCB) AMPARO 6kA, B 13A, 3-pole	AM618313--
Miniature Circuit Breaker (MCB) AMPARO 6kA, B 16A, 3-pole	AM618316--
Miniature Circuit Breaker (MCB) AMPARO 6kA, B 20A, 3-pole	AM618320--
Miniature Circuit Breaker (MCB) AMPARO 6kA, B 25A, 3-pole	AM618325--
Miniature Circuit Breaker (MCB) AMPARO 6kA, B 32A, 3-pole	AM618332--
Miniature Circuit Breaker (MCB) AMPARO 6kA, B 40A, 3-pole	AM618340--
Miniature Circuit Breaker (MCB) AMPARO 6kA, B 50A, 3-pole	AM618350--
Miniature Circuit Breaker (MCB) AMPARO 6kA, B 63A, 3-pole	AM618363--

Characteristic C

Miniature Circuit Breaker (MCB) AMPARO 6kA, C 6A, 3-pole	AM617306--
Miniature Circuit Breaker (MCB) AMPARO 6kA, C 10A, 3-pole	AM617310--
Miniature Circuit Breaker (MCB) AMPARO 6kA, C 13A, 3-pole	AM617313--
Miniature Circuit Breaker (MCB) AMPARO 6kA, C 16A, 3-pole	AM617316--
Miniature Circuit Breaker (MCB) AMPARO 6kA, C 20A, 3-pole	AM617320--
Miniature Circuit Breaker (MCB) AMPARO 6kA, C 25A, 3-pole	AM617325--
Miniature Circuit Breaker (MCB) AMPARO 6kA, C 32A, 3-pole	AM617332--
Miniature Circuit Breaker (MCB) AMPARO 6kA, C 40A, 3-pole	AM617340--
Miniature Circuit Breaker (MCB) AMPARO 6kA, C 50A, 3-pole	AM617350--
Miniature Circuit Breaker (MCB) AMPARO 6kA, C 63A, 3-pole	AM617363--

MCB Miniature Circuit Breakers series AMPARO, 6kA, 3+N

Description	Order no.
Characteristic B	
Miniature Circuit Breaker (MCB) AMPARO 6kA, B 6A, 3+N	AM618806--
Miniature Circuit Breaker (MCB) AMPARO 6kA, B 10A, 3+N	AM618810--
Miniature Circuit Breaker (MCB) AMPARO 6kA, B 13A, 3+N	AM618813--
Miniature Circuit Breaker (MCB) AMPARO 6kA, B 16A, 3+N	AM618816--
Miniature Circuit Breaker (MCB) AMPARO 6kA, B 20A, 3+N	AM618820--
Miniature Circuit Breaker (MCB) AMPARO 6kA, B 25A, 3+N	AM618825--
Miniature Circuit Breaker (MCB) AMPARO 6kA, B 32A, 3+N	AM618832--
Miniature Circuit Breaker (MCB) AMPARO 6kA, B 40A, 3+N	AM618840--

Characteristic C

Miniature Circuit Breaker (MCB) AMPARO 6kA, C 6A, 3+N	AM617806--
Miniature Circuit Breaker (MCB) AMPARO 6kA, C 10A, 3+N	AM617810--
Miniature Circuit Breaker (MCB) AMPARO 6kA, C 13A, 3+N	AM617813--
Miniature Circuit Breaker (MCB) AMPARO 6kA, C 16A, 3+N	AM617816--
Miniature Circuit Breaker (MCB) AMPARO 6kA, C 20A, 3+N	AM617820--
Miniature Circuit Breaker (MCB) AMPARO 6kA, C 25A, 3+N	AM617825--
Miniature Circuit Breaker (MCB) AMPARO 6kA, C 32A, 3+N	AM617832--
Miniature Circuit Breaker (MCB) AMPARO 6kA, C 40A, 3+N	AM617840--
Miniature Circuit Breaker (MCB) AMPARO 6kA, C 50A, 3+N	AM617850--
Miniature Circuit Breaker (MCB) AMPARO 6kA, C 63A, 3+N	AM617863--

MCB Miniature Circuit Breakers series AMPARO, 6kA, 4-pole

Description	Order no.
Characteristic B	
Miniature Circuit Breaker (MCB) AMPARO 6kA, B 10A, 4-pole	AM618410--
Miniature Circuit Breaker (MCB) AMPARO 6kA, B 16A, 4-pole	AM618416--
Miniature Circuit Breaker (MCB) AMPARO 6kA, B 20A, 4-pole	AM618420--
Miniature Circuit Breaker (MCB) AMPARO 6kA, B 25A, 4-pole	AM618425--
Miniature Circuit Breaker (MCB) AMPARO 6kA, B 32A, 4-pole	AM618432--
Miniature Circuit Breaker (MCB) AMPARO 6kA, B 40A, 4-pole	AM618440--
Characteristic C	
Miniature Circuit Breaker (MCB) AMPARO 6kA, C 10A, 4-pole	AM617410--
Miniature Circuit Breaker (MCB) AMPARO 6kA, C 16A, 4-pole	AM617416--
Miniature Circuit Breaker (MCB) AMPARO 6kA, C 20A, 4-pole	AM617420--
Miniature Circuit Breaker (MCB) AMPARO 6kA, C 25A, 4-pole	AM617425--
Miniature Circuit Breaker (MCB) AMPARO 6kA, C 32A, 4-pole	AM617432--
Miniature Circuit Breaker (MCB) AMPARO 6kA, C 40A, 4-pole	AM617440--
Miniature Circuit Breaker (MCB) AMPARO 6kA, C 50A, 4-pole	AM617450--
Miniature Circuit Breaker (MCB) AMPARO 6kA, C 63A, 4-pole	AM617463--