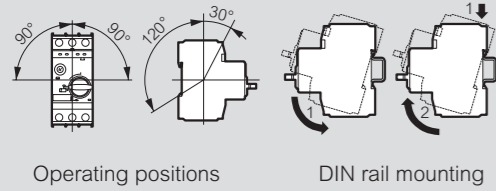


MPCBs MPX<sup>3</sup>

technical characteristics

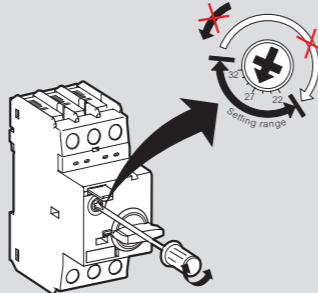
Mounting

MPX<sup>3</sup> 32: 35 mm rail (depth 15 mm)  
 MPX<sup>3</sup> 63: 35 mm rail (depth 15 mm) or screws  
 MPX<sup>3</sup> 100: 35 mm (depth 15 mm) or 75 mm rail or screws



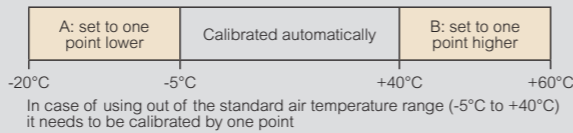
Caution for thermal adjustments

1. Keep the setting range as shown below
2. Moving counterclockwise out of the setting range may cause the damage of the device



Dial setting method

3. Calibration by ambient air temperature



Environment

Ambient air temperature:  
 - storage: -50...+80°C  
 - operation: -20...+60°C  
 Ambient temperature compensation: -20...+60°C  
 Maximum operating altitude: 2000 m  
 Protection degree: IP20  
 Shock resistance: 25 g  
 Vibration resistance: 5~150 Hz

Power consumption

	MPX <sup>3</sup> 32S	MPX <sup>3</sup> 32H/MA	MPX <sup>3</sup> 63H	MPX <sup>3</sup> 100H
Total power loss P <sub>v</sub>	In = 0.16 to 1.6 A: 4.4	In = 0.16 to 1.6 A: 4.4	In = 10 to 22 A: 10.2	In = 17 to 32 A : 15
Circuit breaker at rated load operating temperature (W)	In = 2.5 to 26 A : 7.4 In = 32 A : 4.0	In = 2.5 to 26 A : 7.4 In = 32 A : 4.0	In = 26 to 63 A: 9.7	In = 40 to 63 A : 21.8 In = 75 to 100 A: 17.8

MPX<sup>3</sup> 32S

Rated operational current I <sub>e</sub> (A)	0.16	0.25	0.4	0.63	1	1.6	2.5	4	6	8	10	13	17	22	26	32
Switching of standard three-phase motors AC-2, AC-3																
230/240V (kW)	-	0.03	0.06	0.09	0.12	0.18/0.25	0.37	0.55/0.75	1.1/1.5	1.5	2.2/3	3	3.7/4	4	5.5	7.5
400/415V (kW)	0.02	0.06	0.09	0.12	0.18/0.25	0.37/0.55	0.75	1.1/1.5	2.2	3	3.7/4	5.5	7.5	7.5	11	15
500V (kW)	-	-	-	0.25	0.37	0.55/0.75	1.1	1.5/2.2	3	3.7	4/5.5	7.5	11	11	15	18.5
690V (kW)	-	-	-	0.25	0.37/0.55	0.75/1.1	1.5	2.2/3	3.7/4	5.5	7.5	11	11	15	18.5	22
Back-up fuses gG, gL, only if I <sub>cc</sub> > I <sub>cu</sub> (* = no back up fuse required)																
230/240V (A)	*	*	*	*	*	*	*	*	*	*	*	*	*	125	125	125
400/415V (A)	*	*	*	*	*	*	*	*	*	*	80	80	100	100	100	
440/460V (A)	*	*	*	*	*	*	*	50	50	63	63	80	80	100	100	
500V (A)	*	*	*	*	*	*	50	40	50	63	63	80	80	80	80	
690V (A)	*	*	*	*	*	*	20	35	40	50	63	63	63	63	63	

MPX<sup>3</sup> 32H

Rated operational current I <sub>e</sub> (A)	0.16	0.25	0.4	0.63	1	1.6	2.5	4	6	8	10	13	17	22	26	32
Switching of standard three-phase motors AC-2, AC-3																
230/240V (kW)	-	0.03	0.06	0.09	0.12	0.18/0.25	0.37	0.55/0.75	1.1/1.5	1.5	2.2/3	3	3.7/4	4	5.5	7.5
400/415V (kW)	0.02	0.06	0.09	0.12	0.18/0.25	0.37/0.55	0.75	1.1/1.5	2.2	3	3.7/4	5.5	7.5	7.5	11	15
500V (kW)	-	-	-	0.25	0.37	0.55/0.75	1.1	1.5/2.2	3	3.7	4/5.5	7.5	11	11	15	18.5
690V (kW)	-	-	-	0.25	0.37/0.55	0.75/1.1	1.5	2.2/3	3.7/4	5.5	7.5	11	11	15	18.5	22
Back-up fuses gG, gL, only if I <sub>cc</sub> > I <sub>cu</sub> (* = no back up fuse required)																
230/240V (A)	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
400/415V (A)	*	*	*	*	*	*	*	*	*	*	*	*	100	125	125	125
440/460V (A)	*	*	*	*	*	*	*	*	*	80	80	80	80	100	100	
500V (A)	*	*	*	*	*	*	*	*	*	63	80	80	80	80	80	
690V (A)	*	*	*	*	*	*	35	40	50	63	63	63	63	63	63	

MPX<sup>3</sup> 32MA

Rated operational current I <sub>e</sub> (A)	0.16	0.25	0.4	0.63	1	1.6	2.5	4	6	8	10	13	17	22	26	32
AC-2, AC-3																
230/240V (kW)	-	0.03	0.06	0.09	0.12	0.18/0.25	0.37	0.55/0.75	1.1/1.5	1.5	2.2/3	3	3.7/4	4	5.5	7.5
400/415V (kW)	0.02	0.06	0.09	0.12	0.18/0.25	0.37/0.55	0.75	1.1/1.5	2.2	3	3.7/4	5.5	7.5	7.5	11	15
500V (kW)	-	-	-	0.25	0.37	0.55/0.75	1.1	1.5/2.2	3	3.7	4/5.5	7.5	11	11	15	18.5
690V (kW)	-	-	-	0.25	0.37/0.55	0.75/1.1	1.5	2.2/3	3.7/4	5.5	7.5	11	11	15	18.5	22
Back-up fuses gG, gL, only if I <sub>cc</sub> > I <sub>cu</sub> (* = no back up fuse required)																
230/240V (A)	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
400/415V (A)	*	*	*	*	*	*	*	*	*	*	*	*	100	125	125	125
440/460V (A)	*	*	*	*	*	*	*	*	*	80	80	80	80	100	100	
500V (A)	*	*	*	*	*	*	*	*	*	63	80	80	80	80	80	
690V (A)	*	*	*	*	*	*	35	40	50	63	63	63	63	63	63	

MPX<sup>3</sup> 63H

Rated operational current I <sub>e</sub> (A)	10	13	17	22	26	32	40	50	63
Switching of standard three-phase motors AC-2, AC-3									
230/240V (kW)	2.2/3	3	3.7/4	4	5.5	7.5	7.5	11	15
400/415V (kW)	3.7/4	5.5	7.5	7.5	11	15	18.5	22	30
500V (kW)	4/5.5	7.5	11	11	15	18.5	22	30	37
690V (kW)	7.5	11	11	15	18.5	22	30	45	55
Back-up fuses gG, gL, only if I <sub>cc</sub> > I <sub>cu</sub> (* = no back up fuse required)									
230/240V (A)	*	*	*	*	*	*	*	*	*
400/415V (A)	*	*	100	125	125	125	160	160	160
440/460V (A)	100	100	100	125	125	125	125	125	160
500V (A)	100	100	100	100	100	100	100	100	100
690V (A)	63	63	63	80	80	80	80	80	80

MPX<sup>3</sup> 100H

Rated operational current I <sub>e</sub> (A)	17	22	26	32	40	50	63	75	90	100
Switching of standard three-phase motors AC-2, AC-3										
230/240V (kW)	3.7/4	4	5.5	7.5	7.5	11	15	22	30	30
400/415V (kW)	7.5	7.5	11	15	18.5	22	30	37	45	45
500V (kW)	11	11	15	18.5	22	30	37	45	55	63
690V (kW)	11	15	18.5	22	30	45	55	63	75	90
Back-up fuses gG, gL, only if I <sub>cc</sub> > I <sub>cu</sub> (* = no back up fuse required)										
230/240V (A)	*	*	*	*	*	*	*	*	*	*
400/415V (A)	*	*	*	*	*	*	*	*	*	*
440/460V (A)	125	125	125	160	160	160	200	200	200	200
500V (A)	100	125	125	125	160	160	160	160	160	160
690V (A)	80	80	80	80	80	100	100	125	160	160





Number of auxiliaries per circuit breaker

Auxiliaries	MPX <sup>3</sup> 32S	MPX <sup>3</sup> 32H/MA	MPX <sup>3</sup> 63H	MPX <sup>3</sup> 100H
Auxiliary contact front mounting	1	1	1	1
Auxiliary contact side mounting	1	1	1	1
Fault signalling contact	1	1	1	1
Shunt release or undervoltage release	1	1	1	1


# MPCBs MPX<sup>3</sup>


## technical characteristics

### Terminals

			MPX <sup>3</sup> 32S	MPX <sup>3</sup> 32H / 32 MA	MPX <sup>3</sup> 63H	MPX <sup>3</sup> 100H
Conformity to standards			IEC60947 UL508, UL508 Type E			
Approvals			CE, UL			
Terminal parts						
Screwdriver						
Single-core	1 conductor	(mm <sup>2</sup> ) / (AWG)	1...10 / 18...8	1...10 / 18...8	0.75...35 / 18...2	2.5...70 / 12...2/0
	2 conductor	(mm <sup>2</sup> ) / (AWG)	1...6 / 18...10	1...6 / 18...10	0.75...25 / 18...4	2.5...50 / 12...1/0
Standard	1 conductor	(mm <sup>2</sup> ) / (AWG)	1...6 / 18...10	1...6 / 18...10	0.75...35 / 18...2	2.5...70 / 12...2/0
	2 conductor	(mm <sup>2</sup> ) / (AWG)	1...6 / 18...10	1...6 / 18...10	0.75...25 / 18...4	2.5...50 / 12...1/0
Flexible	1 conductor	(mm <sup>2</sup> ) / (AWG)	1...6 / 18...10	1...6 / 18...10	0.75...25 / 18...4	2.5...50 / 12...1/0
	2 conductor	(mm <sup>2</sup> ) / (AWG)	0.75...4 / 18...10	0.75...4 / 18...10	0.75...16 / 18...6	2.5...35 / 10...2
Tightening torque		(Nm) / (lb-in)	0.8...2.5 / 7...22	0.8...2.5 / 7...22	3...4.5 / 26...39	4...6 / 35...53

### Auxiliaries

			Auxiliary contacts for front mounting		Auxiliary contacts for left side mounting		Alarm switch for left side mounting	
Rated thermal current / Ith at 40 °C ambient temperature	(A)		5		10		10	
	(A)		3		6		6	
Contact class coordination according to NEMA (UL/CSA-Standards)	AC		A600		A600		A600	
	DC		Q300		Q300		Q300	
Back-up fuses gG, gL		(A)	16		16		16	
Rated supply current								
AC-15	(V)	-	240	24	240	24	240	
	(A)	-	3	6	4	6	4	
DC-13	(V)	24	220	24	220	24	220	
	(A)	1	0.1	2	0.25	2	0.25	
Weight (g)			18		30		40	
Terminal parts								
Screwdriver					Pozi driv size 2			
Single-core	1 conductor	(mm <sup>2</sup> ) / (AWG)	0.5...2.5 / 20...14		0.5...2.5 / 20...14			
	2 conductor	(mm <sup>2</sup> ) / (AWG)	-		0.5...2.5 / 20...14			
Standard	1 conductor	(mm <sup>2</sup> ) / (AWG)	0.5...4 / 20...10		0.5...4 / 20...10			
	2 conductor	(mm <sup>2</sup> ) / (AWG)	0.75...2.5 / 18...14		0.75...2.5 / 18...14			
Tightening torque		(Nm) / (lb-in)	0.8...1.2 / 7...10		0.8...1.2 / 7...10			

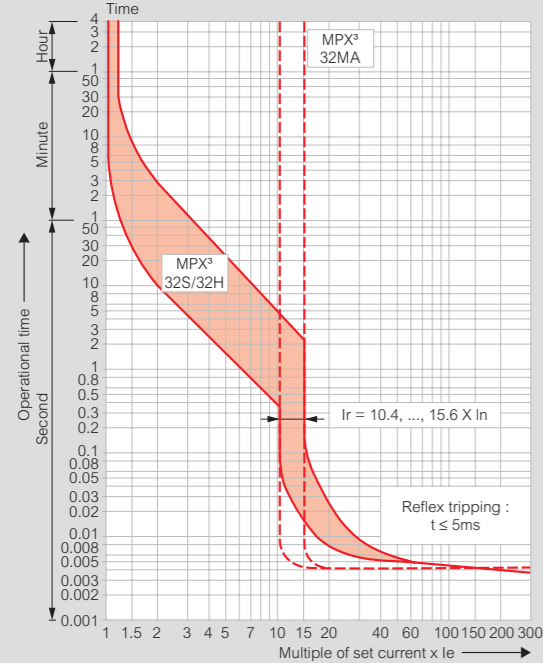
			Undervoltage release for right side mounting	Undervoltage release with 2 auxiliary contacts for right side mounting	Shunt release for right side mounting
Actuating voltage	Pull-in		0.7...1.1 x Us	0.85...1.1 x Us	0.85...1.1 x Us
	Drop-out			0.7...0.35 x Us	0.7...0.35 x Us
Rated control voltage	min:		24 V 50 Hz / 28 V 60 Hz	24 V 50 Hz / 28 V 60 Hz	24 V 50 Hz / 28 V 60 Hz
	max:		415-440 V 50 Hz / 460-480 V 60 Hz	415-440 V 50 Hz / 460-480 V 60 Hz	415-440 V 50 Hz / 460-480 V 60 Hz
Coil rating	Pull-in		8.5 VA, 6 W	8.5 VA, 6 W	8.5 VA, 6 W
	Hold		3 VA, 12 W	3 VA, 12 W	3 VA, 12 W
Opening time (ms)			-	20	20
Weight (g)			18	30	40
Terminal parts					
Screwdriver			Pozi driv size 2		
Single-core	1 conductor	(mm <sup>2</sup> ) / (AWG)	0.5...2.5 / 20...14		
	2 conductor	(mm <sup>2</sup> ) / (AWG)	0.5...2.5 / 20...14		
Standard	1 conductor	(mm <sup>2</sup> ) / (AWG)	0.5...4 / 20...10		
	2 conductor	(mm <sup>2</sup> ) / (AWG)	0.75...2.5 / 18...14		
Tightening torque		(Nm) / (lb-in)	0.8...1.2 / 7...10		

MPCBs MPX<sup>3</sup>

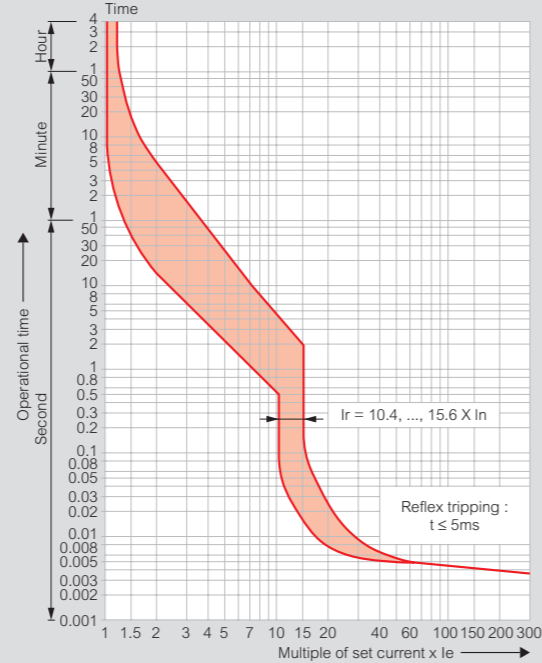
curves

Tripping curves

MPX<sup>3</sup> 32S / 32H / 32MA



MPX<sup>3</sup> 63H / 100H



1) Thermal release trip current :

The adjustable inverse bimetal trip reliability protects motors against overloads. The curve shows the mean operating current at an ambient temperature of 20 °C starting from cold. Careful testing and setting ensures effective motor protection even in the case of single-phasing.

2) Current setting Ie :

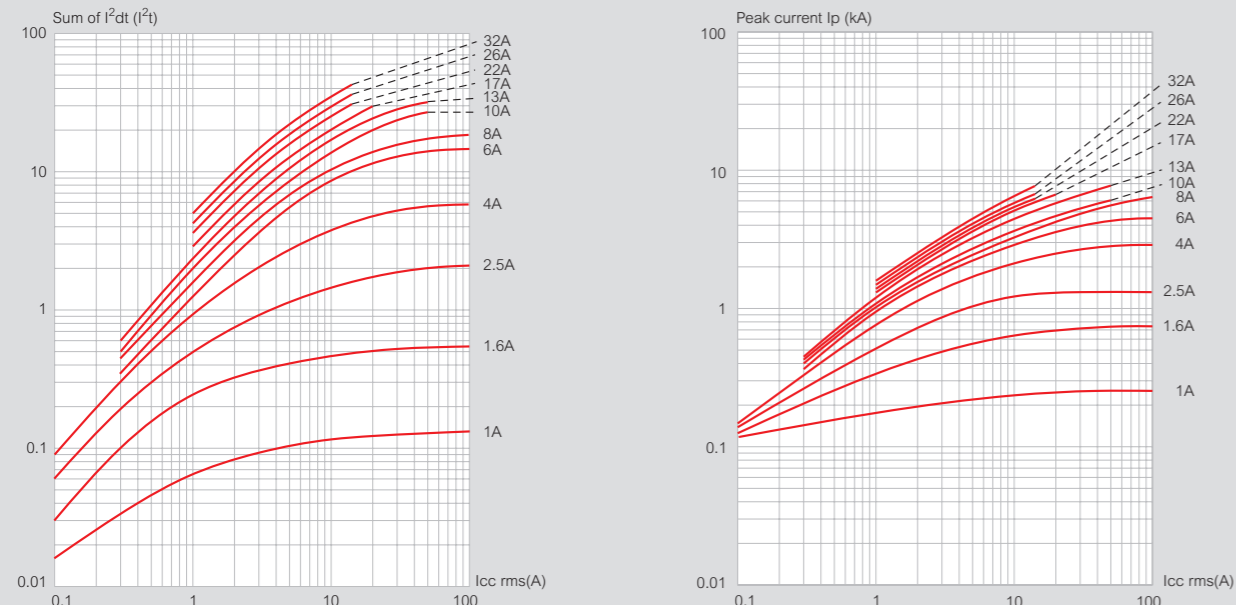
The overload trip corresponds to a thermal overload relay in a motor starter conforming to IEC 947-4-1. If a different value is prescribed (e.g. reduced Ie for cooling medium having a temperature higher than 40 °C or a place of installation higher than 2000m above sea level), the setting current is equal to the reduced rated current Ie of the motor, as per manufacturer specifications. When the MCPB is used outside the standard air temperature range (-5°C to +40°C) the thermal release needs to be calibrated by one point: one point lower from -20°C to -5°C and one point higher from +40°C to +60°C.

3) Magnetic release trip current :

The instantaneous magnetic trip has a fixed operating current setting. This corresponds to 13 times the maximum value of setting range, at a lower setting it is correspondingly higher.

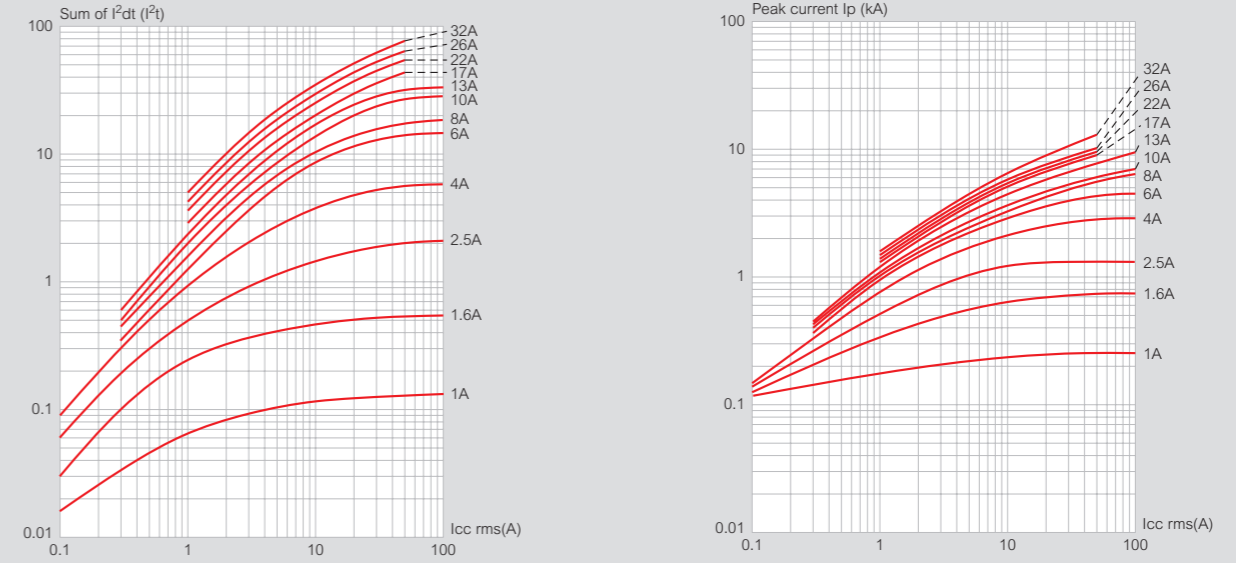
Thermal limit in kA<sup>2</sup>s in the magnetic operating zone (Ue=415V)

MPX<sup>3</sup> 32S

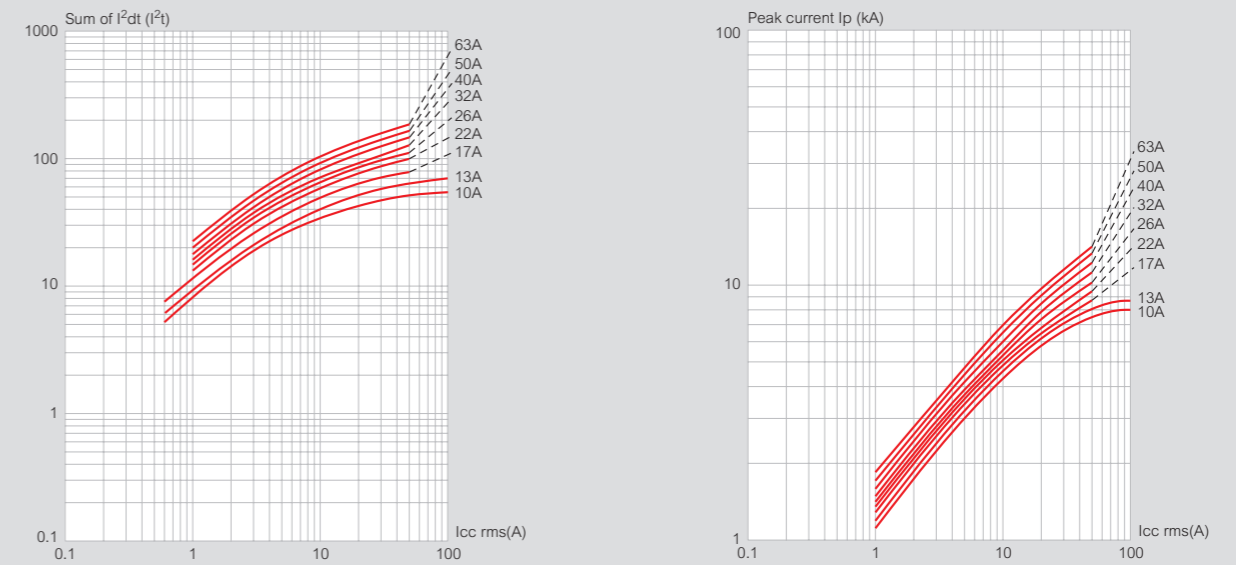


Thermal limit in kA<sup>2</sup>s in the magnetic operating zone (Ue=415V) (continued)

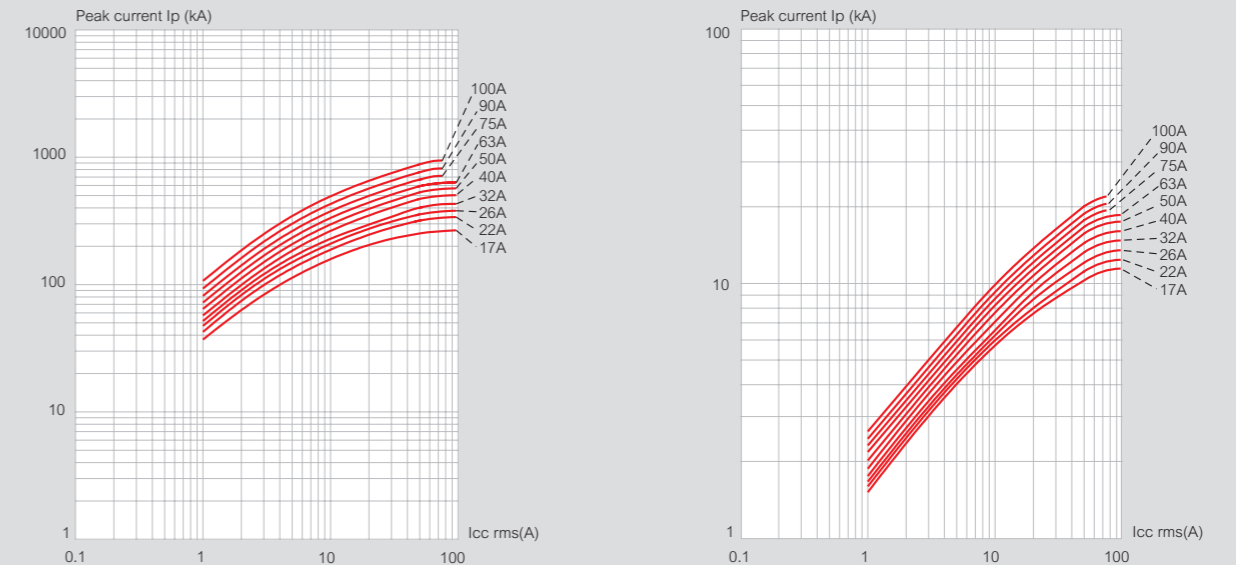
MPX<sup>3</sup> 32H / 32MA



MPX<sup>3</sup> 63H



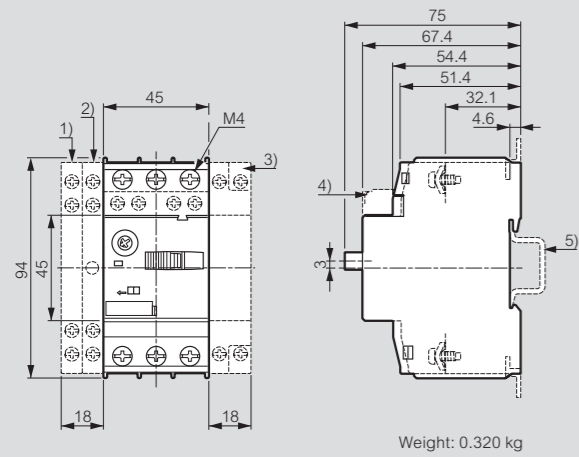
MPX<sup>3</sup> 100H



MPCBs MPX<sup>3</sup>

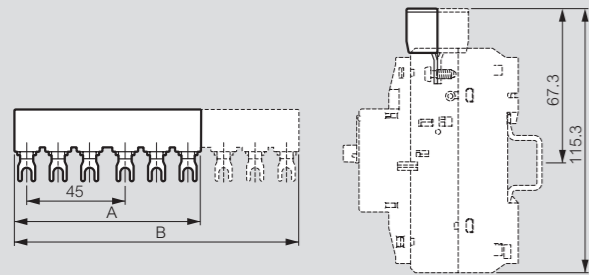
dimensions

MPX<sup>3</sup> 32S



Weight: 0.320 kg

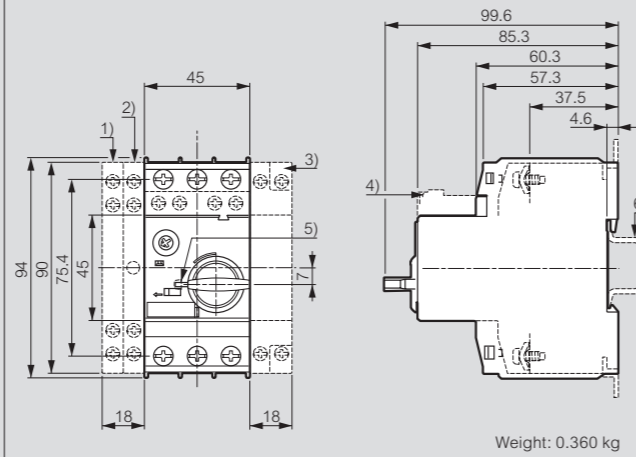
- 1) Side auxiliary contact
- 2) Side magnetic trip alarm contact
- 3) Side shunt release or Side undervoltage release
- 4) Front auxiliary contact
- 5) 35 mm standard mounting rail acc. to EN 50 022



Cat.No	Numbers of MPX <sup>3</sup>	A <sup>(1)</sup> (mm)	B (mm)
4 174 71	2	85	-
4 174 73	3	-	130
4 174 75	4	-	175
4 174 76	5	-	220

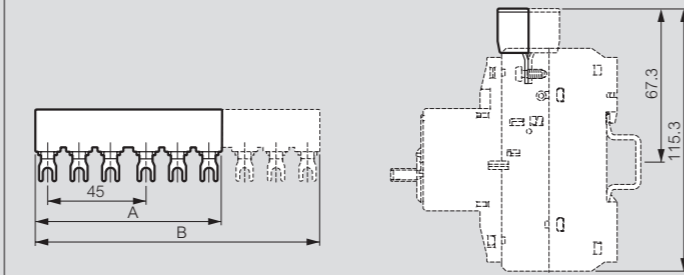
(1) Only for Cat.No 4 174 71

MPX<sup>3</sup> 32H / 32MA



Weight: 0.360 kg

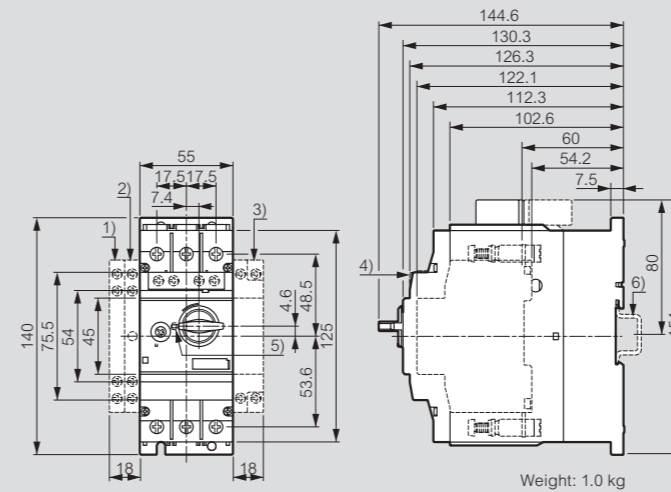
- 1) Side auxiliary contact
- 2) Side magnetic trip alarm contact
- 3) Side shunt release or Side undervoltage release
- 4) Front auxiliary contact
- 5) Handle lock in OFF position (Ø 5 mm)
- 6) 35 mm standard mounting rail acc. to EN 50 022



Cat.No	Numbers of MPX <sup>3</sup>	A <sup>(1)</sup> (mm)	B (mm)
4 174 71	2	85	-
4 174 73	3	-	130
4 174 75	4	-	175
4 174 76	5	-	220

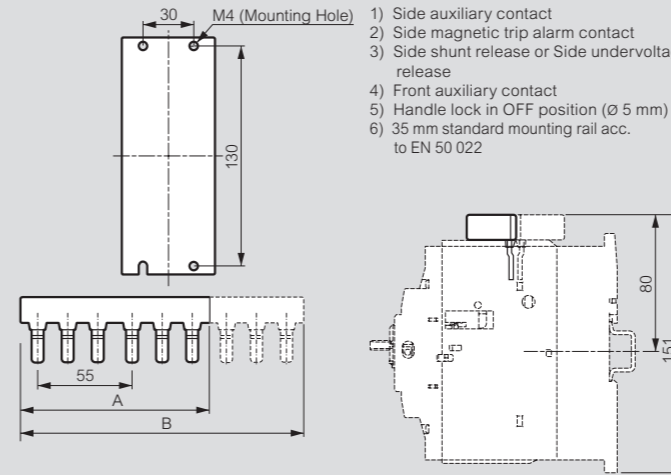
(1) Only for Cat.No 4 174 71

MPX<sup>3</sup> 63H



Weight: 1.0 kg

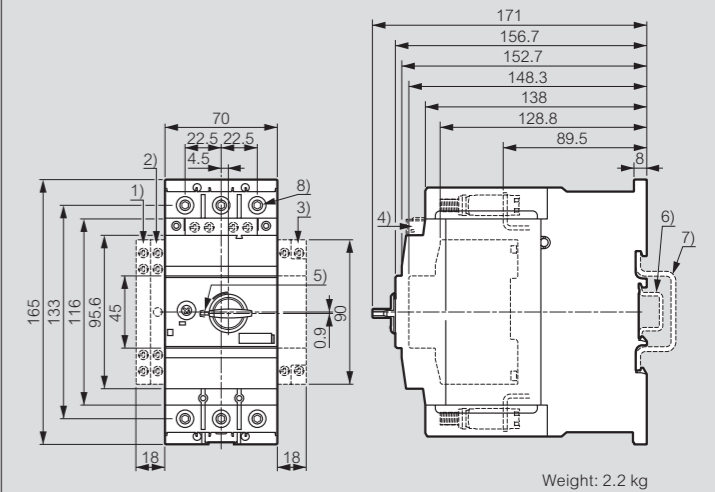
- 1) Side auxiliary contact
- 2) Side magnetic trip alarm contact
- 3) Side shunt release or Side undervoltage release
- 4) Front auxiliary contact
- 5) Handle lock in OFF position (Ø 5 mm)
- 6) 35 mm standard mounting rail acc. to EN 50 022



Cat.No	Numbers of MPX <sup>3</sup>	A <sup>(1)</sup> (mm)	B (mm)
4 174 72	2	110	-
4 174 74	3	-	165

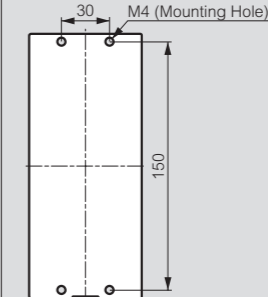
(1) Only for Cat.No 4 174 72

MPX<sup>3</sup> 100H



Weight: 2.2 kg

- 1) Side auxiliary contact
- 2) Side magnetic trip alarm contact
- 3) Side shunt release or Side undervoltage release
- 4) Front auxiliary contact
- 5) Handle lock in OFF position (Ø 5 mm)
- 6) 35 mm standard mounting rail acc. to EN 50 022
- 7) 75 mm standard mounting rail acc. to EN 50 023
- 8) 4 mm hexagon socket screw

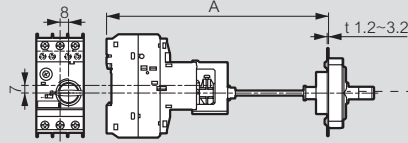


# MPCBs MPX<sup>3</sup>

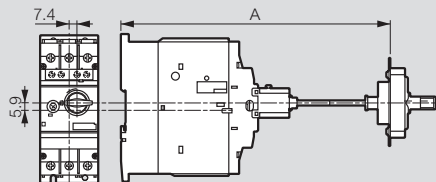
## dimensions (continued)

### External Handle

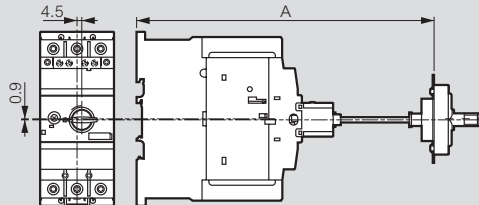
MPX<sup>3</sup> 32H / 32MA - Cat.No 4 174 63



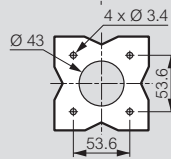
MPX<sup>3</sup> 63H - Cat.No 4 174 64



MPX<sup>3</sup> 100H - Cat.No 4 174 65

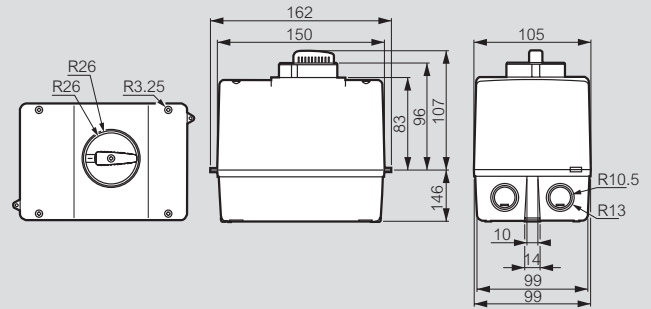


Cat.Nos	A (mm)	MMS Type
4 174 63	min: 148.6	MPX <sup>3</sup> 32H / 32MA
	max: 410.6 (Shaft 315mm)	
4 174 64	min: 193.6	MPX <sup>3</sup> 63H
	max: 455.6 (Shaft 315mm)	
4 174 65	min: 220	MPX <sup>3</sup> 100H
	max: 482 (Shaft 315mm)	



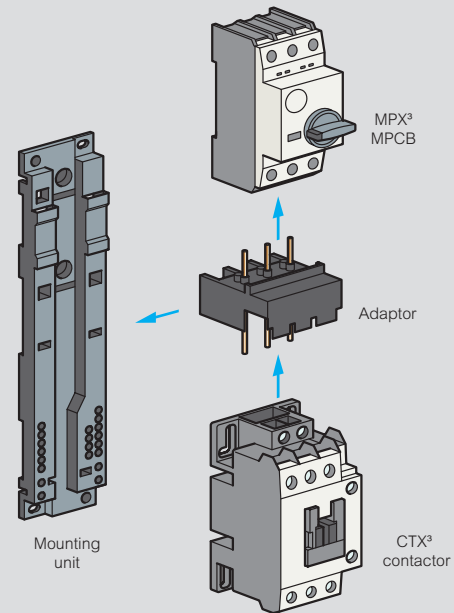
### Enclosure

Cat.Nos 4 174 80/81



### Mounting units - installation principle

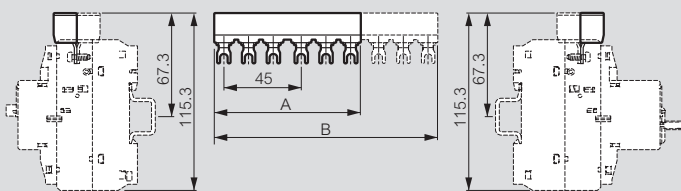
Cat.Nos 4 174 60/61/62



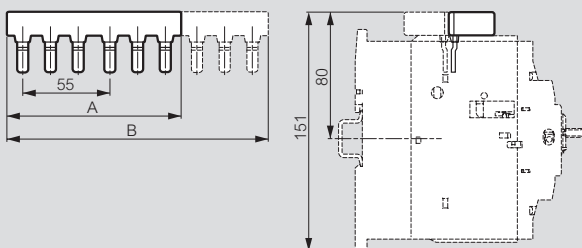
MPX <sup>3</sup> MPCB	CTX <sup>3</sup> contactor	Adaptor	Mounting unit
MPX <sup>3</sup> 32S	CTX <sup>3</sup> mini ~	4 174 40	4 174 60
	CTX <sup>3</sup> mini =	4 174 41	
	CTX <sup>3</sup> 22 ~	4 174 48	
	CTX <sup>3</sup> 22 =	4 174 49	
	CTX <sup>3</sup> 40 ~	4 174 52	
MPX <sup>3</sup> 32H/MA	CTX <sup>3</sup> 40 =	4 174 53	4 174 60
	CTX <sup>3</sup> mini ~	4 174 42	
	CTX <sup>3</sup> mini =	4 174 43	
	CTX <sup>3</sup> 22 ~	4 174 50	
	CTX <sup>3</sup> 22 =	4 174 51	
MPX <sup>3</sup> 63H	CTX <sup>3</sup> 40 ~	4 174 54	4 174 61
	CTX <sup>3</sup> 40 =	4 174 55	
	CTX <sup>3</sup> 65 ~	4 174 56	
MPX <sup>3</sup> 100H	CTX <sup>3</sup> 65 =	4 174 57	4 174 62
	CTX <sup>3</sup> 100 ~	4 174 58	
	CTX <sup>3</sup> 100 =	4 174 59	

### Phase Bus

Cat.Nos 4 174 71/73/75/76



Cat.Nos 4 174 72/74



Cat.Nos	Number of MPX <sup>3</sup>	A (mm)	B (mm)
4 174 71	2	85	-
4 174 72	3	-	130
4 174 73	2	110	-
4 174 74	3	-	165
4 174 75	4	-	175
4 174 76	5	-	220