



Motor Protection Circuit Breaker

MPH Series



BCH ELECTRIC LIMITED

BCH MPH series of MPCB is a compact range for motor protection up to 30 kW (415V)/ 63 A in two frame sizes i.e. 45mm & 55mm. It offers Thermal overload protection and Short circuit protection in a single compact unit with features like trip-free mechanism, temperature compensation and a rotary handle with a clear switch position position indication.

- Over load protection
- Phase failure protection
- Fuse less short circuit protection up to feeder line

Add on accessories

- 1 NO + 1 NC - Front Mounted
- Trip Indicator
- 2 NO - Side Mounted
- Undervoltage / Shunt Release

Salient Features

- ON / OFF Rotary knob with manual operation enables individual motor circuit to be isolated without having to disconnect all other circuits in control panel.
- Pad locking in “OFF” position to prevent accidental turn “ON” of motor during servicing.
- Clear trip indication. The Rotary Knob comes to “TRIP” position on Short circuit & Over load faulty conditions which help to identify the tripped condition of the MPCB easily.
- Test function to verify the performance of the device & accessories.
- Universal rating & marking: A, KW & HP rating with CE markings.
- Wide range of Relay scale.
- Over load relay function confirms to TRIP class 10A
- Trip indication - visual discrimination between short circuit & over load tripping.
- Wide variety of accessories coupled with modular design helps in easy distribution of power to multiple MPCB's.

Selection Table

Cat reference	Relay ratings (A)	Magnetic trip current (13 x I _n)	Motor KW (1-Phase)	Motor KW (3-Phase)			
			220 -240V	230V	400/415V	500V	690V
			KW	KW	KW	KW	KW
MPH32-0.16	0.1-0.16	2.1					0.06
MPH32-0.25	0.16-0.25	3.3			0.06	0.06	0.12
MPH32-0.4	0.25-0.4	5.2			0.09	0.12	0.18
MPH32-0.63	0.40-0.63	8.2		0.06	0.12	0.25	0.25
MPH32-1.0	0.63-1.0	13	0.06	0.12	0.25	0.37	0.55
MPH32-1.6	1.0-1.6	21	0.12	0.18	0.55	0.75	1.1
MPH32-2.5	1.6-2.5	33	0.18	0.37	0.75	1.1	1.5
MPH32-4.0	2.4-4.0	52	0.37	0.75	1.5	2.2	3
MPH32-6.3	4.0-6.3	82	0.55	1.1	2.2	3	4
MPH32-10	6.3-10	130	1.1	2.2	4	4	7.5
MPH32-16	10-16	208	2.2	3.7	9	12.5	15
MPH32-20	16-20	260	3.0	3.7	9	12.5	15
MPH32-25	20-25	325		5.5	12.5	15	22
MPH32-32	25-32	416		7.5	15	18.5	30
MPH63-16	11-16	Coming soon...					
MPH63-20	14-20						
MPH63-25	18-25						
MPH63-32	22-32						
MPH63-40	28-40						
MPH63-45	36-45						
MPH63-50	40-50						
MPH63-63	45-63						

Note: Mag only version is available on request.

Short Circuit Current Rating

Cat reference	Rated Current (A)	Short Circuit Breaking Capacity at 230V			Short Circuit Breaking Capacity at 400/415V			Short Circuit Breaking Capacity at 440V			Short Circuit Breaking Capacity at 500/525V			Short Circuit Breaking Capacity at 690V		
		Icu (kA)	Ics (kA)	gI/gG fuse ①	Icu (kA)	Ics (kA)	gI/gG fuse ①	Icu (kA)	Ics (kA)	gI/gG fuse ①	Icu (kA)	Ics (kA)	gI/gG fuse ①	Icu (kA)	Ics (kA)	gI/gG fuse ①
MPH32-0.16	0.16	100	100	-	100	100	-	100	100	-	100	100	-	100	100	-
MPH32-0.25	0.25	100	100	-	100	100	-	100	100	-	100	100	-	100	100	-
MPH32-0.4	0.4	100	100	-	100	100	-	100	100	-	100	100	-	100	100	-
MPH32-0.63	0.63	100	100	-	100	100	-	100	100	-	100	100	-	100	100	-
MPH32-1.0	1	100	100	-	100	100	-	100	100	-	100	100	-	100	100	-
MPH32-1.6	1.6	100	100	-	100	100	-	100	100	-	100	100	-	100	100	-
MPH32-2.5	2.5	100	100	-	100	100	-	100	100	-	100	100	-	8	6	25
MPH32-4.0	4	100	100	-	100	100	-	100	100	-	100	100	-	8	6	40
MPH32-6.3	6.3	100	100	-	100	100	-	100	100	-	100	100	-	6	5	50
MPH32-10	10	100	100	-	100	100	-	50	38	63	50	38	50	6	5	50
MPH32-16	16	100	100	-	50	38	100	35	25	80	10	8	80	4	3	63
MPH32-20	20	100	100	-	50	38	125	35	25	80	10	8	80	4	3	63
MPH32-25	25	100	100	-	50	38	125	35	25	100	10	8	80	4	3	63
MPH32-32	32	100	100	-	50	38	125	35	25	100	10	8	80	4	3	63
MPH63-16	16	Coming Soon...														
MPH63-20	20															
MPH63-25	25															
MPH63-32	32															
MPH63-40	40															
MPH63-45	45															
MPH63-50	50															
MPH63-63	63															

① Fuse is used if I_{cc} is greater than I_{cu}

Technical Data

S.NO	PARAMETER	MPH32		MPH63	
		Relay ranges (A)	Rated Oper. current (A)	Relay ranges (A)	Rated Oper. current (A)
1	Relay ranges & Rated operational current	0.1 – 0.16	0.16	11 – 16	16
		0.16 - 0.25	0.25	14 – 20	20
		0.25 – 0.4	0.4	18 – 25	25
		0.4 – 0.63	0.63	22 – 32	32
		0.63 – 1.0	1.0	28 – 40	40
		1- 1.6	1.6	36 – 45	45
		1.6 – 2.5	2.5	40 – 50	50
		2.5 – 4	4.0	45 – 63	63
		4 – 6.3	6.3		
		6.3 – 10	10		
		10 – 16	16		
		16 – 20	20		
		20 – 25	25		
		25 – 32	32		
2	Magnetic release operating current	13 In		13 In	
3	Trip class	10A		10A	
4	Operating frequency	50 – 60Hz		50-60Hz	
5	Degree of protection	IP20		IP20	
6	Certifications	CE		CE	
7	Rated Insulation voltage	690 V		690 V	
8	Rated Impulse withstand voltage	6 kV		6 kV	
9	Utilisation category (i) IEC947-2 (Circuit breaker)	CAT A		CAT A	
	(ii) IEC947-4-1 (Motor starter)	AC3		AC3	
10	Rated Thermal current	0.1 - 32		11 – 63	
11	Ambient temperature compensation	Available		Available	
12	Permissible altitude w/o de rating	2000m		2000m	
13	Suitability for group motor protection	Yes		Yes	
14	Self protected type E manual combination starter	Yes		Yes	
15	Max. kAIC (max.short circuit current)	100kA at 415V		50kA at 415V	
16	Mechanical life	1,00,000		50,000	
17	Electrical life	1,00,000		50,000	
	Max switching frequency per hour	25		25	
18	Frame size (L x B x H)	96 x 45 x 97 (in mm)		140 x 55 x 148.5 (in mm)	

Accessories

Type	Name	Description	Suitability	CAT No.
 <p>Front Mount</p>	Front auxiliary contact. One No per MPCB	1NO + 1NC	MPH32 MPH63	MPHF11
Left side mount				
	Side auxiliary contact One No per MPCB	1NO+1NC, 2NO 2NC	MPH32 & MPH63	MPHS11
	Trip indicating contact One per MPCB Can also be fitted in addition to auxiliary contact	Two sets of 1NO + 1NC are available with trip indication. One set is for short circuit and another set is for thermal tripping	MPH32 & MPH63	MPHT11
Under Voltage / Shunt Release				
	Under voltage release one number per MPCB	110 V 230 V 400 V	MPH32 & MPH63	MPH***UR
	Shunt trip one per MPCB	24 V AC/DC 110 V AC/DC 230 V AC / 220 V DC	MPH32 & MPH63	MPH***SR
	3-Phase in feed terminals	Conductor cross-section solid; 25 mm ²	MPH32 & MPH63	



***** UV release voltage**

Voltage	Description
024	24V 50Hz
115	110 - 115V 50Hz
240	230 - 240V 50Hz
415	400 - 415V 50Hz

***** Shunt release voltage**

Voltage	Description
024	20 - 24V, 50/60Hz
048	40 - 48V, 50/60Hz
440	365 - 440V, 50/60Hz
127	100 - 127V, 50/60Hz

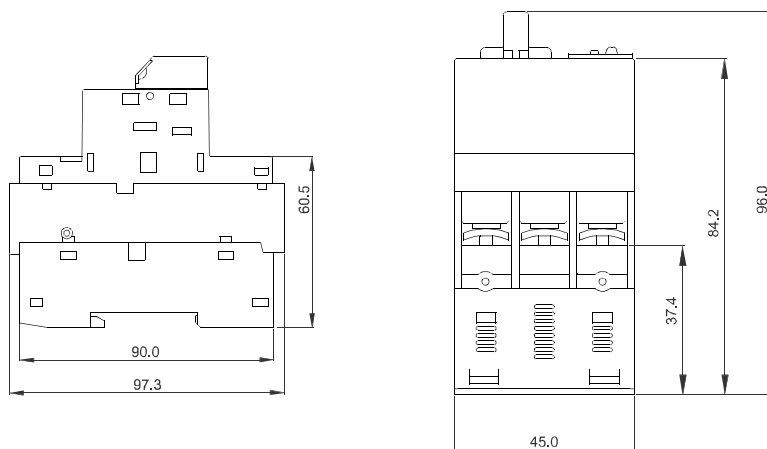
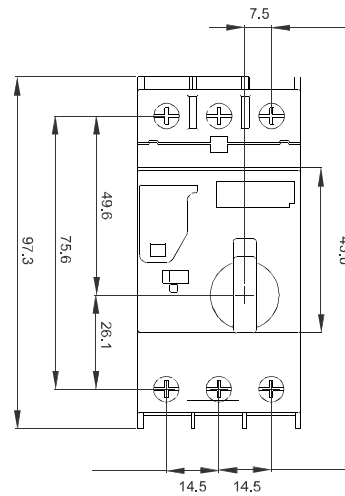
Accessories

Type	Name	Description	Suitability	CAT No.
Insulated 3-Phase bus bar system				
	Modular spacing 45mm	for 2 MPCB w/o side accessories for 3 MPCB w/o side accessories for 4 MPCB w/o side accessories for 5 MPCB w/o side accessories	MPH32 & MPH63	
	3-Phase Busbars Modular Spacing 55m	for 2 MPCB w/o side accessories for 4 MPCB w/o side accessories		
	3-Phase Busbars Modular spacing 63mm	for 2 MPCB with side accessories for 4 MPCB with side accessories		
	3-Phase Busbars Modular spacing 75mm	for 2 MPCB with side accessories for 4 MPCB with side accessories		
	Door operating Mechanism with door interlock defeat facility, padlocking facility Extension shaft 300mm	Front Operated	MPH32 & MPH63	

Dimensional Details

MPCB - MPH32 type

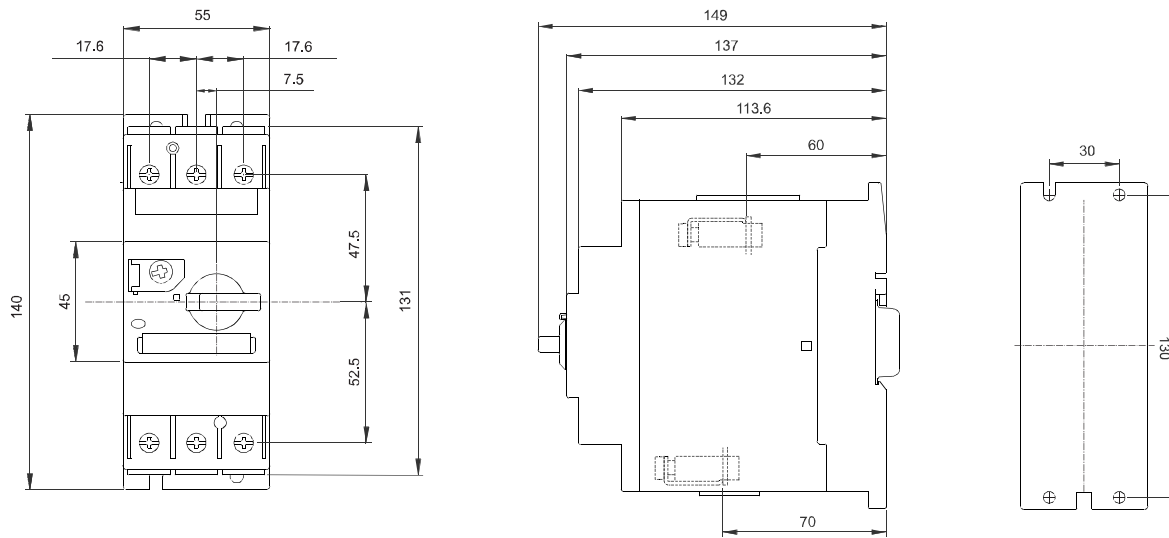
in mm



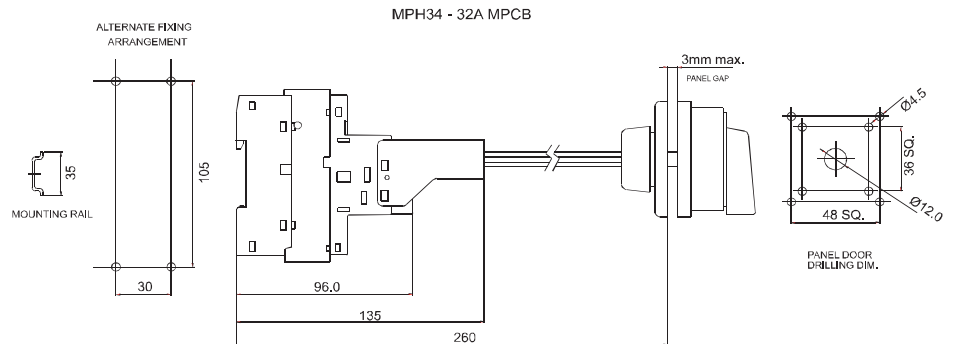
Dimensional Details

MPCB - MPH63 type

in mm



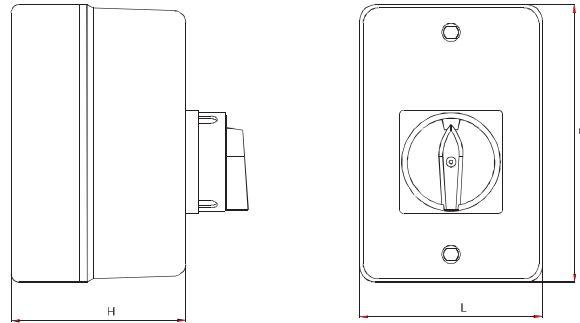
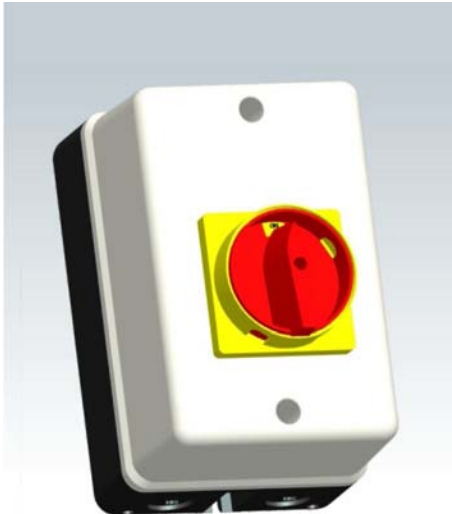
MPH34



B31SMA1

Plastic Enclosure

in mm

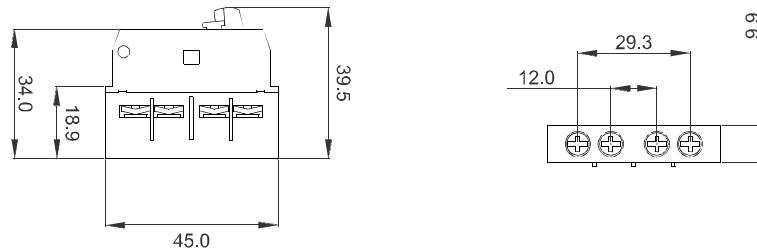


- Mounted in ABS Enclosure
- Round Padlocking Device (Max. 3 Padlocks) to Prevent the MPCB from being Made to ON by unauthorised persons
- Door Interlock-Cover Cannot Open in ON Condition

Model	L	B	H
B31SMA1	115	175	110
B31MA1	125	210	170

Dimension Details

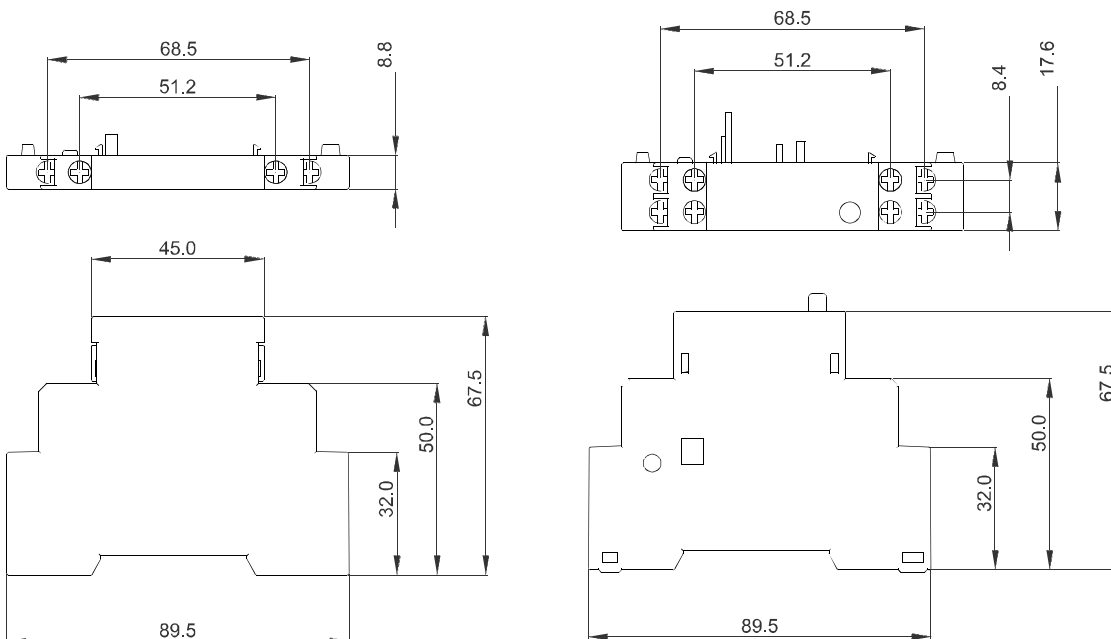
Front mount - NONC



Left side mount

1NO 1NC, 2NO, 2NC

Trip indicator contact



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Since product improvement is a continuous process, the data furnished in this brochure may undergo revision without prior notice.