

Miniature Circuit Breakers B4/BR6/B10

IMO

Technical Datasheet

The IMO range of miniature circuit breakers have been designed for protection of electrical installations against overload and short circuits and are manufactured in accordance with IEC 60898-1

Technical Data

- Handle central-tripping function for circuit fault indication
- Contact position indicating window; transparent cover to carry label
- High short circuit capacity
- Suitable for terminal and Pin or Fork type busbar connection
- IP20 Finger protected connection terminals
- Optional Handle padlock device: B10-LOCK



Tripping characteristics: available in B, C, and D curves

- B Curve: $3-5 I_n$
- C Curve: $5-10 I_n$
- D Curve: $10-20 I_n$



Options & Ordering Codes

B10		B	10	16A	L
MCB Series					
MCB 4.5kA	B4				
MCB 6kA (Curve D: 4.5kA)	BR6				
MCB 10kA	B10				
		Rated Current Amps			
		L Neutral on the left			
		Applies to units with neutral.			
		Pole Configuration			
		10	Single pole		
		1N	Single pole + Neutral		
		20	Two pole		
		30	Three pole		
		3N	Three pole + Neutral		
		40	Four pole		

Specifications

In accordance with		IEC 60898-1
Certification		CE, SEMKO (only with B4 & BR6) Kema Keur (only with B10), RCM (only with 1, 2 & 3 pole B10)
Pole composition		1P, 1P+N, 2P, 3P, 3P+N, 4P
Tripping Curve		B, C, D
Calibration temperature		+30°C
Rated frequency		50/60Hz
Rated voltage		240/415VAC; 60VDC Max
Rated insulation voltage		240VAC / 415VAC
Rated impulse withstand voltage		6.2kV
Rated short circuit breaking capacity as per IEC 60898-1	B4	4.5kA
	BR6	4.5kA (Curve D only), 6kA
	B10	10kA
Mechanical lifetime		> 20,000 cycles
Electrical lifetime		≤ 4,000 cycles
Tightening torque		2.0Nm, 1.2Nm (B4 only)
Screw Type		M5, M4 (B4 only)
Terminal capacity		35mm ² solid, 25mm ² stranded conductor (10mm ² for 1P+N)
Mounting		DIN Rail EN 60715 (EN 50022)
Protection degree		IP20
Energy Limiting Class		3
Operating temperature		-30°C to 60°C

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Accessories

Auxiliary Switch	B10-F3 (only for B10 MCB, B10R RCD & B6 RCBO)
	BR6-F3 (only for BR6) & B10-S3 (only for B10)
For monitoring the status of the protection device (open/closed) 1 pole changeover (for C & D curve only) Rated current: 6A @ 230VAC & 24VDC or 3A @ 400VAC Dielectric Strength: 2000V/1min Terminal Capacity: 2.5mm ² Mounting on the Left side	

Shunt Trip	BR6-S2 (only for BR6) & B10-S3 (only for B10)
Shunt Trip to remotely switch off the protection device Rating voltage U _e : AC 110V / 230V / 400V Operating Voltage: 70%~110% X U _e Mounting on the Left side	

Under / Over Voltage Trip	BR6-U2-02
Trips the attached unit in case of under / over voltage Rated Voltage U _e : AC 230V Over-Voltage Tripping Range: 280V ±5% Under-Voltage Tripping Range: 170V ±5% Mounting on Left Side	

Auxiliary Alarm Switch	B10-A3 (only for B10 MCB, B10R RCD & B6 RCBO)
For the detection of MCB tripping 1 pole changeover Rated current: 6A @ 230VAC & 24VDC or 3A @ 400VAC	

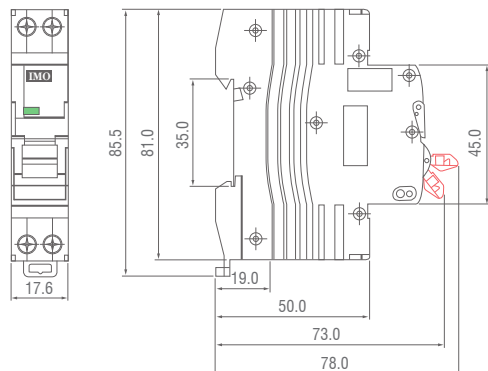
Busbars	
Description	Ref.
Busbar 1 Pole, 80A, Fork Type, 1M	BB80A1P-F
Busbar 3 Pole, 80A, Fork Type, 1M	BB80A3P-F
Busbar 3 Pole, 125A, Fork Type, 1M	BB125A3P-F
Busbar 1 Pole, 80A, Pin Type, 1M	BB80A1P-P
Busbar 3 Pole, 80A, Pin Type, 1M	BB80A3P-P
End Cap 1 Pole	BB1P-CAP
End Cap 3 Pole	BB3P-CAP

Terminal Adapter	BA1
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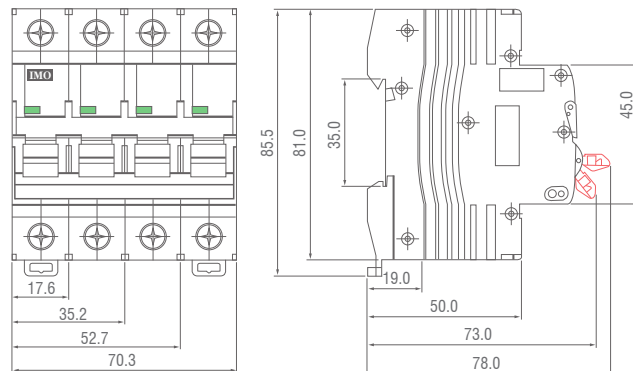
Locking Device	B10-LOCK
4mm padlock max diameter, padlock not included	

Dimensions (mm)

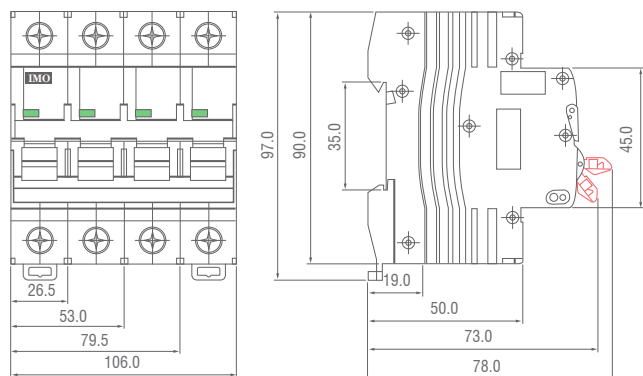
Miniature Circuit Breakers up to 32A (4.5kA Only)



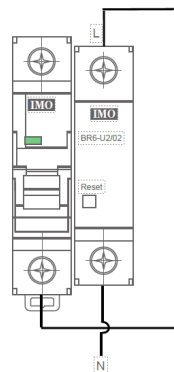
Miniature Circuit Breakers up to 63A



Miniature Circuit Breakers from 80A to 125A



MCB - BR6-U2/02 Wiring Diagram

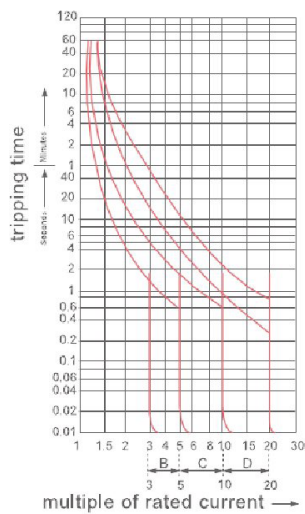


Miniature Circuit Breakers B4/BR6/B10



Technical Datasheet

B, C, D Tripping Curve



Power Loss (W)

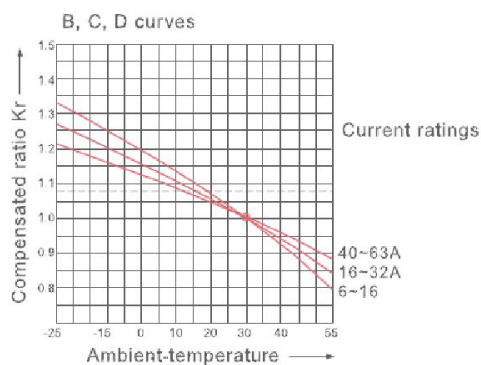
BR6 Models

	Number of Poles			
	1P	2P	3P	4P
1A	0.70	1.40	2.11	2.79
2A	1.25	2.63	3.90	4.82
4A	1.29	2.53	4.08	5.08
6A	0.92	1.84	2.70	3.84
10A	1.32	2.85	4.24	5.77
16A	2.23	4.62	7.03	9.05
20A	2.67	5.97	8.10	11.35
25A	2.9	5.71	10.27	12.27
32A	3.55	8.30	14.31	17.45
40A	5.39	12.07	18.31	25.2
50A	6.71	14.43	24.09	30.64
63A	7.51	12.88	24.54	33.21

B10B/C/D Models

	Number of Poles			
	1P	2P	3P	4P
1A	1.35	2.70	4.04	5.39
2A	1.71	3.42	5.12	6.83
3A	1.28	2.57	3.85	5.14
4A	1.48	2.96	4.44	5.93
6A	1.67	3.34	5.01	6.68
10A	1.33	2.66	3.99	5.32
16A	2.04	4.09	6.13	8.17
20A	2.16	4.32	6.48	8.64
25A	2.34	4.69	7.03	9.38
32A	3.25	6.49	9.74	12.98
40A	3.22	6.43	9.65	12.86
50A	3.35	6.70	10.05	13.40
63A	4.68	9.37	14.05	18.73
80A	10.00	20.00	30.00	40.00
100A	15.00	30.00	45.00	60.00
125A	19.00	38.00	57.00	76.00

Ambient temperature & Current rating curve



NOTE: These figures should be used for guidance only, actual value will vary from device to device.

Residual Current Circuit Breakers

B10R

IMO

Technical Datasheet

The IMO range of Residual Current Circuit Breakers have been designed for protection of electrical installations against earth fault / leakage current and are manufactured in accordance with IEC 61008-1.

Options & Ordering Codes

B10		R		20		25		30 -		A -		110	
10kA Rated		B10				Rated Current Amps						230VAC / 400VAC	
						16-125A						110VAC	
RCCB Version		R											
1 pole + N (2 pole)				20									
3 pole + N (4 pole)				40									

Residual Current Circuit Breakers With Overload Protection

The IMO range of Residual Current-Circuit Breakers with Overload have been designed for protection of electrical installations against earth fault / leakage current, overload and short circuit and are manufactured in accordance with IEC 61009.

RCBO Features

- Provides protection against earth fault / leakage current, overload, short circuit and function of isolation
- Contact position indicating window; transparent cover to carry label
- High short circuit current withstand capacity
- Suitable for terminal and Pin or Fork type busbar connection
- IP20 Finger protected connection terminals
- Compatible with MCB accessories range
- Optional handle padlock device: B10-LOCK



Tripping characteristics: available in B, C, and D curves

- B Curve: 3-5 I_n
- C Curve: 5-10 I_n
- D Curve: 10-20 I_n

Options & Ordering Codes

B6		B		R		1N		16 - 30 - A - 110	
10kA Rated		B6						Rated Current Amps	
Tripping Curve		B		C		D		1-40A	
Tripping Curve									
Tripping Curve									
Residual Current				R					
						1 Pole + N (2 Pole)		1N	

BIS Isolating Switches

The IMO range of isolating switch have been designed to isolate safely your electrical circuit from the main supply and are manufactured in accordance with IEC 60947-3.

- On-load isolator
- Capable of switch electric circuit with load
- Contact position indicating window; transparent cover to carry label
- Suitable for terminal and Pin or Fork type busbar connection
- IP20 Finger protected connection terminals
- Compatible with MCB accessories range
- Optional handle padlock device: B10-LOCK



Technical Datasheet



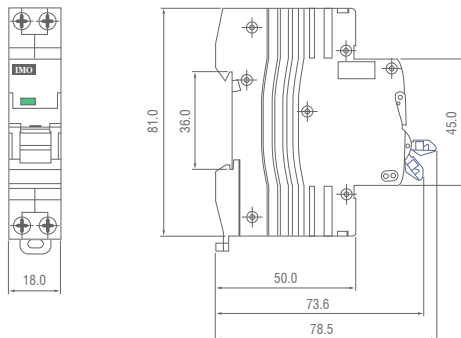
Options & Ordering Codes

BIS	2	063A
Distribution board Isolating Switch	BIS	
1 Pole	1	N32A Compact Size, Blue Handle, 32A
2 Pole	2	063A 63 Amps
3 Pole	3	100C 100 Amps
4 Pole	4	125A 125 Amps
		250A 250 Amps (Supplied with terminal separators)

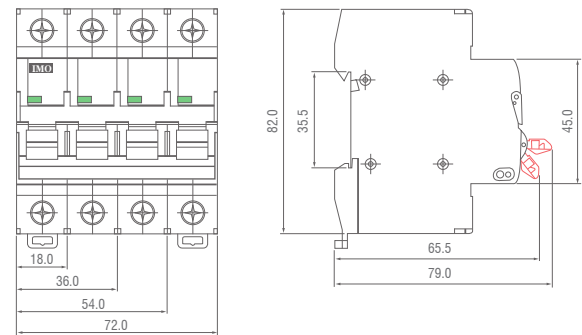
Specifications

In accordance with	IEC 60947-3
Certification	CE, SEMKO (63 and 125A only)
Pole composition	1P / 2P / 3P / 4P
Rated current	32A / 63A / 100A / 125A / 250A
Rated voltage	AC 230 / 400V
Rated frequency	50/60Hz
Rated short circuit capacity	6kA (3kA for 100A version)
Electrical lifetime	> 10,000 operations
Fastening torque	2.0Nm
Terminal capacity	35mm ² solid, 25mm ² stranded conductor
Protection degree	IP20
Operating temperature range:	-30°C to 60°C

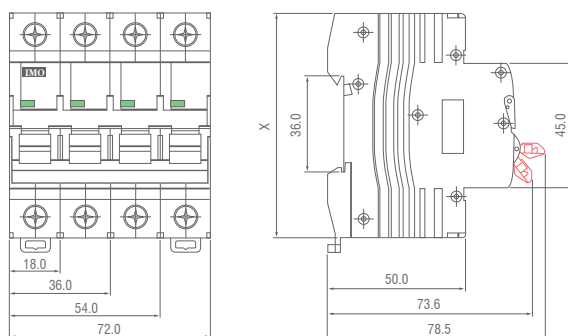
Dimensions (mm) for Compact 32A version



Dimensions (mm) for 100A version

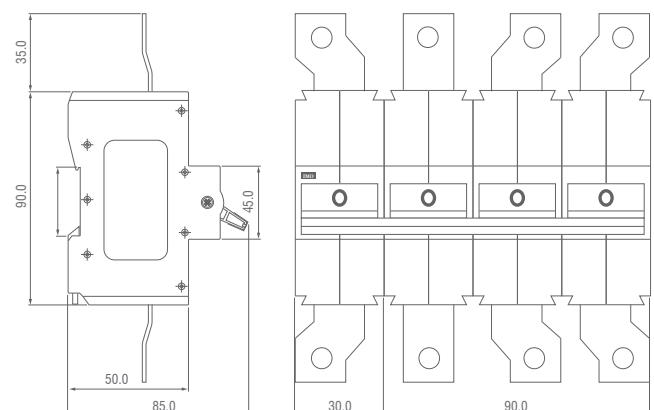


Dimensions (mm) for 63A & 125A version



Rating	X
63A	81mm
125A	90mm

Dimensions (mm) for 250A version



Residual Current Circuit Breakers With Overload Protection 1P+N Single Module

The IMO range of Residual Current-Circuit Breakers with Overload have been designed for protection of electrical installations against earth fault / leakage current, overload and short circuit and are manufactured in accordance with IEC 61009-1.

RCBO Features

- Provides protection against earth fault / leakage current, overload, short circuit and function of isolation
- Single width module RCBO, 119mm tall
- Contact position indicating window; transparent cover to carry label
- High short circuit current withstand capacity
- Suitable for terminal and Pin or Fork type busbar connection
- Finger protected connection terminals
- Compatible with MCB accessories range
- Optional handle padlock device: B10-LOCK



Tripping characteristics: available in B, C, and D curves

- B Curve: $3-5 I_n$
- C Curve: $5-10 I_n$
- D Curve: $10-20 I_n$

Options & Ordering Codes

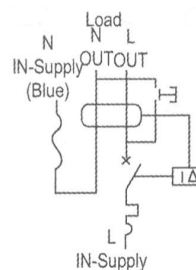
B10T	B	R	1N	16	30	-	A
10kA Rated	B10T			Rated Current Amps			Type AC
	B Curve	B		1-32A			A Type A
	C Curve	C					
	D Curve	D					
	Residual Current	R			30	30mA residual tripping current	
					100	100mA residual tripping current	
					300	300mA residual tripping current	
			1 Pole + N	1N			

Specifications

In accordance with	IEC 61009-1
Certification	CE
Pole composition	1P+N
Residual current characteristics	AC
Tripping Curve	B, C, D
Rated current	1A, 2A, 3A, 4A, 6A, 10A, 16A, 20A, 25A, 32A
Rated short circuit capacity	10 kA
Calibration Temperature	+30°C
Rated frequency	50/60Hz
Rated voltage	230/400VAC
Rated residual operating current $I_{\Delta n}$	30mA, 100mA, 300mA
Residual tripping current range	$0.5 I_{\Delta n} \sim 1 I_{\Delta n}$
Electrical lifetime	> 4,000 cycles
Fastening torque	2.0 Nm
Terminal capacity (Live input)	35mm ² solid or 25mm ² stranded
Terminal capacity (ouput)	10mm ² solid or 6mm ² stranded
Mounting on	DIN rail EN 60715 (EN 50022)
Protection degree	IP20
Energy Limiting Class	3
Operating temperature	-30°C to 60°C
Weight g/pc	178.0

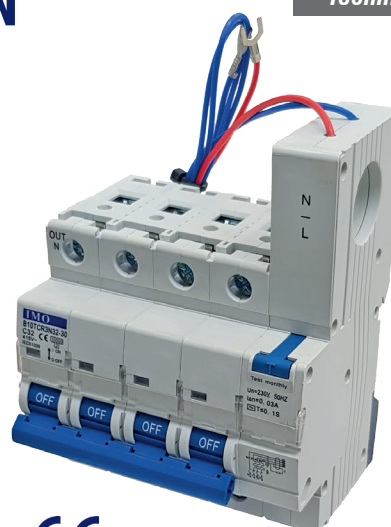
Dimensions (mm) for 1P+N: 1 module (18W x 119H x 69D)
For Tripping Curve refer to MCB.

Wiring Diagram



The IMO range of Residual Current-Circuit Breakers with Overload have been designed for protection of electrical installations against earth fault / leakage current, overload and short circuit and are manufactured in accordance with IEC 61009-1.

- Provides protection against earth fault / leakage current, overload, short circuit and function of isolation
- 3P + N Version, 5 module width RCBO, 119mm tall
- Contact position indicating window; transparent cover to carry label
- High short circuit capacity
- Suitable for terminal and Pin or Fork type busbar connection
- IP20 Finger protected connection terminals
- Compatible with MCB accessories range
- Optional handle padlock device: B10-LOCK



CE

Tripping characteristics: available in B, C, and D curves

- B Curve: 3-5 I_n
- C Curve: 5-10 I_n
- D Curve: 10-20 I_n

10kA B10T

10kA Rated	B10T
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B Curve	B
C Curve	C
D Curve	D

Rated Current Amps	1-63A
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30	30mA residual operating current
100	100mA residual operating current
300	300mA residual operating current

Residual Current **R**

3 Pole + N **3N**

10kA B10T 30 100 300 3 Pole + N 3N

In accordance with	IEC 61009-1
Certification	CE
Pole composition	3P+N
Residual current characteristics	AC
Tripping Curve	B, C, D
Rated current	1A, 2A, 3A, 4A, 6A, 10A, 16A, 20A, 25A, 32A, 40A, 50A, 63A
Rated short circuit capacity	10 kA
Calibration Temperature	+30°C
Rated frequency	50/60Hz
Rated voltage	230/400VAC
Rated residual operating current $I_{\Delta n}$	30mA, 100mA, 300mA
Residual tripping current range	0.5 $I_{\Delta n} \sim 1 I_{\Delta n}$
Electrical lifetime	> 4,000 cycles
Fastening torque	2.0 Nm
Terminal capacity	35mm ² solid or 25mm ² stranded
Mounting on	DIN rail EN 60715 (EN 50022)
Protection degree	IP20
Energy Limiting Class	3
Operating temperature	-30°C to 60°C

Dimensions (mm) for 3P+N: 4 module (72W x 81H x 69D) + 1 module (18W x 130H x 69D).
For Tripping Curve refer to MCB.

Temperature Derating Tables

IMO

Technical Datasheet

The Temperature Derating section of the IMO circuit protection device datasheet provides essential guidance on how the device's current-carrying capacity diminishes with rising ambient temperatures. Specifically, for devices ranging from 1A to 125A, this section includes comprehensive derating tables that outline the necessary adjustments to ensure optimal performance and safety. With an optimum temperature of 30°C, the temperature derating table are as follows;

IMO circuit protection devices: 1A to 125A

In (A)	-30°C	-20°C	-10°C	-0°C	10°C	20°C	30°C	40°C	50°C	60°C
1	1.1	1.1	1.1	1.0	1.0	1.0	1	0.9	0.9	0.8
2	2.3	2.2	2.1	2.1	2.0	2.0	2	1.8	1.8	1.7
3	3.4	3.3	3.2	3.1	3.0	2.9	3	2.7	2.6	2.5
4	4.5	4.4	4.3	4.2	4.1	3.9	4	3.7	3.5	3.4
6	6.8	6.6	6.4	6.3	6.1	5.9	6	5.5	5.3	5.1
10	11.3	11.0	10.7	10.4	10.1	9.8	10	9.2	8.8	8.4
16	18.1	17.7	17.2	16.7	16.2	15.7	16	14.7	14.1	13.5
20	22.6	22.1	21.5	20.9	20.3	19.7	20	18.3	17.6	16.9
25	28.3	27.6	26.9	26.1	25.4	24.6	25	22.9	22.0	21.1
32	36.2	35.3	34.4	33.4	32.5	31.4	32	29.3	28.2	27.0
40	45.3	44.1	43.0	41.8	40.6	39.3	40	36.6	35.2	33.8
50	56.6	55.2	53.7	52.2	50.7	49.1	50	45.8	44.1	42.2
63	71.3	69.5	67.7	65.8	63.9	61.9	63	57.7	55.5	53.2
80	90.6	88.3	86.0	83.6	81.1	78.6	80	73.3	70.5	67.6
100	113.2	110.4	107.5	104.5	101.4	98.3	100	91.6	88.1	84.4
125	141.5	138.0	134.3	130.6	126.8	122.8	125	114.5	110.1	105.6