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Circuit Protection Circuit Breakers

Thermal Magnetic Type

CB4201-10



Single Pole

CB4202-10



Double Pole

Ordering Data	Type: Single Pole - CB4201-10		Type: Double Pole - CB4202-10	
Internal Resistance per Pole (ohms)	Current Ratings (amps)	Part No.* TS 35	Current Ratings (amps)	Part No.* TS 35
131.00	0.1	9104173500	0.1	9120353500
40.00	0.2	9104183500	0.2	9124243500
19.30	0.3	9129813500	0.3	9124263500
10.40	0.4	9124093500	0.4	9124273500
7.10	0.5	9101003500	0.5	9129583500
4.30	0.6	9124113500	0.6	9124283500
3.58	0.7	9129563500	0.7	9124293500
2.50	0.8	9101103500	0.8	9129593500
1.67	1.0	9101203500	1.0	9129613500
1.22	1.2	9101303500	1.2	9129623500
0.61	1.5	9101403500	1.5	9129633500
0.55	1.8	9124143500	1.8	9124333500
0.38	2.0	9101503500	2.0	9129643500
0.24	2.5	9101603500	2.5	9129653500
0.19	3.0	9101703500	3.0	9129663500
0.16	3.5	9124163500	3.5	9124343500
0.09	4.0	9104353500	4.0	9129713500
0.09	4.5	9124173500	4.5	
0.061	5.0	9101803500	5.0	9129673500
0.07	5.5	9107833500	5.5	
0.041	6.0	9103813500	6.0	9124373500
0.04	6.5	9120043500	6.5	
0.034	7.0	9104153500	7.0	9124393500
0.02	8.0	9103003500	8.0	9104673500
0.02	9.0	9104613500	9.0	9124423500
<0.02	10.0	9101903500	10.0	9129683500
<0.02	11.0	9124183500	11.0	
<0.02	12.0	9107843500	12.0	9124443500
<0.02	13.0	9124193500	13.0	
<0.02	14.0	9107853500	14.0	9124463500
<0.02	15.0	9102003500	15.0	9129693500
<0.02	16.0	9124213500	16.0	9124473500

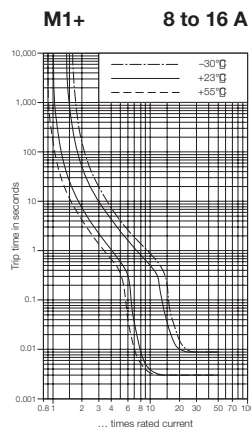
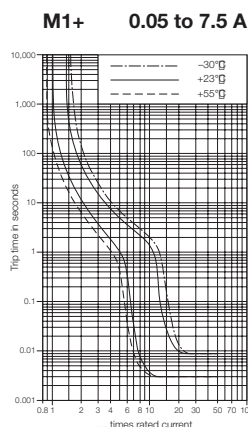
RAIL MOUNTED TERMINAL BLOCKS: W-SERIES

Circuit Breaker – Trip Curves

Thermal Magnetic Type

Typical time/current characteristics at 23°C

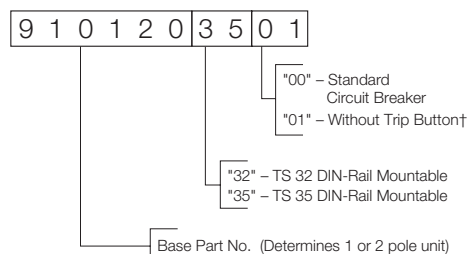
4200 Series



* Ordering Options - Example

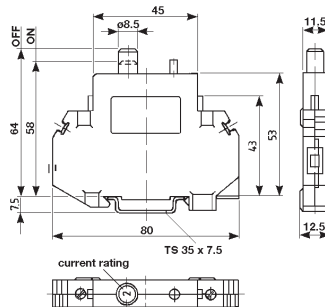
To order CB4201-10 Single Pole Circuit Breaker,
Part No. 9101203501

- Current Rating of 1.0 amps
- Internal Resistance per Pole of 1.67 ohms
- For TS 35
- Without Trip Button



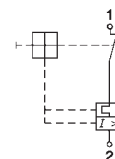
†To manually trip breaker, a plastic or wooden dowel (0.12 inch diameter) will be needed.

CB4201-10
Single Pole

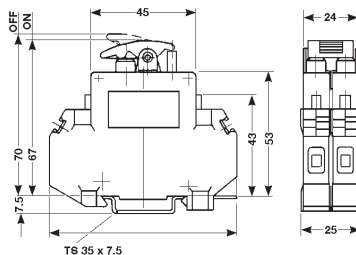


Dimensions in mm

Internal
Wiring
Diagram

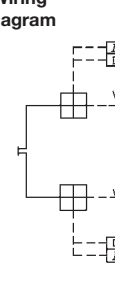


CB4202-10
Double Pole



Dimensions in mm

Internal
Wiring
Diagram



Technical Data

Rated voltage & current†		Voltage Ratings		Current Ratings	
UL		AC 250 V, DC 80 V, 50/60 Hz		0.05...16 A	
CSA		AC 250 V, DC 80 V, 50/60 Hz		0.05...16 A	
VDE		AC 250 V, DC 65 V, 50/60 Hz		0.05...16 A	
Creepage resistance		PTI 600 to IEC 112			
Dielectric strength		4,000 VAC; IEC 664 & 664 A			
Insulation resistance		> 100 MΩ (DC 500 V)			
Interrupting capacity (VDE 0660, Part 101, P-2)		4201-10	Maximum capacity		
		0.05...0.8 A	Self-limiting		
		1...2 A	200 A		
		2.5...16 A	400 A		
Interrupting capacity; 4201-10 (UL 1077/EN 60934 PC1)		Rated current	Rated voltage	Maximum capacity	
		0.05...4.5 A	AC 250 V	200 A	
		5...8 A	AC 250 V	1000 A	
		9...15 A	AC 125 V	1000 A	
		0.05...15 A	DC 65 V	200 A	
Typical life at 2 x rated current		5,000 operations			
Shock		25 g (11 ms) to IEC 68-2-27, Test Ea			
Torque		Nm (lb. in.)			
		0.8 (7.1)			
Vibration		5 g (57 to 500 Hz / ±0.38 mm, 10 to 57 Hz) to IEC 68-2-6, Test Fc			
Temperature range		-30°C...+55°C (-22°F...+131°F)			
Corrosion		96 hours at 5% salt spray, to IEC 68-2-11, Test Ka			
Humidity		240 hours at 95% RH, to IEC 68-2-3, Test Ca			
Weight		Approximately 60 g per pole			
Wire size (UL)		#20...8 AWG	solid		
		#20...10 AWG	standard		

Accessories

	Type	Part No.
Jumpers		
Daisy Chain 50*	BDC 50	9970290000
Straight CQB**	CQB 2	9970560000
insulated	CQB 3	9970570000
	CQB 4	9970580000
	CQB 10	9970590000
Angled CQB**	CQB 2	9970600000
insulated	CQB 3	9970610000
	CQB 4	9970620000
	CQB 10	9970630000
Adapter foot (for TS 32 Rail)	AF/TS 32	9102100000

Marking Tags

Special print only	WS 8/5 MC	1640750000***
Consecutive horizontal	DEK 5/5	0473460001
Consecutive vertical	DEK 5/5	0473560001

Note: Part numbers are shown for a single card of pre-printed tags numbered 1-50.

[†]Note: Resistive and inductive loads (0.05 - 16 A)

*BDC will accommodate 20 A per pin, 20 A total

**CQB will accommodate 18 A per pin, 18 A total; dedicated to 4201 Series

***Please specify horizontal or vertical print when ordering. Standard quantity = 144 tags per card.

Circuit Protection Circuit Breakers

Thermal Magnetic Type

CB2211-10
Single Pole



CB2212-10
Double Pole



CB2213-10
Triple Pole



Ordering Data	Type: Single Pole - CB2211-10			Type: Double Pole - CB2212-10			Type: Triple Pole - CB2213-10		
Internal Resistance per Pole (ohms) (M1)	Current Ratings (amps)	N/O Aux. Part No.	N/C Aux. Part No.	Current Ratings (amps)	N/O Aux. Part No.	N/C-N/O Part No.	Current Ratings (amps)	N/O Aux. Part No.	N/C-N/O Part No.
92	0.1	9911010000	9911010005	0.1	9912010000	9912010003	0.1	9913010000	9913010003
26.1	0.2	9911020000	9911020005	0.2	9912020000	9912020003	0.2	9913020000	9913020003
11.6	0.3	9911030000	9911030005	0.3	9912030000	9912030003	0.3	9913030000	9913030003
6.6	0.4	9911040000	9911040005	0.4	9912040000	9912040003	0.4	9913040000	9913040003
4.1	0.5	9911050000	9911050005	0.5	9912050000	9912050003	0.5	9913050000	9913050003
3	0.6	9911060000	9911060005	0.6	9912060000	9912060003	0.6	9913060000	9913060003
1.65	0.8	9911080000	9911080005	0.8	9912080000	9912080003	0.8	9913080000	9913080003
1.1	1.0	9911100000	9911100005	1.0	9912100000	9912100003	1.0	9913100000	9913100003
0.47	1.5	9911150000	9911150005	1.5	9912150000	9912150003	1.5	9913150000	9913150003
0.28	2.0	9911200000	9911200005	2.0	9912200000	9912200003	2.0	9913200000	9913200003
0.183	2.5	9911250000	9911250005	2.5	9912250000	9912250003	2.5	9913250000	9913250003
0.124	3.0	9911300000	9911300005	3.0	9912300000	9912300003	3.0	9913300000	9913300003
0.077	4.0	9911400000	9911400005	4.0	9912400000	9912400003	4.0	9913400000	9913400003
0.063	5.0	9911500000	9911500005	5.0	9912500000	9912500003	5.0	9913500000	9913500003
0.045	6.0	9911600000	9911600005	6.0	9912600000	9912600003	6.0	9913600000	9913600003
≤0.02	8.0	9911800000	9911800005	8.0	9912800000	9912800003	8.0	9913800000	9913800003
≤0.02	10	9921100000	9921100005	10	9922100000	9922100003	10	9923100000	9923100003
≤0.02	12	9921120000	9921120005	12	9922120000	9922120003	12	9923120000	9923120003
≤0.02	15	9921150000	9921150005	15	9922150000	9922150003	15	9923150000	9923150003
≤0.02	16	9921160000	9921160005	16	9922160000	9922160003	16	9923160000	9923160003
≤0.02	18	9921180000	9921180005	18	9922180000	9922180003	18	9923180000	9923180003
≤0.02	20	9921200000	9921200005	20	9922200000	9922200003	20	9923200000	9923200003
≤0.02	25	9921250000	9921250005	25	9922250000		25	9923250000	
≤0.02	32	9921320000	9921320005	32	9922320000		32	9923320000	

Ordering Options - Example

To order CB2212-10 Double Pole Circuit Breaker with N/O Aux.,
Part No. 9912100003

- Current Rating of 1.0 amps
- Internal Resistance per Pole of 1.1 ohms
- Trip Curve – M1, Medium (Standard)
- N/C-N/O Auxiliary Contacts

9 9 1 2 1 0 0 0 3

Auxiliary Contacts[†]

00 – N/C Auxiliary Contact
02 – W/O Auxiliary Contact
03 – N/C-N/O Auxiliary Contacts (double and triple pole only)
05 – N/O Auxiliary Contact

Trip Curves

00 – M1, Medium (standard)
11 – F1, Fast (DC only)
12 – M3, Low Resistance
13 – T1, Delayed

Base Part No. (Indicates number of poles)*

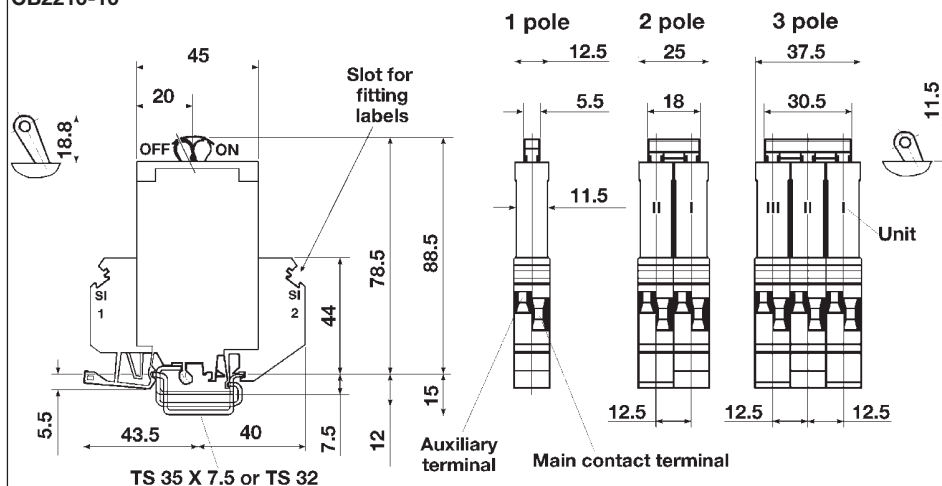
[†]Auxiliary for the 2-pole will be configured: N/C for 1st pole & N/O for 2nd pole.
Auxiliary for the 3-pole will be configured: N/C for 1st pole & N/O for 3rd pole.

*Standard breakers will be calibrated to a M1 trip curve with N/O Auxiliary Contacts.

Standard Current Ratings and Typical Internal Resistance Values

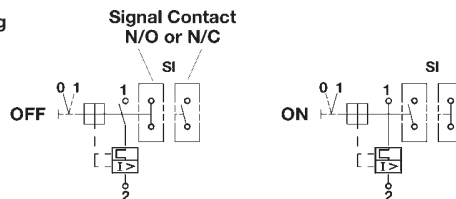
Current Rating (amps)	Internal Resistance (ohms)				
	F1 fast acting for DC	M1 standard delay for AC & DC	T1 delayed for AC	M3 low resistance standard delay for AC & DC	T2 thermal for AC & DC
0.1	162	92	81	42	77
0.2	39.3	26.1	24.2	11.7	23
0.3	17.5	11.6	10.4	5.6	10.2
0.4	9.2	6.6	6.0	2.9	5.7
0.5	6.8	4.1	3.9	1.75	3.7
0.6	4.2	3	2.7	1.42	2.6
0.8	2.8	1.6	1.53	0.75	1.39
1.0	1.6	1.10	0.98	0.5	0.9
1.5	0.78	0.47	0.42	0.22	0.36
2.0	0.42	0.28	0.24	0.136	0.19
2.5	0.26	0.183	0.17	0.083	0.141
3.0	0.18	0.124	0.12	0.057	0.091
4.0	0.12	0.077	0.073	0.041	0.051
5.0	0.092	0.063	0.055	0.032	0.040
6.0	0.054	0.045	0.039	0.021	0.027
8.0	0.025	≤0.02	≤0.02	≤0.02	≤0.02
10.0	0.022	≤0.02	≤0.02	≤0.02	≤0.02
12.0	≤0.02	≤0.02	≤0.02	≤0.02	≤0.02
16.0	≤0.02	≤0.02	≤0.02	≤0.02	≤0.02
20.0	–	≤0.02	≤0.02	–	≤0.02
25.0	–	≤0.02	≤0.02	–	≤0.02
32.0	–	≤0.02	≤0.02	–	≤0.02

CB2210-10



Dimensions in mm

Internal Wiring Diagram



Note:

N/O-Auxiliary contact will be open during normal state. Aux. will close when breaker trips.

N/C-Auxiliary contact will be closed during normal state. Aux. will open when breaker trips.

Note: For Trip Curves, please reference page 39.

Technical Data

Rated voltage & current [†]	Voltage Ratings		Current Ratings
UL	277 / 480 VAC (50/60 Hz); 65 VDC	65 VDC	0.1 ... 32 A
CSA	277 / 480 VAC (50/60 Hz); 65 VDC	65 VDC	0.1 ... 32 A
VDE	250 / 415 VAC / 65 VDC	65 VDC	0.1 ... 32 A
Auxiliary contacts	277 VAC / 65 VDC, 1 A		
Creepage resistance	PTI 600 to IEC 112		
Dielectric strength	4,000 VAC; IEC 664 & 664 A		
Insulation resistance	> 100 MΩ (DC 500 V)		
Interrupting capacity (VDE 0660, Part 101, P-2)	Rated current	Rated voltage	Rupture capacity (3 times)
	0.05 ... 0.8 A	250 / 415 VAC	400 A
	6 ... 32 A	250 / 415 VAC	800 A
Interrupting capacity (UL 1077/EN 60934 PC1)	Rated current	Rated voltage	Maximum rupture capacity (3 times)
	0.1 ... 16 A	277 / 480 VAC	5000 A
	20 ... 32 A	277 / 480 VAC	2000 A
	0.1 ... 32 A	65 VDC	2000 A
Typical life at 2 x rated current	5,000 operations		
Shock	25 g (11 ms) to IEC 68-2-27, Test Ea		
Torque	Nm (lb. in.)	0.6 (5.3)	Auxiliary contact: 0.5 (4.4)
Vibration	5 g (57 to 500 Hz / ±0.38 mm, 10 to 57 Hz) to IEC 68-2-6, Test Fc		
Temperature range	-30 ... +60°C (-22°F ... +140°F)		
Corrosion	96 hours at 5% salt spray, to IEC 68-2-11, Test Ka		
Humidity	240 hours at 95% RH, to IEC 68-2-3, Test Ca		
Weight	Approximately 60 g per pole		
Wire size (UL)	#20 ... 10 AWG	solid	Auxiliary Contact: #20 ... 16 AWG
	#20 ... 10 AWG	standard	

Accessories

Type	Part No.
Jumpers	
Daisy Chain 50	BDC 50, 20 A maximum 9970290000

Marking Tags

Special print only	DEK 5/6	0490360000*
Consecutive horizontal	DEK 5/6	0468660001
Consecutive vertical	DEK 5/6	0468760001

Note: Part numbers shown are for a single card of pre-printed tags numbered 1-50. For additional information, see Accessories section.

[†]Note: Resistive and inductive loads (0.05 - 16 A)

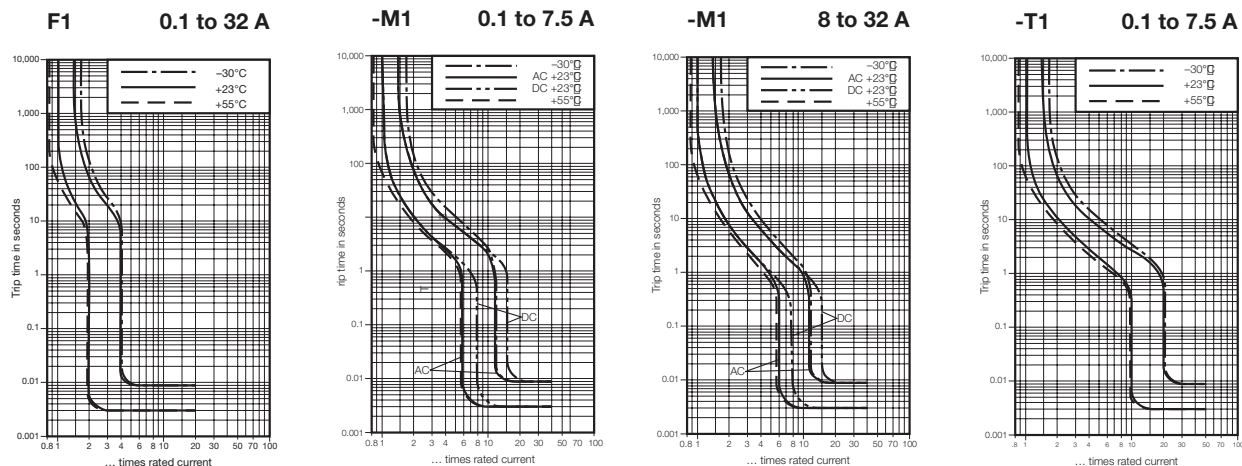
*Please specify horizontal or vertical print when ordering.

Circuit Breaker — Trip Curves

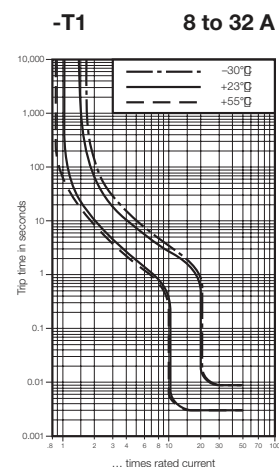
Thermal Magnetic Type

Typical time/current characteristics at 23°C

2200 Series



2200 Series



Circuit Protection Circuit Breakers

Thermal Magnetic Type

CB9101-16
Single Pole



CB9102-16
Double Pole



CB9103-16
Triple Pole



Ordering Data

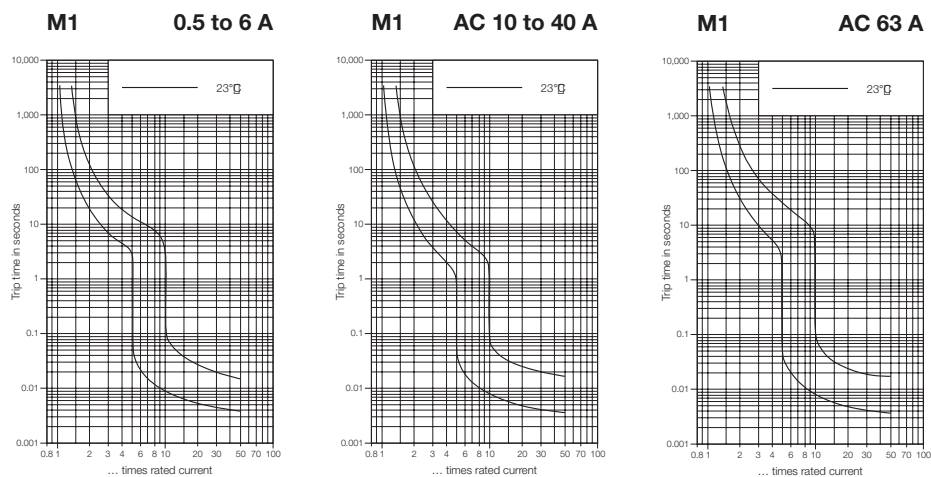
Type: Single Pole - CB9101-16			Type: Double Pole - CB9102-16			Type: Triple Pole - CB9103-16		
Internal Resistance per Pole (ohms)	Current Ratings (amps)	Part No.	Current Ratings (amps)	Part No.		Current Ratings (amps)	Part No.	
6.2	0.5	9925350000	0.5	9925650000		0.5	9925810000	
1.7	1.0	9925360000	1.0	9925660000		1.0	9925820000	
0.45	2.0	9925380000	2.0	9925680000		2.0	9925840000	
0.22	3.0	9925390000	3.0	9925690000		3.0	9925850000	
0.13	4.0	9925400000	4.0	9925700000		4.0	9925860000	
0.05	6.0	9925410000	6.0	9925710000		6.0	9925870000	
<0.02	10.0	9925430000	10.0	9925730000		10.0	9925890000	
<0.02	13.0	9929820000	13.0	9929830000		13.0	9929840000	
<0.02	16	9925440000	16	9925740000		16	9925900000	
<0.02	20	9925450000	20	9925750000		20	9925910000	
<0.02	25	9925460000	25	9925760000		25	9925920000	
<0.02	32	9925470000	32	9925770000		32	9925930000	
<0.02	40	9925480000	40	9925780000		40	9925940000	
<0.02	50	9925490000	50	9925790000		50	9925950000	
<0.02	63	9925500000	63	9925800000		63	9925960000	

Circuit Breaker — Trip Curves

Thermal Magnetic Type

Typical time/current characteristics at 23°C

9100 Series

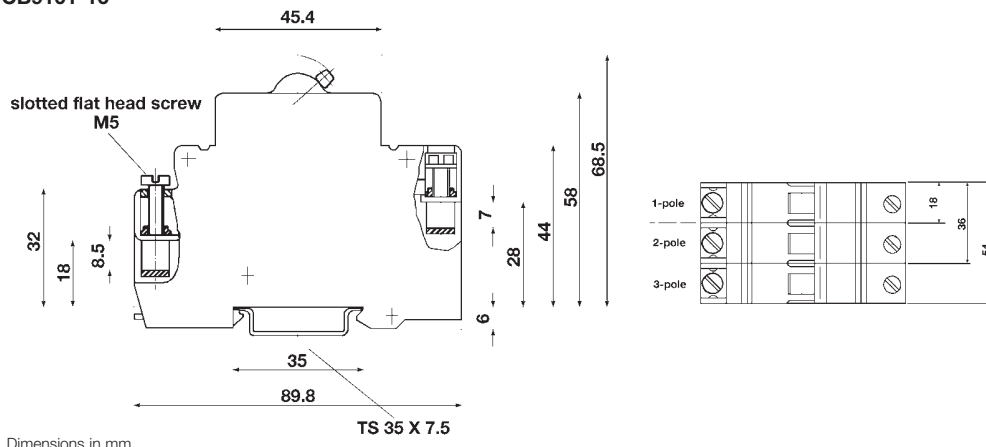


Note: "C" trip time characteristics according to VDE 064 A4/11.88 (9100 Series only)

Circuit Protection Circuit Breakers

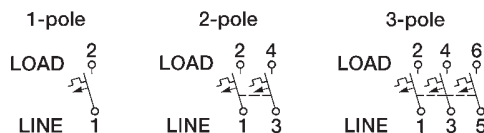
Thermal Magnetic Type

CB9101-16



Dimensions in mm

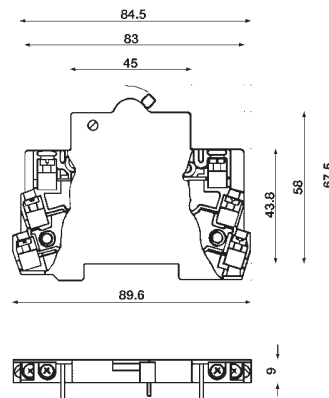
Internal Wiring Diagram



Technical Data

Rated voltage & current			
UL 1077	347 / 600 VAC (0.5...32 A); 277 / 480 VAC (40...63 A)		
CSA	347 / 600 VAC (0.5...32 A); 277 / 480 VAC (40...63 A)		
VDE	240 / 415 VAC (0.5...63 A)		
Creepage resistance	PTI 250 to IEC 112		
Insulation resistance	>100 MΩ at 500 VDC		
Interrupting capacity (UL 1077/EN 609334 PC1)	Current ratings	Rupture capacity (3X)	Voltage
	0.5...63 A	10,000 A (UL)	277 / 480 AC
	0.5...32 A	2,000 A (UL)	347 / 600 AC
	0.5...63 A	6,000 A (UL)	48 VDC (1) pole
	0.5...50 A	6,000 A (UL)	110 VDC (2) poles
Typical life at 1x rated current	6,000 operations		
Shock	20 g (10 ms)		
Torque Nm (lb. in.)	2 (17.7)		
Vibration	3 g (10 to 55 Hz)		
Temperature range - operating	-25°C...+55°C (-13°F to 131°F)		
Weight	1 pole (130 g); 2 pole (280 g); 3 pole (430 g)		
Strip length	12 mm		
Auxiliary contact rating	Voltage	Current	
Wire size - #22...12 AWG	AC 220/240	5 A	
	AC 277	3 A	
	DC 24 V	4 A	
	DC 60 V	1 A	
	DC220 V	0.4 A	
Wire size (UL)	#18...2 AWG (line); #18...3 AWG (load)		
Accessories	Type	Part No.	
Jumpers	3 pole bus, 10 x 1010 mm, buses (19) 3 phase groupings	9970330000	
	3 pole bus, 16 x 210 mm, buses (4) 3 phase groupings	9970340000	
	3 pole bus, 16 x 1010 mm, buses (19) 3 phase groupings	9970350000	
	1 pole bus, 12 x 210 mm, buses 12 breakers	9970360000	
	1 pole bus, 12 x 210 mm (insulated), buses 12 breakers	9991990000	
	Bus bar clamp	9970370000	
Auxiliary contacts			
SPDT	Auxiliary contacts	9970300000	
DPDT	Auxiliary contacts	9970310000	
Security hardware	Lock out cover	9970380000	
Marking Tags			
Adhesive label	ETO 10/26, yellow (26 mm x 10 mm)	1609620000	
	ETO 12.7/25.4, white (25.4 mm x 12.7 mm)	9990080000	

Auxiliary Contact Modules

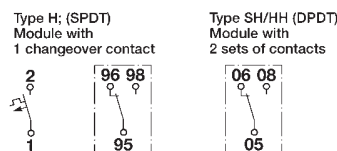


Note:

N/O-Auxiliary contact will be open during normal state. Aux. will close when breaker trips.

N/C-Auxiliary contact will be closed during normal state. Aux. will open when breaker trips.

Internal Auxiliary Wiring Diagram



Note:

N/O-Auxiliary contact will be open during normal state. Aux. will close when breaker trips.

N/C-Auxiliary contact will be closed during normal state. Aux. will open when breaker trips.