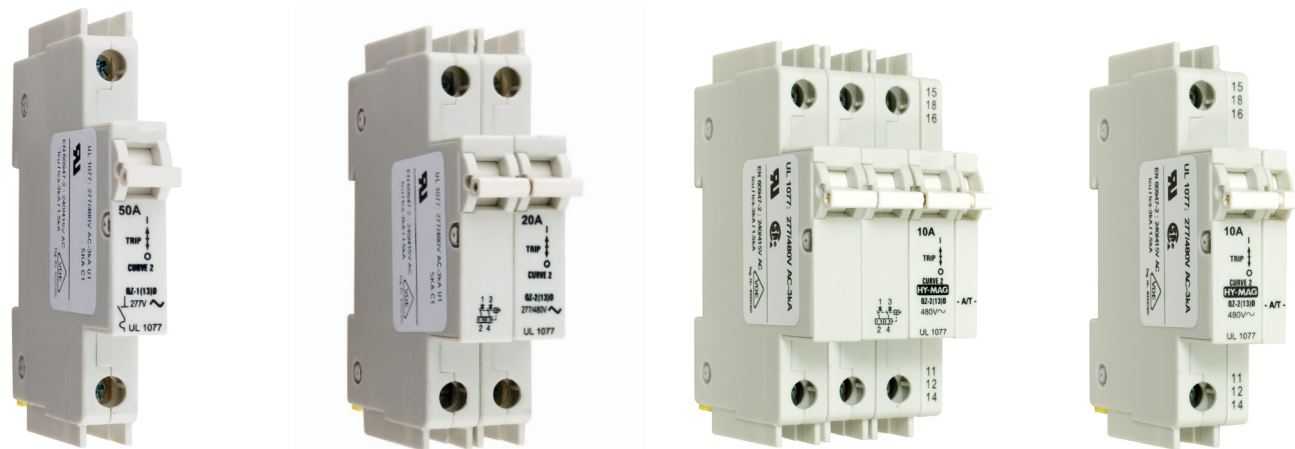


# QZ - Series Data

## Miniature Circuit Breakers



### Features:

- AC Circuit Breaker
- Hydraulic-Magnetic technology
- 100% Rating capability independent of ambient temperature
- Up to four poles
- CSA, VDE and CE approved
- UL recognized (UL 1077)
- Ratings up to 60A
- Optional auxiliary / trip alarm switch - factory fitted
- Wide range of time delays and operating currents
- Precision tripping
- Current limiting capabilities
- Ultra compact – 13mm width module

- Trip indication with mid-trip handle
- Reset immediately after overload
- DIN mount Greg shells
- DUAL mount in Black shells

### Application:

- UPS Equipment
- Mobile power-generation equipment
- Power conditioning equipment
- Alternative energy equipment
- Lighting control

## Technical Data

Product Type	Supplementary Protector						
Approvals	UL 1077						
	Tested with series fuse				Tested without series fuse		
Number of Poles	1	1	2	3	3	1	3
Operating Voltages	120 Vac	277 Vac	480 Vac	240 Vac	277 / 480 Vac	120 Vac	240 Vac
Minimum Current Ratings	0.5 A				0.5 A		
Maximum Current Ratings	60 A				50 A		
Specific Ratings (Verify Certification)	0.5, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 15, 16, 20, 25, 30, 35, 40, 45, 50, 60 A						
Interrupting S/C Capacity	5 kA				5 kA		

**Technical Data**

Product Type	Circuit Breaker				
Approvals	IEC / En 60947 - 2, CE EAC				
Number of Poles	1	2 (1+N)	2	3	4 (3+N)
Operating Voltages	240 Vac		415 Vac		
Minimum Current Ratings	5A				
Maximum Current Ratings	50 A				
Specific Ratings (Verify Certification)	5, 6, 7, 8, 9, 10, 12, 15, 16, 20, 25, 30, 35, 40, 45, 50 A				
Ultimate S/C Breaking Capacity (Icu)	3 kA				

Product Type	OZ
Ambient Operating Temperature	-40 °C to +85 °C
Mounting Options	DIN rail, Dual mounting (DIN & Mini), Surface mounting clip
Time Delay Curves	1, 2, 3, 9, OP
Endurance	10000 operations - 1500 with current, 8500 without current (IEC 60947 - 2 Clause 7.2.4.2)* 6000 operations with current (UL 1077 Clause 22)*
Dielectric Strength	1000 - 2000 Vac for one minute (IEC 60947 - 2 Clause 8.3.3.3)* 1000 Vac plus twice the rated voltage for one minute (UL 1077 Clause 23)*
Rated Impulse Withstand Voltage	4 kV (IEC 60947 - 2)
Weight	102 g per role, 160 g with auxiliary (unpacked)
Altitude	Certification tests done at altitude ≈ 2000 meters. Will operate at higher altitudes.
Shock	16 G (IEC 60068-2-27)
Vibration	2 G (IEC 60068-2-6) (sinusoidal wave)
Flammability	I3 - ignition does not persist at 850 °C after glow wire is withdrawn with an oxygen index of ≥ 28
Toxicity	F1 - Smoke index of ≤ 20 which determines the fume class
Pollution Degree	PD2 - Normally only non-conductive pollution occurs. Temporary conductivity caused by condensation is to be expected.

Auxiliary Module	
Auxiliary Switch	DIN and mini rail mounted
Trip Alarm	Mini rail mounted only
Auxiliary Switch / Trip Alarm Combo	Mini rail mounted only

Circuit Breaker	Wire Size mm <sup>2</sup> (IEC)	Wire Gauge (UL)	Torque (IEC)	Torque(UL)	Comments
Main Terminals	0.75 - 25 mm <sup>2</sup>	18 - 3 - AWG	2.5 Nm	20 in-lb	Pozidriv #2 Combi head

# Datasheet

## QZ-Series Miniature Circuit Breakers

### Long Code

Example Code: **QZ-A-1-13-DM-2-50.0**

Group	1	2	3	4	5	6	7	8	9	10
Requirement	QZ Frame	Switch / Neutral	Auxiliary switch + trip alarm	Triple pole	13 mm module width	DUAL mount	Medium delay curve 2	Current rating 50 A	No shunt trip	Special Termination
<b>Long Code</b>	<b>QZ</b>	<b>-</b>	<b>A</b>	<b>1</b>	<b>13</b>	<b>DM</b>	<b>2</b>	<b>50.0</b>	<b>-</b>	<b>-</b>

Group 1: Frame Type	Code	Description	Comments	
	QZ	Miniature Circuit Breaker	IEC/En 60947-2, UL 1077	
Group 2: Switch/Neutral	Code	Description	Comments	
	-	Not applicable		
	N	Neutral	Green handle	
Group 3: Auxiliary Switch	Code	Description	Comments	
	-	Not applicable	If no auxiliary is required	
	A	Auxiliary Switch (1 x Aux in 1 module)	6.5 mm module fitted on right-hand side (DIN & Dual mount)	
	T	Trip Alarm (1 x Trip alarm in 1 module)	6.5 mm module fitted on right-hand side (Dual mount black)	
	AT	Auxiliary Switch + trip alarm combo (Combined in 1 module)	6.5 mm module fitted on right-hand side (Dual mount black)	
Group 4: No of Poles	Code	Description	Comments	
	1	Single pole		
	2	Double pole	2 pole or 1+N	
	3	Triple pole		
	4	Four pole	3+N	
Group 5: Module Width	Code	Description	Comments	
	(13)	13 mm module width	13 mm per pole	
Group 6: Mounting	Code	Description	Comments	
	D	DIN rail mount	DIN mount supplied in grey only - 45mm Escutcheon, Grey body	
	DM	Dual mount	Dual mount supplied in black only - 57mm Escutcheon, Black body	
Group 7: Time Delays	Code	Description	Instantaneous Trip Point (x In)	Comments
	1	Long time delay, high instantaneous trip	10 - 20	Orange handle
	2	Medium time delay	5 - 10	White handle
	3	Short time delay	3 - 5	White handle
	9	Long time delay	7 - 12	White handle
	OP	Instantaneous	None	White handle
Group 8: Current Ratings	Code / Description		Comments	
	0.5, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 15, 16, 20, 25, 30, 32, 35, 40, 45, 50, 60 A			
Group 9:	Code	Description	Comments	
	-	Not applicable	For future use (-)	
Group 10: Shunt trip (not certified only offered as special order)	Code	Description	Comments	
	-	Not applicable	If no shunt trip is required	
	U0	12 Vdc Shunt trip (Flying leads)	Flying leads (+ / - 60 mm long)	
	U1	24 Vdc Shunt trip (Flying leads)	Recommend pulse duration 100 ms to 60 s	
	U2	48 Vdc Shunt trip (Flying leads)	Note: Shunt trip carries no approvals - available as a special offer only	
	U3	60 Vdc Shunt trip (Flying leads)		
	U4	110 Vdc & 110 - 230 Vac Shunt trip (Fly leads)		
Group 11:	Code	Description	Comments	
	-	Not applicable	For future use (-)	
Group 12: Special Termination	Code	Description	Comments	
	R	Ring terminal ready	Terminal screw is removable. Ring lug (5 mm)	



9926 Series Single Pole

Type: Single Pole (up to 277 VAC)		
Current Ratings (amps)	Description	Order Number
1	QZ-1-13-D-2-1.0	9926251501
2	QZ-1-13-D-2-2.0	9926251502
3	QZ-1-13-D-2-3.0	9926251503
4	QZ-1-13-D-2-4.0	9926251504
5	QZ-1-13-D-2-5.0	9926251505
6	QZ-1-13-D-2-6.0	9926251506
8	QZ-1-13-D-2-8.0	9926251508
10	QZ-1-13-D-2-10.0	9926251510
15	QZ-1-13-D-2-15.0	9926251515
20	QZ-1-13-D-2-20.0	9926251520
25	QZ-1-13-D-2-25.0	9926251525
35	QZ-1-13-D-2-35.0	9926251535
40	QZ-1-13-D-2-40.0	9926251540
50	QZ-1-13-D-2-50.0	9926251550
60	QZ-1-13-D-2-60.0	9926251560

9926 Series Double Pole

Type: Double Pole (up to 480 VAC)		
Current Ratings (amps)	Description	Order Number
1	QZ-2-13-D-2-1.0	9926252501
2	QZ-2-13-D-2-2.0	9926252502
4	QZ-2-13-D-2-4.0	9926252504
5	QZ-2-13-D-2-5.0	9926252505
6	QZ-2-13-D-2-6.0	9926252506
10	QZ-2-13-D-2-10.0	9926252510
15	QZ-2-13-D-2-15.0	9926252515
20	QZ-2-13-D-2-20.0	9926252520
25	QZ-2-13-D-2-25.0	9926252525
30	QZ-2-13-D-2-30.0	9926252530
35	QZ-2-13-D-2-35.0	9926252535
40	QZ-2-13-D-2-40.0	9926252540
50	QZ-2-13-D-2-50.0	9926252550
60	QZ-2-13-D-2-60.0	9926252560

9926 Series Triple Pole

Type: Triple Pole (up to 277/480 VAC)		
Current Ratings (amps)	Description	Order Number
10	QZ-3-13-D-2-10.0	9926253510
15	QZ-3-13-D-2-15.0	9926253515
20	QZ-3-13-D-2-20.0	9926253520
25	QZ-3-13-D-2-25.0	9926253525
30	QZ-3-13-D-2-30.0	9926253530
40	QZ-3-13-D-2-40.0	9926253540
50	QZ-3-13-D-2-50.0	9926253550
60	QZ-3-13-D-2-60.0	9926253560

9926 Series Single Pole w/ Auxiliary Contact



Type: Single Pole Trip (up to 277 VAC)		
Current Ratings (amps)	Description	Order Number
1	QZ-A-1-13-D-2-1.0	9926261501
2	QZ-A-1-13-D-2-2.0	9926261502
5	QZ-A-1-13-D-2-5.0	9926261505
10	QZ-A-1-13-D-2-10.0	9926261510
15	QZ-A-1-13-D-2-15.0	9926261515
20	QZ-A-1-13-D-2-20.0	9926261520
25	QZ-A-1-13-D-2-25.0	9926261525

9926 Series Single Pole Trip (Alarm Contact)



Type: Single Pole Trip (up to 277 VAC)		
Current Ratings (amps)	Description	Order Number
1	QZ-T-1-13-D-2-1.0	9926271501
2	QZ-T-1-13-D-2-2.0	9926271502
5	QZ-T-1-13-D-2-5.0	9926271505
10	QZ-T-1-13-D-2-10.0	9926271510
15	QZ-T-1-13-D-2-15.0	9926271515
20	QZ-T-1-13-D-2-20.0	9926271520
25	QZ-T-1-13-D-2-25.0	9926271525

9926 Series Single Pole Combination (Auxiliary & Alarm Contact)



Type: Triple Pole (up to 277 VAC)		
Current Ratings (amps)	Description	Order Number
1	QZ-AT-1-13-D-2-1.0	9926281501
2	QZ-AT-1-13-D-2-2.0	9926281502
5	QZ-AT-1-13-D-2-5.0	9926281505
10	QZ-AT-1-13-D-2-10.0	9926281510
15	QZ-AT-1-13-D-2-15.0	9926281515
20	QZ-AT-1-13-D-2-20.0	9926281520
25	QZ-AT-1-13-D-2-25.0	9926281525

9926 Series Double Pole w/ Auxiliary Contact



Type: Double Pole Aux (up to 480 VAC)		
Current Ratings (amps)	Description	Order Number
1	QZ-A-2-13-D-2-1.0	9926262501
2	QZ-A-2-13-D-2-2.0	9926262502
5	QZ-A-2-13-D-2-5.0	9926262505
10	QZ-A-2-13-D-2-10.0	9926262510
15	QZ-A-2-13-D-2-15.0	9926262515
20	QZ-A-2-13-D-2-20.0	9926262520
25	QZ-A-2-13-D-2-25.0	9926262525

9926 Series Double Pole Trip (Alarm Contact)



Type: Double Pole Trip (up to 480 VAC)		
Current Ratings (amps)	Description	Order Number
1	QZ-T-2-13-D-2-1.0	9926272501
2	QZ-T-2-13-D-2-2.0	9926272502
5	QZ-T-2-13-D-2-5.0	9926272505
10	QZ-T-2-13-D-2-10.0	9926272510
15	QZ-T-2-13-D-2-15.0	9926272515
20	QZ-T-2-13-D-2-20.0	9926272520
25	QZ-T-2-13-D-2-25.0	9926272525

9926 Series Double Pole Combination (Auxiliary & Alarm Contact)



Type: Double Pole Combo (up to 480 VAC)		
Current Ratings (amps)	Description	Order Number
1	QZ-AT-2-13-D-2-1.0	9926282501
2	QZ-AT-2-13-D-2-2.0	9926282502
5	QZ-AT-2-13-D-2-5.0	9926282505
10	QZ-AT-2-13-D-2-10.0	9926282510
15	QZ-AT-2-13-D-2-15.0	9926282515
20	QZ-AT-2-13-D-2-20.0	9926282520
25	QZ-AT-2-13-D-2-25.0	9926282525

9926 Series Triple Pole w/ Auxiliary Contact



Type: Triple Pole Aux (up to 480 VAC)		
Current Ratings (amps)	Description	Order Number
1	QZ-A-3-13-D-2-1.0	9926263501
2	QZ-A-3-13-D-2-2.0	9926263502
5	QZ-A-3-13-D-2-5.0	9926263505
10	QZ-A-3-13-D-2-10.0	9926263510
15	QZ-A-3-13-D-2-15.0	9926263515
20	QZ-A-3-13-D-2-20.0	9926263520
25	QZ-A-3-13-D-2-25.0	9926263525

9926 Series Triple Pole Trip (Alarm Contact)



Type: Triple Pole Trip (up to 480 VAC)		
Current Ratings (amps)	Description	Order Number
1	QZ-T-3-13-D-2-1.0	9926273501
2	QZ-T-3-13-D-2-2.0	9926273502
5	QZ-T-3-13-D-2-5.0	9926273505
10	QZ-T-3-13-D-2-10.0	9926273510
15	QZ-T-3-13-D-2-15.0	9926273515
20	QZ-T-3-13-D-2-20.0	9926273520
25	QZ-T-3-13-D-2-25.0	9926273525

9926 Series Triple Pole Combination (Auxiliary & Alarm Contact)



Type: Triple Pole Combo (up to 480 VAC)		
Current Ratings (amps)	Description	Order Number
1	QZ-AT-3-13-D-2-1.0	9926283501
2	QZ-AT-3-13-D-2-2.0	9926283502
5	QZ-AT-3-13-D-2-5.0	9926283505
10	QZ-AT-3-13-D-2-10.0	9926283510
15	QZ-AT-3-13-D-2-15.0	9926283515
20	QZ-AT-3-13-D-2-20.0	9926283520
25	QZ-AT-3-13-D-2-25.0	9926283525

### Mounting Options

If the product is not vertically mounted in the normal DIN-rail mounting orientation, a rating factor must be applied. Figure below shows a diagram of the rating factor to apply. The published curves for these circuit breaker products are produced with the circuit breaker in the vertical mounting position. The rating factor only applies to the must hold and must trip points of the curve as the other parts (instantaneous trip point) stay largely unaffected.

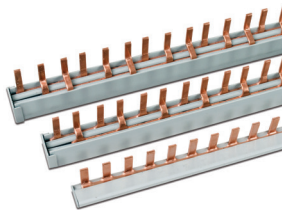
It is important to note that in environments that are exposed to a high degree of vibration, the cables that connect to the circuit breaker must be securely held in place, as the breaker is not designed to carry the weight of the cables. A maximum of 35N can be applied to the terminal area, in a direction perpendicular to the mounting axis.

### Optional Accessories:

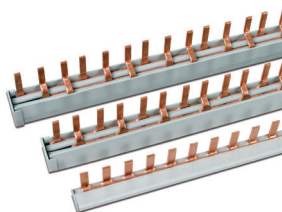
- Auxiliary Switch
- Auxiliary Switch + Trip Alarm
- Trip Alarm
- Handle Lock
- Surface Mounting Clips
- Busbar

**Accessories**

Type	
Bus - bar (1 pole, insulated, 1 Meter Length)	67101904
Bus bar end cap, 1 pole	67101973



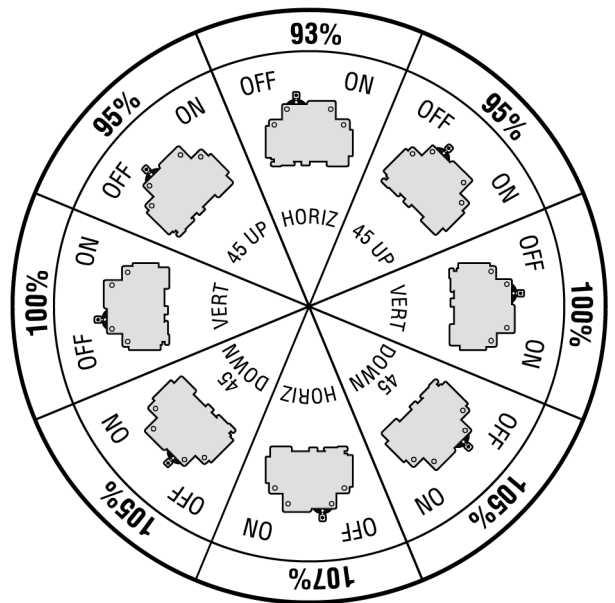
Type	
Bus - bar (2 pole, insulated, 1 Meter Length)	67101972
Bus - bar end cap, 2 pole	67101974



Type	
Power lug, straight (14 mm)	67101960
Power lug, 90° (14mm)	67101961
Power lug, straight (32 mm)	67101980
Power lug, 90 (32mm)	67101980



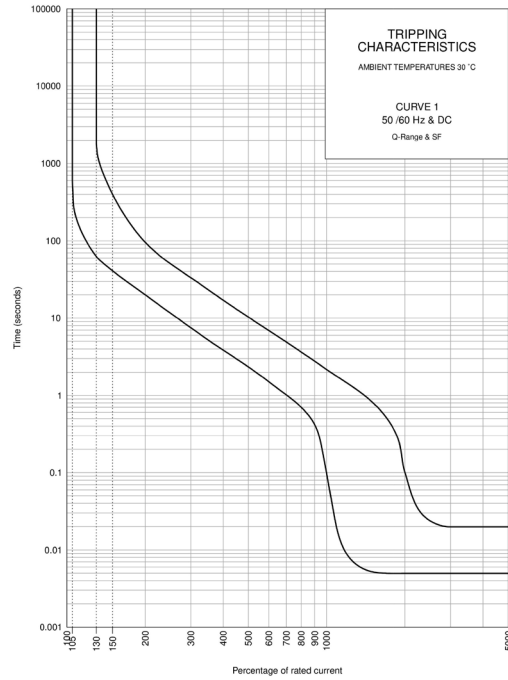
Type	
Lock-out handle	67101913



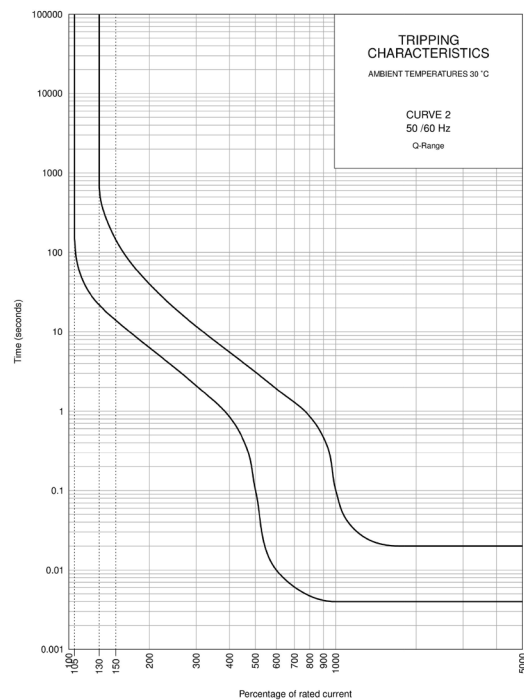
### Auxiliary Switch, Trip Alarm & Combo: Features:

- Auxiliary Switch (Din and Dual mount)
- Auxiliary Switch + trip alarm (Dual mount only)
- Trip alarm (Dual mount only)
- UL489 Listed & IEC 60947-5-1 110Vdc, 0.5A, 240Vac, 6A.
- Attached to Right Hand Side of Circuit Breaker
- Compact 6.5mm Width
- Available in Dual and DIN Rail Mounting

## Standard Time Delay Curves

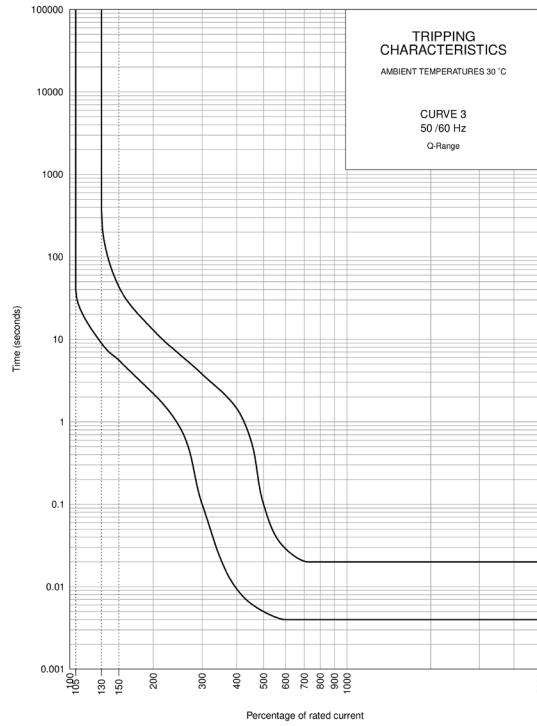


PERCENTAGE OF RATED CURRENT	105%	130%	145%	150%	200%	300%	400%	500%	600%	700%	800%	900%	1000%	2000%
MINIMUM TRIP TIME IN SECONDS	NO TRIP	63	45	41	20	7.5	3.8	2.3	1.5	1.01	0.7	0.42	0.1	0.005
MAXIMUM TRIP TIME IN SECONDS	NO TRIP	1800	503	400	96	34	17	10.3	6.8	4.9	3.6	2.8	2.2	0.1

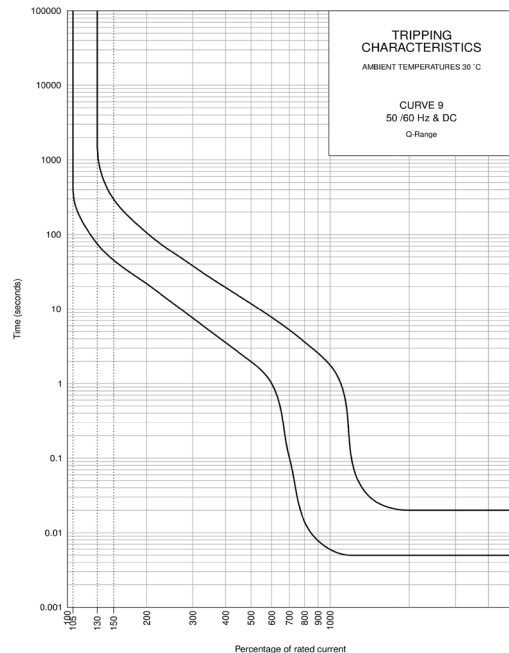


PERCENTAGE OF RATED CURRENT	105%	130%	145%	150%	200%	300%	400%	500%	600%	700%	800%	900%	1000%	2000%
MINIMUM TRIP TIME IN SECONDS	NO TRIP	22	15.4	14	6.3	2.1	0.85	0.1	0.001	0.006	0.005	0.041	0.004	0.004
MAXIMUM TRIP TIME IN SECONDS	NO TRIP	660	180	144	40	12	5.5	3	1.92	1.3	0.86	0.47	0.1	0.02

## Standard Time Delay Curves

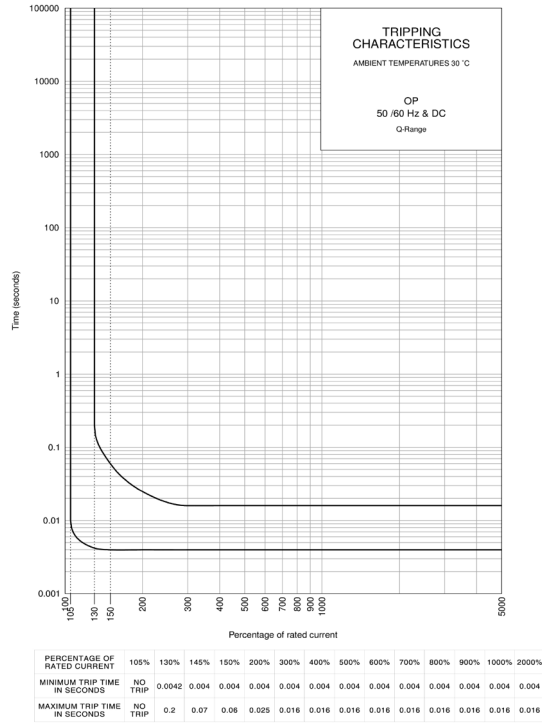


PERCENTAGE OF RATED CURRENT	105%	130%	145%	150%	200%	300%	400%	500%	600%	700%	800%	900%	1000%	2000%
MINIMUM TRIP TIME IN SECONDS	NO TRIP	9	6	5.6	2.2	0.1	0.009	0.005	0.004	0.004	0.004	0.004	0.004	0.004
MAXIMUM TRIP TIME IN SECONDS	NO TRIP	365	57	44	13	3.8	1.45	0.1	0.028	0.02	0.02	0.02	0.02	0.02



PERCENTAGE OF RATED CURRENT	105%	130%	145%	150%	200%	300%	400%	500%	600%	700%	800%	900%	1200%	2000%
MINIMUM TRIP TIME IN SECONDS	NO TRIP	75	50	45	22	7.6	3.6	2	1	0.1	0.01	0.008	0.005	0.005
MAXIMUM TRIP TIME IN SECONDS	NO TRIP	1500	360	295	100	38	19	11.8	7.7	5.3	3.6	2.6	0.06	0.02

## Standard Time Delay Curves



## Internal Resistance vs Current Rating

