

## QY - Series Miniature Circuit Breakers



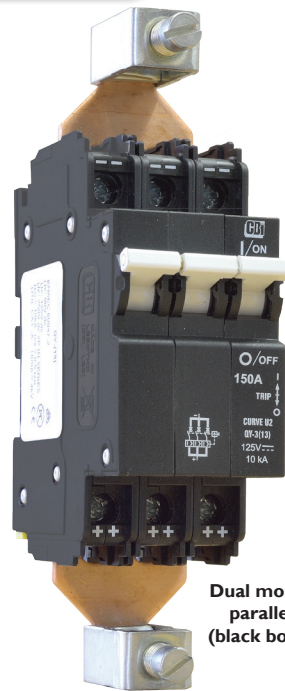
DIN mount  
(grey body)



Dual mount  
(black body)



Dual mount + Auxiliary  
(black body)



Dual mount  
parallel  
(black body)



Dual mount  
series  
(black body)

### Features

- DC Circuit Breaker
- Hydraulic-Magnetic technology
- 100% rating capability, independent of ambient temperature
- VDE and CCC approved, CE certified
- UL listed (UL 489 A)
- Ratings 0.1 to 63 A (1 & 2 pole), 3 pole parallel (150 A maximum), 4 pole parallel (200 A maximum)
- Optional Auxiliary Switch / Trip Alarm - factory fitted (6.5 mm wide)
- Optional Shunt Trip (no approvals)
- Wide range of time delays and operating currents
- Precision tripping characteristics
- Ultra compact – 13 mm wide module
- Trip indication with mid-trip handle
- Reset immediately after overload
- DIN mount product in grey shells
- Dual mount product in black shells
- 80V DC devices are reverse feedable
- 125 / 250 / 600V DC devices are polarity sensitive
- Suitable to use for electrical isolation

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

- AC and DC voltages
- UL 489 listed (Auxiliary Switch: 6 A 250 V AC, 0.5 A 80 V DC)
- IEC 60947-5-1 approved (Auxiliary Switch: 6 A 240 V AC, 0.5 A 110 V DC; Trip Alarm: 6 A 240 V AC, 0.5 A 110 V DC)
- Factory fitted
- Attached to right hand side of Circuit Breaker
- Compact 6.5 mm width

### Applications

- DC branch circuit protection (UL 489A, IEC / EN 60947-2)
- Telecom / datacom equipment
- UPS equipment
- Alternative energy equipment
- Battery protection & switching
- Telecommunication DC power distribution
- Railway signalling equipment

### Optional Accessories

- Auxiliary Switch (DIN and Dual Mount)
- Auxiliary Switch + Trip Alarm (Dual Mount only)
- Trip Alarm (Dual Mount only)
- Handle lock
- Surface mounting clips
- Busbar
- 57 mm Escutcheon blank (Dual Mount only)
- 57 mm Safety blank (Dual Mount only)

## QY - Series Miniature Circuit Breakers

### Technical Data

Approvals	IEC / EN 60947-2, VDE							
Number of Poles	1	2	2 parallel	2 parallel	3 parallel	4 parallel	2 series	1 pole plug-in
Operating Voltages	80 V DC, 125 V DC		80 V DC	125 V DC	80 V DC		250 V DC	80 V DC
Minimum Current Rating	0.1 A	0.1 A	60 A	30 A	110 A	200 A	0.1 A	0.1 A
Maximum Current Rating	63 A	50 A	100 A	100 A	150 A	200 A	50 A	50 A
Interrupting Capacity	10 kA							
Operating Temperature Range	-40°C to +85°C							
Mounting Options	DIN Rail, Dual mounting (DIN & Mini), surface mounting clip, plug-in terminal							
Time Delay Curves	I, 9, U2, U3, OP							

Approvals	UL 489A								
Number of Poles	1	2	2 parallel	2 parallel	3 parallel	4 parallel	2 series	4 series	1 pole plug-in
Operating Voltages	80 V DC, 125 V DC		80 V DC	125 V DC	80 / 125 V DC	80 V DC	250 V DC	600 V DC	80 V DC
Minimum Current Rating	0.1 A	0.1 A	30 A	20 A	110 A	200 A	0.1 A	0.1 A	0.1 A
Maximum Current Rating	63 A	50 A	100 A	100 A	150 A	200 A	50 A	20 A	50 A
Interrupting Capacity	10 kA								
Operating Temperature Range	-40°C to +85°C								
Mounting Options	DIN Rail, Dual mounting (DIN & Mini), surface mounting clip, plug-in terminal								
Time Delay Curves	I, 9, U2, U3, OP								

Approvals	CCC					
Number of Poles	1	2	2 parallel	3 parallel	4 parallel	1 pole plug-in
Operating Voltages	80 V DC					
Minimum Current Rating	0.1 A	0.1 A	30 A	110 A	200 A	0.1 A
Maximum Current Rating	63 A	50 A	100 A	150 A	200 A	50 A
Interrupting Capacity	10 kA					
Operating Temperature Range	-40°C to +85°C					
Mounting Options	DIN Rail, Dual mounting (DIN & Mini), surface mounting clip, plug-in terminal					
Time Delay Curves	I, 9, U2, U3, OP					

Breaker QY	Wire Size mm <sup>2</sup> (IEC)	Wire Gauge (UL)	Torque (IEC)	Torque (UL)	Comments
1 Pole & 2 Pole	0.75 - 35 mm <sup>2</sup>	18 - 2 - AWG	2.5 Nm	20 in-lb	Pozidriv #2 Combi head
2 Pole Parallel	50 mm <sup>2</sup>	14 - 1/0 - AWG	3.2 Nm	28 in-lb	Bridge Terminal
3 Pole Parallel	95 mm <sup>2</sup>	14 - 5/0 - AWG	5.6 Nm	50 in-lb	Bridge Terminal
4 Pole Parallel	95 mm <sup>2</sup>	14 - 5/0 - AWG	5.6 Nm	50 in-lb	Bridge Terminal

# QY - Series Miniature Circuit Breakers

## Long Code

Example Code: **QY--A-3(13)-D-U2-150A-B0---Z**

Group	1	2	3	4	5	6	7	8	9	10	11	12
Requirement	QY Frame	Switch / Neutral	Auxiliary	Triple pole	13 mm module width	DIN Rail	Medium delay curve U2	Current Rating 150 A	Voltage 80V DC	No Shunt Trip	Future use	Parallel bridged (by customer)
Long Code	<b>QY</b>	<b>-</b>	<b>A</b>	<b>3</b>	<b>(13)</b>	<b>D</b>	<b>U2</b>	<b>150A</b>	<b>B0</b>	<b>-</b>	<b>-</b>	<b>Z</b>

Group 1: Frame Type	Code	Description	Comments	
	QY	13 mm wide Miniature Circuit Breaker	UL 489A, IEC / EN 60947-2, VDE, CE, CCC	
Group 2: Switch/Neutral	Code	Description	Comments	
	-	Not applicable	Overload poles do not have any further coding	
Group 3: Auxiliary	Code	Description	Comments	
	-	Not applicable	Use this code if no Auxiliary used	
	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 only)	
	AT	Auxiliary Switch + Trip Alarm combo (combined in 1 module)	6.5 mm module fitted on right-hand side (Dual Mount only)	
Group 4: No of Poles	Code	Description	Comments	
	1	Single pole		
	2	Double pole		
	3	Triple pole		
	4	Four pole		
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 – 45 mm Escutcheon, grey body	DIN mount supplied in grey only	
	DM	Dual mount – 57 mm Escutcheon, black body	Dual mount supplied in black only	
Group 7: Time Delays	Code	Description	Instantaneous Trip Point (x In)	Comments
	1	Long time delay, high instantaneous trip	10 – 20	Orange handle
	9	Long time delay	7 – 12	White handle
	U2	Medium time delay	5 – 10	White handle
	U3	Short time delay	3 – 5	White handle
	OP	Instantaneous	None	White handle
Group 8: Current Ratings	Code / Description		Comments	
	0.1, 0.2, 0.3, 0.5, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 15, 16, 20, 25, 30, 32, 35, 40, 45, 50, 60, 63, 70, 80, 90, 100, 120, 125, 150, 200 A		Ratings available vary depending on certification, bridging configuration and voltage. (See comments in Group 9) * Other ratings are available as special orders. Check availability.	
Group 9: Voltage	Code	Voltage	Description	Comments
(see diagram on page 7)	B0	80 V DC	Not polarity sensitive	0.1 - 63 A 1 pole, 0.1 - 50 A 2 pole, 60 - 100 A 2 pole parallel (80V DC), 30 - 100 A 2 pole parallel (125V DC), 110 - 150 A 3 pole parallel, 200 A 4 pole parallel (ratings available vary depending on certification)
	B1	125 V DC	Polarity sensitive. Positive bottom.	
	B2	250 V DC	2 poles in series bridged (2 x 125 V) Positive = pole 1 bottom	0.1 - 50 A 2 pole series bridged at the top (by customer) pole 1 (-) to pole 2 (+)
	B3	250V DC	2 poles in series bridged (2 x 125 V) Positive = pole 1 bottom	0.1 - 50 A 2 pole series bridged at the top (factory fitted) pole 1 (-) to pole 2 (+)
	B4	600V DC	4 poles in series bridged (4 x 125 V) Positive = pole 1 bottom	0.1 - 20 A 4 pole series bridged (factory fitted) As per wiring diagram printed on unit
	T1	125 V DC	Polarity sensitive. Positive top.	0.1 - 63 A 1 pole, 0.1 - 50 A 2 pole, 30 - 100 A 2 pole parallel, 110 - 150 A 3 pole parallel, 200 A 4 pole parallel
	T2	250 V DC	2 poles in series bridged (2 x 125 V) Positive = pole 1 top	0.1 - 50 A 2 pole series bridged at the bottom (by customer) pole 1 (-) to pole 2 (+)
	T3	250V DC	2 poles in series bridged (2 x 125 V) Positive = pole 1 top	0.1 - 50 A 2 pole series bridged at the bottom (factory fitted) pole 1 (-) to pole 2 (+)
	T4	600V DC	4 poles in series bridged (4 x 125 V) Positive = pole 1 top	0.1 - 20 A 4 pole series bridged (factory fitted) As per wiring diagram printed on unit

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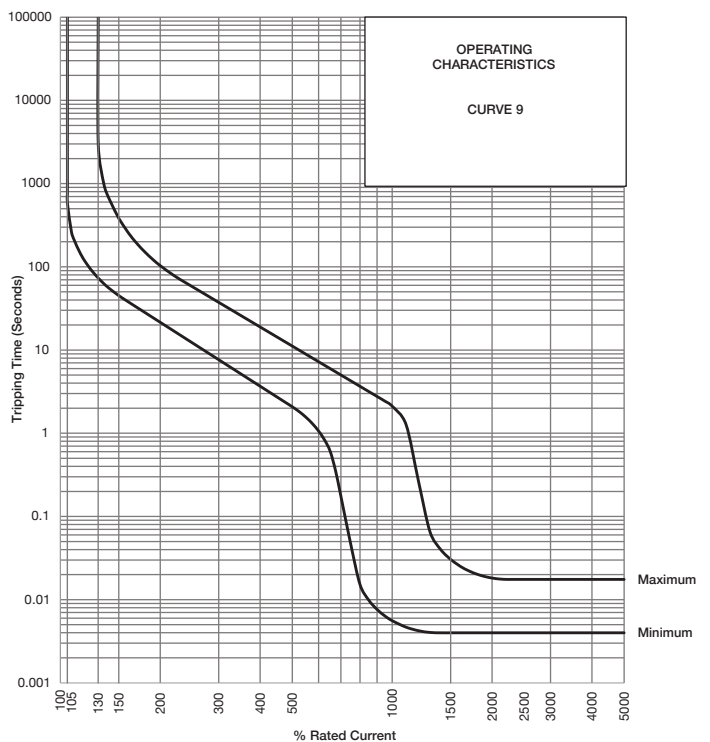
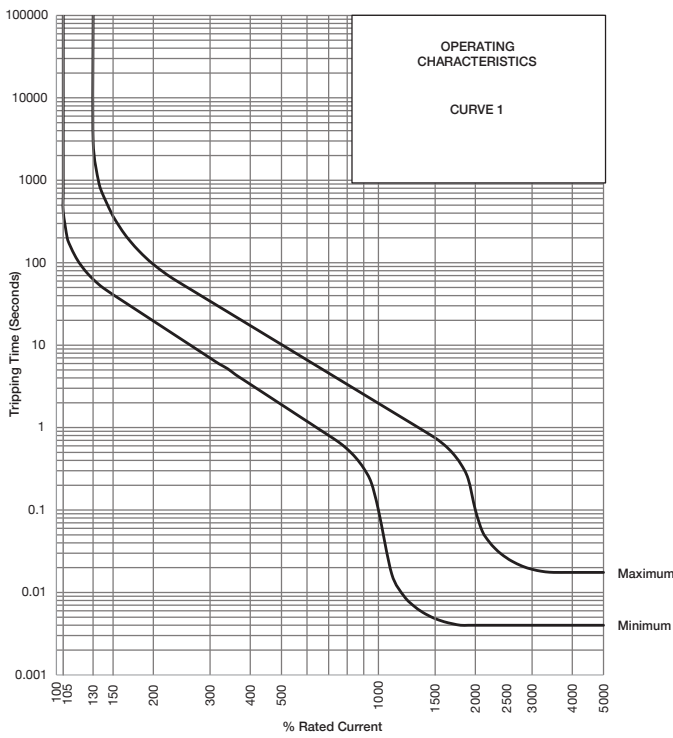
# QY - Series Miniature Circuit Breakers

## Long Code continues

Group 10: Shunt Trip	Code	Description	Comments
(not certified, only offered as special order)	-	Not applicable	Use this code if no Shunt Trip is used
	V0	100 – 480 V	Fly leads (approximately 60 mm long)
	V5	100 – 480 V	Internally connected
Other voltages are available as special orders. Check availability.			
Group 11	For future use (-)		
Group 12: Special Termination	Code	Description	Comments
	-	Not applicable	Use this code if no special terminations are used
	P	Plug-in	
	Z	Bridged unit (bridge to be fitted by customer)	
	ZL	Bridged unit (factory fitted)	

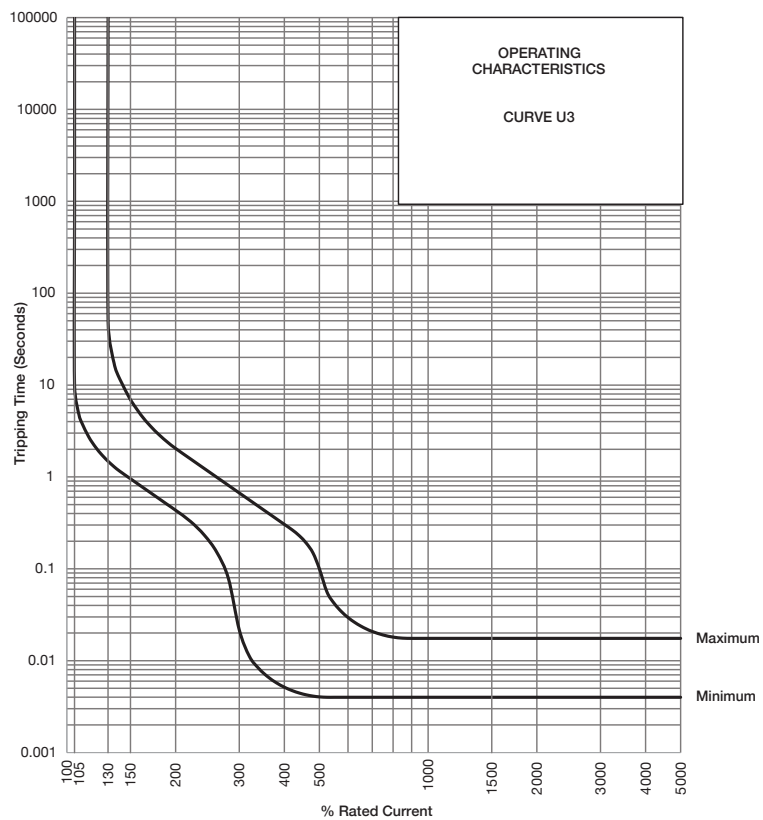
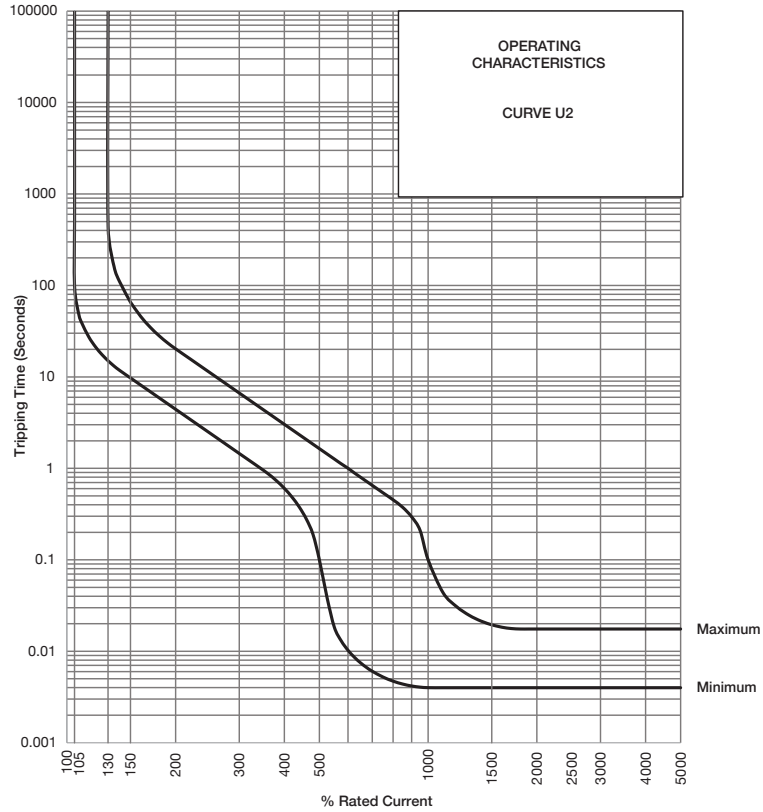
*For options not listed, please contact CBI for assistance*

## Time Delay Curves



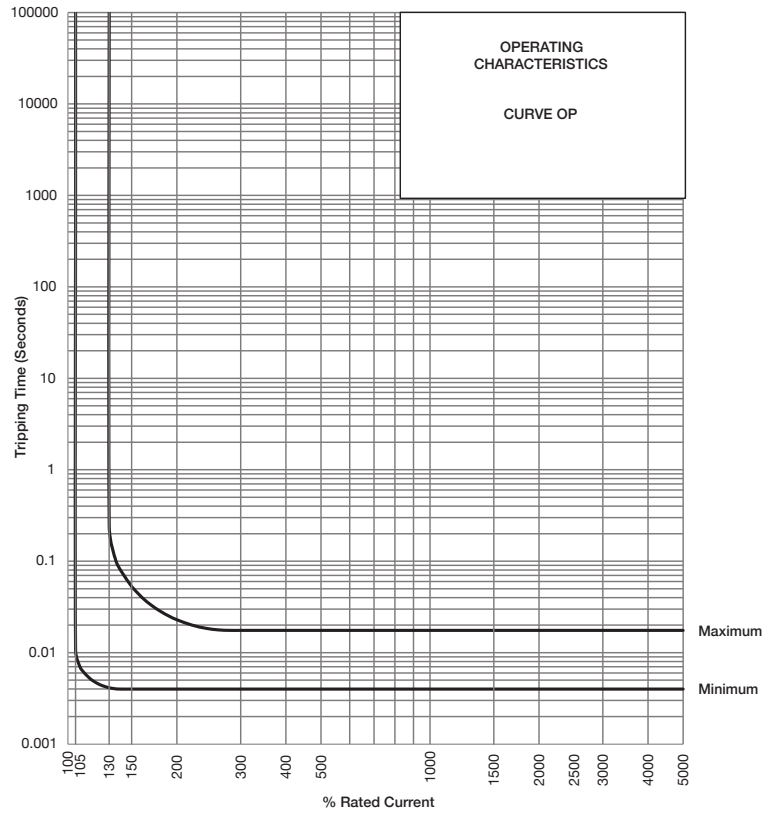
# QY - Series Miniature Circuit Breakers

## Time Delay Curves



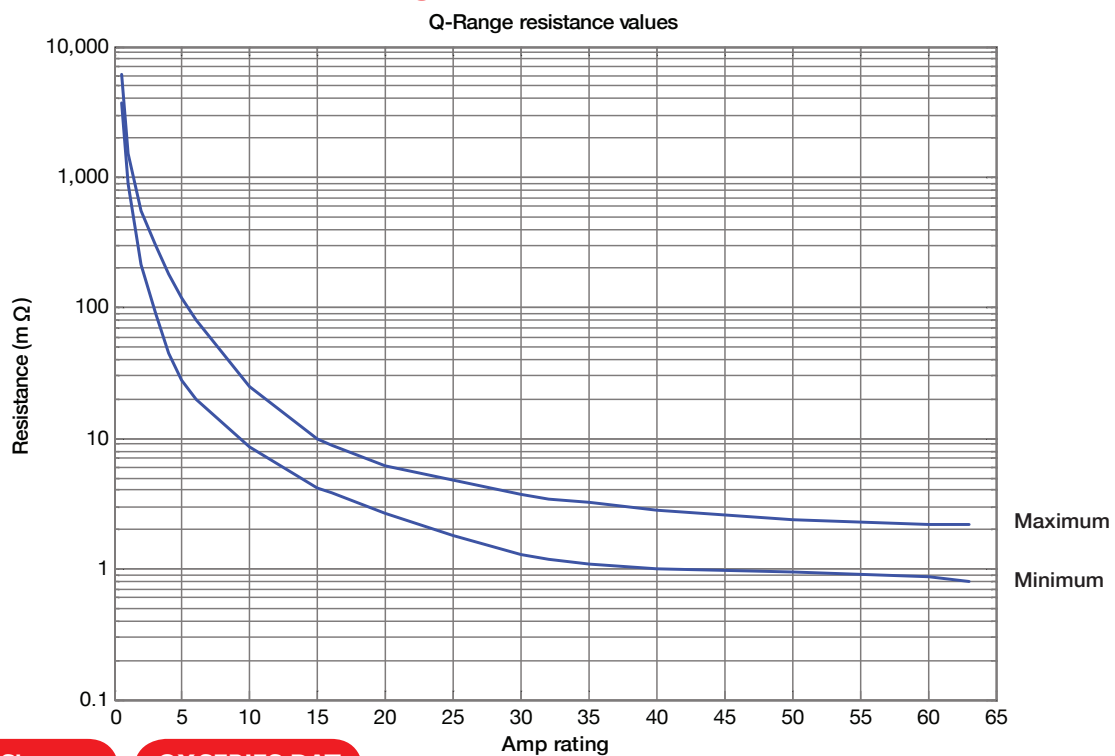
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### Time Delay Curves



\* The published time delay curves are generated at 30°C ambient temperature with the Circuit Breaker mounted in the up-right position. The “must hold”, “must trip” and “instantaneous trip” current values are not affected by temperature, although delay time for the other operating current values may have to be adjusted using the temperature compensation curve which is available on request.

### Internal Resistance vs Current Rating



# QY - Series Miniature Circuit Breakers

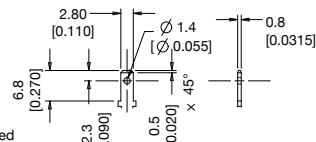
## Typical outline of Auxiliary Switch / Trip Alarm

Auxiliary available (6.5 mm module width) to match the unit to which it is attached.

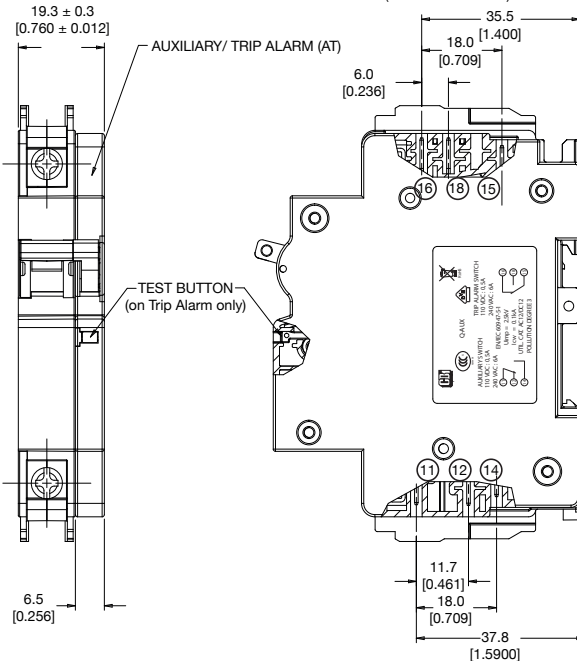
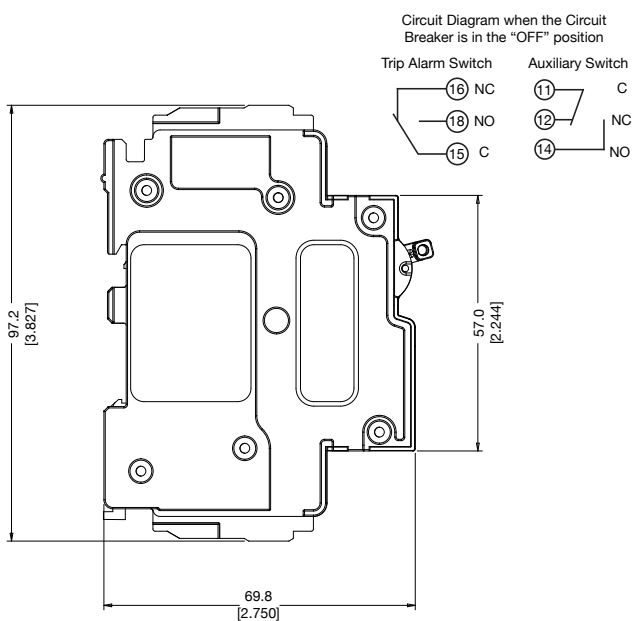
Available types as listed in Group 3:

- Type T - Trip Alarm as shown in outline drawings (fitted on a Dual mount product)
- Type AT - Auxiliary Switch + Trip Alarm (as shown)
- Type A - Auxiliary Switch

Typical outline for an Auxiliary module attached to a Dual mount single pole Circuit Breaker  
All dimensions in mm [ inch ]  
Tolerance  $\pm 0.2$  unless otherwise specified

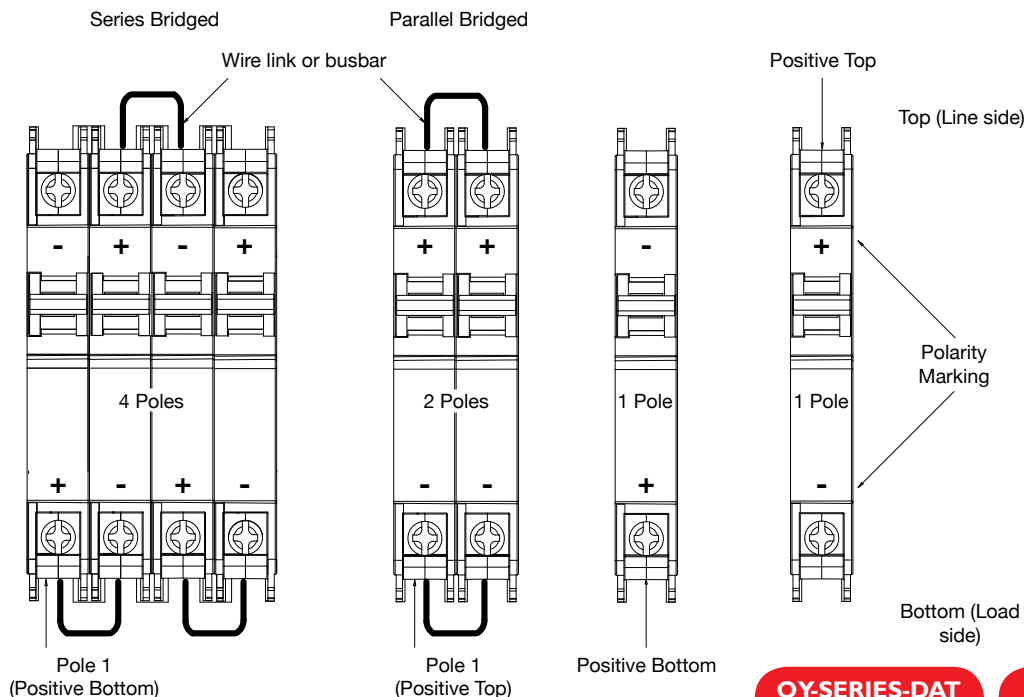


CONNECTING TERMINALS  
DETAIL (COMMON TO ALL)



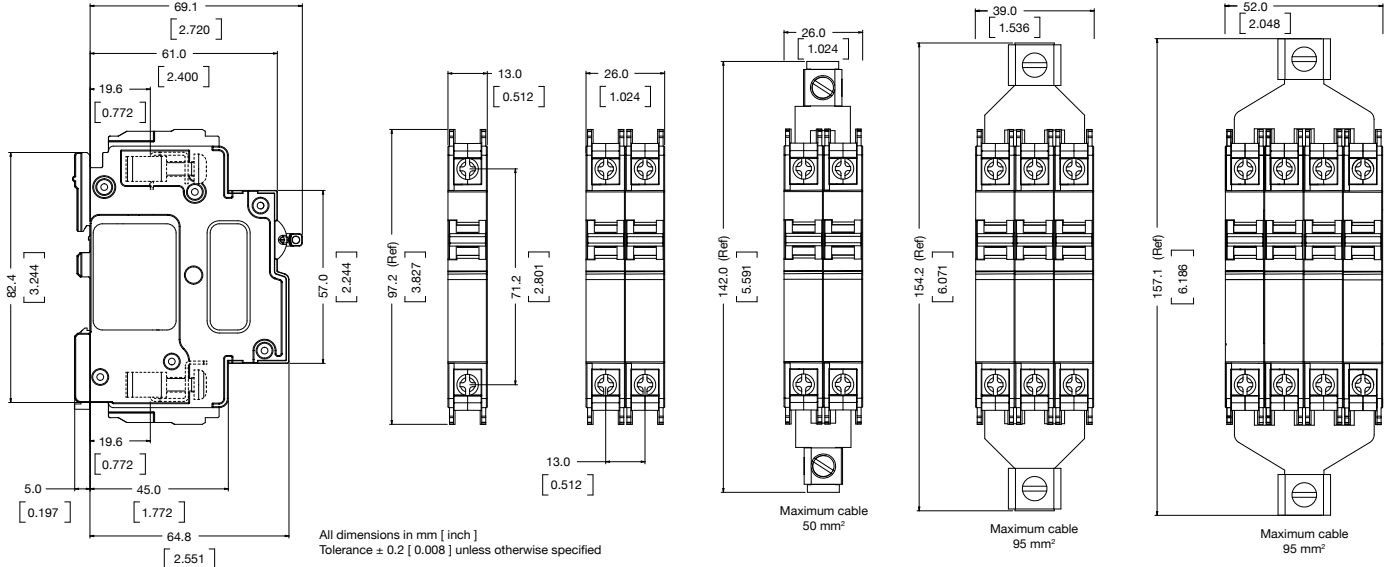
## Polarity identification

Diagram identifying the polarity of 125 V DC products in reference to Group 9 on page 3. Devices are shown viewed from the front. Series devices (standard) - each pole is opposite polarity from the next pole on the left (bridged "-" to "+"). Parallel devices - each pole has the same polarity (bridged "+" to "+", "-" to "-").

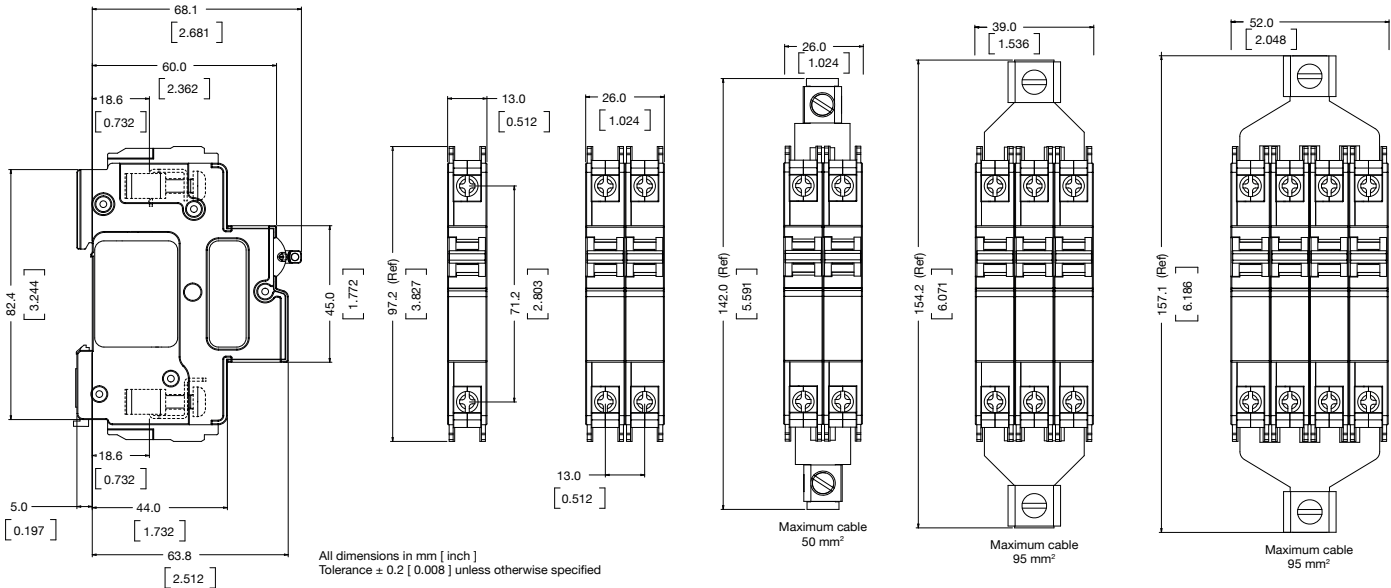


## QY - Series Miniature Circuit Breakers

### Outline Dimensions: Dual mount



### Outline Dimensions: DIN mount



### Plug-in terminal dimensions available on request

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