

QO/QOB Ring Terminal

Table 1.2: QO/QOB Ring Terminal—Factory-installed only

Ampere Rating	Poles	Suffix
10–30 A	1, 2, 3	5237
35–60 A	1, 2	5238
35–50 A	3	
70–110 A	2	
60–100 A	3	5273

Wire Sizes for QO/QOB Circuit Breakers

Table 1.3: Wire Sizes

Circuit Breaker Type	Ampere Rating [11]	Wire Size (AWG/kcmil)
QO 1P	10–30 A	14–8 Al/Cu
	10–30 A	(2) 14–10 Cu
	35–70 A	8–2 Al/Cu
QO 2P	10–30 A	14–8 Al/Cu
	10–30 A	(2) 14–10 Cu
	35–70 A	8–2 Al/Cu
	80–125 A	4–2/0 Al/Cu
	150–200 A	4–300 Al/Cu
QO 3P	10–30 A	14–8 Al/Cu, (2) 14–10 Cu
	35–70 A	8–2 Al/Cu
	80–125 A	4–2/0 Al/Cu
QOB-VH	110–150 A	4–300 Al/Cu
QOT	15–20 A	12–8 Al 14–8 Cu
QO-AFI, QO-GFI or QO-EPD	15–30 A	12–8 Al 14–8 Cu
	40, 50, 60 A	12–4 Al 14–6 Cu
QO-PL	10–60 A	12–2 Al 14–2 Cu

QOT Tandem Circuit Breakers

Current limiting QOT tandem circuit breakers have a mounting cam as shown. Installation into a QO load center can only be made in those positions having a mounting pan rail slot. Meets Paragraph 408.15 of the NEC®. UL Listed as Class CTL



QOT 1P Tandem
1 Space Required

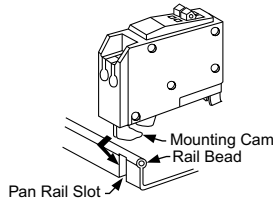


Table 1.4: QOT Tandem Circuit Breakers

Ampere Rating [12]	Cat. No. [13]
1P—120/240 Vac	
15 A and 15 A	QOT1515
15 A and 20 A	QOT1520
20 A and 20 A	QOT2020
2P—120/240 Vac Common Trip	

Order two QOT1515 or QOT2020 circuit breakers and handle tie QOTHT for common switching of center two poles.

Replacement Tandem Circuit Breakers Includes two circuit breakers (one QO2030 and one QO3020) and handle tie QOTHT.

Table 1.5: Replacement Tandem Circuit Breakers

Ampere Rating [12]	Cat. No. [13]
1P—120/240 Vac—1 Space Required	
15 A and 15 A	QO1515
15 A and 20 A	QO1520
20 A and 20 A	QO2020
20 A and 30 A	QO2030
30 A and 20 A	QO3020
Two 1P Individual Trip—120/240 Vac—2 Spaces Required	
15 A and 15 A	Order Two QO1515 or QO2020 circuit breakers and handle tie QOTHT
15 A and 20 A	
20 A and 20 A	—
20 A and 30 A	QO20303020 [14]
30 A and 20 A	—

[11] 10–30 A circuit breakers are suitable for use with 60°C or 75°C conductors. 35–125 A circuit breakers are suitable for use with 75°C conductors.

[12] 10–30 A circuit breakers are suitable for use with 60°C or 75°C conductors. 35–125 A circuit breakers are suitable for use with 75°C conductors.

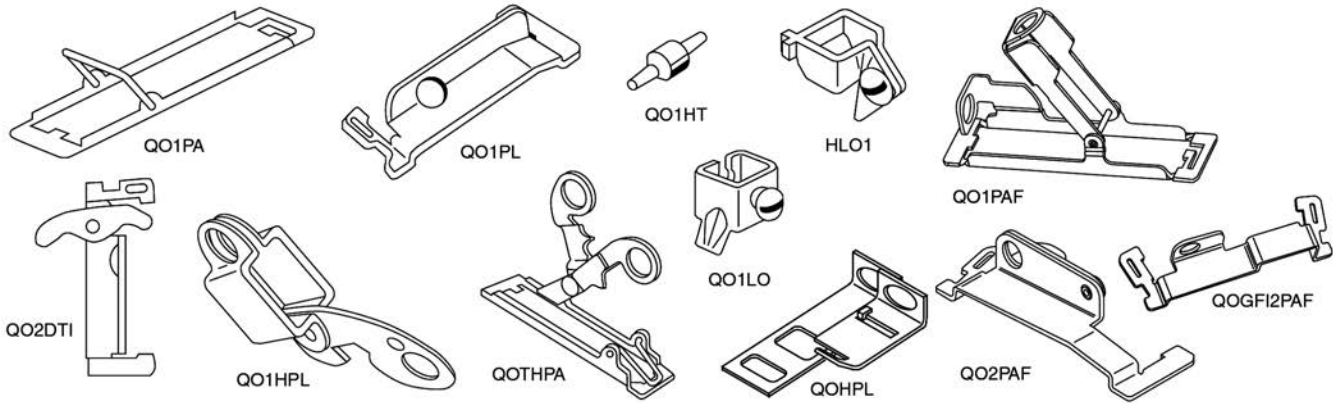
[13] UL Listed as HACR type for use with air conditioning, heating and refrigeration equipment having motor group combinations and marked for use with HACR type circuit breakers.

[14] Includes two circuit breakers (one QO2030 and one QO3020) and handle tie QOTHT.

Accessories for QO/QOB Circuit Breakers

Table 1.15: Accessories for use with QO and QOB Miniature Circuit Breakers

Description		Cat. No.	Schedule
Handle Attachments			
Handle Tie	Converts any two adjacent 120/240 Vac 1P QO circuit breakers to independent trip 2P Converts any two adjacent 120/240 Vac 1P side-by-side QOT circuit breakers to independent trip 2P	QO1HT QOTHT	DE2E DE2E
Handle Clamp	Clamp for holding QO 1P handle in ON or OFF position Clamp for holding QO or Q1 either 1P, 2P or 3P circuit breaker handles in ON or OFF position	QO1LO HLO1	DE2E DE2E
Handle Padlock Attachment for Padlocking in ON or OFF position	For padlocking 1P QO circuit breaker in ON or OFF position Loose attachment Fixed attachment	QOHPL QO1PA	DE2E DE2E
	For padlocking 1P side-by-side QOT circuit breaker in ON or OFF position	QOTHPA	DE2E
	For padlocking 2P QO-GFI circuit breakers in either ON or OFF position, fixed attachment.	GFI2PA	DE2A
	For 2P and 3P QO and Q1 standard circuit breakers which require padlocking in either ON or OFF position. Loose attachment Fixed attachment	QO1HPL QO1PL	DE2E DE2E
Handle Padlock Attachment for Padlocking in OFF position	For padlocking 1P QO circuit breaker in OFF position only, fixed attachment.	QO1PAF	DE2E
	For padlocking 2P and 3P QO circuit breakers in OFF position only, fixed attachment.	QO2PAF	DE2E
	For padlocking 1P QO-GFI, QO-CAFI, QO-DF and QO-EPD circuit breakers in OFF position only, fixed attachment.	QOGFI1PAF	DE2E
	For padlocking 2P QO-GFI, QO-CAFI and QO-EPD circuit breakers in OFF position only, fixed attachment.	QOGFI2PAF	DE2E
Ring Terminal	Ring terminals are available as a factory-installed option.	See page 7-10	DE2A
Sub-feed Lugs	60 A 2P plug-on – 2 spaces required (6-2 Al/Cu) 125 A 2P plug-on – 2 spaces required (12-2/0 Al/Cu) 225 A 2P plug-on – 4 spaces required (4-300 Al/Cu) 125 A 3P plug-on – 3 spaces required (12-2/0 Al/Cu)	QO60SL QO2125SL QO2225SL [27] QO3125SL	DE2A DE2A DE2A DE3
Mechanical Interlock Attachment	For interlocking the handles of two 2P or one 2P and one 1P QO and Q1 circuit breakers mounted side-by-side so that only one circuit breaker can be ON at a time (Not QOU)	QO2DTI	DE2E
With Retaining Kit	QO2DTI mechanical interlock attachment with retaining kits for securing two adjacent back-fed circuit breakers in dual power supply applications. Can be used with (2) 2Ps or (1) 2P and (1) 1P QO circuit breakers in QO816L100 load centers.	QO2DTIM	DE2E



Factory-Installed Accessories for use with QO and QOB Miniature Circuit Breakers

Factory-installed electrical accessories take up an additional pole space on QO, QO-GFI, QO-EPD, QO-SWN and QOU circuit breakers. All AC electrical accessories shown below are rated for 50/60 Hz. Accessories are not available for QOB-VH (2P 150 A and 3P 110-150 A) circuit breakers or QO, QOU molded case switches. QO circuit breakers will accept only one accessory per circuit breaker. Undervoltage trip is not available on miniature circuit breakers. Factory-installed accessories are not available for QO-AFI or QO-CAFI Arc Fault Circuit Breakers or on QO2150, QO2175, or QO2200 circuit breakers.

Table 1.16: Factory-Installed Accessories

Accessory	Description	Rated Voltage	Coil Burden	Cat. No. Suffix	Accessory	Description	Contact Comb.	Max. Voltage	Max.	Cat. No. Suffix
Shunt Trip	Trips the circuit breaker from a remote location by means of a trip coil energized from a separate circuit. A 120 Vac shunt trip will operate at 55% or more of rated voltage. All other shunt trips will operate at 75% or more of rated voltage. Application <ul style="list-style-type: none"> For use with momentary or maintained push button. Not available on QO-GFI, QO-EPD. Shunt trip terminals accept (2) 0.14-0.12 AWG Cu. 	12 Vac/Vdc 24 Vac/Vdc	60 VA 168 VA	-1042	Auxiliary Switches	Monitors circuit breaker contact status and provides a remote signal indicating the circuit breaker contacts are OPEN or CLOSED. Application <ul style="list-style-type: none"> Auxiliary switch terminals accept (2) 14-12 AWG Cu leads. Leads (EH): Yellow for "A", Blue for "B", Striped common 18 AWG Cu. 	1A 1B	120 Vac 120 Vac	5 A 5 A	-1200 -1201
		120 Vac 208 Vac 240 Vax	72 VA 228 VA 288 VA	-1021	Alarm Switches	Used with control circuits and is actuated only when the circuit breaker has tripped. Standard construction includes a normally-open contact. Application <ul style="list-style-type: none"> Leads: Alarm switch terminals accept (2) 14-12 AWG Cu leads. 	1A	120 Vac	5 A	-2100

[27] Not suitable for use in 3Ø panels. Use only in 1Ø panel rated 150 A or greater.

QOB Bolt-On Circuit Breakers [1]

Table 9.16: QOB-GFI, QOB-EPD, and QOB-EPE Circuit Breakers

Ampere Rating [2]	One-pole	Two-pole—Common Trip	Three-pole—Common Trip	
	Catalog No.	Catalog No.	Catalog No.	Catalog No.
QOB-GFI—QOB Qwik-Gard™ Circuit Breaker With Ground Fault Circuit Interrupter—UL Class A 4–6 mA People Protection. [3]				
	120 Vac—10 k AIR	120/240 Vac—10 k AIR	208Y/120 Vac—10 k AIR	
15 A	QOB115GFI	QOB215GFI	QOB315GFI	
20 A	QOB120GFI	QOB220GFI	QOB320GFI	
25 A	QOB125GFI	QOB225GFI	—	
30 A	QOB130GFI	QOB230GFI	QOB330GFI	
40 A	—	QOB240GFI	QOB340GFI	
50 A	—	QOB250GFI	QOB350GFI	
60 A	—	QOB260GFI [4]	—	
QOB-VHGFI [5]				
	120 Vac—22 k AIR			
15 A	QOB115VHGFI			
20 A	QOB120VHGFI			
25 A	QOB125VHGFI			
30 A	QOB130VHGFI			
QOB-EPD—QOB Equipment protection circuit breakers with UL Listed 30 mA (EPD) or 100 mA (EPE) equipment protection.				
	120 Vac—10 k AIR	120/240 Vac—10 k AIR	240 Vac—10 k AIR	
15 A	QOB115EPD	QOB215EPD	QOB315EPD [6]	QOB315EPE [6]
20 A	QOB120EPD	QOB220EPD	QOB320EPD [6]	QOB320EPE
25 A	QOB125EPD	QOB225EPD	—	—
30 A	QOB130EPD	QOB230EPD	QOB330EPD [6]	QOB330EPE [6]
40 A	—	QOB240EPD	QOB340EPD [6]	QOB340EPE [6]
50 A	—	QOB250EPD	QOB350EPD [6]	QOB350EPE [6]
60 A	—	QOB260EPD	—	—
QOB-VHEPD				
	120 Vac—22 k AIR			
15 A	QOB115VHEPD			
20 A	QOB120VHEPD			
25 A	QOB125VHEPD			
30 A	QOB130VHEPD			
QOB-HM—High magnetic trip circuit breakers				
15 A	QOB115HM [7]			
20 A	QOB120HM [7]			
QOB-K—Key operated QOB circuit breakers [8]				
	120 Vac—10 k AIR			
10 A	QOB110K			
15 A	QOB115K			
20 A	QOB120K			
25 A	QOB125K			
30 A	QOB130K			

Table 9.17: Standard Interrupting QOB 10,000 AIR Circuit Breakers

Ampere Rating [2]	One-pole	Two-pole—Common Trip	Two-pole—Common Trip [9]	Three-pole—Common Trip
	Catalog No.	Catalog No.	Catalog No.	Catalog No.
QOB Bolt-On				
	120 Vac—10 k AIR 48 Vdc—5 k AIR	120/240 Vac—10 k AIR 48 Vdc—5 k AIR [10]	240 Vac—10 k AIR	240 Vac—10 k AIR 48 Vdc—5 k AIR [10]
10 A	QOB110	QOB210	—	QOB310
15 A	QOB115 [7] [11]	QOB215 [11]	QOB215H	QOB315 [11]
20 A	QOB120 [7] [11]	QOB220 [11]	QOB220H	QOB320 [11]
25 A	QOB125 [11]	QOB225 [11]	QOB225H	QOB325 [11]
30 A	QOB130 [11]	QOB230 [11]	QOB230H	QOB330 [11]
35 A	QOB135 [11]	QOB235 [11]	—	QOB335 [11]
40 A	QOB140 [11]	QOB240 [11]	QOB240H	QOB340 [11]
45 A	QOB145 [11]	QOB245 [11]	—	QOB345 [11]
50 A	QOB150 [11]	QOB250 [11]	QOB250H	QOB350 [11]
60 A	QOB160 [11]	QOB260 [11]	QOB260H	QOB360 [11]
70 A	QOB170 [11]	QOB270 [11]	QOB270H	QOB370 [11] [10]
80 A	—	QOB280 [11] [10]	QOB280H	QOB380 [11] [10]
90 A	—	QOB290 [11] [10]	QOB290H	QOB390 [11] [10]
100 A	—	QOB2100 [11] [10]	QOB2100H	QOB3100 [11] [10]

[1] For QO plug-on circuit breakers, see the tables starting on Digest page 7-11.

[2] 10–30 A circuit breakers are suitable for use with 60 °C or 75 °C conductors. 35–60 A circuit breakers are suitable for use with 75 °C conductors.

[3] Do not connect to more than 250 feet of load conductor for the total one-way run to prevent nuisance tripping.

[4] Suitable only for feeding 240 Vac and 208 Vac two-wire loads. Does not contain load neutral connection.

[5] Recommended for applications where high initial inrush may occur and for individual dimmer applications.

[6] See note in Instruction Bulletin when using in an enclosure with a QO403 or QON prefix.

[7] UL Listed as SWD (switching duty) rated suitable for switching 120 Vac fluorescent lighting loads.

[8] Available in single pole construction and can be mounted in any single pole space which will accept a standard QOB. These circuit breakers can be turned ON or OFF or RESET with a special key (Catalog No. QOK10) included with the circuit breaker. These circuit breakers are UL Listed and available as shown in the table.

[9] UL Listed 5,000 AIR on 3Ø corner grounded delta systems.

[10] DC Rating is not available on indicated products.

[11] UL Listed as HACR type for use with air conditioning, heating, and refrigeration equipment having motor group combinations and marked for use with HACR type circuit breakers.

Table 9.17 Standard Interrupting QOB 10,000 AIR Circuit Breakers (cont'd.)

Ampere Rating [9]	One-pole	Two-pole—Common Trip	Two-pole—Common Trip [10]	Three-pole—Common Trip
	Catalog No.	Catalog No.	Catalog No.	Catalog No.
110 A	—	QOB2110[12][13]	—	—
125 A	—	QOB2125[12][13]	—	—
Molded Case Switch 60 A max—240 Vac	—	QOB200	—	QOB300
Molded Case Switch 100 A max—240 Vac	—	QOB2000	—	QOB3000

Table 9.18: High Interrupting QOB and Specialty Circuit Breakers

Ampere Rating [9]	One-pole	Two-pole—Common Trip	Three-pole—Common Trip
	Catalog No.	Catalog No.	Catalog No.
QOB-VH			
	120 Vac—22 k AIR	120/240 Vac—22 k AIR	240 Vac—22 k AIR
15 A	QOB115VH [14][12]	QOB215VH[12]	QOB315VH[12]
20 A	QOB120VH [14][12]	QOB220VH[12]	QOB320VH[12]
25 A	QOB125VH[12]	QOB225VH[12]	QOB325VH[12]
30 A	QOB130VH[12]	QOB230VH[12]	QOB330VH[12]
40 A	QOB140VH	QOB240VH[12]	QOB340VH[12]
50 A	QOB150VH	QOB250VH[12]	QOB350VH[12]
60 A	QOB160VH	QOB260VH[12]	QOB360VH[12]
70 A	QOB170VH	QOB270VH[12]	QOB370VH[12]
80 A	—	QOB280VH[12]	QOB380VH[12]
90 A	—	QOB290VH[12]	QOB390VH[12]
100 A	—	QOB2100VH[12]	QOB3100VH[12]
110 A	—	QOB2110VH[12]	QOB3110VH [15]
125 A	—	QOB2125VH[12]	QOB3125VH [15]
150 A	—	QOB2150VH [15]	QOB3150VH [15]
QHB			
	120 Vac—65 k AIR	120 Vac/240 Vac—65 k AIR	240 Vac—65 k AIR
15 A	QHB115 [14][16]	QHB215[12]	QHB315[12]
20 A	QHB120 [14][16]	QHB220[12]	QHB320[12]
25 A	QHB125[12]	QHB225[12]	QHB325[12]
30 A	QHB130[12]	QHB230[12]	QHB330[12]
QOB-HID—HID circuit breakers [17]			
	120 Vac—10 k AIR	120/240 Vac—10 k AIR	240 Vac—10 k AIR
15 A	QOB115HID [14]	QOB215HID	QOB315HID
20 A	QOB120HID [14]	QOB220HID	QOB320HID
25 A	QOB125HID	QOB225HID	QOB325HID
30 A	QOB130HID	QOB230HID	QOB330HID
40 A	QOB140HID	QOB240HID	—
50 A	QOB150HID	QOB250HID	—
QOB-SWN—Switch Neutral—Common Trip—NEC 514.11			
		1-pole—2-Wire 2 Spaces—120 Vac	2-pole—3-Wire 3 Spaces—120/240 Vac
10 A	—	QOB210SWN	QOB310SWN
15 A	—	QOB215SWN	QOB315SWN
20 A	—	QOB220SWN	QOB320SWN
25 A	—	QOB225SWN	QOB325SWN
30 A	—	QOB230SWN	QOB330SWN
40 A	—	QOB240SWN	QOB340SWN
50 A	—	QOB250SWN	QOB350SWN

Table 9.19: QO/QOB Circuit Breaker Wire Sizes

Breaker Type	Ampere Rating [18]	Wire Size (AWG)	
		Al	Cu
QOB 1-pole	10–30 A	#14–8	#14–8
	10–30 A	—	two #14–10
	35–70 A	#8–2	#8–2
QOB 2-pole	10–30 A	#14–8	#14–8
	10–30 A	—	two #14–10
	35–70 A	#8–2	#8–2
	80–125 A	#4–2/0	#4–2/0
QOB 3-pole	150–200 A	#4–300 kcmil	#4–300 kcmil
	10–30 A	#14–8	#14–8
	35–70 A	#8–2	#8–2
QOB-VH	80–125 A	#4–2/0	#4–2/0
	110–150 A	#4–300 kcmil	#4–300 kcmil
QOB-GFI and QOB-EPD	15–30 A	#12–8	#14–8
	40, 50, or 60 A	#12–4	#14–6

[9] 10–30 A circuit breakers are suitable for use with 60 °C or 75 °C conductors. 35–60 A circuit breakers are suitable for use with 75 °C conductors.

[10] UL Listed 5,000 AIR on 3Ø corner grounded delta systems.

[12] UL Listed as HACR type for use with air conditioning, heating, and refrigeration equipment having motor group combinations and marked for use with HACR type circuit breakers.

[13] DC Rating is not available on indicated products.

[14] UL Listed as SWD (switching duty) rated suitable for switching 120 Vac fluorescent lighting loads.

[15] QOB2150VH uses 4 pole spaces. QOB3110VH, QOB3125VH, and QOB3150VH each use 6 pole spaces. 40A maximum circuit breaker mounted opposite. Use with 75 °C wire only.

[16] UL Listed as SWD (switching duty) rated suitable for switching 120 Vac fluorescent lighting loads.

[17] UL Listed for use on circuit feeding fluorescent and High Intensity Discharge (HID) lighting systems such as mercury vapor, metal halide, or high pressure sodium. These circuit breakers are physically interchangeable with QOB circuit breakers.

[18] 10–30 A circuit breakers are suitable for use with 60 °C or 75 °C conductors.

35–60 A circuit breakers are suitable for use with 75 °C conductors.