

Selection Procedure for NQ Merchandised Panelboards

- Review maximum electrical system voltage, ampacity, and available fault current, and determine the type of panelboard is desired (see tables [Table 9.1–Table 9.4](#)).
- Identify type (plug-on or bolt-on) and total quantity of branch circuit breaker poles and panel spaces required (see Digest sections 7 and 9 for catalog numbers).
- Select proper main lug interior (from [Table 9.5](#) or [Table 9.7](#)) or:
 - Select main circuit breaker interior and main circuit breaker adapter kit (from tables 9.6 [NQ Main Circuit Breaker Interiors](#), page 9-12 or [Table 9.8 NQ 14-inch-wide Main Circuit Breaker Interiors](#), page 9-13), based upon the equivalent number of poles and ampere rating.
NOTE: Interiors include solid neutral and are field convertible to top-feed.
 - If a main circuit breaker interior was selected, select a main circuit breaker (or fuse) from pages [page 7-2](#), [page 7-6](#), [page 7-7](#), or [page 7-11](#).
- Select ground bars from tables [Table 9.9](#) or any non-standard neutral bars (i.e., 200% neutral for non-linear loads) from table [Table 9.38](#).
- Select any required sub-feed circuit breakers, sub-feed lugs (SFL), or feed-through lugs (FTL) kits:
 - Sub-feed lugs (SFL) or feed-through lugs (FTL) kits: tables [Table 9.39](#) in the NQ Accessories sections.
 - Any subfeed circuit breakers: [Table 7.1](#) or tables [Table 9.10–Table 9.14](#).
- Determine the total mounting inches required by adding requirements from interior, main circuit breaker, neutrals and ground bars, SFL, FTL, or sub-feed circuit breaker.
- Select enclosure from the tables [Table 9.5–Table 9.9](#), [Table 9.38–Table 9.42](#), [Table 9.19](#), [Table 9.21](#), and [Table 9.23](#).
NEMA Type 1—select box and front (cover) catalog number corresponding to interior catalog number.
NEMA Type 3R, 5, 12—select enclosure. Cover for Type 3R, 5, 12 is included with the enclosure.
- Select the branch circuit breakers to be installed in the panel.
For NQ panelboards use QO circuit breakers from tables [Table 7.1](#), [page 7-13–page 7-14](#), or QOB circuit breakers from [Table 9.10–Table 9.14](#).
- Select options and accessories from tables [Table 9.7–Table 9.43](#).
NOTE: Additional NF and NQ options may be found in the [Supplemental and Obsolescence Digest, Section 4](#).

NQ Merchandised Selection Example

208Y/120 Vac, 3Ø4W, 10 kA SCCR, 225 A, MLO, NEMA Type-1, surface-mount, bolt-on, branch circuit breakers, main sub-feed lugs

Branches	Table No.	Catalog Number	Spaces
(20) 20/1	Table 9.11	(20) QOB120	20
two 40/2	Table 9.11	two QOB240	4
two 30/3	Table 9.11	two QOB330	6
Total 30 spaces			
			Min. Box Height
225 A MLO Interior	Table 9.5	NQ430L2	32 inches
Enclosure (Box)	Table 9.5	MH38	—
Front (Cover)	Table 9.5	NC382S	—
Sub-feed Lugs	Table 9.39 and Table 9.40	NQSFL2	6 inches
Total 38 inches			

QOB Bolt-On Circuit Breakers with Visi-Trip™ Indicator for NQ Panelboards

NOTE: For QO plug-on circuit breakers, see the tables in Digest topic: Plug-on Circuit Breakers. [24]

Table 9.10: QOB-GFI, QOB-EPD, and QOB-EPE Circuit Breakers

Ampere Rating [25]	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. [26]				
	120 Vac—10 k AIR [27]	120/240 Vac—10 k AIR [27]	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 [28]	—	
QOB-VHGF1 [29]				
	120 Vac—22 k AIR [27]			
15 A	QOB115VHGF1			
20 A	QOB120VHGF1			
25 A	QOB125VHGF1			
30 A	QOB130VHGF1			
QOB-EPD—QOB Equipment protection circuit breakers with UL Listed 30 mA (EPD) or 100 mA (EPE) equipment protection.				
	120 Vac—10 k AIR [27]	120/240 Vac—10 k AIR [27]	240 Vac—10 k AIR [27]	
15 A	QOB115EPD	QOB215EPD	QOB315EPD [30]	QOB315EPE [30]
20 A	QOB120EPD	QOB220EPD	QOB320EPD [30]	QOB320EPE
25 A	QOB125EPD	QOB225EPD	—	—
30 A	QOB130EPD	QOB230EPD	QOB330EPD [30]	QOB330EPE [30]
40 A	—	QOB240EPD	QOB340EPD [30]	QOB340EPE [30]
50 A	—	QOB250EPD	QOB350EPD [30]	QOB350EPE [30]
60 A	—	QOB260EPD	—	—
QOB-VHEPD				
	120 Vac—22 k AIR [27]			
15 A	QOB115VHEPD			
20 A	QOB120VHEPD			
25 A	QOB125VHEPD			
30 A	QOB130VHEPD			
QOB-HM—High magnetic trip circuit breakers				
15 A	QOB115HM [31]			
20 A	QOB120HM [31]			
QOB-K—Key operated QOB circuit breakers [32]				
	120 Vac—10 k AIR [27]			
10 A	QOB110K			
15 A	QOB115K			
20 A	QOB120K			
25 A	QOB125K			
30 A	QOB130K			

Table 9.11: Standard Interrupting QOB 10,000 AIR Circuit Breakers

Ampere Rating [33]	One-pole	Two-pole—Common Trip	Two-pole—Common Trip [34]	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 [27]	120/240 Vac—10 k AIR 48 Vdc—5 k AIR [35] [27]	240 Vac—10 k AIR [27]	240 Vac—10 k AIR 48 Vdc—5 k AIR [35] [27]
10 A	QOB110	QOB210	—	QOB310
15 A	QOB115 [31] [36]	QOB215 [36]	QOB215H	QOB315 [36]
20 A	QOB120 [31] [36]	QOB220 [36]	QOB220H	QOB320 [36]
25 A	QOB125 [36]	QOB225 [36]	QOB225H	QOB325 [36]
30 A	QOB130 [36]	QOB230 [36]	QOB230H	QOB330 [36]
35 A	QOB135 [36]	QOB235 [36]	—	QOB335 [36]

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

[25] 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.

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

[27] May be applied in 208Y/120 Vac systems.

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

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

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

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

[32] 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.

[33] 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.

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

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

[36] 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.

Specifications

NQ Fingersafe Bus Ratings, Enclosures, and Circuit Counts								
IP2X Design	Mains rating	Enclosures: NEMA types	Circuit Count					
			18	30	42	54	72	84
Standard	100	1, 2, 3R, 4/4X, 5, 12	X	X	—	—	—	—
	225		—	X	X	X	X	X
	400		1	—	X	X	—	X
Enhanced	225	1, 2, 3R, 4/4X, 5, 12	—	—	X	—	—	—
	400		1	—	—	X	—	—

QO(B) Branch Circuit Breaker Ratings ^[69]				
Branch Circuit Breaker	Amperes	1-Pole	1-Pole	3-Pole
QO / QOB	10–60	L	L	L
	70	L	L	H
	80–100	—	H	H
QO-H / QOB-H	15–30	—	L	—
	40–100	—	H	—
QO-HID / QOB-HID	15–30	L	L	L
	40–50	L	L	—
QO-HM / QOB-HM	15–20	L	—	—
	15–30	—	L	L
QO-VH / QOB-VH	15–70	L	—	—
	40–100	—	H	H
	40–100	—	H	—
QOH ^[70]	15–30	L	L	—
QHB ^[70]	15–30	L	L	—
IP2X QO(B) Lug Covers:	L (Low Amp) - QOFSLALB H (High Amp) - QOFSHALB			

Replacement Parts

Replacement Parts		
Catalog Number	Quantity Per Package	Description
QOFBFB12	12	NQ IP2X Bus Finger Filler ^[71]
QOFSLALB12	12	NQ IP2X QO(B) Lug Cover Low Amp
QOFSHALB12	12	NQ IP2X QO(B) Lug Cover High Amp
HJQLLC	1	HJQ Main Breaker IP2X Line Lug Cover
LALLC	1	LA/LH Main Breaker IP2X Line Lug Cover
NQHJLSC	1	HJ Main Breaker IP2X Load Side Cover
NQQLSC	1	Q Main Breaker IP2x Load Side Cover
NQLALHLSC	1	LA/LH Main Breaker IP2X Load Side Cover
NQMLLSC	1	Main Lugs IP2X Cover
NQNCC	1	NQ IP2X Neutral Cover
QO1PJ15	15	QOB Jaw Kit ^[72]

^[69] QOB circuit breakers and jaw kits required for Enhanced IP2X design.

^[70] Available only in standard IP2X design

^[71] Used only with Standard IP2X design.

^[72] Used only with Enhanced IP2X design.