NQ Circuit Breaker Panelboards

Class 1640

Catalog

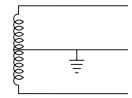
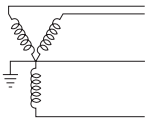
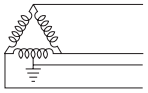
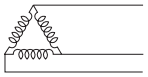
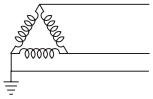
1640CT0801
R10/19

Legal Information

Table of Contents

Standards and Ratings

NQ circuit breaker panelboards meet US and Canadian standards, and are marked cULus. NQ circuit breaker panelboards accept QO™ and QOB branch circuit breakers.

Voltage	System	System Diagram
120/240 Vac	1Ø3W	
208Y/120 Vac	3Ø4W	
240/120 Vac	3Ø4W Delta	
240 Vac	3Ø3W Delta	
240 Vac	3Ø3W Grd. BØ Delta	
48 1Ø Vdc	1Ø2W	

Standards

NQ circuit breaker panelboards are designed, manufactured, and tested to comply with the following standards:

- UL 67—Standard for Panelboards
- UL 50—Enclosures for Electrical Equipment
- CSA C22.2, No. 29-M1989—Panelboards and Enclosed Panelboards
- CSA C22.2, No. 94-M91—Special Purpose Enclosures
- NEMA PB 1—Panelboards
- NFPA 70—National Electrical Code® (NEC®)
- Federal Specification W-P-115C Type I Class 1—Circuit Breaker Panelboards
- ASCE 7-05, ASCE 7-10, IBC 2009, IBC 2012, CBC 2010, CBC 2013, CBC 2016, NBCC 2015 Seismic Qualification, and OSHPD Special Seismic Certification Pre-approval: OSP-0016-10
- ABS Type Certified

Ratings

- Main Lugs 100–600 A
- Main Circuit Breaker 100–600 A

Interiors

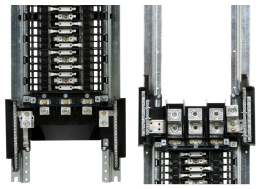
Main Lug Interiors

225 A Maximum Main Lug Interior and Deadfront

- Will accept plug-on or bolt-on branch circuit breakers
- Top- or bottom-feed
- 65k AIR maximum branch circuit breakers (fully-rated)
- 200k AIR maximum when supplied by remote PowerPact circuit breaker (series rated)
- Field-installable sub-feed lug kits for 100–400 A interiors
- Factory installed main lugs on all interiors
- 225–400 A main lug interiors are convertible to main circuit breaker by adding a main circuit breaker and adapter kit
- Available with silver/tin-plated copper or tin-plated aluminum bus (aluminum is standard). Tin-plated or thick silver plated copper bus are available options. Branch connector fingers are tin-plated copper; thick silver-plated branch connector fingers are optional

Main Lugs for MLO Interiors

Main Lug Interiors



100–225 A Maximum and 600 A Maximum

Table 1 - Aluminum Main lugs for MLO Interiors

Amperes	Catalog Number	Lug Wire Range for wire bending space
Aluminum Mechanical (Standard)[1]		
100	*NQALM1*	(1) #6–2/0
225	*NQALM2*	(1) #6–350 kcmil
400	*NQALM4*	(1) 1/0–750 kcmil, or (2) 1/0–350 kcmil
600	*NQALM6*	(2) 1/0–750 kcmil
600[2]	*NQALM6A*	(3) 1/0–250 kcmil
Aluminum Compression		
100	*NQALV1*	(1) #4–300 kcmil
225	*NQALV2*	(1) 250–350 kcmil
400	*NQALV4*	(2) 2/0–500 kcmil
600	*NQALV6*	(2) 2/0–500 kcmil

1. NQ MLO interiors are supplied with lugs. No selection is required if aluminum mechanical lugs are acceptable.
2. Optional lug for 600 A. Can also be used for 400 A.

NQALM2 225 A Main Lug Kit

NQALM6A 600 A Main Lug Kit

Type VCEL VERSAtile™ Compression Equipment Terminals

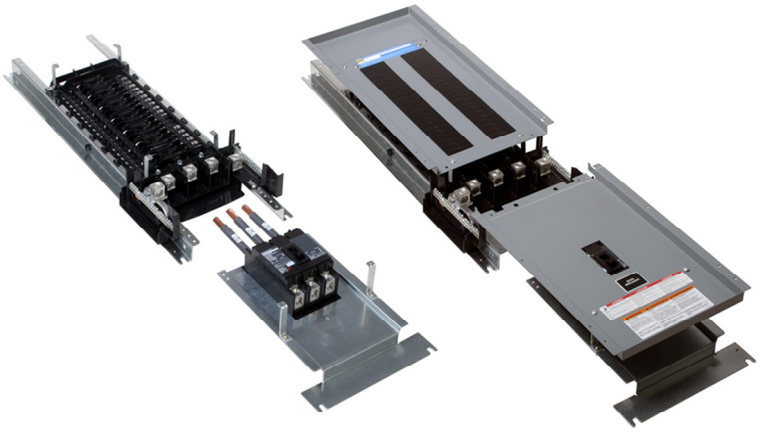
NQCUM2 225 A Copper Mechanical Lugs

NQCUV2 225 A Copper Compression Lugs

Table 2 - Copper Main lugs for MLO Interiors

Amperes	Catalog Number	Lug Wire Range for wire bending space
Copper Mechanical		
100	*NQCUM1*	(1) #6–2/0
225	*NQCUM2*	(1) #6–350 kcmil
400	*NQCUM4*	(1) 1/0–750 kcmil, or (2) 1/0–350 kcmil
600	*NQCUM6*	(2) 1/0–750 kcmil
Copper Compression		
100	*NQCUV1*	(1) #6–350 kcmil
225	*NQCUV2*	(1) #6–350 kcmil
400	*NQCUV4*	(1) 400–750 kcmil
600	*NQCUV6*	(2) 250–500 kcmil

Main Lugs Interior with PowerPact™ Q Main Circuit Breaker and Main Circuit Breaker Kit

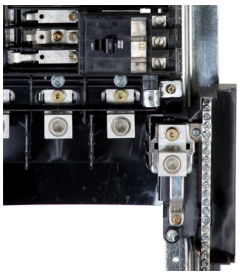


Deadfront Removed **Deadfront Installed**

NQ442L2 Main Lugs Interior (without deadfront) and QBL32225 Main Circuit Breaker (mounted to NQMB2Q kit)

Main Circuit Breaker Interiors

QOB Branch Mounted Main Circuit Breaker on a 225 A NQ Interior



QBL Main Circuit Breaker on a 3-phase NQ Main Lug Interior

- May be assembled from merchandised main lug interiors, main circuit breaker, and main circuit breaker kits.
- Will accept plug-on or bolt-on branch circuit breakers.
- Merchandised main circuit breaker interiors are suitable for use as service entrance (US only).
- Barriers must be installed in jurisdictions that have adopted the 2017 National Electric Code.

Table 3 - UL Service Entrance Barrier Kits

Catalog Number[3]	Description	Applicable Main Breakers
HJQLLC	H/J/Q Line Lug Cover	PowerPact™ H, J, Q
LALLC	LA/LH Line Lug Cover	LA/LH
PPLLC	PowerPact™ L Line Lug Cover	PowerPact™ L

- Service entrance barriers are required and available in Canada (factory-assembled only).
- May be top-feed or bottom-feed.
- Accept 65k AIR maximum branch circuit breakers (fully-rated).
- May be series rated 200k AIR maximum when supplied by PowerPact™ circuit breaker.
- Are available with silver/tin plated copper or tin-plated aluminum bus (aluminum is standard). Tin-plated or silver-plated copper bus is available as an option. Branch connector fingers are tin-plated copper; silver-plated branch connector fingers are optional.
- 100 A main circuit breaker interiors use a standard or 14” wide main lug interior and an appropriate QOB or QOB-VH main circuit breaker in a branch space; vertical main breaker main breaker interiors are also available.
- 110–225 A main circuit breaker may be assembled from:

  — A standard or 14” wide main lug interior.

  — Main circuit breaker adaptor kit (NQMB2Q, NQMB2HJ) (or NQMB2Q14 or NQMB2HJ14 for 14" interiors).

  — Appropriate PowerPact™ H, J, or Q frame circuit breaker
- 250 A main circuit breaker interiors are factory-assembled only.
- Merchandised 400 A main circuit breaker interiors consist of:

  — 400 A 3-phase or single phase main lug interior.

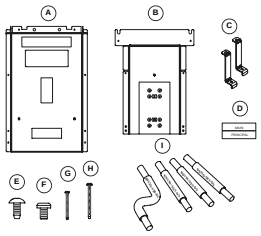
  — Main circuit breaker adapter kit (Catalog No. NQMB4LA).

  — Appropriate LA or LH circuit breaker.
- Factory assembled 400 A main circuit breakers are available with LA, LH, or PowerPact™ L[4] main circuit breakers.
- 600 A main circuit breaker interiors (factory-assembled only) use:

  — Appropriate LD, LG, LJ, or LL circuit breaker.[4]

3. Main circuit breaker panels are supplied with UL service entrance barriers if "UL Service Entrance" is selected as a requirement in SE Advantage.
4. Requires 8.75 in.deep enclosures.

Main Circuit Breaker Adapter Kit



Hardware not shown to scale

Table 4 - NQMB2Q Kit Contents

A	Main circuit breaker deadfront cover (1)
B	Main circuit breaker mounting pan (1)
C	Deadfront support brackets (2)
D	“Main” circuit breaker label (1)
E	10-32 x 7/16-inch tapping screws (2)
F	10-32 x 5/16-inch tapping screws (6)
G	8-32 x 2 ¼-inch tapping screws (2)
H	8-32 x 3 ¼-inch tapping screws (2)
I	Main lug wires (4)

Table 5 - Main Circuit Breaker Adapter Kits

Catalog No.	Ampere Rating	Main Circuit Breaker
NQMB2Q	100–225 A	PowerPact™ Q
NQMB2HJ	100–225 A	PowerPact™ H or J
NQMB4LA	125–400 A	LAL, LHL

NQMB4LA, 400 A LA/LH Main Breaker Kit

Table 6 - Main Circuit Breakers

Max. Amperes	Circuit Breaker Type
100 A	QOB[5], QOB-VH[5]
150 A	HDL, HGL, HJL, HLL, or HRL
225 A	QBL, QDL, QGL, QJL, JDL, JGL, JJL, JLL, or JRL
250 A	PowerPact™ J[6]: JD, JG, JJ, JL, or JR
400 A	LAL or LHL
	PowerPact™ L[6]: LD, LG, LJ, or LL
600 A	PowerPact™ L[6]: LD, LG, LJ, or LL

Field-Installable Circuit Breaker Accessories

Field-installable shunt trip, alarm switch, and other accessories are available for PowerPact™ H, J, L and LA/LH main circuit breakers. Refer to *Catalog 0616CT1001* or *0601CT9101* for additional information.

5. Backfed main circuit breaker.
6. Factory assembled only.

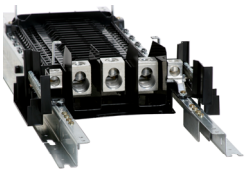
Interior Accessories

QOB3125SL Sub-Feed Lug Device

NQSFL4, 400 A Sub-Feed Lug Kit

NQFTL2, 225 A Feed-Through Lug Kit

225 A Main Lug Interior with Sub-feed Lugs



Sub-Feed Lug Kits

Table 7 - Branch Mounted Sub-Feed Lugs

Rating Amperes	Number of Poles	Type of Connection	Catalog No.	Main Wire Size
125	2	Bolt-On	*QOB2125SL*	#4–2/0 Al or Cu
	3		*QOB3125SL*	

Field-Installable Sub-Feed Lugs

Table 8 - Field-Installable Sub-Feed Lugs

Mains Rating	Added Length[7]	Catalog No.
100 A	—	*NQSFL1*
225 A	6 Inches	*NQSFL2*
400 A	—	*NQSFL4*

Table 9 - Field installable Feed-Through Lugs

Mains Rating	Interior Circuits	Added Length[7]	Catalog No.
225 A	30	6 inches	*NQFTL2*
	42	—	
	54, 72, 84	6 inches	*NQFTL2H*
400 A	30	—	*NQFTL4L*
	42	6 inches	
	54, 72	6 inches	*NQFTL4H*
	84	—	

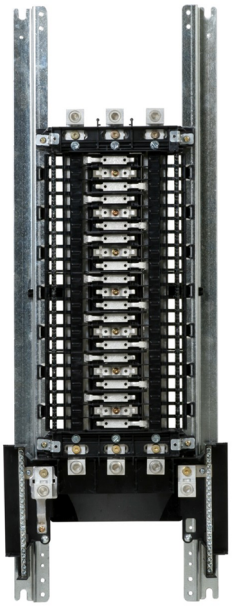
Field Installable Sub-Feed Circuit Breaker Kits

Table 10 - Field Installable Sub-Feed Circuit Breaker Catalog Numbers

Field Ampere Rating	Catalog Number	Number of Sub-Feed Circuit Breakers and Type
225	*NQSFB2Q*	1 Q-frame
225	*NQSFB2HJ*	1 H or J-frame
400	*NQSFB4Q*	2 Q-frame
400	*NQSFB4HJ*	2 H or J-frame

7. Refer to *Digest 178* for the correct box size.

225 A Main Lug Interior with Feed-Through Lugs



Factory-Installed Sub-Feed and Feed-Through Options

- Feed-through lugs are available on standard width 1Ø or 3Ø, 100–600 A interiors (main lug interiors only).
- Sub-feed lugs are available on 1Ø or 3Ø, 100–400 A main lug interiors only.
- Sub-feed circuit breakers

  — Available on 1Ø or 3Ø, main lugs 225–600 A interiors (main lug or main breaker)

  — One sub-feed circuit breaker for each 225 A panelboard

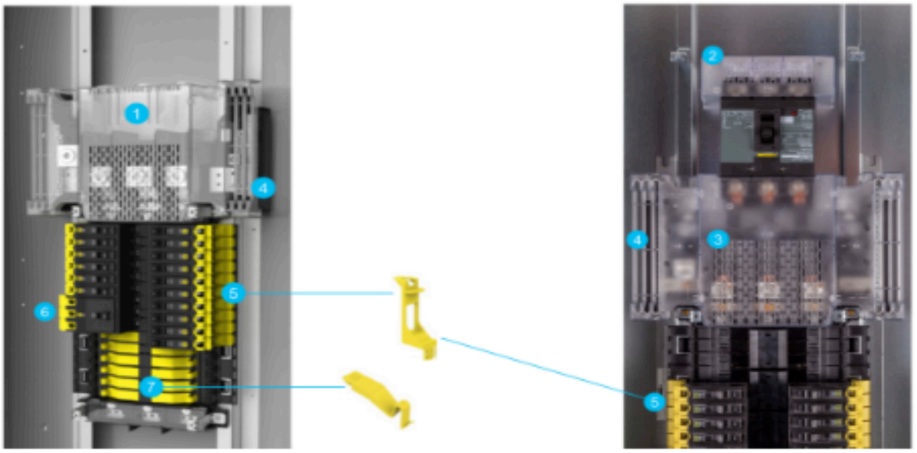
  — One or two sub-feed circuit breakers for each 400–600 A panelboard

  — Sub-feed circuit breakers may be PowerPact™ H, J, or Q frame.

Fingersafe IP2X per IEC 60529 Barriers for NQ Panelboards

- Factory-installed IP2X barriers for NQ Panelboards reduce the risk of accidental contact with energized components if a cover is removed.
- Plastic barriers cover Mains (lugs or circuit breaker), copper bus, and branch circuit breakers, providing IP2X per IEC 60529 protection for undergrounded parts.
- Available in 3 phase interiors with main lugs up to 400 A. Main circuit breaker choices include PowerPact™ Q, H, J or LA/LH frame.
- Series rated up to 200 kAIC—fully rated up to 65 kA.
- Selectively coordinated up to 30 kAIC.
- All standard NEMA 1, 2, 3R, 4/4X, 5, or 12 enclosures available up to 225 A. Higher ampacity panels are supplied with NEMA 1 enclosures.
- Branch breakers available to 100 A in 1P, 2P, and 3P.
- Two factory assembled constructions:
  - Standard design that offers maximum flexibility, including interiors with 18–84 circuits, and sub-feed lugs up to 225 A.
  - Enhanced design that retains IP2X per IEC 60529 protection whether or not a branch breaker is installed.

Standard IP2X per IEC 60529 **Enhanced IP2X per IEC 6052**



(Bus Finger Covers Empty Spaces) **(Bus Covered Without Branch Circuit Breaker)**

1	Main Lug Cover
2	Main Breaker Line Side Cover
3	Main Breaker Load Side Cover
4	Neutral Cover
5	Low Amp QO(B) Cover
6	High Amp QO(B) Cover
7	Bus Finger Cover

For more information please reference *Document Number 1640BR1701*.

Separated Distribution and Split Bus Panelboards

Square D™ NQ Separated Distribution and Split Bus Panelboards come Factory Assembled with copper bus, with or without an integral Main Circuit Breaker. For more detailed information about Square D NQ Separated Distribution and Split Bus Panelboards please review document *1600HO1701*.

Branch Circuit Breakers (Bolt-on)

Please reference QO QOB Circuit Breaker *Catalog 0730CT9801*.

QOB Branch Circuit Breakers

QO Branch Circuit Breakers

Table 11 - Branch Circuit Breakers (Bolt-on or Plug-on)

Circuit Breaker Catalog Prefix	Max. Vac Rating	Number of Poles	Ampere Rating	Interrupting Rating—RMS Symmetrical Amperes[8]		
				Vac		
				120	120/240	240
QO, QOB	120/240	1	10–70	—	10k	—
	120/240	2	10–125	—	10k	—
	240	3	10–100	—	—	10k
QO-H, QOB-H	240	2	15–125	—	—	10k
QO-VH	120/240	1	15–70	—	22k	—
	120/240	2	15–125	—	22k	—
	240	3	15–100	—	—	22k
QOB-VH	120/240	1	15–70	—	22k	—
	120/240	2	15–150	—	22k	—
	240	3	15–150	—	—	22k
QOH-QOHB	120/240	2	35–125	—	42k	—
QH, QHB	120/240	1	15–30	—	65k	—
	120/240	2	15–30	—	65k	—
	240	3	15–30	—	—	65k

8. Series ratings are also available. Canada: See the Series Rating Guide (data bulletin #S1600PD0302EP) USA: See Switchboard/ Panelboard Short-Circuit Current Ratings (data bulletin #2700DB9901).

QO™ Arc-Fault Circuit Breakers

QO arc-fault circuit breakers provide combination arc fault protection with or without ground fault circuit protection as required by the NEC and local code adoption, and comply with UL 1699.

Table 12 - QO Arc-Fault Circuit Breaker Catalog Numbers

Circuit Breaker Type[9]	Ampere Rating	1P 120 Vac 10 kAIR 1 Space Required	1P 120 Vac 22 kAIR 1 Space Required
		Catalog Number	Catalog Number
Combination Arc-Fault Interrupter	15	*QO(B)115CAFI*	*QO(B)115VCAFI*
	20	*QO(B)120CAFI*	*QO(B)120VHCAFI*
Combination Arc-Fault and Ground Fault Circuit Interrupter (Pigtail Neutral)	15	*QO(B)115DF*	*QO(B)115VHDF*
	20	*QO(B)120DF*	*QO(B)120VHDF*

Table 13 - Branch Circuit Breaker Lug Data

Ampere Rating	Circuit Breaker Type	Wire Size	
		Aluminum	Copper
10–30	QO, QOB	(2) #12–#8	(2) #14–#8
35–50	QO, QOB	(1) #8–#4	(1) #8–#4
60–70	QO, QOB	(1) #6–#2	(2) #6–#2
80–125	QO, QOB	(1) #4–2/0	(1) #4–2/0
150	QOB-VH	(1) #4–300 kcmil	(1) #4–300 kcmil

NOTE:

- Lugs suitable for 75°C wire
- Torque QOB connector mounting screws to 18–21 lb-in
- Torque labels are included on the circuit breakers with load side lug torque requirements

Table 14 - QO Breaker Binding Screw Torque Summary

Type	Description and AIC Rating	Torque lb.-in (N-m)
QO/QOB	10 A–30 A, 1, 2 and 3–pole, all interruption ratings	36 (4)
QO/QOB	35 A–70 A, 1 and 2–pole and 40 A–60 A 3–pole, 10kA	45 (5)
QO/QOB-VH, QOH	40 A–125 A, 2–pole, 22kA and 42kA	50 (5.6)
QO/QOB-VH	40 A–100 A, 3–pole, 22kA	50 (5.6)
QO/QOB	70 A–100 A, 3–pole, 10kA	50 (5.6)
QO/QOB-H	40 A–100 A, 2–pole, 240 Vac	50 (5.6)
QO/QOB	80 A–125 A, 2–pole, 10kA	50 (5.6)

Recommended torque values may be found on the label of the Panelboards.

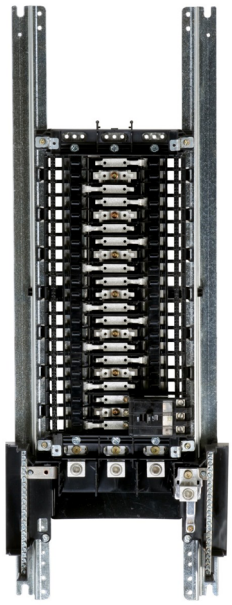
9. HACR type for use with air conditioning, heating and refrigeration equipment having motor group combinations and marked for use with HACR type circuit breakers.

Lighting Contactors

Lighting Contactors are available as an option in factory-assembled panelboards. 2-pole and 3-pole contactors are available for 30, 60, 75, 100, 150, 200, or 225 A applications. Fore more information please review *Lighting Contactors Catalog 8903CT9701*.

Neutrals

100–225 A Neutral Assembly



- All lugs suitable for copper or aluminum wire.100–600 A interiors have split neutral located on same end as mains.
- Bondable for use as service entrance (in Canada, available as factory-assembled only).
- Branch terminals suitable for #12–#4 aluminum and #14–#4 copper.
- Provisions for larger branch terminal lugs with use of auxiliary neutral lugs.
- All unused neutral terminals may be used to terminate equipment grounding conductors when panelboard is used as service entrance.
- 100% rated neutrals. One neutral termination provided per circuit in panelboard.
- 200% rated neutrals are available as factory-assembled options or as kits.

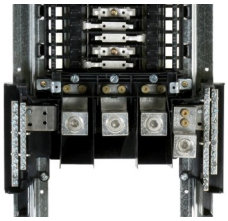
Table 15 - Field Installable Copper 100% Neutral Kits

Amperes	Catalog Number
100	*NQN1CU*
225	*NQN2CU*
400/600[10]	*NQN6CU*

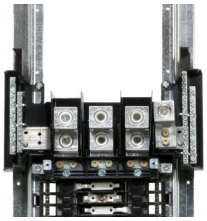
Table 16 - Field Installable 200% Neutral Kits

Amperes	Catalog Number
100	*NQNL1*
225	*NQNL2* [11]
400	*NQNL4* [12]

Typical Neutral Assemblies

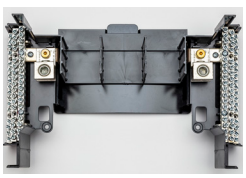


400 A



600 A

NQNL2: 225 A Copper 200% Neutral Assembly



200% Neutral Restrictions

- Compression lugs on 200% neutrals not available with accessories (feed through lugs, sub feed lugs).

225 A, 200% Neutral

- Integral lighting contactors are not available.
- Not available on column width or 14" wide interiors.
- If sub-feed lugs, feed-through lugs, or sub-feed circuit breakers are required, order the following 200% neutral kit: *NQNL2ACCY*.

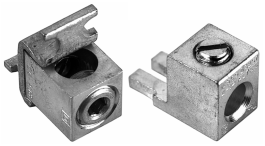
400 A, 200% Neutral

- NEMA Type 3R, 5, and 12 enclosures require copper-bussed interiors.
- Integral lighting contactors are not available.
- NQNLEP neutral plate available for 400 A panelboards equipped with 200% neutrals and sub-feed lugs, feedthrough lugs, or sub-feed circuit breakers.

10. Not for use with 600 sub-feed lugs, feed-through lugs, or sub-feed circuit breaker.
11. Use NQNL2ACCY when installing on a 225A panel with SFL, SFB, or TFL.
12. Not to be used with SFL, FTL, or SFB. These combinations are factory-assembled only.

Auxiliary Neutral Lugs

Auxiliary Neutral Lugs



Catalog No. *QO70AN*

Catalog No. *Q1150AN*

Lugs are suitable for copper or aluminum wire and are field-installable on neutral assembly.

Table 17 - Optional Ground Bar / Neutral Bar Lugs

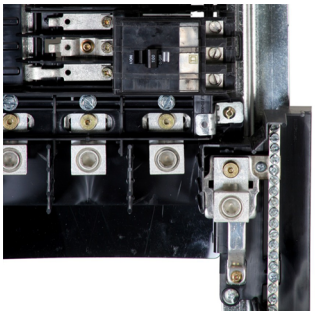
QO70AN	#10–#2 Al or #14–#4 Cu lug
Q1100AN	#4–#1/0 Al/Cu lug
Q1150AN	#1–#4/0 Al/Cu lug

NOTE: Up to 5 lugs may be added to NQ neutrals or ground bars.

Neutral Bonding Provisions

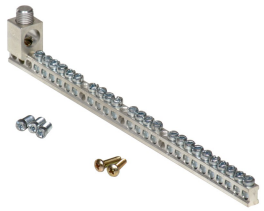
Bonding strap may be field-installed for UL service equipment requirements on 100–600 A interiors (in Canada, available as factory-assembled only).

100–225 A Provision



Ground Bar Kits

Equipment Ground Bar



- Field-installable in all panelboards.
- Suitable for copper or aluminum wire.
- Provisions for mounting up to four ground bar kits per panel.

Table 18 - Available Ground Bar Kits

Catalog Number	Terminals			Approximate Overall Length Inches (mm)	Distance Between Mounting Holes Inches (mm)
	Number of Terminals	Quantity Available for Each Size			
		Material	I/II		
PK12GTA	12	Al	12/0	4.700 (119)	3.125 (79)
PK12GTACU	12	Cu	12/0	4.700 (119)	3.125 (79)
PK18GTA	18	Al	18/0	6.560 (167)	3.125 (79)
PK18GTACU	18	Cu	18/0	6.560 (167)	3.125 (79)
PK23GTA	24	Al	23/1	9.125 (232)	3.125 (79)
PK23GTACU	24	Cu	23/1	9.125 (232)	3.125 (79)
PK27GTA	27	Al	24/1	9.125 (232)	3.125 (79)
PK27GTACU	27	Cu	27/0	9.125 (232)	3.125 (79)

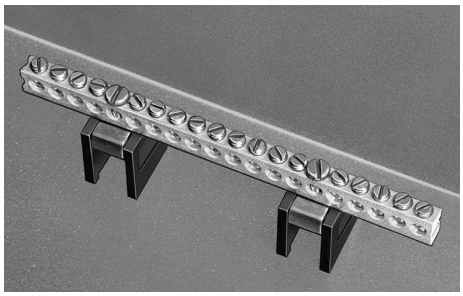
Table 19 - Ground Bar Kit Wire Ranges

Size	Cu	Al
I	(1) #14 to #4 or (2) #14 or #12	(1) #12 to #4 or (2) #12 or #10
II	(1) #1 to 4/0	(1) #1 to 4/0

Ground Bar Insulator Kit (Catalog No. PKGTAB)

The insulator kit is field installable and may be used with equipment ground bar kits. NQ panelboard enclosures have equipment ground bar mounting provisions in all four corners.

Ground Bar with Insulator Kit

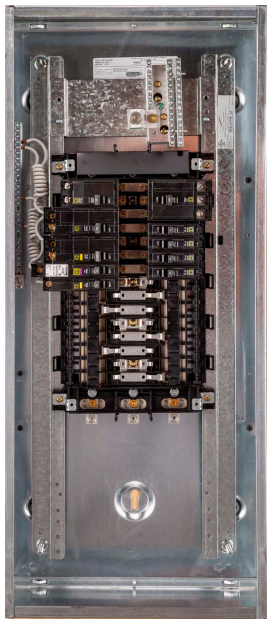


Technical Information

All PK equipment grounding kits are supplied with mounting screws, necessary installation instructions, and an “Equipment Grounding Terminal” self-adhesive label.

NQ 14-inch wide—up to 240 Vac or 48 Vdc

NQ 14 in. interior (without deadfront) with QOB branch circuit breakers (in NQB532 enclosure)



Features

- 240 Vac, 48 Vdc maximum.
- 100 or 225 A rated interior with main circuit breaker or main lugs only.
- Accepts same QO(B) branch circuit breakers as standard NQ interiors, up to 100 A maximum.
- Interiors supplied with tin plated copper bus as standard.
- Three-phase, four-wire, and single-phase, three-wire interiors available.
- Panelboards available with Mono-Flat™ trim front.
- Suitable for use as service entrance equipment.
- Branch circuit filler plates provide fast and easy installation.

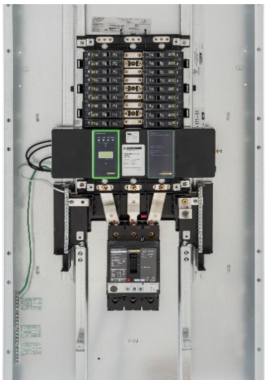
Table 20 - 14–inch wide Main Circuit Breakers

Main Circuit Breaker Catalog Number	Mains Rating	Voltage System	Main Circuit Breaker
—	100 A	1 phase, 3 wire	2–pole QOB or QOB-VH[13]
—		3 phase, 4 wire	3–pole QOB or QOB-VH[13]
NQMB2HJ14 or *NQMB2Q14*	225 A	Any	PowerPact™ H, J, or Q

13. Select a PowerPact circuit breaker (and associated main circuit breaker kit from the list for 225 interiors), for panels to be “Suitable for use as UL service equipment.”

Surge Protection

NQ Main Circuit Breaker Interior with SurgeLoc™ SPD



Square D™ brand SurgeLoc™ Surge Protective Device (SPD) delivers specification grade performance for service entrance or critical branch panel applications. The SurgeLoc™ SPD product utilizes a high-energy suppression circuit that provides 6–10 modes of suppression from 80,000 to 240,000 peak Amps of surge current rating per phase.[14] These devices feature circuity that provides not only transient surge suppression, but also noise filtration. More detailed information can be found in SurgeLoc™ Brochure1300BR1302.

Table 21 - Surge Protection Ratings

NQ SurgeLoc™ Voltage Specifications	Voltage Protection Rating (VPR)				
Service Voltage	**L–N**	**L–G**	**N–G**	**L–L**	**MCOV[15]**
120/240 Vac, 1-phase	700	700	600	1000	150
208Y/120 Vac, 3-phase, 4-wire	700	700	600	1000	150
240/120 Vac, 3-phase, high-leg delta	800	800	700	1200	150

Select a 30 A circuit breaker if a SPD Disconnect is desired (2–pole) breaker for single phase interiors, or 3–pole breaker for three phase interiors.

Design Features

- Individually fused suppression modules.
- Thermal cutout.
- Inline, copper bus bar connection.
- Solid state bi-directional.
- Push-to-Test on-line diagnostic display.
- Audible alarm with enable/disable switch.
- LED indicators indicate loss of protection, or fully-operational circuit.
- High-energy parallel design for IEEE C62.41 category A, B, and C3 applications.
- Available in main circuit breaker and main lug only panelboards with sub-feed circuit breakers, feed-through lugs, or sub-feed lugs.
- AC tracking filter with EMI/RFI filtering up to -30 dB from 100 kHz to 100 MHz.
- Dry Contacts provide remote indication of the SPD device's operating status to a computer interface board or emergency management system.

Table 22 - Surge Protection Options

Option	Description
Surge Counter	Displays the combined total number of transient voltage surges detected from L–G, L–L, L–N, and N–G since the counter was last reset.
Remote Monitor	Displays the alarm status of the surge protective device up to 1,000 ft (305 m) away from the unit. This option uses the dry contacts.

14. Available surge current rating: 80, 100, 120, 160, 200, and 240kA.
15. MCOV: maximum continuous operating voltage.

Enclosures

Indoor Enclosures

Interior Mounts to Box Studs

MH Box

Front (Type 1) Enclosure for 400–600 A Interiors

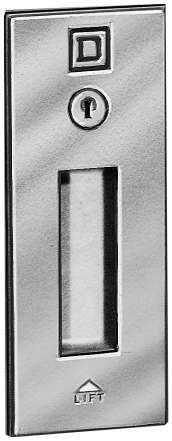
Mono-Flat Front (Type 1 Enclosure) for 100–250 A Interiors

Concealed Hinge Used on 100–600 A Trim Fronts

Indoor Enclosure Accessories

Flush Lock (standard) Catalog No.
PK4FL

Sliding Vault Lock (optional) Catalog No.
PK5FL



Key NSR-251 Catalog No.
LP9618

Table 23 - Enclosure Types

Type	Environment	Protects Against
Type 1	Indoor	Contact with the enclosed equipment, falling dirt
Type 2	Indoor	Type 1, plus • Dripping and light splashing of non-corrosive liquids
Type 3R	Outdoor	Type 2, plus • Rain, snow, and sleet
Type 4	Indoor/outdoor	Type 3R, plus • Circulating dust, lint, fiber • Settling airborne dust, lint, fibers • Windblown dust • Hosedown and splashing water
Type 4X	Indoor/outdoor	Type 4, plus • Corrosive agents
Type 5	Indoor	Type 2, plus • Settling airborne dust, lint, fibers, and flyings
Type 12	Indoor	Type 2, plus • Circulating dust, lint, fibers, and flyings • Settling airborne dust, lint, fibers, and flyings • Oil and coolant seepage

Indoor Enclosures (NEMA Types 1 and 2)

Boxes (MH):

- Galvanized steel with removable endwalls, one is provided with knockouts and the other is blank.
- Standard enclosure sizes:

  – 20 in. (508 mm) wide x 5.75 in. (146 mm) deep, 600 A main lug interior max. or 400 A main circuit breaker max.

  – 20 in. (508 mm) wide x 8.75 in. (223 mm) deep, for PowerPact™ L main circuit breaker interior, factory-assembled only.
- Enclosure and interior mounting instructions are found in the information manual shipped with the interior.
- Interiors mount directly to studs in the MH enclosure. Interior mounting brackets are not required.
- Type 2 enclosure includes a driphood.

  – Surface-mounted trim only.

  NOTE: Also available with knockouts / blank endwalls both ends.

NOTE: A wide variety of enclosure widths and height extensions are available for factory assembled panelboards.

Trims Fronts (NC):

- Finished with gray baked enamel over cleaned phosphatized steel (ANSI 49).
- Flush or surface mounted (Type 2 surface only).
- Door has flush lock. Uses NSR-251 key.
- Directory card located on the inside of the door.
- Trim fronts for 400–600 A interiors are vented and mount to the enclosure with trim screws. Door hinges are concealed.
- Optional hinged trim fronts are available. These meet most door-in-door specifications.

Hinged Trim on Surface Mounted Enclosure

NOTE: Special trim fronts are also available, including: welded metal directory card holders; three point latches; custom paint colors, stainless steel, custom door locks, taller and/or wider trim fronts.

Rainproof (Type 3R) and Dust Resistant (Type 5 and 12) Enclosures

Rainproof and Dusttight Enclosure

Type 3R, 5, and 12 Enclosure

Vault Handle with Lock Catalog No.
PK4NVL

- Finished with gray baked enamel over cleaned phosphatized galvanized steel (ANSI 49).
- Gasketed door has vault handle with lock (uses NSR-251 key).
- Directory card holder on inside of door.
- No knockouts.
- Removable drain screw for Type 3R enclosure rating.
- Provisions for two ground bars.

Corrosion-Resistant Fiberglass-Reinforced Polyester Enclosures (Type 4X)

Corrosion-Resistant Fiberglass-Reinforced Polyester Enclosure

- Watertight and dust resistant.
- Gasketed door with optional locking handle.
- Directory card holder on inside of door.

Stainless Steel Enclosures (Type 4 and 4X)

Stainless Steel Enclosure

- Watertight and dust resistant.
- Gasketed door with optional locking handle.
- Directory card holder on inside of door.
- Type 304 or Type 316 stainless steel available.

Single Row (Column-Width) Panelboards

NQ Column Width Panelboard with Cable Trough and Pull Box

Ratings

- Main lugs: 100–225 A
- Main circuit breaker: 100–225 A

Enclosures

- 8.625 in. (219 mm) wide by 5.00 in. (126.95) deep for 10” WF Beams
- Galvanized Steel
- Removable endwalls
- Finish: gray baked enamel over cleaned, phosphatized steel

Miscellaneous

- All lugs are suitable for 75°C copper or aluminum wire
- 60 A maximum branch circuit breaker
- Bolt-on QOB/QOB-VH/QHB circuit breakers
- Solid neutral opposite mains, second neutral in pull box

Table 24 - Branch Circuit Breakers (Bolt-on) 240 Vac

10 k AIR QOB	22 k AIR QOB-VH	65 k AIR QHB
1 pole, 10–60 A	1 pole, 10–60 A	1 pole, 10–30 A
2 pole, 10–60 A	2 pole, 10–60 A	2 pole, 10–30 A
3 pole, 10–60 A	3 pole, 10–60 A	3 pole, 10–30 A

Cable Trough

- Stackable
- 8.625 in. (219 mm) wide by 5.00 in. (127 mm) deep for 10” WF Beams
- Galvanized steel trough uses enclosure end wall
- Two-piece front trim
  – 15 in. (381mm) long top piece of front trim removable for pull box mounting
- Finish: gray baked enamel over cleaned, phosphatized steel
- Cable troughs are standard with a trough barrier

Table 25 - Cable Troughs

Length of Cable Trough	Catalog Number
36 inch (9914 mm)	*MTX836*
48 inch (1219 mm)	*MTX848*
56 inch (1422 mm)	*MTX856*
66 inch (1676 mm)	*MTX866*

Pull Box

- Mounts on cable trough
- 20 in. (508 mm) wide by 5.00 in. (127.00 mm) deep by 15 in. (381 mm) high
- Finish: gray-baked enamel electrodeposited over cleaned, phosphatized steel
- Removable end walls with knockouts
- Solid neutral included with 42 circuits
- Pull Box catalog number *MPX81542*

Power and Energy Management Options

NQ 100 A Branch Mounted Main Circuit Breaker Interior with EM3555 Circuit Monitor and SurgeLoc™ SPD Module

Several Power Meters and Circuit Monitors are available factory-assembled in NQ panelboards. Basic Energy Metering at the Mains is possible with PowerLogic EM3500 series circuit monitors. Power Quality Monitoring is available with the selection of PM5563 or PM8244 power meters. These are typically installed with an LCD display in a 7 inch (178 mm) wide side gutter. Communications from these meters is avaiable via Ethernet Modbus TCP/IP.

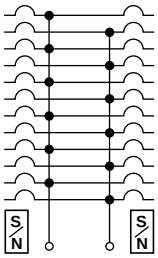
Measurement and Verification Panels may be created through the selection of PowerLogic BCPM branch circuit power metering in factory assembly NQ panelboards. CT strips work with communication modules to enable power monitoring of every branch circuit in an NQ panelboard.

Measurement and Verification Panels (MVP Panelboards) may be created through the selection of PowerLogic BCPM branch circuit power metering in factory assembled NQ panelboards. CT strips work with communication modules to enable power monitoring of every branch circuit in an NQ panelboard. More information about NQ MVP Panelboards may be found in *Document Number 1200BR1201*.

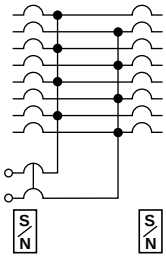
Typical Wiring Diagrams

1-Phase, 3-Wire

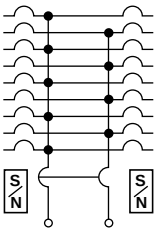
100–225 A Main Lugs



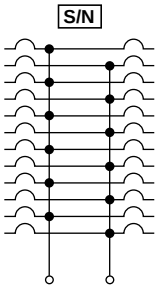
100 A QOB Main Circuit Breaker



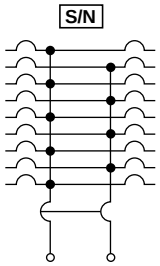
70–225 A Main Circuit Breaker Types QBL, JDL, HDL



400–600 A Main Lugs

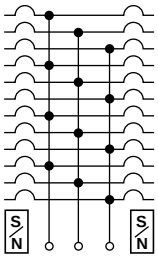


400 A Main Circuit Breaker Type LAL

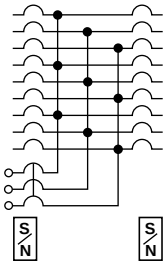


3-Phase, 4-Wire

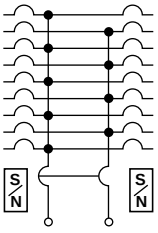
100–225 A Main Lugs



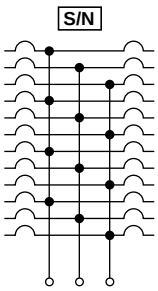
100 A QOB Main Circuit Breaker



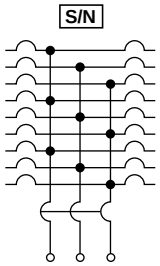
70–225 A Main Circuit Breaker Types QBL, JDL, HDL



400–600 A Main Lugs



400 A Main Circuit Breaker Type LAL



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As standards, specifications, and design change from time to time, please ask for confirmation of the information given in this publication.

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