LynTec RS-232 Controlled Panels and Load Centers

Motorized Breakers Make Control Easy!

All relay based systems **MUST** be electrically protected by a circuit breaker. Motorized breakers eliminate the need for wall or rack mounted relay based systems...

- Saves Space
- Saves redundant installation and hardware costs!
- UL listed circuit breaker with built-in internal switching capability manufactured by **SQUARE D**
- Time tested, in service over 20 years
- Available in 15A, 20A and 30A - 1, 2 or 3 poles for remote control of all electrical loads
- Robust - rated for 60k on, off, on cycles
- Energy efficient - NO holding current or heat sinks required to maintain state - Runs cool, lasts long!
- Automatic load shedding and brownout protection in every panel.
- Emergency override function standard on every panel.

**Specifying in 5 easy steps**

1. Choose the control method: **SC=RS-232**
2. Choose the cabinet style: **LC** for load center and **P** for panelboard
3. Choose three phase (3) or single phase (1)
4. Choose the number of circuits: **26** or **41** Panelboards are only available in 41 circuits.
5. Choose the maximum number of controlled circuits: **10, 20, 30, 40, or 50**.

EX: **SCLC 326-20** = a 3 phase load center with 26 circuits (24 max controlled)

**SCP 341-30** = a 3 phase panel board with 41 circuits (30 max controlled)

**All panels and load centers**
### AVAILABLE MODELS

See [www.LynTec.com](http://www.LynTec.com) for model specific design and submittal PDFs

#### LOAD CENTERS

**SCLC 326-xx-Mxxx RS-232 Controlled Load Center**

- 30, 208Y/120 Vac, 4 wire. — 100 Amp Main Breaker Standard

**LynTec**

**RS-232 Controlled Load Center**

**MODEL NUMBERS**

**SCLC 326-10-Mxxx**

(Up to 10 RS-232 controlled circuits)

**SCLC 326-20-Mxxx**

(Up to 20 RS-232 controlled circuits)

**SCLC 326-30-Mxxx**

(Up to 30 RS-232 controlled circuits)

Square D QO327M100 Load Center with LynTec low-voltage sidecar.

- Standard back-fed Main Breaker: Squared D# QO3
  - (Up to 26 RS-232 controlled circuits)
  - (Up to 20 RS-232 controlled circuits)
  - (Up to 10 RS-232 controlled circuits)

- Back-fed Main Breaker options
  - Part# suffix — **Bold face** Amps
    - M330, M3304: (10kAIR)
    - Square D# QO3xxx
    - M3350, M33060, M33070 or M33090
    - Squared D# QO3xxVH
    - (all VH = 22k AIR)
    - Wire Sizes
      - #4 - 2/0 Cu

- Outside dimensions
  - 20.9" w., 29.8" h., 3.9" d.

- **Main Breaker**: 3/0 - 350 kcmil Al/Cu
  - 200% Neutral has one feed lug that
  - feeds from a protected disconnect.
  - Provides access to branch breaker positions 1, 3, & 5.
  - Model number becomes a
  - SCLC 329-10-MLO
  - (10 RS-232 controlled circuits)
  - (Up to 10 RS-232 controlled circuits)
  - (Holds up to 29 one pole breakers)
  - 125 Amp. Panel Bus Rating
  - Wire size: #6 - 2/0 Cu

**SCP 341-xx-Mxxx RS-232 Controlled Panelboard**

- 30, 208Y/120 Vac, 4 wire. — 225 Amp Main Breaker Standard

**LynTec**

**RS-232 Controlled Panelboard**

**MODEL NUMBERS**

**SCP 341-10-Mxxx**

(Up to 10 RS-232 controlled circuits)

**SCP 341-20-Mxxx**

(Up to 20 RS-232 controlled circuits)

**SCP 341-30-Mxxx**

(Up to 30 RS-232 controlled circuits)

**SCP 341-40-Mxxx**

(Up to 40 RS-232 controlled circuits)

**SCP 341-50-Mxxx**

(Up to 41 RS-232 controlled circuits - limited by 42 circuit code rule)

- Square D NQOD-NL MB Panel
  - with LynTec low-voltage sidecar.
  - Standard SCP 225A Main Breaker:
    - 225A Copper - 65k AIR - M400
  - Main Breaker options
    - Part# suffix — **Bold face** Amps
      - MHG3125, MHG3150, MHG3175 or MHG3200
    - Wire Sizes
      - Main Breaker: 3/0 - 350 kcmil Al/Cu
      - 200% Neutral has one feed lug that accepts 2 - 250 kcmil Cu wires

- Outside dimensions
  - 28.06" w., 50" h., 6.13" d.

- Knockout panels supplied in both ends

- Optional isolated technical ground
  - sidecar not shown

**SCLC 341-xx-Mxxx RS-232 Controlled Load Center**

- 30, 208Y/120 Vac, 4 wire. — 225 Amp Main Breaker Standard

**LynTec**

**RS-232 Controlled Load Center**

**MODEL NUMBERS**

**SCLC 341-10-Mxxx**

(Up to 10 RS-232 controlled circuits)

**SCLC 341-20-Mxxx**

(Up to 20 RS-232 controlled circuits)

**SCLC 341-30-Mxxx**

(Up to 30 RS-232 controlled circuits)

**SCLC 341-40-Mxxx**

(Up to 40 RS-232 controlled circuits)

- Square D QO342M225 Load Center with LynTec low-voltage sidecar.
- Standard Main Breaker:
  - Square D# QDL32225. 225 Amp
  - Main Breaker options
    - Part# suffix — **Bold face** Amps
      - M3150 or M3200
      - Square D# QDL32xx series
      - (all 25k AIR) [Amps Interrupt Rating]

- **Wire Sizes**
  - Main Breaker:
    - 350 kcmil Al or 250 kcmil Cu
  - 100% Neutral has one feed lug
    - 1-350 kcmil Al or 1-250 kcmil Cu

- Outside dimensions
  - 20.9" w., 39.3" h., 3.9" d.

### PANELBOARDS

**SCP 341-xx-Mxxx RS-232 Controlled Panelboard**

- 30, 208Y/120 Vac, 4 wire. — 225 Amp Main Breaker Standard

**LynTec**

**RS-232 Controlled Panelboard**

**MODEL NUMBERS**

**SCP 341-10-M000**

(Up to 10 RS-232 controlled circuits)

**SCP 341-20-M000**

(Up to 20 RS-232 controlled circuits)

**SCP 341-30-M000**

(Up to 30 RS-232 controlled circuits)

**SCP 341-40-M000**

(Up to 40 RS-232 controlled circuits)

**SCP 341-50-M000**

(Up to 41 RS-232 controlled circuits - limited by 42 circuit code rule)

- Square D NQOD-MB Panel
  - with LynTec low-voltage sidecar.
  - Standard SCP 400A Main Breaker:
    - 400A Copper - 10k AIR - LA36400
    - [Amps Interrupt Rating]

- **Wire Sizes**
  - Main Breaker:
    - 1 #1-600 kcmil Cu or 2 - #1-250 kcmil Cu (per NEC)
    - 100% Neutral has one feed lug that accepts one #1-750 kcmil or two #1-300 kcmil Cu wires.

- Outside dimensions:
  - 28.06" w., 68.2" h., 6.13" d.

- Optional isolated technical ground
  - sidecar not shown

**SCP 341-xx-M400 RS-232 Controlled Panelboard**

- 30, 208Y/120 Vac, 4 wire. — 400 Amp Main Breaker Standard

**LynTec**

**RS-232 Controlled Panelboard**

**MODEL NUMBERS**

**SCP 341-10-M400**

(Up to 10 RS-232 controlled circuits)

**SCP 341-20-M400**

(Up to 20 RS-232 controlled circuits)

**SCP 341-30-M400**

(Up to 30 RS-232 controlled circuits)

**SCP 341-40-M400**

(Up to 40 RS-232 controlled circuits)

**SCP 341-50-M400**

(Up to 41 RS-232 controlled circuits - limited by 42 circuit code rule)

- Square D NQOD-MB Panel
  - with LynTec low-voltage sidecar.
  - Standard SCP 400A Main Breaker:
    - 400A Copper - 10k AIR - LA36400
    - [Amps Interrupt Rating]

- **Wire Sizes**
  - Main Breaker:
    - 1 #1-600 kcmil Cu or 2 - #1-250 kcmil Cu (per NEC)
    - 100% Neutral has one feed lug that accepts one #1-750 kcmil or two #1-300 kcmil Cu wires.

- Outside dimensions:
  - 28.06" w., 68.2" h., 6.13" d.

- Optional isolated technical ground
ARCHITECT’S and ENGINEER’S SPECIFICATIONS
SCP Series Serial Controlled Panelboard

All A.C. power for the A/V system shall be supplied from a source capable of being remote controlled via RS-232 control protocol.

Circuits shall be individually addressable providing on and off control via RS232 protocol.

A means of visual operator feedback shall provide an indication of circuit on/off status locally via LEDs.

The system shall have brownout (undervoltage) protection; monitoring the line voltage and triggering an automatic shutdown if the line voltage drops below 95 volts for more than 2 seconds. The system shall automatically return circuits to on state when power resumes and remains above 105 volts for more than 2 seconds without operator intervention.

The system shall have emergency shutdown capability triggered by external contacts or the system operator.

Un-motorized circuits, as required, shall be supplied from the same A.C. source so that a single lever main circuit breaker is dedicated to the system.

Three phase panelboards shall have 200% neutrals.

Single phase panelboards shall have a single neutral.

Panelboards shall have a separate and attached isolated technical ground section.

All branch circuit breakers shall be bolt-on.

The Serial Controlled Panelboard system shall be the LynTec model SCP xxx series Panelboard.

Manufacturer shall warrant specified equipment to be free from defects in materials and workmanship as follows: at least (15) months from date of purchase for line voltage equipment; at least (5) years from the date of purchase for control electronics.

LynTec — 800-724-4047 — www.LynTec.com

Models:

Single Phase, 65k AIR: SCP 141-12, SCP 141-24, SCP 141-36, SCP 141-48, SCP 141-60

Balanced Power, 60v-0-60v, 65k AIR: SCP 119-12, SCP 119-24

Three Phase, 65k AIR: SCP 341-12, SCP 341-24, SCP 341-36, SCP 341-48, SCP 341-60

This document available in Word format:
http://www.lyntec.com/139-0578_SCP_A&E_Spec.docx

Most recent version pdf:
http://www.lyntec.com/139-0578_SCP_A&E_Spec.pdf

139-0578-00_SCP_A&E_Spec 10/5/11
SC-10 RS232 PROTOCOL

Commands set

<table>
<thead>
<tr>
<th>Command</th>
<th>Decimal</th>
<th>Hexadecimal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Start byte</td>
<td>176</td>
<td>0xB0</td>
</tr>
<tr>
<td>Stop byte</td>
<td>240</td>
<td>0xF0</td>
</tr>
<tr>
<td>Board address</td>
<td>1 - 99</td>
<td>0x01 - 0x63</td>
</tr>
<tr>
<td>Output address</td>
<td>1 - 10</td>
<td>0x01 - 0x0A</td>
</tr>
<tr>
<td>Output ON</td>
<td>180</td>
<td>0xB4</td>
</tr>
<tr>
<td>Output OFF</td>
<td>181</td>
<td>0xB5</td>
</tr>
<tr>
<td>Output status</td>
<td>182</td>
<td>0xB6</td>
</tr>
<tr>
<td>Status of all outputs</td>
<td>189</td>
<td>0xBD</td>
</tr>
<tr>
<td>All ON</td>
<td>186</td>
<td>0xBA</td>
</tr>
<tr>
<td>All OFF</td>
<td>187</td>
<td>0xBB</td>
</tr>
<tr>
<td>Set/clear output verification status*</td>
<td>190</td>
<td>0xBE</td>
</tr>
</tbody>
</table>

*Not to be implemented - autoscan can distinguish between RR7 and RR9

2. Commands description

2.1 Outputs ON command

0xB0, board_address, 0xB4, output_address_1, ..., output_address_m, 0xF0

m<=10 (0x0A)

Example: B0 01 B4 04 0A F0, turns on outputs at 4 and 10, on 1st card

2.2 Outputs OFF command

0xB0, board_address, 0xB5, output_address_1, ..., output_address_n, 0xF0

n<=10 (0x0A)

Example: B0 02 B5 09 F0, turns off output at 9, on 2nd card

2.3 Outputs ON/OFF command

0xB0, board_address, 0xB4, output_address_1, ..., output_address_m, 0xB5, output_address_1, ..., output_address_n, 0xF0

m and n<=10 (0x0A)

Example: B0 01 B4 04 0A B5 09 F0, turns on output at 4 and 10, and turns off output at 9, on 1st card

2.4 Outputs status

0xB0, board_address, 0xB6, output_address_1, ..., output_address_m, 0xF0

m<=10 (0x0A)

Example: B0 03 B6 04 0A F0, status of outputs at 4 and 10, on 3rd card

2.5 Status of all outputs

0xB0, board_address, 0xBD, 0xF0

2.6 All ON - turn on all available outputs

0xB0, board_address, 0xBA, 0xF0
2.7 All OFF - turn off all available outputs
0xB0, board_address, 0xBB, 0xF0

2.8 Set/clear output verification status (NOT IMPLEMENTED)
0xB0, board_address, 0xBE, output_address_i, output_ver_status_i, output_address_j, output_ver_status_j, ...
output_address_n, output_ver_status_n, 0xF0
output_address_i, output_ver_status_i, output_address_j, output_ver_status_j, ...
output_address_n, output_ver_status_n - addresses and status of outputs, n<=10

Output_ver_status coding

<table>
<thead>
<tr>
<th>Status</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disable</td>
<td>0x01</td>
</tr>
<tr>
<td>Enable</td>
<td>0x02</td>
</tr>
</tbody>
</table>

When verification status of the output is disabled, the board will always respond with “no verification” status for this output. Verification status shall be disabled for all outputs driving RR7 relays.

3. Responses

3.1 Output status codes

<table>
<thead>
<tr>
<th>Status</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Off</td>
<td>0x01</td>
</tr>
<tr>
<td>On</td>
<td>0x02</td>
</tr>
<tr>
<td>Fault</td>
<td>0x03</td>
</tr>
<tr>
<td>No verification, expected off</td>
<td>0x04</td>
</tr>
<tr>
<td>No verification, expected on</td>
<td>0x05</td>
</tr>
<tr>
<td>Empty</td>
<td>0x06</td>
</tr>
</tbody>
</table>

3.2 Output status change response

This response is transmitted when output(s) change(s) status for ANY reason (RS232 command, button push, brown out, recover from brown out, emergency override, recover from emergency override).

0xB0, board_address, 0xB6, output_address_i, output_status_i, ...
output_address_n, output_status_n, 0xF0
n<=10 (0x0A)

Example: B0 01 B6 04 01 05 02 0A 06 F0, output at 4 is off, at 5 is on, and at 10 is empty, on 1st card

3.3 Status of all ten outputs (transmitted only in reply to status of all outputs command)

0xB0, board_address, 0xBD, byte_1, ..., byte_10, 0xF0

Example: B0 02 BD 01 01 01 01 01 02 02 02 02 06 F0, outputs 1 thru 5 are off, 6 thru 9 are on, and 10 is empty, on 2nd card

4. AMX Device Discovery

Beacon request: “AMX\r”
Beacon: “AMXB<SDKClass=Utility><Make=Lyntec><Model=SC10><Revision=1.0.0>\r”
SC 139-xx-M125 to -M225
(65k AIR main) - 225A bus

xx = Number of controller circuits
10, 20, 30, 40 or 50.

 SCP 139-20 model holds up to 10 pole breakers.
 SCP 139-30 model holds up to 41 poles.
 SCP 139-40 model holds up to 41 poles.
 SCP 139-50 model holds up to 41 poles.

SC-10 circuit boards in left-hand, low-voltage cabinet.

RS-232 Output
RS-232 Input

RS-232 Board address:

SCP 139-10 model holds up to 41 poles.
SCP 139-20 model holds up to 41 poles.
SCP 139-30 model holds up to 41 poles.
SCP 139-40 model holds up to 41 poles.
SCP 139-50 model holds up to 41 poles.

Main breaker connections
70A: #8 — 2 Al/Cu
80A - 100A: #4 — 300 kcmil Al/Cu
Main Breakers available
QOB2xxxx-VH series — All 22k AIR

Part# suffix — Bold face = Amps
-MQOB2070, -MQOB2080,
-MQOB2090, -MQOB2100.

RS-232 CONTROL POWER
10A un-motorized breaker supplied installed.

Eight motorized breaker is actuated by a command from a RS-232 control device.

As-built door label example:
RS-323 # ______ is the RS-232 address of this breaker.
The board jumpers set the RS-232 address of the board. Each breaker has a sub-address of 1-10

Keep this sheet for as-built documentation.

Available as PDF download
www.lyntec.com/139-0576_SCL139_Pln.pdf
High voltage interior may be field inverted for top feed.

SCP139-10-MQOB2xxx
10 Controlled circuits

SCP139-20-MQOB2xxx
20 Controlled circuits

SCP139-30-MQOB2xxx
30 Controlled circuits

SCP139-40-MQOB2xxx
40 Controlled circuits (limited to 39)

xxx = Main Breaker size

Back Fed Main Breaker
70, 80, 90 or 100A (22kAIR)

Main Breakers available
QOB2xxx-VH series
All 22kAIR
Part# suffix — Bold face = Amps
-MQOB2070, -MQOB2080,
-MQOB2090, -MQOB2100.

NQOD Panel
225A Copper Bus

Main breaker connections
70A: #8 — 2 Al/Cu
80A - 100A: #4 — 300 kcmil Al/Cu

1.5" I.D. wiring access nipples between sidecars & Panelboard

Enclosure ground bar.
23 position 14-4 ga.

Cabinet outline
NEMA-1 — Surface mount only
Outside dimensions
28" w., 50" h., 6.13" d.
Outline Drawing with Optional ITG Cabinet

LynTec
SCP139-10-MQOB2xxx
10 Controlled circuits
SCP139-20-MQOB2xxx
20 Controlled circuits
SCP139-30-MQOB2xxx
30 Controlled circuits
SCP139-40-MQOB2xxx
40 Controlled circuits (limited to 39)

xxx = Main Breaker size

Back Fed Main Breaker
70, 80, 90 or 100A (22kAIR)

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Part# suffix — Bold face = Amps
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NQOD Panel
225A Copper Bus

Main breaker connections
70A: #8 — 2 Al/Cu
80A - 100A: #4 — 300 kcmil Al/Cu

High voltage interior may be field inverted for top feed

Controller 1
Controller 2
Controller 3
Controller 4
Controller 5

Isolated Technical Ground Bar
Feed 2/0 max.

Enclosure ground bar. 23 position 14-4 ga.

225A Copper Bus
Controller POWER

NEMA-1 — Surface mount only
Outside dimensions
36" w., 50" h., 6.13" d.
Thermal-magnetic Molded Case Circuit Breakers
250 Ampere Frame
Class 734

POWERPACT Q-frame — 250 A, Thermal-magnetic (240 Vac)

<table>
<thead>
<tr>
<th>Current Rating</th>
<th>AC Magnetic Trip Settings</th>
<th>D Interrupting</th>
<th>G Interrupting</th>
</tr>
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<tbody>
<tr>
<td>70</td>
<td>1200 2400 1800</td>
<td>QDL22070</td>
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<td>100</td>
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<td>QGL22100</td>
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<tr>
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<td>QDL22110</td>
<td>QGL22110</td>
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<td>125</td>
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<td>QGL22225</td>
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<td>250</td>
<td>1200 2400 1800</td>
<td>QDL22250</td>
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</tr>
</tbody>
</table>

3-pole, 240 Vac

<table>
<thead>
<tr>
<th>Current Rating</th>
<th>AC Magnetic Trip Settings</th>
<th>D Interrupting</th>
<th>G Interrupting</th>
</tr>
</thead>
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<tr>
<td>70</td>
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<td>QDL32070</td>
<td>QGL32070</td>
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<td>1200 2400 1800</td>
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</tbody>
</table>

For Branch Breaker Series Ratings
see http://www.lyntec.com/139-0407_Series_Ratings.pdf

Interrupting Ratings (kA)

<table>
<thead>
<tr>
<th></th>
<th>QD</th>
<th>QG</th>
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</thead>
<tbody>
<tr>
<td>240 V</td>
<td>25</td>
<td>65</td>
</tr>
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</table>
This page contains UL Tested and Certified series combination ratings for panelboards. These ratings apply to either an integral main located in the same enclosure or a remote main located in a separate enclosure.

### NQOD Series Ratings

<table>
<thead>
<tr>
<th>Branch Circuit Breaker Designations and Allowable Amperes Ranges</th>
<th>Type</th>
<th>1-pole</th>
<th>2-pole</th>
<th>3-pole</th>
</tr>
</thead>
<tbody>
<tr>
<td>25k</td>
<td>QO (B)</td>
<td>15–30 A</td>
<td>15–30 A</td>
<td>15–30 A</td>
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<td>QO (B)</td>
<td>15–30 A</td>
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<td>65k</td>
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<td>15–40 A</td>
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<td>QO (B)</td>
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<td>15–60 A</td>
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<td>200k</td>
<td>QO (B)</td>
<td>15–150 A</td>
<td>15–150 A</td>
<td>15–150 A</td>
</tr>
</tbody>
</table>

#### Breaker Types

- **QO (B)**: Standard circuit breaker
- **QO (B) AFI**: Arc-fault circuit breaker
- **QO (B) AFI, GFI**: Arc-fault and ground-fault circuit breaker
- **QO (B) VH**: High-voltage circuit breaker
- **QO (B) VH, QH (B)**: High-voltage circuit breaker and main circuit breaker
- **QO (B) H**: Main circuit breaker

### NQOD Series Ratings (Continued)

<table>
<thead>
<tr>
<th>Branch Circuit Breaker Designations and Allowable Amperes Ranges</th>
<th>Type</th>
<th>1-pole</th>
<th>2-pole</th>
<th>3-pole</th>
</tr>
</thead>
<tbody>
<tr>
<td>25k</td>
<td>QO (B)</td>
<td>15–30 A</td>
<td>15–30 A</td>
<td>15–30 A</td>
</tr>
<tr>
<td>40k</td>
<td>QO (B)</td>
<td>15–30 A</td>
<td>15–30 A</td>
<td>15–30 A</td>
</tr>
<tr>
<td>65k</td>
<td>QO (B)</td>
<td>15–40 A</td>
<td>15–40 A</td>
<td>15–40 A</td>
</tr>
<tr>
<td>100k</td>
<td>QO (B)</td>
<td>15–60 A</td>
<td>15–60 A</td>
<td>15–60 A</td>
</tr>
<tr>
<td>150k</td>
<td>QO (B)</td>
<td>15–100 A</td>
<td>15–100 A</td>
<td>15–100 A</td>
</tr>
<tr>
<td>200k</td>
<td>QO (B)</td>
<td>15–150 A</td>
<td>15–150 A</td>
<td>15–150 A</td>
</tr>
</tbody>
</table>

#### Breaker Types

- **QO (B)**: Standard circuit breaker
- **QO (B) AFI**: Arc-fault circuit breaker
- **QO (B) AFI, GFI**: Arc-fault and ground-fault circuit breaker
- **QO (B) VH**: High-voltage circuit breaker
- **QO (B) VH, QH (B)**: High-voltage circuit breaker and main circuit breaker
- **QO (B) H**: Main circuit breaker

### NF Series Ratings

<table>
<thead>
<tr>
<th>Main Type</th>
<th>Branch Type</th>
<th>Poles</th>
</tr>
</thead>
<tbody>
<tr>
<td>65k</td>
<td>GSF, FG, GFB, HLF, HLF, HK, HL, HQ, HL, HU, JJ</td>
<td>2 / 3</td>
</tr>
</tbody>
</table>

### OQBPLxxx-5393 = BMW series Bolt-on, Motorized (REMOTE OPERATED)

| xxx = poles, xxx = trip current, -539 suffix denotes special 60" control wires. |

#### [1 pole]
- **BMW-15**, **BMW-20**, **BMW-30**

#### [2 poles]
- **BMW-15**, **BMW-20**, **BMW-220**, **BMW-230**
- **BMW-315**, **BMW-320**, **BMW-330**

#### [3 poles]
- **BMW-15**, **BMW-20**, **BMW-30**

#### QOPxx = MB series clip-on, UnMotorized Breaker

| xxx = poles, xxx = trip current. |

#### [1 pole]
- **UMB-15**, **UMB-20**, **UMB-30**

#### [2 poles]
- **UMB-15**, **UMB-20**, **UMB-220**, **UMB-230**
- **UMB-315**, **UMB-320**, **UMB-330**

All 15 & 20 A breakers are HM (High Magnetic).
Instruction Bulletin

QO-PL (Plug-on), QOB-PL (Bolt-on) Powerlink® Remotely Operated Circuit Breakers
(Use in Type QO Load Centers and Type NQO, NQOB, and NQOD Panelboards)

Retain for future use.

REQUIREMENTS

Remotely Operated Circuit Requirements

POWERLINK® QO(B)-PL Remotely Operated Circuit Breakers require a power supply capable of delivering at least two amperes at 24 Vdc for a minimum of 50 milliseconds. One-, two-, and three-pole circuit breakers all have one internal motor, and power requirements are the same regardless of the number of poles and ampere ratings.

The required power supply ampacity and control device contact rating are determined by the number of circuit breakers to be switched simultaneously (i.e., four circuit breakers switched simultaneously require a power supply and a control device contact rated 8 amperes minimum). The control device may be either a normally-open (NO)/normally-closed (NC) contact; a single-pole, double-throw switch (SPDT); or other three-wire control device.

1. Turn off all power supplying this equipment before working on or inside equipment.
2. Before installing circuit breaker turn circuit breaker handle to OFF position.
3. Remove panelboard cover and deadfront. Verify power is off with voltage meter before proceeding.

Installation of circuit breaker into panelboard/load center (refer to figure below)

4. Except for remotely operated connections, QO(B)-PL remotely operated circuit breakers are installed in a panelboard/load center the same as conventional QO(B) circuit breakers.

Connection of remotely operated circuit (refer to the figure on next page)

5. Assure that power supply and control device meet requirements listed under “Remotely Operated Circuit Requirements.”

See page 2 for LynTec part number explanation

All LynTec supplied breakers have special 60” control wires. (Square D standards are 18”).

HAZARD OF ELECTRIC SHOCK, BURN, OR EXPLOSION.

When servicing a branch circuit fed by a remotely operated circuit breaker, move handle of remotely operated circuit breaker to OFF position. Do not rely on remote operation to open circuit breaker.

Failure to follow these instructions will result in personal injury or death.

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

• Apply appropriate personal protective equipment (PPE) and follow safe electrical work practices. See NFPA 70E.
• This equipment must be installed and serviced only by qualified electrical personnel.
• Turn off all power supplying this equipment before working on or inside equipment.
• Always use a properly rated voltage sensing device to confirm power is off.
• Replace all devices, doors, and covers before turning on power to this equipment.

Failure to follow these instructions will result in death, or serious injury.
CIRCUIT BREAKER INSTALLATION

HAZARD OF CIRCUIT BREAKER DAMAGE.
Connect the 24 Vdc remote control wiring as shown on this page.
Failure to follow these instructions can permanently damage the remotely operated circuit breaker.

** LynTec part numbers **

** MB series motorized circuit breakers (Snap-On) **
May be used in LCLS, LCP, MSCL, MSP, SLC or SP series panels.
** BMB series motorized circuit breakers (Bolt-On) **
Use only in LCP, MSP or SP Panelboards.

All BMB & MB series breakers have Square D part number suffix of -5393 indicating a special 60 inch lead length for remote control wires required to connect to LynTec control boards in low voltage cabinet.

** = Stocked items

**MB-15 = 15 Amp. Square D QO-115PL-5393**
**MBM-15 = 15 Amp. Square D QOB-115PL-5393**
**MB-20 = 20 Amp. Square D QO-120PL-5393**
**MBM-20 = 20 Amp. Square D QOB-120PL-5393**
**MB-30 = 30 Amp. Square D QO-130PL-5393**
**MBM-30 = 30 Amp. Square D QOB-130PL-5393**
Two pole motorized - call for pricing & delivery

**MB-215 = 15 Amp. Square D QO-215PL-5393**
**BMB-215 = 15 Amp. Square D QOB-215PL-5393**
**MB-220 = 20 Amp. Square D QO-220PL-5393**
**BMB-220 = 20 Amp. Square D QOB-220PL-5393**
**MB-230 = 30 Amp. Square D QO-230PL-5393**
**BMB-230 = 30 Amp. Square D QOB-230PL-5393**
40A, 50A or 60A, Two pole also available on Special Order

Three pole motorized - call for pricing & delivery

**MB-315 = 15 Amp. Square D QO-315PL-5393**
**BMB-315 = 15 Amp. Square D QOB-315PL-5393**
**MB-320 = 20 Amp. Square D QO-320PL-5393**
**BMB-320 = 20 Amp. Square D QOB-320PL-5393**
**MB-330 = 30 Amp. Square D QO-330PL-5393**
**BMB-330 = 30 Amp. Square D QOB-330PL-5393**

LynTec also stocks UMB & BUMB (un-motorized) QO series circuit breakers including HM (High Magnetic). Recommended for eliminating nuisance trips in high inrush applications. [All BMB & MB x15’s and BMB & MB x20’s are HM breakers.]

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Voice 913-529-2234 • Fax 888-722-4157 or 913-529-4157
LynTec overprint 139-0216-08.2 9/23/06

6. All wiring and splicing must comply with applicable code requirements for Class 1 circuits. Refer to paragraph 373-8 and article 725 of the National Electrical Code.

7. Three #18 AWG control wires are attached to the remotely operated circuit breaker for connection to the power supply and remote control device and should be cut to the required length to reach the splice connections. Use #18 AWG or larger conductors with 600 V insulation and approved wire connectors for splices.

8. Connect the black lead of the remotely operated circuit breaker to the negative (-) terminal of the 24 Vdc power supply. Connect the red lead of the remotely operated circuit breaker to the positive (+) terminal of the 24 Vdc power supply. Connect the white lead of the remote control device. The remote control device provides connections between either positive or negative potential of the power supply and the white wire of the remotely operated circuit breaker, as appropriate.

9. Applying the positive potential of the power supply to the white wire (contact closure between the red wire and white wire) will operate the remote mechanism of the circuit breaker to the OFF position. Applying the negative potential of the power supply to the white wire (contact closure between the black wire and the white wire) will operate the remote mechanism of the circuit breaker to the ON position. A control circuit utilizing a normally open (NO)/normally closed (NC) contact is illustrated below.

NOTE: The remote mechanism will not move the circuit breaker handle. Also, the remote mechanism cannot turn power ON when the circuit breaker is tripped (VISI-TRIP® flag indicator showing) or when the circuit breaker handle is in the OFF position.

Installation of the trim and operational checks

10. Remove corresponding twist-out from panelboard trim and replace trim.

11. Turn power to panelboard on.

12. Turn remotely operated circuit breaker handle to the ON position.

13. Turn power to the remotely operated circuit on and test this circuit, turning remotely operated circuit breaker off remotely, then on remotely. If power to remote controlled circuit breaker load does not switch off and on, turn off power to remotely operated circuit and panelboard and check wiring.

NOTE: A power supply is available from Square D Company, Cat. No. QOPLPS (plug-on) or QOBPLPS (bolt-on).

Splice not normally required with LynTec supplied breakers with 60” leads.

Electrical equipment should be installed, operated, serviced and maintained only by qualified personnel. No responsibility is assumed by Schneider Electric for any consequences arising out of the use of this material.

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