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 funtion standard on every panel.

Specifiying 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

SC-10 RS232 PROTOCOL

Commands set

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

*Not 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

Status	Code
Disable	0x01
Enable	0x02

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

Status	Code
Off	0x01
On	0x02
Fault	0x03
No verification, expected off	0x04
No verification, expected on	0x05
Empty	0x06

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"

Planning and Layout Worksheet — As-built door label

SCP 139-xx RS-232 Controlled Panelboard

Breaker types, sizes, positions and connections

Job_____

Panel _____

Comments_____

_____

by_____ Date_____

Transfer as-built information to the door label upon completion.

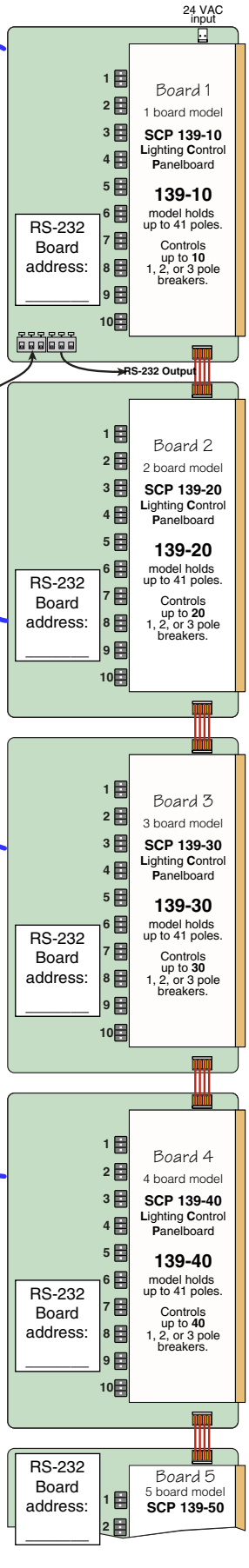
Keep this sheet for as-built documentation

Available as PDF download
www.lyntec.com/139-0576_SCP139_Plnr.pdf

Each motorized breaker is actuated by a command from a RS-232 control device.
As-built door label example:
The RS-232 # _____ 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
Bold line around box ☐= ***suggested*** control board: #1 (Top), #2, #3 or #4.
Fill in ■ box to indicate which control board this breaker is connected to.

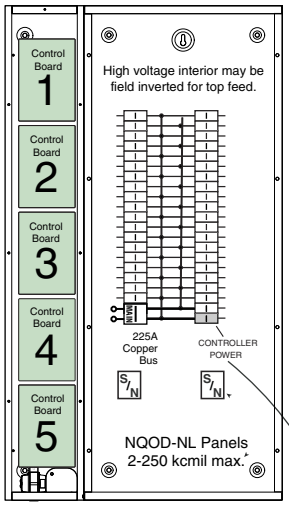
1 _____Amp. ☐ Un-motorized. ☐ Motorized-RS-232 # _____	2 _____Amp. ☐ Un-motorized. ☐ Motorized-RS-232 # _____
3 _____Amp. ☐ Un-motorized. ☐ Motorized-RS-232 # _____	4 _____Amp. ☐ Un-motorized. ☐ Motorized-RS-232 # _____
5 _____Amp. ☐ Un-motorized. ☐ Motorized-RS-232 # _____	6 _____Amp. ☐ Un-motorized. ☐ Motorized-RS-232 # _____
7 _____Amp. ☐ Un-motorized. ☐ Motorized-RS-232 # _____	8 _____Amp. ☐ Un-motorized. ☐ Motorized-RS-232 # _____
9 _____Amp. ☐ Un-motorized. ☐ Motorized-RS-232 # _____	10 _____Amp. ☐ Un-motorized. ☐ Motorized-RS-232 # _____
11 _____Amp. ☐ Un-motorized. ☐ Motorized-RS-232 # _____	12 _____Amp. ☐ Un-motorized. ☐ Motorized-RS-232 # _____
13 _____Amp. ☐ Un-motorized. ☐ Motorized-RS-232 # _____	14 _____Amp. ☐ Un-motorized. ☐ Motorized-RS-232 # _____
15 _____Amp. ☐ Un-motorized. ☐ Motorized-RS-232 # _____	16 _____Amp. ☐ Un-motorized. ☐ Motorized-RS-232 # _____
17 _____Amp. ☐ Un-motorized. ☐ Motorized-RS-232 # _____	18 _____Amp. ☐ Un-motorized. ☐ Motorized-RS-232 # _____
19 _____Amp. ☐ Un-motorized. ☐ Motorized-RS-232 # _____	20 _____Amp. ☐ Un-motorized. ☐ Motorized-RS-232 # _____
21 _____Amp. ☐ Un-motorized. ☐ Motorized-RS-232 # _____	22 _____Amp. ☐ Un-motorized. ☐ Motorized-RS-232 # _____
23 _____Amp. ☐ Un-motorized. ☐ Motorized-RS-232 # _____	24 _____Amp. ☐ Un-motorized. ☐ Motorized-RS-232 # _____
25 _____Amp. ☐ Un-motorized. ☐ Motorized-RS-232 # _____	26 _____Amp. ☐ Un-motorized. ☐ Motorized-RS-232 # _____
27 _____Amp. ☐ Un-motorized. ☐ Motorized-RS-232 # _____	28 _____Amp. ☐ Un-motorized. ☐ Motorized-RS-232 # _____
29 _____Amp. ☐ Un-motorized. ☐ Motorized-RS-232 # _____	30 _____Amp. ☐ Un-motorized. ☐ Motorized-RS-232 # _____
31 _____Amp. ☐ Un-motorized. ☐ Motorized-RS-232 # _____	32 _____Amp. ☐ Un-motorized. ☐ Motorized-RS-232 # _____
33 _____Amp. ☐ Un-motorized. ☐ Motorized-RS-232 # _____	34 _____Amp. ☐ Un-motorized. ☐ Motorized-RS-232 # _____
35 _____Amp. ☐ Un-motorized. ☐ Motorized-RS-232 # _____	36 _____Amp. ☐ Un-motorized. ☐ Motorized-RS-232 # _____
37 _____Amp. ☐ Un-motorized. ☐ Motorized-RS-232 # _____	38 _____Amp. ☐ Un-motorized. ☐ Motorized-RS-232 # _____
MAIN	39 _____Amp. ☐ Un-motorized. ☐ Motorized-RS-232 # _____
	RS-232 CONTROL POWER 10A un-motorized breaker supplied installed.

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



SCP 139-xx-M125 to **-M225**
(65k AIR main) - 225A bus
xx = Number of controller circuits
10, **20**, **30**, **40** or **50**.

Cabinet outline - Surface mount only
Outside dimensions: 28.06" w., 50" h., 6.13" d.
Knockout panels supplied in both ends.



NQOD Panel
225A Copper Bus

Main breaker connections
70A: #8 — 2 Al/Cu
80A - 100A: #4 — 300 kcmil Al/Cu
Main Breakers available
QOB2**xxx-VH** series — All 22k AIR

Part# suffix — **Bold face** = Amps
-MQOB20**70,** -MQOB20**80**,
-MQOB20**90**, -MQOB2**100**.

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)

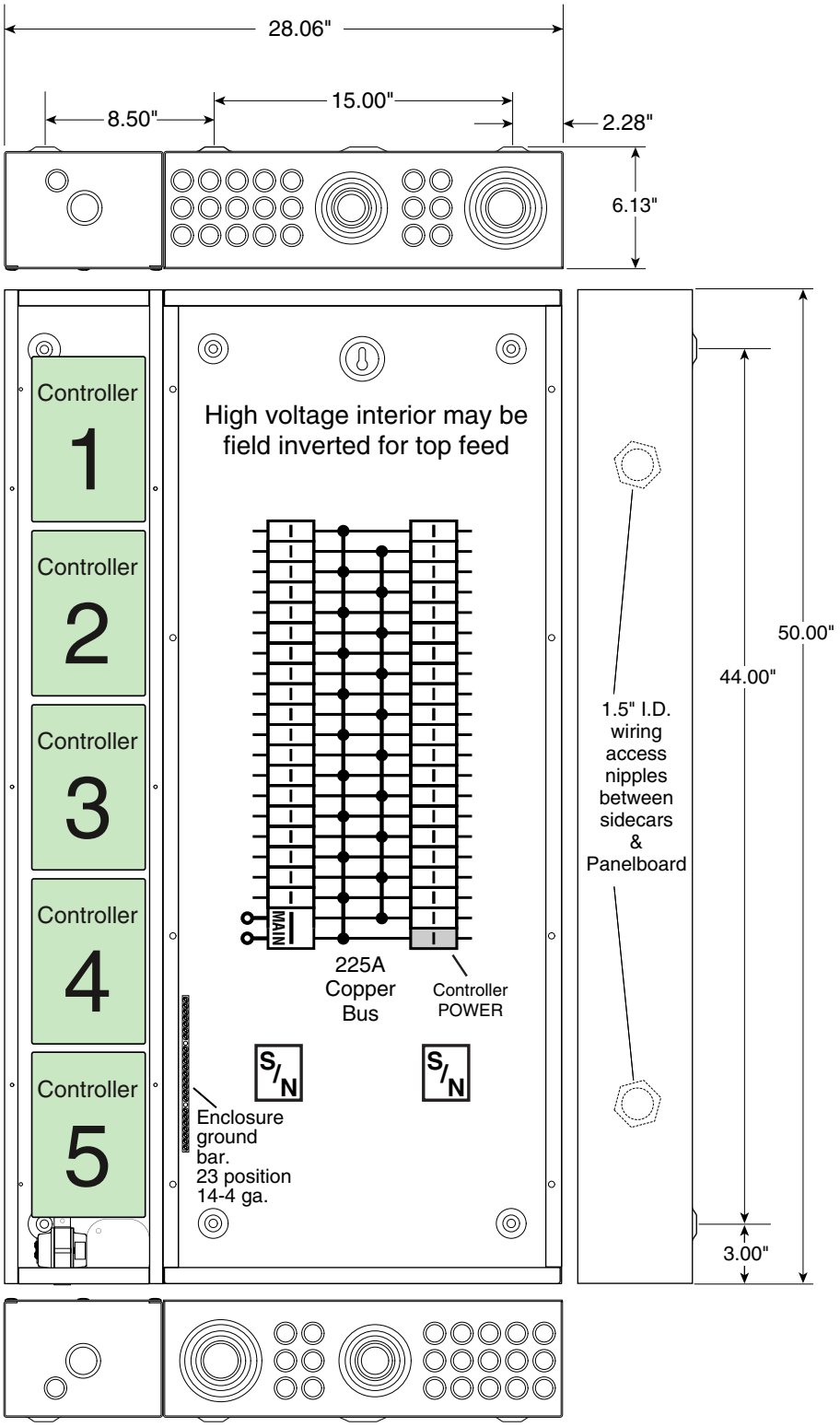
xxx = Main Breaker size

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

Main Breakers available
QOB2**xxx-VH** series
All 22kAIR
Part# suffix — **Bold face** = Amps
-MQOB20**70,** -MQOB20**80**,
-MQOB20**90**, -MQOB2**100**.

NQOD Panel
225A Copper Bus

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



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)

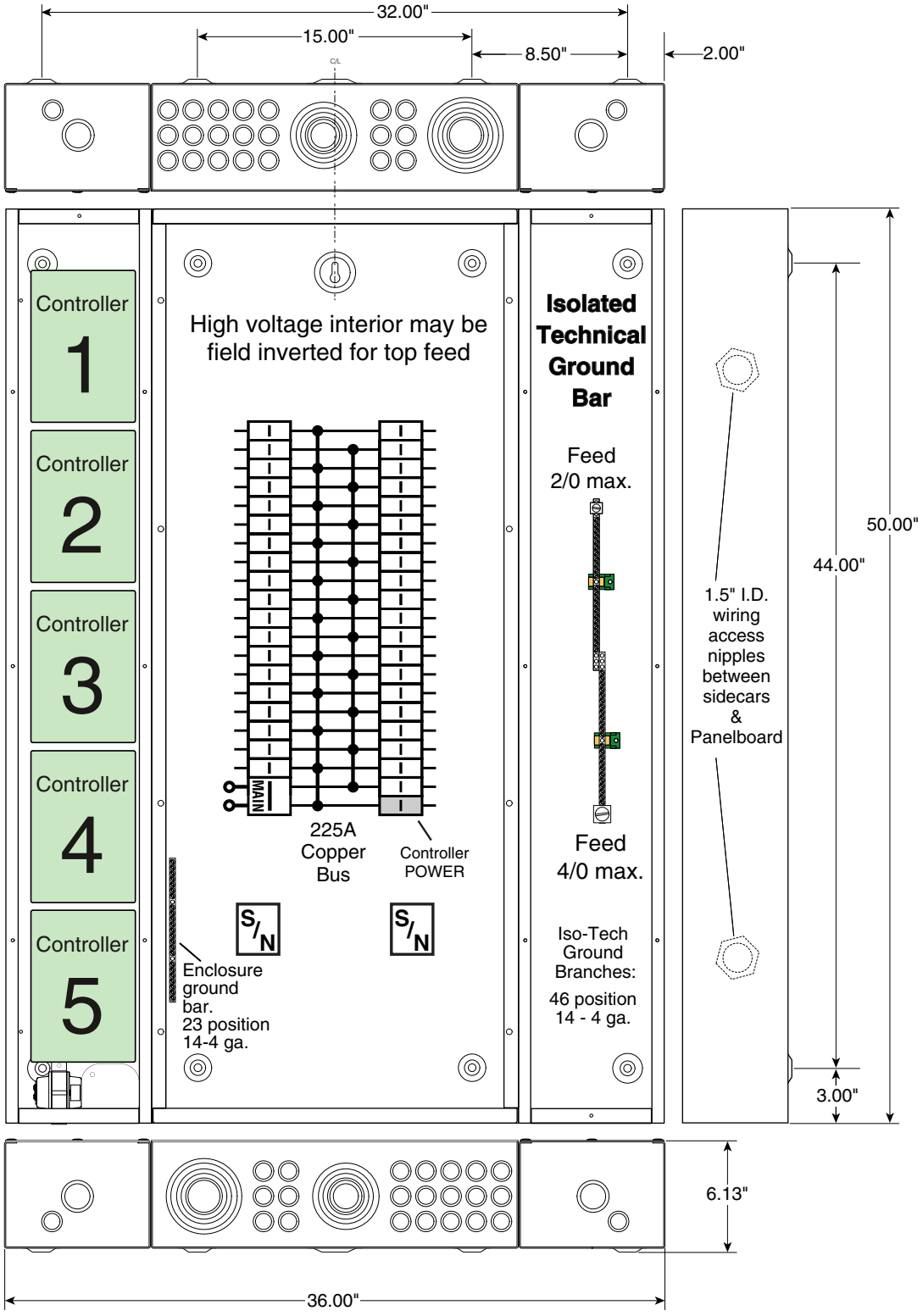
xxx = Main Breaker size

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

Main Breakers available
QOB2**xxx-VH** series
All 22kAIR
Part# suffix — **Bold face** = Amps
-MQOB20**70,** -MQOB20**80**,
-MQOB20**90**, -MQOB2**100**.

NQOD Panel
225A Copper Bus

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



Cabinet outline
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

QDL & QGL

2 and 3-pole
70–250 Amperes

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

Current Rating @ 40°C	AC Magnetic Trip Settings		D Interrupting	G Interrupting
	Hold	Trip	Catalog Number	Catalog Number
2-pole, 240 Vac				
70	1000	1800	QDL22070	QGL22070 ++
80	1000	1800	QDL22080	QGL22080 ++
90	1000	1800	QDL22090	QGL22090 ++
100	1200	2400	QDL22100	QGL22100 ++
110	1200	2400	QDL22110	QGL22110 ++
125	1200	2400	QDL22125	QGL22125 ++
150	1200	2400	QDL22150	QGL22150 ++
175	1200	2400	QDL22175	QGL22175 ++
200	1200	2400	QDL22200	QGL22200 ++
225	1200	2400	QDL22225	QGL22225 ++
250	1200	2400		

LynTec
MSP 139
SCP 139
Use a 2 pole, back-fed main breaker, rated at 100 AMPS or less.

LynTec
MSP 119, MSP 141
SCP 141
++ All models 70-225A
Special order, **NCNR**
Non **C**ancelable
Non **R**eturnable

Current Rating @ 40°C	AC Magnetic Trip Settings		D Interrupting	G Interrupting
	Hold	Trip	Catalog Number	Catalog Number
3-pole, 240 Vac				
70	1000	1800		QGL32070
80	1000	1800		QGL32080
90	1000	1800		QGL32090
100	1200	2400		QGL32100
110	1200	2400		QGL32110
125	1200	2400		QGL32125
150	1200	2400	QDL32150 +	QGL32150
175	1200	2400	QDL32175	QGL32175
200	1200	2400	QDL32200 +	QGL32200
225	1200	2400	QDL32225	QGL32225
250	1200	2400		

LynTec
LCLC 326
MSLC 326
MSLC 338
MSP 338
SCLC 326
SCLC 338
SCP338
Use a 3 pole, back-fed main breaker, rated at 100 AMPS or less.

QO3xxxVH Series

LynTec
LCLC 341
MSLC 341
SCLC 341
Standard
+ Optional from stock

▲ Replacement lugs are not available for POWERPACT Q-frame circuit breakers. Lugs for the POWERPACT Q-frame circuit breakers accept (1) #4–300 kcmil.

Interrupting Ratings (kA)

	QD	QG
240 V	25	65

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

Series Ratings
For NQOD and NF Panelboards
Class 1630, 1670

SQUARE D
www.SquareD.com
For the most up-to-date information

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

Maximum System Voltage AC c	Maximum Short Circuit Current Rating (RMS Symmetrical)	Integral or Remote Main Circuit Breakers and Remote Main Fuses	Branch Circuit Breaker Designations and Allowable Ampere Ranges ab — Type	1-pole	2-pole	3-pole
120/240 1Ø	22k	MG	QO (B)	15–30 A	...	...
	42k	HD, JD	QO (B) PL	15–30 A	15–60 A	15–30 A
	65k	HG, JG	QO (B) PL	15–30 A	15–60 A	15–30 A
	100k	HJ, JJ	QO (B) PL	15–30 A	15–60 A	15–30 A
	125k	HL, JL	QO (B) PL	15–30 A	15–60 A	15–30 A
120/240 1Ø	100k	DJ 400 A	QO (B) QO (B) GFI QO (B) VH QO (B) AFI	15–70 A 15–30 A ... 15–20 A	15–125 A 40–60 A 150 A ...	... ... 15–150 A ...
208Y/120		QJ	QO (B) QO (B) AS QO (B) GFI QO (B) PL QO (B) VH QO (B) AFI	15–70 A 15–30 A 15–30 A 15–30 A ... 15–20 A	15–125 A 15–30 A 15–60 A 15–60 A 150 A ...	15–30 A 15–30 A ... 15–30 A 35–150 A ...
208Y/120	18k	LA/LH (L) 34200MC LA/LH (L) 34225MC LA/LH (L) 34250MC LA/LH (L) 34400MC	QO (B)	15–30 A	15–30 A	15–30 A
	22k	UMB-xx QO (B) VH MB-xx	QO (B) QO (B) AS QO (B) GFI QO (B) PL QO (B) AFI	15–70 A 15–30 A 15–30 A 15–30 A 15–20 A	15–125 A 15–30 A 15–60 A 15–30 A ...	15–100 A 15–30 A ... ...
	22k	Q2-Hf	QO (B) QO (B) GFI QO (B) AFI	15–70 A 15–30 A 15–20 A	15–100 A 15–30 A ...	15–30 A ... ...
	25k	UMB-xx QD MB-xx	QO (B) QO (B) AS QO (B) GFI QO (B) PL QO (B) VH QO (B) AFI	15–70 A 15–30 A 15–30 A 15–30 A ... 15–20 A	15–125 A 15–30 A 15–60 A 15–60 A 150 A ...	15–30 A 15–30 A ... 15–30 A 35–150 A ...
	25k	ED, FDf	QO (B) QO (B) GFI QO (B) AFI	15–70 A 15–30 A 15–20 A	15–125 A 15–60 A ...	15–100 A ... ...
	25k	KDf	QO (B) QO (B) AS QO (B) GFI QO (B) AFI	15–70 A 15–30 A 15–30 A 15–20 A	15–125 A 15–30 A 15–60 A ...	15–100 A 15–30 A ... ...
	25k	HD, JD	QO (B) QO (B) VH QO (B) GFI QO (B) AFI QO (B) H QOB2150VH	15–70 A ... 15–30 A 15–20 A	15–125 A ... 15–60 A ... 15–100 A 150 A	15–100 A 35–150 A ... ...
240	42k	LA, MA	Q2L-Hf QDL	... ...	110–225 A 70–225 A	110–225 A 70–225 A
		MG	QO (B) VH	15–30 A	15–30 A	15–30 A
		HD, JD	QO (B) PL	15–30 A	15–60 A	15–30 A
	42k	LC 600 A Maximum	QO (B) QO (B) VH QO (B) GFI QO (B) AFI	15–70 Ad 15–30 A 15–30 Ae 15–20 A	... 15–125 A 15–60 A ...	... 15–100 A (3P 208 V Max.) ... ...
	65k		QO (B) VH QO (B) GFI QO (B) AFI	15–30 A 15–30 Ae 15–20 A	15–125 A	15–100 A (3P 208 V Max.) ... ...
	65k	DJ 400 A	QO (B) QO (B) VH QO (B) H	15–70 A	15–125 A 150 A 15–100 A	... 15–150 A ...
	65k	EG, FGf , KGf	QO (B) QO (B) GFI QO (B) AFI	15–70 A 15–30 A 15–20 A	15–125 A 15–60 A ...	15–100 A ... ...
	65k	QG	QO (B) QO (B) AS QO (B) VH	15–70 A 15–30 A ...	15–125 A 15–30 A ...	15–30 A 15–30 A 35–150 A
		BMB-xx QG, HG, JG	QO (B) GFI QO (B) PL QO (B) AFI	15–30 A 15–30 A 15–30 A	15–60 A 15–60 A ...	... 15–30 A ...
	65k	BUMB-xx HG, JG	QO (B) QO (B) VH QO (B) H QOB2150VH	15–70 A	15–125 A ... 15–100 A 150 A	15–100 A 35–150 A ... ...
	65k	FCL22___ KCL22___ FCL32___ KCL32___	QO (B) QO (B) AS QO (B) GFI QO (B) AFI	15–70 A 15–30 A 15–30 A 15–20 A	15–100 A 15–30 A 15–30 A ...	15–100 A 15–30 A ... ...
	65k	400 A Max. Class J or T6 Fuses	QO (B) VH QOB-VH QO (B) AFI	15–30 A ... 15–20 A	15–125 A 150 A ...	15–100 A ... ...
	100k	FCL24___ KCL24___ FCL34___ KCL34___	QO (B) QO (B) AS QO (B) GFI QO (B) AFI	15–70 A 15–30 A 15–30 A 15–20 A	15–100 A 15–30 A 15–30 A ...	15–100 A 15–30 A ... ...
	100k	200 A Max. Class T3 Fuses	QO (B) AFI	15–20 A	...	...
	100k	EJ, FJf	QO (B) QO (B) GFI QO (B) AFI	15–70 A 15–30 A 15–20 A	15–125 A 15–60 A ...	15–100 A ... ...

LynTec models: LCLC 326, MSLC 326, SCLC 326, MSLC 338, SCLC 338, MSP 338, SCP 338, MSP139

LynTec models: LCLC 341, MSLC 341, SCLC 341

LynTec models: MSLC 113, MSLC 127, MSLC 129 are series rated 22k AIR. see QO130Mxx on pg 1-3 of Digest

LynTec models: MSP 119, MSP 141, SCP 141, LCP 341, MSP 341, SCP 341

QOBxxx (B) = BUMB series **B**olt-on, **U**n**M**otorized **B**reaker
-**x**xx = poles. x**xx** = trip current.
[1 pole] **BUMB-15, BUMB-20, BUMB-30**
[2 pole] **BUMB-215, BUMB-220, BUMB-230**
[3 pole] **BUMB-315, BUMB-320, BUMB-330**

QOxxx = UMB series clip-on, **U**n**M**otorized **B**reaker
-**x**xx = poles. x**xx** = trip current.
[1 pole] **UMB-15, UMB-20, UMB-30**
[2 pole] **UMB-215, UMB-220, UMB-230**
[3 pole] **UMB-315, UMB-320, UMB-330**
All 15 & 20 A breakers are **HM** (High Magnetic)

NQOD Series Ratings (Continued)

Maximum System Voltage AC c	Maximum Short Circuit Current Rating (RMS Symmetrical)	Integral or Remote Main Circuit Breakers and Remote Main Fuses	Branch Circuit Breaker Designations and Allowable Ampere Ranges ab — Type	1-pole	2-pole	3-pole
240	100k	HJ, JJ	QO (B) QO (B) VH QO (B) GFI	15–70 A ... 15–30 A	15–125 A ... 15–60 A	15–100 A 35–150 A ...
	125k	HL. JL	QO (B) PL QO (B) AFI QO (B) H QOB2150VH	15–30 A 15–20 A	15–60 A ... 15–100 A 150 A	15–30 A ... ...
	200k	FI, KI	QO (B) QO (B) AS QO (B) GFI QO (B) AFI	15–70 A 15–30 A 15–30 A 15–20 A	15–125 A 15–30 A 15–60 A ...	15–100 A 15–30 A ... ...
	200k	Maximum Fuses 200 A Class J or T6 400 A Class T3	QO (B) QO (B) AS QO (B) GFI	15–70 A 15–30 A 15–30 A	15–125 A 15–30 A 15–60 A	15–100 A 15–30 A ...

▲ Suffixes HID, SWD and SWN may also be applied to the applicable branch circuit breakers shown above, except suffix SWN may **NOT** be applied in combination with LC main circuit breakers.
■ Where QO (B) circuit breakers are shown above, QO (B) H, QO (B) VH, and QH (B) circuit breakers may also be used.
For shown circuit breakers rated less than this maximum voltage, the indicated short circuit current rating also applies, but at the voltage rating of the circuit breaker.
★ Only 15–30 A circuit breakers may be used when the LC circuit breaker is rated 450, 500 or 600 A.
▼ Circuit breakers may not be used when the LC circuit breaker is rated 450, 500 or 600 A.
△ Obsolescent. Contact your nearest Square D/Schneider Electric sales office for replacement circuit breaker. One-pole FJ circuit breakers are still available.
Where QO(B) GFI circuit breakers are shown above, QO(B), EPD circuit breakers may also be used.

NF Series Ratings

Maximum System Voltage AC	Maximum Short Circuit Current Rating (RMS Symmetrical)	Main Type	Branch Type	Poles
240	65,000	EG, FH, FGf , KH, LH, MH, MX, HG, JG	EDB, EDB-EPD	1, 2 & 3
		EG	ECB-G3	
	100,000	EJ, FC, FJf , KC, LC, LX, HJ, JJ	EDB, EDB-EPD, EGB	
		EJ, FC, KC, HJ, JJ	ECB-G3	
	125,000	HL, JL	EDB, EDB-EPD, EGB, ECB-G3	
	200,000	FI, KI, LI, LXI	EDB, EDB-EPD, EGB, EJB	
		FI, KI	ECB-G3	
480Y/277	35,000	EG, FGf , KH, LH, HG, JG	EDB, EDB-EPD	1, 2 & 3
		EG, HG, JG	ECB-G3	
	65,000	EJ, FC, FJf , KC, LC, LX, HJ, JJ	EDB, EDB-EPD, EGB	
		EJ, FC, KC, HJ, JJ	ECB-G3	
	100,000	HL,JL	EDB, EDB-EPD, EGB	
	200,000	FI, KI, LI, LXI	EDB, EDB-EPD, EGB, EJB	
		FI, KI	ECB-G3	
600Y/347	18,000	HG, JG, MG	EDB, EDB-EPD	1, 2, 3
	25,000	EJ, FI, KH, KL, LC,. LE, LX, LI, LXI, HJ, JJ	EDB, EDB-EPD, EGB	
		LH	EDB(15–70 A), EGB	
	35,000	LC, LE	EDB, EDB-EPD, EGB, EJB	
	50,000	HL, JL	EDB, EDB-EPD, EGB	
	65,000	FI, KI	EDB, EDB-EPD, EGB, EJB	
		LI, XI	EJB	
		Remote Main Fuse		
240	200,000	200 Ampere Maximum Class J or T (600V)	ECB-G3	1, 2 & 3
480Y/277	100,000	400 Ampere Maximum Class J or T (600V)	EDB, EDB-EPD, EGB, EJB	1, 2 & 3
	200,000	200 Ampere Maximum Class J or T (600V)	EDB, EDB-EPD, EGB, EJB	
	200,000	200 Ampere Maximum Class J or T (600V)	ECB-G3	
600Y/347	200,000	200 Ampere Maximum Class J or T (600V)	EDB, EDB-EPD, EGB, EJB	1, 2 & 3

QOBPLxxx-5393 = BMB series **B**olt-on, **M**otorized. (REMOTELY OPERATED)
-**x**xx = poles. x**xx** = trip current. **-5393** suffix denotes special 60" control wires.
[1 pole] **BMB-15, BMB-20, BMB-30**
[2 pole] **BMB-215, BMB-220, BMB-230, BMB-240, BMB-250, BMB-260**
[3 pole] **BMB-315, BMB-320, BMB-330**

QOPLxxx-5393 = MB series clip-on, **M**otorized. (REMOTELY OPERATED)
-**x**xx = poles. x**xx** = trip current. **-5393** suffix denotes special 60" control wires.
[1 pole] **MB-15, MB-20, MB-30**
[2 pole] **MB-215, MB-220, MB-230, MB-240, MB-250, MB-260**
[3 pole] **MB-315, MB-320, MB-330**

LynTec overprint document # 139-0216-08.1 48840-496-04
11/2003
Cedar Rapids, IA, USA
ECN N353

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

⚠ DANGER

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.

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.

CIRCUIT BREAKER INSTALLATION

⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

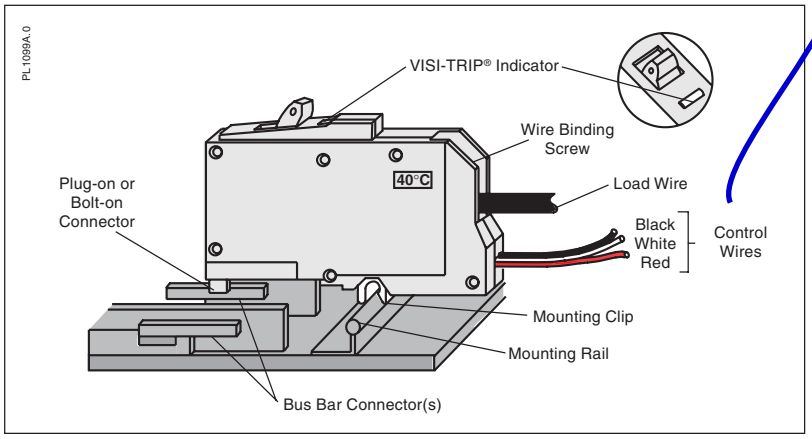
- Apply appropriate personal protective equipment (PPE) and follow safe electrical work practices. See NFPA 70E.
- This equipment must be installed and serviced only by qualified electrical personnel.
- Turn off all power supplying this equipment before working on or inside equipment.
- Always use a 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.

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)

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



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

CIRCUIT BREAKER INSTALLATION

CAUTION

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.

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

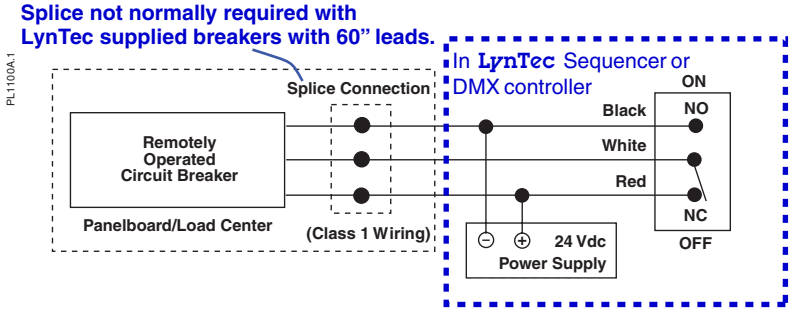
10. Remove corresponding twist-out from panelboard trim and replace trim.

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).



Square D Company
3700 Sixth Street SW
Cedar Rapids IA 52404 USA
1-888-SquareD (1-888-778-2733)
www.SquareD.com