# 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 builtin 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.



## Specifiying in 5 easy steps

- 1. Choose the control method: SC=RS-232
- 2. Choose the cabinet style:  $\ \textbf{LC}$  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

Planning and Layout Worksheet — As-built door label Job LynTec SCLC 329-xx Lighting Control Load Center Panel RS-232 controlled, AC power remote control for un-dimmed lighting circuits Comments Breaker types, sizes, positions and connections Date Each motorized breaker is actuated by a command from a RS-232 control device.by\_ As-built door label example: is the RS-232 address of this breaker. The BS-232 # SC-10 circuit boards in left-hand, The board jumpers set the RS-232 address of the board. Each breaker has a sub-address of 1-10 low-voltage cabinet. 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. Which board .... Transfer as-built Phase A 2 information to the door. 1 Board 1 Amp. 🗌 Un-motorized. 🗌 Motorized-RS-232 # mp. 🗌 Un-motorized. 🗌 Motorized-RS-232 🗄 2 Keep this sheet for 1 board model 3 Phase 3 as-built documentation. SCLC 329-10 Lighting Control 4 Load Center Amp. 🗌 Un-motorized. 🗌 Motorized-RS-232 🕯 np. 🗌 Un-motorized. 🗌 Motorized-RS-232 🗄 5 🖪 5 329-10 Phase 6 6 model holds up to 29 poles. RS-232 Amp. 🗌 Un-motorized. 🗌 Motorized-RS-232 # Amp. 🗆 Un-motorized. 🗔 Motorized-RS-232 ; 7 🗖 Controls up to 10 1, 2, or 3 pole breakers. Board 8 17 8 address: Available as PDF download 9 📘 www.lvntec.com/139-0543 SCLC329 F Amp. 🗆 Un-motorized. 🗆 Motorized-RS-232 # Un-motorized. Motorized-BS-232 # 10 Ц9 ------LynTec mm S-232 Output Amp. 🗌 Un-motorized. 🗌 Motorized-RS-232 # Amp. 🗌 Un-motorized. 🥅 Motorized-RS-232 Serial Control 12 Load Center 1 Amp. 🗌 Un-motorized. 🗌 Motorized-RS-232 Amp. 🗌 Un-motorized. 🥅 Motorized-RS-232 RS-232 Inpu **SCLC 329-xx** 3 2 14⊦ Board 2 -xx = Maximum number 3 2 board model of controlled breakers. Un-motorized. 🗌 Motorized-RS-232 # ized. 🗌 Motorized-RS-232 SCLC 329-20 4 🖪 See right side of page for model number for explanation. Lighting Control Load Center 16 5 Amp. 🗆 Un-motorized. 🗆 Motorized-RS-232 # Amp. Un-motorized. Motorized-RS-232 6 🖪 329-20 **BS-232** 18 7 model holds up to 29 poles Board 8 Controls Cabinet Outline — Surface mount only address: Amp. Un-motorized. Motorized-RS-232 # up to 20 1, 2, or 3 pole breakers. Amp. Un-motorized. Motorized-RS-232 9 📘 20 200A Copper Bus 9 Contro 10 Board Un-motorized. Motorized-RS-232 Un-motorized. Motorized-RS-232 Ń 2 22 Control mp. 🗌 Un-motorized. 🗌 Motorized-RS-232 🕯 mp. 🗌 Un-motorized. 🥅 Motorized-RS-232 Board 231 24 2 2 🗖 Board 3 Amp. 🗌 Un-motorized. 🗌 Motorized-RS-232 # mp. 🗌 Un-motorized. 🗌 Motorized-RS-232 3 3 hoard model 26 25 SCLC 329-30 Control 4 🖽 Board Lighting Control Load Center 5 Amp. 🗌 Un-motorized. 🗌 Motorized-RS-232 🕯 . 🗆 Un-motorized. 🗔 Motorized-RS-232 3 28 6 🗖 329-30 RS-232 model holds up to 29 poles. 7 📘 Board 们目 Amp. 🗆 Un-motorized. 🗆 Motorized-RS-232 # mp. 🗌 Un-motorized. 🗌 Motorized-RS-232 Controls up to 30 1, 2, or 3 pole breakers. 8 address: 29 30 **CONTROL POW** 9 📘 10A un-motorized breaker supplied installed Amp. 🗌 Un-motorized. 🗌 Motorized-RS-232 # 10 .... How it works The Board RS-232 address is set for The CONTROL POWER circuit each board by jumpers. Square D QO330L200G Load Center breaker powers the circuit boards via The RS-232 output is an Main Lug Only a 24 volt transformer. optoisolated, buffered, loop-thru for with LynTec low-voltage sidecar Motorized circuit breakers (face-marked **REMOTELY OPERATED**) are driving other RS-232 devices. Output data availability is indicated Wire: #6 - 250 kcmil Al/Cu individually actuated by a command by a flicering LED from a remote RS-232 control device. Outside Dimensions 20.9" w., 29.8" h., 3.9" d.

Each numbered LED idicates the status of that addressed breaker. Lit = ON, Unlit = OFF

Flashing = command execution in progress.

Each circuit board controls up to ten 1, 2 or 3 pole motorized circuit breakers.

RS-232 signals are fed to the first board of each RS-232 panel.

Power and RS-232 data are daisy-chain fed board to board by the yellow jumper connectors.

#### MANUAL CONTROL

The circuit breakers may be manually controlled by the TEST switches on each board.

The test switches work in the absence of a RS-232 signal. A valid RS-232 signal, indicated by a flashing Receiving RS-232 LED overrides the test switches.

> www.LynTec.com 800-724-4047 8-5 Central Time 146-0347-00 SCLC 329 Door

Document # 139-00543-00 SCLC 329 Planner 10/10/11

Surface mount only.

# 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	OxBE

\*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"

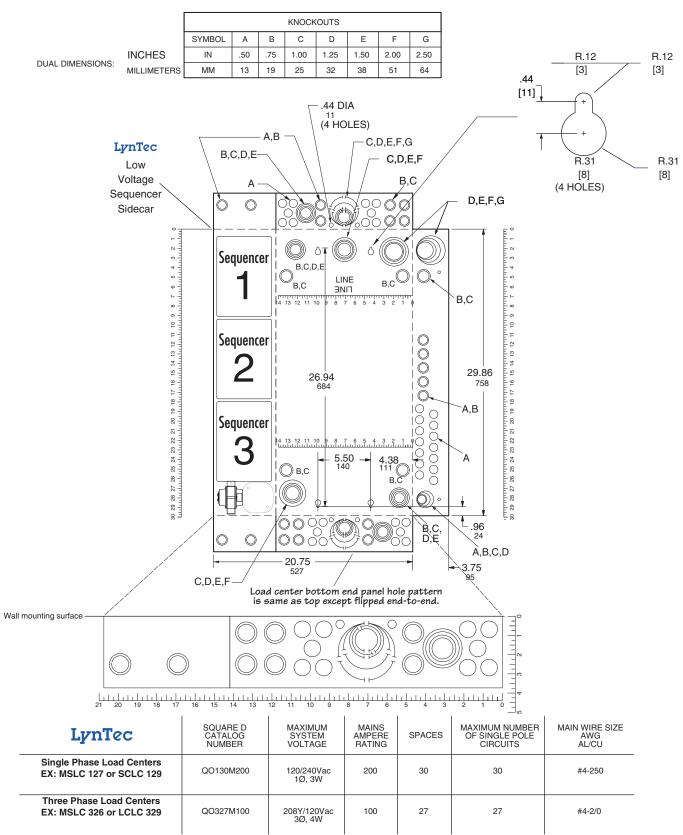
### **Mechanical Dimensions and Knockouts**

### LynTec MSLC 113-xx, MSLC 127-xx, MSLC 129-xx, MSLC 326-xx, MSLC 329-xx (MLO),

LCLC 326-xx, LCLC 329-xx (MLO) SCLC 127-xx, SCLC 129-xx,

### SCLC 326-xx or SCLC 329-xx (MLO)

Surface Mount ONLY



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

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

LynTec MSP 119, MSP 141 **SCP 141** 

++ Al	I models
70-	225A
Createla	INCOM

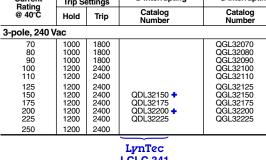
D Interrupting	G Interrupting
1	ecial order, NCNR Non Cancelable Non Returnable

Catalog

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.

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

QO3xxxVH Series



Catalog

AC Magnetic Trip Settings

Current

#### **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

6 CIRCUIT BRE	6 CIRCUIT BRE		6 сівсиіт вяе/	6 CIRCUIT BRE		
6 CIRCUIT BR	6 CIRCUIT BR	6 CIRCUIT BR	6 CIRCUIT BR	6 сівсиіт вя	п	
6 CIRCUIT B		6 CIRCUIT B		6 CIRCUIT B		
6 сівсит	6 circuit	6 CIRCUIT	6 circuit	6 CIRCUIT	···	
6 circu	6 circu	6 circu	6 circu	6 circu		
6 circ	6 circ	6 circ	6 circ	6 CIRC	3	
6 cir	6 cira	6 cira	6 cir	6 cir	3	
6 CI	6 cl	6 <sup>cll</sup>	6 <sup>cll</sup>	9 cl	<b>~</b>	
ပ ပ	ہ 9	。 9	。 9	。 9	_	
6	9	9	9	9	S.	
					9	

KERS

### **Series Ratings**

For NQOD and NF Panelboards Class 1630, 1670



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. NOOD Series Batings

		rent				Breaker Des le Ampere R	
	Maximum System Voltage AC c	Maximum Short Circuit Current Rating (RMS Symmetrical)	Integral or Remote Main Circuit Breakers and Remote Main Fuses	Туре	1-pole	ab 2-pole	3-pole
		22k	MG	QO (B)	15-30 A		
	120/ 240	42k 65k	HD, JD HG, JG	QO (B) PL QO (B) PL	15–30 A 15–30 A	15–60 A 15–60 A	15–30 A 15–30 A
	1Ø	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		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 
IwnTec	1Ø 208Y/ 120	100k	Ø	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 15–60 A 150 A 	15–30 A 15–30 A 15–30 A 35–150 A 
LynTec models CLC 326 ISLC 326		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
CLC 326 ISLC 338 CLC 338 MSP 338		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 15–30 A	15–125 A 15–30 A 15–60 A 15–30 A 	15–100 A 15–30 A  
SCP 338 MSP139	J	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  
LynTo model: LCLC 3 MSLC 3	s 341 341	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 
SCLC	041 🗡	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  
LynTe		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 
MSLC 1 MSLC 1 MSLC 1 MSLC 1 are seri	13 27 29	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	15–100 A 35–150 A  
rated 2 AIR.		42k	LA, MA MG	Q2L-Hf QDL QO (B) VH	  15–30 A	150 A 110–225 A 70–225 A 15–30 A	 110–225 A 70–225 A 15–30 A
see QO130N	Ixx		HD, JD	QO (B) PL	15-30 A	15-60 A	15–30 A
on pg 1 of Dige		42k	10	QO (B) QO (B) VH QO (B) GFI	15–70 Ad 15–30 A 15–30 Ae	 15–125 A 15–60 A	15–100 Å (3P 208 V Max 
ARDS	240	65k	LC 600 A Maximum	QO (B) AFI QO (B) VH QO (B) GFI	15–20 A 15–30 A 15–30 Ae	 15–125 A 	 15–100 A (3P 208 V Max.) 
PANELBOARDS		65k	DJ 400 A	QO (B) AFI QO (B) QO (B) VH QO (B) H	15–20 A 15–70 A 	 15–125 A 150 A 15–100 A	 15–150 A
8 PA		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 BMB-xx	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
IunTe	~	$\bigwedge$	QG,HG, JG	QO (B) GFI QO (B) PL QO (B) AFI QO (B)	15–30 A 15–30 A 15–30 A 15–70 A	15–60 A 15–60 A  15–125 A	15–30 Ä  15–100 A
LynTeo models MSP 11 MSP 14	19 <b>)</b>	65k	HG, JG	QO (B) VH QO (B) H QOB2150VH		 15–100 A 150 A	35–150 A  
SCP 14	11 J	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 
MSP 34 SCP 34	11/	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 QO (B)	15–20 A 15–70 A	 15–125 A	 15–100 A
		1	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  
		100k	·			In Materia	
		<b>QOE</b> - <b>x</b> XX [1 pc [2 pc [3 pc	8xxx (B) = BUM = poles. xxx = tri ble] BUMB-15, E ble] BUMB-215, ble] BUMB-215, ble] BUMB-315, xx = UMB serie	B series E p current. BUMB-20, BUMB-22 BUMB-32	BUMB-3 20, BUME 20, BUME	0 3-230 3-330	

# [3 pole] UMB-315, UMB-320, UMB-330

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

#### NOOD Series Ratings (Continued)

**NF Series Ratings** 

	Current al)		Branch Circuit Breaker Designations and Allowable Ampere Ranges ab				
Maximum System Voltage AC c	Maximum Short Circuit Current Rating (RMS Symmetrical)	Integral or Remote Main Circuit Breakers and Remote Main Fuses	Туре	1-pole	2-pole	3-pole	
	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 15–60 A 15–100 A 150 A	15–30 A  	
240	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 	

400 A Class T3
QO (B) GFI 15–30 A 15–60 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.
★ Only 15–30 A circuit breakers may be used when the LC circuit breaker.
★ Only 15–30 A circuit breakers may 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 breakers are shown above, QO(B), EPD circuit breakers may also be used.

Maximum System Voltage AC	Maximum Short Circuit Current Rating (RMS Symmetrical)	Main Type	Branch Type	Poles
	65,000	EG, FH, FGf, KH, LH, MH, MX, HG, JG	EDB, EDB-EPD	
	,	EG	ECB-G3	
	100,000	EJ, FC, FJf , KC, LC, LX, HJ, JJ	EDB, EDB-EPD, EGB	
240		EJ, FC, KC, HJ, JJ	ECB-G3	1,2&3
	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	
	35,000	EG, FGf , KH, LH, HG, JG	EDB, EDB-EPD	
	55,000	EG, HG, JG	ECB-G3	
	65,000	EJ, FC, FJf , KC, LC, LX, HJ, JJ	EDB, EDB-EPD, EGB	
480Y/277		EJ, FC, KC, HJ, JJ	ECB-G3	1.2&3
1001/2/1	100,000	HL,JL	EDB, EDB-EPD, EGB	., 2 4 0
	200,000	FI, KI, LI, LXI	EDB, EDB-EPD, EGB, EJB	
	,	FI, KI	ECB-G3	
	18,000	HG, JG, MG	EDB, EDB-EPD	
	25,000	EJ, FI, KH, KL, LC,. LE, LX, LI, LXI, HJ, JJ	EDB, EDB-EPD, EGB	
		LH	EDB(15-70 A), EGB	
600Y/347	35,000	LC, LE	EDB, EDB-EPD, EGB, EJB	1, 2, 3
	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
	100,000	400 Ampere Maximum Class J or T (600V)	EDB, EDB-EPD, EGB, EJB	
480Y/277	200,000	200 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)	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 Bolt-on, Motorized. (REMOTELY OPERATED) -xxx = poles. xxx = 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: 139-0407-03 Series Ratings 09/27/11 For most current version see http://www.lyntec.com/139-0407\_Series\_Ratings.pdf © 2006 Schneider Electric All Rights Reserved 8/24/06

## **Instruction Bulletin**

ECN N353

# QO-PL (Plug-on), QOB-PL (Bolt-on) Powerlink<sup>®</sup> 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**

### A 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.

# CIRCUIT BREAKER

### A 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.





POWERLINK<sup>®</sup> 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.

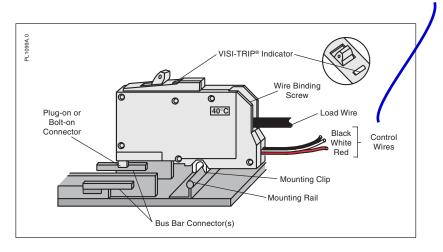
The required power supply ampacity and control device contact rating are determined by the number of circuit breakers to be switched simultaneously (i.e., four circuit breakers switched simultaneously require a power supply and a control device contact rated 8 amperes minimum). The control device may 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. All LynTec
- Before installing circuit breaker turn circuit breaker handle to OFF position.

supplied breakers have special 60" control wires. (Square D standards

 Remove panelboard cover and deadfront. Verify power is off with voltage meter before proceeding.

# Installation of circuit breaker into panelboard/load center (refer to standards figure below) are 18".)



 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."

#### 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.

### LynTec

part numbers **MB** series motorized circuit breakers (Snap-On) May be used in LCLC, LCP, MSLC, 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 \*\***BMB-15** = 15 Amp. square D QOB-115PL-5393

\*\***MB-20** = 20 Amp. Square D QO-120PL-5393 \*\***BMB-20** = 20 Amp. Square D QOB-120PL-5393

\*\***MB-30** = 30 Amp. square D QO-130PL-5393 \*\***BMB-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 00-330PL-5393 BMB-330 = 30 Amp. square D 00B-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. [AlI BMB & MB-315 and BMB & MB-3205 are HM breakers.]

#### 800-724-4047

LynTec • www.LynTec.com 8401 Melrose Dr., Lenexa, KS 66214, USA Voice 913-529-2233 • Fax **888-722-4157** or 913-529-4157

LynTec overprint 139-0216-08.2 9/23/06

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



- 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.

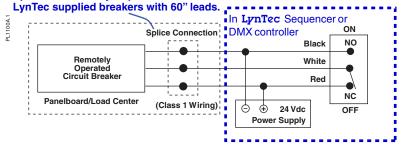
NOTE: The remote mechanism will not move the circuit breaker handle. Also, the remote mechanism cannot turn power ON when the circuit breaker is tripped (VISI-TRIP<sup>®</sup> flag indicator showing) or when the circuit breaker handle is in the OFF position.

#### 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



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.

© 1991-2003 Schneider Electric All Rights Reserved