

Planning and Layout Worksheet — As-built door label

LynTec LCLC 338-xx Lighting Control 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/139-0412_LC338Plnr.pdf

Each motorized breaker is actuated by a command from a DMX control device.
As-built door label example:
The DMX # _____ is the DMX address of this breaker.
The board jumpers set the DMX address of the #1 position of the board.
Positions 2 to 10 are subsequent addresses. Example: #1= 201, #2 to #10 = 202 to 210.
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.

LC-10M Master & LC-10S Slave circuit boards in left-hand, low-voltage cabinet.

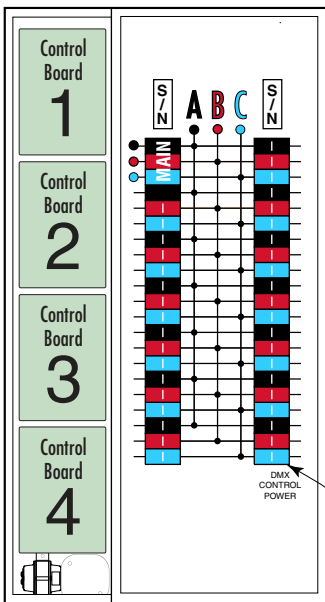
DMX PROTOCOL		Circuit Function — NOTES
Code Range (8 bit)	%	
0	0%	No change - Keep previous command. A zero or CLEAR command remembers the command preceding it. After a 0 command, this channel awaits a new command.
1 - 24	1 - 9%	All breakers OFF — 0.25 sec. step rate. DMX Override Test, All OFF command. Must be sent to first address on each board. Overrides all other DMX commands.
25 - 50	10 - 19	This breaker, Instant OFF. When sent to all breaker addresses simultaneously, they turn OFF at a .25 sec. step rate.
51 - 65	20 - 25	This breaker, OFF in 1 minute. Green breaker LED will flash during countdown.
66 - 80	26 - 31	This breaker, OFF in 2 minutes
81 - 95	32 - 37	This breaker, OFF in 3 minutes
96 - 110	38 - 43	This breaker, OFF in 4 minutes
111 - 126	44 - 49	This breaker, OFF in 5 minutes
127 - 133	50 - 52	BLONK - 8 sec. LONG blink. An 8 sec. power off reset for unresponsive luminaires. Must be preceded by an ON command - NOT an All On.
134 - 191	53 - 74	This breaker, Instant ON. When sent to all breaker addresses simultaneously, they turn ON at a .25 sec. step rate.
192 - 223	75 - 87	All breakers ON — 0.25 sec. step rate. DMX Override Test, All ON command. Must be sent to first address on each board. Overrides all other DMX commands.
224 - 255	88 - 100	All breakers ON — 1 sec. step rate.

LCLC 338-xx

(22k AIR back-fed main) - 225A bus
xx = Number of controller circuits
10, 20, 30, or 40.

See right side of page for model number explanation.

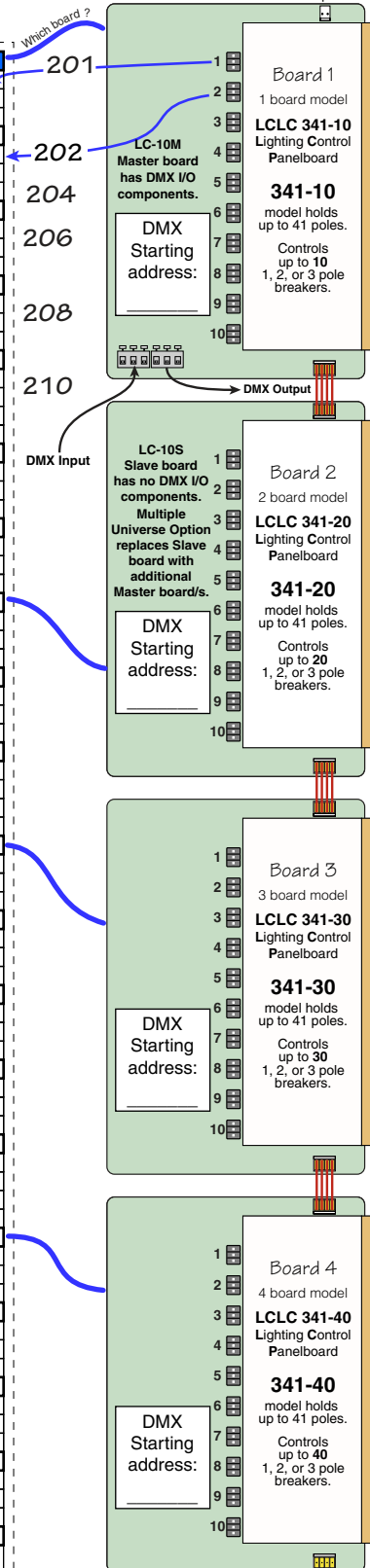
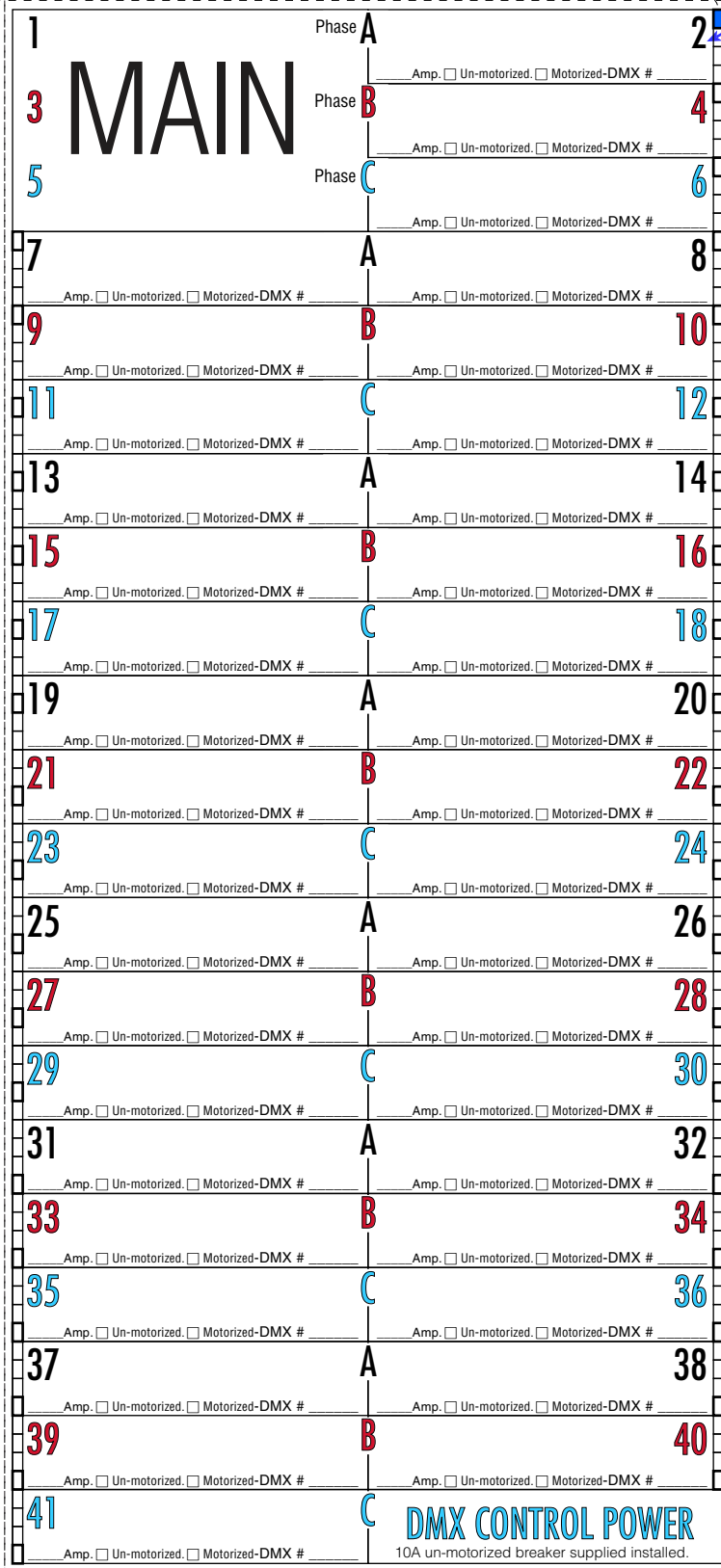
Cabinet outline - Surface mount only
Outside dimensions: 20.9" w., 39.3" h., 3.9" d.



Square D QO342 Load Center with LynTec low-voltage sidecar.

Standard back-fed Main Breaker: QO3100VH. 100A, (VH = 22k AIR).

Wire: 350 kcmil Al or 250 kcmil Cu.
100% Neutral has one feed lug that accepts one 350 kcmil Al or one 250 kcmil Cu wire.



www.LynTec.com
800-724-4047
8-5 Central Time

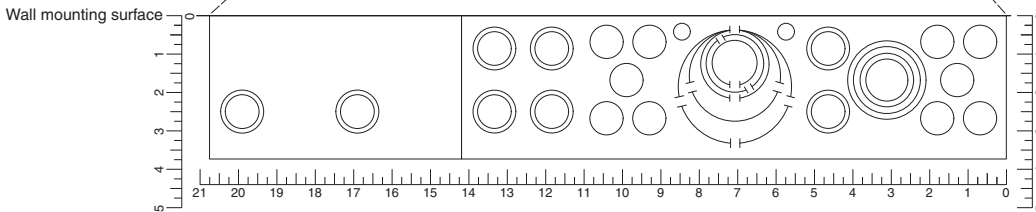
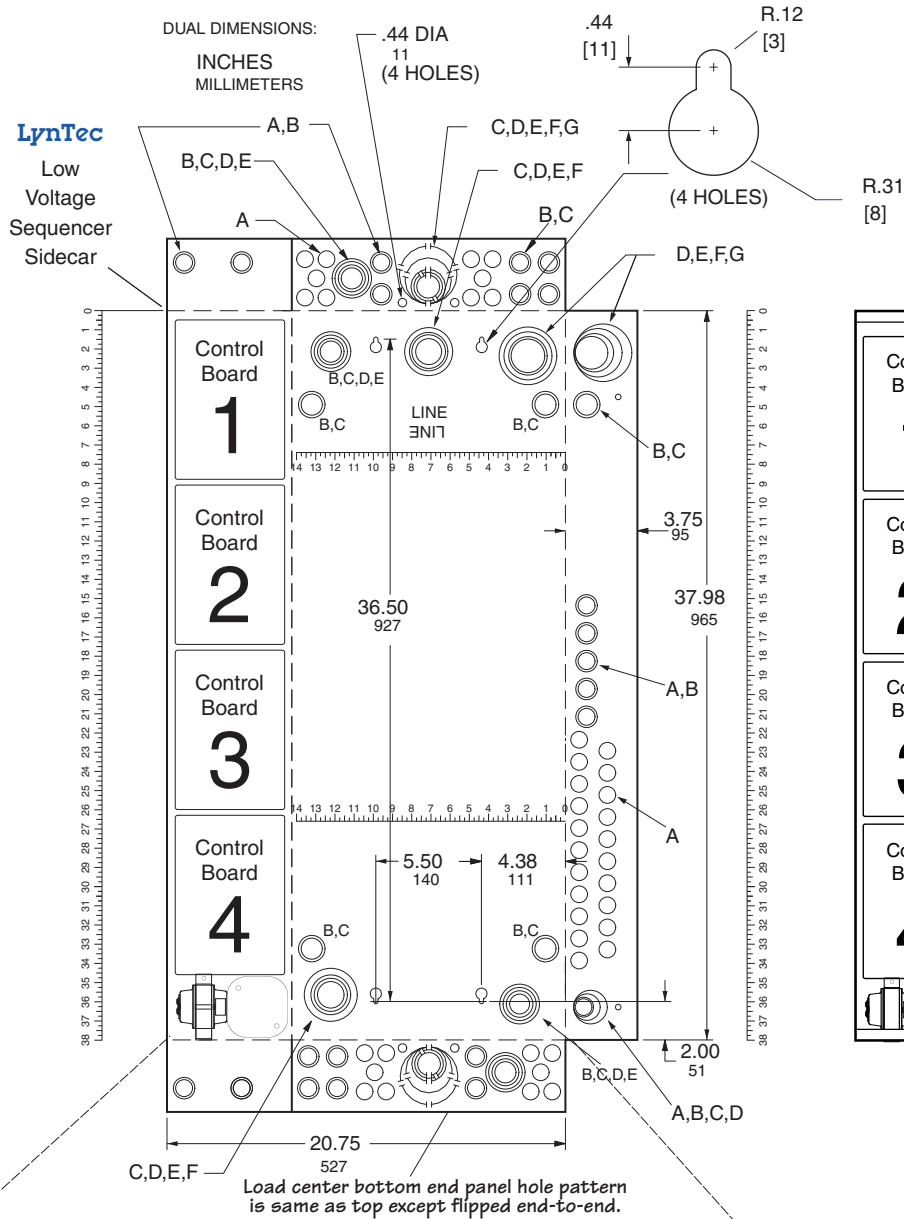
Mechanical Dimensions and Knockouts

LynTec LCLC 338-xx or LCLC 341-xx Lighting Control Load Center

LynTec MSLC 338-xx or MSLC 341-xx Modular Sequencing Load Center

KNOCKOUTS							
SYMBOL	A	B	C	D	E	F	G
IN	.50	.75	1.00	1.25	1.50	2.00	2.50
MM	13	19	25	32	38	51	64

Surface Mount **ONLY**



LynTec	SQUARE D CATALOG NUMBER	MAXIMUM SYSTEM VOLTAGE	MAINS AMPERE RATING	SPACES	MAXIMUM NUMBER OF AVAILABLE SINGLE POLE CIRCUITS	MAIN WIRE SIZE AWG AL/CU
LCLC 338-xx \ MSLC 338-xx or LCLC 338-xx \ MSLC 341-xx	QO342MQ225	208Y/120 Vac 3Ø, 4W	225	42	38 41	#4-250

As-built EDO field programming record.
 Indicate if a stored on condition was programmed for each breaker by filling corresponding circle.

**EDO Programming
 Emergency DMX Override**

For egress or emergency lighting triggered by an external contact.

Connecting **EDO to Common** with an external contact overrides the incoming DMX signal and forces all breakers to the pre-programmed **EDO** state.

How to program EDO

- A. Turn the **DMX CONTROL POWER** off.
- B. Note the DMX Starting Address _____.
- C. Move jumpers to reset the **DMX STARTING** Address to 555.
- D. Turn the **DMX CONTROL POWER** on.
 The board will scan through the breakers 1 thru 10 and display the previous EDO settings if there are any stored in memory. All numbered LEDs that were on when the EDO setting was stored will light.
- E. Press the green **EDO ON-OFF Toggle** button once.
 The #1 breaker LED will flash; Fast for ON — Slow for OFF. **Toggle** the same green button to the desired state of the #1 breaker.
- F. Advance to breaker #2 with the red **EDO Advance** button. (#1 now indicates the condition you left it in. Lit = ON)
- G. Set the rest of the positions, having breakers connected, to your desired EDO condition. Finish your settings with one more **EDO Advance** keystroke. All breaker LEDs will indicate their EDO state. If you change your mind, you can loop back to 1 with another **Advance** keystroke. #1 will begin flashing again to indicate it's ready to edit.
- H. To store your EDO settings, turn **DMX CONTROL POWER** off and wait until the large red LED extinguishes.
- I. Reset the DMX Starting Address jumpers to the one remembered in step B.
- J. Turn on DMX CONTROL POWER. Now whenever you connect the EDO terminal to common, the red EDO LED will light and your stored EDO settings will *override* any DMX commands until the emergency contact is opened.
 If you have programmed Post EDO, all circuits will go to that scenario when the emergency contact is opened.
 With no Post EDO program all breakers default to off and will require another DMX command to actuate.

You have the option to program the Post EDO condition to reset the breakers to a different condition when the EDO contacts are reopened.

How to program Post EDO

- K. With power off, move jumpers to reset the DMX Starting Address to 599.
 Return to step D. to program **Post EDO**.

Panel _____ Location _____

Revision _____ Date _____ By _____

Bold line around box is suggested control board: #1 (Top), #2, #3 or #4. Fill in box to indicate which control board this breaker is connected to.

1	Phase A	_____ Amp. <input type="checkbox"/> Un-motorized. <input type="checkbox"/> Motorized-DMX # _____ universe	2
3	Phase B	_____ Amp. <input type="checkbox"/> Un-motorized. <input type="checkbox"/> Motorized-DMX # _____ universe	4
5	Phase C	_____ Amp. <input type="checkbox"/> Un-motorized. <input type="checkbox"/> Motorized-DMX # _____ universe	6
7	A	_____ Amp. <input type="checkbox"/> Un-motorized. <input type="checkbox"/> Motorized-DMX # _____ universe	8
9	B	_____ Amp. <input type="checkbox"/> Un-motorized. <input type="checkbox"/> Motorized-DMX # _____ universe	10
11	C	_____ Amp. <input type="checkbox"/> Un-motorized. <input type="checkbox"/> Motorized-DMX # _____ universe	12
13	A	_____ Amp. <input type="checkbox"/> Un-motorized. <input type="checkbox"/> Motorized-DMX # _____ universe	14
15	B	_____ Amp. <input type="checkbox"/> Un-motorized. <input type="checkbox"/> Motorized-DMX # _____ universe	16
17	C	_____ Amp. <input type="checkbox"/> Un-motorized. <input type="checkbox"/> Motorized-DMX # _____ universe	18
19	A	_____ Amp. <input type="checkbox"/> Un-motorized. <input type="checkbox"/> Motorized-DMX # _____ universe	20
21	B	_____ Amp. <input type="checkbox"/> Un-motorized. <input type="checkbox"/> Motorized-DMX # _____ universe	22
23	C	_____ Amp. <input type="checkbox"/> Un-motorized. <input type="checkbox"/> Motorized-DMX # _____ universe	24
25	A	_____ Amp. <input type="checkbox"/> Un-motorized. <input type="checkbox"/> Motorized-DMX # _____ universe	26
27	B	_____ Amp. <input type="checkbox"/> Un-motorized. <input type="checkbox"/> Motorized-DMX # _____ universe	28
29	C	_____ Amp. <input type="checkbox"/> Un-motorized. <input type="checkbox"/> Motorized-DMX # _____ universe	30
31	A	_____ Amp. <input type="checkbox"/> Un-motorized. <input type="checkbox"/> Motorized-DMX # _____ universe	32
33	B	_____ Amp. <input type="checkbox"/> Un-motorized. <input type="checkbox"/> Motorized-DMX # _____ universe	34
35	C	_____ Amp. <input type="checkbox"/> Un-motorized. <input type="checkbox"/> Motorized-DMX # _____ universe	36
37	A	_____ Amp. <input type="checkbox"/> Un-motorized. <input type="checkbox"/> Motorized-DMX # _____ universe	38
39	B	_____ Amp. <input type="checkbox"/> Un-motorized. <input type="checkbox"/> Motorized-DMX # _____ universe	40
41	C	_____ Amp. <input type="checkbox"/> Un-motorized. <input type="checkbox"/> Motorized-DMX # _____ universe	

How it works

The **DMX CONTROL POWER** circuit breaker powers the control circuit boards via a 24 volt transformer.

Motorized circuit breakers (face-marked **REMOTELY OPERATED**) are individually actuated by a low-voltage command from a remote DMX control device. (light board)

Each of the *numbered* LEDs, 1 thru 10, indicate the status of the attached breaker.
 Lit = ON — Unlit = OFF
 Flashing = A command execution is in progress.

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

Each motorized breaker acts as a circuit protection device as well as a remotely operated switch. The breaker handle

moves *only* when over-current-tripped or manually turned off.

Master and Slave control boards are used depending upon the number of DMX universes served. (Slaves have no DMX input or output components).

DMX signals are fed to the Master board/s from the appropriate DMX universe.

Power, DMX and EDO data are daisy-chain fed board-to-board by the yellow jumper connectors. (**EDO = Emergency DMX Override**)

The **STARTING DMX** address is set for each board by jumpers. Depending on the results of a power-up-scan, consecutive DMX addresses are only used for the headers with breakers attached.

The DMX Output is an optoisolated, buffered, loop-thru for driving other DMX devices.

Output data availability is indicated by a small-green flickering **DMX Output** LED.

MANUAL TEST CONTROL

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

The test switches work in the absence of a DMX signal. A valid DMX signal, indicated by a flashing large-green **Receiving DMX** LED, overrides the test switches.

Emergency DMX Override
 see above right

www.**LynTec**.com
 800-724-4047
 8-5 Central Time

DMX PROTOCOL for LynTec LC series		
Code Range (8 bit)	%	Circuit Function — NOTES
0	0%	No change - Keep previous command. A zero or CLEAR command remembers the command preceding it. After a 0 command, this channel awaits a new command.
1 - 24	1 - 9%	All breakers OFF — 0.25 sec. step rate. DMX Override Test, All OFF command. Must be sent to first address on each board. Overrides all other DMX commands.
25 - 50	10 - 19	This breaker, Instant OFF. When sent to all breaker addresses simultaneously, they turn OFF at a .25 sec. step rate.
51 - 65	20 - 25	This breaker, OFF in 1 minute. Green breaker LED will flash during countdown.
66 - 80 81 - 95 96 - 110 111 - 126	26 - 31 32 - 37 38 - 43 44 - 49	This breaker, OFF in 2 minutes This breaker, OFF in 3 minutes This breaker, OFF in 4 minutes This breaker, OFF in 5 minutes
127 - 133	50 - 52	BLONK - 8 sec. LONG blink. An 8 sec. power off reset for unresponsive luminaires. Must be preceded by an ON command - NOT an All On.
134 - 191	53 - 74	This breaker, Instant ON. When sent to all breaker addresses simultaneously, they turn OFF at a .25 sec. step rate.
192 - 223	75 - 87	All breakers ON — 0.25 sec. step rate. DMX Override Test, All ON command. Must be sent to first address on each board. Overrides all other DMX commands.
224 - 255	88 - 100	All breakers ON — 1 sec. step rate.

NOTES

LynTec — AVAILABLE MODELS — LynTec

Panel electrical specifications and configurations — Outline dimensions

See  at LynTec.com for *model specific* Design or Submittal PDFs.

LOAD CENTERS

LCLC 326-xx-Mxxx Lighting Control Load Center

3Ø, 208Y/120 Vac, 4 wire. — 100 Amp Main Breaker Standard

LynTec Lighting Control Load Center

MODEL NUMBERS

- LCLC 326-10-Mxxx**
(Up to 10 DMX controlled circuits)
- LCLC 326-20-Mxxx**
(Up to 20 DMX controlled circuits)
- LCLC 326-30-Mxxx**
(Up to 26 DMX controlled circuits)

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

Standard back-fed Main Breaker:

Squared D# QO3100VH. 100A,
(VH = 22k AIR)
[Amps Interrupt Rating]

Back-fed Main Breaker options

Part# suffix — **Bold face**=Amps
-M3030, -M3035: (10kAIR)
Square D# QO30xx

-M3050, -M3060, -M3070 or -M3090

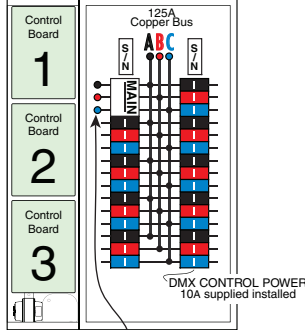
Squared D# QO3xxVH
(all VH = 22k AIR)

Wire Sizes
#4 - 2/0 Cu



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

Cabinet Outline — Surface mount only



Main Lug Only -MLO option
Remove Back fed main and top feed as a MLO to gain 3 circuits. Feed from a protected disconnect.

Provides access to branch breaker positions 1, 3, & 5.

Model number becomes a

- LCLC 329-10-MLO**
(10 DMX controlled circuits)
 - LCLC 329-20-MLO**
(20 DMX controlled circuits)
 - LCLC 329-30-MLO**
(Up to 29 DMX controlled circuits)
(Holds up to 29 one pole breakers)
- 125 Amp. Panel Bus Rating
Wire size: #6 - 2/0 Cu

LCLC 341-xx-Mxxx Lighting Control Load Center

3Ø, 208Y/120 Vac, 4 wire. — 225 Amp Main Breaker Standard

LynTec Lighting Control Load Center

MODEL NUMBERS

- LCLC 341-10-Mxxx**
(Up to 10 DMX controlled circuits)
- LCLC 341-20-Mxxx**
(Up to 20 DMX controlled circuits)
- LCLC 341-30-Mxxx**
(Up to 30 DMX controlled circuits)
- LCLC 341-40-Mxxx**
(Up to 40 DMX controlled circuits)

Square D QO342MQ225 Load Center with LynTec low-voltage sidecar.

Standard Main Breaker:

Square D# QDL32225. 225 Amp

Main Breaker options

Part# suffix — **Bold face**=Amps
-M3150, -M3175 or -M3200
Square D# QDL32xxx series
(all 25k AIR) [Amps Interrupt Rating]

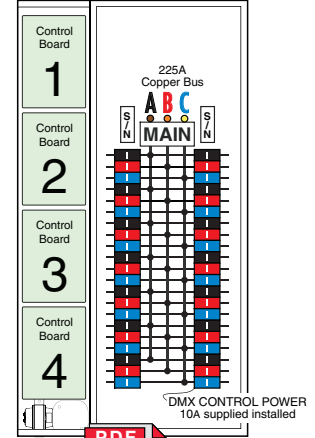
LCLCH option for 65k AIR Main Breaker
Square D# QGL32xxx series

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

Cabinet Outline — Surface mount only



PANELBOARDS

LCP 341-xx-Mxxx Lighting Control Panelboard

3Ø, 208Y/120 Vac, 4 wire. — 225 Amp Main Breaker Standard

LynTec Lighting Control Panelboard

MODEL NUMBERS

- LCP 341-10-Mxxx**
(Up to 10 DMX controlled circuits)
- LCP 341-20-Mxxx**
(Up to 20 DMX controlled circuits)
- LCP 341-30-Mxxx**
(Up to 30 DMX controlled circuits)
- LCP 341-40-Mxxx**
(Up to 40 DMX controlled circuits)
- LCP 341-50-Mxxx**
(Up to 41 DMX controlled circuits - limited by 42 circuit code rule)

Square D NQOD-NL MB Panel with LynTec low-voltage sidecar.

Standard **LCP-225A** Main Breaker:
225 Amp. - 65k AIR - MJG36225

Square D MJG36xxx or MHG36xxx series
(all 65k AIR) [Amps Interrupt Rating]

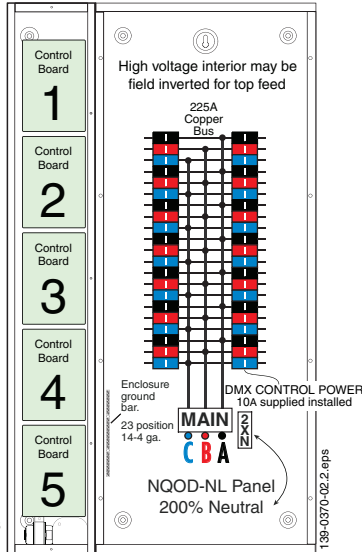
Main Breaker options

Part# suffix — **Bold face** = Amps
-MHG3125, -MJG3150, -MJG3175 or -MJG3200

Wire Sizes

Main Breaker: 3/0 - 350 kcmil Al/Cu
200% Neutral has one feed lug that accepts 2 - 250 kcmil Cu wires

Cabinet Outline — Surface mount only



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

Knockout panels supplied in both ends



LCP 341-xx-M400 Lighting Control Panelboard

3Ø, 208Y/120 Vac, 4 wire. — 400 Amp Main Breaker Standard

LynTec Lighting Control Panelboard

MODEL NUMBERS

- LCP 341-10-M400**
(Up to 10 DMX controlled circuits)
- LCP 341-20-M400**
(Up to 20 DMX controlled circuits)
- LCP 341-30-M400**
(Up to 30 DMX controlled circuits)
- LCP 341-40-M400**
(Up to 40 DMX controlled circuits)
- LCP 341-50-M400**
(Up to 41 DMX controlled circuits - limited by 42 circuit code rule)

Square D NQOD MB Panel with LynTec low-voltage sidecar.

Standard **LCP 400A** Main Breaker:
400 Amp. - 10k AIR - LA36400
[Amps Interrupt Rating]

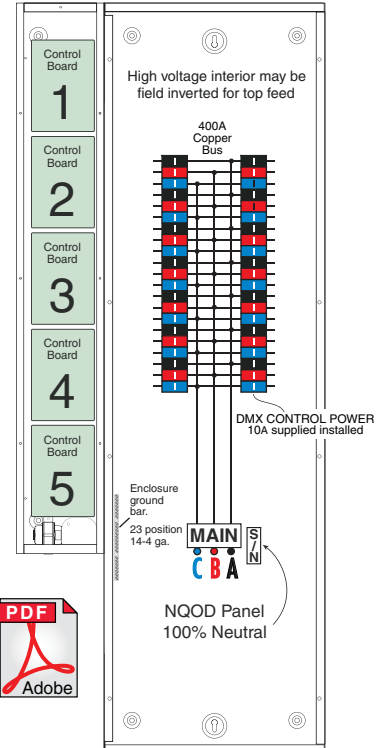
Wire Sizes

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.

Knockout panels supplied in both ends

Cabinet Outline — Surface mount only



Specifier's Guide for LynTec Lighting Control Panels

Load Center and Panelboard part number explanation

Load Center — Panelboard — *What's the difference?*

Panelboards are the electrician's choice because they have 3 times the wiring space. Panelboards are used when bolt-on breakers, 200% neutrals or high circuit counts are required.

Load Centers are typically used where the circuit count isn't high, offering the lowest cost.

Lighting Control Panelboards

LCP 341- 30 -2U -MJG3200

41

Number of available single pole circuit breaker spaces

10
20
30
40
50

Control board capacity—will drive up to this number of 1, 2 or 3 pole motorized breakers

1U
2U
3U
4U
5U

number of DMX512 Universes

-Main breaker &
-Main Lug Only options
SEE BELOW

3 = 3 phase 208/120v, 4 wire

3 Phase Panelboards

400 A Panelboard

The standard LCP 341-xx-M400 has a LA36400, 3 pole, 400 Amp main breaker (115 kVA). 10kAIR [Amps Interrupt Rating]. Optional main breakers — call for price and delivery.

-MLO (Main Lug Only) is an option.

225 A Panelboard

The standard LCP 341-xx has a JGP36225, 3 pole, 225 Amp main breaker (65 kVA). 65k AIR [Amps Interrupt Rating]. Optional main breakers [All 65kAIR]

125A -MHG3125 (36 kVA transformer)
 150A -MJG3150 (45 kVA)
 175A -MJG3175 (50 kVA)
 200A -MJG3200 (60 kVA)

-MLO (Main Lug Only) is an option.

Multiple DMX512 Universe Option

LynTec Lighting Control panels have the option of multiple universe control. All LC-10 boards service up to 10 - one, two or three pole motorized breakers. The first/top control board is always a LC-10M Master board. The Master board has the opto-isolated DMX512 input and opto-isolated, buffered, feed-thru output components.

In a standard one-universe system, the subsequent boards are slaves. The lower-cost, LC-10S Slave boards have their own starting address, but derive their opto-isolated DMX data from the Master board above.

When multiple universes are desired, two or more LC-10M Master boards are supplied.

Each universe requires a Master board. Any Master may have one or more subsequent slaves. See page 3 for possible board counts in each type panel.

Please include Branch Breakers to complete your specification.

Lighting Control Load Centers

LCLCH 341- 30 -2U -MQD3200

326
341

Number of available single pole circuit breaker spaces

10
20
30
40

Control board capacity—will drive up to this number of 1, 2 or 3 pole motorized breakers

1U
2U
3U
4U

number of DMX512 Universes

-Main breaker &
-Main Lug Only options
>>>>>>

3 = 3 phase 208/120v, 4 wire

▲ H option 65k AIR Main Breaker. Amps Interrupt Rating (Available only on 341)

Load Center Main Breaker Options

Large 3 Phase Load Center

The standard LCLC 341-xx has a factory installed, 3 pole, 225 Amp main breaker (65 kVA transformer) [25kAIR Amps Interrupt Rating]. Optional main breakers [All 65kAIR]

150A -MQD3150 (45 kVA)
 175A -MQD3175 (50 kVA)
 200A -MQD3200 (60 kVA)

-MLO (Main Lug Only) option:
 We only stock LCLC panels with main breakers. If your specification requires a **-MLO** we will provide it at the same price as the standard panel.

▲ Higher Interrupt Current Option

LoadCenter: OGL32xxx series 65k AIR main breaker— 150,175, 200 or 225A
 Add the **H** to the model type. Example: LCLCH 341.

Small 3 Phase Load Center

The standard LCLC 326-xx has a bracket-retained, clip-on, back-fed, 3 pole, 100 Amp main breaker.

Optional main breaker sizes available:

⊗ 30A -M3030 (7.5 kVA transformer)
 ⊗ 35A -M3035 (10 kVA)
 + 50A -M3050 (15 kVA)
 + 70A -M3070 (20 kVA)
 + 90A -M3090 (25 kVA)

⊗ 30A & 35A: 10kAIR
 + 50A up: 22kAIR (Amps Interrupt Rating)



RBLC-10 or RBLC-20
 10 or 20 circuit
 Remote Breaker Lighting Controller
 Provides DMX control for any Square D QO panel by using **BMB** or **MB** breakers.

The UL listed heart of the LynTec Lighting Control and Sound Sequencing Panels

Handle functions as a normal circuit breaker.

When switched off or tripped due to overload, the remote control will not turn on power.

When in the normal ON position, the motorized remote control will turn it off and on.

The motor does not move the handle... it only opens or closes the high current contacts.

Snap on clip with heavy steel force spring. Contact is held tightly in place on panel bus feeder finger.

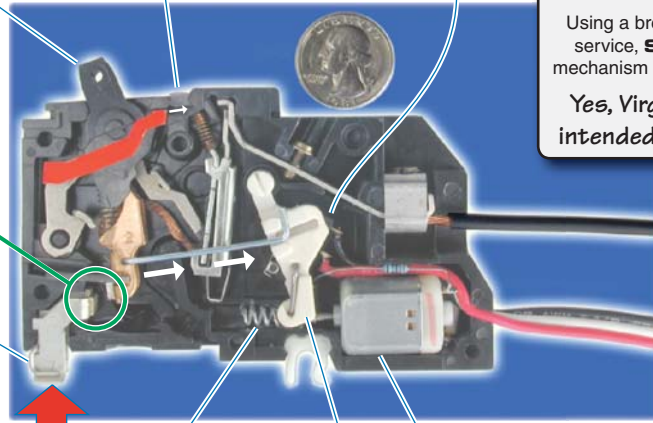
Under high current stress, magnetic forces actually increase contact pressure.

Also available in Bolt-on versions for Panelboards only.

Red flag snaps into window when circuit breaker is tripped.

Microswitch, behind Actuator arm, opens motor circuit at end of transition.

The time-proven **SQUARE D** QOPL series motorized circuit breaker. Using a breaker proven in over 20 years of service, **SQUARE D** added a motor mechanism in 1986 to provide remote control. *Yes, Virginia, some breakers are intended to be used as switches!*



Controlled AC POWER OUT
3 wire, low-voltage, 60" pigtail with 600 volt insulation. Connects to Lighting Controller in low voltage cabinet.

Field installed, UL & CSA listed, motorized circuit breakers are required to complete the Lighting Control Panel package.

BLUE TYPE = Bolt-on breakers for Panelboards ONLY — Clip-on breakers fit Load Centers or Panelboards

BMB-15 Bolt-on Motorized Breaker, Square D #QOB115PL-5393

MB-15 Clip-on Motorized Breaker, Square D #QO115PL-5393
One pole, 15 Amps. Special 60" leads. Square D trip curve: 730-4

BMB-20 Bolt-on Motorized Breaker, Square D #QOB120PL-5393

MB-20 Clip-on Motorized Breaker, Square D #QO120PL-5393
One pole, 20 Amps. Special 60" leads. Square D trip curve: 730-4
15 and 20 Amp breakers have a HM, (High Magnetic) rating. HM reduces nuisance breaker trips on high inrush loads.

BMB-220 Bolt-on Motorized Breaker, Square D #QOB220PL-5393

MB-220 Clip-on Motorized Breaker, Square D #QO220PL-5393
Two pole, 20 Amps. Special 60" leads. Square D trip curve: 730-4
15 and 20 Amp breakers have a HM, (High Magnetic) rating. HM reduces nuisance breaker trips on high inrush loads.

BMB-30 Bolt-on Motorized Breaker, Square D #QOB130PL-5393

MB-30 Clip-on Motorized Breaker, Square D #QO130PL-5393
One pole, 30 Amps. Special 60" leads. Square D trip curve: 730-5

BMB-230 Bolt-on Motorized Breaker, Square D #QOB230PL-5393

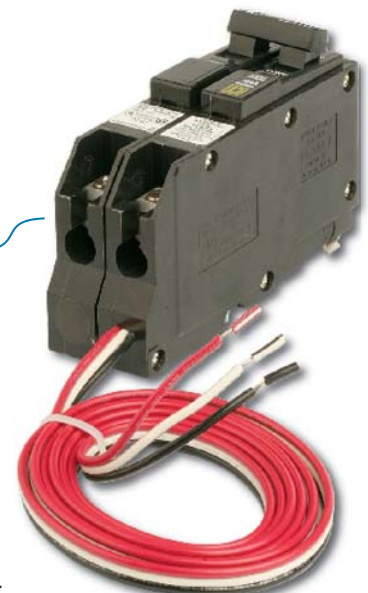
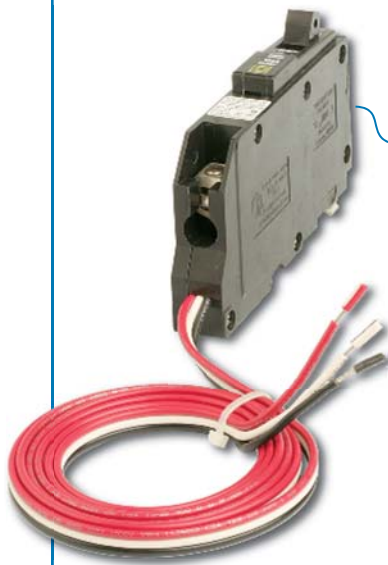
MB-230 Clip-on Motorized Breaker, Square D #QO230PL-5393
Two pole, 30 Amps. Special 60" leads. Square D trip curve: 730-5

3 pole Bolt-on and Clip-on Motorized Breakers are also available on special order. — Call 800-724-4047 for price and delivery.

UnMotorized circuit breakers for un-controlled circuits

BUMB-10, -15, -20 or -30 are Bolt-on, 10, 15, 20 or 30 amp single pole. Square D QOB110, QOB115HM, QOB120HM or QOB130. — 15s & 20s are High Magnetic.

UMB-10, -15, -20 or -30 are Clip-on, 10, 15, 20 or 30 amp single pole. Square D QO110, QO115HM, QO120HM or QO130. — 15s & 20s are 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

⚠ 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 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.

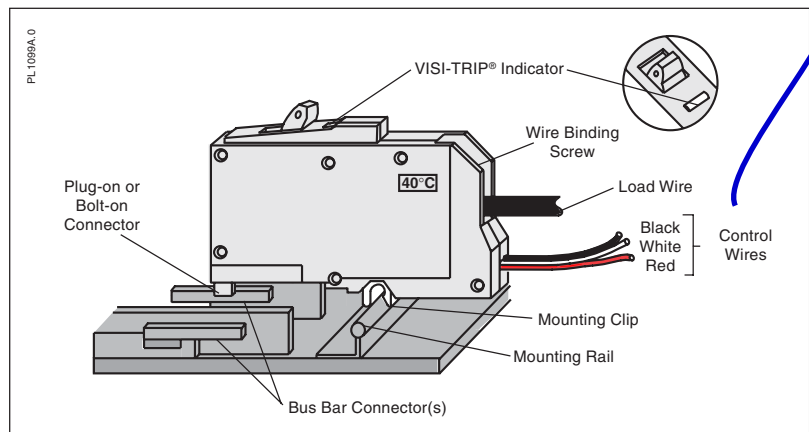
See page 2 for
LynTec
part number explanation

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."

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

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.

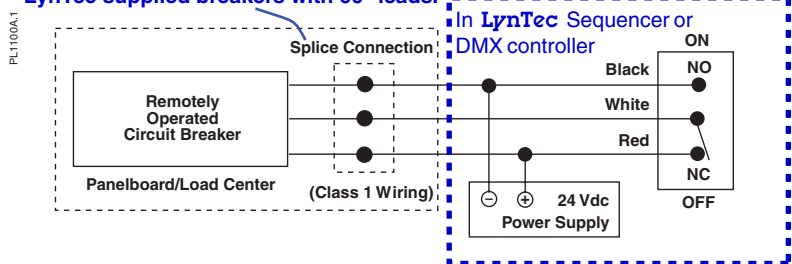
NOTE: The remote mechanism will not move the circuit breaker handle. Also, the remote mechanism cannot turn power ON when the circuit breaker is tripped (VISI-TRIP® flag indicator showing) or when the circuit breaker handle is in the OFF position.

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).

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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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 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.]

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



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.

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 208Y/120	100k	DJ 400 A	QO (B)	15-70 A	15-125 A	...
			QO (B) GFI	15-30 A	40-60 A	...
			QO (B) VH	...	150 A	15-150 A
			QO (B) PL	15-30 A	...	...
			QO (B) AFI	15-20 A	...	...
	QJ	QO (B)	15-70 A	15-125 A	15-30 A	...
		QO (B) AS	15-30 A	15-30 A	15-30 A	...
		QO (B) GFI	15-30 A	15-60 A	...	...
		QO (B) PL	15-30 A	15-60 A	15-30 A	...
		QO (B) VH	...	150 A	35-150 A	...
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	
		QO (B)	15-30 A	15-30 A	15-30 A	
208Y/120	22k	QO (B) VH	UMB-xx	15-70 A	15-125 A	15-100 A
			MB-xx	15-30 A	15-30 A	15-30 A
			QO (B) AS	15-30 A	15-60 A	...
			QO (B) GFI	15-30 A	15-30 A	...
			QO (B) PL	15-30 A	15-30 A	...
	25k	QD	UMB-xx	15-70 A	15-125 A	15-30 A
			MB-xx	15-30 A	15-60 A	15-30 A
			QO (B) AS	15-30 A	15-60 A	...
			QO (B) GFI	15-30 A	15-60 A	...
			QO (B) PL	15-30 A	150 A	35-150 A
240	42k	HD, JD	QO (B)	15-70 A	15-125 A	15-100 A
			QO (B) GFI	15-30 A	15-60 A	...
			QO (B) VH	...	150 A	...
			QO (B) PL	15-30 A	...	...
			QO (B) AFI	15-20 A	...	...
	65k	DJ 400 A	QO (B)	15-70 A	15-125 A	15-100 A
			QO (B) VH	...	150 A	15-150 A
			QO (B) PL	15-30 A	...	...
			QO (B) H	...	15-100 A	...
			QO (B) AFI	15-20 A	...	...
240	65k	EG, Fgf, KGf	QO (B)	15-70 A	15-125 A	15-100 A
			QO (B) GFI	15-30 A	15-60 A	...
			QO (B) VH	...	150 A	...
			QO (B) PL	15-30 A	...	...
			QO (B) AFI	15-20 A	...	...
	100k	FCL22 KCL22 FCL32 KCL32	QO (B)	15-70 A	15-100 A	15-100 A
			QO (B) AS	15-30 A	15-30 A	15-30 A
			QO (B) GFI	15-30 A	15-30 A	...
			QO (B) PL	15-30 A	15-30 A	...
			QO (B) AFI	15-20 A	...	...
100k	400 A Max. Class J or T6 Fuses	QO (B) VH	15-30 A	15-125 A	15-100 A	
		QO (B) AFI	15-20 A	150 A	...	
		QO (B) AS	15-70 A	15-100 A	15-100 A	
		QO (B) GFI	15-30 A	15-30 A	15-30 A	
		QO (B) PL	15-30 A	15-30 A	...	
100k	200 A Max. Class T3 Fuses	QO (B) AFI	15-20 A	...	...
		QO (B)	15-70 A	15-100 A	15-100 A	
		QO (B) AS	15-30 A	15-30 A	15-30 A	
		QO (B) GFI	15-30 A	15-30 A	...	
		QO (B) PL	15-30 A	15-30 A	...	

LynTec models
LCLC 326
MSLC 326
MSLC 338
MSP 338
MSP 139

LynTec models
LCLC 341
MSLC 341

LynTec models
MSLC 127
MSLC 129
are series rated 22k AIR.
see QO130Mxx on pg 1-3 of Digest 173.

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)	15-70 A	15-125 A	15-100 A
			QO (B) VH	...	...	35-150 A
			QO (B) GFI	15-30 A	15-60 A	...
			QO (B) PL	15-30 A	15-60 A	15-30 A
			QO (B) AFI	15-20 A	...	...
	125k	HL, JL	QO (B) H	...	15-100 A	...
			QO (B) VH	...	150 A	...
			QO (B) PL	15-30 A	15-60 A	15-30 A
			QO (B) GFI	15-30 A	15-60 A	...
			QO (B) AFI	15-20 A	...	...
200k	FI, KI	QO (B)	15-70 A	15-125 A	15-100 A	
		QO (B) AS	15-30 A	15-30 A	15-30 A	
200k	Maximum Fuses 200 A Class J or T6 400 A Class T3	QO (B) AS	15-70 A	15-125 A	15-100 A	
		QO (B) GFI	15-30 A	15-60 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.
 - △ Obsolete. 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				
		EJ, FC, FJf, KC, LC, LX, HJ, JJ	EDB, EDB-EPD, EGB				
		EJ, FC, KC, HJ, JJ	ECB-G3				
		HL, JL	EDB, EDB-EPD, EGB, ECB-G3				
	100,000	125,000	FI, KI, LI, LXI	EDB, EDB-EPD, EGB, EJB			
			FI, KI	ECB-G3			
			EG, FGF, KH, LH, HG, JG	EDB, EDB-EPD			
			EG, HG, JG	ECB-G3			
			EJ, FC, FJf, KC, LC, LX, HJ, JJ	EDB, EDB-EPD, EGB			
480Y/277	65,000	EJ, FC, KC, HJ, JJ	ECB-G3	1, 2 & 3			
		HL, JL	EDB, EDB-EPD, EGB				
		FI, KI, LI, LXI	EDB, EDB-EPD, EGB, EJB				
		FI, KI	ECB-G3				
		EG, FGF, KH, LH, HG, JG	EDB, EDB-EPD				
600Y/347	18,000	HG, JG, MG	EDB, EDB-EPD	1, 2, 3			
		EJ, FI, KH, KL, LC, LE, LX, LI, LXI, HJ, JJ	EDB, EDB-EPD, EGB				
		LH	EDB(15-70 A), EGB				
		LC, LE	EDB, EDB-EPD, EGB, EJB				
		HL, JL	EDB, EDB-EPD, EGB				
	35,000	50,000	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					
600Y/347	200,000	200 Ampere Maximum Class J or T (600V)	ECB-G3	1, 2 & 3			

QOPLxxx-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, Motorized. (REMOTELY OPERATED)
-xxx = poles. xxx = 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

QOxxx (B) = BUMB series Bolt-on, UnMotorized Breaker
-xxx = poles. xxx = 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, UnMotorized Breaker
-xxx = poles. xxx = 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)