

All sound systems need a power panel - why not have ONE TOUCH AC power control?
Motorized circuit breakers sequence sound system AC power!

MSP 341-xx Modular Sequencing Panelboard - The Electrician's choice



LynTec Modular Sequencing series panels add branch circuit sequencing to the main and branch circuit breaker functions normally found in a Load Center or Panelboard.

How they work
 Applies AC to low level, front-end electronics... waits for them to stabilize... (clicks and pops are ignored by un-powered power amplifiers)...
 AC is then sequenced to power amplifiers to spread high inrush currents over time.
 Protects valuable loudspeaker systems by delaying turn-on until all low level equipment has stabilized.

ONE TOUCH
 REMOTE POWER CONTROL

SHOWN ACTUAL SIZE



Green LED illuminated Red

SS-2 Sequencer Switch Set
 One SS-2 switch set is supplied with each panel.

LynTec
 Modular Sequencing series Power Panels

BENEFITS

- ✓ **ONE TOUCH remote power control**
 - Immediate visual feedback provided by flashing **ON** switch.
 - Light stays **ON** to verify sequence completion.
 - Process is reversed for turn-off sequence.
 - May be controlled from one to six locations.
 - Multiple sequencing panels may be daisy-chained for larger systems.
- ✓ **Reduced installation labor**
 - One wall-mounted, sequenced power panel feeds AC power to all rack and console receptacles.
- ✓ **Low power consumption**
 - **BMB** (Bolt-on) and **MB** (Clip-on) series motorized circuit breakers require no holding current (like DC relays) or heat sinks (like solid state relays).
 - Runs cool — lasts long.
- ✓ **Automatic load shedding and *BROWNOUT* protection**
 - A voltage sensing system automatically sheds the load when AC mains voltage drops below 95 volts for 2 seconds.
 - Capacitor-stored energy zips-off all circuits 2 seconds after power fails.
 - The system automatically re-sequences without operator intervention when stable voltage (above 105 volts for 5 seconds) resumes.
 - Reduces the start-up load for auxiliary power units.
 - Smart wake-up is ideal for unattended systems.
- ✓ **Kill**
 - Emergency instant shutdown may be triggered by an external contact closure.
 - System automatically re-sequences when contact opens.
- ✓ **HurryOff — *Ohh..... no..... switch* – Kill without restart**
 - By holding **any** OFF switch down for 2 seconds, the operator can trigger an instant shutdown with no automatic restart.

LynTec — AVAILABLE MODELS — LynTec

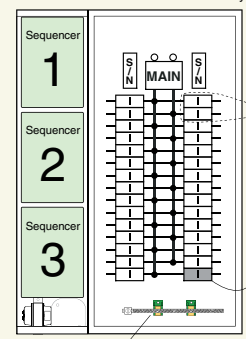
Panel electrical specifications and configurations — Outline dimensions

The base model -xx suffix is the number of motorized breakers the control system will drive: -12, -24, -36, -48 or -60.

Click on  icon to download model specific Panel Planners for submittals. —  Full AllPanel brochure.

MSLC 129-xx
Modular Sequencing Load Center
1Ø, 3 wire, 120/240 Vac.
200 Amp Main Breaker Standard

Cabinet Outline — Surface mount only



SINGLE PHASE

These two positions used for back fed main breaker in **MSLC 127-xx**. (For main breakers 100 Amps or less.)

SEQUENCER POWER 10A supplied installed

Isolated Technical Ground Bar
Feed: 2/0 max. Branches: 29 positions, 14 - 4 ga.

Square D QO130M200 Load Center with LynTec low-voltage sidecar.

Standard Main Breaker: QOM2200VH.

200A, 22k AIR. [Amps Interrupt Rating]
Main Breaker option — Part# suffix
-M1150 Amp

Square D#: QOM2xxxVH, All 22k AIR.
Wire: #4 - 350 kcmil Al/Cu.

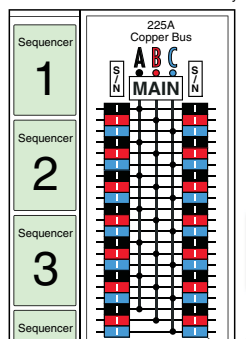
Other back-fed main options
Uses positions 2 & 4 for back-fed main breaker resulting in a **MSLC 127-xx-Mxxx** part #.

Main Options — Part# suffix — **Bold face**=Amps
-M1030, -M1040, -M1060,
-M1080 & -M1100 available.

Square D QO2xxxVH, all 22k AIR.
Wire: #4 - 2/0 kcmil Cu.
Outside dimensions
20.9" w., 29.8" h., 3.9" d.

MSLC 341-xx or MSLCH 341-xx
Modular Sequencing Load Center
3Ø, 208Y/120 Vac, 4 wire.
225 Amp Main Breaker Standard

Cabinet Outline — Surface mount only



All SQUARE D Panels

SEQUENCER POWER 10A supplied installed

Isolated Technical Ground Bar
Branches: 26 pos., 14 - 4 ga.
Feed: 2/0 max.

Square D QO342M225 Load Center with LynTec low-voltage sidecar.

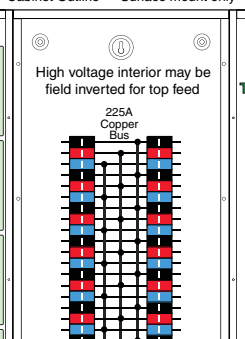
Standard Main Breaker: QDL32225. 225 Amp

Main Breaker options — Part# suffix — **Bold face**=Amps
-M3125, -M3150, -M3175 or -M3200
QDL32xxx series (all 25k AIR) [Amps Interrupt Rating]
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.

Outside dimensions
MSLC 341 or MSLC 338
20.9" w., 39.3" h., 3.9" d.

MSP 341-xx or MSPH 341-xx
Modular Sequencing Panelboard
3Ø, 208Y/120 Vac, 4 wire.
225 Amp Main Breaker Standard

Cabinet Outline — Surface mount only



Isolated Technical Ground Bar
Feed 2/0 max.
Feed 4/0 max.
Iso-Tech Ground Branches: 46 position 14 - 4 ga.

High voltage interior may be field inverted for top feed

225A Copper Bus

SEQUENCER POWER 10A supplied installed

NQOD-NL Panel
200% Neutrals.
2 — 250 kcmil Cu

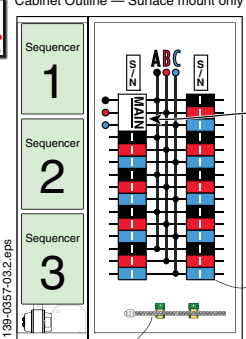
Square D NQOD-NL MB Panel with LynTec sidecars.
Standard Main Breaker: JGP36225YL — 225 Amp

Main Breaker options — Part# suffix — **Bold face** = Amps
-MHG3125, -MJG3150, -MJG3175 or -MJG3200
HGP36xxx or JGP36xxx series (all 65k AIR) [Amps Interrupt Rating]

All Panelboards — Outside dimensions — 36" w., 50" h., 6.13" d.
High voltage interior may be field inverted for top feed.
Knockout panels supplied in both ends.

MSLC 326-xx
Modular Sequencing Load Center
3Ø, 208Y/120 Vac, 4 wire.
100 Amp Main Breaker Standard

Cabinet Outline — Surface mount only



MLO option
Back fed main may be replaced by a protected disconnect, allowing up to 29 breakers.
Model no. becomes a **MSLC-329-xx-MLO**

SEQUENCER POWER 10A supplied installed

Isolated Technical Ground Bar
Feed: 2/0 max. Branches: 26 positions, 14 - 4 ga.

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].

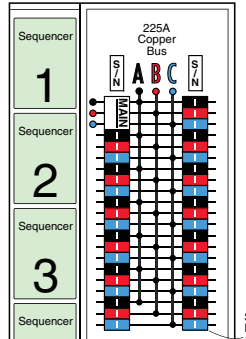
Main Breaker options —

Main Lug Only -MLO option
Feed this panel with appropriate protected disconnect.
Panel Mains Rating is 200A.
Provides access to branch breaker positions 1, 3, & 5.
Becomes **MSLC 329-xx-MLO** (may hold up to 29 breakers)

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

MSLC 338-xx
Modular Sequencing Load Center
3Ø, 208Y/120 Vac, 4 wire.
30 to 100 Amp back-fed Main Breaker

Cabinet Outline — Surface mount only



SEQUENCER POWER 10A supplied installed

Isolated Technical Ground Bar
Branches: 26 pos., 14 - 4 ga.
Feed: 2/0 max.

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

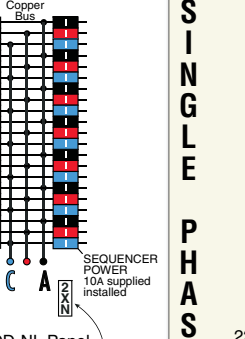
back-fed Main Breaker options
Part# suffix — **Bold face**=Amps
-M3030, -M3035: (10kAIR)
Squared D#: QO30xx

-M3050, -M3060, -M3070 or -M3090
Squared D#: QO3xxVH (all 22k AIR) [Amps Interrupt Rating]
Wire: #4 - 2/0 kcmil Cu.

Neutral data and Outline Dimensions same as MSLC 341 above.

Panelboard INTERIOR Alternatives
Cabinet outlines same as 3 phase above

MSP 338-xx
Modular Sequencing Panelboard
3Ø, 208Y/120 Vac, 4 wire.
30 to 100 Amp QOB3xx series
Bolt-on, back-fed Main Breaker

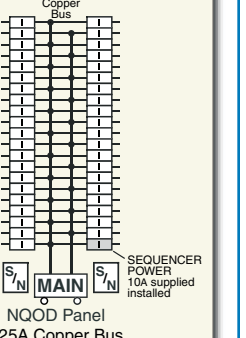


SEQUENCER POWER 10A supplied installed

NQOD-NL Panel
225A Copper Bus
200% Neutrals.
2 — 250 kcmil Cu

MSP 141-xx
Modular Sequencing Panelboard
1Ø, 3 wire, 120/240 Vac.
All Special Order, NCNR.
(Non Cancelable, Non Returnable)

SINGLE PHASE



SEQUENCER POWER 10A supplied installed

NQOD Panel
225A Copper Bus
#4 — 300 kcmil Al/Cu

Main Breakers available
QDL22xxx series — All 25k AIR
Part# suffix — **Bold face** = Amps
-MQD2070, -MQD2080, -MQD2090,
-MQD2100, -MQD2110, -MQD2125,
-MQD2150, -MQD2175, -MQD2100,
-MQD2200, -MQD2225.

MSPH option: QGL22xxx series — All 65k AIR.
Any of the above ratings — use -MQG2xxx suffix

Specifier's Guide for LynTec Modular Sequencing Panels

Load Center and Panelboard part number explanation

Blue type items only available for Panelboards.

Optional field installed branch circuit breaker numbers

Panelboards

MSP 341

3 = 3 phase
208/120v, 4 wire
or
1 = 1 phase
120/240v, 3 wire

Single Phase Panelboards are Special Order, **NCNR**.

41
38 ♦
Number of available circuit breaker spaces

Load Centers

MSLC 326

1 = 1 phase
120/240v, 3 wire
or
3 = 3 phase
208/120v, 4 wire

127 ♦
129 ♦
326
338 ♦
341
Number of available circuit breaker spaces

Load Center Main Breaker Options

Single Phase Load Center

The standard Single Phase **MSLC 129-xx** has a factory installed, two pole, ♦ 200 Amp main breaker. [22kAIR] (AIR = Amps Interrupt Rating)

Optional main breakers [All 22kAIR]

- 125A -M1125
- 150A -M1150 (25 kVA transformer)
- 175A -M1175.

♦ Smaller main sizes are also available by replacing the large block type main breaker with a bracket-retained, clip-on, back-fed, 2 pole, main breaker. [All 10kAIR Amps Interrupt Rating]

- 30A -M1030 (5 kVA transformer)
- 40A -M1040 (7.5 kVA)
- 60A -M1060 (10 kVA)
- 80A -M1080 (15 kVA)

♦ Note This modification reduces the number of available branch breaker spaces from 29 to 27, hence a **MSLC 129-xx** becomes a **MSLC 127-xx**.

-36 21/BMB-20 8/BMB-30 5/BUMB-20 -MJG3150

12
24
36
48
60
panelboard only
Sequencer capacity—will drive up to this number of motorized breakers

BMB
Bolt-on Motorized breakers

or
MB
Clip-on Motorized breakers

Quantity of lowest current sequenced circuit breakers

15
20
30
Current rating

BMB
Bolt-on Motorized breakers

or
MB
Clip-on Motorized breakers

Quantity of higher current sequenced circuit breakers

20
30
Current rating

BUMB = Bolt-on
or
UMB = Clip-on

Quantity of single pole Un-Motorized circuit breakers

10
15
20
30
Current rating

-Main breaker & -Main Lug Only options
SEE BELOW

Load Center — Panelboard

What's the difference?

Panelboards are the electrician's choice because they have over 250% more wiring space. Panelboards are used when bolt-on breakers, 200% neutrals or high circuit counts with heavy isolated technical ground wires are required.

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

Factory options — add suffix to part number

-CR-x: Completion Relay option.

Provides SPDT (form C) relay contact that changes state at the completion of any field selectable step.

Add **-CR-x** for each board requiring CR option at time of manufacture. -x is the board position where CR option is desired. Example: **MSP 341-36 28/20 4/30 9/UMB20 M150 -CR-3** would have the CR relay in the 3rd board from the top.

Front-end remote control

Several options are now available for the remote control of ac for the F.O.H, mix position, booth or control room.

See <http://www.lyntec.com/boothoptions.pdf>

Small 3 Phase Load Center

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

In some instances a smaller isolation transformer feeding the panel requires the use of a smaller main breaker.

See ♦ below for optional main breaker sizes available.

Large 3 Phase Load Center

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

Optional main breakers [All 25kAIR]

- 125A -MQD3125 (36 kVA transformer)
- 150A -MQD3150 (45 kVA)
- 175A -MQD3175 (50 kVA)
- 200A -MQD3200 (60 kVA)

♦ Smaller main sizes are also available by replacing the large block type main breaker with a bracket-retained, clip-on, back-fed, 3 pole, main breaker.

- ♦ 30A & 35A: 10kAIR
- ♦ 50A up: 22kAIR (Amps Interrupt Rating)
- ♦ 30A -M3030 (7.5 kVA transformer)
- ♦ 35A -M3035 (10 kVA)

- ♦ 50A -M3050 (15 kVA)
- ♦ 70A -M3070 (20 kVA)
- ♦ 90A -M3090 (25 kVA)
- ♦ 100A -M3100 (30 kVA)

Note This modification reduces the number of available branch breaker spaces from 41 to 38, hence a

MSLC 341-xx becomes a **MSLC 338-xx**.

-MLO (Main Lug Only) option:

We only stock MSLC panels with main breakers. If your specification requires a **-MLO** we will provide it at the same price as the standard panel.

♦ Smaller main sizes are also available by replacing large main breaker with a 3 pole, bolt-on, back-fed breaker.

♦ 30A -BM3030 (7.5 kVA transformer)

♦ 35A -BM3035 (10 kVA)

♦ 50A -BM3050 (15 kVA)

♦ 70A -BM3070 (20 kVA)

♦ 90A -BM3090 (25 kVA)

♦ 100A -BM3100 (30 kVA)

♦ 30A & 35A: 10kAIR

♦ 50A up: 22kAIR (Amps Interrupt Rating)

Note This modification reduces the number of available branch breaker spaces from 41 to 38, hence a **MSP 341-xx** becomes a **MSP 338-xx**. **-MLO (Main Lug Only)** is an option.

Panelboard

Main Breaker Options

The standard **MSP 341-xx** has a JGP36225, 3 pole, 225 Amp main breaker (65 kVA). 65k AIR [Amps Interrupt Rating].

Optional main breakers [All 25kAIR]

125A -MHG3125 (36 kVA transformer)

150A -MJG3150 (45 kVA)

175A -MJG3175 (50 kVA)

200A -MJG3200 (60 kVA)

Feed thru lugs are **NOT** available on 3Ø NL (Non-Linear) panelboards with 200% neutrals.

Single Phase Panelboard

The special order **MSP 141** or **MSPH 141** have the following main breaker options: **MSP 141 -MQD2xxx** series — 25k AIR **MSPH 141 -MQG2xxx** series — 65k AIR

Ratings available: 70A, 80A, 90A, 100A, 125A, 150A, 175A, 200A or 225A.

ARCHITECT'S and ENGINEER'S SPECIFICATIONS
Sound system A.C. power Sequencing Panelboard

All A.C. power for the sound system shall be supplied from a time sequenced source capable of being remote controlled from multiple locations.

A means of visual operator feedback shall provide an indication of the progress of the power turn-on or turn-off sequence at each control point.

Time between sequence steps shall be adjustable from 1/8 second to 1 second.
Sequencing shall have a time delay adjustable between the low-level equipment circuits and the power amplifier circuits. The delay time shall have a field adjustable range from 1 second to 8 minutes.

The sequencing system shall be capable of shedding the load within 3 seconds after a power failure and automatically re-sequencing when power resumes and remains above 105 volts for more than 5 seconds without operator intervention.

The sequencing system shall have brownout protection; monitoring the line voltage and triggering an automatic shutdown if the line voltage drops below 95 volts for more than 2 seconds.

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

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

Three phase sequenced panelboards shall have 200% neutrals.

Single phase sequenced panelboards shall have a single neutral.

All sequenced panelboards shall have a separate and attached isolated technical ground section.

All branch circuit breakers shall be bolt-on.

The sound system power sequencing shall be the LynTec model MSP xxx or MSPH xxx series Sequencing Panelboard.

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

Models:

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

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

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

This document available in Word format:

http://www.lyntec.com/139-0339_PnlBrd_A&E_Spec.doc

Most recent version pdf:

http://www.lyntec.com/139-0339_PnlBrd_A&E_Spec.pdf

139-0339-05_PnlBrd_A&E_Spec 10/31/06

Planning and Layout Worksheet — As-built door label

MSP 341-xx Sound System Sequencing Panel

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

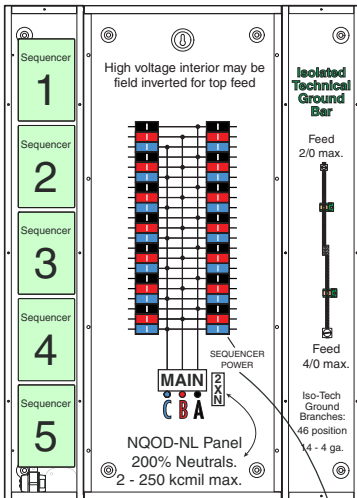
Available as PDF download
www.lyntec.com/139-0246_MSP341Plnr.pdf

Low voltage control
 Wiring Diagram
 located inside
 left cover.

www.lyntec.com/139-0327_SequencerLV_Wiring.pdf

LynTec
MSP 341-xx (65k AIR main)
 Modular Sequencing Panelboard

Cabinet outline
 Surface mount only
 Outside dimensions
 36" w., 50" h., 6.13" d.



Square D NQOD-NL MB Panel with LynTec sidecars.
 Standard **MSP** Main Breaker:
225 Amp. - 65k AIR - JGP36225
 Main Breaker options — Part# suffix
Bold = Amps
 -MHG3**125**,
 -MJG**150**, -MJG**3175** or -MJG**3200**
 Square D #s
 HGP36**125** (65k AIR)
 JGP36**150** (65k AIR)
 JGP36**175** (65k AIR)
 JGP36**200** (65k AIR)
 [Amps Interrupt Rating]

Main Breaker wire:
 #4-350 kcmil Al or 250 kcmil Cu.
 200%, Non-Linear, Neutral has one feed lug that accepts two 250 kcmil Cu wires.

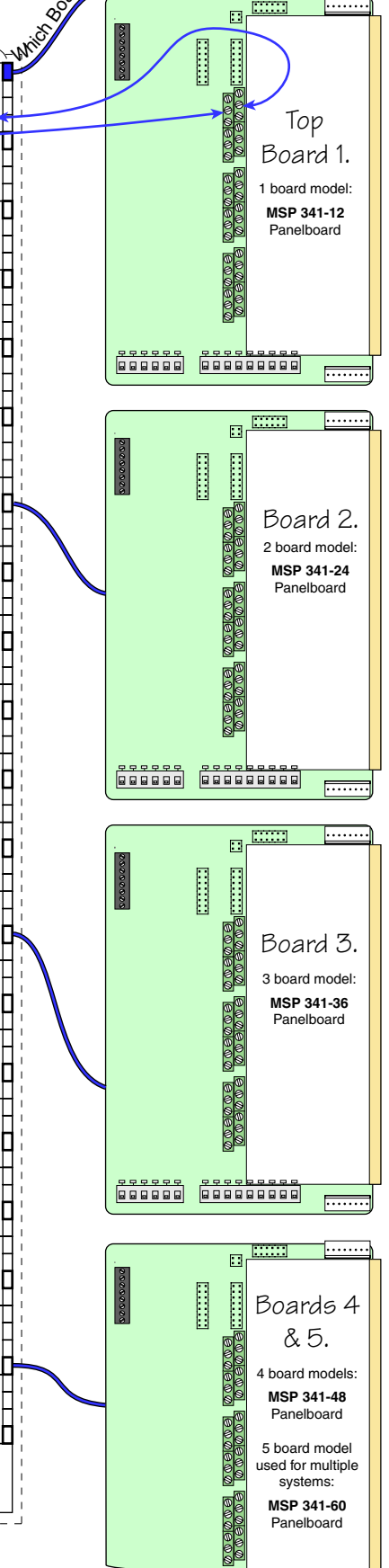
Feed thru lugs **NOT** available on 200% NL panel.

Each motorized breaker is controlled by a sequencer.
 As-built door label example:
 Step # **1a** (1a) (# in parenthesis is *suggested* breaker connection in sequencer).
 Bold line around box is the *suggested* sequencer board: #1(Top), #2, #3, or #4.
 Fill in box to indicate which sequencer board this breaker is connected to.

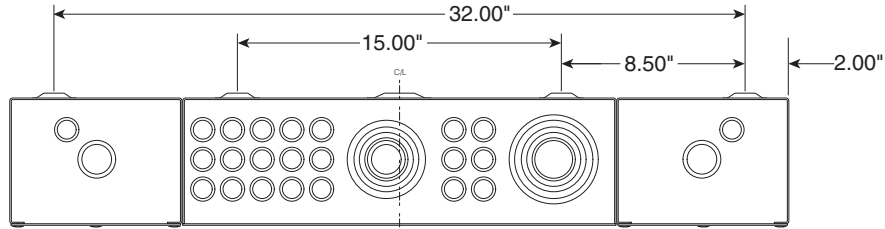
1	Phase A	2
Amp. <input type="checkbox"/> Un-motorized. <input type="checkbox"/> Motorized-Step # _____ (1a)		Amp. <input type="checkbox"/> Un-motorized. <input type="checkbox"/> Motorized-Step # _____ (1b)
3	Phase B	4
Amp. <input type="checkbox"/> Un-motorized. <input type="checkbox"/> Motorized-Step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

SEQUENCER POWER
 10A un-motorized breaker supplied installed.

MS-12 Sequencer circuit boards in left-hand, low voltage cabinet.



Outline Drawing



LynTec
MSP 341-xx (65k AIR main)
 Modular Sequencing Panelboard

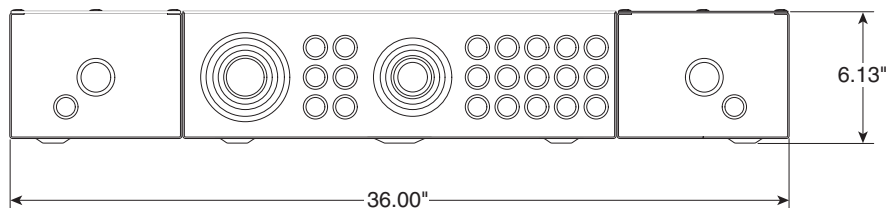
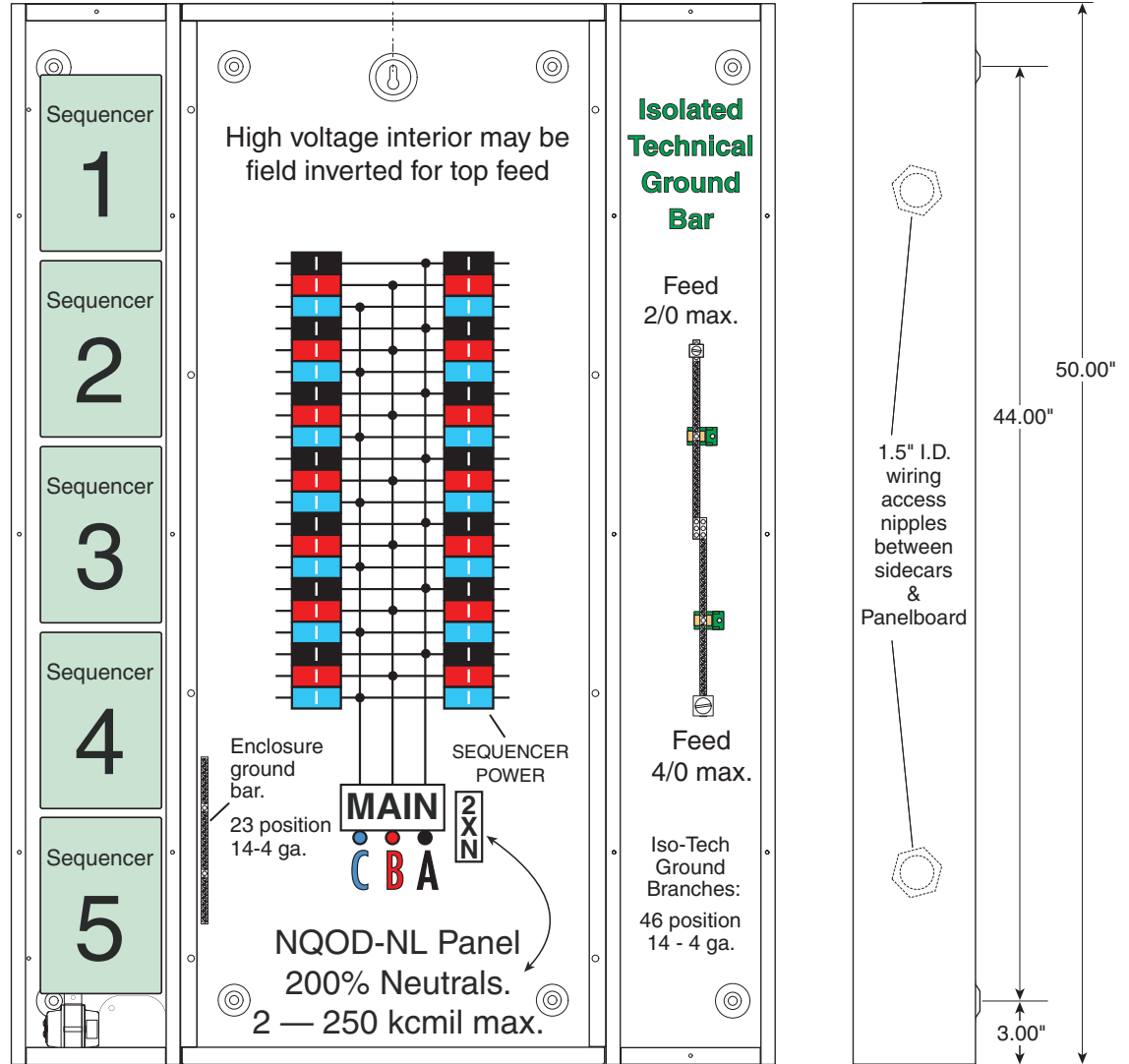
Square D NQOD-NL MB Panel
 with LynTec sidecars.

Standard **MSP** Main Breaker:
225 Amp. - 65k AIR - MJG32225

Main Breaker options — Part# suffix
Bold = Amps
 -MHG3110, -MHG3125,
 -MJG3150, -MJG3175 or -MJG3200
 (all 65k AIR)
 [Amps Interrupt Rating]

Main Breaker wire:
 #4-350 kcmil Al or 250 kcmil Cu.
 200% Neutral has one feed lug that
 accepts two 250 kcmil Cu wires.

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





Selection Information

H- and J- frame Thermal-magnetic Molded Case
150 and 250 Ampere Frame — Class 611

150 A H-frame	250 A J-frame
 <p>LynTec LCP341-xx MSP 341-xx Main breaker suffix -MHG3110 = 110 A -MHG3125 = 125 A Special Order Option NCNR Non Cancellable</p>	 <p>LynTec LCP 341-xx MSP 341-xx The standard main breaker is a JGP36225 and requires no suffix number. Main breaker suffix options -MJG3150 = 150 A -MJG3175 = 175 A -MJG3200 = 200 A -MJG3225 = 225 A</p>

Circuit Breaker Type	HD	HG	HJ	HL	JD	JG	JJ	JL
Number of Poles	2,3	2,3	2,3■	2,3■	2,3■	2,3■	2,3■	2,3■
Current Range	15–150 A	15–150 A	15–150 A	15–150 A	150–250 A	150–250 A	150–250 A	150–250 A

Interrupting Ratings									
	240 V	25	65	100	125	25	65	100	125
UL/CSA/NOM 50/60 Hz	480Y/277 Vac	18	35	65	100	18	35	65	100
	480 Vac	18	35	65	100	18	35	65	100
	600Y/347 Vac	14	18	25	50	14	18	25	50
	600 Vac	14	18	25	50	14	18	25	50
DC Ratings	125/250 Vdc	20	20	20	20	20	20	20	20
	500 Vdc	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
IEC 947-2 Icu/Ics	220/240 Vac	25/25	65/65	100/100	125/125	25/25	65/65	100/100	125/125
	380/415 Vac	18/18	35/35	65/65	100/100	18/18	35/35	65/65	100/100
	500/525 Vac	14/14	18/18	25/25	50/50	14/14	18/18	25/25	50/50

Special Ratings									
Fed. Specs W-C-375B/GEN	✓	✓	✓	✓	✓	✓	✓	✓	✓
HACR (2, 3-pole)	✓	✓	✓	✓	✓	✓	✓	✓	✓

Connections/Terminations									
Unit Mount	✓	✓	✓	✓	✓	✓	✓	✓	✓
I-Line®	✓	✓	✓	✓	✓	✓	✓	✓	✓
Rear Connection	✓▲	✓▲	✓	✓	✓	✓	✓	✓	✓
Drawout	✓▲	✓▲	✓	✓	✓	✓	✓	✓	✓
Optional Lugs	✓▲	✓▲	✓	✓	✓	✓	✓	✓	✓
Unit Mount	✓	✓	✓	✓	✓	✓	✓	✓	✓

Accessories and Modifications									
Shunt Trip	✓	✓	✓	✓	✓	✓	✓	✓	✓
Undervoltage Trip	✓	✓	✓	✓	✓	✓	✓	✓	✓
Auxiliary Switches	✓	✓	✓	✓	✓	✓	✓	✓	✓
Alarm Switch	✓	✓	✓	✓	✓	✓	✓	✓	✓
Motor Operator	✓▲	✓▲	✓	✓	✓	✓	✓	✓	✓
Handle Operators	✓▲	✓▲	✓	✓	✓	✓	✓	✓	✓
Handle Padlock Attachment	✓▲	✓▲	✓	✓	✓	✓	✓	✓	✓
Handle Mechanical Interlocks	✓▲	✓▲	✓	✓	✓	✓	✓	✓	✓
Optional GF Protection	...	...	...	...	...	...	...	...	...

Trip System Type									
Thermal-magnetic	✓	✓	✓	✓	✓	✓	✓	✓	✓
Instantaneous-only (MCP)	...	...	...	...	...	...	...	...	...
Molded Case Switch (Automatic)	✓	✓	✓	✓	✓	✓	✓	✓	✓
Electronic	...	...	...	...	...	...	...	...	...

Dimensions									
Dimensions (3P Unit Mount)	Height IN (mm)	6.4 (163)				7.5 (191)			
	Width IN (mm)	4.1 (104)				4.1 (104)			
	Depth IN (mm)	3.4 (86)				3.4 (86)			

▲ Not available in HD and HG two-pole rating (2-pole module)
■ 2-pole in a 3-pole module.
12/01/05

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

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	25k	ED, Fdf	QO (B)	15-70 A	15-125 A	15-100 A
			QO (B) GFI	15-30 A	15-60 A	...
			QO (B) PL	15-20 A	...	...
			QO (B) AS	15-30 A	15-125 A	15-100 A
			QO (B) GFI	15-30 A	15-60 A	...
	42k	LA, MA	Q2L-Hf	...	110-225 A	110-225 A
			QDL	...	70-225 A	...
			QO (B) VH	15-30 A	15-30 A	15-30 A
			QO (B) PL	15-30 A	15-60 A	15-30 A
			QO (B)	15-70 Ad	...	...
240	42k	LC 600 A Maximum	QO (B) VH	15-30 A	15-125 A	15-100 A (3P 208 V Max.)
			QO (B) GFI	15-30 Ae	15-60 A	...
			QO (B) PL	15-20 A	...	...
			QO (B) VH	15-30 A	15-125 A	15-100 A (3P 208 V Max.)
			QO (B) GFI	15-30 Ae	...	...
	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) H	...	15-100 A	...
			QO (B) GFI	15-30 A	15-60 A	...
			QO (B) PL	15-20 A	...	...
240	65k	EG, Fgf, KGf	QO (B)	15-70 A	15-125 A	15-100 A
			QO (B) AS	15-30 A	15-30 A	15-30 A
			QO (B) VH	...	...	...
			QO (B) GFI	15-30 A	15-60 A	...
			QO (B) PL	15-20 A	...	...
	65k	QG, HG, JG	BMB-xx	15-30 A	15-60 A	15-30 A
			QO (B) GFI	15-30 A	15-60 A	15-30 A
			QO (B) AS	15-30 A	15-60 A	15-30 A
			QO (B) PL	15-30 A	15-60 A	15-30 A
			QO (B) AFI	15-30 A	...	...
240	65k	HG, JG	BUMB-xx	15-70 A	15-125 A	15-100 A
			QO (B) VH	...	35-150 A	...
			QO (B) H	...	15-100 A	...
			QO (B) PL	15-30 A	150 A	...
			QO (B) VH	...	150 A	...
	65k	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	15-20 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) AS	15-30 A	150 A	...	
		QO (B) GFI	15-20 A	...	...
		QO (B) PL	15-20 A	...	...
		QO (B) AFI	15-20 A	...	...
100k	FCL24 KCL24 FCL34 KCL34	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	15-20 A	...	...
		QO (B) AFI	15-20 A	...	...
100k	200 A Max. Class T3 Fuses	QO (B) AFI	15-20 A	...	...
		QO (B) AFI	15-20 A	...	...
100k	EJ, FJf	QO (B)	15-70 A	15-125 A	15-100 A	
		QO (B) GFI	15-30 A	15-60 A	...	
100k	EJ, FJf	QO (B)	15-70 A	15-125 A	15-100 A	
		QO (B) GFI	15-30 A	15-60 A	...	

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

LynTec models
LCLC 341
MSLC 341

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

8 PANELBOARDS

LynTec models
MSLCH 341
MSP 119
MSP 141
LCP 341
MSP 341

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)

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) 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	...	...
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)	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				
	100,000	200,000	EG, HG, JG	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			
			FI, KI, LI, LXI	EDB, EDB-EPD, EGB, EJB			
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	200,000	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

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.

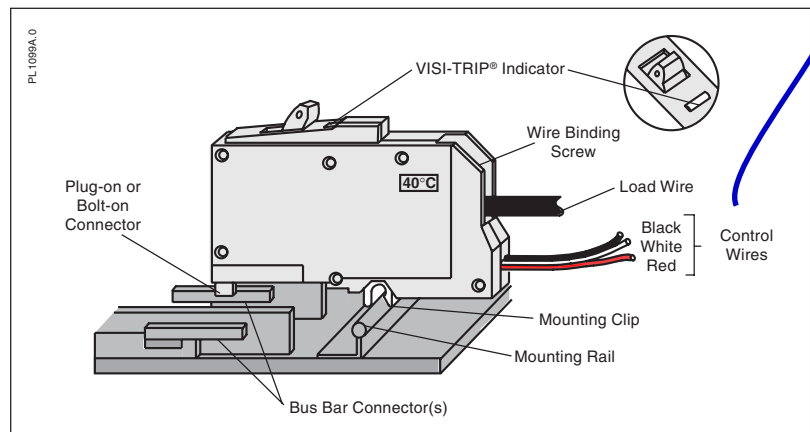
See page 2 for
LynTec
part number explanation

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.

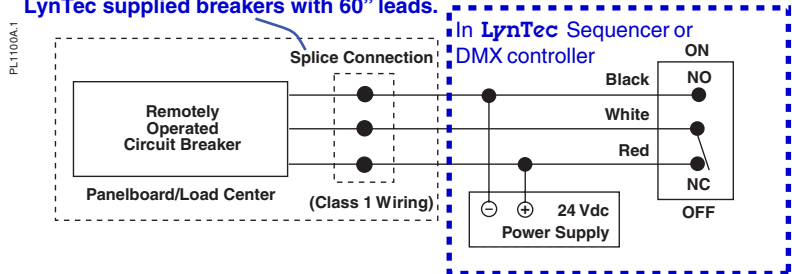
NOTE: The remote mechanism will not move the circuit breaker handle. Also, the remote mechanism cannot turn power ON when the circuit breaker is tripped (VISI-TRIP® flag indicator showing) or when the circuit breaker handle is in the OFF position.

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

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



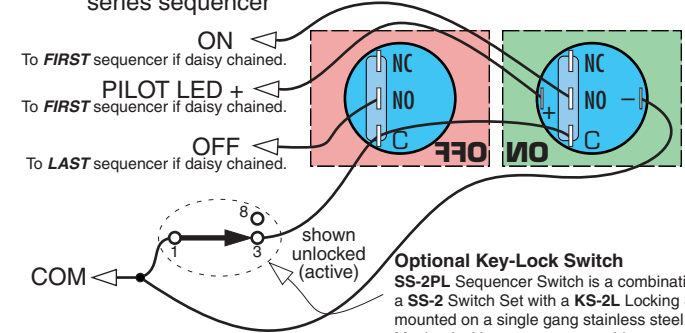
A.C. Sequencing Systems

Wire requirements

Switch set to sequencer: 4 conductors.
 Between daisy chained sequencers:
 9 conductors, 11 if Power Vouchers are used.
 Up to 2500 ft. run: 24 ga.
 2,500 to 3,750 ft. run: 22 ga.

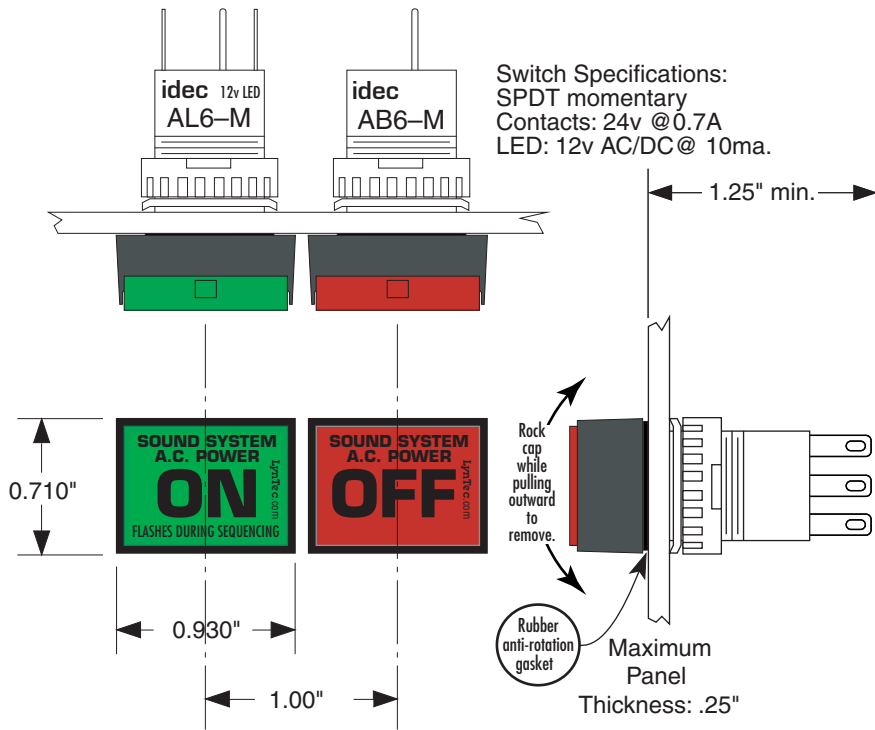
To **LynTec**
PDS, MRTS, MSLC,
SLC, MSP or SP
 series sequencer

Rear view wiring diagram

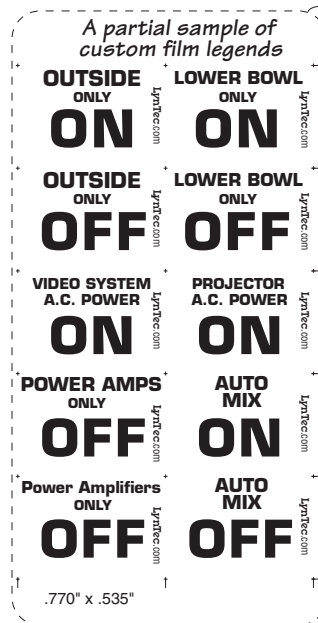


Optional Key-Lock Switch
 SS-2PL Sequencer Switch is a combination of a SS-2 Switch Set with a KS-2L Locking Switch, mounted on a single gang stainless steel wall plate. Mechanical layout on reverse side.

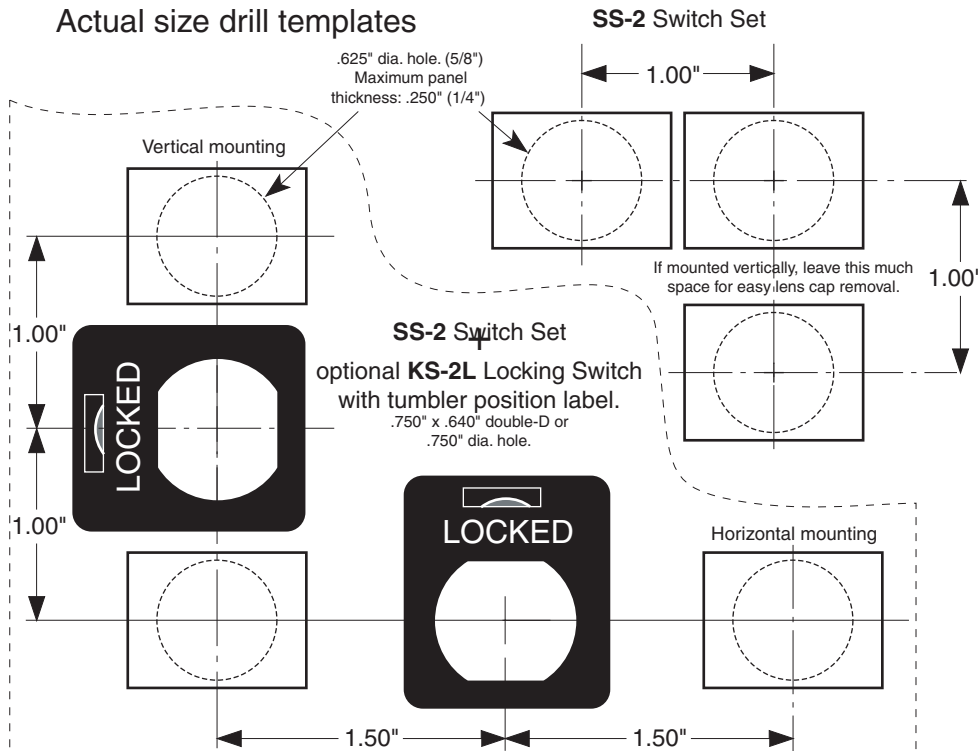
See reverse side for multiple switch set wiring.



Switch Specifications:
 SPDT momentary
 Contacts: 24v @0.7A
 LED: 12v AC/DC@ 10ma.



Actual size drill templates



LynTec

one

SS-2 Sequencer Switch Set

Up to 5* additional remote control locations may be added to the system with additional switch sets or with other momentary switches.

Multiple Sequencer Hookup Diagram

For **LynTec MSLC** and **MSP MODULAR** and **PDS-8EK** Power Sequencing Products

Custom switch legends you can print on your laserprinter

Showing Low-Voltage Remote **ON/OFF** Control and Daisy-Chain Wiring

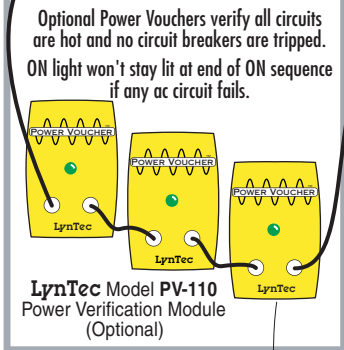
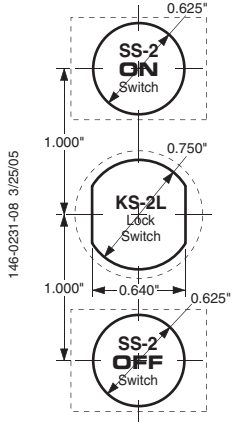
See http://www.lyntec.com/139-0309_CSLF-1_Film.pdf

One set of the **ON** and **OFF** switches shown below are supplied unmounted as a **SS-2** Switch Set with each LynTec sequencer cabinet. Mount in 5/8" dia. round holes in panels up to 1/4" thick.



LynTec Model SS-2PL
Locking Switch Set.
(Optional)

Switch layout for field constructed panel mounting.
1/4" max. panel thickness.



LynTec Model PV-110
Power Verification Module
(Optional)

★ Parallel connect additional SS-2 switch sets for multiple remote control locations.
4 conductors, 24 ga., 5,000 ft. loop max.

Maximum number of switch sets:

All LynTec sequencers support 6 switch sets.

LynTec
Lenexa, KS (Central time zone) U.S.A.
Voice **800-724-4047** or 913-529-2233
Fax **888-722-4157** or 913-529-4157
www.LynTec.com

For **single** sequencer board hookup connect OFF switch normally open to OFF.

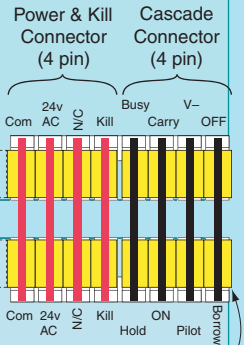
PILOT LED (green)

Cage clamp terminal blocks. Press white levers back with small straight-blade screwdriver to insert stripped wires.

These expansion terminals on the top or middle boards are NOT used when the cascade connectors are used to daisy-chain boards within a cabinet.

FIRST
Sequencer Board (Top)

NOT in PDS-8EK
See daisy-chain connections below for wiring between PDS-8s or multiple cabinets.



+5v CMOS Logic output. Mimics Pilot LED. 3.3KΩ source impedance. (For touch panel drive)

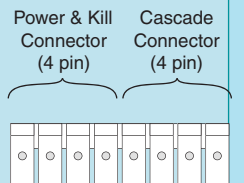
When sequencers are daisy-chained **avoid** using these test switches. Use the **first ON** test switch and the **last OFF** test switch to avoid confusing operation.

For multiple control points add SS-2's or SS-2PL's. Parallel connect lines.

To run each sequencer board as a separate system, remove the **right** Cascade Connector. Connect ON, Pilot, Com & OFF to switch set.

To isolate the **Hurry-Off** and **Kill** functions, unplug **left** Power & Kill Connector and move to the left one step, mis-mating to eliminate the board-to-board Kill connection.

LAST
Sequencer Board (Bottom)



These expansion terminals on the **bottom** board are only used for daisy-chain connections when more than one cabinet is used.

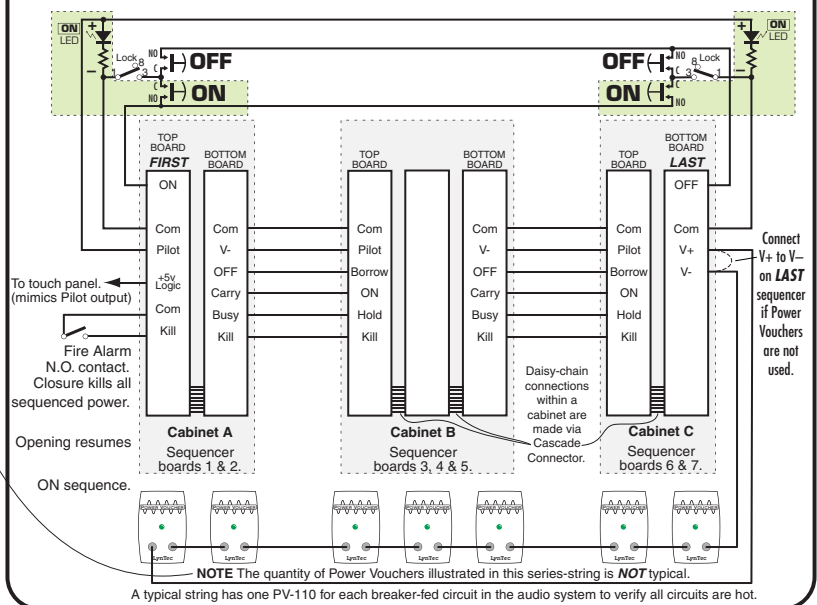
Kill — Fire alarm shutdown

External contact closure lights the red Kill LEDs and kills all sequenced power.

Contact opening restarts the ON sequence.

See next page for enlarged daisy-chain hookup
Low voltage control wire: 24 gauge minimum, 5,000 ft. loop max.

A typical three panel, daisy-chained, system with two locking control locations.



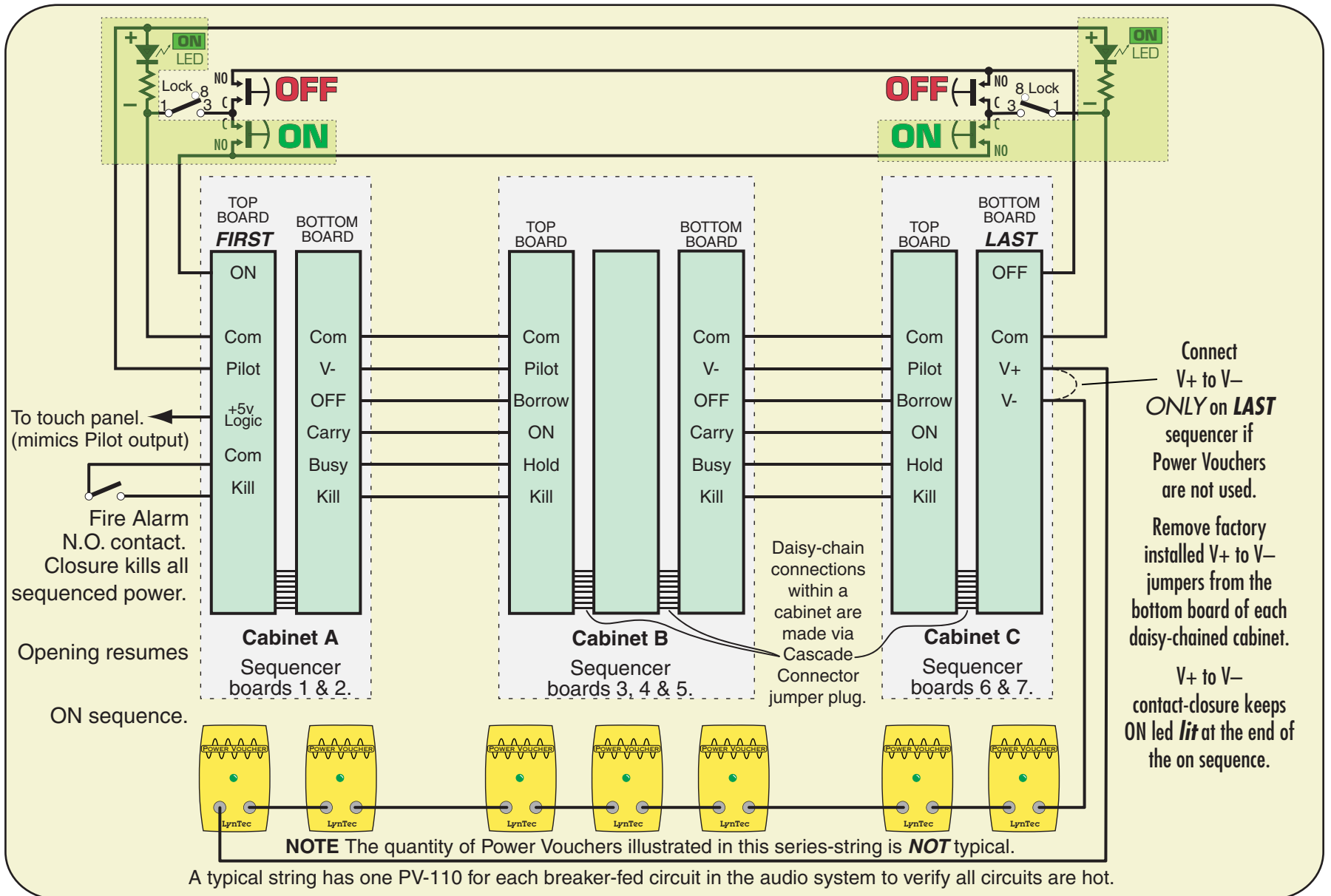
NOTE The quantity of Power Vouchers illustrated in this series-string is **NOT** typical. A typical string has one PV-110 for each breaker-fed circuit in the audio system to verify all circuits are hot.

A typical LynTec three panel, daisy-chained system with two locking control locations.

For Timing Diagram and Logic levels
See http://www.lyntec.com/139-0266_Seq_Timing.pdf

Wire Requirements for Remote Controls

- Basic system ON/OFF Control from one panel only4 conductors
- Basic + Kill Add Kill function6 conductors
- 2 conductors to Kill control location
- Remote control at both ends9 conductors
- Kill, Remote control both ends, full power verification11 conductors
- Low voltage control wire: 24 gauge minimum, 5,000 ft. loop max.



Built-in Kill, Hurry-Off and ZipOff (PANIC) switch option for MSLC and MSP and PDS-8EK series AC SEQUENCING SYSTEMS

What the functions do

Kill — EMERGENCY SHUTDOWN

Provides an *IMMEDIATE* shut down method for the sound system at the command of a fire alarm, emergency announcement system, or ZipOff switch.

Optional ZipOff switch, ZOS-5K

Provides a full AC Power shutdown within 250 milliseconds after the ZipOff button is pushed.

In case of a runaway oscillation or other unexpected signal which could damage the loudspeakers if sustained...

Lift the protective cover and press the ZipOff button... it latches down and lights red. The AC power sequencing system immediately zips off.

Press again to unlatch... the light goes out and the sequencer restarts to repower the system.

OR

Use the new Hurry-Off function at any OFF switch. 

MULTI-BOARD SHUNT R

The Kill line is an 11 ma. current source from each MS-12 Modular Sequencer or PDS-8 EK board

A voltage sensor on the Kill line determines the Kill threshold.

The Kill line has an open circuit voltage of 28 volts which must be pulled down to less than 10.5 volts to generate a Kill function. Grounding the Kill line to Common will always kill the system instantly. This current source may also be used to light the Zip-Off switch's, red LED.

The red ZipOff LED only requires 10 ma. For systems where multiple-board system's Kill lines are paralleled, a 9 v. voltage regulator chip is installed in the ZOS-5K which will automatically shunt the excess source current of up to 5 boards. For more than 5 boards an additional resistor must be used in parallel with the ZipOff switch LED. To prevent damage due to overheating the voltage regulator chip, the resistor should be installed as shown with **full length leads** to get the heat source away from the switch.

Total Number of boards	Shunt Resistor required	
1-5	none	
6	820Ω, 1/4w	16
7	430Ω, 1/4w	17
8	270Ω, 1/2w	18
9	200Ω, 1/2w	19
10	150Ω, 1/2w	20
11	150Ω, 1w	21
12	120Ω, 1w	22
13	100Ω, 1w	23
14	92Ω, 1w	24
15	82Ω, 1w	25
		75Ω, 2w
		68Ω, 2w
		62Ω, 2w
		56Ω, 2w
		56Ω, 2w
		51Ω, 2w
		47Ω, 2w
		47Ω, 2w
		43Ω, 2w
		39Ω, 2w

What to specify or order

For ZipOff switch order ZOS-5K. (services up to 5 Kill equipped boards)

Includes switch with ZipOff film legend and flip up security cover.

Switch mounts in 5/8" round hole in panels up to 3/16" thick.

ZOS-5K Contractor C.O.D. price: \$40.

Delivery: Stock.

Hurry-Off

The MS-12 Modular & PDS-8EK Sequencing boards have a new Hurry-Off function. If you **hold down** any OFF switch for two seconds, a "Kill without restore" function is triggered. The system shuts down within 250 milliseconds and doesn't restart until you give it a new ON command. Kinda like a DSP undo command.

How they work

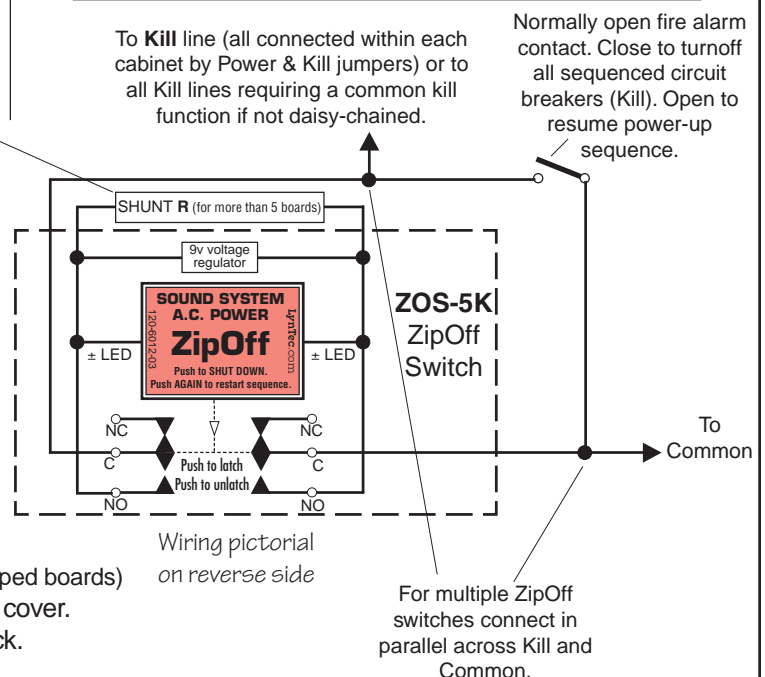
All LynTec sequencing systems have the ZipOff load shedding feature. The older SLC, SP and PDS-8's implemented it by interrupting 24v ac power.

The newer Modular sequencers, the MSLC and MSP series and the PDS-8EK, load shed when power fails, but also have a Kill function that is triggered by grounding the Kill line.

The red Kill LED, adjacent to the Kill terminal on the board, lights and Zip-Off is immediate. The kill line is a low current line. Long control wiring may be used without concern for loop resistances up to 32Ω. (22 gauge, up to a 1,000 ft. run [2,000 ft. loop] or a 680 ft. run of 24 ga).

The ON/OFF *latching* pilot relay remembers that the sequencer was ON. When the Kill line is opened, the ON sequence repeats, bringing the AC power back on.

For the Modular series control boards the ZipOff switch connects the Kill line to common, through the Zip-Off switch's LED, initiating the Kill function.

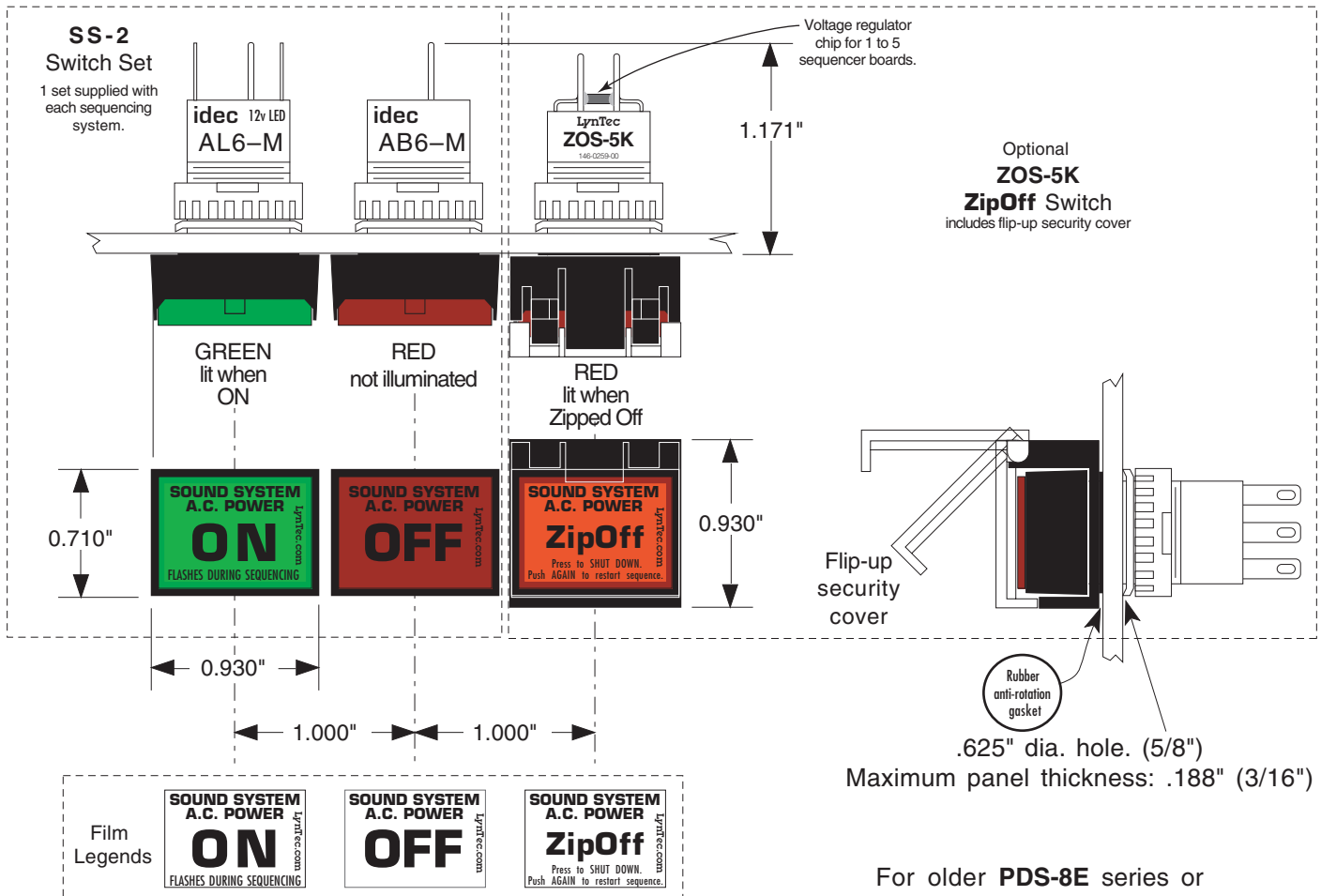


www.LynTec.com

8401 Melrose Drive • Lenexa, KS 66214 • Voice 800-724-4047 or 913-529-2233 • Fax 888-722-4157 or 913-529-4157

for **Modular A.C. Sequencing Systems, models MSLC, MSP & PDS-8EK.**

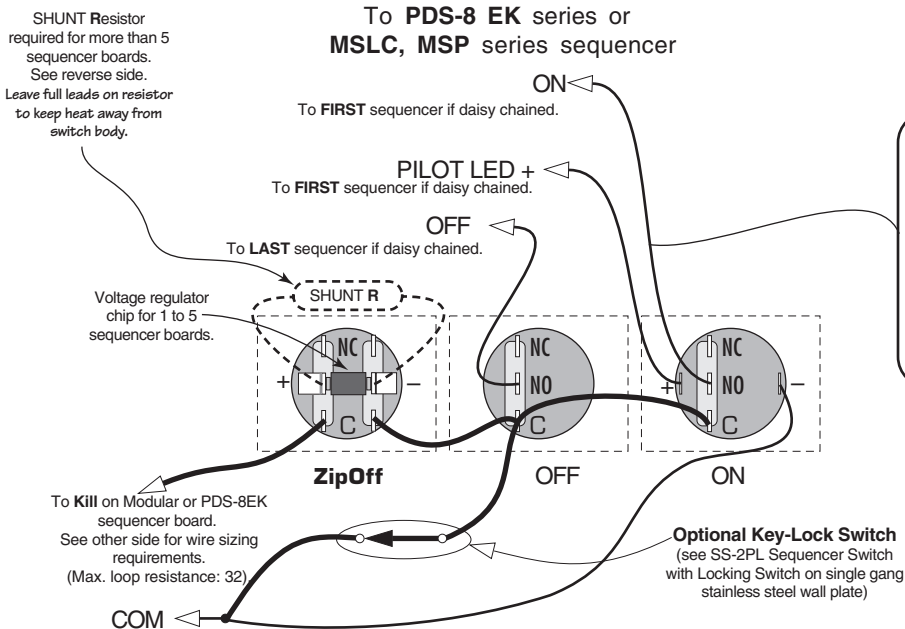
ON, OFF and ZipOff switch mounting & wiring



For older PDS-8E series or SLC, SP series sequencers see

http://www.lyntec.com/139-0137_ZOS-1.pdf

Wiring pictorial - Rear view



Wire requirements

Switch set to sequencer: 4 conductors.
Between daisy chained Modular sequencers: 9 conductors, 11 if Power Vouchers are used.
Up to 5,000 ft run: 22 ga.,
5,000 to 7500 ft. run: 20 ga.
7,500 to 10,000 ft. run: 18 ga.
See other side for ZipOff wire sizing.