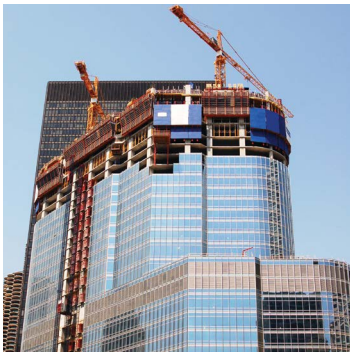
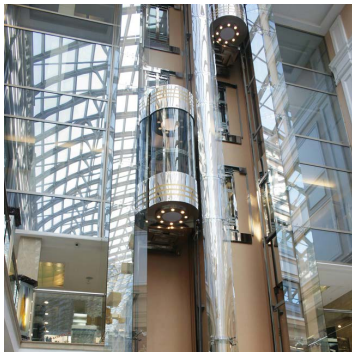
Section Overview

POWR-GARD's Pre-Engineered Solutions include custom-built electrical panels designed specifically to meet NEC requirements, as well as fused and non-fused disconnect switches.





PRE-ENGINEERED SOLUTIONS

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LCP FUSED COORDINATION PANEL

Selective Coordination Panel

Description

The Littelfuse Coordination Panel provides a simple, time-saving solution for circuits that require selective coordination. This UL Listed product saves time and money, and increases safety by minimizing system downtime.

Applications

- Elevators
- Hospitals
- Hotel and Entertainment Industry
- Amusement Parks and Stadiums

Code Requirements

Systems required by the NEC® to be selectively coordinated include:

- Health Care Essential Electrical Systems (NEC 517.26)
- Elevators (NEC 620.62)
- Emergency Systems (NEC 700.32 in 2017) (NEC 700.28 in 2014)
- Legally Required Standby Systems (NEC 701.18)
- Critical Operations Power Systems (NEC 708.54)

Features/Benefits

- Meets NEC® requirements
- Class CC and J fuse holders have built-in open-circuit indication
- Fast-acting UL Listed fuses protect against short circuits
- Feed through/sub feed lugs and 84-circuit configuration available
- Ground and neutral bars
- Copper bus standard

Advanced Design Options

- MLO, Main Circuit Breaker, or Main Fused Pullout device
- Fused Class T branch circuit pullout
- Spare fuse cabinet accessory (holds six spare fuses)
- SPD overvoltage protection
- Any NEMA enclosure required
- High amperage sub-fed branch breakers (J60A)

Specifications

Voltage Ratings	120/208, 120/240, 277/480 VAC
Main Bus Rating	100 A - 400 A Standard
Conductor Terminals	6 AWG - 300 kcmil
UL Listed	UL 67 Panel boards and UL 50 Enclosures
SCCR	100 kA Max*

* The following current-limiting fuses must be used directly upstream for 100kA SCCR.

1. 120/208 Volt Panels – LLNRK 100 A max, JTD_ID 200 A max, or JLLN 200 A max

2. 120/240 Volt Panels – LLSRK_ID 200 A max, JTD_ID 200 A max, or JLLS 200 A max

3. 277/480 Volt Panels – LLSRK_ID 200 A max, JTD_ID 200 A max, or JLLS 200 A max

Web Resources

For more information, visit: **littelfuse.com/lcp**

Customizable Options (select one from each column)

NUMBER OF CIRCUITS	VOLTAGE	MAIN DEVICES	NEUTRAL RATING	PANEL MOUNTING	PANEL DOOR	FUSE HOLDERS	BRANCH CIRCUIT PROTECTION DEVICES (1-3 POLE)†	PANEL FEED	OPTIONAL LUGS	STANDARD ENCLOSURE RATING
2 - 42	120/208 V 3P, 4 W 120/240 V 1P, 3 W 277/480 V 3P, 4 W	125, 225, 400 or 600 A MLO Up to 600 A MCB or Main Fuse Pullout	100% 200%	Surface Flush	Standard Door-in-door	30 A Class CC 60 A Class J >100A Class T	10 A - 60 A fused circuit breaker 70 A - 200 A fused pullouts Sub-fed circuit breakers >60 A (not fused)	Top Bottom	None Sub-Fed (MLO panels) Feed-Through	NEMA 1 NEMA 3R NEMA 4X NEMA 12

†Fuses quoted separately to meet panel specifications. Coordination for breakers >60 A depends on upstream and downstream devices. More specialized configurations are also available. Contact factory for more information.

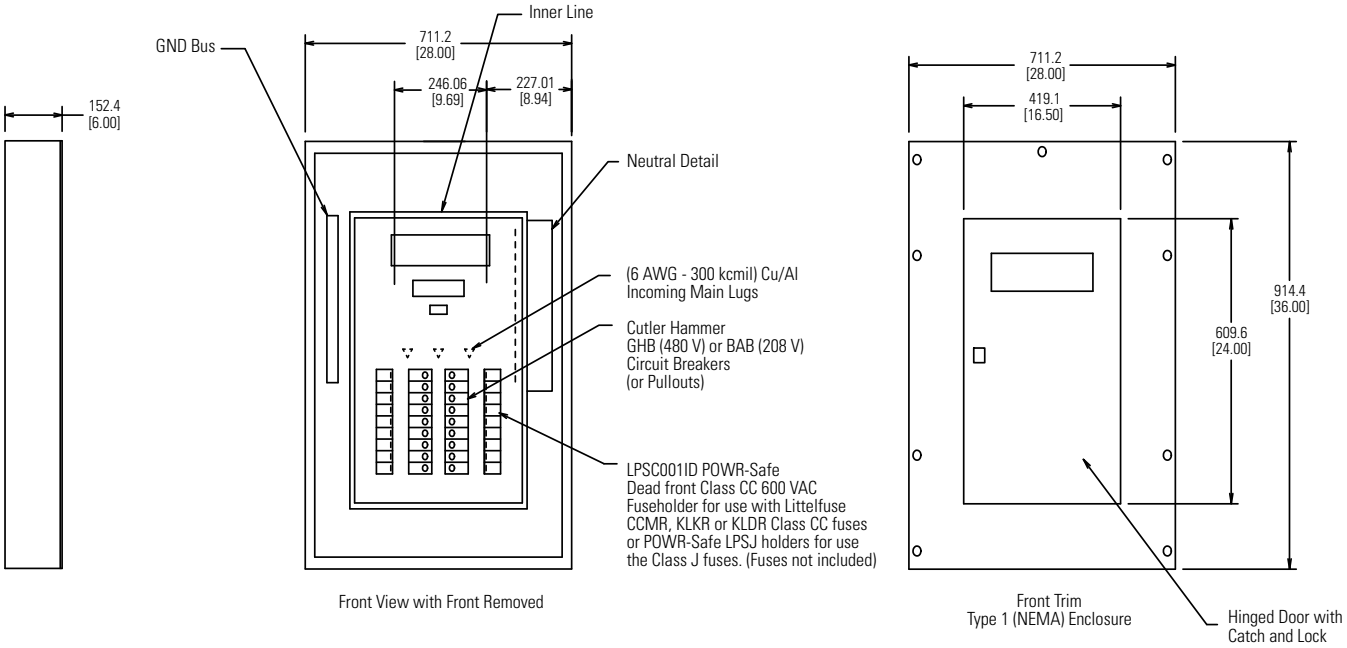
Note: The Littelfuse LPS and LCP products are custom designed products that fall outside standard specifications.

LCP FUSED COORDINATION PANEL

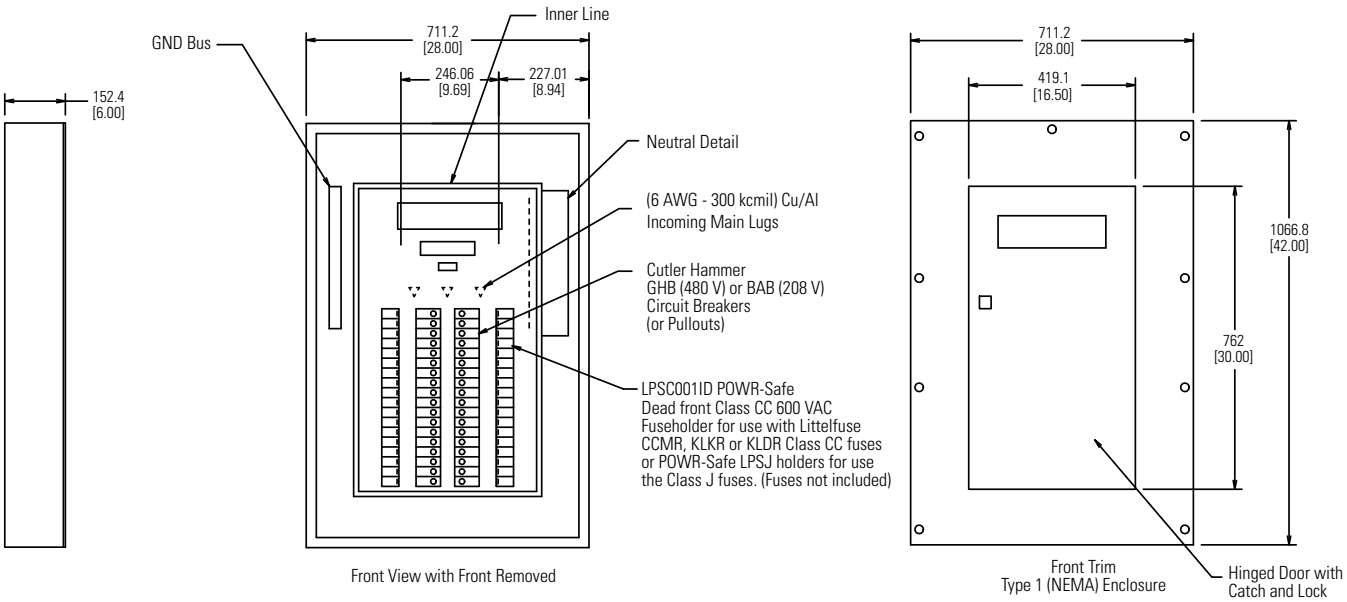
Selective Coordination Panel

Dimensions mm (inches)

Standard Coordination Panel Board (up to 30 circuits)



Standard Coordination Panel Board (31-42 circuits)



Note: The Littelfuse LCP Series products are custom designed products that fall outside standard specifications.

Dimensions may change depending on panel components.
More specialized configurations are also available.
Contact factory for more information.

LPS SERIES SHUNT TRIP DISCONNECT SWITCH

Description

The Littelfuse® LPS Series provides a simple and economical solution for applications that require selective coordination and shunt trip capabilities.

Utilizes Class J time-delay fuses that are easily coordinated with other system overcurrent devices. The shunt trip capability allows the LPS Series to meet the ANSI/ASME standard that requires power to be automatically disconnected before water is turned on by the fire safety system.

Applications

- Elevator circuits
- Data processing rooms
- Building emergency systems

Web Resources

Download technical information: **littelfuse.com/lps**

Specifications (Disconnect Switch)

Supply Voltage Rating*	208 V, 240 V, 480 V
Ampere Range	30 A, 60 A, 100 A, 200 A, 400 A
Enclosures	NEMA 1 (standard) NEMA 3R, NEMA 4, NEMA 12 (optional)
Approvals	UL Listed (File: E219511)

*Contact factory for 600 V options.

Specifications (Shunt Trip)

Voltage Rating	120 V, 60 Hz
Max Inrush	4 A
Max On time	1.5 cycles
Momentary Inrush	140 VA

Features/Benefits

- Pre-engineered single unit, which makes procurement easier than systems with multiple components
- Reduces labor costs up to 66% and total installation costs by over 30%
- Pre-installed UL Listed Class J fuse holder – unique Class J size eliminates the need for any rejection type fuse clips
- Optional features offer flexibility for a variety of applications
- Color coded control power terminal blocks
- UL Listed package
- Cu and Al wire rated
- Pre-wired control circuits lower installation time
- Lockable operating handle meets all code and safety requirements (accepts up to 3 locks)
- Every unit is fully tested before delivery

Options

- Control power transformer with fuses and blocks
- Fire safety interface relay
- Key to test switch
- Pilot light "On"
- Isolated neutral lug
- Mechanical interlock auxiliary contact for hydraulic elevators with automatic recall (5 amp 120 Vac rated)
- Fire alarm voltage monitoring relay
- Option to bypass alarm when performing maintenance (-AZ option)
- XPress-Ship™ service offers 48 hours direct shipment service on select fully loaded LPS Series Shunt Trip Disconnect Switches

LPS SERIES SHUNT TRIP DISCONNECT SWITCH

Ordering Information

Complete catalog numbers consist of switch catalog numbers and the desired options. See example below.

Example Catalog Number from Desired Options

LPS1 T20 R1 K G N1 B F3 U – AZ = Littelfuse Catalog Number LPS1T20R1KGN1BF3U-AZ

LITTELFUSE SWITCH CATALOG NUMBER		CONTROL POWER TRANSFORMER STD. 100VA WITH PRI & SEC FUSE (120 V SEC.)		FIRE SAFETY INTERFACE RELAY (3 PDT, 10 A, 120 V)		KEY TO TEST SWITCH		PILOT LIGHT "ON"		ISOLATED NEUTRAL LUG		MECHANICAL INTERLOCK AUX. CONTACT FOR HYDRAULIC ELEVATORS W/ AUTOMATIC RECALL (5 A ,120 VAC)		FIRE ALARM SHUNT TRIP VOLTAGE MONITORING RELAY		OPTIONAL ENCLOSURES		—	AZ OPTION (BYPASS FIRE ALARM DURING MAINT. TEST)
REQUIRED		REQUIRED		REQUIRED		OPTIONAL		OPTIONAL		OPTIONAL		REQUIRED		REQUIRED		OPTIONAL			OPTIONAL
BASE CATALOG #	RATING	RATING	OPTION CODE	RATING	OPTION CODE	RATING	OPTION CODE	RATING	OPTION CODE	RATING	OPTION CODE	RATING	OPTION CODE	RATING	OPTION CODE	RATING	OPTION CODE		OPTION CODE
LPS3*	30 A	208 V	T20	24 VDC Coil	R2	120 V	K	Red	R	30–60 A	N6	1 NO & 1 NC	A	1-Pole	F1	NEMA 3R	U	–	AZ
LPS6*	60 A	240 V	T24	120 VAC Coil	R1			Green	G			2 NO & 2 NC	B	3-Pole	F3	NEMA 4	Y	–	
LPS1*	100 A	480 V	T48					White	W	100 A	N1					NEMA 12	Z	–	
LPS2*	200 A									200 A	N2							–	
LPS4*	400 A									400 A	N4							–	

*Part Numbers: Any voltage can be paired with any amperage. Options can be any combination but the ratings must match the option code. Not all options are required. Contact factory for 600 V control power transformer option.

Note: When ordering - desired options must be listed in the order shown above. Typical options include Control Power Transformer, Fire Safety Interface Relay, Mechanical Interlock Auxiliary Contact and Fire Alarm Voltage Monitoring Relay.

Dimensions of Enclosure

CATALOG SERIES	AMPERE RATING	NEMA 1 DIMENSIONS	NEMA 3R DIMENSIONS	NEMA 4, 12 DIMENSIONS	LUG SIZE	SHIPPING WEIGHT (LBS)
LPS3	30	24"H x 20"W x 9"D	24"H x 20"W x 8"D	24"H x 20"W x 10"D	#14 - #8 AL or CU	75
LPS6	60	24"H x 20"W x 9"D	24"H x 20"W x 8"D	24"H x 20"W x 10"D	#14 - #2 AL or CU	75
LPS1	100	24"H x 20"W x 9"D	24"H x 20"W x 8"D	24"H x 20"W x 10"D	#8 - 1/0 AL or CU	75
LPS2	200	30"H x 20"W x 9"D	30"H x 24"W x 8"D	30"H x 20"W x 10"D	#6 - 250kcmil AL or CU	85, 115*, 120**
LPS4	400	48"H x 36"W x 10"D	48"H x 36"W x 12"D	48"H x 36"W x 10"D	3/0 AL or CU	225

* NEMA 3R
** NEMA 4 & NEMA 12
Note: Over-size enclosures used to accommodate control power transformer, interface relay and terminal blocks.

XPress-Ship™

US Only

Littelfuse XPress-Ship™ service offers 48 hours** direct-shipment service on select fully-loaded LPS Series Shunt Trip Disconnect Switches to meet your urgent system requirements on time.

XPress-Ship™ switches include three JTD_ID Series fuses rated at the device's maximum ampacity.

AMPERE RATING	VOLTAGE RATING	CATALOG NUMBER	XPress-Ship™ ORDERING NUMBER
60 A	480 V	LPS6T48R1KGN6BF3-AZ	XPS6T48R1KGN6F3-AZ*
100 A	480 V	LPS1T48R1KGN1BF3-AZ	XPS1T48R1KGN1F3-AZ*
100 A	480 V	LPS1T48R1KGN1BF3	XPS1T48R1KGN1BF3
200 A	208 V	LPS2T20R1KGN2BF3-AZ	XPS2T20R1KGN2F3-AZ*
200 A	480 V	LPS2T48R1KGN2BF3	XPS2T48R1KGN2BF3

AZ option includes B & F3 options.

***XPress-Ship™ 48 hour service requires ordering from XPress-Ship™ Ordering Numbers shown above and is subject to a maximum of any combination of three switches per customer order. XPress-Ship™ service offers 48 hour shipment from the factory through standard ground transportation. For expedited delivery, contact your local Littelfuse Representative.*

LPS SERIES SHUNT TRIP DISCONNECT SWITCH

Shunt-Trip Operation

The disconnecting means is a shunt-trip operated switch. The control power source for the shunt-trip operator is a 120 Vac supply originating in the Littelfuse LPS Series shunt trip disconnect switch. Current to the shunt-trip device is switched by an isolation relay, which is in turn controlled by the FACP (Fire Alarm Control Panel).

The control signal may be either 24 Vdc from the FACP (option R2) or a "dry" contact closure in the FACP (option R1). In the case of a "dry" contact closure, the sensing voltage is 120 VAC originating in the Littelfuse LPS Series shunt trip disconnect switch.

CAUTION: When using the "dry" contact closure, option 1, DO NOT supply 120 Vac from the FACP as equipment damage or personnel injury may occur.

A key test option (option K) is available to test the shunt-trip circuit.

Supervisory Indication

Additionally, an optional separate relay can be specified to monitor the 120 Vac control power source in the Littelfuse POWR-Switch LPS Series disconnect. This relay (option FR) is used to provide supervisory indication of "Control Power Available" as required by NFPA 72 Section 6.15.4.4.

Fuse Table

POWR-SWITCH VOLTAGE/ TRANSFORMER TYPE	PRIMARY FUSES (2)		SECONDARY FUSE (1)	
	FUSE TYPE	FUSE RATING (AMPS)	FUSE TYPE	FUSE RATING (AMPS)
208/120 Vac	KLDR001	1	FLM1.12	1-1/8
240/120 Vac	KLDR500	1/2	FLM1.12	1-1/8
480/120 Vac	KLDR400	4/10	FLM1.12	1-1/8
600/120 Vac	KLDR250	1/4	FLM1.12	1-1/8

All Littelfuse LPS Series shunt trip disconnect switches are UL Listed and designed for safe access by qualified personnel. When maintenance or shutdown service is required, no energized parts are exposed inside the enclosure when the disconnect switch is manually turned to the OFF position. For proper maintenance safety precautions, always turn off incoming power to the Littelfuse LPS Series shunt trip disconnect switch when possible. When servicing any live electrical equipment, always wear appropriate personal protective equipment.

Power Wiring Torque Specifications

CHARACTERISTICS	LPS3	LPS6	LPS1	LPS2	LPS4
Amps	30	60	100	200	400
AWG	10	6	3	3/0	(2) 3/0
Molded Case Switch (MCS) Mfr.	ABB	ABB	ABB	ABB	ABB
MCS Catalog No.	TS3H150DBBS4	TS3H150DBBS4	TS3H150DBBS4	TS3H225DQQS4	T5H400DWS4
MCS Lug Type	K4TB	K4TB	K4TB	K4TD	KT5400-3
MCS Lug Torque (in-lbs)	50 in-lb*	50 in-lb*	50 in-lb*	200 in-lb*	275 in-lb*
Fuse Block Mfr.	LITTELFUSE	LITTELFUSE	LITTELFUSE	LITTELFUSE	LITTELFUSE
Fuse Block Catalog No.	LFJ60030-3	LFJ60060-3	LFJ60100-3	LFJ60200-3	LFJ60400-3
Fuse Lug Torque (in-lbs)	25 in-lb†	45 in-lb†	120 in-lb†	275 in-lb†	275 in-lb†
Neutral Lug Mfr.	LITTELFUSE	LITTELFUSE	LITTELFUSE	LITTELFUSE	LITTELFUSE
Neutral Lug Catalog No.	LS21211	LS21211	LS21211	LS31231	LS455712
Neutral Lug Torque (in-lbs)	35 in-lb†	45-120 in-lb†	120 in-lb†	275 in-lb†	500 in-lb†
Ground Lug Mfr.	PANDUIT	PANDUIT	PANDUIT	PANDUIT	PANDUIT
Ground Lug Catalog No.	LAMA 1/0-14-Q	LAMA 1/0-14-Q	LAMA 1/0-14-Q	LAMA 250-56-Q	LAMA 350-38-Q
Ground Lug Torque	25 in-lb‡	45 in-lb‡	120 in-lb‡	275 in-lb‡	275 in-lb‡

Note: Torque specs apply only to wire compression screws. Other requirements may exist for attachment of lugs and accessories to these devices. See manufacturer data.

*Per ABB.com
† Littelfuse Device nameplate data.
‡ Panduit, "Torque Chart for Aluminum Mechanical Connectors".