

SIEMENS



# Elevator Control Switches Product Guide

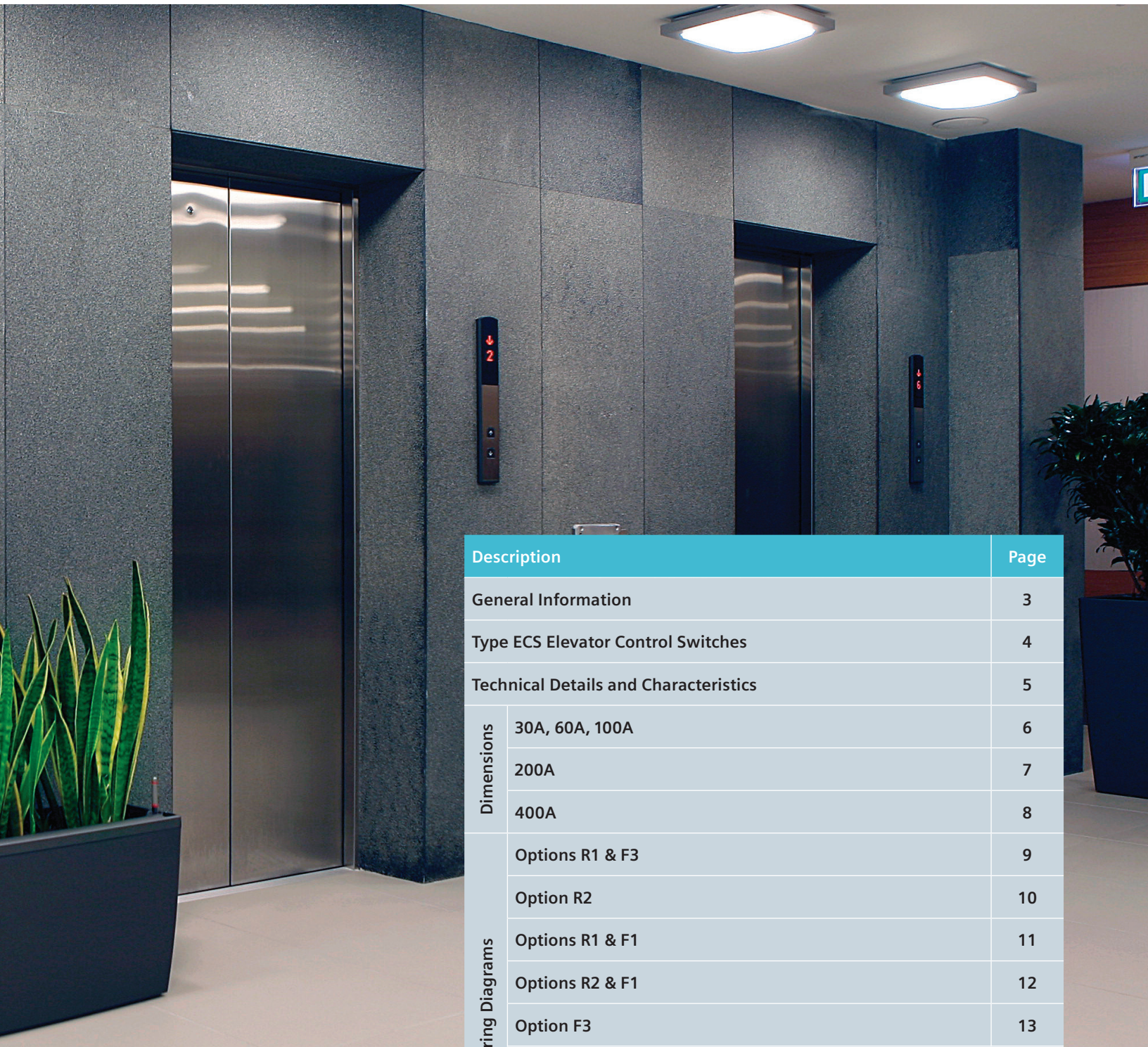
Elevator Control Switches (ECS)

[usa.siemens.com/switches](http://usa.siemens.com/switches)

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Elevator Control Switches Product Guide





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# General Information

## Type ECS Switches

### Description

Siemens Elevator Control Switch (ECS) is designed to interrupt incoming AC power upon receiving a signal from a Fire Alarm Control Panel (FACP) for both cable and hydraulic elevators.

The Elevator Control Switch comes completely assembled for quick installation, eliminating the labor and time needed to assemble individual components. The smart numbering system helps ensure the switch includes the correct components and eliminates the need for ordering accessories.

Siemens' ECS supports fused systems requiring selective coordination code compliance. The ECS achieves the code requirement by utilizing Class J fuses which coordinate with any upstream fuse by simply using a 2:1 line-side to load-side fuse ratio.

### Agency information

- UL 98 Enclosed and Dead Front Switch – Guide 96NK3917, File E25506



### Catalog Number System

The following catalog numbering system defines an Elevator Control Switch construction.

ECS 1 T2 R2 G F1 3 N B C

#### • Elevator Control Switches

#### • Ampere rating

- 1 = 30 A
- 2 = 60 A
- 3 = 100 A
- 4 = 200 A
- 5 = 400A

#### • Control Transformer ①

- T2 = 208 V
- T3 = 240 V
- T1 = 480 V
- T4 = 600 V

#### • Fire Safety Interface Relay (3PDT, 10 A, 120 V)

- R2 = 24 Vdc Coil
- R1 = 120 Vac Coil

#### • Pilot Light ON

- G = Green
- R = Red
- W = White

#### • Fire Alarm Voltage Monitoring Relay (To Monitor Shunt Trip Voltage)

- F1 = Single-Pole
- F3 = Three-Pole

#### • Enclosure options (NEMA 1 Standard With No Suffix Designation Required)

- 3 = NEMA 3R
- D = NEMA 12
- P = NEMA 4 Painted Steel

#### • Neutral Lug

- N = Isolated Full Capacity

#### • Auxiliary Contacts (1NO/1NC)

- B = Main Switch

#### • Surge Protection

- C = Integrated surge protection device ②

① 100 VA with Primary and Secondary fusing (120 V Secondary)

② For information on Siemens TPS3 03 protection device refer to product literature or Speedfax.

# Type ECS Elevator Control Switches

## Features and ordering information

### Standard features

- 30-400 A, 600 Vac, 3-phase fused power switch
- 200 kA RMS assembly short-circuit current rating
- Shunt trip 120 V
- Control power terminal block
- Ground lug compliant with the National Electric Code
- Class J fuse mounting only (Class J fuses not included)
- Key to test switch
- Pilot light – "ON"
- Mechanically interlocked auxiliary contact for hydraulic elevators with battery backup (5 A, 120 Vac rated)
- Handle designed for hook stick operation
- OSHPD Special Seismic Certification Preapproval (OSP)

### Configurable standard features

- Control power transformer with fuses and blocks
- Fire safety interface relay
- Fire Alarm Voltage Monitoring Relay (to monitor Shunt Trip Voltage)
- NEMA 3R, 4, and 12 enclosures available

### Optional features

- Isolated neutral lug (oversized 200% rated neutral option available where required by excessive non-linear loads)
- Additional auxiliary contact (1NO / 1NC)
- Integrated surge protection device (TPS3 03). Externally viewable through window in door

### Other options

Optional features include contact closure, i.e. battery lowering/door opening system. The B option offers support for the states of Arizona, Oregon, and Texas requirements to prevent "nuisance" fire alarms by over-riding the "Control Power not Available" signal when the ECS is manually (intentionally) turned off, and distinctive signaling for ON-OFF-TRIPPED conditions (Option B).

All ECS configurations are UL-Listed and designed for safe access by qualified personnel. To help ensure safe maintenance, when the switch is in the "OFF" position and the enclosure door is open, no energized parts are exposed. For proper maintenance safety precautions, always turn off incoming power to the Siemens Elevator Control elevator switch when possible. When servicing any live electrical equipment, always wear appropriate personal protective equipment.

### Shunt-trip operation

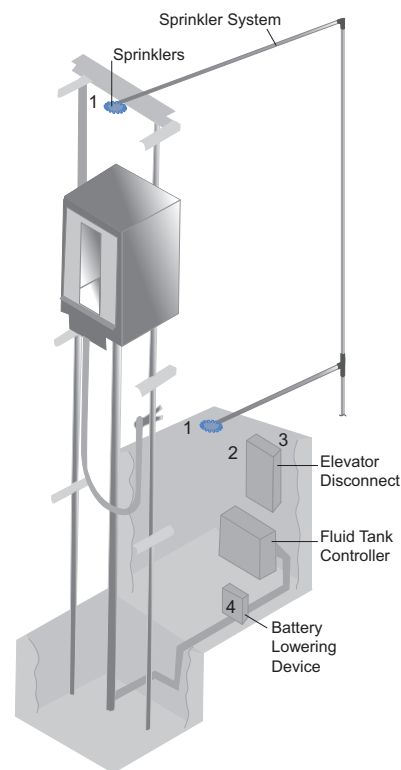
The disconnect means is a shunt-trip operated switch. The control power source for the shunt-trip operator is a 120 Vac supply originating in the Siemens Elevator Control switch. Current to the shunt-trip device is switched by an isolation relay, which is in turn controlled by the FACP.

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 Siemens Elevator Control switch.

A key test switch (Option K) is included for testing the shunt-trip circuit.

### Supervisory indication

An optional separate relay can be specified to monitor the 120 Vac control power source in the Siemens Elevator Control switch. This relay (Option F1 or F3) is used to provide supervisory indication of "Control Power Available" as required by NFPA 72 Section 6.15.4.4.



1 NFPA 13 requires sprinklers in elevator shaft (with exceptions) and in control room.

2 ASME A17.1 (Safety Code for Elevators and Escalators) requires shutdown of power to the elevator prior to the release

3 NFPA 72 (Fire Alarm Code) requires control circuit for elevator shutdown to be monitored for the loss of voltage.

4 NEC requires standby power systems such as a battery lowering device to be disconnected by an auxiliary

# Technical Data and Characteristics

## Transformer Fuse Details

ECS Voltage/ Transformer Voltage	Primary Fuse (amps)	Secondary Fuse (amps)
208/120	FNQ-R-2	FNM-1 1/4
240/120	FNQ-R-2	FNM-1 1/4
480/120	FNQ-R-1	FNM-1 1/4
600/120	FNQ-R-1	FNM-1 1/4

## Tightening Torques for Wire Connectors

Amp	Wire Size	Tightening Torque	Screw Head Style	Location
30-60	14 – 10 AWG	35 lb-in.	SLOT HD	–
30-60	8 AWG	40 lb-in.	SLOT HD	–
60-100	6 – 4 AWG	45 lb-in.	SLOT HD	–
100	3 – 1/0 AWG	50 lb-in.	SLOT HD	–
200	4 – 4/0 AWG	120 lb-in.	3/16 Hex socket	–
200	4 AWG – 300 kcmil	275 lb-in.	5/16 Hex socket	–
400	(2) 2 AWG – 500 kcmil	375 lb-in.	5/16 Hex socket	Line lugs
400	(1) 1/0 AWG – 750 kcmil (2) 1/0 – 300 kcmil	500 lb-in.	3/8 Hex socket	Load lugs Neutral lugs
400	6 AWG – 250 kcmil	275 lb-in.	5/16 Hex socket	Ground lugs
Terminal Block	22 – 10 AWG	5.3 – 7 lb-in.	SLOT HD	–

## UL<sub>A</sub> / NEC<sub>B</sub> Listed Horsepower Ratings

Voltage / Poles	30A		60A		100A		200A		400A	
	Std <sup>2</sup>	Max <sup>1</sup>	Std <sup>2</sup>	Max <sup>1</sup>	Std <sup>2</sup>	Max <sup>1</sup>	Std <sup>2</sup>	Max <sup>1</sup>	Std <sup>2</sup>	Max <sup>1</sup>
208VAC / 3 Pole <sub>B</sub>	2	5	5	10	10	15	20	40	40	75
240VAC / 3 Pole <sub>A</sub>	2	7 1/2	7 1/2	15	15	30	25	60	50	75
480VAC / 3 Pole <sub>A</sub>	5	15	15	30	25	60	50	125	100	150
600VAC / 3 Pole <sub>A</sub>	7 1/2	20	15	50	30	75	60	150	125	200

1 = Max HP w/time delay Class J Fuses

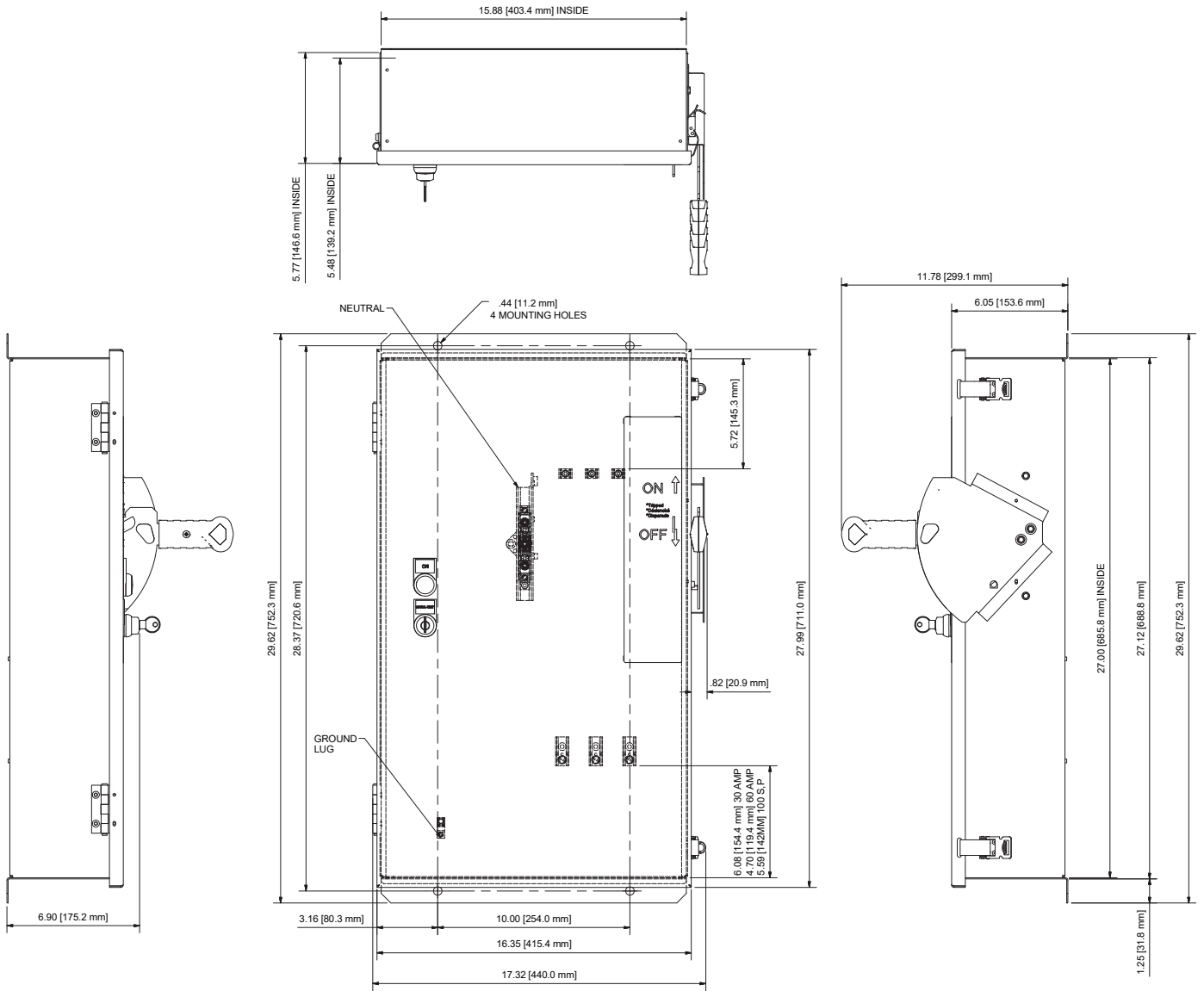
2 = Max HP w/non-time delay Class J Fuses

## Fuse and Short Circuit Information

This switch is suitable for use with Class J Fuses ONLY.

# Dimensions

30A, 60A, 100A

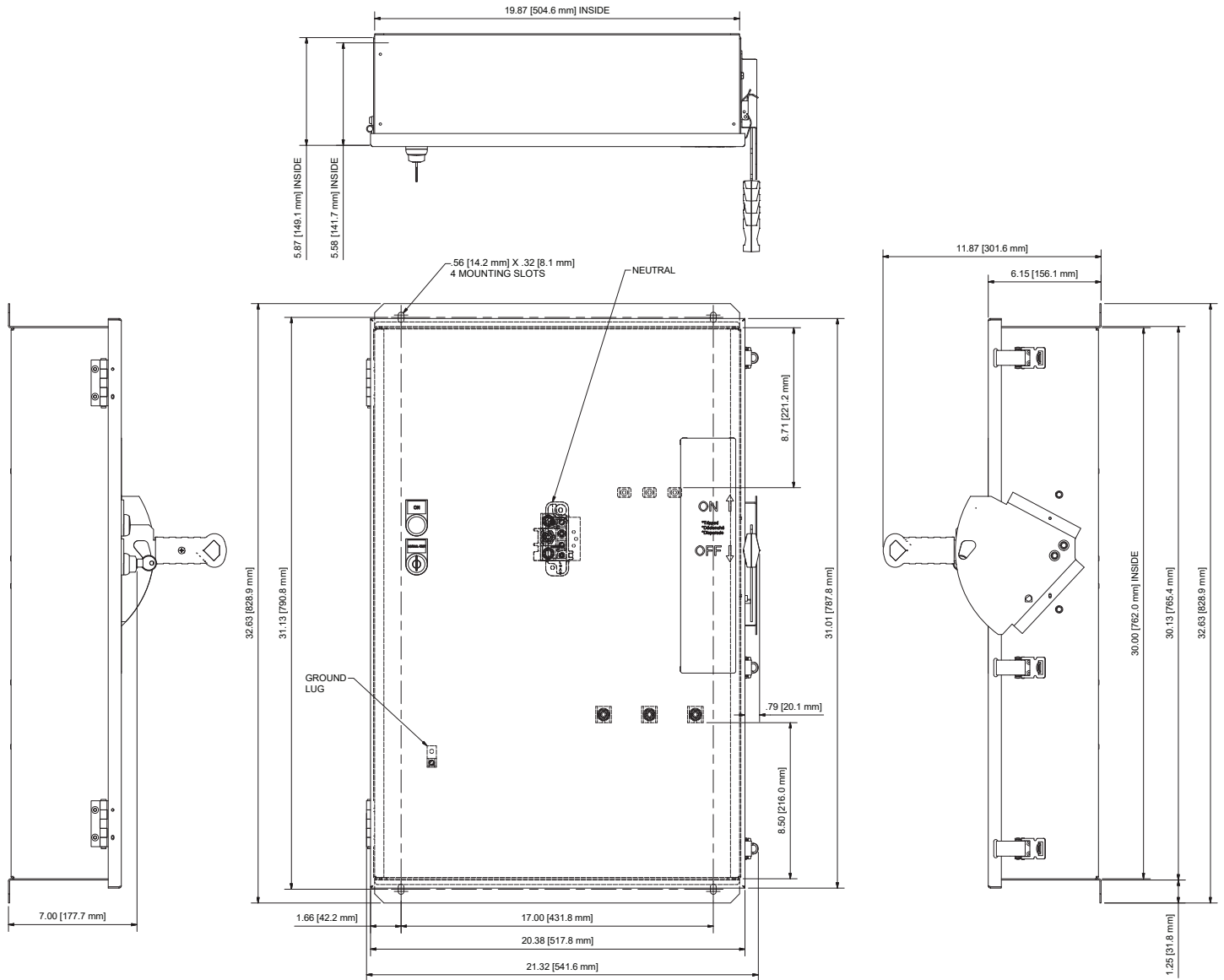


- NOTE:
1. FINISH - GRAY BAKED ENAMEL ON GALVANIZED STEEL FOR TYPES 1, 3R, 4 AND 12.
  2. UL LISTED - FILE E1922262.
  3. NEUTRAL, INSULATED.
  4. 100% LOAD BREAK RATED.
  5. SHORT CIRCUIT CURRENT RATING:  
200,000 RMS SYMMETRICAL AMPERES @ 600 VOLTS. USE CLASS J FUSES.
  6. DUAL DIMENSIONS: INCHES (MILLIMETERS).
  7. TEMPERATURE RANGE: -30° TO +50°C (-22° TO +122°F).
  8. USE 60° OR 75°C WIRE.
  9. APPROXIMATE CARTON WEIGHT: 58 POUNDS.

TERMINAL LUG INFORMATION				
AMPERAGE	LOCATION	MIN. WIRE SIZE	MAX. WIRE SIZE	TYPE
30, 60, 100	LINE LUGS	#14 AWG	1/0 AWG	AL OR CU
30, 60	LOAD LUGS	#14 AWG	#2 AWG	AL OR CU
100	LOAD LUGS	#14 AWG	1/0 AWG	AL OR CU
30, 60, 100	NEUTRAL LUGS (2 PROVIDED)	#14 AWG	1/0 AWG	AL OR CU
30, 60, 100	GROUND LUG	#14 AWG	#4 AWG	AL OR CU

# Dimensions

## 200A



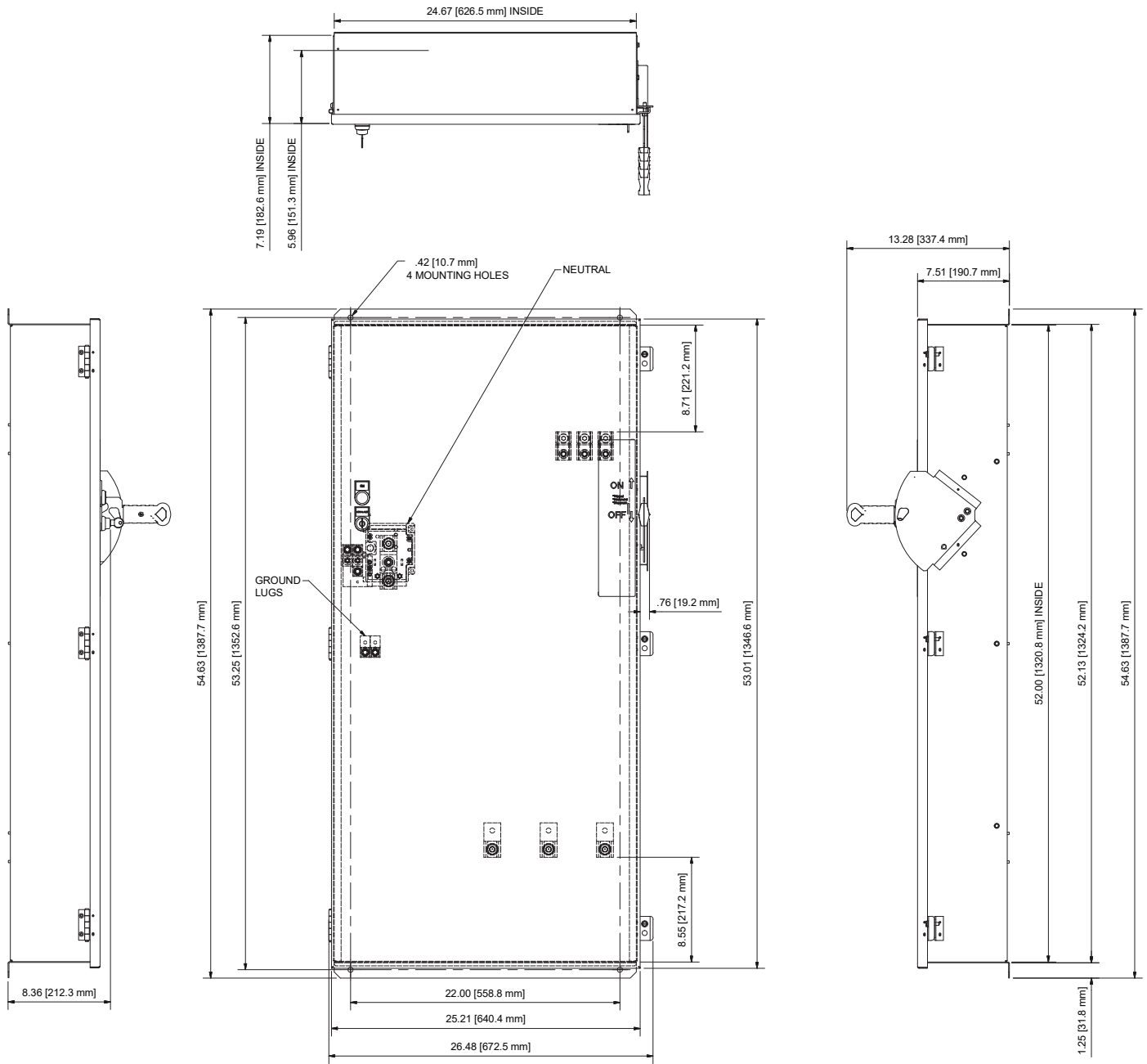
- NOTE:
1. FINISH - GRAY BAKED ENAMEL ON GALVANIZED STEEL FOR TYPES 1, 3R, 4 AND 12.
  2. UL LISTED - FILE E182262.
  3. NEUTRAL, INSULATED.
  4. 100% LOAD BREAK RATED.
  5. SHORT CIRCUIT CURRENT RATING: 200,000 RMS SYMMETRICAL AMPERES @ 600 VOLTS. USE CLASS J FUSES.
  6. DUAL DIMENSIONS, INCHES (MILLIMETERS).
  7. TEMPERATURE RANGE: -30° TO +50°C (-22° TO +122°F).
  8. USE 75°C WIRE.
  9. APPROXIMATE CARTON WEIGHT: 76 POUNDS.

TERMINAL LUG INFORMATION			
LOCATION	MIN. WIRE SIZE	MAX. WIRE SIZE	TYPE
LINE LUGS	#4 AWG	4/0 AWG	AL OR CU
LOAD LUGS	#4 AWG	300 MCM	AL OR CU
NEUTRAL LUGS (2 PROVIDED)	#6 AWG	250MCM	AL OR CU
GROUND LUG	#14 AWG	#2 AWG	AL OR CU



# Dimensions

## 400A



**NOTE:**

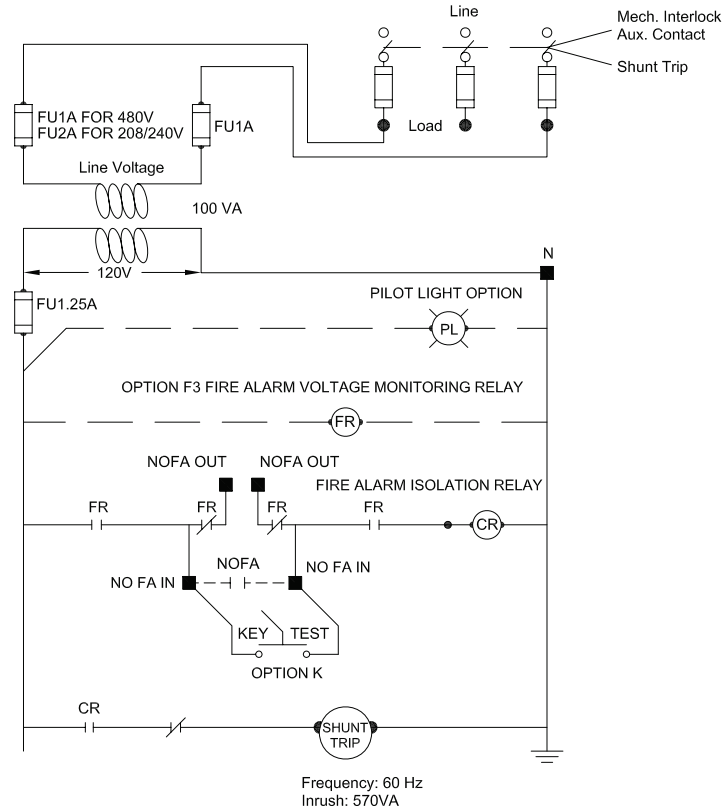
1. FINISH - GRAY BAKED ENAMEL ON GALVANIZED STEEL FOR TYPES 1, 3R, 4 AND 12.
2. UL LISTED - FILE E182262.
3. NEUTRAL, INSULATED.
4. 100% LOAD BREAK RATED.
5. SHORT CIRCUIT CURRENT RATING:  
200,000 RMS SYMMETRICAL AMPERES @ 600 VOLTS. USE CLASS J FUSES.
6. DUAL DIMENSIONS, INCHES [MILLIMETERS].
7. TEMPERATURE RANGE: -30° TO +50°C (-22° TO +122°F).
8. USE 75°C WIRE.
9. APPROXIMATE CARTON WEIGHT: 140 POUNDS.

TERMINAL LUG INFORMATION			
LOCATION	MIN. WIRE SIZE	MAX. WIRE SIZE	TYPE
LINE LUGS	(2) #2 AWG	(2) 500 MCM	AL OR CU
LOAD LUGS	(1) 1/0 AWG OR (2) 1/0 AWG	(1) 750 MCM (2) 300 MCM	AL OR CU
NEUTRAL LUGS (2 PROVIDED)	(1) 1/0 AWG OR (2) 1/0 AWG	(1) 750 MCM (2) 300 MCM	AL OR CU
GROUND LUG (2 PROVIDED)	#6 AWG	250 MCM	AL OR CU

# Wiring Diagrams

## Typical Control with Wiring Options for Fire Safety Interface

### Options R1 & F3



AUXILIARY SWITCH LOGIC						
MAIN SWITCH POSITION	OPTION A		OPTION B		OPTION A *	
	NO	NC	NO	NC	NO	NC
CLOSED	O	C	O	C	O	C
TRIPPED	C	C	O	C	C	O
OPEN	C	O	C	O	C	O

\* AUXILIARY SWITCH LOGIC WHEN BLUE WIRE WITH "+" MARKER IS REMOVED FROM NC TERMINAL

WHERE LOCAL AUTHORITIES HAVING JURISDICTION PERMIT, FIELD REMOVAL OF THE BLUE WIRE IDENTIFIED BY "+" MARKER WILL CHANGE THE OPTION A SWITCH LOGIC, SEE THE AUXILIARY SWITCH LOGIC TABLE, REMOVAL HAS THE EFFECT OF DISABLING THE BATTERY LOWERING DEVICE WHEN THE SWITCH IS IN THE TRIPPED POSITION. FIELD INSTALLER MUST ENSURE THIS MEETS ALL LOCAL CODES BEFORE REMOVAL.

#### LEGEND:

FACP - FIRE ALARM CONTROL PANEL

**NOFA IN - NORMALLY OPEN FIRE ALARM CONTROL INPUT.**

**NOFA - NORMALLY OPEN FIRE ALARM CONTACTS** SUPPLIED FROM THE FIRE ALARM SYSTEM TO INITIATE THE SHUNT TRIP.

SHUNT TRIP - SOLENOID FOR REMOTE TRIP OF SWITCH, WHICH IS ACTIVATED BY THE CLOSING OF THE FIRE ALARM CONTACTS OR KEY TEST SWITCH.

OPTION R1 - FIRE ALARM INTERFACE RELAY THAT IS OPERATED AT 120VAC FROM SECONDARY OF TRANSFORMER. NO ADDITIONAL POWER NEEDED.

CR - CONTROL RELAY USED TO ISOLATE THE N.O.F.A. CONTACTS FROM THE DUTY OF THE SHUNT TRIP.

FR - FIRE ALARM VOLTAGE MONITORING RELAY USED TO MONITOR THE STATUS OF CONTROL VOLTAGE FROM A REMOTE LOCATION (I.E. FIRE ALARM CONTROL PANEL).

PL - PILOT LIGHT TO VISUALLY INDICATE PRESENCE OF VOLTAGE ON OUTSIDE OF SWITCH ENCLOSURE.

CPT - CONTROL POWER TRANSFORMER USED TO STEP DOWN LINE VOLTAGE TO 120VAC TO POWER SHUNT TRIP COIL.

SW AUX. - OPTION A OR B, NORMALLY CLOSED CONTACT WHEN SWITCH IS CLOSED. OPENS AS POWER SWITCH OPENS.

KEY TEST - KEY-TO-TEST SWITCH USED TO OPERATE SHUNT TRIP FROM THE OUTSIDE OF SWITCH ENCLOSURE. CAN BE USED FOR TROUBLE-SHOOTING AND INSPECTION.

MECHANICALLY INTERLOCKED AUXILIARY CONTACT - CONTACT USED TO DISABLE BATTERY LOWERING DEVICE.

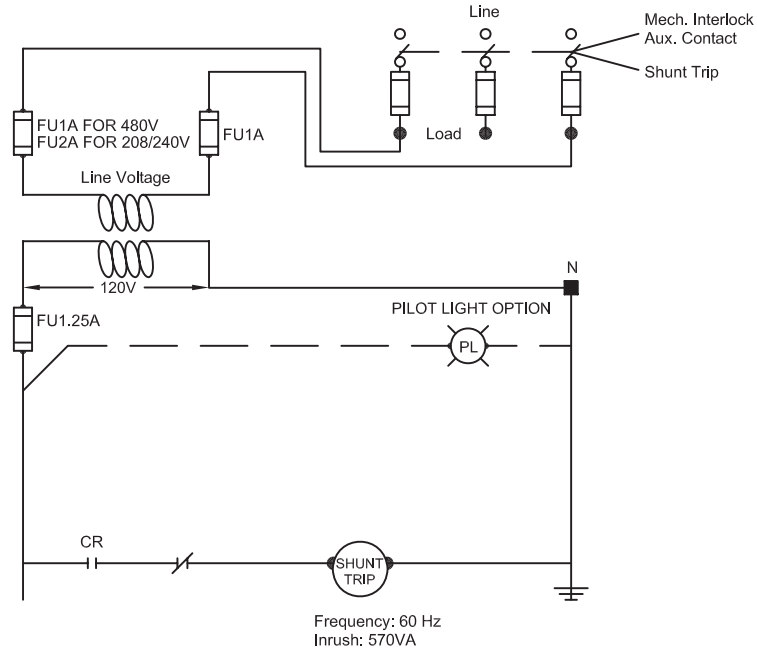
■ - TERMINAL BLOCK CONNECTION POINT.

● - PRE-WIRED CONNECTION POINTS.

# Wiring Diagrams

## Typical Control with Wiring Options for Fire Safety Interface (Cont.)

### Options R2



AUXILIARY SWITCH LOGIC						
MAIN SWITCH POSITION	OPTION A		OPTION B		OPTION A *	
	NO	NC	NO	NC	NO	NC
CLOSED	O	C	O	C	O	C
TRIPPED	C	C	O	C	C	O
OPEN	C	O	C	O	C	O

\* AUXILIARY SWITCH LOGIC WHEN BLUE WIRE WITH "+" MARKER IS REMOVED FROM NC TERMINAL

WHERE LOCAL AUTHORITIES HAVING JURISDICTION PERMIT, FIELD REMOVAL OF THE BLUE WIRE IDENTIFIED BY "+" MARKER WILL CHANGE THE OPTION A SWITCH LOGIC, SEE THE AUXILIARY SWITCH LOGIC TABLE. REMOVAL HAS THE EFFECT OF DISABLING THE BATTERY LOWERING DEVICE WHEN THE SWITCH IS IN THE TRIPPED POSITION. FIELD INSTALLER MUST ENSURE THIS MEETS ALL LOCAL CODES BEFORE REMOVAL.

#### LEGEND:

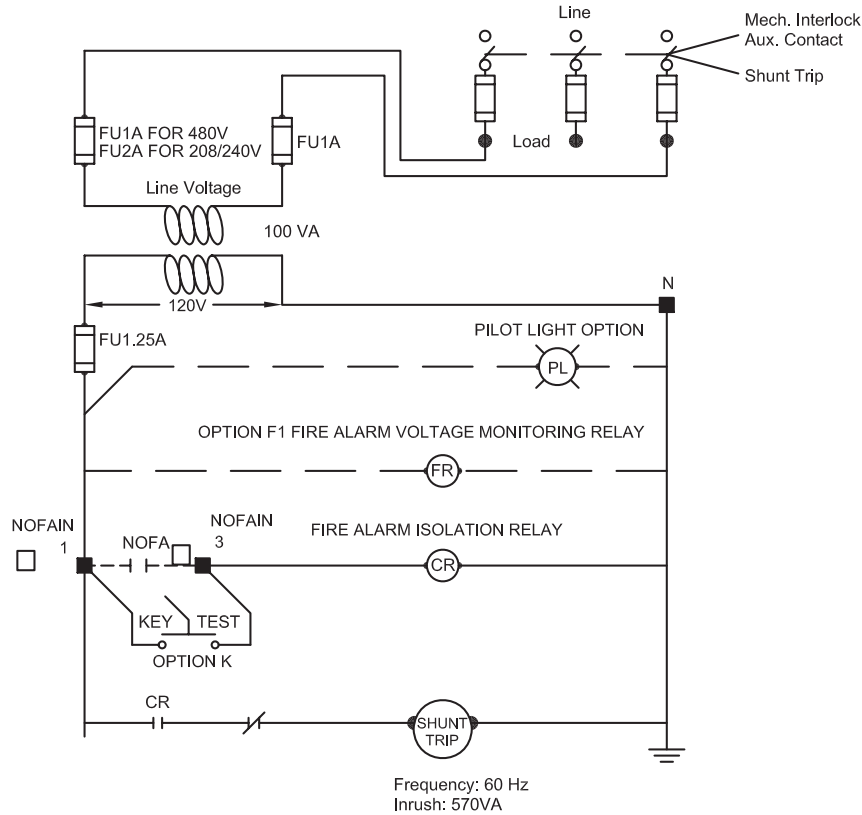
- FACP - FIRE ALARM CONTROL PANEL.
- NOFAIN - NORMALLY OPEN FIRE ALARM CONTROL INPUT.
- NOFA - NORMALLY OPEN FIRE ALARM CONTACTS SUPPLIED FROM THE FIRE ALARM SYSTEM TO INITIATE THE SHUNT TRIP.
- SHUNT TRIP - SOLENOID FOR REMOTE TRIP OF SWITCH, WHICH IS ACTIVATED BY THE CLOSING OF THE FIRE ALARM CONTACTS OR KEY TEST SWITCH.
- OPTION R1 - FIRE ALARM INTERFACE RELAY THAT IS OPERATED AT 120VAC FROM SECONDARY OF TRANSFORMER. NO ADDITIONAL POWER NEEDED.
- CR - CONTROL RELAY USED TO ISOLATE THE N.O.F.A. CONTACTS FROM THE DUTY OF THE SHUNT TRIP.
- FR - FIRE ALARM VOLTAGE MONITORING RELAY USED TO MONITOR THE STATUS OF CONTROL VOLTAGE FROM A REMOTE LOCATION (i.e. FIRE ALARM CONTROL PANEL).
- PL - PILOT LIGHT TO VISUALLY INDICATE PRESENCE OF VOLTAGE ON OUTSIDE OF SWITCH ENCLOSURE.
- CPT - CONTROL POWER TRANSFORMER USED TO STEP DOWN LINE VOLTAGE TO 120VAC TO POWER SHUNT TRIP COIL.
- SW AUX. - OPTION A OR B, NORMALLY CLOSED CONTACT WHEN SWITCH IS CLOSED. OPENS AS POWER SWITCH OPENS.
- KEY TEST - KEY-TO-TEST SWITCH USED TO OPERATE SHUNT TRIP FROM THE OUTSIDE OF SWITCH ENCLOSURE. CAN BE USED FOR TROUBLE-SHOOTING AND INSPECTION.
- MECHANICALLY INTERLOCKED AUXILIARY CONTACT - CONTACT USED TO DISABLE BATTERY LOWERING DEVICE.
- - TERMINAL BLOCK CONNECTION POINT.
- - PRE-WIRED CONNECTION POINTS.

NOTE: TERMINAL 1 IS NOT PRESENT WHEN OPTION K IS ABSENT.

# Wiring Diagrams

## Typical Control with Wiring Options for Fire Safety Interface (Cont.)

### Options R1 & F1



AUXILIARY SWITCH LOGIC						
MAIN SWITCH POSITION	OPTION A		OPTION B		OPTION A *	
	NO	NC	NO	NC	NO	NC
CLOSED	O	C	O	C	O	C
TRIPPED	C	C	O	C	C	O
OPEN	C	O	C	O	C	O

\* AUXILIARY SWITCH LOGIC WHEN BLUE WIRE WITH "+" MARKER IS REMOVED FROM NC TERMINAL

WHERE LOCAL AUTHORITIES HAVING JURISDICTION PERMIT, FIELD REMOVAL OF THE BLUE WIRE IDENTIFIED BY "+" MARKER WILL CHANGE THE OPTION A SWITCH LOGIC, SEE THE AUXILIARY SWITCH LOGIC TABLE, REMOVAL HAS THE EFFECT OF DISABLING THE BATTERY LOWERING DEVICE WHEN THE SWITCH IS IN THE TRIPPED POSITION. FIELD INSTALLER MUST ENSURE THIS MEETS ALL LOCAL CODES BEFORE REMOVAL.

#### LEGEND:

FACP - FIRE ALARM CONTROL PANEL

**NOFAIN - NORMALLY OPEN FIRE ALARM CONTROL INPUT.**

**NOFA - NORMALLY OPEN FIRE ALARM CONTACTS** SUPPLIED FROM THE FIRE ALARM SYSTEM TO INITIATE THE SHUNT TRIP.

SHUNT TRIP - SOLENOID FOR REMOTE TRIP OF SWITCH, WHICH IS ACTIVATED BY THE CLOSING OF THE FIRE ALARM CONTACTS OR KEY TEST SWITCH.

OPTION R1 - FIRE ALARM INTERFACE RELAY THAT IS OPERATED AT 120VAC FROM SECONDARY OF TRANSFORMER. NO ADDITIONAL POWER NEEDED.

CR - CONTROL RELAY USED TO ISOLATE THE N.O.F.A. CONTACTS FROM THE DUTY OF THE SHUNT TRIP.

FR - FIRE ALARM VOLTAGE MONITORING RELAY USED TO MONITOR THE STATUS OF CONTROL VOLTAGE FROM A REMOTE LOCATION (i.e. FIRE ALARM CONTROL PANEL).

PL - PILOT LIGHT TO VISUALLY INDICATE PRESENCE OF VOLTAGE ON OUTSIDE OF SWITCH ENCLOSURE.

CPT - CONTROL POWER TRANSFORMER USED TO STEP DOWN LINE VOLTAGE TO 120VAC TO POWER SHUNT TRIP COIL.

SW AUX. - OPTION A OR B, NORMALLY CLOSED CONTACT WHEN SWITCH IS CLOSED. OPENS AS POWER SWITCH OPENS.

KEY TEST - KEY-TO-TEST SWITCH USED TO OPERATE SHUNT TRIP FROM THE OUTSIDE OF SWITCH ENCLOSURE. CAN BE USED FOR TROUBLE-SHOOTING AND INSPECTION.

MECHANICALLY INTERLOCKED AUXILIARY CONTACT - CONTACT USED TO DISABLE BATTERY LOWERING DEVICE.

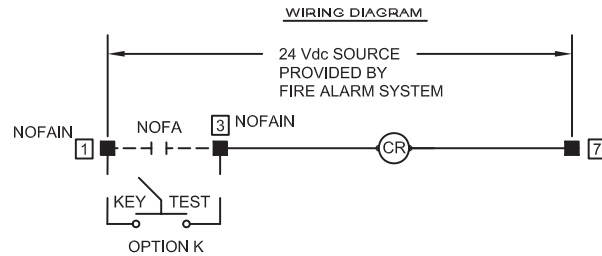
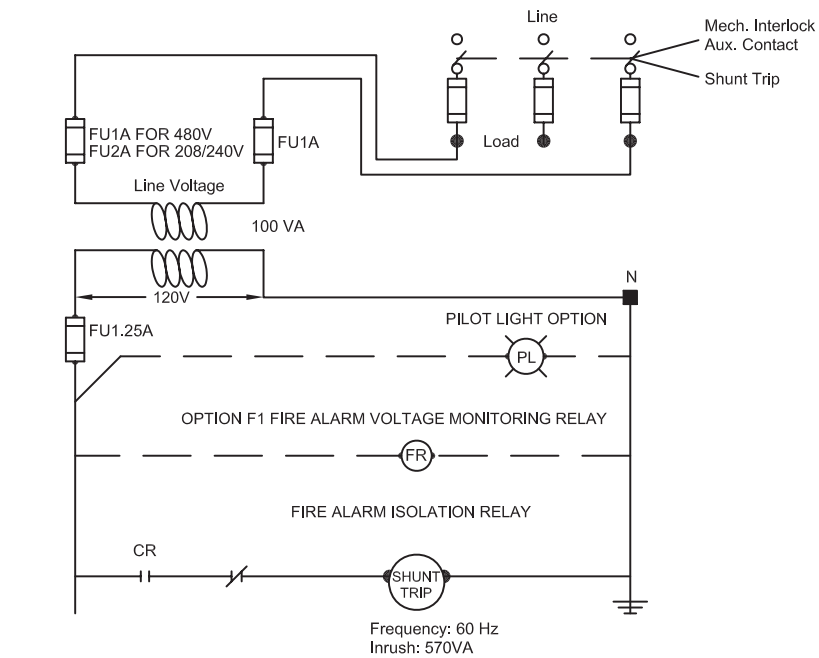
■ - TERMINAL BLOCK CONNECTION POINT.

● - PRE-WIRED CONNECTION POINTS.

# Wiring Diagrams

## Typical Control with Wiring Options for Fire Safety Interface (Cont.)

### Options R2 & F1



AUXILIARY SWITCH LOGIC						
MAIN SWITCH POSITION	OPTION A		OPTION B		OPTION A *	
	NO	NC	NO	NC	NO	NC
CLOSED	O	C	O	C	O	C
TRIPPED	C	C	O	C	C	O
OPEN	C	O	C	O	C	O

\* AUXILIARY SWITCH LOGIC WHEN BLUE WIRE WITH "+" MARKER IS REMOVED FROM NC TERMINAL

WHERE LOCAL AUTHORITIES HAVING JURISDICTION PERMIT, FIELD REMOVAL OF THE BLUE WIRE IDENTIFIED BY "+" MARKER WILL CHANGE THE OPTION A SWITCH LOGIC, SEE THE AUXILIARY SWITCH LOGIC TABLE, REMOVAL HAS THE EFFECT OF DISABLING THE BATTERY LOWERING DEVICE WHEN THE SWITCH IS IN THE TRIPPED POSITION. FIELD INSTALLER MUST ENSURE THIS MEETS ALL LOCAL CODES BEFORE REMOVAL.

#### LEGEND:

FACP - FIRE ALARM CONTROL PANEL

NOFAIN - NORMALLY OPEN FIRE ALARM CONTROL INPUT.

NOFA - NORMALLY OPEN FIRE ALARM CONTACTS SUPPLIED FROM THE FIRE ALARM SYSTEM TO INITIATE THE SHUNT TRIP.

SHUNT TRIP - SOLENOID FOR REMOTE TRIP OF SWITCH, WHICH IS ACTIVATED BY THE CLOSING OF THE FIRE ALARM CONTACTS OR KEY TEST SWITCH.

OPTION R1 - FIRE ALARM INTERFACE RELAY THAT IS OPERATED AT 120VAC FROM SECONDARY OF TRANSFORMER. NO ADDITIONAL POWER NEEDED.

CR - CONTROL RELAY USED TO ISOLATE THE N.O.F.A. CONTACTS FROM THE DUTY OF THE SHUNT TRIP.

FR - FIRE ALARM VOLTAGE MONITORING RELAY USED TO MONITOR THE STATUS OF CONTROL VOLTAGE FROM A REMOTE LOCATION (i.e. FIRE ALARM CONTROL PANEL).

PL - PILOT LIGHT TO VISUALLY INDICATE PRESENCE OF VOLTAGE ON OUTSIDE OF SWITCH ENCLOSURE.

CPT - CONTROL POWER TRANSFORMER USED TO STEP DOWN LINE VOLTAGE TO 120VAC TO POWER SHUNT TRIP COIL.

SW AUX. - OPTION A OR B, NORMALLY CLOSED CONTACT WHEN SWITCH IS CLOSED, OPENS AS POWER SWITCH OPENS.

KEY TEST - KEY-TO-TEST SWITCH USED TO OPERATE SHUNT TRIP FROM THE OUTSIDE OF SWITCH ENCLOSURE. CAN BE USED FOR TROUBLE-SHOOTING AND INSPECTION.

MECHANICALLY INTERLOCKED AUXILIARY CONTACT - CONTACT USED TO DISABLE BATTERY LOWERING DEVICE.

■ - TERMINAL BLOCK CONNECTION POINT.

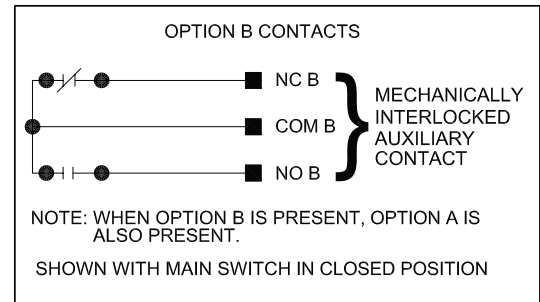
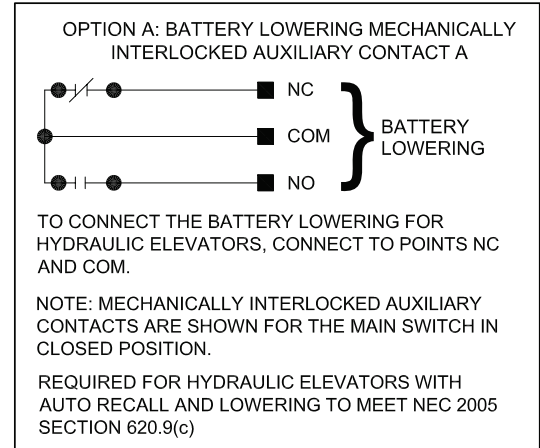
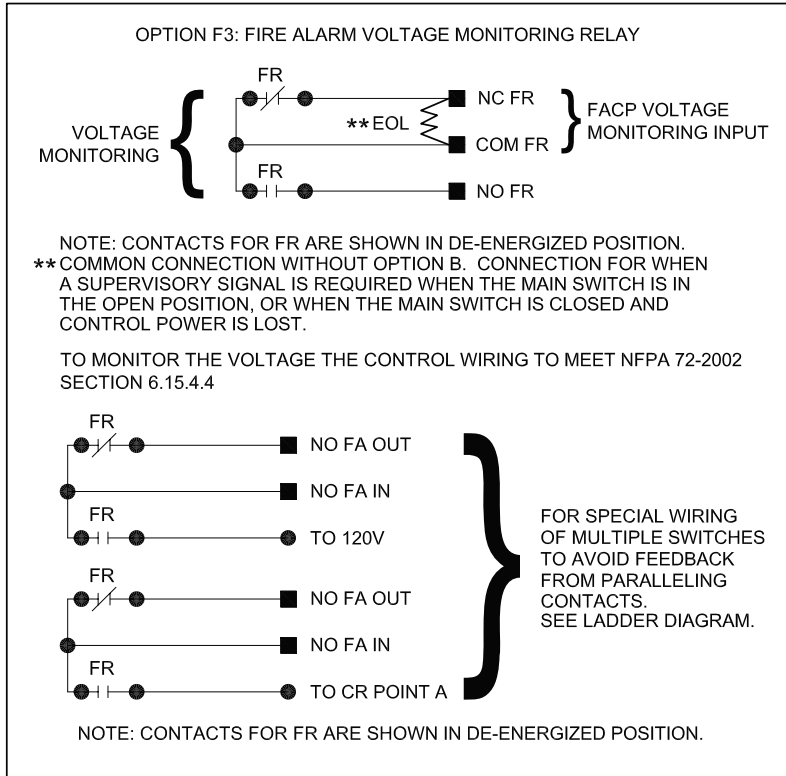
● - PRE-WIRED CONNECTION POINTS.

NOTE: TERMINAL 1 IS NOT PRESENT WHEN OPTION K IS ABSENT.

# Wiring Diagrams

## Typical Control with Wiring Options for Fire Safety Interface (Cont.)

### Option F3



**LEGEND:**

- FACP - FIRE ALARM CONTROL PANEL
- NOFAIN - NORMALLY OPEN FIRE ALARM CONTROL INPUT.**
- NOFA - NORMALLY OPEN FIRE ALARM CONTACTS SUPPLIED FROM THE FIRE ALARM SYSTEM TO INITIATE THE SHUNT TRIP.
- SHUNT TRIP - SOLENOID FOR REMOTE TRIP OF SWITCH, WHICH IS ACTIVATED BY THE CLOSING OF THE FIRE ALARM CONTACTS OR KEY TEST SWITCH.
- OPTION R1 - FIRE ALARM INTERFACE RELAY THAT IS OPERATED AT 120VAC FROM SECONDARY OF TRANSFORMER. NO ADDITIONAL POWER NEEDED.
- CR - CONTROL RELAY USED TO ISOLATE THE N.O.F.A. CONTACTS FROM THE DUTY OF THE SHUNT TRIP.
- FR - FIRE ALARM VOLTAGE MONITORING RELAY USED TO MONITOR THE STATUS OF CONTROL VOLTAGE FROM A REMOTE LOCATION (i.e. FIRE ALARM CONTROL PANEL).
- PL - PILOT LIGHT TO VISUALLY INDICATE PRESENCE OF VOLTAGE ON OUTSIDE OF SWITCH ENCLOSURE.
- CPT - CONTROL POWER TRANSFORMER USED TO STEP DOWN LINE VOLTAGE TO 120VAC TO POWER SHUNT TRIP COIL.
- SW AUX. - OPTION A OR B, NORMALLY CLOSED CONTACT WHEN SWITCH IS CLOSED. OPENS AS POWER SWITCH OPENS.
- KEY TEST - KEY-TO-TEST SWITCH USED TO OPERATE SHUNT TRIP FROM THE OUTSIDE OF SWITCH ENCLOSURE. CAN BE USED FOR TROUBLE-SHOOTING AND INSPECTION.
- MECHANICALLY INTERLOCKED AUXILIARY CONTACT - CONTACT USED TO DISABLE BATTERY LOWERING DEVICE.

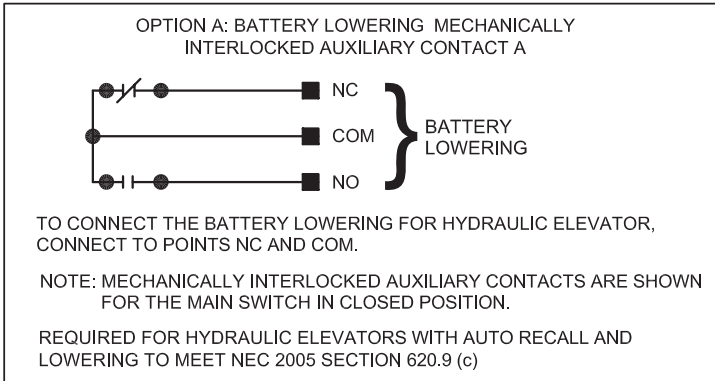
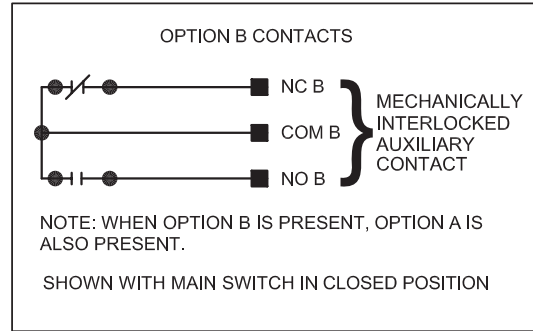
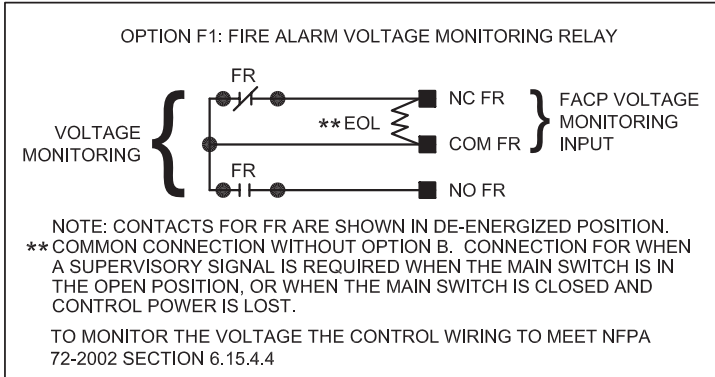
- - TERMINAL BLOCK CONNECTION POINT.
- - PRE-WIRED CONNECTION POINTS.

NOTE: TERMINAL 1 IS NOT PRESENT WHEN OPTION K IS ABSENT.

# Wiring Diagrams

## Typical Control with Wiring Options for Fire Safety Interface (Cont.)

### Option F1



#### LEGEND:

FACP - FIRE ALARM CONTROL PANEL

**NOFAIN - NORMALLY OPEN FIRE ALARM CONTROL INPUT.**

**NOFA - NORMALLY OPEN FIRE ALARM CONTACTS** SUPPLIED FROM THE FIRE ALARM SYSTEM TO INITIATE THE SHUNT TRIP.

SHUNT TRIP - SOLENOID FOR REMOTE TRIP OF SWITCH, WHICH IS ACTIVATED BY THE CLOSING OF THE FIRE ALARM CONTACTS OR KEY TEST SWITCH.

OPTION R1 - FIRE ALARM INTERFACE RELAY THAT IS OPERATED AT 120VAC FROM SECONDARY OF TRANSFORMER. NO ADDITIONAL POWER NEEDED.

CR - CONTROL RELAY USED TO ISOLATE THE N.O.F.A. CONTACTS FROM THE DUTY OF THE SHUNT TRIP.

FR - FIRE ALARM VOLTAGE MONITORING RELAY USED TO MONITOR THE STATUS OF CONTROL VOLTAGE FROM A REMOTE LOCATION (i.e. FIRE ALARM CONTROL PANEL).

PL - PILOT LIGHT TO VISUALLY INDICATE PRESENCE OF VOLTAGE ON OUTSIDE OF SWITCH ENCLOSURE.

CPT - CONTROL POWER TRANSFORMER USED TO STEP DOWN LINE VOLTAGE TO 120VAC TO POWER SHUNT TRIP COIL.

SW AUX. - OPTION A OR B, NORMALLY CLOSED CONTACT WHEN SWITCH IS CLOSED. OPENS AS POWER SWITCH OPENS.

KEY TEST - KEY-TO-TEST SWITCH USED TO OPERATE SHUNT TRIP FROM THE OUTSIDE OF SWITCH ENCLOSURE. CAN BE USED FOR TROUBLE-SHOOTING AND INSPECTION.

MECHANICALLY INTERLOCKED AUXILIARY CONTACT - CONTACT USED TO DISABLE BATTERY LOWERING DEVICE.

■ - TERMINAL BLOCK CONNECTION POINT.

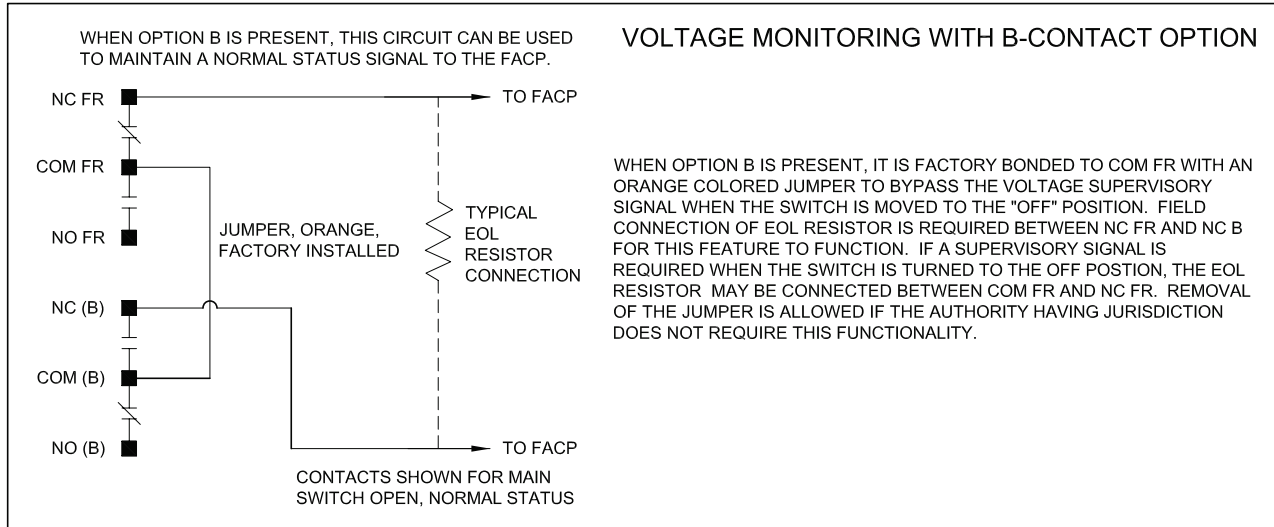
● - PRE-WIRED CONNECTION POINTS.

NOTE: TERMINAL 1 IS NOT PRESENT WHEN OPTION K IS ABSENT.

# Wiring Diagrams

## Typical Control with Wiring Options for Fire Safety Interface (Cont.)

### Voltage Monitoring with B-Contact Option



#### LEGEND:

FACP - FIRE ALARM CONTROL PANEL

**NOFAIN - NORMALLY OPEN FIRE ALARM CONTROL INPUT.**

**NOFA - NORMALLY OPEN FIRE ALARM CONTACTS** SUPPLIED FROM THE FIRE ALARM SYSTEM TO INITIATE THE SHUNT TRIP.

SHUNT TRIP - SOLENOID FOR REMOTE TRIP OF SWITCH, WHICH IS ACTIVATED BY THE CLOSING OF THE FIRE ALARM CONTACTS OR KEY TEST SWITCH.

OPTION R1 - FIRE ALARM INTERFACE RELAY THAT IS OPERATED AT 120VAC FROM SECONDARY OF TRANSFORMER. NO ADDITIONAL POWER NEEDED.

CR - CONTROL RELAY USED TO ISOLATE THE N.O.F.A. CONTACTS FROM THE DUTY OF THE SHUNT TRIP.

FR - FIRE ALARM VOLTAGE MONITORING RELAY USED TO MONITOR THE STATUS OF CONTROL VOLTAGE FROM A REMOTE LOCATION (i.e. FIRE ALARM CONTROL PANEL).

PL - PILOT LIGHT TO VISUALLY INDICATE PRESENCE OF VOLTAGE ON OUTSIDE OF SWITCH ENCLOSURE.

CPT - CONTROL POWER TRANSFORMER USED TO STEP DOWN LINE VOLTAGE TO 120VAC TO POWER SHUNT TRIP COIL.

SW AUX. - OPTION A OR B, NORMALLY CLOSED CONTACT WHEN SWITCH IS CLOSED. OPENS AS POWER SWITCH OPENS.

KEY TEST - KEY-TO-TEST SWITCH USED TO OPERATE SHUNT TRIP FROM THE OUTSIDE OF SWITCH ENCLOSURE. CAN BE USED FOR TROUBLE-SHOOTING AND INSPECTION.

MECHANICALLY INTERLOCKED AUXILIARY CONTACT - CONTACT USED TO DISABLE BATTERY LOWERING DEVICE.

■ - TERMINAL BLOCK CONNECTION POINT.

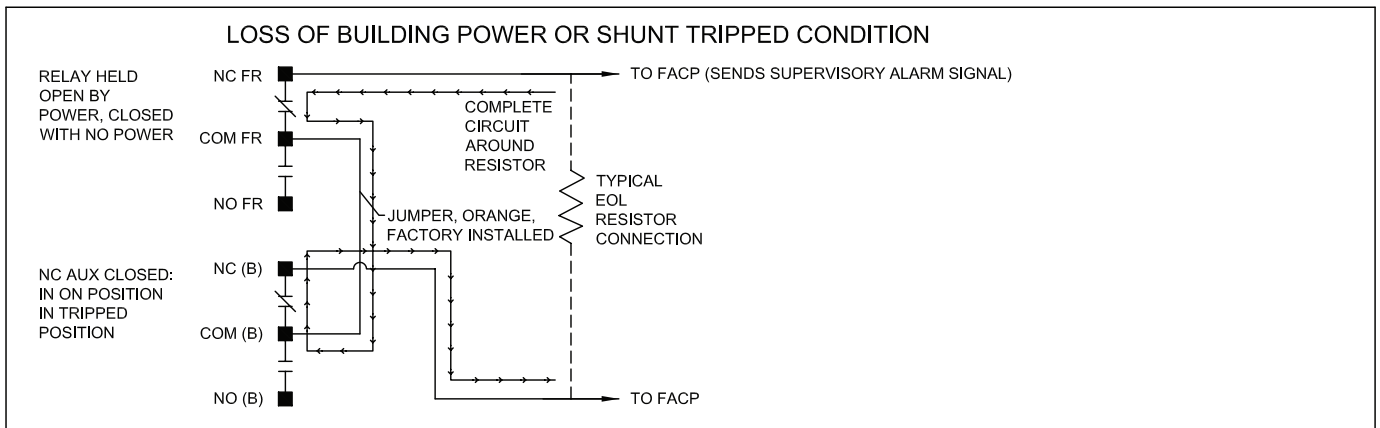
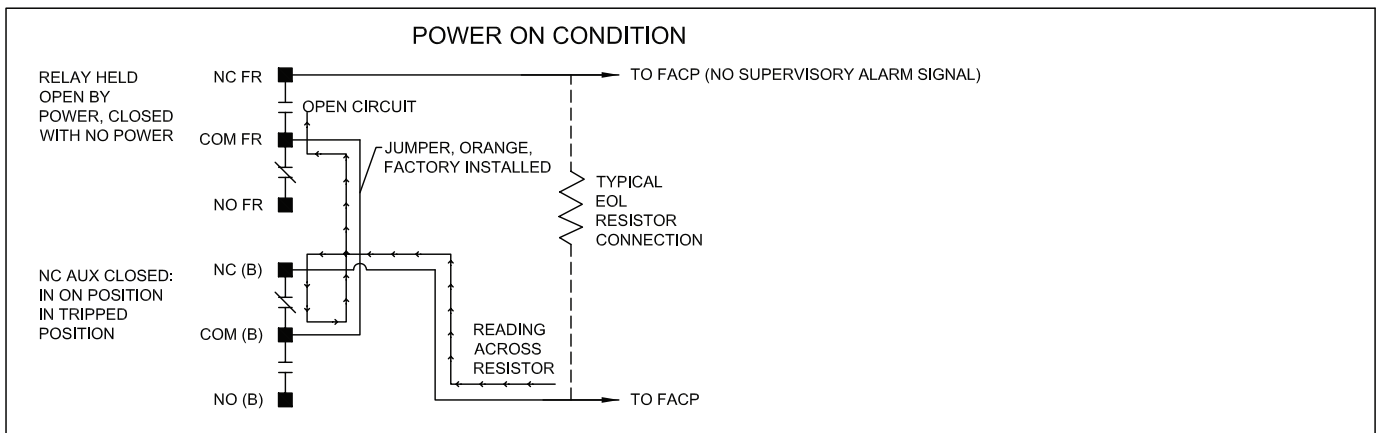
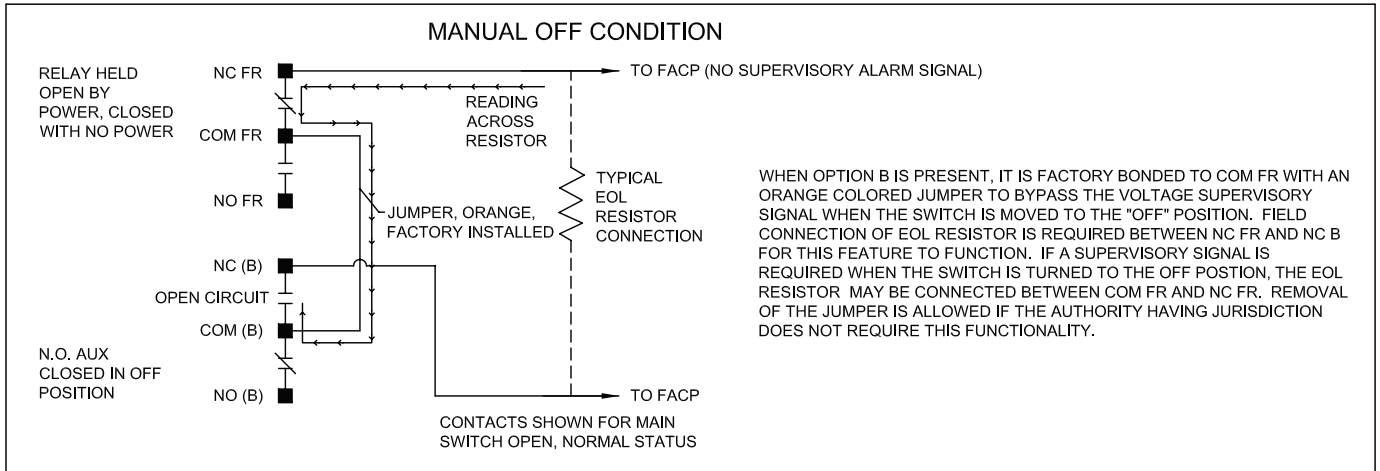
● - PRE-WIRED CONNECTION POINTS.



# Wiring Diagrams

## Common Wiring Scheme for AZ, TX, and OR Applications

### Elevator Control Option B Detail







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