Neeser Construction, Inc.
2501 Blueberry Road
Anchorage, AK 99503
PH. (907) 276-1058
FAX (907) 276-8533

TRANSMITTAL

To: Megawatt Electric

Date: 12/2/21

Project:
SCF Back-Up Generator Power

Attn.: Ed Harris.

SUBMITTALS

We are sending you:

- ☒ Attached
- ☒ Submittal
- ☐ Originals
- ☐ Blueprints
- ☒ Product Data
- ☐ RFI's
- ☐ O&M Manuals
- ☐ Shop drawings
- ☐ Copy of letter

QTY	DESCRIPTION
1	261000-06 Gen Set Gear-Q House submittal review
	Technical Data

These are being transmitted as checked below:

- ☐ For Approval
- ☒ For Your Use
- ☐ As Requested
- ☐ For Review And Comment
- ☐ Return Corrected
- ☐ Other: _____

Remarks:

Submittal Review: Approved as Noted. See RSA comments.

Fuses for main disconnect should be 400A.

VIA: ☐ Site Mailbox ☐ Picked-up ☐ Delivery ☒ OTHER – EMAIL

cc:

TRANSMITTED BY: Tia Quilter

NEESER CONSTRUCTION, INC.

SUBMITTAL TRACKING SHEET

TRANSMITTAL OF SHOP DRAWINGS, PRODUCT DATA, MATERIAL SAMPLES OR CERTIFICATES OF COMPLIANCE

Project: **SCF BACK-UP GENERATOR POWER**

Architect/Engineer: KPB Architects
500 L Street, Anchorage, AK 99501

SUBMITTAL NO.	Submittal Package Title:	Submittal Date:
261000-06	GEAR	11/29/21

RSA Engineering, Inc.
670 W Fireweed Lane, Suite 200, Anchorage, AK 99503

SPEC. NO. **261000** **Subcontractor: Megawatt Electric**

General Contractor: Neeser Construction, Inc.

Item #	Description of Item (Include: type, model # catalog #, mfg, etc.)	No. of Copies
	Q House	
1	Square D, I-Line Power Panelboards	PDF
2	Fuses - UL Class RK5, 600A	PDF
3	Square D Heavy Duty Safety Switches	PDF

Owner/Arch/Eng's Approval Stamp:

SUBMITTAL REVIEW

ENGINEER'S REVIEW

NO EXCEPTIONS NOTED	APPROVED AS NOTED SEE COMMENTS	EXCEPTIONS NOTED PARTIAL RESUBMITTAL REQUIRED	EXCEPTIONS NOTED FULL RESUBMITTAL REQUIRED
☐	☒	☐	☐

Engineer's review is for general conformance with the design concept and contract documents. Markings or comments shall not be construed as relieving the Contractor from compliance with the project plans and specifications, nor departures therefrom. The Contractor remains responsible for details and accuracy, for confirming and correlating all quantities and dimensions, for selecting fabrications processes, for techniques of assembly and for performing his work in a safe manner. Contractor to verify all dimensions at job site before ordering materials and equipment. Any deviations from the contract requirements must be specifically brought to the attention of the engineer in writing and upon the drawings, or by appropriate change order.

RSA Engineering, Inc. BY: Timothy Hall, RSA Engineering DATE: 12/1/21

Fuses for main disconnect should be 400A.

CONTRACTOR'S REVIEW STAMP

NEESER CONSTRUCTION, INC.

☑ REVIEWED
☐ REVIEWED AND NOTED
☐ REVISE & RESUBMIT

REVIEWED BY: Tia Quilter DATE: 11/29/21

Owner/Arch/Eng Review & Approval Comments:

I-Line Power Panelboards

Our I-Line® power distribution panel is the most versatile on the market. It's used to feed NQ and NF lighting and appliance panelboards. I-Line panelboards can also feed large motors and HVAC systems.

Features

- 600Vac, 250Vdc maximum
- 1200A main circuit breaker or main lugs
- 1200A maximum branch circuit breaker
- 200,000A SCCR when using current limiting main or branch circuit breakers
- Fully rated and series rated systems available
- Interiors available in plated copper or aluminum bus
- Suitable for use as service entrance equipment
- Complete line of UL/cUL listed interiors with 200% rated neutrals for non-linear loads
- Sub-feed or through-feed lugs through 1200A
- Interiors accept plug-on thermal magnetic or solid state branch circuit breakers
- Interior, front and most circuit breakers only require a screwdriver for installation
- Branch circuit breaker mounting not restricted by location on bus stack
- Capable of mounting 15A branch circuit breaker across from or next to a 1200A branch circuit breaker
- Branch circuit breakers have no loose mounting hardware and install in as little as 20 seconds with only a screw driver
- Branch circuit breakers are simple to rearrange in the field, limited restrictions on mounting locations
- 100,000A – 240,000A field installable plug-in TVSS units
- Available with or without door, or with hinged trim
- Broad range of field installable kits available from stock

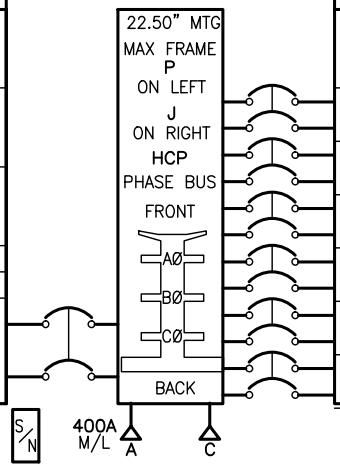
Factory Options

- Split bus bar
- Sub-feed/thru-feed lugs through 1200A
- Optional 200% rated neutrals through 1200A
- Thermal-mag or solid state circuit breakers
- Plated copper or aluminum bus
- Optional customer metering with PowerLogic® power meters or circuit monitors
- Plug-in TVSS modules
- 100,000A – 240,000A plug-in TVSS
- Door in door or hinged trim
- Six circuit QO 240V plug-in distribution module
- Ground fault protection available on main or branch circuit breakers
- Current density-rated panelboard bus

REV	DESCRIPTION	BY	DATE	–	----	--	--/--/--
–	----	--	--/--/--	–	----	--	--/--/--

MDP

CKT NO	ACCESSORIES	TYPE	RATING AMP/P	PHASE BUS CONN
	4.50" BLANK			
	4.50" BLANK			
	4.50" BLANK			
	1.50" BLANK			
	1.50" BLANK			
1		LA	400/2	A C



PHASE BUS CONN	RATING AMP/P	TYPE	ACCESSORIES	CKT NO
			4.50" BLANK	
C A	100/2	BD		2
C A	60/2	BD		4
C A	100/2	BD		6
C A	200/2	QD		8
C A	200/2	QD		10
C A	200/2	QD		12

PHYSICAL DATA

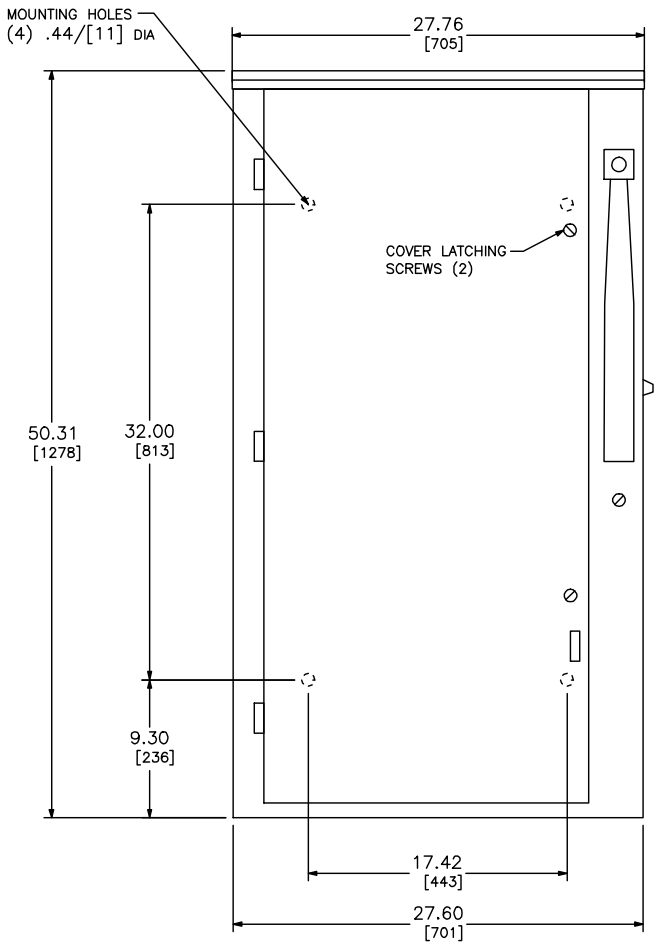
ENCLOSURE Type 3R/5/12
FRONT CAT#: Trim w/Box
BOX CAT#: HC4259WP
DIMENSIONS:
59''(1499mm)Hx42"(1067mm)Wx12.95''(329mm)D
WIRE BENDING SPACE:
TOP – 11.66"(296mm)
BOTTOM – 17.50"(445mm)
LEFT SIDE – 8.66"(220mm)
RIGHT SIDE – 8.77"(223mm)
PBA: 412
BUSSING: 400A RATED COPPER BUS
Tin Plated
OPTIONAL FEATURES:
BRANCH USER PLACEMENT
ALUMINUM SOLID NEUTRAL
ALUMINUM GROUND BAR

ELECTRICAL DATA

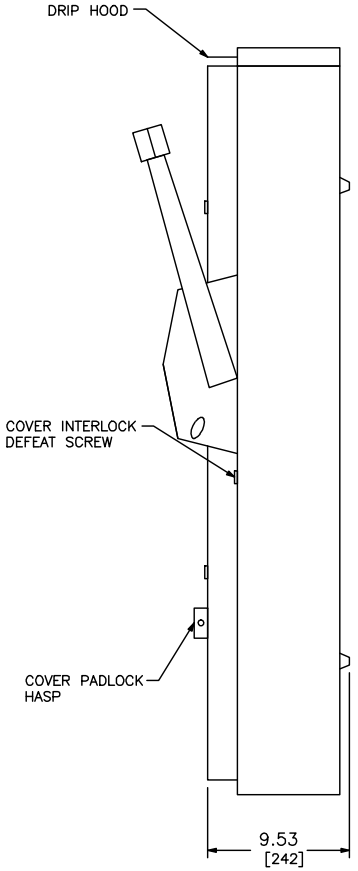
SYSTEM: 120/240V 1Ph 3W 60Hz
System Ampacity: 400A
18kA SYMS. SCCR
MAIN: MAIN LUGS : 400A
Bottom FEED
INCOMING CONDUCTORS(S) PER NEC, CEC, NOM:
Wire Bending Space:
Phase Lugs:1 – (2) #4 – 600 kcmil
----------BRANCH SUMMATION----------
1 – 400A/2P LA
1 – 60A/2P BD
2 – 100A/2P BD
3 – 200A/2P QD

JOB NAME:	Q-House	EQUIPMENT DESIGNATION:	400A MDP
JOB LOCATION:		EQUIPMENT TYPE:	I-Line (Circuit Breaker Type) PANEL 1 OF 1
DRAWN BY:	(Q2C)	DRAWING TYPE:	ONE LINE DIAGRAM
ENGR:			SQUARE D by Schneider Electric
DATE:	November 24 2021		
DRAWING STATUS:	QUOTE	DWG# OQ-2766929-76468336-01	PG 1 OF 1 REV –

Main Disconnect



NEMA TYPE 3R
NO KNOCKOUTS



NOTE: SIDE HINGED DOOR

WIRING DIAGRAMS	
FUSIBLE	NOT FUSIBLE
A B	C

TERMINAL LUGS DATA			
AMPERES	MAX WIRE	MIN WIRE	TYPE
400	(1) 750 KCMIL OR (2) 300 KCMIL	(1) #1/0 AWG OR (2) #1/0 AWG	AL OR CU

NOTES:
FINISH – GRAY BAKED ENAMEL
UL LISTED – FILE E-154828
ALL NEUTRALS – INSULATED GROUNDABLE
SUITABLE FOR USE AS SERVICE EQUIPMENT
SHORT CIRCUIT CURRENT RATINGS:
10,000 AMPERES WHEN USED WITH OR PROTECTED BY CLASS H OR K FUSES.
200,000 AMPERES WHEN USED WITH OR PROTECTED BY CLASS R FUSES HAVING CLASS R REJECTION KITS INSTALLED OR CLASS J FUSES.
*FOR CORNER GROUNDED DELTA SYSTEMS ONLY AND WITH SOLID NEUTRAL ASSEMBLY INSTALLED.
■NEUTRAL ASSEMBLY H600SN MUST BE USED FOR 480VAC, CORNER GROUNDED DELTA SYSTEM.

DUAL DIMENSIONS: INCHES / MILLIMETERS

CATALOG NUMBER	VOLTAGE RATINGS	WIRING DIAG	HORSEPOWER RATINGS				
			240VAC		480VAC		250 VDC
			STD	MAX	STD	MAX	
			3Ø	3Ø	3Ø	3Ø	MAX
H225NR	240VAC;250VDC	B	50*	125*	–	–	–
H225R	240VAC;250VDC	A	–	–	–	–	50
H265R	600VAC;600VDC	A	–	–	100■	250■	50
HU265R	600VAC;600VDC	C	–	–	–	–	50

HEAVY DUTY SAFETY SWITCHES
VISIBLE BLADE TYPE
400 AMPERE – SERIES E5
ENCLOSURE – NEMA TYPE 3R RAINPROOF (SUFFIX R)

SQUARE D
Schneider Electric

DWG# NO. 3453

MAY 2009

3453

FLNR_ID / FLSR_ID SERIES INDICATOR® FUSES

250/600 Vac • Dual Element • Time Delay • 1/10-600 A

Description

Available in both Indicating and Non-Indicating versions, the FLNR/FLSR series of fuses set the standard for general purpose fuses. The dual-element design provides advanced short circuit and overload protection. FLSR series fuses provide excellent protection for all types of circuits especially those containing motors.

Applications

- Service entrance switches
- Switchboard mains and feeders
- Motor control central mains and motor branch circuits
- All general purpose circuits

Features/Benefits

- Indicator and Non-Indicator versions available
- Dual-element design
- Current limiting

Specifications

Voltage Ratings AC: 600 Vac or less (FLSR_ID)
250 Vac or less (FLNR_ID)
DC: 300 V (FLSR_ID)
125 V (FLNR 1/10 – 30 A);
125 V (FLNR_ID 35 – 600 A)

Ampere Range 1/10 – 600 A

Interrupting Ratings AC: 200 kA rms symmetrical
300 kA rms symmetrical
(Littelfuse self-certified)
DC: 20 kA

Approvals Standard 248-12, Class RK5
UL Listed (File: E81895)
CSA Certified (File: LR29862)
Federal Specification WF-1814
(QPL- W-F-1814)

Material FLSR: 1/10-60 A: Composite body, Bronze caps
70-600 A: Composite body, Copper caps
FLNR: 1/10-60 A: Fiber body, Bronze caps
70-600 A: Composite body, Copper caps

Country of Origin Mexico

Ordering Information

AMPERE RATINGS							
1/10	6/10	1 8/10	4	8	30	80	225
1/8*	8/10	2	4 1/2	9	35	90	250
15/100	1	2 1/4	5	10	40	100	300
2/10	1 1/8	2 1/2	5 6/10	12	45	110	350
1/4	1 1/4	2 8/10	6	15	50	125	400
3/10†	1 4/10	3	6 1/4	17 1/2	60	150	450
4/10	1 1/2	3 2/10	7	20	70	175	500
1/2	1 6/10	3 1/2	7 1/2	25	75**	200	600

Note: For 1/10 – 30A 250 volt fuses, order non-indicating FLNR series fuses.
**FLNR only. †FLNR, FLSR, FLSR_ID only. **
**FLNR, FLSR, FLSR_ID only*

VOLTAGE	INDICATION	SERIES	AMP	CATALOG NUMBER	ORDERING NUMBER
600 V	–	FLSR	15	FLSR015	FLSR015.T
600 V	•	FLSR_ID	15	FLSR015ID	FLSR015.TXID
250 V	–	FLNR	60	FLNR060	FLNR060.T
250 V	•	FLNR_ID	60	FLNR060ID	FLNR060.TXID

Web Resources

Download TC Curves, CAD drawings and other technical information: **littelfuse.com/flsr**
littelfuse.com/flnr

Recommended Fuse Blocks

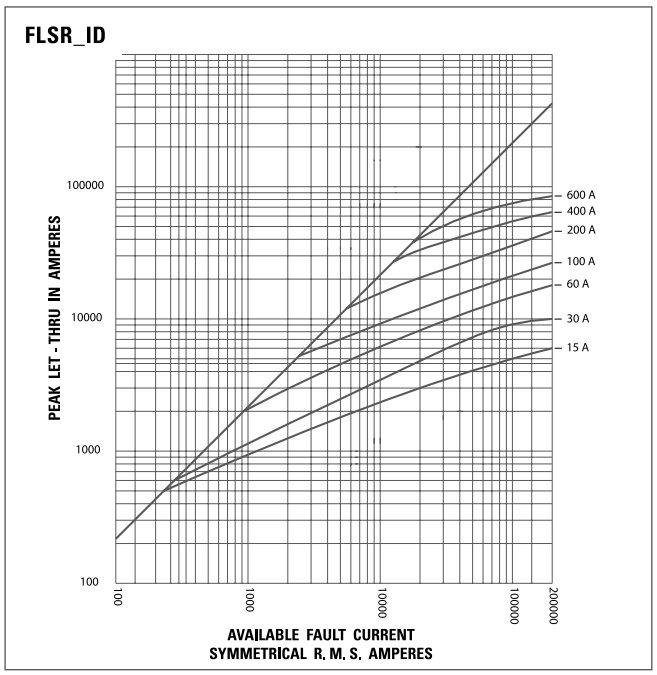
LFR Series 88

Dimensions

Please refer to the Class R dimensions..... 19

Refer to FLNR dim. for FLNR_ID and the FLSR dim. for FLSR_ID.

Peak Let-Thru Curve (600 V)



Note: For more information, see Peak Let-Thru Table on pg. 18

CLASS RK5 CURRENT-LIMITING EFFECTS

Current-Limiting Effects of IDSR (600 V) Fuses

SHORT CIRCUIT CURRENT*	APPARENT RMS SYMMETRICAL CURRENT FOR VARIOUS FUSE RATINGS						
	15 A	30 A	60 A	100 A	200 A	400 A	600 A
5,000	800	1,100	2,100	3,200	5,000	5,000	5,000
10,000	1,100	1,600	2,900	4,300	7,300	10,000	10,000
15,000	1,300	1,900	3,400	5,000	8,600	13,700	15,000
20,000	1,400	2,200	3,800	5,600	9,500	15,500	19,000
25,000	1,500	2,500	4,100	6,100	10,300	16,700	21,500
30,000	1,600	2,700	4,500	6,500	11,000	17,700	23,500
35,000	1,700	2,900	4,700	6,800	11,600	18,600	25,200
40,000	1,800	3,100	5,000	7,200	12,100	19,400	26,600
50,000	1,900	3,400	5,400	7,800	13,100	20,800	29,500
60,000	2,000	3,600	5,800	8,300	13,900	22,000	30,600
80,000	2,200	4,000	6,300	9,100	15,400	24,000	33,200
100,000	2,300	4,200	6,800	9,800	16,700	25,500	35,100
150,000	2,600	4,500	7,700	11,200	19,300	28,100	38,000
200,000	2,800	4,600	8,400	12,400	21,400	30,000	39,600

Current-Limiting Effects of FLSR and FLSR_ID (600 V) Fuses

SHORT-CIRCUIT CURRENT*	APPARENT RMS SYMMETRICAL CURRENT FOR VARIOUS FUSE RATINGS					
	30 A	60 A	100 A	200 A	400 A	600 A
5,000	1,250	2,100	3,200	5,000	5,000	5,000
10,000	1,600	2,850	4,300	7,250	10,000	10,000
15,000	1,800	3,400	5,000	8,500	13,500	15,000
20,000	2,250	3,800	5,500	9,500	15,750	19,000
25,000	2,450	4,100	5,700	10,250	17,000	21,000
30,000	2,700	4,500	6,400	10,750	18,000	23,000
35,000	2,900	4,800	6,700	11,500	19,000	24,250
40,000	3,000	5,000	7,250	12,000	19,500	27,000
50,000	3,400	5,250	7,750	13,000	21,000	29,000
60,000	3,600	5,750	8,100	14,000	22,000	30,500
80,000	3,900	6,250	9,000	15,000	24,000	33,000
100,000	4,300	6,750	9,750	16,500	26,000	35,000
150,000	4,500	7,600	11,100	19,000	28,000	38,000
200,000	4,600	8,400	12,250	21,500	30,000	40,000

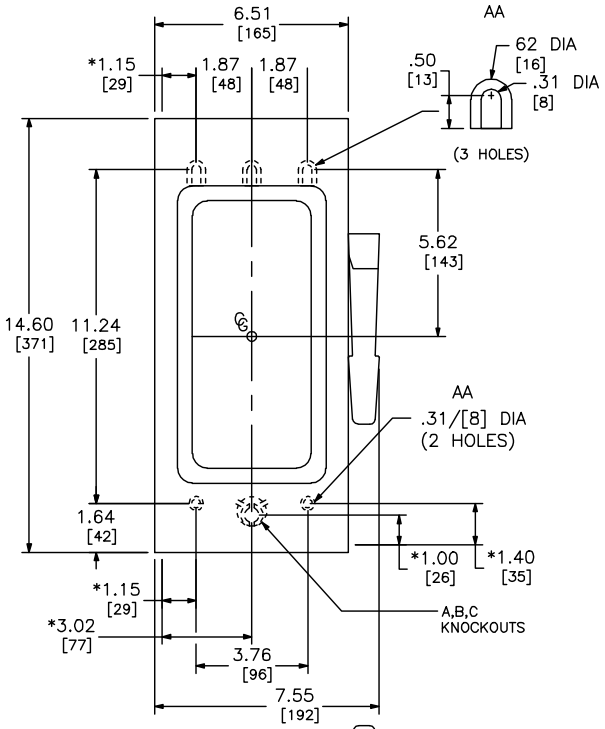
Current-Limiting Effects of FLNR and FLNR_ID (250V) Fuses

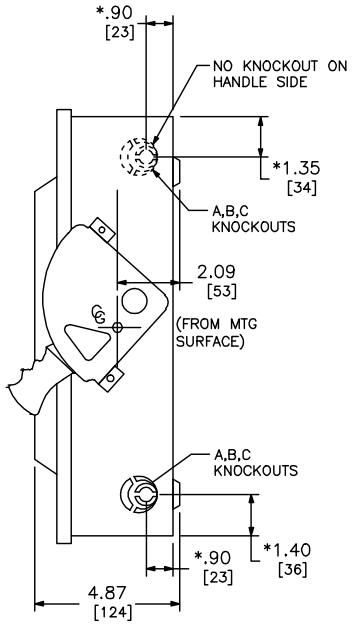
fuses should be 400A

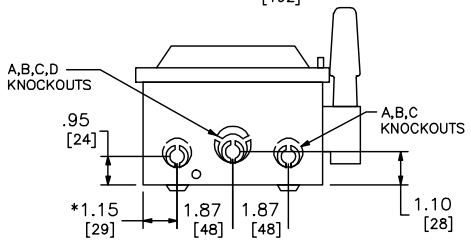
SHORT-CIRCUIT CURRENT*	APPARENT RMS SYMMETRICAL CURRENT FOR VARIOUS FUSE RATINGS					
	30 A	60 A	100 A	200 A	400 A	600 A
5,000	1,400	2,100	3,100	5,000	5,000	5,000
10,000	1,550	2,500	3,900	6,500	9,500	10,000
15,000	2,000	3,150	4,400	7,250	10,500	14,000
20,000	2,250	3,400	5,000	8,250	12,000	16,000
25,000	2,400	3,750	5,250	9,000	12,500	16,500
30,000	2,550	4,100	5,600	9,500	13,500	18,000
35,000	2,650	4,300	5,800	9,750	14,000	19,000
40,000	2,800	4,400	6,250	10,250	15,000	20,000
50,000	3,000	5,000	6,500	10,500	16,000	21,000
60,000	3,200	5,250	7,000	11,500	17,000	23,000
80,000	3,400	5,750	7,500	12,500	19,000	25,500
100,000	3,850	6,000	8,000	13,500	21,000	27,500
150,000	4,100	7,000	9,000	15,200	24,000	31,500
200,000	4,300	7,500	9,750	16,500	26,000	34,000

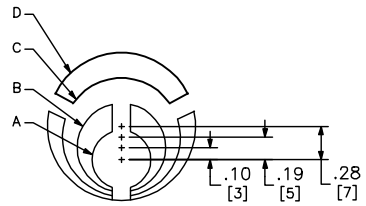
**Prospective RMS Symmetrical Amperes Short-Circuit Current*
Note: Data Derived from Peak Let-Thru Curves

Generator shunt trip disconnect. Comes with AUX NC & NO contacts.





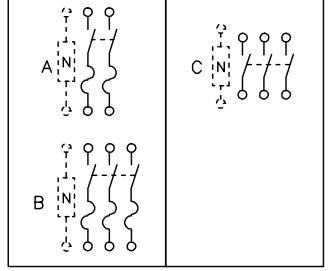




TANGENT KNOCKOUT

(DIMENSION ON DRAWING TO CENTERLINE OF "A" KNOCKOUT)

WIRING DIAGRAMS	
FUSIBLE	NOT FUSIBLE



TERMINAL LUGS			
AMPERES	MAX WIRE	MIN WIRE	TYPE
30	#6 AWG	#14 AWG	AL OR CU

KNOCKOUTS				
SYMBOL	CONDUIT SIZE		DIAMETER	
	IN	MM	IN	MM
A	.50	13	.88	22
B	.75	19	1.13	29
C	1.00	25	1.38	35
D	1.25	32	1.75	44

NEMA TYPE 1

SEISMIC NOTES:
USE (4) 1/4" DIA GRADE 5 STEEL MOUNTING BOLTS @ HOLES AA MAX CONFIGURED WEIGHT 10 LB FOR THE PURPOSE OF DETERMINING SEISMIC ANCHORAGE REQUIREMENTS. FOR ALL OTHER APPLICATIONS, CONTACT SQUARE D COMPANY.

*DIMENSIONS TO BOX (NOT COVER)

DUAL DIMENSIONS: INCHES / MILLIMETERS

CATALOG NUMBER	VOLTAGE RATINGS	AMPERAGE RATINGS	WIRING DIAG	HORSEPOWER RATINGS															
				240VAC				480VAC				600VAC				250 VDC		600 VDC	
				STD		MAX		STD		MAX		STD		MAX					
				1ϕ	3ϕ	1ϕ	3ϕ	1ϕ	3ϕ	1ϕ	3ϕ	1ϕ	3ϕ	1ϕ	3ϕ	STD		MAX	
H221N	240VAC,250VDC	30	A	1 1/2●	3‡	3●	7 1/2‡	–	–	–	–	–	–	–	–	5▲	–	–	–
H321N	240VAC,250VDC	30	B	1 1/2▲	3‡	3▲	7 1/2‡	–	–	–	–	–	–	–	–	5▲	–	–	–
H361	600VAC,600VDC	30	B	–	–	–	–	3▲	5■	7 1/2▲	15■	–	7 1/2	–	20	5▲	–	10▲	15▲
H361N	600VAC,600VDC	30	B	–	–	–	–	3▲	5‡	7 1/2▲	15 ‡	–	7 1/2	–	20	5▲	–	10▲	15▲
HU361	600VAC,600VDC	30	C	–	–	5▲	10■	–	–	7 1/2▲	20■	–	–	10▲	30	–	5▲	–	15▲
HU361EI	600VAC,600VDC	30	C	–	–	5▲	10■	–	–	7 1/2▲	20■	–	–	10▲	30	–	5▲	–	15▲

NOTES;
UL LISTED – E2875
FINISH – GRAY BAKED ENAMEL
▲ ALL NEUTRALS – INSULATED
▲ USE BOTH OUTER SWITCHING POLES
● USE BOTH SWITCHING POLES
■ IF CORNER GROUNDED DELTA, INSTALL NEUTRAL AND USE OUTER SWITCHING POLES FOR UNGROUNDED CONDUCTORS.
‡ FOR CORNER GROUNDED DELTA ONLY, USE OUTER SWITCHING POLES FOR UNGROUNDED CONDUCTORS.

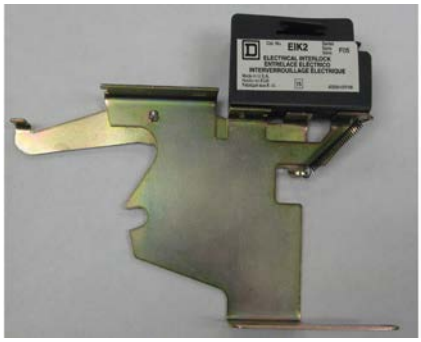
HEAVY DUTY SAFETY SWITCHES – SEISMIC
VISIBLE BLADE TYPE
30 AMPERE
ENCLOSURE – NEMA TYPE 1 GENERAL PURPOSE

SQUARE D
Schneider Electric

DWG# NO. 2228S

JUNE 2009

2228



EIK2 Electrical Interlock Kit

Electrical Interlock Kits

Electrical interlocks for heavy duty safety switches 30 A through 1200 A are available factory installed or in kit form for field installation. A pivot arm operates from the switch mechanism, breaking the control circuit before the main switch blades break. For factory-installed electrical interlocks add EI (for one contact) or EI2 (for two contacts) suffix to catalog number. See Supplemental Digest Section 2 for electrical interlock contact ratings. UL Listed, factory or field installed.

Table 3.29: Electrical Interlock Kit *[56] [57]*

Switch's Amperes Rating	Series Number *[58]*	Electrical Interlock Kit Cat. No. *[59]*
30	F5–F6	EIK031
		EIK032
60 (600 V)	F5–F6	EIK1
		EIK2
60 (240 V)	F5–F6	EIK031
		EIK032
100–200	F5–F6	EIK1
		EIK2
30–100 Receptable Switches	F5–F7	EIK1
		EIK2
30–200 4 and 6 Pole Switches	F5–F6	EIK1
		EIK2
400–1200	E4–E5	EIK40601
		EIK40602

Class R Fuse Kits

When installed, this kit rejects all but Class R fuses. Kits are available for field installation. One kit required for a three pole switch. For factory installation, add "CLR'' suffix to catalog number.

Table 3.30: 240 Vac — Class R Fuse Kits *[60]*

Amperes	Series Number	Class R Fuse Kit Cat. No.
30	F5–F6	RFK03L
60	F5–F6	RFK03H
100	F5–F6	RFK10
200	F5–F6	HRK1020
400–600	E4–E5	HRK4060

Table 3.31: 600 Vac — Class R Fuse Kits *[60] [61]*

Amperes	Series Number	Class R Fuse Kit Cat. No.
30 *[62]*	F5–F6	RFK03H
30 A Receptacle Switches	F7	RFK06
30 A 4 Pole Switches	F5–F6	RFK06
60	F5–F7	RFK06H
100	F5–F7	RFK10
200	F5–F6	HRK1020
400–600	E4–E5	HRK4060

Internal Barrier Kits

Internal Barrier Kits provide an additional barrier that helps prevent accidental contact with live parts. Field-installed transparent barriers do not restrict visual inspection of the switch. Barriers provide IEC529 IP2X "finger safe" protection when door of enclosed disconnect switch is open. Convenient door allows use of test probes without accessing fuses and replacement of fuses without removing barrier. For use with 3 pole switches.

Table 3.32: Internal Barrier Kits

Cat. No.	Description	Safety Switch Application (F Series Only)
SS03	Interior Barrier for 30 A and 240 V 60 A Safety Switch *[63]*	240 / 600 Vac – 30 A 240 Vac – 60 A
SS06	Interior Barrier for 600 V, 60 A Safety Switch	600 Vac – 60 A
SS10	Interior Barrier for 240 / 600 V, 100 A Safety Switch	240 / 600 Vac – 100 A
SS20	Interior Barrier for 240 / 600 V, 200 A Safety Switch	240 / 600 Vac – 200 A

[56] For series not shown in table refer to the switch wiring diagram.
[57] Electrical interlocks for Type 4X fiberblass reinforced polyester and Krydon™ see Table 3.19 and Table 3.20 respectively.
[58] See page 3-19 and page 3-20 for safety switch series.
[59] Electrical interlock kit catalog numbers ending in 1 indicates one normally open and one normally closed contact. These kits use a 9007A01 industrial snap switch. Electrical interlock kit catalog numbers ending in 2 indicates two normally open and two normally closed contacts. These kits use a 9007C03 industrial snap switch.
[60] For series not shown in the table, refer to the switch wiring diagram.
[61] Class R Fuse Kits for Fiberglass Reinforced Polyester enclosures and Krydon™ enclosures see Table 3, page 3-10 and Table 5, page 3-11 respectively.
[62] H361-2, H361-2A, H361-2AWK and H361-2RB use RFK06.
[63] Requires arc shield on 240 V switches be changed to 600 V arc suppressor. Contact the Customer Care Center at 1–888–778–2733 fo the arc suppressor part number.