SAFESIDE®
Permanent Electrical Safety Devices

Optical Cable Voltage Indicator Multi-Environment

Zero Voltage on Enclosure Exterior

Product Data Sheet

R-3F2-L”__”

PLEASE SEE TABLE 1 FOR CABLE LENGTHS

Voltage Indication without Voltage....to the Door

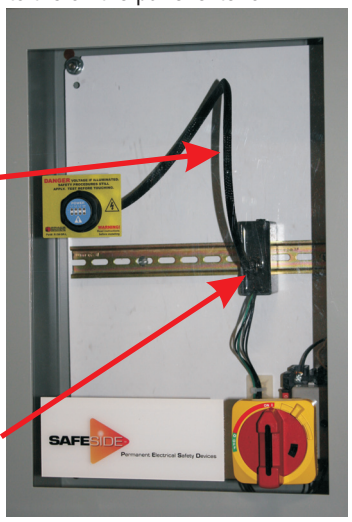
When it comes to thru-door electrical safety, the R-3F2-L__ voltage indicator with an optical cable is a permanent electrical safety device (PESD) designed to keep workers on the safe side of electrical panels by providing them with a no-voltage-to-the-door option. Many international and domestic electrical standards require low voltage panel-mount devices; the R-3F2 meets those requirements with zero voltage on the outside of the panel.

The R-3F2 uses an optical light cable to transmit LED voltage indication up to a thru-panel adaptor on the outside of electrical enclosures, which allows users to see the voltage status of L1, L2, L3 and GRD while the energized conductors are kept inside the enclosure. This voltage indicator illuminates for voltages between 20VAC/VDC and 600VAC/1000VDC (non-UL Max 750VAC) its CAT IV/III rating (pending) makes it suitable for use in any location in your low voltage power system.

The R-3F2 uses the same field-proven and time-tested circuitry as other SafeSide® voltage indicators (R-3W, R-3W2, & R-3W-SR). The potted construction, redundant circuit design, UL /IEC/AS 61010-01 certification, CAT IV/III rating (pending), integral lead wires, and flexible mounting options allow users to reliably locate it close to 3-phase voltage sources. The different cable lengths lets users mount the panel adaptor at the best location on the enclosure.

Zero Energy Here

Panel adapter displays voltage indication LEDs without no energy to the on the panel exterior.



Optical Cable Here

3Ø LED power interface unit with optical cable transmitting the LED voltage indication to the panel adapter.

LED 3Ø Power Interface Here

R-3F2 Features:

- 20-600VAC / 20-1000VDC (non-UL Max 750VAC)
- UL Hazardous Location (Class 1 Division 2 Group A,B,C & D)
- CAT III/IV Electrical Rating
- UL Type 4X, 12, 13

Other Benefits:

- Stored Energy Detector (120.1(6))**
- Visible Blades Disconnect (120.1(3))**
- Permanent Device is Less Prone to Damage
- Voltage Source Labels (120.2(F)(1)(a))**

***NFPA 70E 2012 Edition*

UL TYPE 4X
c UL us LISTED
IND. CONT. EQ. 486Y
UL File: E256847
RoHS CE
UL TYPE 4X
TYPE 12
TYPE 13

DC or AC-rms to Ground (Peak Impulse Transient 8000V 20 repetitions, 2 ohm source)

Low Voltage Switchgear Applications

Because the R-3F2 is a zero-voltage panel mount device, it meets ANSI C37.20.1 (7.1.3.7) for use in low voltage switchgear. The ability to install the R-3F2-L__ into new or existing switchgear can be accommodated by selecting the correct optical cable length and taking advantage of the standard 6’ lead wires. Applications include:

- Verification of breaker operation.
- Line side and load side buss voltage status-- Front or rear mounting.
- Primary or secondary indication on transformers.

More Productivity in Mechanical LOTO

Externally-mounted voltage indication provides a means to check voltage without workers being exposed to voltage. Simpler mechanical LOTO procedures are more productive and ultimately safer.

Table 1

Part Number	Product Description	Part Number	Product Description
R-3F2-L12	Thru-Door Isolated 12” Optical Cable Voltage Indicator	R-3F2-L48	Thru-Door Isolated 48” Optical Cable Voltage Indicator
R-3F2-L24	Thru-Door Isolated 24” Optical Cable Voltage Indicator	R-3F2-L72	Thru-Door Isolated 72” Optical Cable Voltage Indicator
R-3F2-L36	Thru-Door Isolated 36” Optical Cable Voltage Indicator	R-3W-L	Adhesive-backed Warning Label

Warning: Verify an electrical conductor has been de-energized using an adequately rated voltage detector before working on it. Follow appropriate Energy Control (Lockout/Tagout) procedures as per OSHA Subpart; the current edition of NFPA 70E; and the current edition of CSA Z462. Follow all Local, State, and national Electrical Codes when installing this equipment. Overcurrent protection of the supply leads may be necessary. The installation of overcurrent protection shall be in accordance with the requirements in the NEC (NFPA 70) or end product standard(s) when used in the final installation.

GRACE ENGINEERED PRODUCTS, INC

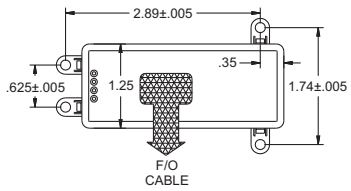
DS: R-3F2:8/2014
LIT-DS-R3F2

5001 Tremont Avenue
Davenport, IA 52807
(800) 280-9517 Fax: (563) 386-9639
www.pesd.com

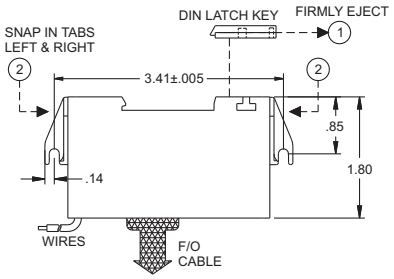
Installation Information

Universal Mounting

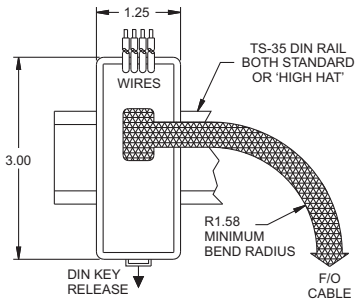
NOTE: Vertical or Side mount requires snap-in installation of respective mounting tabs (hardware included).



Vertical Mount



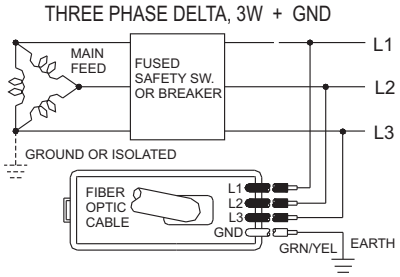
Side Mount



DIN Rail Mount

APPLICATION EXAMPLE

THREE PHASE DELTA, 3W + GND (Fig. 2)



GND Indicators:

For isolated 3-phase systems, it is normal for the L1, L2, & L3 to be illuminated. Typically the "GND" indicator LED pair to illuminate only during an unbalance or phase loss condition. Current must pass through 2 LED indicator pairs to complete a circuit and illuminate the LEDs.

⚠ CAUTION

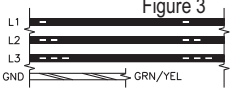
- Do not operate above 750 3-Phase VAC or 1000VDC @ 55°C ambient.

3~ 3-P Alternating Current ⎓ Direct Current

Specifications

OPERATIONAL RANGE: **AC Single or 3-P:** 20-600V** 50/60Hz; Operates to 400 Hz
DC or Stored Energy: 20 to 1000 VDC
DETECTION THRESHOLDS: 14V 3~ , 18.5V 1~ , 15V ⎓ (TYPICAL CUTOFFS)
FLASH RATE (* flashes/sec): 120V (2.6), 240V (3.3), 480V (3.7), for 3~ @ 60Hz
MAX. POWER CONSUMPTION: 1.2 Watts @ 750V 3~ (Approximately)
OPERATING TEMPERATURE: -20°C to +55°C
TERMINATIONS: (4) 6 ft., 18 AWG 90°C @ 1000V, UL-1452
F/O CABLE: 'XX' inches of bundled cable in FR mesh sleeve
DIN MODULE INDICATORS: (8) Red Super Bright LEDs (Interface to F/O cables)
ZERO VOLT DISPLAY: Isolation by means of (8) 2mm all plastic F/O cables

Figure 3



**nonUL Max 750VAC

Epileptic Photosensitivity Compliant

Part #: R-3F2-L" '

Voltage Indicator, Red LEDs, 30mm, with Thru-panel 'Zero' Voltage Optical Cable Indication with Length "XX" inches

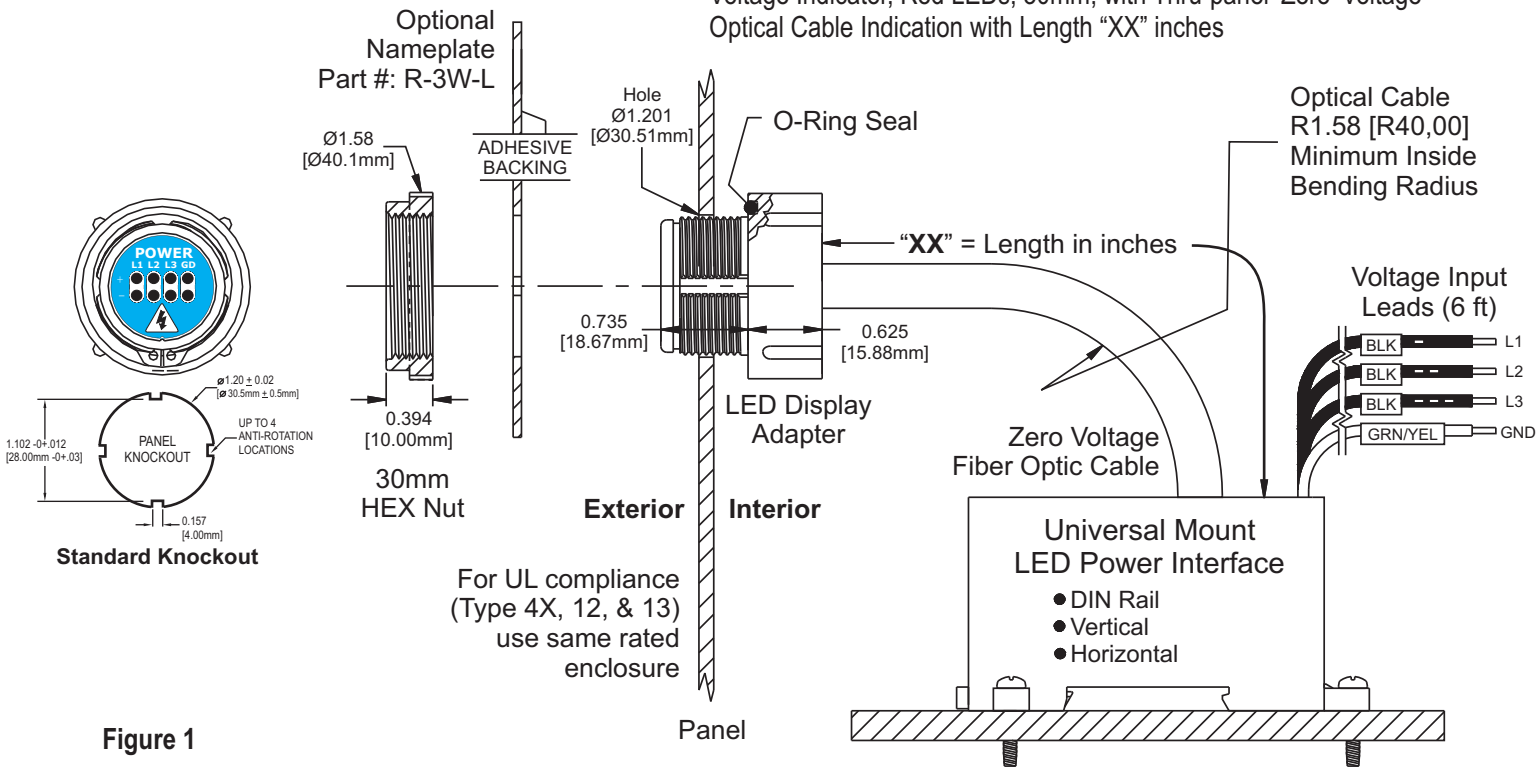


Figure 1