

# 3-Phase Voltage Portal Combo Unit



Part #	Description
R-T3W-LCH	R-3W/T3/Horizontal Combo Label
R-T3W-LCF	R-3W/T3/Flange Combo Label
R-T3WS-LCH	R-3W-SR/T3/Horizontal Combo Label
R-T3WS-LCF	R-3W-SR/T3/Flange Combo Label
R-T3W2-LCH	R-3W2/T3/Horizontal Combo Label
R-T3W2-LCF	R-3W2/T3/Flange Combo Label

**Permanent Electrical Safety Devices (PESDs)** are defined as external devices permanently mounted to electrical systems that, directly or indirectly, reduce the risk of arc flash and/or shock hazard by providing feedback on the voltage state within the enclosure and eliminating proximate exposure to that same voltage. PESD combo units include voltage portals and voltage indicators.

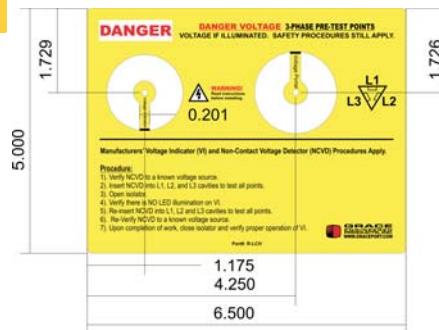
**Voltage Indicators:** Flashing or non-flashing device that monitors both AC and DC voltage. They are externally mounted and give a visual indication outside the panel to the presence or absence of voltage. Voltage indicators are also available in Class 1 Div 2, solid-on LEDs.

**Part numbers include:** R-3W, R-3W2, R-3W-SR



**Voltage Portals:** Non-conductive, encapsulated point that allows for the detection of the presence of voltage through a panel door with a non-contact voltage detector (NCVD).

**Part numbers include:** R-1A003 and R-T3



## PESDs and NFPA 70E

The NFPA 70E states that the following principles are foundational to ensuring a zero energy state:

- **Locate all sources of electrical energy.**<sup>11</sup> Voltage portals and voltage indicators installed will locate each source.
- **Physically contact voltage detector to the electrical energy.**<sup>12</sup> Voltage indicators are hardwired to the source.
- **Test between each phase and phase to ground.**<sup>13</sup> Voltage indicators check voltage between phase-phase-ground
- **Verify voltage detector before and after use.**<sup>14</sup> A non-contact voltage detector (NCVD) can be verified before and after use.

**Please note:** Employers are responsible to train employees in selecting and properly using a voltage detector.<sup>15</sup> It is also the responsibility of employers to provide a written lock-out/tag-out procedure and train employees on those procedures.<sup>16</sup> Follow manufacturer's instructions when using a non-contact voltage detector. All other safety procedures apply.

**NFPA 70 References:** [1] Annex G 6.1, [2] 110.6 (D) (4)(e), [3] 120.1(5), [4] 120.2(F)(2)(f)(1), Annex G 3.4, [5] 120.2(C)(2)  
[1] Annex G 6.1, [2] 110.6 (D) (4)(e), [3] 120.1(5), [4] 120.2(F)(2)(f)(1), Annex G 3.4, [5] 120.2(C)(2)

**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 S; the current edition of NFPA 70E; and the current edition of CSA Z462.

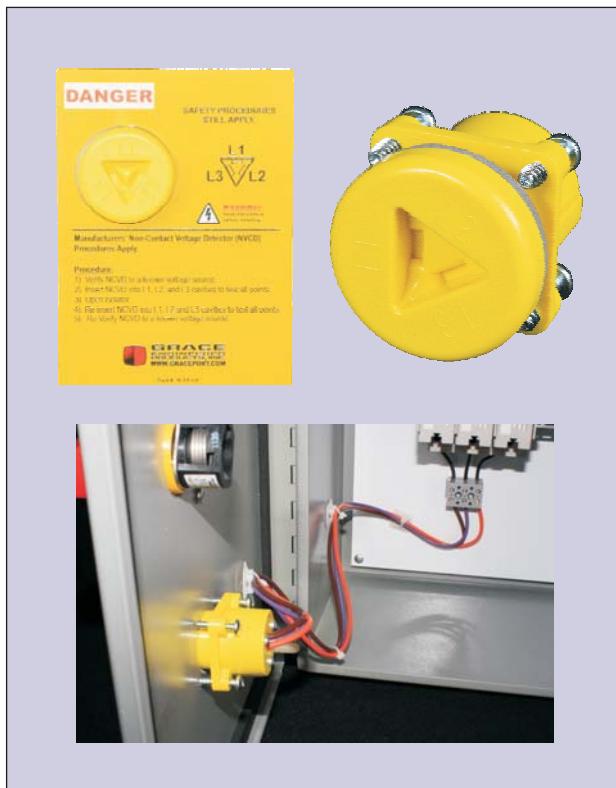




Permanent Electrical Safety Devices

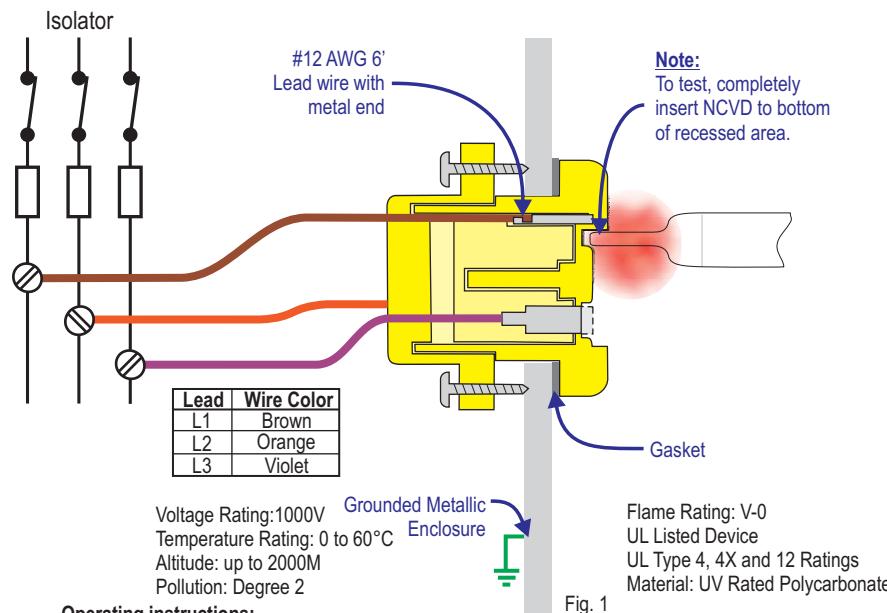
Catalog Number  
**R-T3**

# 3-Phase Voltage Portal



Grace Engineered Products' SafeSide® R-T3, a non-contact voltage portal, has three phases combined into one single unit. Operators now have a single test location for all three phases, which takes up less space on the electrical panel and reduces installation time.

The SafeSide® R-T3 also reduces arc flash risk while increasing electrical safety and productivity by providing electricians and maintenance personnel a single no-touch voltage portal on the outside of grounded metallic electrical enclosures. The SafeSide® R-T3 interface, installed on an electrical panel, allows electricians and maintenance personnel to use a NCVD pen to check line voltage before and after they open the main disconnect. The ability to pre-verify electrical isolation prior to opening an electrical panel puts an additional safety barrier between people and hazardous voltage.



#### Operating instructions:

- 1.) Verify proper operation of Non-Contact Voltage Detector (NCVD) to a known source. With the Isolator closed and the electrical panel powered, verify the NCVD indicates voltage when completely inserted into the bottom of the recessed area of the R-T3 interface (figure 1). If the NCVD does not indicate voltage, then proceed with Lock-out/Tag-out (LOTO) procedure as per NFPA 70E Annex G or other approved procedure.
  - 2.) Open the isolator, insert the NCVD individually into the recessed area of the installed R-T3 interface. If the phases have been isolated, then the NCVD should not sense voltage on the R-T3 interface and the panel has been pre-verified. From here on follow approved electrical LOTO procedure.
- UL E311256 RoHS UL TYPE 4, 4X, 12

Part #	Description
R-T3	Three-phase Voltage Portal installs in a 30mm hole
R-T3-LF	Flange mount adhesive label, 8.75" x 1.90"
R-T3-LH	Door/Panel mount adhesive label, 5.50" x 4.00"

**Warning:** Non-Contact Voltage Detectors (NCVD) require solidly grounded power systems for proper operation. Using NCVDs and/or SafeSide® voltage portals on power systems with a floating, isolated grounds, or other ungrounded systems will result in false-negative voltage indication (voltage present, but not indicated by the NCVD). Follow the NCVDs' manufacturer operating instructions for proper procedures and operation of the NCVD.



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