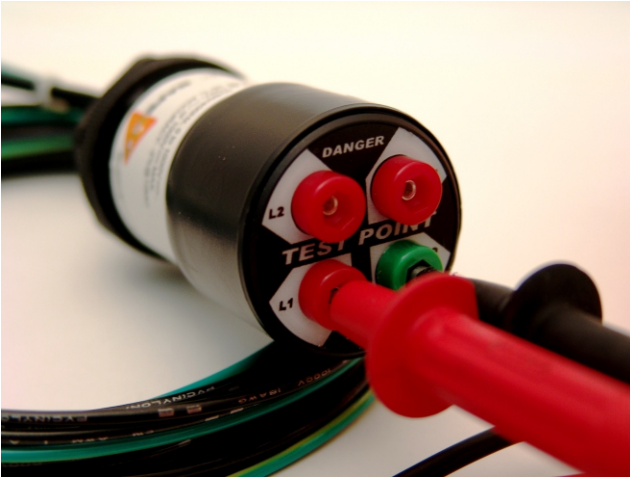


## **⚠ BE SURE POWER IS SHUT OFF PRIOR TO INSTALLING THIS DEVICE**



### **⚠ CAUTION**

- ALWAYS connect the **GRN YEL (GND)** conductor to earth ground.
- Location of device & internal hardware/wiring **MUST** allow free operation of ON/OFF disconnect mean. For indoor use only.
- Means of anti-rotation is required (see knock-out for one or more tab locations).
- The O-ring material is FVMQ fluorosilicone. Please refer to a Chemical Compatibility chart for your application(s).
- Maximum single component failure fault current is 2.9mA @ 600V  $\sim$  or 600V  $\equiv$  with a momentary short between any (2) test point jacks.
- Do not operate above 600V  $\sim$  or 600V  $\equiv$  @ 55°C ambient or >2000m altitude or >80% RH.
- If this product is used in a manner not herein prescribed, the protection provided may be impaired.

$\equiv$  Direct Current    $\sim$  Alternating Current   ⚠ Caution   ⚡ Caution, possibility of electrical shock

## **INSTALLATION INSTRUCTIONS**

- 1.) 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.
- 2.) Locate the unit in visual proximity to the control panel ON/OFF disconnect and within wiring distance to incoming Main Lines and Earth Ground. Mount the unit through a 30.5 mm knockout hole on the three-phase control panel to be monitored. (Fig.1)
- 3.) For Delta configured power, connect 1 bar, 2 bar & 3 bar black wires to L1, L2 & L3 respectively (Fig. 1) on the fused or disconnect side of the 3-Phase line voltage. The Green/Yellow stripe (Grn/Yel) wire **MUST** be connected to Earth Ground. (Fig. 2)
- 4.) With the R-3MT installed, wired, and the enclosure closed, verify the power disconnect is OFF.
- 5.) **Using the proper test equipment:** The voltmeter should be rated for Cat III/1000V and Cat IV/600V. Test probes should be fully insulated with .080" DIA points to insert into Test Point jacks.
- 6.) Follow all safety and lock-out/Tag-out (LOTO) procedures. Set voltmeter to ACV, verify zero voltage between (6) test point combinations {L1-L2, L1-L3, L2-L3, L1-GND, L2-GND, L3-GND}, Switch meter to DCV. Repeat all (6) measurements.
- 7.) **STORED ENERGY** is present whenever DCV readings are observed. The energy must be removed or discharged before the enclosure is to be opened or electrician work is to be performed.
- 8.) Remove any unsafe load conditions and notify personnel power is about to be restored. Turn power ON.
- 9.) Repeat step 6 measurements but now verify proper operating voltage conditions appear on the Test Point combinations.  
(Note: For greater accuracy, multiply voltmeter reading by a factor of 1.02 to determine actual line voltage.)

## **OPERATING INSTRUCTIONS**

### **Equipment needed:**

Digital Volt Meter with 600V AC or DC rated input minimum, 10M ohm input impedance and CAT III & IV. A pair of insulated test probes with .080" DIA. points.

**Directions:** Before and after each test, determine the volt meter is operating satisfactorily through verification of known AC & DC voltage sources. With the meter switched to ACV and test leads in ACV meter jacks, a qualified person can insert probe points into any two of the (4) terminal posts {L1, L2, L3, GND}.

1. To validate normal powered conditions, AC voltage is observed for all six (6) post pair combination circuits {L1-L2, L1-L3, L2-L3, L1-GND, L2-GND, L3-GND}.
2. To check for zero electrical energy during shut off, verify sources of feedback or stored energy are first neutralized. With the meter and leads setup for ACV measurement, verify the (6) post pair combination circuits above are de-energized. Change voltmeter and test leads for DCV measurement. Again verify the (6) post pair combination circuits are also de-energized for DCV (stored energy).

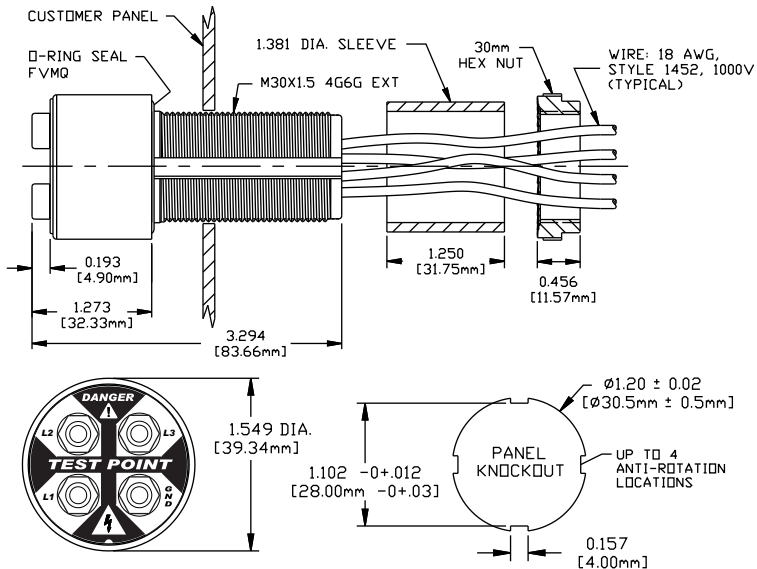
## **MAINTENANCE:**

With power removed, free dust and particles from front label and jack sockets with compressed air. Maintain a clean label by gently wiping with a clean damp cloth while power is removed. Cleaning while powered is not recommended.

### **⚠ WARNING**

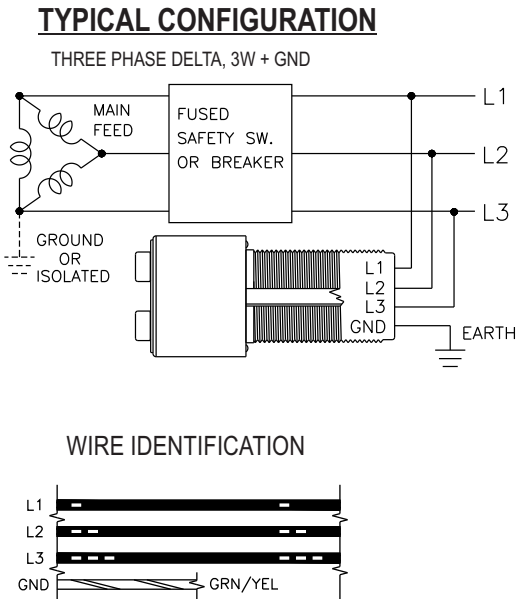
BEFORE OPENING A PANEL, TURN POWER OFF! SAFETY PROCEDURES STILL APPLY! Before working on an electrical conductor, verify zero electrical energy with proper voltage testing instrument and the proper procedure as per NFPA 70E 120.1(5), 120.2 (F)(2)(f)(1-6), OSHA 1910.333(b)(2)(iv)(B)."

Figure 1



NOTE: (4) Test point jacks accept .080" DIA. probe points.

Figure 2



**SPECIFICATIONS**

<u>OPERATIONAL RANGE:</u>	AC Single or 3-Phase: 0-600V @ 50/60/400Hz
<u>DC OR STORED ENERGY:</u>	0 to 600 VDC any (2) wires
<u>MAXIMUM VOLTAGE:</u>	600V 3~ or 600V ==
<u>MAX. POWER CONSUMPTION:</u>	1.2 Watts @ 495V~ (Approx.), with fault load of any (2) corresponding test points shorted indefinitely.
<u>TEMPERATURES:</u>	Operate: -20°C to +55°C Storage: -45°C to +85°C
<u>FAILURE CURRENT:</u>	Maximum single component failure fault current is 2.9mA @ 600V~ or 600V == with a momentary short between any (2) test point jacks.
<u>INTERNAL RESISTANCE:</u>	(2) 51K 3W 5% Tol series resistors encapsulated between each input wire and respective test point jack. (102KΩ 6W equivalent)
<u>OUTPUT ACCURACY:</u>	-2% of applied voltage [with 10MΩ input impedance voltmeter connected to any (2) test points]
<u>CORRECTION FACTOR:</u>	1.02 x test point voltage reading @ 10MΩ meter input impedance.
<u>TERMINATIONS:</u>	(4) Wires, 8 ft, 18 AWG, 90°C @ 1000V,UL-1452, PVC Insulated w/ Nylon Jacket

Note: All above ratings are LINE-TO-LINE or LINE-TO-GND

MEASUREMENT CATEGORY

The categories take into account the total continuous energy available at the given point of circuit, and the occurrence of impulse voltages. The energy can be limited by circuit breakers or fuses, and the impulse voltages by the nominal level of voltage. Maximum rated voltage of this device is 600V AC or DC.

CAT III is for circuits which can be connected to the mains installation of a building. Energy is limited by circuit breakers to less than 110 000 VA with the current not exceeding 11 000 A.

CAT IV includes circuits which are connected directly to the source of power for a given building. There are very high levels of available energy (e.g. limited only by the power transformer) and arc flash can occur.

For additional information, see SAFESIDE Technical Info: [www.pesd.com](http://www.pesd.com)



800-280-9517  
[www.pesd.com](http://www.pesd.com)