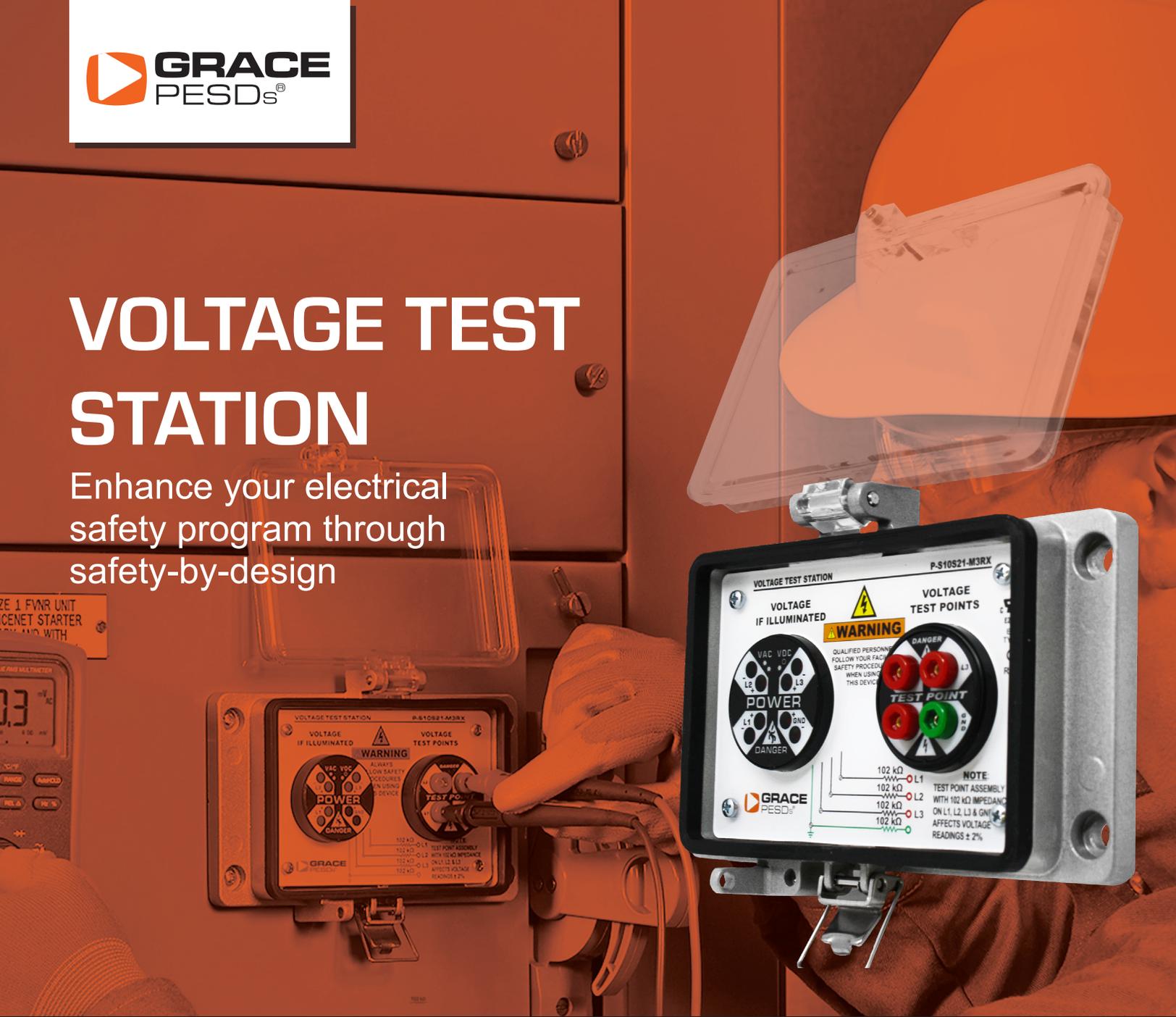


VOLTAGE TEST STATION

Enhance your electrical safety program through safety-by-design



VOLTAGE TEST STATION FEATURES

- ▶ The **Voltage Test Station (VTS)** is a Permanent Electrical Safety Device (PESD) that allows workers a safer way to verify presence of voltage and perform an Absence of Voltage Test from outside the electrical cabinet.
- ▶ The **VTS** combines our Safe-Test Point™ with a voltage indicator conveniently placed within a protective housing. It can be hardwired directly to energy sources and allows visual verification and measurement of AC/DC voltages through a meter test.
- ▶ Provides a safer and more productive method of performing Lockout/Tagout (LOTO), while exceeding NFPA 70E standards and meeting the OSHA energy isolation principle.
- ▶ Various lockable housing options add additional layers of protection and allow authorized personnel to conveniently access the **VTS**.



P-S10S21-M2RX-V

OPERATION

The **Voltage Test Station (VTS)** combines our Safe-Test Point™ with a voltage indicator conveniently placed within a protective housing. The VTS test point jacks allow measurement of AC/DC voltages either phase-to-phase or phase-to-ground. The R-3W Series voltage indicators with either flashing or non-flashing LEDs visually represent presence of voltage. Following facility safety procedures, insert the insulated meter probes with .080" tips into any two test point jacks to take a voltage reading with properly rated test equipment (see *Equipment Requirements*).

VOLTAGE TEST STATION AND COMPONENTS TECHNICAL SPECIFICATIONS

	CAT III & IV RATED				
					
	P-S10S21-M3RX-V*	P-S11S21-M3RX	P-S12S21-M3RX-V*	P-S21#2-M3RX	P-S14S26-M3RX**
Product Number	P-S10S21-M3RX P-S10S21-M3RX-V*	P-S11S21-M3RX P-S11S21-M3RX-V* <i>For use in hazardous location applications</i>	P-S12S21-M3RX P-S12S21-M3RX-V*	P-S21#2-M3RX P-S21#2-M3RX-V*	P-S14S26-M3RX** P-S14S23-M3RX**
Voltage Indicator	R-3W (Flashing red LEDs)	R-3W2 (Flashing red LEDs)	R-3W-SR (Non-flashing red LEDs)	N/A	R-3W-DC (Flashing LEDs)
Housing Dimensions	M Housing L: 6.50 (165.0) x W: 3.78 (96.0) x D: 2.50 (64.0)				
Operating & Storage Temperature	Operate: -20°C to +55°C Storage: -45°C to +85°C				
Operational Range AC Single or 3-Phase	40-600VAC 50/60Hz	40-600VAC 50/60/400Hz	40-600VAC 50/60Hz	0-600VAC 50/60/400Hz	Indicator: 15-600V (AC/DC) Test Points: 0-600V (AC/DC) 50/60/400Hz
Operational Range DC or Stored Energy	30 to 600 VDC			0-600VDC	
Safe-Test Point™ Internal Resistance	102kΩ 6 Watt, 5% Tolerance in series with each input (L1, L2, L3 and GND) wire to respective output jack maximum momentary				102kΩ 6 Watt, 5% Tolerance in series with each input (+ve, -ve, and GND) wire to respective output jack maximum momentary
Safe-Test Point™ Correction Factor	1.02 x Test Point voltage reading with a 10MΩ meter				
Wire Specifications	PVC insulated with nylon jacket, 8 ft., 18AWG Wire, 90°C @ 1000V, UL 1452, pre-stripped and tinned				
Certifications	UL File (RU) #E207344, CE, RoHS				UL File (RU) #E207344, CE, RoHS

Products shown above are UL Type 4, however the Voltage Test Station is also available in Type 4X, 12, Stainless Steel 304 & 316. Please contact your Sales Representative for more information, special configurations, and custom labels.

*Part numbers ending in V are vertical mount units.

**UL Recognized with maximum voltage is limited to 600V AC/DC. Product can be used up to 1000V DC without UL Recognition.

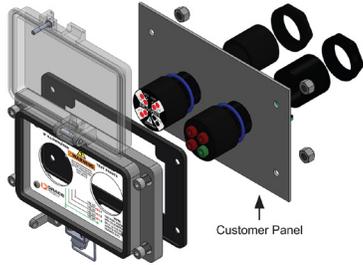
FOR MORE INFORMATION VISIT PESD.COM OR CALL 1.800.280.9517

Warning: Verify an electrical conductor has been de-energized using an adequately rated test instrument before working on it. Follow appropriate Energy Control (Lockout/Tagout) procedures as per OSHA Subpart S.

© Grace Technologies All rights reserved. Specifications are subject to change with/without notice.

KNOCKOUT VOLTAGE TEST STATION

The Knockout VTS features a new design that allows the entire assembly to be installed through two 30mm knockouts and four bolted connections. The kit ships with a detailed, magnetic installation template that allows users to precisely mark the desired location of installation.



Product Number	Description
H-S10S21-M3RX H-S10S21-M3RX-V*	R-3W Voltage Indicator, Safe-Test Point™, Protective Housing and Magnetic Installation Template (unassembled kit)
H-S11S21-M3RX H-S11S21-M3RX-V*	R-3W2 Voltage Indicator, Safe-Test Point™, Protective Housing and Magnetic Installation Template (unassembled kit)
H-S12S21-M3RX H-S12S21-M3RX-V*	R-3W-SR Voltage Indicator, Safe-Test Point™, Protective Housing and Magnetic Installation Template (unassembled kit)

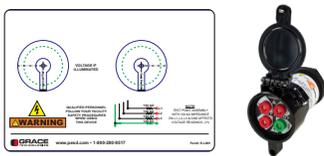
UL Type 4 shown, other UL type housings are available. Contact your local Sales Representative for more information.
*Part numbers ending in V are vertical mount units (not shown)

NEW EZ-UPGRADE VOLTAGE TEST STATION KITS

If you have an existing R-3W series voltage indicator or Safe-Test Point™ installed, you can upgrade to a Voltage Test Station (VTS) or Combination Unit using our EZ-Upgrade Kit that includes a detailed magnetic installation template. Simply mount the template on top of the existing voltage indicator or Safe-Test Point™ and mark the knockout location for the secondary device. The R-3W voltage indicator and Safe-Test Point™ are both installed through 30mm knockouts. The EZ-Upgrade Kit will also include a new combination label or protective housing, if desired.



H-S11-M3RX-EZ-V



R-3MT-EZ-H

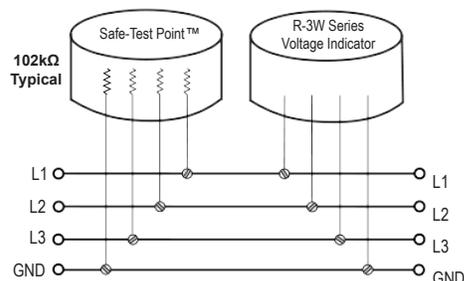
Product Number	Description
H-S10-M3RX-EZ H-S10-M3RX-EZ-V*	R-3W Voltage Indicator, Protective Housing and Magnetic Installation Template (unassembled kit)
H-S11-M3RX-EZ H-S11-M3RX-EZ-V*	R-3W2 Voltage Indicator, Protective Housing and Magnetic Installation Template (unassembled kit)
H-S12-M3RX-EZ H-S12-M3RX-EZ-V*	R-3W-SR Voltage Indicator, Protective Housing and Magnetic Installation Template (unassembled kit)
H-S21-M3RX-EZ H-S21-M3RX-EZ-V*	Safe-Test Point™, Protective Housing and Magnetic Installation Template (unassembled kit)
R-3MT-EZ-H R-3MT-EZ-F	Safe-Test Point™, Combo Label and Magnetic Installation Template (unassembled kit)
R-3W-EZ-H R-3W-EZ-F	R-3W Voltage Indicator, Combo Label and Magnetic Installation Template (unassembled kit)

UL Type 4 shown, other UL type housings are available. Contact your local Sales Representative for more information.
*Part numbers starting with H are units that come with a protective housing.
*Part numbers ending in V are vertical mount units.

EQUIPMENT REQUIREMENTS

Voltage test instrument with 1000V AC/DC rated input minimum, a typical 10mΩ input impedance and CAT III & IV. A pair of insulated test probes with .080" DIA points with minimum probe insertion length of .480".

TYPICAL WIRING CONFIGURATION



Note:
The Voltage Test Station can be installed on either the load or line side based on your application.

FREQUENTLY ASKED QUESTIONS

Q: What is the value of the VTS?

A: The VTS combines our Safe-Test Point™ with a voltage indicator and conveniently places them within a UL Type protective housing (4, 4X, and 12). The protective housing provides tool access for qualified personnel and also helps keep dust and contaminants away from the individual test points.

Q: What are the added benefits of the voltage indicator?

A: The voltage indicator provides a redundant verification and visual representation of voltage presence from outside the door. In addition, the voltage indicator provides the indication of a blown fuse or phase loss in the circuit and release of stored electrical energy.

Q: What are the recommended connection accessories for the Voltage Test Station?

A: Always ensure any accessory is compatible with your specific application and voltage. We suggest the following connectors (based on typical applications): T&B Sta-Kon Series, 3M Scotchlok, Wago 773 Series, or Wago 222 Series.

Q: Where do I install the Voltage Test Station on my equipment?

A: Voltage Test Station can be directly hardwired to either the load side or line side of the LOTO voltage source point. It can also be directly wired onto the bus below the fuses to measure a blown fuse or a tripped circuit breaker.

Q: What is the shock hazard when using this device?

A: This high impedance device limits the max. available fault current to 2.94mA at 600V and 2.35mA at 480V when any two test point jacks are shorted together. According to OSHA document 3075 (2002) page 7, "any shock hazard under 6mA is considered a slight shock; uncomfortable, but not painful."

Q: Do I need Personal Protective Equipment (PPE)?

A: Use the recommended PPE based on your facility's electrical safety program and adhere to the PPE guidelines in Table 130.5(G) or Table 130.7(C)(15)(c) of the NFPA 70E (2021).

Q: What would a typical Lockout/Tagout (LOTO) procedure include with this device?

A: Follow NFPA 70E, Article 120.5, Process for establishing and verifying an electrically safe work condition. The Voltage Test Station allows voltage measurements from phase-to-phase and phase-to-ground to check for presence and test for absence of voltage safely from outside the enclosure.

Q: How do I perform a "live-dead-live" test with this device?

A: Always follow LOTO procedures as per Article 120.4 and "live-dead-live" test procedure as per Article 120.5(7) of NFPA 70E (2021)--with a properly rated test instrument, verify the test instrument to a known source, then insert the test probes into the R-3MT test point assembly to verify the presence of voltage. Next, open the isolator and proceed to test for absence of voltage on the R-3MT assembly by measuring the voltage on L1-L2, L1-L3, L2-L3, L1-G, L2-G and L3-G. Once you have tested for absence of voltage, re-verify the test instrument to any known source.

Q: Do the R-3W series voltage indicators have internal short circuit protection?

A: Yes, the voltage indicator is protected by high impedance circuitry and recognized components that limit the power to 1.2watts @ 750 Volts AC. The following chart gives the phase to ground short circuit current: Voltage Indicator included Fault Current (PHASE-TO-GROUND SHORT)

3- Phase Line-To-Line (VAC)	30	120	240	480	750
0 OHM Phase-To-Ground Current (µA)	28	108	219	455	730

The R-3W is a unique device because it is wired between all three phases and is effectively 'short circuiting' all the phases. Under normal circumstances this device allows only 100-200 micro Amps to pass between phase and ground. If a short circuit occurs in a system where an R-3W is installed, the high currents that pass through the system would not find a path through the R-3W and would not cause any damage to the device. Therefore the SCCR rating is not applicable for the R-3W.