



Knopp

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925 Canal Street, Bristol, PA 19007
• 215.228.0500
• tescometering.com

Safety Equipment

Catalog No.

4E2-1

Third Rail Voltage Detector

PRODUCT INTRODUCTION

The Next-Generation TESCO Third Rail Voltage Detector is a modernized successor to the long-standing 4E2-1 model, engineered for today's transit, rail, and electrified transportation environments. Incorporating extensive voice-of-customers from multiple U.S. passenger rail systems, this upgraded design delivers enhanced visibility, improved ingress protection, true redundant safety circuitry, and an extended four-foot span for increased operator clearance.

The unit is designed for AC and DC third-rail systems across the globe. The 4E2-1 is manufactured with UL approved components. Key improvements include a brighter LED visual indication system, an integrated audible alert for crew-wide awareness, optional magnetic ground probe for hands-free stabilization, full protective housing over electronic components, and a self-test capability for positive confirmation of functionality in territories without active third-rail power.

This next-generation voltage detector builds on TESCO's legacy of rugged, field-proven safety tools designed for real-world operating conditions.

AT-A-GLANCE SUMMARY

- **Voltage Range:** 1,500 V DC
- **Span Length:** 4 ft
- **Indicators:** High-brightness LEDs and Audible Alarm
- **Ingress Protection:** Fully enclosed electronics
- **Ground Options:** Stainless steel tip
- **Self-Test:** Separate Accessory for Purchase
- **Category:** Safety Products – Third Rail Voltage Detector
- **Warranty:** 1 year



The Safe Third Rail Voltage Detector with True Redundancy



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KEY BENEFITS

Enhanced Safety and Crew Awareness

Dual-mode indication—LEDs plus audible alarm—provides immediate and unmistakable voltage-present feedback for both operator and surrounding crew.

Extended Operator Clearance

A four-foot reach increases the distance between personnel and energized third rail surfaces.

Ingress-Protected Design

All internal circuitry is enclosed to eliminate exposed lamp windows and reduce moisture or debris concerns.

Redundant Circuitry and Overvoltage Protection

Engineered with multiple safety paths to minimize failure points and support operational reliability.

PRODUCT FEATURES

High-Visibility LED Indicators

LED lamps replace previous neon bulbs and provide significantly improved visibility in bright sunlight and nighttime conditions.

Integrated Audible Alarm

An additional layer of voltage-present confirmation for nearby crew members.

Redundant Safety Circuitry

Minimizes single-point failures and ensures reliable indication.

Fully Enclosed Electronics

Protects internal components from weather exposure and ingress concerns.

4-Foot Testing Span

Enables increased distance between operator and energized rail.

Rugged TESCO Construction

Impact-resistant housing, stainless steel tips, and soldered internal connections ensure long-term durability.

SPECIFICATIONS

Mechanical and Environmental

- **Span Length:** 4 ft (48")
- **Housing:** Phenolic or reinforced composite
- **Grip:** Rubberized safety guard
- **Ingress Protection:** Fully enclosed electronics
- **Weight:** 12 ounces

Electrical & Power

- **Voltage Range:** 1,500 V DC
- **System Types:** AC and DC third-rail systems
- **Circuitry:** Redundant pathways
- **Overvoltage Protection:** Integrated
- **Indicators:** High-brightness enclosed LEDs and audible alarm

Safety & Compliance

- UL listed components.
- Redundant circuitry for additional safety and reliability

INCLUDED ACCESSORIES

- Carrying case
- Standard stainless steel ground probe
- Optional magnetized ground probe
- Rubberized hand guard



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APPLICATIONS & USE CASES

- Detecting energized third-rail systems
- Transit and rail system maintenance
- Passenger rail and commuter rail electrification
- Pre-work voltage verification
- De-energization confirmation prior to inspection
- Self-test verification in non-powered territories
- Crew safety confirmation scenarios

ORDERING INFORMATION

- **Catalog Number:** 4E2-1
- **Included:** Detector, carrying case, standard stainless steel probe
- **Warranty:** 1 Year (Contact your TESCO Sales Representative to inquire about our Diamond Level Support for extended warranty coverage).

Contact TESCO Sales for configuration support and quoting.

ABOUT TESCO

Since 1904, TESCO has been the trusted partner of electric utilities worldwide, delivering durable, precise, and innovative metering solutions designed for the real-world demands of the field and the laboratory. Our products are engineered and manufactured in the USA and backed by world-class technical expertise and support.

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DISCLAIMER

TESCO Metering reserves the right to modify product designs, specifications, features, and documentation at any time as part of our continuous improvement process. All information is provided "as is" and may change without prior notice. While TESCO® strives for accuracy, completeness, and technical reliability, customers should verify the latest product details before making purchasing or engineering decisions. For confirmation of current specifications or application suitability, please contact TESCO® directly.

