

CRMS

Contact Resistance Measurement System
For Vital Signal Relays

UTE
ULTRA-TECH
Enterprises, Inc.
Dedication That Delivers
Intelligent Solutions



Contact Resistance Measurement System (CRMS)

The CRMS is a system designed to allow any user to measure the resistance of each set of relay contacts associated with the relay under test. The test system consists of a CONTACT RESISTANCE MEASUREMENT UNIT (CRMU), a MULTIPLE RELAY TEST RACK, as well as an interconnect CABLE ASSEMBLY. Either DC or AC energy to pick and drop relay coils under test for all contact measurements is supplied from

the CRMU and easily interfaces with the Multiple Relay Test Rack. For additional and more thorough testing of relays an external relay tester can be interfaced to the Multiple Relay Test Rack to supply energy to the relay coil. It is recommended that the UTE Relay Tester With Timer/Counter (UTE Product # 15967-00) be utilized so the operator can take full advantage of the unique features it offers.



Contact Resistance Measurement Unit (CRMU)

The CRMU measures one set of either front/heel or back/heel contacts at a time. LED indications are provided to indicate the selected contact set. The LED illuminates red when the selected pair is open and green when the selected pair is closed. A rotary selector switch allows the selection of the contact set to be tested. The CRMU is operated from a 110 VAC providing an external 15 VAC and an external variable DC output from 0 VDC to 16 VDC with approximately 2 amps of available current. This allows the user to either interface the output directly to the Multiple Relay Test Rack to energize and de-energize relays for the measurement of their various contacts or to provide power to the external relay tester used to measure pick up and drop away values. The contact resistance measurement is accomplished by driving a controlled one amp current through the selected set of contacts, then measuring the voltage drop across the contacts and have the results displayed on the front panel meter in Milliohms. The connection from the meter to the contacts utilizes a separate pair of wires connected to the relay plug board terminals to provide a Kelvin measurement.

Connection to the Test Rack is made by using a custom cable assembly utilizing 75 pin AMP connectors, keyed to prevent misalignment and utilizing thumb screws to lock the connectors into place. Additionally, the CRMU is housed in a secure, high-impact plastic carrying case for easy transportation.



Multiple Relay Test Rack

The UTE multiple relay test rack is a compact unit and measures 10.125 inches square by 10.8 inches tall. Each relay type configuration of the test rack is self-contained.

You will find that each panel contains a fully wired plug board, a 75 pin AMP connector for connection to the CRMU and two toggle switches to allow configuration of the relay coils. The switches allow the coils to be easily configured for series, parallel or single coil configuration. Jacks are provided for front/heel and back/heel connections to interface to the UTE Relay Tester With Timer/Counter to perform timing tests. An external energy source is required to power the relay coils.

The base of the test rack incorporates a "slide panel" that extends beyond the outside dimensions of the unit to provide support for the rack when a relay is installed. It easily snaps into position both extended and retracted using spring detents and can be completely removed and reinstalled into the appropriate side as relays are installed into the rack.

The test rack can be housed in an optional rugged carrying case with compartments for storing cables, "B" style mounting rods and miscellaneous hardware.



B1 Type



B2 Type



P/N-150 Type



P/N-250 Type

Test Rack Configurations

The Multiple Relay Test Rack can be configured to incorporate one (1) each of the four (4) standard Side Panel assemblies for each relay type or any combination to complete four sides required for the entire assembly. Should only one relay type side panel be required, then the other three (3) side panels required to complete the entire assembly shall be (3) of P/N 16679-01 defined below as the Blank Filler Side Panel.

Description	UTE P/N
• Multiple Relay Test Rack Assembly (Main Unit)	16575-00
• B1 Type Side Panel Assembly	16601-01
• B2 Type Side Panel Assembly	16603-01
• PN-150 Type Side Panel Assembly	16605-01
• PN-250 Type Side Panel Assembly	16607-01
• Blank Filler Side Panel	16679-01

NOTE: Please contact UTE sales if additional relay type side panels are needed.

Suggested Optional Items

Description	UTE P/N
• Carrying Case With Special Protective Foam Insert	16680-01
• Accessory Kit, 4 each B1 Type Connectivity Blocks with Paddle Type Relay Lead	16684-01
• Cable Assembly, CRMU to Multiple Test Rack	16623-01
• Cable Assembly, CRMU to Shelf Type Relays	16694-00

Ultra-Tech Enterprises, Inc.
4701 Taylor Road
Punta Gorda, FL 33950-4720
(800) 293-2001 • FAX: 941-575-2020
www.ute-inc.com

UTE
ULTRA-TECH
Enterprises, Inc.
Dedication That Delivers
Intelligent Solutions