

Introducing the new, Enhanced Manual Conflict Monitor Tester

MMT-900

Manual Monitor Tester

The MMT-900 is a manually operated conflict monitor/malfunction management unit tester unlike any other manual tester offered. The MMT-900 will perform all the "normal" functions that are expected from a manual monitor tester, and then adds a few more features. The MMT-900 is a dual-mode tester which allows a set of conditions to be applied to the monitor for preset time periods, or allows input voltages to be adjusted. The technician can determine the exact voltage and timing thresholds for any monitor type by making adjustments to the AC or DC voltages and setting the time interval for the test conditions to be applied to the monitor inputs.



These capabilities are particularly important to signal shops that repair their own monitors. Detailed information on the equipment fault is often required to efficiently track down the failed electronic components. After repairs are effected, the MMT-900 allows verification of a single function of the monitor, before submitting the monitor to an automated test routine.

- A full set of adjustable signal monitoring inputs to the monitor are available; RedEnable, 18 channels of Red, Yellow, Green, and Walk. This allows complete testing of all monitors defined by NEMA TS1, NEMA TS2, CalTrans System 170, and System 2070. All signal inputs can be adjusted for voltage and set to full sine wave, positive half-wave, and negative half-wave.
- A set of adjustable DC inputs are available to test the response of NEMA (DC1, DC2, CVM, DC Inhibit) and System 170/2070 (DC1, Watchdog) monitors.
- A set of LED indicators display the status of the output relay(s), stop time, start delay output, and the presence of monitor power.
- Monitor power is adjustable from 0 to 135 VAC (approx.) and can be interrupted for a user specified time interval from 0.025 seconds to 9.992 seconds 8.33 mSec increments.
- The MMT-900 uses the same monitor cables as the PCMT-2000 tester, so our existing customers will save money by using the same set of cables for two different testers. Cables are available for NEMA TS1 3, 6, 12, & 18 channel monitors, NEMA TS2 MMU and MMU-8RM, System 170 Type 210 (16 and 18 channel) and Type 208 Ramp monitors, System 2070 Type 2010 monitors, Multisonics SM-1500 series monitors, and Traconex 2000-16B monitors.

ATSI

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The MMT-900 saves time in the service shop after a monitor has been turned over for repairs by allowing complete flexibility and repeatability in applying test conditions to conflict monitors. Reliable and effective test equipment simplifies procedures for technicians in the shop and in the field. We take great pride in serving the Traffic Industry with timesaving tools that help our public agencies become more efficient. Contact ATSI for further information and the name of your local Authorized Distributor.

SPECIFICATIONS FOR A MANUAL MONITOR/MMU TESTER

- 1.0 The Manual Monitor/MMU Tester (MMT) shall be designed to apply test conditions to and indicate the responses from various types and makes of traffic signal conflict monitor units and malfunction management units. The Vendor shall supply the Tester with the conflict monitor cables selected below:
- | | | |
|---------------------|---------------------|--------------------------|
| NEMA TS1 3 Channel | NEMA TS2 8 Channel | System 170 16/18 Channel |
| NEMA TS1 6 Channel | NEMA TS2 16 Channel | System 2070 16 Channel |
| NEMA TS1 12 Channel | | |
- 2.0 The MMT shall be packaged in a durable, high-impact, suitcase-style ABS plastic case. The enclosure shall measure approximately 21 in X 14 in X 7 in. and include a compartment for storage of cables. The unit shall require 120 VAC 60 Hz, and weigh less than 18 lb.
- 3.0 The MMT shall include a 2 X 16 character LCD display which displays the timing interval as set by the operator. An array of pushbuttons shall allow the operator to set the timing interval and begin a timed test. The MMT shall utilize a bank of 3-position toggle switches to allow the operator to apply test conditions to the monitor. The MMT shall provide suitable connection points for the operator to monitor test voltages with an appropriate true-RMS DVM. The DVM is not a part of the MMT hardware to be supplied.
- 4.0 The MMT shall include all hardware, software, cables as specified in Section 1.0 above, and Operating Manual to fully utilize the features of the tester. The MMT shall be warranted against defects in construction and performance for a period of 12 months from the date of purchase.
- 5.0 The MMT shall be capable of applying the following test conditions:
- 5.1 Any combination of un-timed conflicts, redfails, dual indication, single channel failure, DC input failures, watchdog input failures, incandescent lamp failures, and red-enable input failures.
 - 5.2 Timed fault conditions: Power Interrupt, Redfail, Conflict (Y/G/W), Dual Displays, Red-enable, Low-DC input, CVM Input, Watchdog Input.
 - 5.3 Voltage threshold detection: Monitor power failure, Red/Y/G/W signal recognition for sine and half-wave voltages, Red-enable input, 24 VDC monitors, CVM input, and DC monitoring inhibit input.
- 6.0 The MMT may require the use of a "True-RMS" voltmeter capable of accurately measuring half-wave AC input voltages. This capability is sometimes called "AC + DC" by meter manufacturers.
- 7.0 Operating Specifications:
- | <u>INPUT TYPE</u> | <u>RANGE</u> | <u>UNITS</u> |
|--------------------|--------------|------------------------------|
| DC Voltages | 1.25 – 30.0 | Volts, DC (VDC) |
| Red Enable | 0.0 – 140.0 | Volts, AC (VAC) |
| Red Signals (18) | 0.0 – 140.0 | Volts, AC (VAC) sine |
| Red Signals (18) | 0.0 – 98.0 | Volts, AC (VAC) -half, +half |
| Y/G/W Signals (18) | 0.0 – 140.0 | Volts, AC (VAC) sine |
| Y/G/W Signals (18) | 0.0 – 98.0 | Volts, AC (VAC) -half, +half |
| Monitor Power | 0.0 – 140.0 | Volts, AC (VAC) |
| Watchdog frequency | 5 | Hertz (Hz) |
| Transition timing | 25 – 9992 | milliseconds (mSec)* |

Timing increments are 8.33 mSec, as established by the AC line frequency applied to the tester.

The ATSI MMT-900 Manual monitor Tester meets all the above specifications.



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