

MANTA™ TEST SYSTEMS

MODULAR TEST SYSTEM FOR PROTECTIVE RELAYS & METERING MTS-3000 SERIES

- Unique expandable/modular design
- Economical
- Individual display and control of all voltages, currents and phase angles
- **"QUICK TEST"** functions for most common protective relay elements
- Print test reports directly to a printer
- On or off-line programming via keypad and/or rotary knob
- Many productivity enhancing features
- Steady-state & dynamic testing
- Compact & rugged
- Powerscope software included
- Expandable to include DCV & DCI



APPLICATIONS

Testing of:

- All types of protective relays
- Voltage, current, phase, power and frequency transducers
- Fault recorders, fault locators, automatic voltage regulators
- Metering



FIT THE INSTRUMENT TO THE JOB...

The MTS-3000 system can be configured to meet your needs. Add modules as you need in the future. Here are some typical configurations:

1. Overcurrent/Differential Relay Test System



(1,2 or 3 Channel AC Current Modules)

2. Voltage/Frequency Relay Test System



1 or 2 Channel AC Voltage Module
(second channel for higher voltages or to test synchronizing devices)

3. Single Phase Test System



1 Channel AC Voltage Module
+ 2 Channel AC Current Module

4. Three Phase Test System



DC Voltage Module
+
3 Channel AC Voltage Module
+
1 or 3 Channel AC Current Module

CONFIGURATION GUIDE

DEVICES TO BE TESTED	ANSI No.	MTS-3000 Modules Required					
		CONTROL	DIGITAL I/O	Dc CURRENT†	DC VOLTAGE*	AC VOLTAGE	AC CURRENT
OVERCURRENT	50/51	✓	✓	†	*		✓
OVERVOLTAGE	59	✓	✓	†	*	✓	
UNDervOLTAGE	27	✓	✓	†	*	✓	
FREQUENCY	81	✓	✓	†	*	✓	
SYNCHRONIZING, SYNCHECK	25	✓	✓	†	*	✓	
DIFFERENTIAL	87	✓	✓	†	*		✓
1φ DISTANCE	21	✓	✓	†	*	1 CHANNEL	1 CHANNEL
3φ DISTANCE	21	✓	✓	†	*	2 OR 3 CHANNEL	1 OR 3 CHANNEL
DIRECTIONAL OVERCURRENT	67	✓	✓	†	*	1 CHANNEL	1 CHANNEL
TRIP FREE, AUXILIARY	94	✓	✓		✓		
CURRENT, VOLTAGE OR FREQUENCY TRANSDUCER	N/A	✓			*	1 CHANNEL	1 CHANNEL
WATT OR VAR TRANSDUCER	N/A	✓			*	✓	✓

Note: Required modules may vary slightly due to specific device test requirements

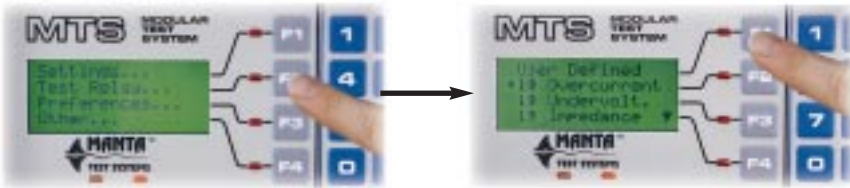
* May be required for electronic relay types
† Add if testing of DC current operated target is required

PRODUCT HIGHLIGHTS

UNIQUE **QUICK TEST** CAPABILITY:

Built-in automated tests for common relays provide step by step instructions and perform the test under internal micro-processor control. Get consistent results every time without a computer.

1. Select device type to be tested

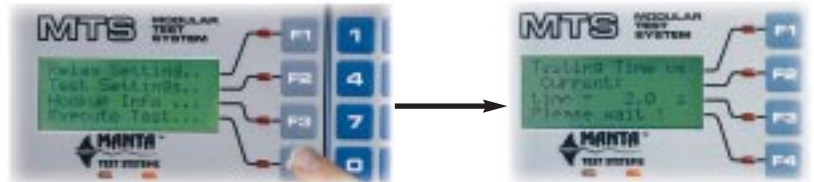


2. Select element



3. Enter relay and test settings

4. Execute test



5. Print results



DISPLAY OUTPUTS THE WAY YOU WANT

Time: 0.0000 sec
Freq: 59.980Hz
 $\phi U-I$: 70.0°
 $\phi-\phi$: Flt Phse AB

Direct display and adjustment of fault angle

IA 1.000A 0.0°
IB 2.300A 240.0°
IC 1.000A 120.0°

Continuous display of amplitude plus angle for each output

UA 69.28V 0.0°
UB 69.28V 240.0°
UC 69.28V 120.0°
AB 120.0V 30.0°

Display and set $\phi - \phi$ quantities directly

DIGITAL PRECISION PLUS ANALOG FEEL



Adjust test parameters using the analog modify knob to give smooth variable control or enter values directly using the numeric keypad.

MORE POWER UNDER THE HOOD



Press the menu button and you can access more powerful testing capabilities, user preferences and advanced features. Instrument firmware upgrades can be downloaded without opening the instrument.



Optionally connect a PC and get real time phasor display of outputs impedance, power and symmetrical components.

OPTIONS & ACCESSORIES

1. Heavy duty shipping case
2. Protective plastic front cover
3. Power cord
4. Operation manual
5. Test lead kit (optional)
6. RS-232 cable (optional)

ORDERING INFORMATION

MTS-3000	Control Module
MTS-3010	Digital I/O Module
MTS-3020	DC Voltage Module
MTS-3040	AC Voltage Module (1 channel)
MTS-3060	AC Current Module (1 channel)

Option-01	Heavy duty shipping case
Option-02	Test lead kit
Option-03	Extra manual
Option-04	Extended warranty
Option-05	DC Current Module (MTS-3010 required)
Option-06	Additional AC Voltage Channel (MTS-3040 required)
Option-07	Additional AC Current Channel (MTS-3060 required)



OTHER PRODUCTS

Transducer Test / Calibration



Current and Voltage Sources

Multi-function Powermeters



Advanced Protective Relay Test Set System



Represented by:



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