



# SWR/POWER/MODULATION METER

Models : TM-3000/TM-2000 INSTRUCTION MANUAL

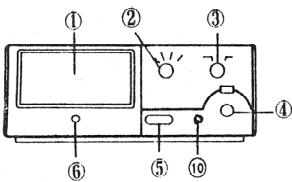
## INTRODUCTION

TM-3000/2000 is a compact test meter to indicate the condition of 1.6-60 MHz / 26 -30 MHz antenna system and transmitter with an impedance of 50 ohm. With TM series you can measure SWR, relative output power of the transmitter and AM modulation.

## SPECIFICATIONS

Model	TM-3000	TM-2000
Frequency Range	1.6 - 60 MHz	26 -30 MHz
Power Range	0W - 3KW	0W - 1KW
Power Scale	10W/30W/300W/3KW	10W/100W/1KW
Maximum Power	3KW	1KW
AM Modulation	MAX 100%	MAX 100%
Accuracy 10W Range	(AVG) +/- 10%	(AVG) +/- 10%
30W - 3KW Range	(AVG) +/- 5%	(AVG) +/- 5%
SWR Measurement	Minimum 1W	Minimum 1W
Testing Function	POWER, SWR, MOD.	POWER, SWR, MOD.
Input/Output Impedance	50 OHM	50 OHM
Input/Output Connectors	M type (SO-239)	M type (SO-239)
Dimension (W/H/D) mm	190x85x135 (w/o holder)	190x85x135 (w/o holder)
Weight (Net)	800g (w/o holder)	800g (w/o holder)
Accessories	Operation Manual	Operation Manual

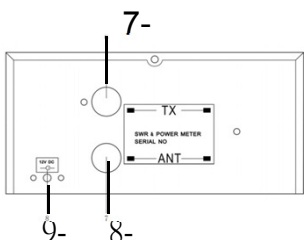
### <FRONT PANEL>



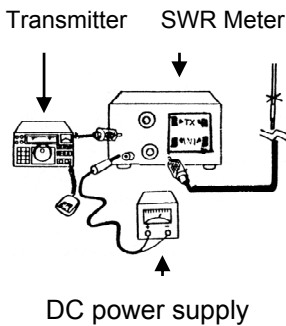
### <FRONT & REAR PANEL>

1. Meter Display : Indicates FWD/REV power and VSWR ratio, AM Modulation.
2. Function switch : Selects FWD/REV power, VSWR, and Modulation
3. Range switch : Selects RF power range
4. Calibration control knob : Set full scale deflection when measuring VSWR and AM modulation
5. AVG/PEP MONI. (elliptical push button) : Selects Average or PEP RF Power readings
6. Meter Zero Adj. : Mechanical zero adjustment for meter needle
7. TX connector : Coax connector to transmitter 50 Ohm RF output.
8. ANT connector : Coax connector to 50 Ohm antenna system.
9. 13.8V DC connection for meter illumination.
10. Calibration MONI. (round push button) : Selects calibration or SWR /MOD readings.

### <REAR PANEL>



## <INSTALLATION>



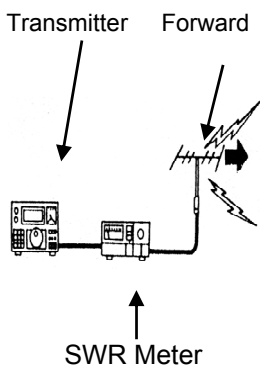
## <FORWARD POWER MEASUREMENT>

1. Set the FUNCTION switch to FWD
2. Set the radio transceiver to transmit mode and read the scale corresponding to the Power Range selected.
3. When the AVG/PEP button is 'out', the meter reads average RF power. When the button is 'depressed', the meter reads Peak Envelope Power for use with SSB and AM transmissions.

## <REVERSED POWER MEASUREMENT>

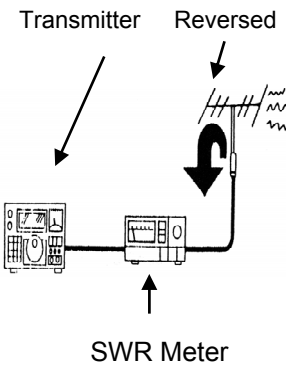
This measures the reverse power on the coaxial cable between transceiver and antenna. The rest of the settings are the same as that of <FORWARD POWER MEASUREMENT>

## <OPERATION>



## <VSWR MEASUREMENT>

1. Set the FUNCTION switch to SWR position
2. Push the Calibration MONI. to CAL/SET position (button "depressed")
3. Slowly turn the calibration control knob clockwise until the meter pointer is at full scale position
4. Push the Calibration MONI. to SWR/MOD position (button "out")  
Set the transceiver to transmit mode.



## <AM MODULATION LEVEL MEASUREMENT>

1. Set the FUNCTION switch to MOD position
2. Push the Calibration MONI. to CAL/SET position (button "depressed")
3. Slowly turn the calibration control knob clockwise until the meter pointer is at full scale position
4. Push the Calibration MONI. to SWR/MOD position (button "out")  
Set the transceiver to transmit mode.

## [CAUTION]

1. Since the meter movement is very sensitive, avoid excessive vibration or mechanical shock to the meter.
2. The meter must never be reverse connected. Always observe the correct connections to transmitter and antenna as indicated on the rear sockets.
3. The meter has been carefully calibrated at the factory. Tampering with any of the internal circuitry or sensors may cause damage and will degrade the meter's accuracy.
4. Do not expose the meter to excessive temperatures, high humidity, or strong magnetic fields.