

MP-4 23 cm MICROWAVE WATTMETER

The MIRAGE MP-4 is designed to provide the UHF amateur with a versatile wattmeter, without having to use cumbersome add-ons or plug-ins.

The MP-4 will measure forward or reverse power in three power ranges: 1, 10, and 100 Watts. It will display either average or peak power. This allows for the best display of power output, whether on FM, CW, or SSB.

When checking antennas, the MP-4 will display SWR directly without using extra charts or graphs. Optimum tuning and adjustment of the antenna is possible, even with as little as 1 Watt, from the transmitter.

The coupling unit may be mounted up to 4 feet from the meter, providing neater installations.

SPECIFICATIONS

Frequency Range.....	1260 - 1300 MHz
Line Impedance.....	50 Ohms resistive
Functions.....	Power - Forward / Reverse
Power Range.....	1, 10, and 100 Watts
	(±5% RF Calibration, ±1% meter)
Power Capability.....	100 Watts continuous
SWR Sensitivity.....	1 to 2 Watts
DC Power Requirement	9 VDC internal battery or optional AC adapter
Size.....	5.75" H x 4.5" W x 5.75" D

INSTALLATION

The MP-4 coupler has two N connectors marked INPUT and OUTPUT. The radio is connected to the INPUT connector and the load, or antenna, is connected to the OUTPUT connector.

The coupler may be remotely mounted by removing the two screws that secure it to the meter case. Replace the two screws back into the coupling unit.

CONTROL

Range Switch - This switch selects the full scale power that is to be read. It also turns the unit ON and OFF.

PEAK / AVG Switch - This switch selects the desired display of power. AVG for CW, FM, AM, or averaging of SSB. This shows the true peak power output.

FWD / REV - "FWD" shows the power that is being transmitted, while "REV" shows the returned or reflected power.

SWR CAL / PWR CAL - When reading power this control is set at full counter-clockwise, in the PWR CAL position. For SWR this control is turned clockwise, to adjust the meter to read full scale.

LOW BAT - When the internal 9-Volt battery drops to approximately 6.75 Volts, the LED will start to flash, indicating that it is time to change the battery.

OPERATION

Power - To measure power, connect the MP-4 between the transmitter and the load. Select the desired power range, set the "**SWR CAL / PWR CAL**" switch to "**PWR CAL.**" To display the forward power, set the "**FWD / REV**" switch to "**FWD.**" For reverse or reflected power, switch to "**REV.**" The actual power being transmitted is the difference between the forward and reverse power reading.

Peak or Average Power - For FM, AM, Slow Speed CW, or to measure your average power on SSB, put the switch on **AVG.** With the switch on **PEAK,** the actual peak power will be displayed. This can be used on AM, Fast CW, and SSB.

SWR - Connect the MP-4 between the transmitter and the load to be measured. Set the range switch to the proper power range and the "**FWD / REV**" switch to **FWD.** Key the transmitter and adjust the SWR CAL to give a full-scale reading. Switch to **REV** and read SWR on the **SWR** scale of the meter. SWR may be measured with input powers between 1 and 100 Watts. The best accuracy is obtained with 10 to 15 Watts, which is the recommended power range, for SWR measurements.

AC Adapter - Any 9 to 15 Volt DC output adapter that uses a 0.1 inch center pin may be used to power the MP-4 and to extend the battery life. When the adapter is plugged in, the battery is disconnected.

Maintenance - The MP-4 is designed to give years of trouble-free performance. It is recommended that the MP-4 be returned to the factory for any required service or calibration.

Battery Change - The battery is located inside the back cover. When the "**LOW BAT LED**" flashes, replace the battery with a fresh 9-Volt battery (Eveready 216 or equivalent).