



TECHNICAL BULLETIN NUMBER 2007

Portable Master Oscillator
TMC Models PMO-4
PMO-5
PMO-6
(O-459A/URT)



Model PMO-5

- 2 to 8 mcs, continuous
- Stable sinusoidal output
- Direct reading dial
- Up to 3 watts output

The Technical Materiel Corporation's Model PMO, Variable Frequency Oscillator, is a precision, direct reading device which may be used as a transmitter exciter, frequency meter or receiver calibrator for field, fixed station or laboratory use. Engineering emphasis has been placed on simplicity of operation, ease of maintenance and high stability.

A large easily-read counter provides direct reading of the output frequency in 1 kc increments over the basic range of 2,000 to 4,000 kcs. The last three figures (cycles) are on an easily-read engraved dial.

Portable Master Oscillator

The high stability oscillator and crystal calibrator are housed in a temperature controlled double oven and provision is made for checking the crystal standard against WWV. This standard provides both visual and aural 100 kc check points and a vernier front panel control allows the operator to calibrate the PMO to zero beat at any crystal check point. Once calibrated, the instrument is readable and resettable to a tolerance of better than 30 parts per million. The end result is an instrument of laboratory fineness with the convenience and simplicity of the field unit.

The PMO is available as follows:

- a. Model PMO-4*, mounted within a fiberglass reinforced case with carrying handle, 18" wide \times 16" deep \times 12" high overall. Model PMO-4 contains a built-in antenna which is used when the PMO functions as a frequency meter.
- b. Model PMO-5, for standard 19" rack mounting, 10" high \times 13" deep.
- c. Model PMO-6, mounted in a desk-type cabinet, 20" wide \times 15" deep \times 12" high. (Not shown)

*The Model PMO-4 may be widened for standard rack mounting by TMC Part No. A-804, Adaptor Kit.

TECHNICAL SPECIFICATIONS, TMC MODELS PMO-4, PMO-5, PMO-6

A. WHEN USED AS A TRANSMITTER EXCITER

FREQUENCY RANGE:	2-8 megacycles, continuously variable in two bands.
OUTPUT POWER:	Up to 3 watts, from 2 to 4 mc; 2 watts, from 4 to 8 mc; adjustable from front panel.
OUTPUT CONNECTIONS:	BNC (RG-58, 59/U) coaxial connectors.
OUTPUT VOLTAGE:	Sinusoidal.
OUTPUT IMPEDANCE:	70 ohms nominal.

B. WHEN USED AS A FREQUENCY METER

FREQUENCY RANGE:	
TRANSMITTER MEASUREMENTS:	2-30 mcs and usable beyond this range.
RECEIVER MEASUREMENTS:	2 to approximately 100 mcs.
ANTENNA:	Built-in antenna contained in the case of the Model PMO-4 connected by cable to a BNC receptacle.

TMC Models PMO-4, PMO-5, PMO-6 (0-459A/URT)

INPUT IMPEDANCE: 70 ohms.
INPUT CONNECTIONS: BNC connector.

C. GENERAL

CALIBRATION: Direct reading over basic range of 2 to 4 mc.
STABILITY: Better than 20 cps per mc for a 30° change in ambient.
LINE VOLTAGE STABILITY: Not more than 6 cycles at 2 mc and 10 cycles at 4 mc for $\pm 10\%$ line voltage variation.
READABILITY AND RESETTABILITY: Better than 30 parts per million to a previously calibrated frequency.
CALIBRATE ADJUST: 100 kc check points against a self-contained oven controlled crystal oscillator.
ZERO BEAT INDICATION: Neon light null each 100 kc.
Aural headphone each 100 kc.
KEYING INPUT: Provision of ON/OFF through front panel jack and rear terminal board.
POWER REQUIREMENTS: 115/230 volts, 50-60 cps, 80 watts average, 220 watts at momentary intervals as ovens cycle.
INSTRUCTION MANUAL: TMC IN 2007
SIZE: PMO-4: 18" w \times 16" d \times 12" h
PMO-5: 19" w \times 13" d \times 10½" h
PMO-6: 20" w \times 15" d \times 12" h
SHIPPING DATA: Weight
PMO-4: 70 lbs.
PMO-5: 59 lbs.
PMO-6: 83 lbs.
Dimensions
PMO-4: 30" lg. \times 23" wd. \times 29" high
PMO-5: 23" lg. \times 21" wd. \times 16" high
PMO-6: 18" lg. \times 23" wd. \times 19" high
COMPONENTS AND CONSTRUCTION: Equipment is manufactured in accordance with JAN/MIL specifications wherever practicable.



Model PMO-4

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CABLE TWX
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