

ADDITIONAL INSTRUCTIONS
APPLYING TO
MODEL 67C WATTMETER

This sheet supplements the Instruction Book for Series 6100 THERMALINE Wattmeter.

GENERAL

The Model 67C is a direct-reading termination-type instrument for measuring RF power up to 2500 watts (in three ranges) in 50-ohm coaxial systems over a frequency range of 30-500 MHz.

LOAD POWER RANGE

The Model 67C combines convection air cooling through the fin structure and water cooling. When operated with water cooling the RF load capacity is 2.5 KW. The 67C has copper tubing coiled in the dielectric coolant around the tapered coaxial resistor housing. The water is a thermal medium only (not used as a dielectric) and has no effect on the input impedance. When water cooled, the Model 67C should be mounted vertically with the input connector down.

Flow rate, when water cooling, should be at least 1/2 gallon per minute. The water should be allowed to flow at least 15 seconds prior to application of power. Water flow should continue for five minutes after input power is turned off. **WARNING:** In the vertical position, the Model 67C can safely absorb only 200 watts of power without water cooling. Water connections by 3/8" ID rubber hose to the two tubes located at the bottom of the front cone. (Rubber hose and clamps not supplied.)

Horizontal operation of the Model 67C is permissible (without water cooling) when the power level does not exceed 500 watts. When used in the horizontal position, the equipment should be placed so as to provide at least 6 inch clearance all around and above the unit to permit free air circulation.

RF INPUT CONNECTOR - QC TYPE

The Model 67 Wattmeter is designed for use with Bird "QC" (quick-change) type input connectors. Model 67C is normally equipped with a type Female N connector to mate with UG-21D/U or similar type Male N connector on RG-8A/U or RG-9B/U cable. These input connectors may be readily changed to other AN Standard Types. Alternate available types are listed below, and may be procured from Bird Electronic.

To change connectors, simply unscrew the four #8-32 round head screws on the square base flange, and pull connector straight out. (Do not remove the second set of #10-32 Fillister head machine screws). To attach connector, reverse the procedure, being certain to properly engage the center pin in the contact hole, keeping alignment true; then fasten flange securely.

Special Note - The alternative connectors listed below should not be used beyond the power and frequency limitations applicable to respective types.

Available Quick-Change Connector Types - with Bird Part number:-

N - Female	4240-062	LC - Female	4240-031
N - Male	4240-063	LC - Male	4240-025
HN - Female	4240-268	LT - Female	4240-018
HN - Male	4240-278	LT - Male	4240-012
C - Female	4240-100	UHF - Female (SO-239)	4240-050
	7/8" EIA Air Line	4240-002	

WATTMETER OPERATION

Any one of the three power ranges 100, 500 or 2500 watts may be selected by inserting the operating crystal in the position marked with the desired range. Remove the crystal by grasping the knurled cap and pulling. False readings will result if more than one crystal is installed at one time. When inserting the crystal in the holder, push gently with a twisting motion until it is felt to stop, add a slight additional pressure to make certain that it is bottomed. A spare crystal is supplied and fastened to the front of the instrument.

When using the Model 67C, make certain that the crystal is in a range position sufficiently high to handle the power being applied. If transmitted power level is doubtful, take first reading at 2500W level; exposure to excess power could damage crystal.

REPLACEMENT PARTS LIST FOR MODEL 67C

<u>PART NO.</u>	<u>DESCRIPTION</u>
8180-097	Resistor-Voltmeter Set furnished with two (2) calibrated crystals
8180-049	Resistor Assembly Only
2430-055	Clamping Band #2430-043 with #10-32 x 1-1/2 Fil. Hd. Screw
8110-039	Seal, O-Ring
5-039	Coolant, GE 10C Transil Oil - approx. one gallon required
8240-092-9	Meter Assembly - Includes Housing & Carrying Strap
8240-121	Meter Housing Only, Assembly
8180-095-3	Meter & Cable Assembly
2000-018	Meter Only, Hickok 48HSR, 100ua
8180-021-1	Meter Cable Assembly Only, 10 feet
4240-062	Connector, Input - "QC" Type, Female N (normally supplied)
7500-147	Crystal Rectifier (Specify Model and Serial Number of Wattmeter)