



Model 43

0.45-2300MHz

0.1-10000 watts

Bird engineers designed the Model 43 for a long, trouble-free life more than 3 decades ago, and while we can't promise that every "43" purchased today will perform like new in 2016, we know that units purchased when the THRU LINE® Wattmeter was first introduced are still in service today.

The key to its longevity and component interchangeability between an early or a current instrument is its modular construction of rugged, cast materials: The familiar round-cornered, diecast aluminum housing protects a recessed, shock-mounted 30 microampere meter as well as the nucleus of the power-sensing system—a silver-plated brass heavy cast line section, precision-machined to the exact same dimensions as the first one three decades ago. The heart of the system, the Plug-in Elements which determine frequency-range and power-level of the wattmeter readings, fit tightly into the precision bore and are pressed down motionless against the depth-controlling platform.

We maintain sets of highly accurate Metrology and Production Test Standards along with a history of mean deviation values, applied meticulously in exacting test procedures insuring the accuracy and integrity of original equipment and replacement components.

In case of damage—e.g. an accidental drop from an antenna tower—any of these modular components can be replaced and your Bird restored to like-new condition easily. Listed accuracies can, of course, not be guaranteed with components not supplied by Bird.

We are constantly adding special features geared to your needs in specific RF power measurement situations. Two recent examples are new very low, double-digit milliwatt level Plug-in Elements of Cellular Radio Telephone frequencies and the addition of a new Mini-UHF Quick-Change Connector to the twenty-eight choices already available.

Plug-in Elements ranging from 100 milliwatts to 10,000 watts in frequency bands from 450 kilohertz to 2300 megahertz are tabulated on page 5. More than two dozen different QC Quick-Change RF Connectors are illustrated on page 35. Accessories like the variable RF Signal Sampler (page 12), Directional Coupler Elements (page 32), a non-

Specifications

model 43

Power Range 100mW to 10kW using Bird Plug-in Elements. Accuracy not guaranteed with components not supplied by Bird.

Frequency Range 0.45 to 2300MHz
Insertion VSWR with N Connectors 1.05 max. to 1000MHz, 1.1 max. to 2300 MHz

Accuracy ±5% of full scale.

Connectors QC Type (Female N normally supplied)

Finish Light Navy grey baked enamel (MIL-E-15090)

Nominal Size incl. conn. 6 $\frac{1}{8}$ " x 5 $\frac{1}{8}$ " x 3 $\frac{1}{8}$ " (175 x 130 x 92mm)

Weight 3 lbs. (1.4kg)

Optional Carrying Case CC-1: Wattmeter & 9 Elements; CC-3: Wattmeter & 8080 or 8362 (25W Load) & 6 Elements; EC-1: 12 Elements

Standard Element

RF Sampler Element



Coupler Elements: For RF signal observation on a scope, for spectrum analysis or for frequency counting and control, use Model 4274-025 wide range RF Sampler Element. This non-directional coupler delivers an unrectified signal at about -50dB ±2dB from 25-1000 MHz tapering down to -66dB at 2MHz. Main line power should not exceed 500W.

directional Sampler Element (page 4) and a new Relative Field Strength Element (page 12) further enhance the usefulness of this extraordinary instrument. Carrying Cases to protect your investment (CC-1 & CC-3 for the Wattmeter, EC-1 for extra Elements) are shown on page 36, and a two-way mobile Test Set on page 27 contains a Wattmeter, load, Variable Signal Sampler and spare Elements. Whether you are a new user or an RF "pro" who goes back with Bird to the time the model 43 was launched, you'll find this THRU-LINE® Wattmeter user-friendly and simple to keep it that way. Its four components include:

Line Section: A very precise 50 ohm coaxial air line is designed for insertion into the transmission line between transmitter and antenna or load. The line section is equipped with a socket into which the Plug-In element with the desired power and frequency range is inserted. It is also equipped with QC Connectors described below:

QC Type Connectors: The Bird model 43 is normally supplied with Two Female N Connectors. However, at the time of ordering, other types of connectors may be specified including: Male or Female BNC, TNC, UHF, C, SC, LC, N, SMA, HN, LT, General Radio Type 874, 7/8" EIA Flanged and Mini-UHF. All of these QC Connectors are interchangeable in the field without affecting the instrument's calibration.

Indicating Meter: A shock-mounted 30 microampere meter with 3 expanded scales of 25, 50, 100 unit calibration to permit full scale direct power reading from 100 milliwatts to 10,000 watts.

Plug-in Elements: These elements read both forward or reflected power as indicated by the direction in which the arrow is pointing. Frequency range and full scale power are marked on each element. Use a lower power element (e.g. 10:1) for increased resolution of reflected power readings.

Remote Installation: When it is more convenient, the RF line section can be easily removed from the model 43 case and inserted at any desired point in the line. The meter may then be located at another point for optimum visibility. 32" of meter cable is supplied in the instrument housing for this purpose. Additional lengths available as required.



CC-3 Carrying Case with 8080 Load and Model 43 customized for cellular service

Plug-In Elements: When ordering, specify catalog number and THRU-LINE model number.

Table 1
Standard Elements (Catalog Numbers)

Power Range	Frequency Bands (MHz)					
	2-30	25-60	50-125	100-250	200-500	400-1000
5 watts		5A	5B	5C	5D	5E
10 watts		10A	10B	10C	10D	10E
25 watts		25A	25B	25C	25D	25E
50 watts	50H	50A	50B	50C	50D	50E
100 watts	100H	100A	100B	100C	100D	100E
250 watts	250H	250A	250B	250C	250D	250E
500 watts	500H	500A	500B	500C	500D	500E
1000 watts	1000H	1000A	1000B	1000C	1000D	1000E
2500 watts	2500H					
5000 watts	5000H					

Table 2
Low-Power Elements

1 watt	Cat. No.	2.5 watts	Cat. No.
30-35 MHz	030-1	30-40 MHz	030-2
35-40 MHz	035-1	40-50 MHz	040-2
40-50 MHz	040-1	50-60 MHz	050-2
50-60 MHz	050-1	60-80 MHz	060-2
60-80 MHz	060-1	80-95 MHz	080-2
80-95 MHz	080-1	95-150 MHz	095-2
95-125 MHz	095-1	150-250 MHz	150-2
110-160 MHz	110-1	200-300 MHz	200-2
150-250 MHz	150-1	250-450 MHz	250-2
200-300 MHz	200-1	400-850 MHz	400-2
275-450 MHz	275-1	800-950 MHz	800-2
425-850 MHz	425-1		
800-950 MHz	800-1		

Table 3
High-Frequency Elements (Catalog Numbers)

Power Range	Frequency Bands (MHz)			
	950-1260	1100-1800	1700-2200	2200-3000
1 watt	1J	1K	1L	1M
2.5 watts	2.5J	2.5K	2.5L	2.5M
5 watts	5J	5K	5L	5M
10 watts	10J	10K	10L	10M
25 watts	25J	25K	25L	25M
50 watts	50J			
100 watts	100J			
250 watts	250J			

Accuracy ±8% o.f.s.

Table 4
Low-Frequency Elements (Catalog Numbers)

Power Range	Frequency Band .45 to 2.5 MHz
1000 watts	1000P
2500 watts	2500P
5000 watts	5000P
10000 watts	10000P

Table 6
Milliwatt Elements

100 mW	Cat. No.	250 mW	Cat. No.	500 mW	Cat. No.
72-76 MHz	430-2	70 MHz	430-34	72-76 MHz	430-33
105-120 MHz	430-6	72-76 MHz	430-22	105-120 MHz	430-26
125-136 MHz	430-9	108-118 MHz	430-24	240-290 MHz	430-27
160-175 MHz	430-10	130-150 MHz	430-13	328-336 MHz	430-28
328-336 MHz	430-3	150-180 MHz	430-15	455-470 MHz	430-30
400-420 MHz	430-7	328-336 MHz	430-16	800-900 MHz	430-109
450-470 MHz	430-8	800-900 MHz	430-108		
800-900 MHz	430-107	1700-1750 MHz	430-17		

Additional, Accessory Elements on pages 12, 32, 36.