RF Power Meters

Bird® offers a wide selection of portable insertion-type instruments for measuring forward and reflected power in coaxial transmission lines. Thruline® instruments can be left in the line for continuous monitoring of the transmitter power output or the amount of RF power reflected by an antenna.

1 TYPES OF POWER METERS

- **Terminating Power Meters –** measures the RF energy that is terminated in a load using either a thermistor, thermocouple, or diode detector. To measure RF power and not damage the RF sensor, a terminating sensor must use an attenuator or directional coupler. This method will introduce mismatch errors which contribute to the overall measurement accuracy.
- **In-line Power Meters –** measures forward and reflected RF energy in a transmission line without disrupting service. Unlike a terminating power meter, the in-line meter is non-intrusive and there is no need for additional equipment to make the measurement. In addition to measuring transmitter power, they can be used to install and maintain wireless base stations, RF generators or repeaters.

2 WHAT ARE ELEMENTS?

Bird wattmeters and other thru-line instruments are based on a "lumped constant" directional coupler. The directional coupler is called an element. Many users also call it a "slug" or a "plug-in".

Each plug-in element (or coupler) samples the voltage at the point of insertion and samples the current via a loop. Turning the element 180° reverses the loop (and consequently the current pick-up) while the voltage sample remains unchanged. By proper combination of the two parameters, we obtain an RF voltage proportional to the square root of main line RF power. The RF sample is then rectified and a DC signal proportional to the RF envelope is delivered to the meter.

Unlike terminating sensors, Bird elements are carefully designed, manufactured, and calibrated to ensure proper directional RF measurements, without the need for calibration charts or instrument adjustments.

3 BEST PRACTICES

To make an accurate RF power measurement, you need to choose the right wattmeter or sensor and follow these best practices:

Type of Signals – the type of signals to be measured greatly influence the reading. Are you measuring a CW signal or one that has analog or digital modulation? How about a pulsed signal? Make sure the wattmeter or sensor is designed to measure your desired signal.

Eliminate adapters - Best practice for making a RF power measurement is to eliminate or minimize connector adapters. Your power meter may have great directivity, but the reading will be degraded when using many adapters. Use the proper connector to minimize mismatch errors that will impact your RF power reading.

Connectors & Cables – many errors when making an RF power measurement are due to worn connectors or damaged cables. RF measurements depend on the integrity of your cables and connectors used to interconnect the various instruments and devices. Inspect for damage and dirt before connections are made. Metal shavings, bent/cracked center pins can cause poor repeatability and high/variable VSWR.

Directivity – a directional coupler is a key component of every in-line, directional power meter element or "slug". The directivity parameter, expressed in decibels (dB), is a measure of how well the coupler is capable of distinguishing between the energy traveling towards the load, and the energy that is being reflected due to the load impedance mismatch.

Portable Thruline Wattmeters

MODEL 43 SERIES, 44 SERIES, & APM-16

The Model 43 Series, Model 44 Series, and APM-16 of Thruline Directional Wattmeters provide accurate forward and reflected power in 50 Ohm coaxial transmission lines providing instant readings or continuous monitoring. Bird's Plug-in elements determine the power rating and the frequency range so there is no need for calibration charts or instrumentation adjustments. Bird offers a broad selection of portable wattmeters ranging from broadband, fixed, peak, and variable signal measurements.

PRODUCT FEATURES

- Insertion-type instrument designed to measure both forward and reflected CW power in coaxial transmission lines under any load condition.
- Full-scale accuracy of ±5%
- QC (quick change) type connectors
- Full range of plug-in elements provide a wide choice of frequency ranges and power levels

BENEFITS

- Measures power as it is being delivered to the load; allows the power meter to be kept in the circuit as the load is active
- Rugged metal housing for the most demanding environments
- Remote installation with removable RF line section
- High directivity and accuracy measurements needed for exceptional system performance

Portable Thruline Wattmeters

MODEL 43 SERIES, 44 SERIES, & APM-16

43 SERIES WATTMETER SELECTION GUIDE

	43	43P	4314C	4304A	4391A
Type	Broadband Wattmeter	Broadband Wattmeter with Peak Power	Broadband Wattmeter with Peak Envelope & Pulsed Power	Single Element Wattmeter	Dual-element Wattmeter
Modulation	CW, AM, FM, and analog TV	CW, AM, FM, SSB and analog TV	CW, AM, FM, SSB, analog TV, and pulsed signals	CW, AM, FM, and analog TV	CW, Pulsed RF (air navigation, DME, ATC, telemetry, radar etc.)
Measurement	Average RF power	Peak pulsed power, average RF power	Peak envelope, peak pulsed, average RF power	Average RF power	Peak envelope, peak pulsed, average RF power
RF Power Range	100 mW to 10 kW (depending on element)	100 mW to 10 kW (depending on element)	100 mW to 10 kW (depending on element)	5 W, 15 W, 50 W, 150 W, 500 W	100 mW to 10 kW (depending on element)
Frequency Range	450 kHz to 1.2 GHz (depending on element)	450 kHz to 1.2 GHz (depending on element)	450 kHz to 1.2 GHz (depending on element)	25 MHz to 1.0 GHz	450 kHz to 1.2 GHz (depending on element)
Power Accuracy	±5% of full scale	**CW Mode:** ±5% of full scale **Peak Mode:** ±8% of full scale	**CW Mode:** ±5% of full scale **PEP Mode:** ±8% of full scale	±6 to 7% full scale	**CW Mode:** ±5% of full scale **PEP Mode:** ±8% of full scale
Pulse Parameters	NA	**Pulse width:** 200 us min **Duty cycle:** 2% min **Pulse repetition:** 100 pps min	**Pulse width:** 0.4 us min (100 to 2300 MHz), 1.5 us (26 to 99 MHz), 15 us (2 to 25 MHz) **Duty cycle:** 0.01% min **Pulse repetition:** 30 pps min	NA	**Pulse width:** 0.8 us min (100 to 1260 MHz), 1.5 us (26 to 99 MHz), 15 us (2 to 25 MHz) **Duty cycle:** 0.01% min Pulse repetition: 25 pps min
Connectors	Two Type-N(F) QC	Two Type-N(F) QC	Two Type-N(F) QC	Two Type-N(F) QC Two UHF(F) QC	Two Type-N(F) QC
Elements*	Tables 1, 2, 3, 4, 6, 13, 14	Tables 1, 2, 3, 4, 5, 6	Tables 1, 2, 3, 4, 5, 6, 13, 14	One 4240-050 & one 4304A-1 elements supplied with unit	Tables 1, 2, 3, 4, 5, 6, 13, 14
Power	None required	Two 9 V alkaline	Two 9 V alkaline	None required	AC power cord or six rechargeable C cell batteries

*All Bird® Wattmeters require Bird's Plug-in Elements.

44 SERIES/APM-16 WATTMETER SELECTION GUIDE

	4431	4410A	APM-16
Type	Broadband Wattmeter with Variable RF Sample Port	Wattmeter with Multi-power Level Elements	Wattmeter for Digital Mobile Radio
Modulation	CW, AM, FM, and analog TV	CW or FM signals	CDMA, TDMA, FDMA & other digitally modulated signals
Measurement	Average RF power	Average RF power	Average RF power
RF Power Range	5 kW max (2 to 30 MHz) 1 kW max (30 to 1000 MHz)	100 W, 1000 W or 10,000 W in single plug-in element	1 to 1000 W
Frequency Range	2 MHz to 1.2 GHz	200 kHz to 1.0 GHz	2 MHz to 960 MHz
Power Accuracy	±5% of full scale	±5% of reading	±4% of reading, ±1% of full scale
Pulse Parameters	NA	NA	NA
Connectors	Two Type-N(F) QC	Two Type-N(F) QC	Two Type-N(F) QC
Elements*	Tables 1, 2, 3, 4, 6, 13, 14	4410 elements	APM elements
Power	None required	One 9 V alkaline	One 9 V alkaline

*All Bird® Wattmeters require Bird's Plug-in Elements.

PRODUCT FEATURES

- Temperature-compensated accurate CW and FM power measurements from 200 kHz to 1.0 GHz and 300 mW to 10 kW
- Uses special 4410-series wide-range elements
- Wide-range accuracy over a 37 dB dynamic range and superior temperature performance
- Quick Change (QC) connectors to minimize the need for adapters when making critical measurements

Multipower RF Wattmeters

4410A

The 4410A RF Wattmeter has the basic principles of the Model 43 but transforms it into a highly accurate high dynamic range instrument. The mirrored-scale linear range meter has 2 switchable ranges, 0 to 1 and 0 to 3.

Power is read as a multiple of the value indicated by the pointer, the decimal point location depending upon the range switch position and the factor printed on the plug-in element. Power ranges covered by individual elements are 300 mW to 1 KW and 2 W to 10 KW, full scale. For most elements, accuracy is +/-5% anywhere above 20% of full scale.

ELEMENT SELECTION GUIDE

POWER RANGE	FREQUENCY BANDS (MHz)										
	0.2 to 0.535	0.45 to 2.5	2 to 30	25 to 80	50 to 125	50 to 200	100 to 250	144 to 520	200 to 500	200 to 1000	400 to 1000
0 to10 W, 30 W, 100 W, 300 W, 1000 W, 3000 W, 10,000 W	4410-1	4410-2	4410-4	—	—	—	—	—	—	—	—
0 to 1 W, 3 W, 10 W, 30 W, 100 W, 1000 W	—	—	4410-3	4410-5	—	4410-6	—	4410-7	—	4410-8	—
0 to 100 mW, 300 mW, 1 W, 3 W, 10 W, 30 W,100 W	—	—	—	4410-10	4410-11	—	4410-12	—	4410-13	—	4410-14

MEASUREMENT

Power Range	300 mW to 1 kW or 2 W to 10 kW full scale in one single Plug-in Element
Frequency Range	200 kHz to 1.0 GHz CW or FM
Insertion VSWR	With N connectors 1.25 max to 2300 MHz
Accuracy	±5% of reading for any reading above 20% of the Power Range selected for FM or CW signals without AM. This accuracy is maintained for a full 37 dB dynamic range with each 4410 Element (except No. 4410-1 200 kHz to 535 kHz which is accurate to ±10% of reading
Usable Over Range	To 120% of nominal full scale

CONNECTORS

RF Connectors	QC Type (Female N normally supplied)

SYSTEM

Battery Type	
4410A	9 V Alkaline, included
4412A	Rechargeable (see website)
Protection	(i.e. 12 W, 120 W, 1200 W, or 12,000 W). No damage or degradation to the unit will result, regardless of the Range Selector Switch position.

ENVIRONMENTAL

Ambient Temperature	Elements 4410-1 through -8 and -10 through -14 are temperature compensated for rated accuracy from 0 °C to 50 °C (32 °F to 122 °F)

PHYSICAL

Size (with connectors)	6.88 in x 5.13 in x 3.63 in (175 mm x 130 mm x 92 mm)
Weight	3 lb (1.4 kg)
Finish	Gray powder coat

OPTIONAL ACCESSORIES

4300A055	Wattmeter, Load, 4 Elements & Accessories Carrying Case
EC-1	12 Plug-In Elements Carrying Case
5-1375	9V, Alkaline Battery

COMPATIBLE ELEMENTS

4410 Elements	See selection guide above

MADE IN USA

PRODUCT FEATURES

- Designed especially for RF power measurement in PCS, cellular, ESMR, paging and similar communication systems
- Equally effective for measuring RF power in conventional analog systems
- Uses APM-series plug-in elements to cover a wide range of frequency and power levels. Simple Thruline® style operation for instant forward or reflected power readings
- Interchangeable QC connectors for fast hook-up

Average Reading RF Power Meter

APM-16

The APM-16 RF Wattmeter is designed to keep pace with the ever growing complexity of digitally-based communication systems. The APM-16 employs active circuitry to deliver accuracy of ±5% for multiple-access technologies such as CDMA, TDMA, FDMA and other digitally-encoded communication systems.

ELEMENT SELECTION GUIDE

POWER RANGE	FREQUENCY BANDS (MHz)						
	2 to 30	25 to 60	50 to 125	100 to 250	200 to 500	400 to 800	800 to 960
1 W	—	—	APM-1B	APM-1C	—	APM-1E-400	APM-1E-800
2.5 W	—	—	APM-2.5B	—	APM-2.5D	APM-2.5E-400	APM-2.5E-800
5 W	APM-5H	APM-5A	APM-5B	APM-5C	APM-5D	APM-5E-400	APM-5E-800
10 W	APM-10H	APM-10A	APM-10B	APM-10C	APM-10D	APM-10E-400	APM-10E-800
25 W	—	—	APM-25B	APM-25C	APM-25D	APM-25E-400	APM-25E-800
50 W	APM-50H	—	—	APM-50C	APM-50D	APM-50E-400	APM-50E-800
100 W	APM-100H	APM-100A	APM-100B	APM-100C	APM-100D	APM-100E-400	APM-100E-800
250 W	APM-250H	APM-250A	APM-250B	APM-250C	APM-250D	APM-250E-400	APM-250E-800
500 W	APM-500H	—	APM-500B	APM-500C	APM-500D	APM-500E-400	APM-500E-800
1000 W	APM-1000H	—	APM-1000B	APM-1000C	—	APM-500E-400	APM-1000E-800

MEASUREMENT

Power Range	1 W to 1000 W
Frequency Range	2 MHz to 960 MHz
Insertion VSWR	with N Connector 1.05 max to 1000 MHz
Accuracy	10 °C to 35 °C ±4% reading, ±1% full scale -20 °C to 50 °C ±6% reading, ±2% full scale
Peak to Average Ratio	In excess of 10 dB
Setting Time	< 1 second
Meter Scales	Shock mounted, linear scale with expanded scales of 25, 50 and 100 for full scale 1 to 1000 W readings. Mirrored scale includes 5% overrange.

CONNECTORS

RF Connectors	QC Type (Female N normally supplied)

SYSTEM

Battery Type	Internal 9 V, included

ENVIRONMENTAL

Operating Temperature	-20 °C to 50 °C (-4 °F to 122 °F)
Storage Temperature	-25 °C to 65 °C (-13 °F to 149 °F)
Humidity	95% ±5% max (non-condensing)

PHYSICAL

Size	6.88 in x 5.13 in x 3.63 in (175 mm x 130 mm x 92 mm)
Weight	3 lb (1.4 kg)
Finish	Black powder coat

OPTIONAL ACCESSORIES

4300-061	Wattmeter, Load, Signal Sampler, QC Connectors & 4 Elements Carrying Case
CC-6	Wattmeter, 5 Elements and 1 Small Load Carrying Case
EC-1	12 Plug-In Elements Carrying Case
5-1375	9V, Alkaline Battery

COMPATIBLE ELEMENTS

APM Elements	See selection guide above

MADE IN USA

PRODUCT FEATURES

- Frequency: .45 MHz or 45 mW to 2.7 GHz
- Power: 100 mW to 10 kW
- Measures peak or average power flow, load match, and amplitude modulation in 50 Ohm coaxial transmission lines.
- Reads forward and reflected CW or FM power in watts or dBm
- Use with CW, AM, FM, SSB, TV, and Pulse modulation envelopes.
- Calculates SWR, return loss in dB and 5 modulation
- Shock-resistant keyboard and range switches

PEP-Dual Element, RF Power Analyst

4391A

The 4391A is a multi-purpose RF Wattmeter designed around a microcomputer. It will compute VSWR, amplitude modulations, and various decibel variables reducing the odds of error. A program stored in permanent memory controls the operation of the instrument at all times allowing for consistent or repeatable measurements no matter who makes the reading.

Monitors Peak Pulse Power, Peak Envelope Power, or CW Power during normal equipment operations in the forward or reflected direction. Designed for air navigational aids DME, ATC and other pulsed RF systems such as telemetry, radar, command and control, etc.

It needs no attenuators, directional couplers or charts and power range and frequency band are determined by the Plug-in Elements used.

MEASUREMENT

Power Range	100 mW to 10 kW using Bird® Plug-in Elements*
Frequency Range	Built in, 450 kHz to 2.5 GHz
Insertion VSWR	with N connectors 1.05 max to 1000 MHz
Accuracy	**Power Readings:** CW: ±5% of full scale PEP: ±8% of full scale VSWR: ±10% of reading **% Modulation:** (CW power 1/3 or more of full scale), ±5% (0-90%), ±10% (90-100%)
Usable Over Range	to 120% of scale (CW, PEP, SWR and Return Loss)
Sampling Rate	2 to 3 readings per second
Modulation	25 to 10,000 Hz (Audio)
Pulse Parameters	**Pulse Width:** 0.8 µs (100 to 1260 MHz), 1.5 µs (26 to 99 MHz) and 15 µs (2 to 25 MHz); **Repetition Rate:** 25 PPS; **Duty Factor:** 1 x 10-4
Return Loss	±0.3 dB to corresponding SWR value

*Quoted accuracy only when used with other Bird® products.

CONNECTORS

RF Connectors	QC Type (Female N normally supplied)

SYSTEM

Display	3.5 digit, 0.3 in LED strobed
Battery Type	1.2V, NiMH Rechargeable
Battery Operating Time	8 hours
AC Power Supply	100-130/200-260 V, 50/60 Hz, 6 W

ENVIRONMENTAL

Operating Temperature	10 °C to 45 °C (50 °F to 113 °F)
Storage Temperature	-20 °C to 45 °C (-4 °F to 113 °F)

PHYSICAL

Size (with connectors)	9.56 in x 5.22 in x 4.31 in (243 mm x 158 mm x 110 mm)
Weight	5.75 lb (2.6 kg)
Finish	Blue vinyl with silver anodized side panels

OPTIONAL ACCESSORIES

4300A085	Carrying Case
5A1230	1.2V, NiMH Rechargeable Battery

COMPATIBLE ELEMENTS

4391A Elements	Select two elements in a 10:1 power ratio from Tables 1, 2, 3, 4, 5, 6 and 14

MADE IN USA

PRODUCT FEATURES

- Rigid Line Wattmeters are offered with a choice of meter scales
- Available with or without a forward/reflected power switch
- Scale choices include 15/30/60 kW, 5/10/25 kW and 8/80 kW

Rigid Line Wattmeters

6810 SERIES

The 6810 Series of 100µA Rigid Line RF Wattmeters forms a complete power measurement system when combined with the appropriate rigid line section and plug-in elements.

Elements must be ordered according to the desired frequency and power ranges, the meter scales and size of the line section selected for use with the meter.

6810 SERIES	TYPE	SCALES	DC CABLE	USES LINE SECTION
6810-220	4.5 in rectangular meter in housing with FWD and RFL switch	5/10/25 kW	10 ft	Double socket
6810-230	4.5 in rectangular meter in housing with FWD and RFL switch	15/30/60 kW	10 ft	Double socket
6810-250	4.5 in rectangular meter in housing with FWD and RFL switch	8/80 kW	10 ft	Double socket
6810-265	4.5 in rectangular meter in housing	8/80 kW	10 ft	Single socket
6810-307	4.5 in rectangular meter in housing	15/30/60 kW	10 ft	Single socket
6810-309-7	4.5 in rectangular meter in housing	5/10/25 kW	10 ft	Single socket

MADE IN USA

Rigid Line Wattmeters

3127 SERIES

The 3127 Series of 100µA Rigid Line RF Wattmeters forms a complete power measurement system when combined with the appropriate rigid line section and plug-in elements.

Elements must be ordered according to the desired frequency and power ranges, the meter scales and size of the line section selected for use with the meter.

3127 SERIES	TYPE	SCALES	DC CABLE	USES LINE SECTION
3127-040	Dual 4.5 in rectangular meter on panel	5/10/25 kW	25 ft	Double socket
3127-075	Dual 4.5 in rectangular meter on panel	15/30/60 kW	25 ft	Double socket

PHYSICAL

Size (with connectors)	19 in x 5.22 in x 4.38 in (483 mm x 132.6 mm x 111.25mm)
Weight	4 lb (1.8 kg)
Finish	Gray

MADE IN USA

Dual Meter, Dual Element, Panel-Mount RF Wattmeters

MODELS 4526 & 4527

The Model 4526 & 4527 panel-mount RF Wattmeters have both dual-meter and dual-element sockets. These features let you determine VSWR more precisely using a more sensitive reflected power element and simultaneously read forward and reflected power. The panel mount styles are versions of our legacy tested Model 43 and are used in rack installation. The 4527 has an RF sampler that provides a low power sample of the main RF signal. The sampler output may be fed to any RF signal suitable monitoring device, e.g., a frequency counter, spectrum analyzer, or oscilloscope. Consult with the factory for appropriate combined transmitter monitoring products.

	4526	4527
Frequency Range	450 kHz to 2.7 GHz (depending on element)	2 to 512 MHz (depending on element)
Insertion VSWR	With N Connectors 1.05 max to 1000 MHz	With N Connectors 1.05 max to 512 MHz
RF Sample Output	N/A	Fixed at -53 dB from 512 to 10 MHz decreasing to -70 dB at 2 MHz BNC(F) port
Elements	Tables 1, 2, 3, 4, 6	2 to 512 MHz models within Tables 1, 2, 6

*Quoted accuracy only when used with other Bird® Products.

MEASUREMENT

Power Range	100 mW to 10 kW using Bird Plug-in Elements (applies only when coupling is less than 30 dB)
Accuracy	±5% of full scale

*Quoted accuracy only when used with other Bird® Products.

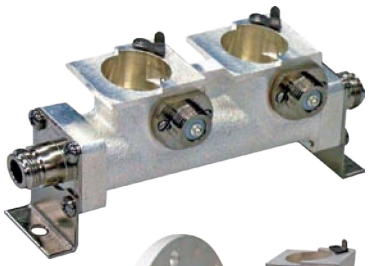
CONNECTORS

RF Connectors	QC Type (Female N normally supplied)

PHYSICAL

Size (with connectors)	5.22 in x 19 in x 1.69 in (133 mm x 483 mm x 43 mm)
Weight	3.5 lb (1.6 kg)
Finish	Gray powder coat

7/8 IN LINE SIZE



1 5/8 IN LINE SIZE

6 1/8 IN LINE SIZE

3 1/8 IN LINE SIZE

4 1/16 IN LINE SIZE

MADE IN USA

Rigid Line Sections

THRULINE® WATTMETER COMPONENTS

Bird manufactures 50 Ohm 7/8 in, 1-5/8 in, 3-1/8 in, 4-1/16, and 6-1/8 in RF Line Sections. Each line section is equipped with one or two sockets where Plug-In Elements, in the desired power and frequency range, are inserted. Double-socket line sections are for simultaneous measurement of forward and reflected power. Designed for insertion between a RF transmitter and antenna or load.

LINE SECTION SELECTION GUIDE

7/8 inch	RF CONNECTOR	ELEMENT SOCKETS	LINE SIZE	LENGTH	WEIGHT
4230-006-1	QC (not included)	1	7/8 in	4 in	1 lb
4230-018	N-Type(F)	1	7/8 in	5.5 in	1.33 lb
4230-057	N-Type(F)	1 w/ Bracket	7/8 in	5.13 in	1.34 lb
4230-059	QC (not included)	1 w/ Bracket	7/8 in	4 in	1.25 lb
4522-002-5	QC (not included)	2 - Panel Mount	7/8 in	6.22 in	1.25 lb
1-5/8 inch	**CONNECTOR TYPE**	**ELEMENT SOCKETS**	**LINE SIZE**	**LENGTH**	**WEIGHT**
4715-000	EIA Flanged	2	1-5/8 in	6.75 in	3.25 lb
4723-000	Unflanged (Rec. 0.438 in)	2	1-5/8 in	6.38 in	1.5 lb
4723-020	Unflanged (Flush)	2	1-5/8 in	6.38 in	1.5 lb
3-1/8 inch	**CONNECTOR TYPE**	**ELEMENT SOCKETS**	**LINE SIZE**	**LENGTH**	**WEIGHT**
4610-000	EIA Flanged	2	3-1/8 in	7.03 in	7.25 lb
4801-100	Unflanged (Rec. 0.688 in)	2	3-1/8 in	6.5 in	4.25 lb
4802-000	Unflanged (Flush)	2	3-1/8 in	6.5 in	4.25 lb
4-1/16 inch	**CONNECTOR TYPE**	**ELEMENT SOCKETS**	**LINE SIZE**	**LENGTH**	**WEIGHT**
4642-010	Flanged (MYAT)	2	4-1/16 in	8.13 in	8.88 lb
6-1/8 inch	**CONNECTOR TYPE**	**ELEMENT SOCKETS**	**LINE SIZE**	**LENGTH**	**WEIGHT**
4905-000	EIA Flanged	2	6-1/8 in	10.22 in	17 lb
4909-000	Unflanged (Rec. 0.968 in)	2	6-1/8 in	9.63 in	12.75 lb

MADE IN USA

Field Replacement Meter Movement Assembly Kit

RPK43-4

The RPK43-4 is a complete replacement assembly kit for use with the Bird Model 43 Series of RF Wattmeters. This kit includes a 3.5 in round meter face, coaxial meter cable, shock ring, neoprene gasket -and shorting plug.

	RPK43-4
Description	3.5 in round replacement meter movement assembly kit
Current	30 µA/1400 Ohms
Meter Scales	25/50/100 W
Elements	Tables 1, 2, 3, 4, 6
Compatible with	Bird Wattmeter models: 43, 43P, 4431, 4521, 4522, 4526 and 4527

MADE IN USA

RF Wattmeter Movement Kit

4210A100

For custom applications and builds, the 4210A100 is a complete kit with a square meter pre-mounted in an aluminum housing. When combined with the appropriate 7/8 inch line section, QC connectors and elements you can assemble to a custom rack mount or use as a benchtop wattmeter.

	4210A100
Description	3.25 in square Wattmeter movement kit in aluminum housing
Current	30 µA/1400 Ohms
Meter Scales	25/50/100 W
Elements	Tables 1, 2, 3, 4, 6

MADE IN USA

Replacement Meter Movement Face

RPK2080-002

The RPK2080-002 is a replacement meter face for use with the Bird Model 43 Series of RF Wattmeters.

	RPK2080-002
Description	3.5 in round replacement meter face movement assembly
Current	30 µA/1400 Ohms
Meter Scales	25/50/100 W
Elements	Tables 1, 2, 3, 4, 6
Compatible with	Bird Wattmeter models: 43, 43P, 4431, 4521, 4522, 4526 and 4527