Bird®

Precision Power Sensors

4027A Series

The **RF** Experts

Bird's® Precision power sensors for precision laboratory applications. The 4027A Series Power Sensors were designed to bring superb accuracy and ease of use together for the engineer in the laboratory. At the calibrated frequency and power level, these sensors are capable of 1% accuracy. With calibration traceable to the National Institute of Standards and Technology, you can be confident of the measurements these sensors provide.

PROBLEMS/SOLUTIONS

Poor production yields
- 1% accuracy at specified frequencies and power levels

Lack of confidence in measurements
- Calibration traceable to NIST

Complex tools requiring calibration each time
- Plug and Play with 4421 Meter
- Unit does not need to be field calibrated before use
- Calibrate only once every six months

Harmonic content interfering with measurements

Wide range of applications requiring various input and output connectors
- Dozens of connector options available

APPLICATIONS

Bird's new 4027A Series Power Sensors represent a family of sensors for use in semiconductor processing and other precision process applications. Intended for use with the industry standard Bird precision Laboratory Power Meter Model 4421, these products provide a threefold improvement in long term unit to unit accuracy.

Precision Power Sensor

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SPECIFICATIONS

Accuracy	±1% at calibration frequencies and power levels ±2 % at other frequency and power levels Add 2% to uncertainty outside 25 ± 10 °C
Calibration Power Level	1000W units: 700 watts 10kW units: 1700 watts
Uniformity	2 % maximum unit to unit, at calibration frequency and power levels
Speed	2 readings per second
Maximum Power	10 kW units - 12 kW max. 1 kW units - 1.2 kW max.
Harmonic Content	-50 dBc max
VSWR Range	1.0-2.0
Directivity	28 dB
Insertion Loss	<0.05 dB
Connectors	*Customer Specified
Power Requirements External DC	12 VDC, supplied from Bird 4421 Power Meter
Dimensions	5.2″ L x 2.5″ W x 3.25″ H
Weight	1 lbs. 13 oz. (0.8 kg)
Operating Temperature	15°C to 35°C (59°F to 95°F)
Storage Temperature	-40°C to 80°C (-40°F to 176°F)
Humidity	95% maximum (non-condensing).
Altitude	Up to 10,000 feet (3,048 m)
General EMC	Designed to carry CE mark
Emissions	EN-55011, 1991, Class B
Immunity	EN-50082-1, 1995
Safety	EN-61010, 1993 in accordance with Council Directives 73/23/EEC and 93/68/EEC
Calibration Cycle	6 month. Performance before and performance after data to be supplied for units

If you need assistance in selecting products from our standard 4020-series sensor line, please contact a sales engineer at Bird.

*For connector options, please refer to our catalog or contact sales at 866.695.4569 / sales@birdrf.com

Models	Power Range	Frequency
4027A12M	300 mW to 1 kW	10-15 MHz
4027A250K	3 W to 10 kW	250-400 kHz
4027A400K	3 W to 10 kW	400-550 kHz
4027A800K	3 W to 10 kW	800-950 kHz
4027A2M	3 W to 10 kW	1.5-2.5 MHz
4027A4M	3 W to 10 kW	3-5 MHz
4027A10M	3 W to 10 kW	10-15 MHz
4027A25M	3 W to 9 kW	25-30 MHz
4027A35M	3 W to 7.5 kW	35-45 MHz
4027A60M	3 W to 6 kW	45-65 MHz
4027A100M	3 W to 4 kW	95-105 MHz
4027A150M	3.75W to 3.75 kW	150-170 MHz

Also available - Standard 4020 series 4021(300mW-1kW, 1.8-32 MHz), 4022 (300mW-1kW, 25-1000 MHz), 4024 (3W-10kW, 1.5-32 MHz), and 4025 (3W-10kW, 100-2500 kHz).
±3% (1s) of reading accuracy and 28 dB minimum directivity.

Note 1: See also 4020 Series of broadband, 5% accuracy sensors.
Note 2: For applications with harmonic greater than -50 dBc, contact the factory for versions of 4027A Sensors with filtering included.