



# 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.

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## 4027A Series

### SPECIFICATIONS

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

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.

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

