THRULINE® DIRECTIONAL RF POWER SENSORS

4027A Series

Instruction Book Part Number 920-4027AS Rev. M

Specifications

CAUTION
Changing the sensor's connectors will invalidate calibration data, and may reduce the maximum power rating of the unit.

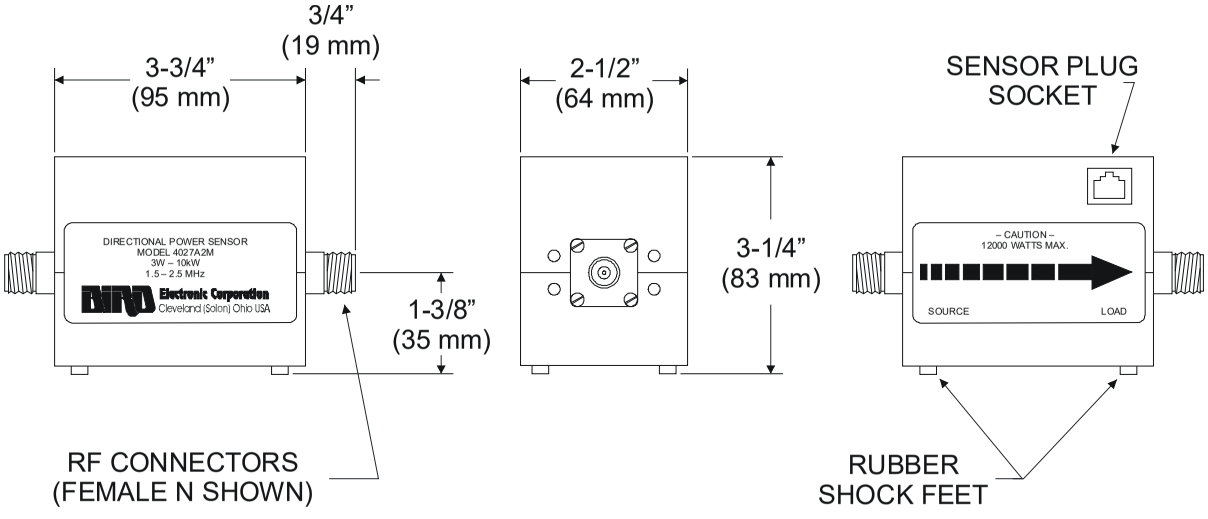
Frequency Range	
4027A250K	250 – 400 kHz
4027A390K	340 – 450 kHz
4027A400K	400 – 550 kHz
4027A400K-15	400 – 550 kHz
4027A800K	800 – 950 kHz
4027A1M	0.9 – 1.1 MHz
4027A1M-1	1.0 – 1.3 MHz
4027A2M	1.5 – 2.5 MHz
4027A4M	3 – 5 MHz
4027A10M	10 – 15 MHz
4027A12M	10 – 15 MHz
4027A25M	25 – 30 MHz
4027A35M	35 – 45 MHz
4027A60M	45 – 65 MHz
4027A100M	95 – 105 MHz
4027A150M	150 – 170 MHz
RF Power Range	
4027A12M	300 mW – 1 kW
4027A25M	3 W – 9 kW
4027A35M	3 W – 7.5 kW
4027A60M	3 W – 6 kW
4027A100M	3 W – 4 kW
4027A150M	3.75 W – 3.75 kW
4027A390K	5 W – 16 kW
4027A400K-15	5 W – 15 kW
All other models	3 W – 10 kW
Accuracy, Fwd, Best Case*	± 1.0% (2σ)
Accuracy, Reflected	Calculated from Fwd accuracy and power $\text{RFL Accuracy} = \text{FWD Accuracy} + \frac{\text{FWD Power}}{10^{\text{Directivity}/10}}$
Accuracy, VSWR	Calculated from Fwd and Rfl power $\text{VSWR} = \left(1 + \sqrt{\frac{P_R}{P_F}}\right) / \left(1 - \sqrt{\frac{P_R}{P_F}}\right)$

* For rated accuracy, no more than 1% AM; Harmonics –50 dBc or less
Derate accuracy by 1% (1s) outside cal. power or cal. frequency
Derate accuracy by 1% (1s) below 15 °C and above 35 °C

Repeatability, Multiple Measurements, Single Sensor	Determined by connector repeatability ± 0.3% (2σ) with female "N" connectors
VSWR, Max	1.05:1
Insertion Loss, Max	0.05 dB (with female "N" connectors)
Directivity, Min	
4027A12M	30 dB
All other models	28 dB
Impedance, Nominal	50 ohms
Max. Allowable Terminating VSWR	2.00:1
Calibration Technique	Frequency-specific calibration factors stored in nonvolatile memory in each sensor. Sensor output corrected for frequency and temperature within specified ranges.
Calibration Frequencies, Typical (MHz)*	
4027A250K	0.25, 0.40
4027A400K	0.40
4027A400K-15	0.40
4027A800K	0.90
4027A2M	1.8, 2.0, 2.17
4027A4M	4.0, 5.0
4027A10M	10.0, 13.56, 15.0
4027A12M	10.0, 13.56, 15.0
4027A25M	25.76, 27.12, 28.48
4027A35M	40.68
4027A60M	55.0, 60.0
4027A100M	95.0, 100.0
4027A150M	162.0
Cal Power, Typical	
4027A12M	700 W
All other models	1700 W
Cal Cycle, Nominal	6 months

* Other calibration frequencies available upon request

Connectors	Customer specified from “QC” list, appropriate for frequency and power.
Operating Power	Supplied by power meter via sensor cable
Sampling Rate, Nominal	2 readings / second
Temperature	
Operating Storage	0 to 50 °C (32 to 122 ºF) –20 to +70 °C (–4 to +158 °F)
Humidity, Max	95% (non-condensing)
Altitude, Max	10,000 ft. (3,000 m)
CE	CE Compliant. Refer to Declaration of Conformity for specific standards
Dimensions, Nominal	5.2”L x 2.5”W x 3.25”H (137 x 64 x 83 mm)
Weight, Nominal	1 lb. 13 oz. (0.8 kg)


3/4"
(19 mm)
3-3/4"
(95 mm)
DIRECTIONAL POWER SENSOR
MODEL 4027A2M
3W – 10kW
1.5 – 2.5 MHz
Electronic Corporation
Cleveland (Solon) Ohio USA
1-3/8"
(35 mm)
RF CONNECTORS
(FEMALE N SHOWN)
2-1/2"
(64 mm)
3-1/4"
(83 mm)
SENSOR PLUG
SOCKET
– CAUTION –
12000 WATTS MAX.
SOURCE
LOAD
RUBBER
SHOCK FEET

Special Lifetime Warranty –
Series 4027A Power Sensor Head

In addition to its standard warranty, the Bird Electronic Corporation warrants its Series 4027A Thruline® Power Sensor Heads for lifetime to original purchaser. This extended warranty is against burnout. For the warranty to apply, the Sensor Head must be used with the correct Bird Electronic Corporation Display Unit, the maximum power rating of the Sensor must not be exceeded, the Sensor RF circuit must be properly terminated and the Sensor not subjected to physical abuse.

Bird Electronic Corporation, at its option, will repair or replace the defective Sensor at its world Headquarters at 30303 Aurora Road, Solon, Ohio 44139.

The customer is responsible to pay transportation charges to return the defective sensor to Bird.