

Key PowerSensor+™ Specifications

10 MHz to 26.5 GHz

-55 dBm to +20 dBm

1.95% Total Error*

1.20:1 VSWR

* Measuring a well matched DUT (-20 dBm @ 1 GHz)

Key PowerSensor+™ Capability

General purpose power and scalar measurements

General Description

The LB589A is an easy to use high performance general purpose power meter and power sensor in one. It features high speed measurements and temperature compensated accuracy with superior in class performance. The standard product can measure signals below -55 dBm.

Get up and running quickly with the supplied power meter panels. Use the supplied drivers and programming examples for ATE applications. Easily integrate the power sensors into Lab View, C, VB and other programming environments.

Integration and use is further simplified through the no calibration and no zero before use and the flexibility of selecting a male or female SMA input connector.

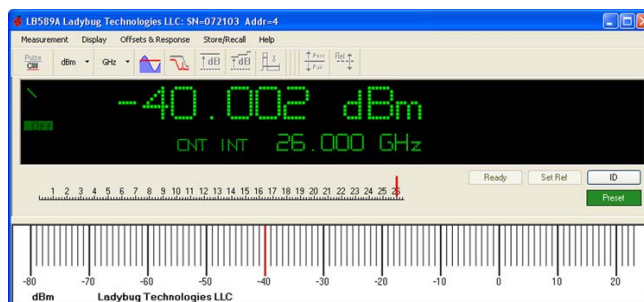
Order option 003 for triggering on the RF input level and general TTL triggering. Option 001 is ordered when a slow moving (<3 Hz) analog output is required.

Features

- Best in-class price
- Superior in-class performance
- Compact - 1/10 the volume of competitive sensors
- Ruggedized USB connector - does not fatigue or break like competitive sensors
- Trigger on RF input level
- Fully calibrated over temperature
- Unlimited signal bandwidth measurements
- Offered with 30 day return policy



Test Setup for One Sensor Measurements



Power Meter Panel

Applications

- General purpose scalar measurements
- General average RF and microwave power measurements requiring leading edge accuracy:
 - CW & pulsed signals
 - Narrow and wide band signals: CDMA, W-CDMA, QAM, OFDM, GSM, TDMA, QPSK, FSK, AM, FM, etc.
 - Recorders, power monitoring, and ALC loops
- Research & development, and manufacturing
- Maintenance, repair, installation, and service
- Communications
- Radar, wireless, satellite, radio links, etc.

LB589A PowerSensor+™ Specifications

Parameter	LB589A
Frequency Range	10 MHz to 26.5 GHz
Dynamic Range	
Standard	-55 dBm to +20 dBm
Accuracy	Total Error (RSS) = $\sqrt{(M^2 + CF^2 + L^2 + N^2 + T^2)}$ See Note 1
Calibration Factor	
SMA	
10 MHz to 1 GHz	2.5%
1 GHz to 10 GHz	2.4%
10 GHz to 18 GHz	2.7%
18 GHz to 26.5 GHz	TBD
Linearity (10 MHz to 26.5 GHz)	
+15 to +20 dBm	3.0%
0 to +15 dBm	2.0%
-10 to 0 dBm	1.0%
-20 to -10 dBm	0.5%
-40 to -20 dBm	2.0%
-50 to -40 dBm	TBD
Noise (1 second integration)	Standard
-30 to +20 dBm	
10 MHz to 1 GHz	1.0%
1 GHz to 10 GHz	0.25%
10 GHz to 18 GHz	0.25%
18 GHz to 26.5 GHz	
-40 to -30 dBm	
10 MHz to 1 GHz	1.0%
1 GHz to 10 GHz	0.5%
10 GHz to 18 GHz	0.5%
18 GHz to 26.5 GHz	
-50 to -40 dBm	
10 MHz to 1 GHz	TBD
1 GHz to 10 GHz	TBD
10 GHz to 18 GHz	TBD
18 GHz to 26.5 GHz	TBD

LB589A PowerSensor+™ Specifications (continued)

Parameter	LB589A
Accuracy (continued)	
Match	
SMA	
10 MHz to 1 GHz	1.20:1 VSWR (21 dB Return Loss)
1 GHz to 10 GHz	1.20:1 VSWR (21 dB Return Loss)
10 GHz to 18 GHz	1.29:1 VSWR (18 dB Return Loss)
18 GHz to 26.5 GHz	1.29:1 VSWR (18 dB Return Loss)
Temperature (°C)	
40 - 50	1.00%
30 - 40	0.75%
20 - 30	0.00%
10 - 20	0.75%
0 - 10	1.00%
Maximum Average Power	+20 dBm (100 mW)
Damage Level	+23 dBm (200 mW)
Maximum Pulse Power	+20 dBm (100 mW)
Damage Level	+23 dBm (200 mW)
Video Bandwidth	
Standard	100 Hz
Time Base	±50 ppm
Effective Sample Rate	48 MS/second
Measurements	2000/second
Recommended Calibration Cycle	1 year

¹ Error term definitions: Mm (Mismatch); CF (Cal Factor); N (Noise); L (Linearity); T (Temperature).

LB589A PowerSensor+™ Specifications (continued)

Parameter	LB589A
Average Power Measurements	Average Power, Duty Cycle-Computed Pulse Power, Data Logging
Display & Data Processing Capability	Multiple sensors, displays, and traces
Scaling	Linear, dB
Memory	Unlimited
Trigger	Option 003
Resolution	2 us
Modes (GUI)	Single, Continuous
Source	External
Input	TTL compatible, rising or falling edge
V _{IH} , minimum high-level input	2.0 V at +/- 10 uA
V _{IL} , maximum low-level input	0.8 V at +/- 10 uA
Connector type	SMB male (shared with recorder output)
Absolute maximum levels	5.5 V maximum, -0.5 V minimum
Output	TTL compatible, rising or falling edge
V _{OH} , minimum high-level output	4.6 V at 1 mA
V _{OL} , maximum low-level output	0.8 V at -1 mA
Connector type	SMB male
Absolute maximum levels	5.5 V maximum, -0.5 V minimum
Recorder Out	Option 001
Range	
Operating	0 to 1 V typical
Maximum output	5 V, if in trigger mode (option 003)
Output impedance	1 K ohm typical
Sensitivity	
Scale	Linear or dB, factory default to Linear
Full Scale Value	User settable, factory default to Linear
Connector	SMB male (shared with trigger input)
Environment, operating	
Temperature	0 °C to 55 °C
Humidity	15% - 95% non-condensing
Altitude	10,000 feet (3,000 meters)
Environment, storage	
Temperature	-25 °C to 85 °C
Humidity	15% to 95% non-condensing
Altitude	50,000 feet (15,000 meters)
Physical	
Weight	2.75 oz (78 g), plus connector weight
Size	1.6" (40 mm) diameter by 2.25" (57 mm) long plus connector length