Integrated Thermocouple and Diode Power Monitors

- **Broadband Frequency Coverage**
- **High Level Outputs**
- **Simplifies System Designs**
- **Excellent Stability, Accuracy**
- **Low Cost**

Description

Narda integrated power monitors are complete, integrated power measurement subsystems which provide an output signal proportional to their RF input level. A system designer need only supply DC power to the RF power monitor for it to measure RMS average power levels. Measurements can be made over the designer's choice of 20 or 30 dB dynamic range with repeatable, accurate performance. All units are designed to operate in hostile RF environments and are sealed to reduce emissions of, and susceptibility to, stray RF signals. Input connectors are precision type "N" or 3.5mm connectors that comply with MIL-C-39012, and output connections are through a MIL-C-26284 type connector for environmental and EMC considerations. This design feature allows these units to be mounted close to high power output stages while maintaining accurate output readings. These power monitors operate from a wide range of supply voltages. Single ended supplies of either ±24 to 36 VDC unregulated, or dual supply voltages of ±12 to ±18 VDC regulated are acceptable for all thermocouple monitors. However special versions are available to match system supply voltages. These devices may be used as either constant current of constant voltage devices. In a system where variations of the resistance of the DC wiring may be encountered (such as through the slip rings of a rotating antenna system), or where the length of wire would cause a voltage reduction, a constant current source is desirable since any resistance, or resistance fluctuation would not affect the accuracy of the remote readout. In a system where the remote readout might be a high impedance device, such as a PC based data acquisition card the most desirable configuration is a constant voltage source. The choice of either a constant current or constant voltage configuration does not require any change or modification of the internal circuitry of the power monitor. Either configuration is obtained by proper wiring of the external circuitry. The supplied operation and maintenance manual contains numerous examples of external wiring configurations that may be employed.

435 MORELAND ROAD • HAUPPAUGE, NY 11788
USA TEL: (1) 631 231-1700 • INT'L TEL: (1) 631 231-1390 • FAX (1) 631 231-1711
E-MAIL: nardaeast@L-3COM.com • www.nardamicrowave.com

Specifications

MODEL NUMBER	426B	427B	460B	462B	466B	4491
FREQUENCY RANGE	10 MHz to 12.4 GHz					0.1 to 26.5 GHz
DETECTION	TRUE RMS AVERAGE					
DYNAMIC RANGE*	30 dB				20 dB	30 dB
MEASUREMENT RANGE	0.1 μW to 100 mW	1.0 μW to 1.0 mW	1.0 μW to 1.0 mW	100 μW to 100 mW	1 mW to 100 mW	10 μW to 10 mW
OVERLOAD CW PEAK	300 mW 30 W	3.0 mW 0.1 W	3.0 mW 0.1 W	300 mW 30 W	300 mW 30 W	30 mW 5.0 W
REPLACEMENT ELEMENT	820A	818A	818A	820A	820A	4813
OUTPUT CONNECTOR	15 PIN MS3116A-14-15P (mates with MS3116A-14-15S, Narda P/N 30931302)		18 PIN MS3116A-14-18P (mates with MS3116A-14-18S, Narda P/N 30931301)			

*Units can be configured for two or three 10 dB ranges or for a single 20 dB 0r 30 dB range

Common Specifications (All Units)

INPUT CONNECTOR	Type N male (Except 4491 - 3.5 male)
INPUT VSWR (max)	1.5:1 (except 4491*, 2.0:1)
ZERO OFFSET (typ)	.005%/C° on least sensitive range, 10dB higher on each lower range
LINEARITY	2% of full scale

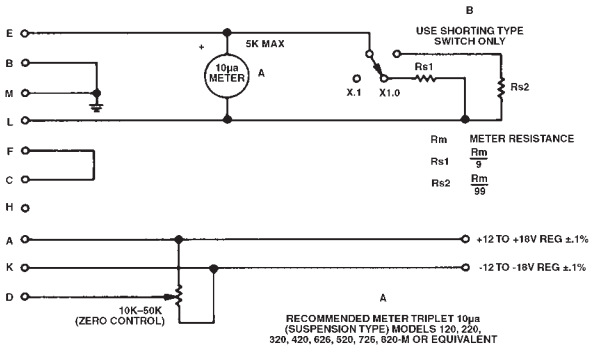
*(50 MHz to 22 GHz 1.5:1)(75 MHz to 20 GHz 1.3:1)

Environmental Specifications

TEMPERATURE RANGE	Operating -55° to +85°C Non-operating -55° to +125°C
HUMIDITY	0 to 99% (Non-condensing)
ALTITUDE	0 to 30,000 ft.

435 MORELAND ROAD • HAUPPAUGE, NY 11788
USA TEL: (1) 631 231-1700 • INT'L TEL: (1) 631 231-1390 • FAX (1) 631 231-1711
E-MAIL: nardaeast@L-3COM.com • www.nardamicrowave.com

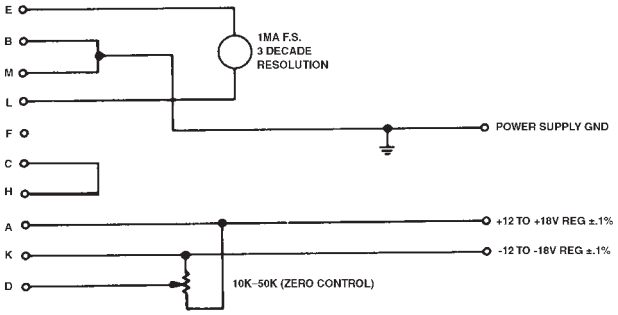
Typical Interconnection Diagrams



Constant Current Dual Supply, 3 Ranges

In this external wiring configuration, the RMS power monitors will generate a 0 to 100 mV output for each 10 dB range (x.1, x1, x10).

If the switch is left in the x.1 range, the RMS monitors will generate 0 to 1V and 0 to 10 V if **operated** in the x1 and x10 power ranges, respectively.

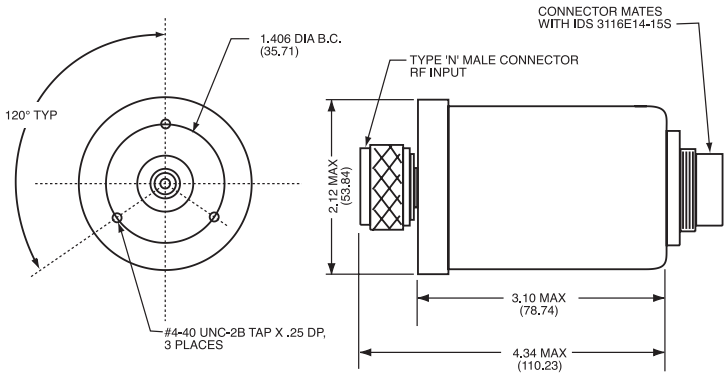


Constant Current Dual Supply Connection, Single Range

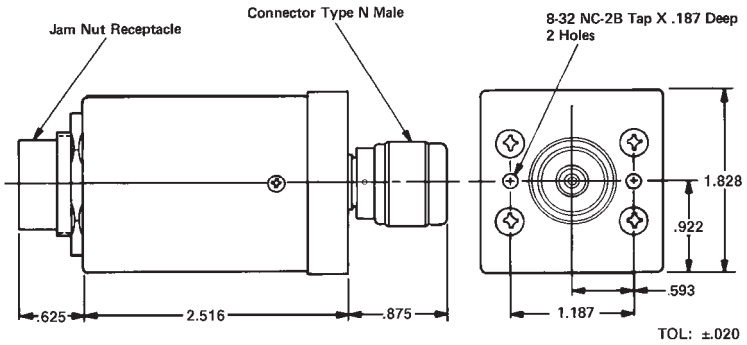
In this external wiring configuration, the RMS power monitor will generate up to 1 mA of current. When operated in the most sensitive range it will generate 0 to 10 μA, mid range and 0 to 100 μA and in the least sensitive range 0 to 1 mA.

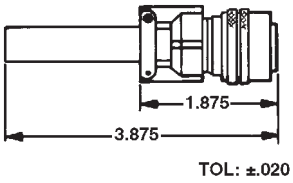
435 MORELAND ROAD • HAUPPAUGE, NY 11788
USA TEL: (1) 631 231-1700 • INT'L TEL: (1) 631 231-1390 • FAX (1) 631 231-1711
E-MAIL: nardaeast@L-3COM.com • www.nardamicrowave.com

Outline Drawings



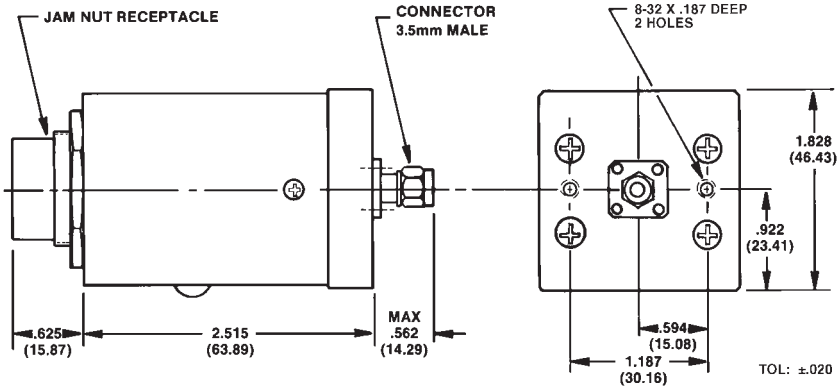
MODELS 426B AND 427B





MATING CONNECTOR PART NO. 309313 (Accessory)

MODEL 460B SERIES AND MODEL 491



MODEL 4491

Dimensions in parentheses are in millimeters and are for reference only.

435 MORELAND ROAD • HAUPPAUGE, NY 11788
USA TEL: (1) 631 231-1700 • INT'L TEL: (1) 631 231-1390 • FAX (1) 631 231-1711
E-MAIL: nardaeast@L-3COM.com • www.nardamicrowave.com