0.01-26.5 GHz

Integrated Thermocouple Based 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 3.5 mm 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 or 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.

Power Monitors

Specifications

0.01 - 26.5 GHz

FREQUENCY RANGE	MODEL	DETECTION	DYNAMIC RANGE* (dB)	MEASUREMENT RANGE	OVERLOAD CW (mW)	OVERLOAD PEAK (W)	REPLACEMENT ELEMENT	OUTPUT CONNECTOR	INPUT CONNECTOR	INPUT VSWR (max.)
10 MHz-12.4 GHz	426B	True RMS Average	30	100 µW to 100 mW	300	30	820A	15 PIN**	Type N (M)	10-50 MHz: 2.0 50 MHz-12.4 GHz: 1.5
	427B	True RMS Average	30	1.0 µW to 1.0 mW	3.0	0.1	818A	15 PIN**	Type N (M)	10-50 MHz: 2.0 50 MHz-12.4 GHz: 1.5
	460B	True RMS Average	30	1.0 µW to 1.0 mW	3.0	0.1	818A	18 PIN‡	Type N (M)	10-50 MHz: 2.0 50 MHz-12.4 GHz: 1.5
	462B	True RMS Average	30	100 µW to 100 mW	300	30	820A	18 PIN‡	Type N (M)	10-50 MHz: 2.0 50 MHz-12.4 GHz: 1.5
	466B	True RMS Average	20	1 mW to 100 mW	300	30	820A	18 PIN‡	Type N (M)	10-50 MHz: 2.0 50 MHz-12.4 GHz: 1.5
0.1-26.5 GHz	4491	True RMS Average	30	10 µW to 10 mW	30	5.0	Contact Factory	18 PIN‡	3.5 mm (M)	0.1-22 GHz: 1.5 22-26.5 GHz: 2.0

* Units can be configured for two or three 10 dB ranges or for a single 20 dB or 30 dB range
** MS3116A-14-15P (mates with MS3116A-14-15S, Narda P/N 30931302)
‡ MS3116A-14-18P (mates with MS3116A-14-18S, Narda P/N 30931301)

NOTES:
ZERO OFFSET (typ): 0.005%/C° on least sensitive range, 10dB higher on each lower range
LINEARITY: ±2% of full scale

Environmental Specifications

TEMPERATURE

Operating ..... -55°C to +85°C
Non-operating ..... -55°C to +125°C

HUMIDITY ..... 0 to 99% (Non-condensing)

ALTITUDE ..... 0 to 30,000 ft.

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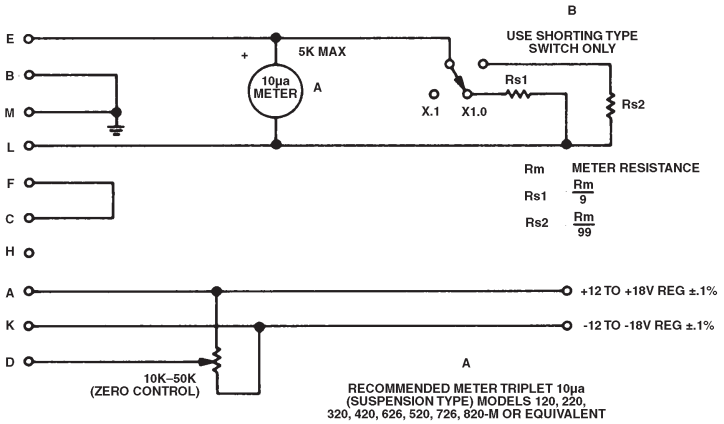
Typical Interconnection Diagrams

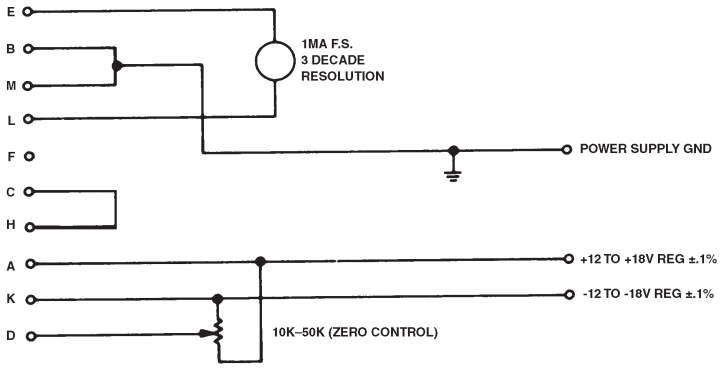
In this external wiring configuration, the RMS power monitors will generate a 0 to 100 mV output for each 10 dB range (x.1, x1, x10).

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, 3 Ranges

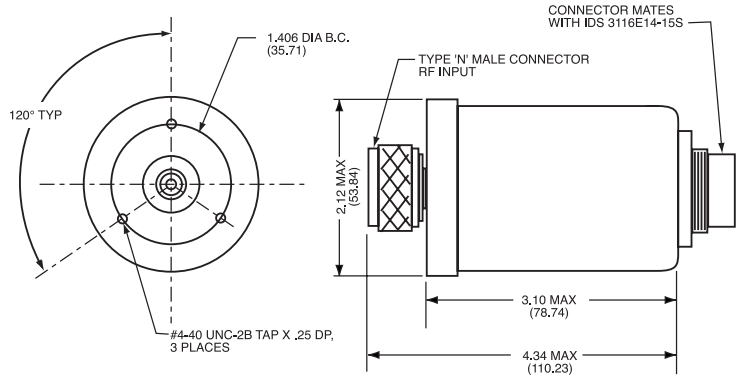
In this external wiring configuration, the RMS power monitor will generate up to 1 mA of current. When operated in the most sensitive range it will generate 0 to 10 µA, mid range; 0 to 100 µA and in the least sensitive range; 0 to 1 mA.



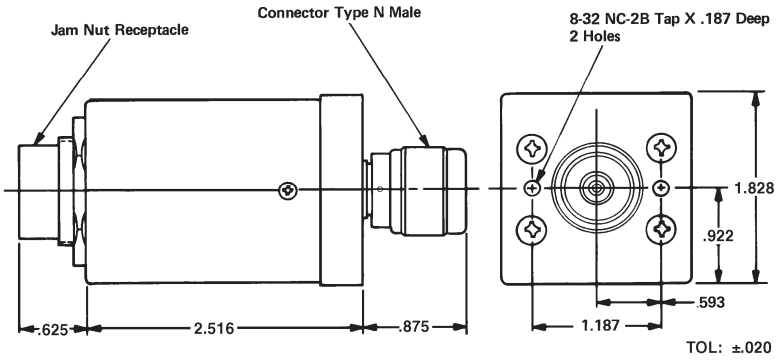
Constant Current Dual Supply Connection, Single Range

Power Monitors

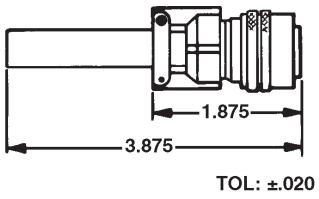
Outline Drawings



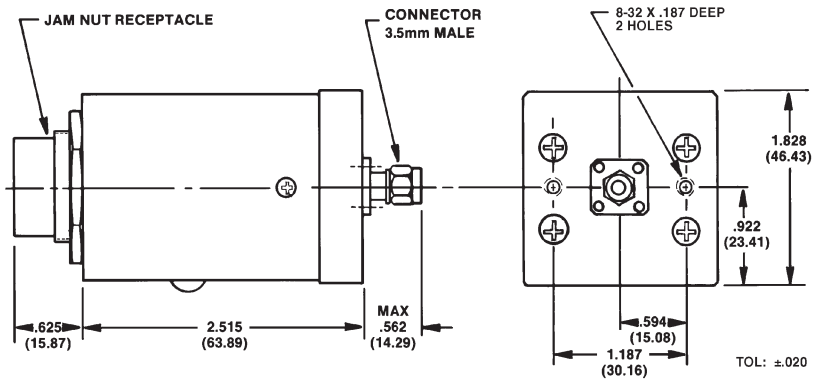
MODELS 426B AND 427B



MODEL 460B, 462B, 466B



MATING CONNECTOR PART NO. 309313 (Accessory)



MODEL 4491

Dimensions in inches (mm in parentheses), unless otherwise specified.

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