



DR9051R-02

BRIDGE INPUT POLLING TRANSMITTER

FEATURES

- Direct Strain Gauge (Bridge) Input
- 10 VDC Regulated Excitation Voltage
- Four Digital Inputs For Contact Closure or NPN Transistor
- Repeater Capability
- DIN Rail Mount - Steel Clip
- 10-30VDC Power
- Reverse Polarity Screw-On SMA Antenna Connector

- 915 MHz ISM* Band - 2 Versions, 14 Hop Sequences
- 2.4GHz Unlicensed Band - 1 Version, 7 Hop Sequences
- Spread Spectrum, Frequency Hopping Technology*
- Line of Sight Range to 20 Miles With 915MHz Band Radio
- Line of Sight Range to 10 Miles With 2.4GHz Band Radio
- 5 Year Warranty (1 Year on Radio Module)
- UL/cUL Recognized



DESCRIPTION

The DR9051R is an RF transmitter that will accept both analog and switch contact inputs. A 12 bit A/D converter is used to digitize the analog data. Analog data and switch status is read when requested by the companion DR9050 Control Unit. The DR9050 polls the DR9051R and outputs the data in Modbus RTU format. A single DR9050 can poll up to 247 DR9051R's utilizing a single Hop sequence.

The DR9051R has a repeater capability that is useful for data monitoring in areas where the DR9050 cannot communicate directly with a DR9051R due to distance or obstructions in the transmission path.

The switch inputs require a standard contact closure or an open collector NPN transistor.

Three radio modules are available for the DR9051R, two 915MHz band versions with 7 Hop sequences each and a 2.4GHz band version with 7 Hop sequences. They use spread spectrum, frequency hopping* technology. These choices provide 21 different Hop sequences that allow 21 systems to work in the same locale without interfering with each other.

With proper antenna and cable selection and a 915MHz band version radio, the DR9051R can transmit up to 20 miles. The 2.4GHz band version can transmit up to 10 miles.

The DR9051R provides isolation between input and power source.

A 10 VDC precision power supply is built-in and provides excitation for up to four (4) 330 ohm bridges.

Screw terminal blocks that plug into the case allow easy wiring and removal of products.

All of the DR Series of products provide transient protection to help eliminate damage from lightning and from other transients created on the power and signal leads.

SPECIFICATIONS

INPUT

Strain Gauge

Span
0.5 mV/V to 1 V/V

Accuracy
±0.1% of Span

Linearity
±0.01% of Span

Excitation:
10 VDC Precision Supply for
up to 4 Strain Gauges
125 mA Maximum

Switch Input

Open Circuit Voltage
Equals Power Input
(10 to 30 VDC)

Closed Circuit Current
3 to 9 mA

RADIO

Frequency
915 MHz Band
908 or 922 MHz
2.4 GHz Band
2.4000 - 2.4835 GHz

Spread Spectrum Type
Frequency Hopping, Direct FM

I/O Data Rate Tx to Rx:
9600 bps

Range / Line of Sight
915 MHz Band - Up to 20 Mi.
2.4 GHz Band - Up to 10 Mi.

Receiver Sensitivity:
915 MHz Band
-110 dBm @ 9600 baud
2.4 GHz Band
-105 dBm @ 9600 baud

Transmitter Power:
915 MHz Band
100 mW (20 dBm)
2.4GHz Band
50 mW (17dBm)

Connector:
Reverse Polarity SMA Female

CERTIFICATIONS

RF Module
FCC Part 15.247
DR9051R-02
UL/cUL Recognized

COMMON MODE REJECTION

100 dB, DC to 60 Hz

OPERATING TEMPERATURE

-13°F to 167°F
-25°C to 75°C

TEMPERATURE STABILITY

±(0.01% of Span)/°C Max

POWER

10 to 30 VDC
1.5 Watts Max

* See page 56 for a comprehensive definition.

ORDERING INFORMATION

Input Range

(Must be within minimum to maximum specification)

Span

mV/V V/V

RADIO

- 908 MHz - Standard
- 922 MHz - Optional
- 2.4 GHz

*** NOTE: This unit must be used with a DR9050 Master Control Unit.**

ACCESSORIES

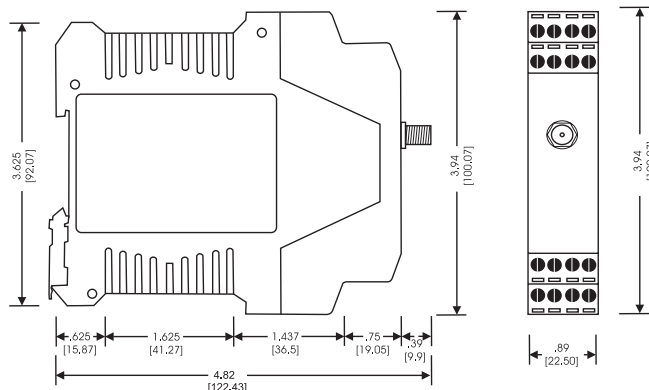
RP = Reverse Polarity

| | | |
|-------|--|-----------|
| 4073 | Two Antenna Coupler, Transmit and Receive, 2-Port 900 MHz | QTY _____ |
| 4051 | Receive Only, 2 to 4 Antenna Coupler 4-Port 900 MHz | QTY _____ |
| 4061 | Receive Only, 2 to 4 Antenna Coupler 4-Port 2.4 GHz | QTY _____ |
| 4062 | 50 Ohm Termination, For Unused Ports On P/N 4051,4061 | QTY _____ |
| 4022 | PSP24-024S, 24 VDC 1 Amp Power Supply | QTY _____ |
| 4026 | Bulkhead Connector Type N Female to Type N Female | QTY _____ |
| 4011 | Bulkhead Surge Protector Type N Male to Type N Female | QTY _____ |
| 4035 | Bulkhead Surge Protector Type N Female to Type N Female | QTY _____ |
| CBH2 | 2 Ft WBC195 Cable w/ RP-SMA Male & RP-SMA Female Bulkhead Connector | QTY _____ |
| CBH6 | 6 Ft WBC195 Cable w/ RP-SMA Male & RP-SMA Female Bulkhead Connector | QTY _____ |
| CBH10 | 10 Ft WBC195 Cable w/ RP-SMA Male & RP-SMA Female Bulkhead Connector | QTY _____ |
| CBH-X | Custom Length WBC195 Cable w/ RP-SMA Male & RP-SMA Female Bulkhead Connector | QTY _____ |
| CPT2 | 2 Ft WBC195 Cable w/ RP-SMA Male & Type N Male Connector | QTY _____ |
| CPT6 | 6 Ft WBC195 Cable w/ RP-SMA Male & Type N Male Connector | QTY _____ |
| CPT10 | 10 Ft WBC195 Cable w/ RP-SMA Male & Type N Male Connector | QTY _____ |
| CPT-X | Custom Length WBC195 Cable w/ RP-SMA Male & Type N Male Connector | QTY _____ |

For more accessories and cables, see the ACCESSORIES section of this catalog (Page 51).

DIMENSIONS

Inches [mm]



CONNECTIONS

| TERMINAL | CONNECTION |
|----------|---------------------|
| 1 | Bridge Input + |
| 2 | Bridge Input - |
| 3 | Shield |
| 4 | Shield |
| 5 | Switch 1 + |
| 6 | Switch 1 - |
| 7 | Switch 2 + |
| 8 | Switch 2 - |
| 9 | Switch 3 + |
| 10 | Switch 3 - |
| 11 | Switch 4 + |
| 12 | Switch 4 - |
| 13 | 10 VDC Excitation + |
| 14 | Excitation Common |
| 15 | Power + |
| 16 | Power - |