

RTD Sensor and Transmitter

NEMA-4X Rated Enclosure

4/20 mA Temperature Output

True 2-Wire Operation

Push-Button Configuration



#### GENERAL DESCRIPTION

The Model d-RTTI-N4 Digital, Room-Temperature, Transmitter-Indicator is designed to accurately sense ambient room temperature and provide a 4 to 20 mA output signal that is linear to the measured temperature to within  $\pm 0.1$  °F.

The d-RTTI-N4 provides a 0.4-inch high, seven-segment, red, LED display to indicate the ambient temperature across an operating range of -40°F to 180°F (-40°C to 82°C) with a display resolution of 0.1 degrees. The 4 to 20 mA output signal can be configured to represent any temperature range between -40°F and 180°F. The milliamp output configuration can be specified when ordering, or it can be easily configured in the field using the push buttons on the backside of the pc board.

A high precision 1000 Ohm RTD sensor is

used to detect the ambient temperature. The sensor is encased in a stainless steel probe protruding from bottom of the enclosure. An external 1000 Ohm platinum RTD sensor can also be used as input.

This is a true two-wire device with signal and power being provided over a single pair of wires. The operating voltage for the d-RTTI-N4 ranges from 10VDC to 28VDC.

The d-RTTI-N4 is housed in a NEMA 4X, polycarbonate enclosure. The enclosure may be surface mounted using the four mounting holes located behind the cover screws on the face of the unit. Pipe mounting, SnapTrack mounting, and DIN rail mounting options are also available.

## SPECIFICATIONS

### GENERAL

Display: 4 Digit LED with 0.4 inch high, red characters  
Housing: NEMA-4X rated enclosure  
Material: Polycarbonate  
Sensor: 1000 Ohm Platinum RTD, Conforms to DIN Standard EN 60751, Class A  
Open RTD: Output goes upscale  
Temp. Range: -40°F to 180 °F or -40°C to 82 °C  
RFI Immunity: Rated class 3-C: 0.25% of span per SAMA PMC 33.1-1978 (15V/meter field strength 440 to 450 MHz frequency band)  
Weight ½ pound

### DISPLAY

Range: -40.0°F to 180 .0°F or -40.0°C to 82 1°C  
Accuracy: ±0.5 °F (±0.3 °C) at 77 °F (25 °C)  
Thermal Effect: Zero Shift: ±0.002 X (Reading-77 °F)  
Span Shift: ±0.004 X (Reading-77 °F)

### MILLIAMP OUTPUT

Range: 4 to 20 mA  
Accuracy: ±0.7 °F (±1.3 °C) + 0.1% of Span  
Thermal Effect: Zero: Display Shift ± 0.01% of Span per °F  
Span: Display Shift ± 0.01% of Span per °F  
Supply: 10 to 28 VDC  
Max Load:  $R_{ohms} = (V_{supply} - 10V) / 0.020A$   
Supply effect: 0.01% of Span per Volt  
Load Effect: 0.05% of Span per 300 Ohm Change

### DEFAULT CALIBRATION

Displayed Temperature Range: -40 to 180 °F  
4 to 20mA Output Represents: 0 to 100 °F

### FIELD CALIBRATION

Display: -40 to 180 °F or -40 to 82°C  
Output Loop: Milliamp output can be set to represent any temperature within the displayable range  
Caution: The recommended minimum span for the Milliamp output is 35 °F (20 °C). A narrower span will degrade system performance.  
Method: Display prompts and push buttons on back side of pc board

### ORDERING

Default Cal: d-RTTI-N4  
Custom Cal: d-RTTI-N4-[Temp at 4 mA / Temp at 20 mA]  
(e.g. d-RTTI-N4 -30/120 °F)  
Options: -M42 Replace cable grip (shown below) with 1/2 ", water tight, conduit fitting  
-M36 2" pipe mount  
-M31S 3" SnapTrack mount  
-M31D DIN rail mount

**WARRANTY:** 2 YEARS, *Made in USA*

