



## ZN-2401

# ZigBee™ 100mW Wireless Sensor Modem

### Features:

- 2.4 GHz direct sequence spread spectrum technology
- Ad hoc mesh network
- Low power consumption
- Small size, light weight
- CE marked
- FCC certified for unlicensed operation

### Benefits:

- International operation
- Fast acquisition time
- Redundant, self healing network
- Supports large number of nodes
- Low cost

- 4 - 4-20mA Inputs
- 2 - 4-20mA Output
- 1 - RTD Input
- 2 - Input/Output Lines



### Input Specifications

Number of Channels	4 single ended (one common)
Input Range	4 to 20mA
Resolution	12 bit
Step Response	250mS
Crosstalk	<=-85db
Active low-pass filtering	-3dB at 4Hz -90dB at 50Hz -95dB at 60Hz
Input Impedance	124 ohms ± .1%
Absolute Max Ratings	-31mA to +31mA
Converter Type	Successive approximation
Linearity Error (end to end)	<.05%
Offset Calibration Error	<.1%
Max Inaccuracy	±.4% @ 25°C, ±1% @ -40 to +85°C
Accuracy vs. Temperature	<.05%
RTD - Number of Channels	One 3-wire input
RTD - Input Range	-200°C to 650°C, pt100
RTD - Bandwidth	10Hz
RTD - Current Source	200µA
RTD - Linearity	<.05%

## Output Specifications

Number of Channels	2 single ended (one common)
Output Range	4 to 20mA
Output Type	Current sourcing
Resolution	12 bit
Max. Loop Voltage	24Vdc
Load/loop Power Supply	0-1K ohms / 9Vdc
Linearity Error (end to end)	<.05%
Conversion Settling Time	20 $\mu$ s for full scale change

## Power Supply

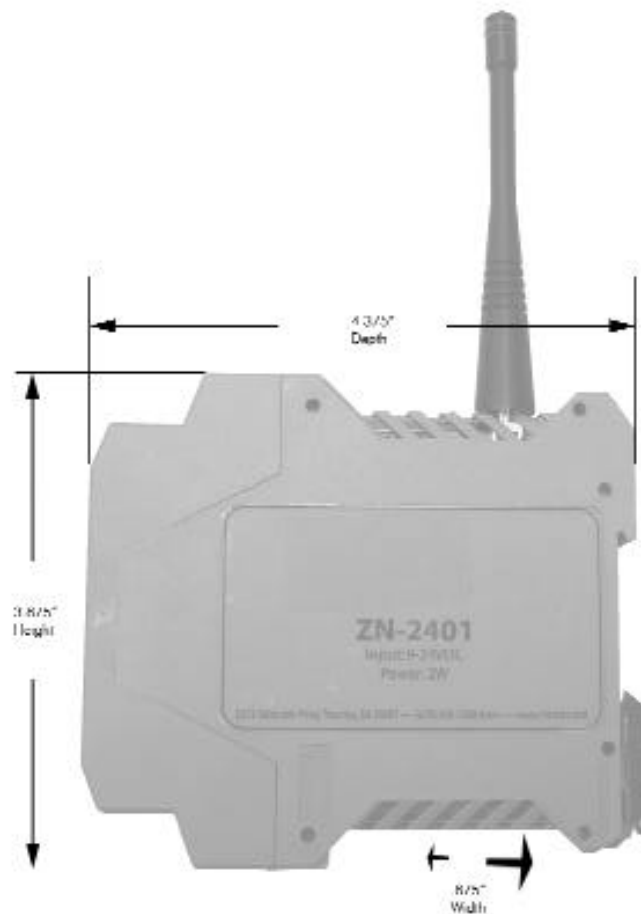
Voltage Range	9V - 30V
Power	
Transmit	900mW
Receive	400mW

## Connector Pinout

Pin 1A : 4-20mA Input	Pin 1C : 4-20mA Output
Pin 2A : 4-20mA Input	Pin 2C : 4-20mA Output
Pin 3A : 4-20mA Input	Pin 3C : I/O
Pin 4A : 4-20mA Input	Pin 4C : I/O
Pin 1B : RTD +	Pin 1D : V in
Pin 2B : RTD -	Pin 2D : GND
Pin 3B : GND	Pin 3D : GND
Pin 4B : GND	Pin 4D : GND

## RF Specifications

RF Frequency	2400 - 2483.5MHz
Tx Power	+20dBm
Rx Sensitivity	-95dBm for 10-5 BER
Antenna Connection	Reverse SMA, Female
Channels	16
Freq. Modulation	O-QPSK



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## **Mesh Networking**

Built around the RFM ZMN-2400 ZigBee module, the ZN-2401 provides a simple means to add wireless mesh networking to a wide array of sensors. The ZigBee wireless module runs a ZigBee stack with the RFM CSM profile. The mesh networking capabilities provide redundant RF paths as well as a means to avoid obstructions. To increase its versatility, the ZN-2401 adds a 100mW power amplifier to provide exceptional range, especially in outdoor installations.

## **Class I Div2 Certified**

The DIN-rail mount ZN-2401 is the complete solution for adding wireless mesh networking functions to any 4 – 20mA sensor. Class I Div 2 certified, the ZN-2401 is designed for industrial sensing applications and provides inputs for four 4 – 20mA sensors and two 4 – 20mA current outputs. Provision is also made to add a temperature sensor without using one of the four current loop inputs.

## **Industrial Construction**

Designed for industrial environments, the ZN-2401 operates over a -40°C to +85°C temperature range and can be powered from a +9Vdc to +24Vdc power supply. The DIN-rail enclosure allows easy installation in close proximity to the sensors. Detachable field device wiring connectors allow the ZN-2401 to be changed out without requiring a messy rewiring job.