RFM®

HNIO-241R
HNIO-241RR
HNIO-241RX

900MHz Relay I/O Wireless Modem

Features:
- *Full multi-point, bidirectional operation*
- *4 channels*
- *Fully configurable through DIP switches*
- *Frequency hopping spread spectrum*
- *Class I Div 2 certified*
- *2.4GHz*
- *Operates over an input voltage range of +9Vdc to +30Vdc making it suitable for battery and solar power sources*

Benefits:
- *Ability to confirm remote status*
- *Operate multiple devices from one modem*
- *Reliable performance in high RF noise environments*
- *Deploy in a wide variety of locations*
- *Useful for industrial and outdoor applications with a -40°C to +70°C operating temperature range and certified for hazardous location use*

Providing multi-point, bidirectional communications, 4 Form A relay outputs, and Class I Div 2 certification, the HN 2.4GHz spread spectrum wireless relay I/O modems are the ideal solution for industrial and commercial monitoring and control applications. All HNIO modems include RFM frequency hopping spread spectrum radio technology that has been field-proven to provide reliable, robust wireless communications in harsh RF environments.

900MHz Relay I/O Wireless Modem

General Specifications

| RF Frequency	902 -927 MHz
Spreading Method	FCC Part 15.247, license free
Modulation	GFSK
Transmit Power	500mW, 100mW, 10mW, software selectable; 1W, 200mW, 20mW with integral patch antenna modules
Receive Sensitivity	-103 dBm for 10-5 BER / -108dBm with integral patch antenna module
RF Channels	54
RF Data Rate	172.8 Kbps
I/O	4 – Opto-Isolated Inputs 0-30V 4 – SPST (Form A) Relays (NO/COM) 250VAC, 5A 1 – SPST Relay (NO;COM) RF Link 1 – RS-232 D9 Serial Port
Operating Voltage	+9Vdc – +30Vdc
Operating Temperature	-40°C to +70°C

Mechanical Specifications

Model	HNIO-241R	HNIO-241RR	HNIO-241RX
Enclosure Material	ABS	ABS (network interface unit) Polycarbonate NEMA 4X (remote radio unit)	ABS (network interface unit) Polycarbonate NEMA 4X (remote radio unit)
Enclosure Size	138 x 108 x 47	201 x 144 x 53 (network interface unit) 130 x 79 x 35 (remote radio unit)	201 x 144 x 53 (network interface unit) 130 x 79 x 35 (remote radio unit)
Antenna Type	2dBi included	3dBi integral patch	2dBi included
Antenna Type	Reverse TNC	n/a	Reverse TNC

Connector1 Pinout

Pin 1 - RFLink NO
Pin 2 - RFLink COM
Pin 3 - Input1 +
Pin 4 - Input1 -
Pin 5 - Input2 +
Pin 6 - Input2 -
Pin 7 - Input3 +
Pin 8 - Input3 -
Pin 9 - Input4 +
Pin 10 - Input4 -
Pin 11 - IN A
Pin 12 - IN B
Pin 13 - OUT A
Pin 14 - OUT B
Pin 15 - GND
Pin 16 - GND

Connector2 Pinout

Pin 1 - Relay1 NO
Pin 2 - Relay1 COM
Pin 3 - Relay2 NO
Pin 4 - Relay2 COM
Pin 5 - Relay3 NO
Pin 6 - Relay3 COM
Pin 7 - Relay4 NO
Pin 8 - Relay4 COM
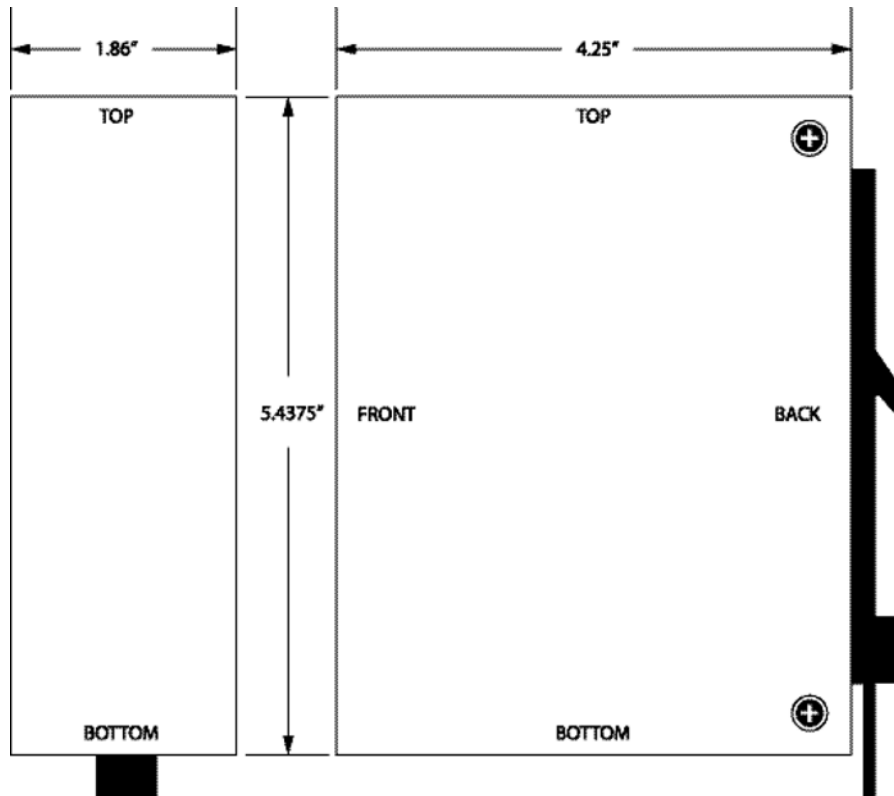
Flexible I/O

Four 250VAC, 5 Ampere Form A relay contacts are controlled by 4 opto-isolated inputs on the companion radio. Offering full bidirectional operation, the four inputs on one end control the relays of the second modem while the inputs of the second radio control the relays of the first modem – simultaneously. The HNIO-R uses sealed relays allowing Class I Div 2 certification. Each base radio can connect up to four remote radios. Four base radios can be located together.

Fully Configurable

The HNIO-241R is fully configurable through DIP switches or an intuitive terminal interface. Configurable options include edge or level triggered inputs, positive or negative activation signals (selectable per channel), frequency of transmission from continuous to once every 45 minutes, and an RF link interruption fail-safe mode. A NO relay contact indicates RF link status.

Industrial Networking

The HNIO-241R is designed for industrial and outdoor applications with a -40°C to +70°C operating temperature range. The HNIO-241R can operate over an input voltage range of +9Vdc to +30Vdc making it suitable for battery and solar power sources. The HNIO-241R is Class I Div 2 certified for hazardous location use. The standard DIN-rail enclosure or optional six inch cabinet allows easy installation whatever the application. The HNIO-241RR and HNIO-241RX are external versions where the remote radio is housed in a separate NEMA 4X rated enclosure with either an integral patch antenna or a reverse TNC antenna connector.

FHSS Technology

The frequency hopping spread spectrum technology used in the HNIO-241R has been powering a wide variety of mission-critical industrial applications for years and embodies extensive experience in spread spectrum radio design. With superior immunity to jamming and multipath fade, RFM FHSS technology transmits data over the air at a crisp 460.8Kbps rate providing short latencies and plenty of bandwidth. Operating in the 2.4GHz band, the HNIO-241R can be deployed license-free worldwide.