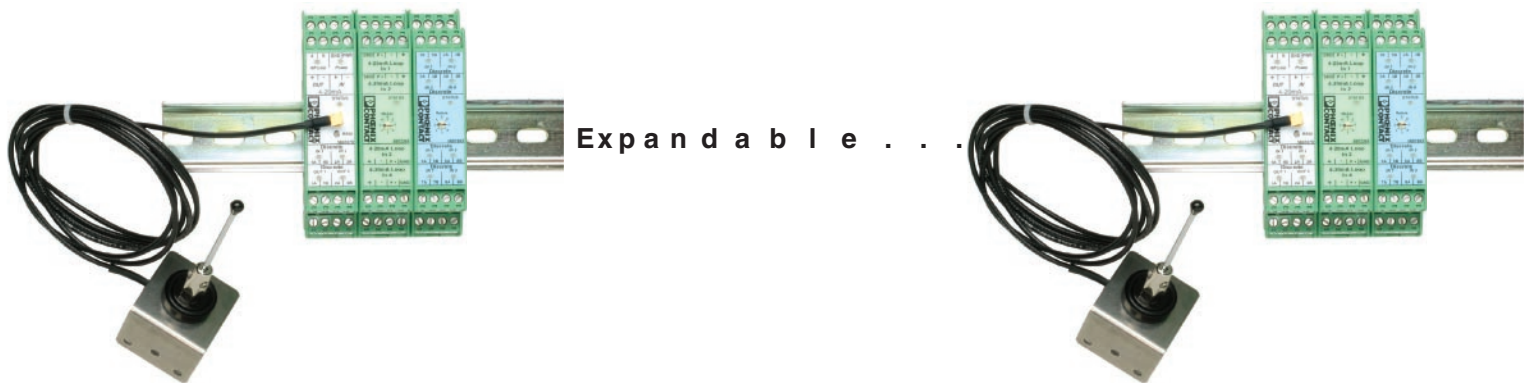# Wireless Interface RAD-ISM-900-SET-BD...
Two-way (Point-to-Point) Monitoring and Control with Expandable I/O Options

Data Sheet 1655B

February 2003

E x p a n d a b l e . . .

Features
- Modular DIN-rail mount transceiver and I/O
- No programming required
- Class I, Div. 2 approved
- Up to eight (8) expandable I/O modules per transceiver on common power and communications bus with multiple combinations
- Maximum thirty-three (33) analog or sixty-six (66) discrete signals in one direction
- Dry contact LINK diagnostic output

Typical Applications
- SCADA systems
- PLC/RTU extensions
- Pump controls
- Tank level/pressure/temperature monitoring
- Water/wastewater
- Petro-chem

Description
The Phoenix Contact RAD-ISM-900-BD is an integrated radio & I/O module designed for bi-directional interfacing of a 4-20mA current loop and two digital signals in harsh industrial environments. This unique design also allows the user the flexibility to add on multiple channels of I/O to the paired transceivers in combinations. The Frequency Hopping Spread Spectrum (FHSS) utilizes 902-928MHz ISM band to guarantee a license free, interference free link between remote devices and the control room. The design is ideal for moving numerous signals within high interference environments without costly cable and conduit runs.

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Engineering Specifications

Range ....600 to 1000 feet (180 to 305 m) in-plant [obstructed]; 4 to 5 miles (6 to 8 km) line-of-sight with Omni antenna; 20+ miles (32+ km) line-of-sight with Yagi antenna

Inputs...One (1) 4-20 mA analog (16-bit resolution; 125 ohms impedance)
Two (2) discrete (5 to 36 V dc)

Outputs..One (1) 4-20 mA analog (16-bit resolution; short-circuit protected)
Two (2) discrete (dry contact, Normally Open (NO), contact rating: 250 V ac/5 A)

I/O Expansion..Eight (8) analog and/or discrete I/O modules per transceiver station

Accuracy ....Current loop: 0.2% of full-scale @ 77°F (25°C)

Repeatability ....Current loop: 0.02%

Wiring Connections...12-24 AWG screw-type terminals; removable terminal blocks

Mounting ....DIN-rail mount

Power (Input voltage) ....9 to 30 V dc

Power Consumption...75 mA at 24 V (average)
200 mA at 24 V (peak)

Reverse Polarity Protection................................Yes

Surge Protection..Yes

Temperature Rating..-40°F to 158°F (-40°C to 70°C)

Humidity ....20% to 90% (non-condensing)

Dimensions ....4.5" x 3.9" x 0.9" (114 mm x 99 mm x 22.5 mm)

LED Indicators ....External (Power, RF Link, I/O Status)

Unit ID..Factory configured (unique); 16-bit coding of each transceiver pair allows multiple units to be used in the same area (easy configuration of spares with HopKey)

Frequency ....902 to 928 MHz - license-free ISM band

Transmit Power...1 Watt (30dBm)

Antenna Connector ....MCX (female)

Environmental Rating...NEMA 1 (equivalent to IP30)

Approvals ....USA - FCC Part 15.247
Canada - ISC RSS 210

Certifications ....CSA/C & US UL - Class I, Div. 2 (Groups A, B, C ,D - pending)

Specifications subject to change without notice

RAD-ISM-900-SET-BD Components
The RAD-ISM-900-SET-BD base system includes the following items:
- Two RAD-ISM-900-BD transceiver modules
- Two 3" ¼ wave whip antennas, each with 6' of RG174 cable. The antennas can be mounted on an "L" bracket (also supplied) inside or outside a cabinet.

Ordering Information

Part Description	Part Number
RAD-ISM-900-SET-BD-ANT Transceiver set	2867270
RAD-ISM-900-BD	2867092

spare transceiver (can be used as repeater or in simplex mode for expansion)

Expandable I/O options

Part Description	Part Number
RAD-IN-4A-I	2867115
RAD-OUT-4A-I	2867128
RAD-IN-8D	2867144
RAD-OUT-8D-REL	2867157