

DME-900/RAD-ISM-900-DATA-BD-BUS Specification Sheet

“Wireless Terminal Block for PLC’s”



DME-900 / RAD-ISM-900-DATA-BD-BUS Transceiver (Shown with I/O Modules Connected)



The DME-900 is a radio transceiver that allows a master PLC to poll remote DME-900 transceivers and extract analog/discrete values. The remote I/O is accessed using MODBUS RTU or Allen Bradley’s DF1 protocol by reading and writing to registers of each separately addressed remote transceiver. The analog and discrete I/O are handled by modules that plug into the DME-900 transceiver. Up to 255 remote locations can be accessed by one master transceiver connected to a PLC. The DME-900 transceivers use the license free 902 - 928MHz band and OMNEX’s proven Frequency Hopping Spread Spectrum technology designed for use in high interference environments. As for reliability, just ask any OMNEX sales rep about the thousands of pieces of heavy machinery HOPLink radios control.

Engineering Specifications: DME-900 / RAD-ISM-900-DATA-BD-BUS (p/n 28 67 29 6)

I/O Interface	
Protocols	MODBUS RTU or AB DF1 Half-Duplex
Interface	RS-232 and RS-485/422 (2-wire or 4 wire half duplex)
Baud Rates	300 to 38,400 baud
Data Format	Asynchronous – 7 Data, even parity or 8 Data, No parity; 1 stop bit
Flow Control	RTS/CTS or None

Radio Specifications	
Range	15-20 miles (24-32km) line-of-sight with Yagi antennas, 4-5 miles (6-8km) with omni antennas
Frequency	902 – 928MHz (License Free ISM Band)
Transmit Power	1 Watt
Channel Hopping	FHSS – 256 channels
Bit Error Rates	10e-6 BER at -106dBm without error correction
Rx Sensitivity	< -110dB
Unit ID	16 bit coding of each transceiver group
Antenna Connector	MCX (female)
Antenna Impedance	50 ohms
Approved Antenna Gain	6dB maximum
FCC ID (USA)	IA9FHOEM900
ISC (Canada)	1338104550A

General	
Power	9 – 30VDC regulated
Power Consumption	Average: 2.5 Watts Peak: 4.1 Watts
Reverse Wiring Protection	Yes
Wiring Connections	RS-232 port: DB9 female RS-485/422 port: screw type terminals; 12-24 AWG
Mounting	35mm DIN rail mount
Dimensions	3.9” x 1.2” x 4.6” (length x width x height) (99mm x 30mm x 117mm)
Case Material	Plastic
Weight	5.5 oz (175 grams)
Temperature Range	-40 to 70C (-40 to 158F)
Environmental Rating	NEMA 1 (equivalent to IP 30)
Approvals	Class I, Div 2, Groups A, B, C & D, UL and CSA (pending)
LED Indicators	(3) Three; RF: glows solid when RF link established TX: flashes when data being transmitted RX: flashes when data being received

The DME-900 transceiver can be configured using either the on-board DIP switches or the Windows based HopView software. Full access to all features can only be obtained by use of the software.

Analog & Discrete Expansion Module Specifications

Discrete Output Expansion Module (size and shape of all modules are the same)



Engineering Specifications: Analog Input Module -
Analog Output Module -
Discrete Input Module -
Discrete Output Module -
Combination Module -

The I/O Expansion Modules are designed to provide analog and discrete inputs and output at remote locations. Each module plugs directly into the 5-pin bus connector on the side of the transceiver. This 5-pin bus connector provides power to the modules and communications with the transceiver. Up to 8 modules can be connected to each transceiver. Utilize the full power of your PLC by maximizing the I/O at your remote sites.

RAD-IN-4A-I p/n 28 67 115
RAD-OUT-4A-I p/n 28 67 128
RAD-IN-8D p/n 28 67 114
RAD-OUT-8D-REL p/n 28 67 157
RAD-IN+OUT-2D-1A-I p/n 28 67 322

Common Specifications	
Temperature	-40 to 158F (-40 to 70C)
Humidity	20% to 90% (non-condensing)
Power	Supplied through transceiver
Wiring Connections	12-24 AWG
Mounting	DIN rail mount
Dimensions	
Case Material	Plastic
Approvals	Class I, Div 2, Groups A, B, C & D, UL/C (pending on Combination Module only)
Environmental Rating	NEMA 1 (equivalent to IP 30)

Discrete Input Module Specifications	
Inputs	Eight (8) Discrete Inputs
Input Voltage Range	5-36VAC/DC
Input Impedance	20K ohms
Indicator LED's	Nine (9) Status LED – one for module status and eight (8) for discrete channel status
Weight	3.7 oz (120 grams)
Channel Isolation	Optical Isolation
Over-voltage rating	100VAC/DC maximum
Power Consumption	30mA maximum

Analog Input Module Specifications	
Inputs	Four (4) Analog Inputs
Range	4-20mA
Input Impedance	< 200 ohms
Indicator LED's	One (1) Status LED
Weight	3.6 oz (115 grams)
Channel Isolation	None – power supply connections are common with the transceivers power supply
Reverse Polarity Protection	Yes
Repeatability	0.02% of full scale
Resolution	16 bit
Over-voltage rating	42VDC maximum
Accuracy	0.2% of full scale
Compatibility	2-wire, 3-wire and 4-wire devices
Power Consumption	100mA maximum

Discrete Output Module Specifications	
Outputs	Eight (8) Discrete Relay Outputs
Contact Ratings	2A @ 250VAC / 30VDC Res.
Output Terminals	Normally Open Dry Contacts
Indicator LED's	Nine (9) Status LED – one for module status and eight (8) for discrete channel status
Weight	4.5 oz (145 grams)
Channel Isolation	Full Isolation
Power Consumption	160mA maximum

Analog Output Module Specifications	
Outputs	Four (4) Analog Outputs
Range	4-20mA
Minimum Loop Voltage Drop	10V
Indicator LED's	One (1) Status LED
Weight	3.9 oz (125 grams)
Channel Isolation	Optically Isolated
Short Circuit Protection	Yes
Repeatability	0.02% of full scale
Resolution	16 bit
Accuracy	0.12% of full scale
Compatibility	2-wire, 3-wire and 4-wire devices
Power Consumption	100mA maximum

Combination Module Specifications	
Inputs/Outputs	One (1) Analog Input, One (1) Analog Output, Two (2) Discrete Inputs and Two (2) Discrete Outputs
Analog Channel Range	4-20mA
Analog Channel Input Impedance	< 200 ohms
Indicator LED's	Five (5); One for Module Status and Four (4) for Discrete Channel Status
Weight	4.0 oz (130 grams)
Channel Isolation	All channels are isolated except for the Analog Input Channel
Reverse Polarity Protection	Yes
Analog Channel Repeatability	0.02% of full scale
Analog Channel Resolution	16 bit
Analog Input Channel Over-voltage rating	42VDC maximum
Analog Channel Accuracy	0.2% of full scale
Analog Channel Compatibility	2-wire, 3-wire and 4-wire devices
Discrete Input Channel Voltage	5 – 36VDC/AC
Discrete Input Channel Over-voltage	100VAC/DC maximum
Discrete Input Channel Input Impedance	20k ohms
Discrete Output Channel Contact Ratings	2A @ 250VAC / 30VDC Res.
Discrete Output Channel Type	Normally Open Dry Contacts
Power Consumption	120mA maximum