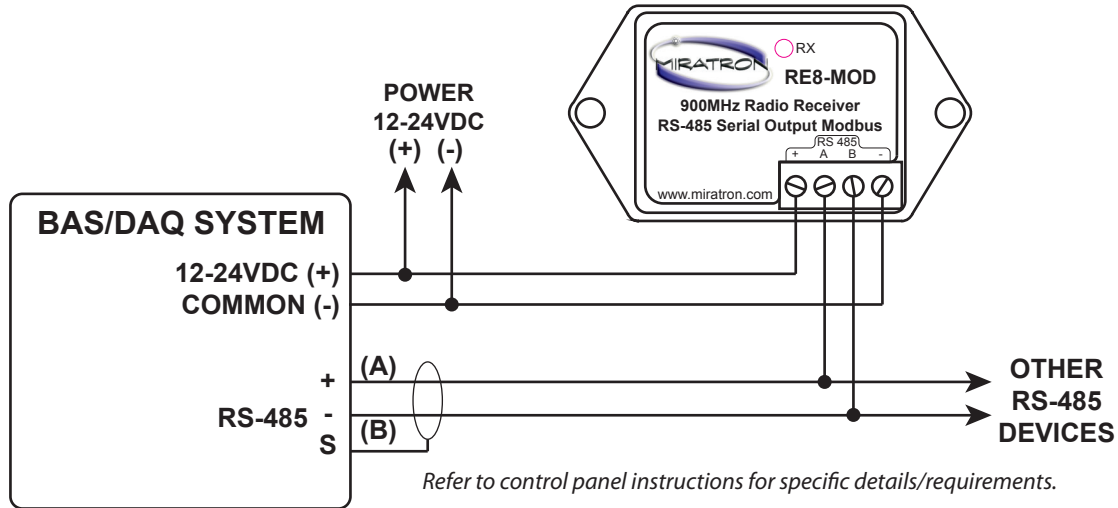




INSTALLATION MANUAL - R8-MOD

RS-485 serial output radio receiver module, MODBUS.

RECEIVER WIRING/CONFIGURATION



SETUP

Modbus ID:

Default Modbus ID# for Miratron R8-MOD receivers is 10.

Pre-configured systems with multiple receivers may have alternate Modbus ID#'s preset. Receivers will be labeled with alternate ID#'s. Modbus ID# may be changed by writing an alternate ID# to register 49999, or by using Miratron R8 configuration software.

Configuration:

Miratron R8 configuration software utility may be used to change the Modbus ID number, pair transmitters and receivers, and make changes to transmitter settings.

Configuration utility and instruction manual can be downloaded from www.environmentaldata.com

Antenna:

R8 Series receivers are equipped with an RP-SMA connector to accommodate a variety of antenna options. The standard antenna is a 1/2 wave whip. For applications in which the receiver may be shielded or near sources of interference, remotely mounted cabled antennas are also available.

SPECIFICATIONS

Power	Power Supply	5 to 24 VDC, 200mA max.
Serial Port	RS-485	
	MOD version	Modbus RTU Serial, 9600 baud 8N1
	BAC version	BACnet MS/TP, consult factory for specifications
Radio	Frequency	2.4GHz (RZ8) or 902-928MHz (RE8), Unlicensed ISM band
	Range (RZ8)	1,000 ft. line of sight
	Range (RE8)	1 mile outdoor line-of-sight. 3 miles with optional directional antenna
Enclosure		Thermoplastic, 3" w x 2.75" h x 1" d, with molded-in mounting brackets

MODBUS REGISTERS

R8-MOD POINTMAP MODBUS SERIAL RECEIVER

RS485 RTU SERIAL, 9600 BAUD 8N1

CONFIGURATION	Read/Write	Name	Units	Type	Notes	DLX	LTE	SML	
Address	[3,4]x001	MAC A		HEX16	Radio Address	✓	✓	✓	
	[3,4]x002	MAC B		HEX16		✓	✓	✓	
	[3,4]x003	MAC C		HEX16		✓	✓	✓	
	[3,4]x004	MAC D		HEX16		✓	✓	✓	
Rates	[3,4]x005	Radio Ping Rate	Seconds	UINT16	Broadcast interval	✓	✓	✓	
	[3,4]x006	Warm Up Time	Seconds	UINT16	For 12v power	✓	✓	✓	
	[3,4]x007	Sample Rate	Seconds	UINT16	For sensors	✓	✓	✓	
Thermistor	[3,4]x008	GPS Ping Rate	Seconds	UINT16	0xFFFF = Disable	✓	✓	✓	
	[3,4]x009	Thermistor Type		UINT16	Note 1	✓	✓	✓	
Temp Set Points	[3,4]x010	T1 Low Set Point	deg C	INT16	Note 2	✓	✓	✓	
	[3,4]x011	T1 High Set Point	deg C	INT16		✓	✓	✓	
	[3,4]x012	T2 Low Set Point	deg C	INT16		0x7FFF = Disable	✓	✓	✓
	[3,4]x013	T2 High Set Point	deg C	INT16		✓	✓	✓	
Pulse Counts	[3,4]x014	Pulse Count A		UNT32	Default = Disabled	✓	✓	✓	
	[3,4]x016	Pulse Count B		UNT32		Factory Option	✓	✓	✓
Modbus ID #	[3,4]9999	Modbus ID#		UINT16	Default = 10	✓	✓	✓	

(x = transmitter #)

DIAGNOSTIC	Read Only	Name	Units	Type	Notes	DLX	LTE	SML
Raw Voltages	3x020	Thermistor 1	mV	UINT16	Analog 0	✓	✓	✓
	3x021	Thermistor 2	mV	UINT16	Analog 1	✓	✓	✓
	3x022	Input 1	mV	UINT16	Analog 2	✓	✓	✓
	3x023	Input 2	mV	UINT16	Analog 3	✓	✓	✓
	3x024	Input 3	mV	UINT16	Analog 4	✓	✓	✓
	3x025	Input 4	mV	UINT16	Analog 5	✓	✓	✓
	3x026	Vacuum	mV	UINT16	Analog 6	✓	✓	✓
	3x027	Battery	mV	UINT16	Analog 7	✓	✓	✓

(x = transmitter #)

DATA	Read Only	Name	Units	Type	Notes	DLX	LTE	SML
Scaled Data	3x030, 3x031	Battery	Volts	FLOAT32	Note 3	✓	✓	✓
	3x032, 3x033	Last Packet Timer	Seconds	UINT32		✓	✓	✓
	3x034, 3x035	Pulse Count A		UINT32		✓	✓	✓
	3x036, 3x037	Pulse Count B		UINT32		✓	✓	✓
	3x038, 3x039	Thermistor 1	deg F	FLOAT32		✓	✓	✓
	3x040, 3x041	Thermistor 2	deg F	FLOAT32		✓	✓	✓
	3x042, 3x043	Analog 1	Volts or mA	FLOAT32		✓	✓	✓
	3x044, 3x045	Analog 2	Volts or mA	FLOAT32		✓	✓	✓
	3x046, 3x047	Analog 3	Volts or mA	FLOAT32		✓	✓	✓
	3x048, 3x049	Analog 4	Volts or mA	FLOAT32		✓	✓	✓
	3x050, 3x051	O/A RH%	%RH	FLOAT32		✓	✓	✓
	3x052, 3x053	O/A TEMP	deg F	FLOAT32		✓	✓	✓

(x = transmitter #)

GPS OPTION	Read Only	Name	Units	Type	Notes	DLX	LTE	SML
GPS Data	3x060, 3x061	GPS Latitude		FLOAT32	Note 4	✓	✓	✓
	3x062, 3x063	GPS Longitude		FLOAT32		✓	✓	✓
	3x064	North/South		UINT16 (1 CHAR)		✓	✓	✓
	3x065	East/West		UINT16 (1 CHAR)		✓	✓	✓

(x = transmitter #)

OTHER	Read Only	Name
Reserved	3x100-3x999	Expansion/Legacy

NOTE 1: Thermistor Type. 2 = 10k TYPE 2, 3 = 10k TYPE 3. Consult factory for other options.

NOTE 2: If Thermistor 1 or Thermistor 2 readings are in programmed range, ping rate is automatically overridden to 10 seconds in auto mode.

NOTE 3: Not Reported Yet = -3568 deg F, Open Circuit / No Sensor = -1768 deg F

NOTE 4: N = 78 (0x4E), S = 83 (0x53), E = 69 (0x45), W = 87 (0x57), No Fix = 45 (0x2D)

Supported Modbus Function Codes

FC03 = Read 16 bit Output Holding Registers (4xxxx table)

FC04 = Read 16 bit Input Registers (3xxxx table)

FC06 = Write Single 16 bit Holding Register (4xxxx table)

Multiple Transmitters

Up to 10 transmitters are supported per receiver device.

30001 - 30999 = Transmitter 0 Registers

Block 0

31001 - 31999 = Transmitter 1 Registers

Block 1

32001 - 32999 = Transmitter 2 Registers

Block 2

...

39001 - 39998 = Transmitter 9 Registers

Block 9