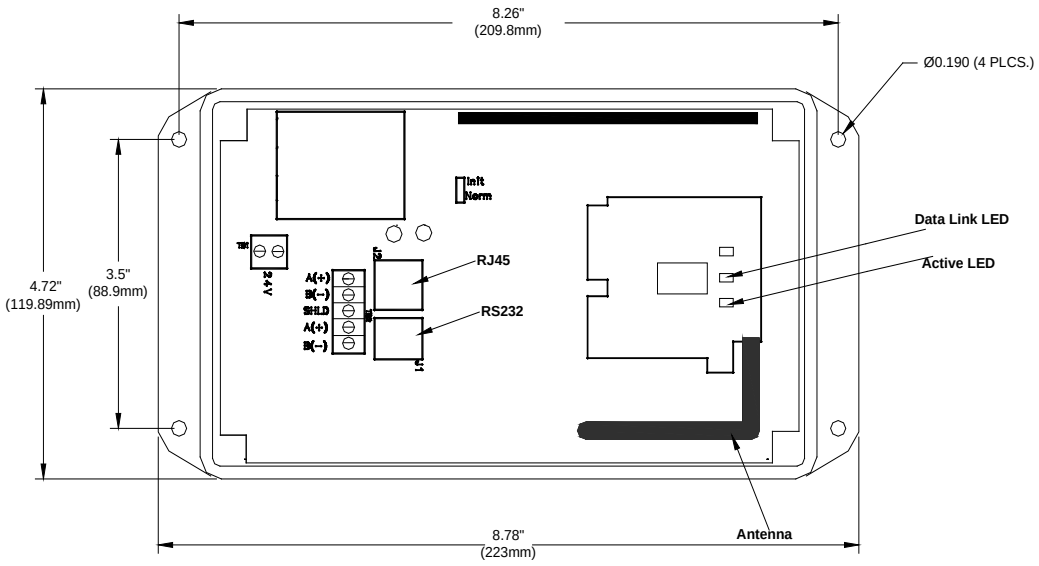
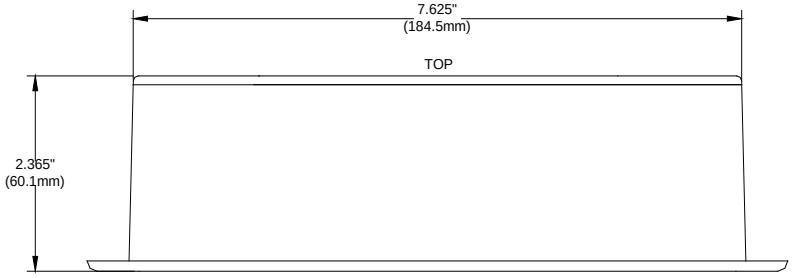
Installation and Operation Instructions
MOD9200D Spread Spectrum
MODBUS Network Transceiver



TOP VIEW



SIDE VIEW

Figure #1

General Description

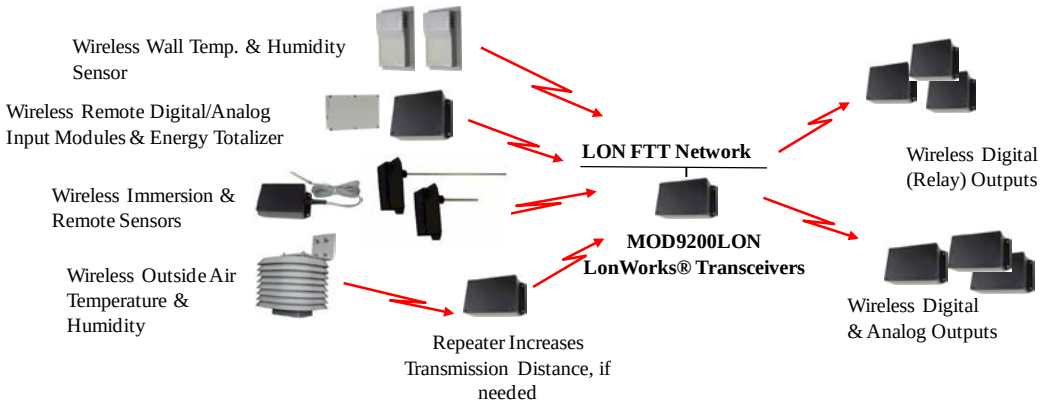
ACI's mesh network Series 2000 MOD9200D MODBUS network transceiver utilizes reliable Spread Spectrum Mesh network Radio technology. Together with other wireless sensors and controls, the system can be used to transmit remote sensor readings, status/alarm indications and control signals wirelessly. It is compatible with any control systems or Programmable Logic Controller (PLC) panels that utilize MODBUS communication protocol or interface. Up to 50 separate physical wireless sensor transmitters and/or wireless remote output (analog & digital) modules can be used with one MOD9200D Transceiver and up to 100 data points and 100 outputs can be monitored and controlled with one (1) MOD9200D Transceiver..

The maximum radio transmission distance is dependent on the building type. The maximum open air transmission distance is one mile. In a typical commercial building with steel I-Beam construction, concrete floors with reinforcing rod, and metal stud walls, it can be expected that transmissions will penetrate vertically through floors and horizontally through 200 to 500 feet of walls, furniture and air.

Generally a wireless system will cover at least three floors – one floor above, and one floor below the receiver location. In some buildings with favorable transmission characteristics the system may cover more floors.

Wireless sensor transmitters should be installed within 200 to 500 feet of the MOD9200D transceiver.

RR2552 signal repeaters can be installed as needed to increase transmission distance between sensors and receivers.



Sub-System Overview

Installation

⚠ PRECAUTIONS

SENSORS, REPEATERS AND RECEIVERS SHOULD NOT BE INSTALLED IN THE FOLLOWING AREAS:

- **INSIDE METAL ENCLOSURE / PANEL**
- **INSIDE OR IMMEDIATELY NEXT TO ELEVATOR SHAFT / ELEVATOR BANKS**
- **IN FRONT OF OR IMMEDIATELY NEXT TO LARGE TREES OR LARGE BODY OF WATER**

TRANSMISSION DISTANCE AND PERFORMANCE WILL BE DRASTICALLY REDUCED.

Refer to the configuration setup instruction manual for the configuration of the MODBUS registers and logging setup. A PC is required for the setup of the Transceiver.

Choose a location close to the computer, network hub, or RS485 loop.

Mount the MOD9200D on the wall using four #8 screws (mounting dimensions see Figure #1).

24VAC Input – Connect 24VAC 60Hz to the input terminals using 18-20AWG wire (See Figure #1).

TCP/IP – If using TCP/IP use RJ45 Category 5 Ethernet cable to connect the Gateway(J2) to the network hub or computer(See Figure #1).

RS232 – If using RS232 RTU/ASCII use the MOD9200D-RS232 cable (sold separately) to connect the Gateway(J1) to the serial port on the computer (See Figure #1).

RS485 – If using RS485 RTU/ASCII use 18AWG shielded twisted pair wire to connect the Gateway(Terminals A+ & B-) to the MODBUS master(see Figure #1).

⚠ CAUTION

DO NOT USE THIS PRODUCT IN ANY SAFETY RELATED APPLICATIONS WHERE HUMAN LIFE MAY BE AFFECTED.

PRODUCT SPECIFICATIONS

Supply	**Voltage**	24VAC 60Hz, 400mA nominal
RF	**Data Protocol**	IEEE 802.15.4-2003/2006
	Operating Frequency	902-928 MHz
	Output Power	+11 dBm
	Receiver Sensitivity	-110 dBm
	Open Field Range	One mile (line of sight)
Network	**Connections**	Ethernet – RJ45, Cat. 5 cable
		RS485 – Twisted pair with shield
		RS232 – Serial Cable
Enclosure	**Material**	ABS
	Rating	UL 94 5VA
Environment	**Operating Temperature**	32 to 150°F (0 to 65°C)
	Operating Humidity	0 to 95% RH (non-condensing)
Approvals		FCC

WARRANTY SPECIFICATION

The ACI Wireless Series is covered by ACI's Two (2) Year Limited Warranty, which is located in the front of ACI'S SENSORS & TRANSMITTERS CATALOG or can be found on ACI's web site: www.workaci.com.