



Model RXT-300

SmartWireless® Transceiver

GAS DETECTION SENSORS ■ INTEGRATED CONTROL SYSTEMS ■ SMARTWIRELESS® ■ PIPELINE ANALYZERS ■ ALARMS

Description

Detcon Model Series RXT-300 SmartWireless® transceivers are ideal for transmitting signal data in a wide range of industrial detection and alarm system applications. The transceiver operates at a universally accepted frequency of 2.4 GHz and is able to transmit signal data from 4-20 mA DC or serial MODBUS inputs. Wireless installations eliminate the cost of point-to-point wiring and can be as simple as a single field device communicating with a controller, or as complex as 32 field device nodes forming a seamless network with a controller, remote display, and audio/visual alarm stations.

Wireless network integrity, security, and reliability are accomplished using direct sequence spread spectrum wireless mesh technology. Every device in the network is capable of functioning as a router and repeater for all other devices in the network. This means that subscribers can “hop” through neighboring devices to communicate with each other, thus widening network access points. This innovative technology creates a robust network that automatically routes around congestion and RF line-of-sight obstacles. Throughput improves as device density increases.

Model RXT-300 is designed with a unique innovation in self-healing mesh networking. Unlike conventional mesh networks, the Model RXT-300's processing power is shared among all network devices. The RXT-300 is able to automatically select another transceiver in the network to take over as the master device, should the designated master transceiver fail. As a result, the RXT-300 does not depend on a single controller to maintain network operation. This feature significantly enhances the redundancy and overall safety level of the wireless system.



Features

- ▶ Universally Acceptable Frequency 2.4 GHz
- ▶ Network Wide Control Processing Capability
- ▶ Low Power Requirement
- ▶ 1 Mile Line-of-Sight Range
- ▶ Robust Mesh Network Topology
- ▶ Network Capacity up to 32 Devices
- ▶ Flexible I/O options

Applications

- ▶ Oil and Gas Drilling Rigs
- ▶ Oil and Gas Production Sites
- ▶ Wastewater Treatment Plants
- ▶ Food and Beverage Processing
- ▶ Pulp and Paper Mills
- ▶ Refining and Petrochemical

System Specifications

Input/Output

Two Analog 4-20mA
RS-485 Modbus™ RTU (9600bps)

Outputs

Four Open Collector Outputs

Electrical Classification

Class I; Division 1; Groups D, C

Safety Approvals

cETLus Class I, Division 1, Groups C, D
ATEX II 2 G Ex d [ib] ib IIB T6 + H2 T4 (pending)
CE Marking (pending)

Warranty

One Year

Environmental Specifications

Operating Temperature Range

-40°C to +85°C; -40°F to +185°F

Mechanical Specifications

Dimensions

8.4"H x 2.4"Dia.; 213mmH x 61mm Dia. (transceiver only)
15.7"H x 10"W x 4.3"D; 399mmH x 254mmW x 109mmD (with J-Box)
15.7"H x 10"W x 8"D; 399mmH x 254mmW x 203mmD (with J-Box & battery)

Weight

2 lbs/0.90 kilograms (transceiver only)
8 lbs/3.62 kilograms (with aluminum J-box)
11 lbs/4.98 kilograms (with SS J-box)
10 lbs/4.53 kilograms (with aluminum J-box & battery)
13 lbs/5.89 kilograms (with SS J-box & battery)

Accessories

Solar Charging Panel

Order Guide

Part Number	Description
976-000300-000	Model RXT-300 Wireless Transceiver
976-000301-000	Model RXT-300 w/Aluminum J-Box & Terminal Board
976-000302-000	Model RXT-300 w/Stainless Steel J-Box & Terminal Board
976-000328-000	Model RXT-300 w/Extended lid aluminum junction box and smart battery pack
976-0003FF-000	SmartWireless® Network Configuration Tool

Electrical Specifications

Power Input

7-30 VDC

Power Consumption

Base RXT-300 unit: <500mW, 20 mA max at 24VDC
Total Power is dependent on com update rate between RXT transceivers

Baud Rate

9600 BPS (9600,N,8,1 Half Duplex)

Performance

Transmit Power Output: 18dBm

Range Limits

Indoor/ No Line of Sight: 1,000ft
Outdoor RF Line of Sight (with standard antenna): 1 Mile
Interface Data Rate: 9,600bps
Throughput Data Rate: 19,200bps
RF Data Rate: 250,000bps
Transceiver Sensitivity: -102dBm

Networking and Security

Frequency: 2.4GHz ISM
Spread Spectrum: DSSS (Direct Sequence Spread Spectrum)
Modulation: 0-QPSK
Supported Network Topologies: Mesh, Point-to-Point
Channel Capacity: 32
Encryption: AES-128 Available

Antenna

Connector: Internal F-Type Antenna
Impedance: N/A

I/O Protection

Over-voltage, Miswiring, EMI/RFI Immunity

Specifications subject to change without notice

Houston ■ Odessa ■ Shanghai ■ Dammam ■ Del Carmen ■ Europe



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