SmartWireless®
Gas Detection Sensor Assemblies

Description

Detcon SmartWireless® gas detection sensors are low power devices covering 4 technologies and a wide range of industrial applications; electrochemical for a long list of toxic gases, solid state MOS for H2S, catalytic beads for combustible gas and infrared for combustible hydrocarbons. All component parts are rated for Class 1; Division 1, Group C, D hazardous areas. These advanced field devices consist of a Detcon Model Series 100 low power gas detection sensor, a Detcon smart rechargeable battery pack, a Detcon Model RXT-300/320 SmartWireless® transceiver and an optional solar charging circuit.

Detcon's proprietary "Self Healing Mesh" technology operates at 2.4 GHZ and conforms to non licensed radio frequency appliance usage around the world. Wireless network integrity and security is accomplished using direct sequence spread spectrum DSSS programming topology. Wireless applications can be as simple as a single field device communicating with a host display or any number of field devices forming a network of subscribers. Each device in the network is assigned its unique device identification or a UID. Processing power is, in a sense, shared among all devices. There is no controller dependence. Each device in the network is capable of acting as the network master, processing real time data and issuing commands to other devices in the network. Every device in the network can act 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 thereby widening network access points. This unique and innovative technology is designed to create a robust network that automatically routes around congestion and line-of-sight obstacles, while improving throughput as subscriber device density increases.

Features

▶ Detcon Model RXT-300 self healing mesh network topology
▶ Universally accepted 2.4 GHz non-licensed frequency
▶ Detcon Model 100 low power gas detection sensors
▶ Loop powered display for gas sensor/field device HMI
▶ Smart rechargeable battery packs with integral safety circuitry
▶ Built-in charge gauge and low voltage cutoff

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
RS-485 Modbus™ RTU (9600bps)

Electrical Classification
Class I; Division 1; Groups C, D

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

Mechanical Specifications

Dimensions
22"H x 10"W x 4.3"D; 558mmH x 254mmW x 109mmD
22"H x 10"W x 8"D; 58mmH x 254mmW x 203mmD (with battery)

Weight
10 lbs/4.53 kilograms (with aluminum J-box)
13 lbs/5.89 kilograms (with SS J-box)
12 lbs/5.44 kilograms (with aluminum J-box & battery)

Refer to the RXT-300/320 data sheet for RXT-300/320 specific specifications
Refer to the appropriate Model 100 Sensor data sheet for sensor specific specifications

Electrical Specifications

Power Input
10-28 VDC

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

Order Guide

Part Number	Description	Operation without Recharge
961-34002_-025-_ _ _	Model SW-DM-100-O2, 0-25 % Oxygen Deficiency	2-3 months
961-EA002_-100-_ _ _	Model SW-DM-100-C2H30, 0-100 PPM Acetaldehyde	2-3 months
961-EG002_-100-_ _ _	Model SW-DM-100-C2H2, 0-100 PPM Acetylene	2-3 months
961-EM002_-100-_ _ _	Model SW-DM-100-C3H3N, 0-100 PPM Acrylonitrile	2-3 months
961-50002_-100-_ _ _	Model SW-DM-100-NH3, 0-100 PPM Ammonia	2-3 months
961-19002_-001-_ _ _	Model SW-DM-100-AsH3, 0-1 PPM Arsine	2-3 months
961-75002_-005-_ _ _	Model SW-DM-100-Br2, 0-5 PPM Bromine	2-3 months
961-EB002_-100-_ _ _	Model SW-DM-100-C4H6, 0-100 PPM Butadiene	2-3 months
961-44002_-100-_ _ _	Model SW-DM-100-CO, 0-100 PPM Carbon Monoxide	2-3 months
961-74002_-010-_ _ _	Model SW-DM-100-CL2, 0-10 PPM Chlorine	2-3 months
961-76002_-050-_ _ _	Model SW-DM-100-CLO2, 0-50 PPM Chlorine Dioxide	2-3 months
961-77002_-001-_ _ _	Model SW-DM-101-CLO2, 0-1 PPM Chlorine Dioxide	2-3 months
961-21002_-005-_ _ _	Model SW-DM-100-B2H6, 0-5 PPM Diborane	2-3 months
961-E0002_-100-_ _ _	Model SW-DM-100-C2H50H, 0-100 PPM Ethanol	2-3 months
961-EZ002_-100-_ _ _	Model SW-DM-100-C2H5SH, 0-100 PPM Ethyl Mercaptans	2-3 months
961-ED002_-100-_ _ _	Model SW-DM-100-C2H4, 0-100 PPM Ethylene	2-3 months
961-EJ002_-100-_ _ _	Model SW-DM-100-C2H4O, 0-100 PPM Ethylene Oxide	2-3 months
961-27002_-001-_ _ _	Model SW-DM-100-F2, 0-1 PPM Fluorine	2-3 months
961-EP002_-100-_ _ _	Model SW-DM-100-CH20, 0-100 PPM Formaldehyde	2-3 months
961-25002_-002-_ _ _	Model SW-DM-100-GeH4, 0-2 PPM Germane	2-3 months
961-26002_-001-_ _ _	Model SW-DM-100-N2H4, 0-1 PPM Hydrazine	2-3 months
961-84002_-100-_ _ _	Model SW-DM-100-H2, 0-100 PPM Hydrogen	2-3 months
961-05002_-04P-_ _ _	Model SW-DM-101-H2, 0-100 % LEL Hydrogen	2-3 months
961-07002_-01P-_ _ _	Model SW-DM-102-H2, 0-1 % Hydrogen	2-3 months
961-08002_-030-_ _ _	Model SW-DM-100-Hbr, 0-30 PPM Hydrogen Bromide	2-3 months
961-09002_-030-_ _ _	Model SW-DM-100-HCL, 0-30 PPM Hydrogen Chloride	2-3 months
961-13002_-030-_ _ _	Model SW-DM-100-HCN, 0-30 PPM Hydrogen Cyanide	2-3 months
961-33002_-010-_ _ _	Model SW-DM-100-HF, 0-10 PPM Hydrogen Fluoride	2-3 months
961-24002_-100-_ _ _	Model SW-DM-100-H2S, 0-100 PPM Hydrogen Sulfide	2-3 months
961-E0002_-100-_ _ _	Model SW-DM-100-CH30H, 0-100 PPM Methanol	2-3 months
961-EK002_-100-_ _ _	Model SW-DM-100-CH3SH, 0-100 PPM Methyl Mercaptans	2-3 months
961-94002_-100-_ _ _	Model SW-DM-100-NO, 0-100 PPM Nitric Oxide	2-3 months
961-64002_-010-_ _ _	Model SW-DM-100-NO2, 0-10 PPM Nitrogen Dioxide	2-3 months
961-39002_-001-_ _ _	Model SW-DM-100-O3, 0-1 PPM Ozone	2-3 months
961-41002_-001-_ _ _	Model SW-DM-100-COCL2, 0-1 PPM Phosgene	2-3 months
961-20002_-005-_ _ _	Model SW-DM-100-PH3, 0-5 PPM Phosphine	2-3 months
961-23002_-050-_ _ _	Model SW-DM-100-SiH4, 0-50 PPM Silane	2-3 months
961-55002_-020-_ _ _	Model SW-DM-100-SO2, 0-20 PPM Sulfur Dioxide	2-3 months
961-EF002_-100-_ _ _	Model SW-DM-100-C4H6O2, 0-100 PPM Vinyl Acetate	2-3 months
961-EL002_-100-_ _ _	Model SW-DM-100-C2H3CL, 0-100 PPM Vinyl Chloride	2-3 months
961-52002_-100-_ _ _	Model SW-FP-100, 0-100 % LEL Combustible	1 week

Accessories

Solar Charging Panel

To complete the part number please select from the options below.

X X X - X X X X X _ - X X X - _ _ _

Position "9" select junction box & display
1 - Aluminum - no display
2 - Aluminum with display
3 - Stainless steel - no display*
4 - Stainless steel with display*

* Battery pack option not available

Position "13" select SmartWireless™ Transceiver
2 - RXT-300
4 - RXT-320

Position "14" power selection
5 - Battery pack (not available with SS j-box)
7 - VAC line power to DC power supply in Div. 1 Alm Enclosure
8 - 12-24VDC supplied by customer
9 - VAC line power to DC power supply w/ stand-by battery in Div. 1 Alm Enclosure

Position "15" select solar panel
0 - None
1 - NEMA 7 direct mount
3 - NEMA 7 remote mount

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