

WaveContact 10i EndPoint

Class 1, Division 1, Multipurpose I/O



Key Benefits

Class 1, Division 1, Groups C and D

Heavy duty, explosion-proof enclosure

5½"W x 6"H x 7¼"D

Solar powered with integrated battery

Integrated interference resistant FreeWave radio (900 MHz or 2.4 GHz)

On board sensor power

Adjustable zero, span, and scale

Modbus RTU/Slave compatible

Ethernet I/O when used with Data Concentrator

Up to 6 Analog Voltage Inputs

2 Precision Analog Inputs with Voltage or Current

2 Digital Inputs w/Pulse Counting

2 Digital Outputs w/Relays

RC-485 Serial Master for Sensors

4 Sensor Power Channels

The rugged and reliable WaveContact™ 10i EndPoint delivers a Class 1, Division 1 I/O solution, intended to solve challenging telemetry I/O requirements in known hazardous locations. With its explosion-proof, self-contained metal enclosure and integrated radio module, the WaveContact 10i product family is backwards compatible with FreeWave FGR/FGR2 (900 MHz) or I2/GXM (2.4 GHz) networks. With six analog inputs, it makes for an incredibly versatile solution for a variety of industrial applications such as pressure monitoring, temperature, fluid levels or other sensor applications.

The WaveContact 10i includes a Smart Serial interface for the built-in RS-485 serial port, capable of powering and communicating directly with intelligent device sensors such as ABB LevelMaster, Siemens Digital Level Sensors, and many other Modbus Capable Devices for adding wireless communications in the Class 1 Division 1 environment. The RS-485 connection can power and communicate with any sensor device up to 960 mW at 12V or 18V per connection, and is capable of communicating with up to 4 connected devices on the same serial channel.

With the WaveContact 10i's flexible architecture, designers can select the sensor of their choice to deliver a versatile overall SCADA network solution. When paired with the WaveContact 50i Data Concentrator, a powerful wireless system is created for I/O applications that use existing FreeWave devices. This allows RTU/PLC or SCADA systems to interface via both serial and Ethernet networks, offering frequent and fast polling with low latency.

While well suited for the types of hazardous environments common to the Oil and Gas industry, the WaveContact 10i's innovative packaging and integrated power subsystem makes it ideal for M2M/SCADA I/O applications in other many industries such as Factory Automation, Industrial Control, Water/Wastewater, Smart Grid, and Precision Agriculture.



WaveContact 10i EndPoint: Technical Specifications

I/O INPUTS

Analog	6 inputs, [2 Voltage (1-5V, 0-10V), 4 voltage (1-5V)] Selectable zero, range, scale , 0.1% Full Scale Accuracy, Full temperature range
Digital	2 digital input channels, with Pulse Counting up to 10kHz, 2 digital output channels with 30 v @ 1A Relays
Serial	RS-485 serial ports (2 or 4 wire)
Update Rate	Configurable, 30 seconds default
Modbus	RTU / TCP via Data Concentrator
Sensor Power	4 total: three 12-18V, 960 mW regulated power, plus one 12V, always on up to 10mA power
Sensor Interface	Smart Sensor 485 Interfaces (Modbus, ABB Level Master, Siemens Tank Probes, Emerson 3300 Tested), 4 Device Multi-drop Supported

900 MHz MM2

2.4 GHz GXM

TRANSMITTER

Frequency Range	902 to 928 MHz (FHSS) (DTS)	2.4 to 2.483 GHz ISM Band
Output Power	10 mW to 1 W	10 mW to 500 mW with option to limit to 100 mW
Data Link Range	60 miles, with clear Line of Sight	20 miles, with clear Line of Sight
Modulation	2 level GFSK	2 level GFSK
Data Rate	Selectable speeds 115.2 to 153.6 kbps over the air	Selectable speeds 115.2 to 153.6 kbps over the air
Occupied Bandwidth	230 kHz	230 kHz
Hopping Patterns	15 per band, 105 total, user selectable	15 per Band, 105 total, user selectable
Hopping Channels	50 to 112, user selectable	3 groups of 80
Hopping Bands	7, user selectable	7, user selectable
Frequency Zones	16 zones	16 Zones
RF Connector	SMA	SMA

RECEIVER

Sensitivity	-106 dBm @ 115.2 kbps for BER 10 ⁻⁴ , -101 dBm @ 153.6 kbps for BER 10 ⁻⁴	-103 dBm @ 115.2 kbps for BER 10 ⁻⁴ , -100 dBm @ 153.6 kbps for BER 10 ⁻⁵
IF Selectivity	40 dB at fc +/- 230 kHz	20 dB at fc +/- 230 kHz
RF Selectivity	50 dB at 896 MHz, 935 MHz	50 dB at 2.395 GHz, 2.488 GHz
Dynamic Range	+10 dBm 3rd Order Intercept Point at Input Connector	+10 dBm 3rd Order Intercept Point at Input Connector

POWER REQUIREMENTS

Normal Operation	Normal operation requires included, certified Solar Panel. External 12V can be applied to charge battery and operation with battery removed, not certified for C1D1 operation when used with external power supply
Power Draw	2W typical, 6W maximum
Solar Panel	6 watt, certified unit included
Battery Pack	Rechargeable, 5 AH lead acid

GENERAL INFORMATION

Operating Temp Range	-40° C to +60° C (-40° C F +140° F)
Dimensions	5½" wide, 6" high x 7¼" deep
Weight	8 lb. (3.6 kg)
Humidity	0 to 95% non-condensing
Type	Explosion Proof NEMA 4x IP rating
Material	Aluminum
Model	WC10i
Diagnostic Cable	Micro USB
Wire Harness	23 Wire Harness standard; 7 Wire Harness option
Mounting Plate	Optional Mounting plate with U Bolts for flexible mounting is available (AOHØØ1ØSP)
Master Radio	WC50i Data Concentrator required as Master Radio

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For more information, visit www.freewave.com

Specifications are subject to change without notice.

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