

WaveLine 10i

Class 1, Division 1, Intrinsically Safe I/O



Key Benefits

Intrinsically safe: CSA Certified Class 1, Division 1, and 2 Groups (C and D)

NEMA 4x rated enclosure

3.7"W x 5.0"H x 4.2"D

Simple to use, intuitive keypad

Two 0 – 5 Volt DC analog sensor inputs

Solar powered integrated battery

Two digital switch I/O's – jumper selectable as input or output

Radio configuration via Tool Suite

I/O configuration via keypad and display

Integrated diagnostics port inside the enclosure

Integrated 1-watt FreeWave radio compatible with FGR/FGR2 Series

On board sensor power

Adjustable zero, span, and scale

Adjustable time sensor

Integrated temperature sensor

Modbus RTU/slave compatible

The rugged and reliable WaveLine™ 10i delivers a class 1, division 1, intrinsically safe design for protection in hazardous locations, enabling its use in explosive gas applications. Designed with a self-contained enclosure and a 1-watt radio, the WaveLine 10i Series is constructed for outdoor applications and is compatible with all FreeWave FGR/FGR2 networks. Two analog inputs enable versatile use across applications such as pressure monitoring, temperature, or analog sensor applications.

With the WaveLine 10i's flexible design, end users can select the analog sensor of their choice for a versatile overall solution. Two digital channels are jumper selectable as either input or output, enabling the control and monitoring of process control applications using a secure reliable data link.

Though well suited for the oil and gas industry in hazardous environments, the WaveLine 10i's convenient small packaging and integrated solar panel make it ideal for small I/O count applications in other industries such as Smart Grid, water/wastewater, and agriculture. The WaveLine 10i is assembled and tested in Boulder, Colorado, and is compatible within existing FreeWave architectures.

Applications



Oil and Gas



Smart Grid



Water/
Wastewater



Agriculture



WaveLine 10i: Technical Specifications

TRANSMITTER

Frequency Range	902 to 928 MHz (FHSS) (DTS)
Output Power	10 mW to 1 W
Data Link Range	10 miles, Clear Line of Sight
Modulation	2 level GFSK
Data Rate	Selectable speeds 115.2 to 153.6 kbps over the air up to 38.4 kbps to Modbus slave
Occupied Bandwidth	230 kHz
Hopping Patterns	15 per band, 105 total, user selectable
Hopping Channels	50 to 112, user selectable
Hopping Bands	7, user selectable
Frequency Zones	16 zones
RF Connector	SMA

RECEIVER

Sensitivity	-98 dBm @ 115.2 kbps for BER 10-4 -93 dBm @ 153.6 kbps for BER 10-4
IF Selectivity	40 dB at fc +/- 230 kHz
RF Selectivity	50 dB at 896 MHz, 935 MHz
Dynamic Range	+10 dBm 3rd Order Intercept Point at Input Connector

I/O INPUTS

Analog	Two 0 – 5 VDC inputs, 12-bit ADC, settable zero, range, scale
Digital	2 Digital Switch I/O's – jumper selectable as input or output
Update Rate	2 – 999 seconds, configurable
Modbus	RTU slave device, 8-bit addressing

DISPLAY

Type	32-character LCD display with auto-contrast control
Window	Polycarbonate coated

POWER REQUIREMENTS

Operating Voltage	(+/-) 4.5 to 20 VDC input voltage, 2.5 mm power jack for external power
Solar Panel	Custom C1D1, low-voltage, 8-watt panel
Sensor Power	12 V – 13.5 V; 30 mA DC max; 400 ohm load

GENERAL INFORMATION

Operating Temperature Range	-30° C to +65° C (-20° F to +150° F)
Dimensions	3.7"W x 5.0"H x 4.2"D
Weight	2.8 lbs.
Humidity	0 to 95% non-condensing
Type	Gasket sealed NEMA 4X
Material	Thermoplastic polyurethane
Model	WL10i-R1-0220
AC-DC 6V Power adaptor	EMD6300FP
Diagnostic Cable	ASC0409DC (FreeWave standard 3-pin)

