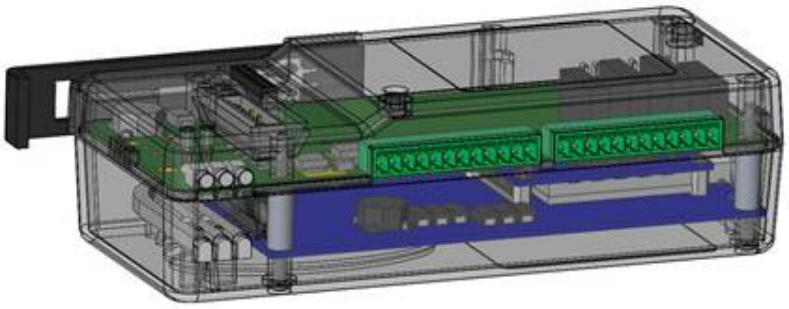
FGR2 I/O Series

FGR2 I/O Expansion Module



FGR2-IOE

APPLICATIONS

Oil & Gas | Smart Grid | Water & Wastewater | Precision Agriculture

KEY FEATURES

- **Modular:** Up to 15 Expansion Modules can be added to a Serial Base or Radio Base
- **Flexible:** Can be added to Radio Base for wireless I/O or Serial Base or Radio Base
- **Low Latency:** Bus communications provide access times as fast as 11 milli-seconds to 1st Expansion Module, 15th Expansion Module and every module in between
- **Powerful:** Each universal channel can be configured as a Digital Input, Digital Output, Analog Input, Analog Output or Sensor Power
- **Reliable:** Fail-Safe settings are user configurable for DO and AO channels
- **Easy Sensor Selection:** Native support for 4 to 20 mA, 1 to 5 V and 0 to 10 V transducers with loop power
- **High Accuracy:** Maximum reading error of 0.10% of AI channels across entire operating temperature
- **Low Power:** Suitable for solar powered installations
- **Safe:** UL approved for Class 1 Division 2, Groups A, B, C and D
- **Industrial Grade:** All devices are tested and tuned across full operating temperature range frome –40° to +75° C

OVERVIEW

FreeWave Technologies' I/O Expansion module offers a reliable, safe and easy way to meet the growing measurement and control demands of your automation system. I/O Expansion builds on existing communications systems and controller infrastructure to extend the useful life of your automation system. The Expansion Modules snap easily on to a radio base to provide 188 I/O points over a single wireless link. The Serial Base features a wired serial interface to provide up to 192 I/O points to an existing PLC, RTU or other device with serial communications

All radios are designed, manufactured and tested in Boulder, Colorado.

MODEL	DIMENSIONS	PRODUCT OPTIONS
FGR2-IOE-4404	7 1/8 H, 3 1/8 W, 1 L (inches)	Enclosure
FGR2-IOE-4422	7 1/8 H, 3 1/8 W, 1 L (inches)	Enclosure
FGR2-IOE-4440	7 1/8 H, 3 1/8 W, 1 L (inches)	Enclosure

FGR2 I/O Expansion Module Technical Specifications

Preliminary

PART NUMBER SUMMARY			
Serial Base	**FGR2-IOE-4404**	**FGR2-IOE-4422**	**FGR2-IO-4404**
Frequency Range	**FGR2-IOE-4404**	**FGR2-IOE-4422**	**FGR2-IOE-4404**
Number of Universal Channels	4	4	4
Number of Input-Only Channels	4	4	4
Number of Isolated Digital Input Channels	4	2	0
Number of Isolated Digital Output Channels	0	2	4

TECHNICAL SPECIFICATIONS	
Digital Input	**Universal Channels**
Input ON voltage	> 3.0 V
Input OFF voltage	< 2.5 V
Pulse-counting frequency, standard	100 Hz or 4 ms
Pulse-counting frequency, high	-
Pull-up resistor	1 kΩ to 3 V
Pull-down resistor	10 kΩ to ground
Digital Output	**Universal Channels**
Output ON current	1 A to ground
Output ON impedance	0.2 Ω to ground, plus diode
Output OFF impedance	2.34 kΩ to ground
External voltage connection	V_{BAT}
Analog Input	**Universal Channels**
Resolution	20 bits
Maximum Reading Error	0.10%
Voltage Input Range	-2.5 to 12.5 V
Current Input Range	0 to 22 mA
Current Sense Resistor	250 Ω
Analog Output	**Universal Channels**
Current Output Range	0 to 22 mA
Maximum Output Error	0.25%
Sensor Power	**Universal Channels**
Voltage Output	0.5 V below V_{BAT}
Current Output	Up to 50 mA
Power Supply	
Operating Supply Voltage	7.5 to 28 VDC
Current Consumption 12 V	DI 17 mA, DO 18 mA, AI voltage, 17 mA, AI current 25 mA, AO 0 mA 17 mA, AO 4 x 20 mA 98 mA

GENERAL INFORMATION	
Mounting	Integrated 35 mm DIN rail clip
Dimensions	7 1/8 H, 3 1/8 W, 1 L (inches)
Weight	0.35 lbs.
Temperature	-40° C to +75° C
Humidity	0 to 95% non-condensing

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