



F2A1A

Frequency to Analog Converter Module

Features:

- Economically priced
- Rugged, compact and lightweight
- Electrically Isolated input/output
- 5 to 600,000 RPM range (0.1 to 10 KHz)
- Compatible with most speed sensors (TTL)
- 12 to 24 V dc input power
- User configurable*
- View real-time data on PC*
- Store data in Excel™ file in real time*
- 4-20 mA or 0 to 5 V dc scalable output
- 5 V dc or 10 V dc sensor supply (jumper selectable)

Typical Uses:

- Process monitoring
- Tachometer signal generator
- QC and R&D
- Engine performance
- Signal conditioning for data acquisition
- Motor or pump monitoring

*Requires optional USB Programming Cable and free downloadable PM Remote Software



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The F2A1X Frequency to Analog Converter Module converts a frequency input signal into a proportional analog voltage (0-5 V dc) or current (4-20 mA) output. The output signal is electrically isolated from the input signal and input power source, effectively eliminating troublesome ground loops. The input signal can be supplied from a Monarch Instrument sensor (measuring RPM for example) or any source of digital signal not exceeding 12 volts.

The F2A1X requires 12-24 V dc input power and consumes less than 100 mA. It can be operated freestanding or can be mounted to a panel using the fixed wings on either end of the device.

The device is factory pre-programmed with the input measurement mode (Frequency or RPM) and the analog signal full-scale output as specified when ordered. These settings can be changed using the optional USB Programming Cable and downloadable PM Remote Software.

The F2A1X accepts input signals from optical, infrared, laser, or 3-wire proximity sensors, or direct TTL or external ac inputs. There are multiple settings relating to the sensor input that can be set by the user.



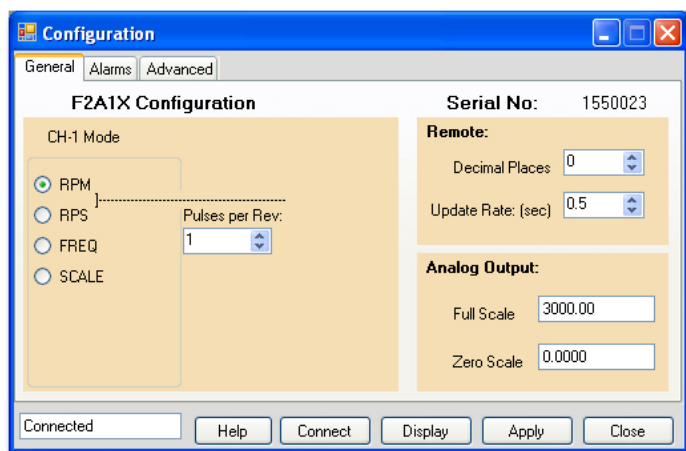
F2A1X Frequency to Analog Converter Module



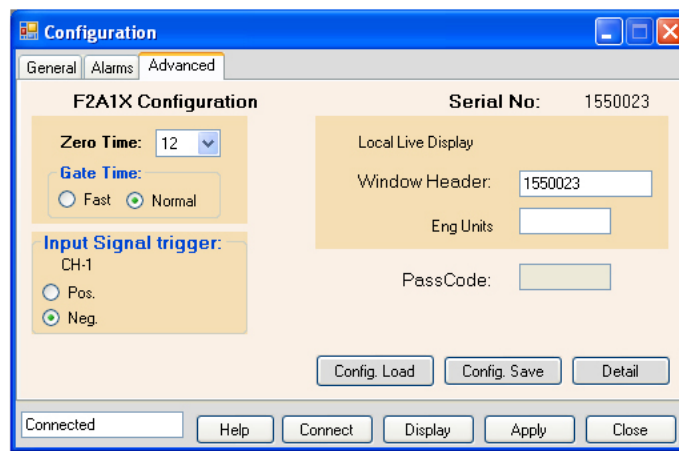
PM Remote Software

PM (Panel Meter) Remote Software is a Windows-based software application that allows the user to customize the configuration of the F2A1X. Set the mode of operation to RPM, RPS, Frequency, Totalization, Single Event Capture or Rate of Change and select the input scale (pulses per revolution). In addition, the decimal places displayed can be selected as well as the output scale of the optional analog output modules.

The two alarm setpoints are easily configured within the Alarms tab. From the Advanced tab, the user can set the input pulse trigger and optional output pulse to be positive or negative. Complete unit configurations can be saved to disk and quickly reloaded or transferred to other F2A units. Real-time data can be displayed directly on the PC along with max/min. values. Data can be streamed directly into Microsoft Excel with one simple mouse click. PM Remote Software is free and downloadable from the [Monarch website](http://www.monarchinstrument.com). If you order the serial communication option with 1/8" phone plug connector, you will need to order the optional USB Programming Cable. Units ordered with USB, RS232 or Ethernet do not include an interface cable.



F2A1X Configuring Basic Features



F2A1X Advanced Features



F2A1X Real-Time Display



USB Programming Cable Connects PC directly to F2A1X

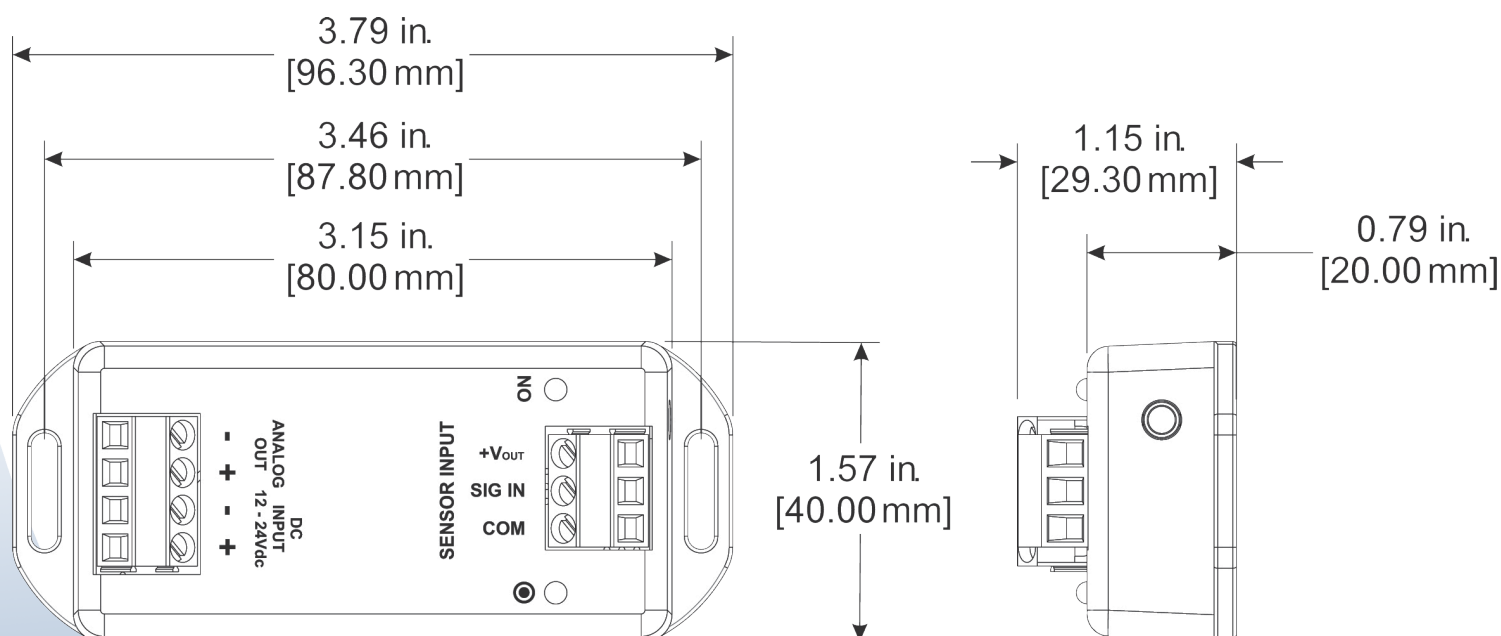
F2A1X Frequency to Analog Converter Module



Specifications*	F2A1X Frequency to Analog Module
Input Range	0.1 to 10 KHz, 5 to 600,000 RPM
Accuracy†	0.02% FS
Voltage Output Option	0 to 5 V dc out, 5 mA 15-bit resolution; zero and full scale settings as specified when ordered or programmable using USB Programming Cable and PM Remote Software
Current Output Option	4 to 20 mA out, 15-bit resolution 10 V dc compliance voltage; zero and full scale settings as specified when ordered or user programmable using USB Programming Cable and PM Remote Software
Resolution	0.003% of Full Scale
Power Supply	12 to 24 V dc $\pm 5\%$ @ 150 mA max
Input	TTL input or ± 3 V ac to ± 12 V ac
Sensor Supply	5 V dc or 10 V dc at 75 mA – user selectable
Dimensions LxWxH	3.2 in. x 1.6 in. x 1.2 in. [80 mm x 40 mm x 28 mm] excluding the mounting wings

*Specifications are subject to change without notice.

†Rated accuracy reached after 10-minute warm up period.



F2A1X Frequency to Analog Converter Module

Ordering Information

Configure Model # here:

F2A1X – [] – [] – []

Input Mode (select input measurement mode)

- 1 Frequency (Hz/RPS)
- 2 RPM (assumes 1 pulse per revolution)
- 3 Custom (contact factory or order optional PM Remote Software and USB programming cable)

Analog Output

- 1 0 to 5 V dc, Isolated
- 2 4-20 mA, Isolated

Full Scale Output

xxx Specify full scale output of analog signal (1 to 600,000)

Application Example 1: Convert 0 - 5000 RPM signal to a 4-20 mA output
Model number = F2A1X-2-2-5000

Application Example 2: Convert a 0 to 8kHz signal to a 0-5 V dc output that is proportional to 0 - 200,000 GPH (Gallons Per Hr)
Model number = F2A1X-1-1-200,000

[Accessories available on website](#)

[For details, see F2A1X webpage.](#)

Note: More advanced setups such as multiple input pulses per revolution, elevated zeros and custom scale factors can be accomplished using the advanced setup capabilities of PM Remote Software and USB Programming Cable.

Monarch Instrument Sensors:

6180-030	ROLS-W	Remote Optical Laser Sensor with 8 ft. cable, 4 tinned leads, mounting bracket with jam nuts and 12 inches of T-5 Reflective Tape
6180-056	ROS-W	Remote Optical Sensor with 8 ft. cable, mounting bracket and 12 inches of reflective tape
6180-058-25	ROS-HT-W-25	Same as 6180-056 for high temperature applications to 257 °F (125 °C) with 25 ft. cable
6180-013	P5-11	Two-wire inductive NAMUR output with 10 ft. cable and tinned leads
6180-032	PS-12	Three-wire sensor that outputs an open collector PNP pulse
6180-012	M-190W	Magnetic Sensor with 8 ft. cable
6180-019	GE200 HP	Gasoline Engine Electromagnetic Inductive Sensor and amplifier with 23 ft. of cable
6180-080	RLS-W	Rugged Laser Sensor with removable 3 m cable, watertight M12 connector to tinned leads

Accessories:

6180-031	USB Programming Cable	Enables the user to connect the F2A1X to a Windows® PC USB port to use PM Remote Software to program the unit. The software also allows remote monitoring of the RPM using a graphic display or an Excel™ spreadsheet. Software available for download at monarchinstrument.com
6180-070	T-5 Reflective Tape	5 ft. roll, 0.5 inch wide
6180-079	T-5 WP Reflective Tape	Waterproof reflective tape (honeycomb pattern) - 5 ft. roll, 1 inch wide

F2A1X 0824



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