

# F2A1X

## Frequency to Analog Converter/Tachometer

### Description

The F2A1X Frequency to Analog module converts a frequency input signal into a proportional analog voltage (0-5Vdc) or current (4-20mA) output. The output signal is electrically isolated from input signal and input power source effectively eliminating troublesome ground loops. The input signal can be supplied from a Monarch sensor (measuring RPM for example) or any source of digital signal not exceeding 12 volts. The F2A1X is factory preprogrammed with the full scale output and input scale factor of your choice. These settings are also user configurable with the optional USB programming cable and PM Remote Software. PM Remote Software also displays data in real-time and allows data to be stored directly to Microsoft Excel™. The F2A1X requires 12-24Vdc input power.



### Features

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

\*Requires optional USB programming cable and PM Remote Software

### Typical Uses

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

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## PM Remote Software

PM Remote Software is a Windows™ based software application that allows the user to quickly and easily customize the configuration of the F2A1X. Set the mode of operation to RPM, RPS or Frequency and select the input scale (pulses per revolution). The isolated analog output is also fully scalable.

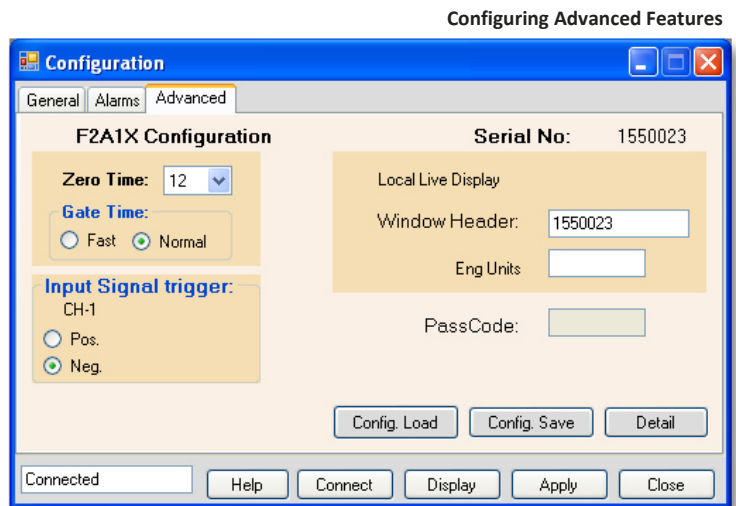
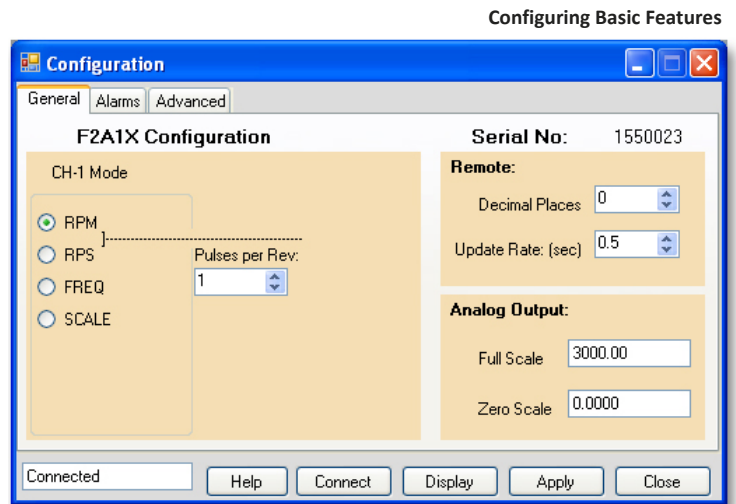
The user can set the input pulse trigger, zero timeout and gate time.

Real-time data can be displayed directly on the PC along with Min and Max values. Decimal places and display update rate are user configurable.

Data can be streamed directly into Microsoft Excel™ with one simple mouse click.

Unit configurations can be saved for reloading in the future.

PM Remote Software is included when purchasing the optional USB programming cable. Complete instructions are included on the software CD.



Real-Time Display



F2A1X Programming Port



# F2A1X

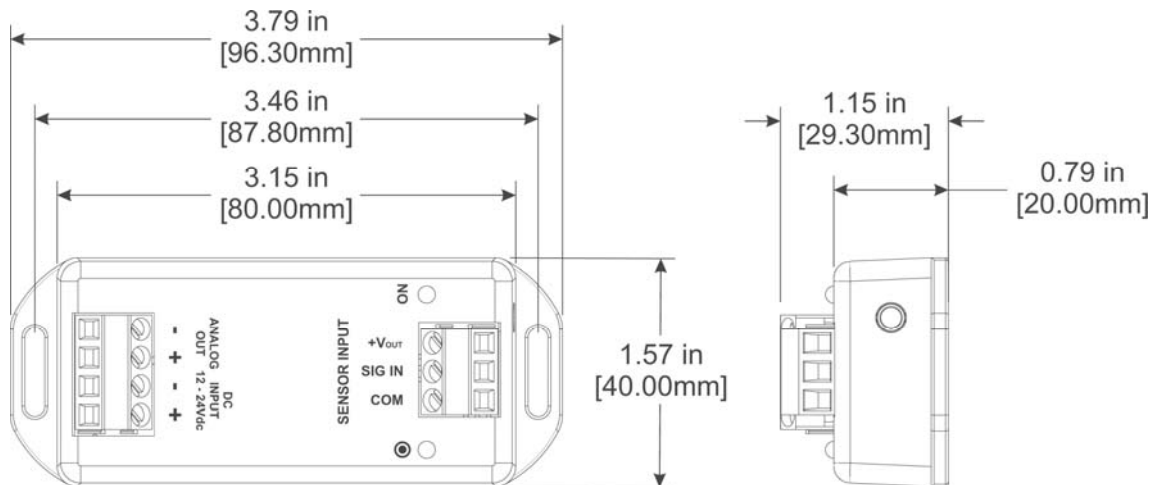
## Frequency to Analog Converter/Tachometer

### Specifications

<b>Input Range:</b>	0.1 to 10,000 Hz (5 to 600,000 RPM)
<b>Accuracy:</b>	0.005%
<b>Resolution:</b>	1 RPM
<b>Dimensions:</b>	L x W x H = 80 x 40 x 28 mm (3.2 x 1.6 x 1.2 inches) excluding the mounting wings
<b>Power Supply:</b>	12 to 24Vdc $\pm$ 5% @ 150mA max
<b>Inputs:</b>	TTL input or $\pm$ 3Vac to $\pm$ 12Vac Programmable using PM Remote Software and USB programming cable.
<b>Sensor Excitation:</b>	5 Vdc or 10 Vdc @ 75mA (user selectable jumper setting).
<b>Recommended Sensors:</b>	Optical - Monarch ROS-W Proximity - Monarch P5-11 Infrared - Monarch IRS-W Laser - Monarch ROLS-W
<b>Current Output Option:</b>	4 to 20 mA out, 16 bit resolution (0.0015%) 10Vdc compliance voltage. Zero and Full scale RPM settings as specified when ordered or programmable using PM Remote Software and USB programming cable.
<b>Voltage Output Option:</b>	0 to 5 Vdc out, 5 mA, 16 bit resolution (0.0015%). Zero and Full scale RPM settings as specified when ordered or programmable using PM Remote Software and USB programming cable.
<b>Resolution:</b>	76 $\mu$ volts or 30.5 Nano amps
<b>Environmental:</b>	Indoor use only, Installation category II per IEC 664 <b>Temperature:</b> -10°C to 50°C operating per IEC 61010-1 <b>Humidity:</b> Maximum relative humidity 80% for temperatures up to 31°C, decreasing linearly to 50% relative humidity at 40°C.
<b>Electrical Safety:</b>	Meets EN61010-1:2001, EC low voltage directive 72/23/EEC and 89/336/EEC.



### Dimensions



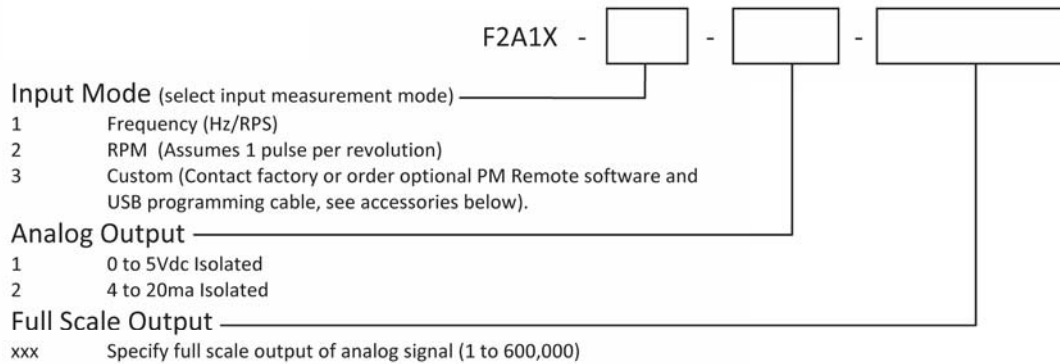
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### Ordering Information

To specify your F2A1X: Select the input mode and analog output signal. Then specify the full scale output range of the analog output (the low will be set to zero). These ranges are factory pre-set or can be user configured with the optional USB cable and PM Remote software.



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

**Application Example 2:** Convert a 0 to 8kHz signal to a 0 - 5Vdc output that is proportional to 0 to 200,000 Gallons per hour GPH  
 Model number = F2A1X - 1 - 1 - 200,000

**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.

### Accessories

6180-031	<b>USB Programming Cable and Software</b>	3 ft. USB Programming Cable and Windows™ compatible PM Remote Software Package. Allows user configuration of operation mode, analog output scaling, decimal places, display update rate and pulses per input. View real time data in digital format and/or through Microsoft® Excel.
1064-2022-001	<b>WIRE PER FOOT</b>	3-wire shielded Sensor Cable, bulk lengths for any sensor. Specify Total Length.
6180-070	<b>T-5</b>	Reflective Tape - 5 foot roll, 0.5 inch wide
6180-079	<b>T-5WP</b>	Waterproof reflective tape (honeycomb pattern) - 5 foot roll, 1 inch wide
6180-CAL	<b>Calibration - N.I.S.T.</b>	N.I.S.T. Traceable Certificate of Calibration / Re-calibration

### Sensors

6180-030	<b>ROLS-W</b>	Remote Optical Laser Sensor with 8 foot cable, 4 tinned leads, mounting bracket with jam nuts and 12 inches of T-5 tape.
6180-056	<b>ROS-W</b>	Remote Optical Sensor with 8 foot cable, mounting bracket and 12 inches of reflective tape
6180-057-25	<b>ROS-P-25</b>	Remote Optical Sensor with 25 foot cable, mounting bracket and 12 inches of reflective tape
6180-058-25	<b>ROS-HT-W-25</b>	Same as 6180-056 for high temperature applications to 257°F (125°C) with 25 foot cable
6180-037	<b>MT-190W</b>	Magnetic Sensor/Amplifier with 8 foot cable and 3 tinned leads
6180-013	<b>P5-11</b>	Proximity Sensor with 6 foot cable
6180-014	<b>GE-200HP</b>	Gasoline Engine Electromagnetic Inductive Sensor and amplifier with 23 feet of cable.
6180-021	<b>IRS-W</b>	Infrared Sensor with 8 foot cable, tinned wires and mounting bracket.