



# ACT-3X

## Panel Tachometer/Totalizer

### Features:

- 1/8 DIN sized
- 5-digit LED
- 5 to 999,990 RPM range
- Universal sensor inputs
- User configurable with front panel pushbuttons or optional PM Remote Software
- View real-time data on PC\*
- Store data in Excel™ file in real time\*
- Universal AC power 100 to 240 Vac, 50/60 Hz or optional 12 or 240 Vdc power
- Optional 4-20 mA or 0-5 Vdc scalable output

### Typical Uses:

- Process monitoring
- Research and development
- Field testing
- Engine performance analysis
- Interface to PLCs
- Trip speed testing
- Verification of rate of change (speed)
- Single-event capture
- Predictive maintenance

\*Requires downloadable PM Remote Software



The ACT-3X is a powerful NIST calibrated, fully programmable tachometer and totalizer. It accepts inputs from all Monarch speed sensors or from any standard TTL generating device. The unit operates from 120/240 Vac input power or from 12 or 24 Vdc input power (optional). Programming is easily performed through the 5 front panel pushbuttons or using the optional **PM Remote Software**. Set up for single channel monitoring. Programmable scale factor with menu selection for multiple pulses per revolution, linear rates, totalization, single event trip speeds and rate of change in RPM. A TTL pulse repeater output is standard.

**Options include:** 0-5 Vdc or 4-20 mA isolated (or non-isolated) outputs and 2 Form C microprogrammable relay outputs. **Available communication options include:** bi-directional RS232C, USB or Ethernet. When used with the free downloadable PM Remote Software, the communication options allow for remote configuration, real-time view of data, and data streaming directly into Microsoft Excel.



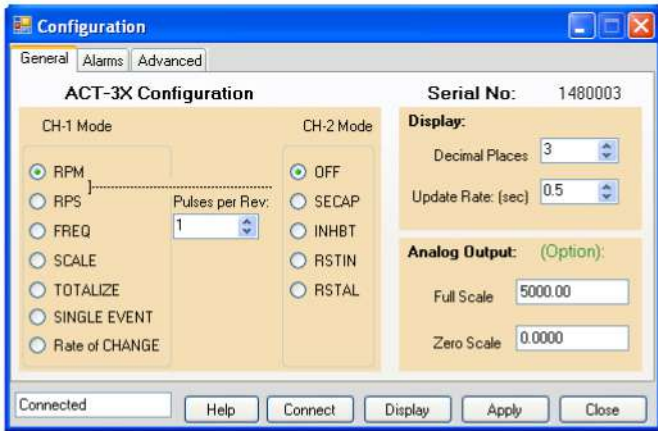
# ACT-3X Panel Tachometer/Totalizer



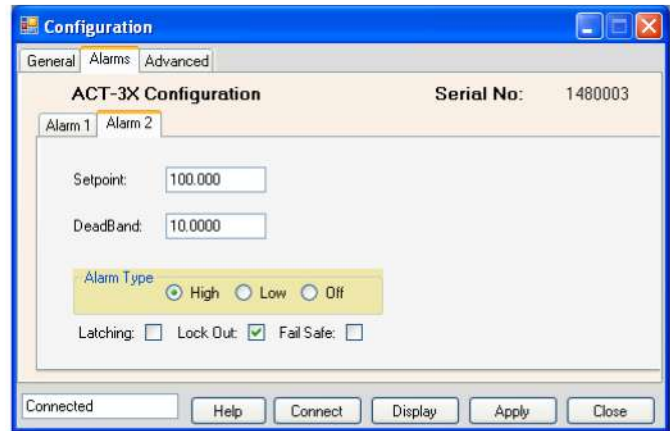
## PM Remote Software

PM (Panel Meter) Remote Software is a Windows-based software application that allows the user to customize the configuration of the ACT-3X Tachometer/Totalizer. 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.

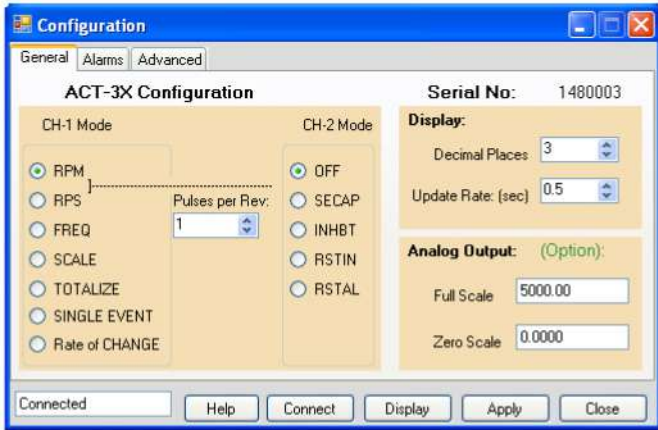
The two alarm setpoints are easily configured within the Alarms tab. From the Advanced tab, the user can set the input pulse trigger and optional output pulse to be positive or negative. Complete unit configurations can be saved to disk and quickly reloaded or transferred to other ACT-3X units. Real-time 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 Instrument 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.



ACT-3X Configuring Basic Features



ACT-3X Configuring Alarms



ACT-3X Configuring Advanced Features



ACT-3X Real-time Display



### USB Programming Cable

PN: 6180-031

This 3 ft. cable allows user configuration of operation mode, analog output scaling, decimal places, display update rate, and input pulses per revolution.

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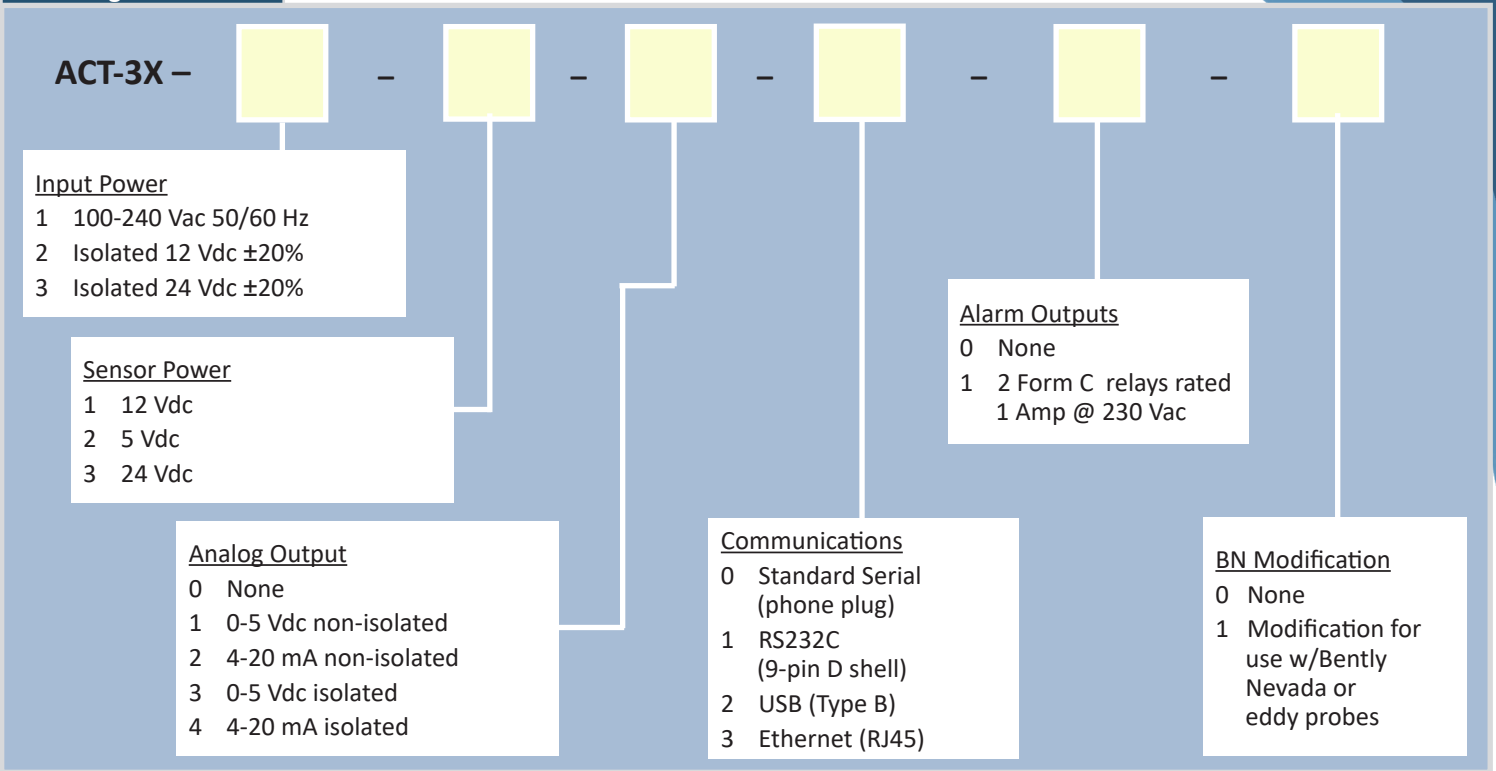
Specifications*	ACT-3X Panel Tachometer/Totalizer	
Speed Range	5 RPM to 999,990 RPM (speeds below 5 RPM are possible with multiple pulses per revolution)	
Input Frequency Range	0.083 Hz to 250 kHz	
Totalizer/Counter	Display Range: 0.001 to 99,999 100,000 – 999,990 (only top 5 digits are shown -- x10) Maximum # of counts of 16,777,216 even with a 0.001 scale	
Input Configuration and Voltage Range	Universal inputs: 1 to 9,999 pulses per revolution Front panel pushbutton programmable TTL input and 1.1 V to 50 Vac signals Opt: -1 to -50 Vdc	
Accuracy	±0.001% of reading or ±1 displayed resolution (Standard Gate) ±0.01% of reading or ±1 displayed resolution (Fast Gate)	
Resolution	<u>Fixed Range Mode</u> 1 RPM (5 to 99,999 RPM) 10 RPM (100,000 to 999,990 RPM)	<u>Auto Range Mode</u> Up to 0.001 RPM
Display	5-digit, 0.56 inch high red seven segment LED	
Display and Output Update	Menu selectable between: 0.5 second above 120 RPM, 1 second above 60 RPM and 1.5 seconds above 40 RPM	
Max Measurement Rate	Up to 100 times per second (Standard Gate) or up to 1000 (Fast Gate) Dependent on input frequency; Input must be > measurement rate	
Scaling mode – Scaling Computation	Programmable scaling 0.0001 to 99,999; Front panel pushbutton programmable	
Decimal Point	User Selectable (0-3 decimal places max); Front panel pushbutton programmable	
Memory	Maximum, minimum and last reading recall from front panel pushbuttons	
Dimensions	1/8 DIN by 4.5" [114 mm] deep; panel cutout: 3.58" x 1.74" [91 mm x 44 mm]	
Input Power	Standard: 100 - 240 V ac ±10%, 50/60 Hz Optional: 12 or 24 V dc ±20%, isolated, 6.0 Watts	
Recommended Monarch Instrument Sensors	Optical, Laser, Proximity, Magnetic, Infrared, Gas Engine (See product accessories webpage for more details)	
Sensor Power Output	12 Vdc @ 60 mA standard, or optional 5 Vdc @ 60 mA or 24 Vdc @ 30 mA to sensor	
Pulse Repeater Output TTL	0 to 5 V TTL compatible, one pulse out for each pulse in Menu selectable polarity	
Serial Interface Options	Bidirectional RS232C, USB, or Ethernet Interface	
Alarm Capability	Two alarm setpoints: High or Low Alarm Limits Latching or Non-latching Front panel pushbutton or remotely programmable Hysteresis and low limit lockout are programmable Relays can be set as failsafe	
Analog Output <sup>†</sup>	<b>Voltage (AO):</b> 0 to 5 Vdc, 5 mA max load, Isolated or Non-isolated <i>or</i> <b>Current Source (IO):</b> 4 to 20 mA (500Ω max load with internal 12 V Compliance Voltage), Isolated or Non-isolated (1-5V with 250Ω load resistor) 15-bit resolution; Front panel pushbutton programmable for full scale and offset RPM ranges	
Alarm Outputs	Form C relay contacts, rated 1A at 115 Vac or 230 Vac	
Remote Programming	Unit can be remotely programmed using Serial Interface (3.5 mm phone plug Serial Interface requires USB Programming Cable and PM Remote Software)	

\*Specifications are subject to change without notice.

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

# ACT-3X Panel Tachometer/Totalizer

## Ordering Information



## Sensors

For a complete list, see product's manual or [accessories webpage](#).

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
6180-057-25	ROS-P-25	Remote Optical Sensor with 25 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	Proximity Sensor with 6 ft. cable
6180-018	MT-190W	Magnetic Trigger Sensor/Amplifier with 8 ft. cable
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
6180-021	IRS-W	Infrared Sensor with 8 ft. cable, tinned wires and mounting bracket

## Accessories

6180-031	USB Programming Cable	3 ft. Programming Cable, 1/8" (3.5mm plug to USB) 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 and ability to view real-time data in digital format and/or through Excel
4180-406	Amplifier for GE200 HP or Magnetic Sensor	The Amplifier Module extends the operating gap for the sensor to 0.25 in. [6.35 mm] from the ferrous target; features a 3 ft. cable and is available with either 1 3.5 mm phone plug or 3 tinned leads
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



ACT-3X/0126

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