



Ectron
CORPORATION[®]

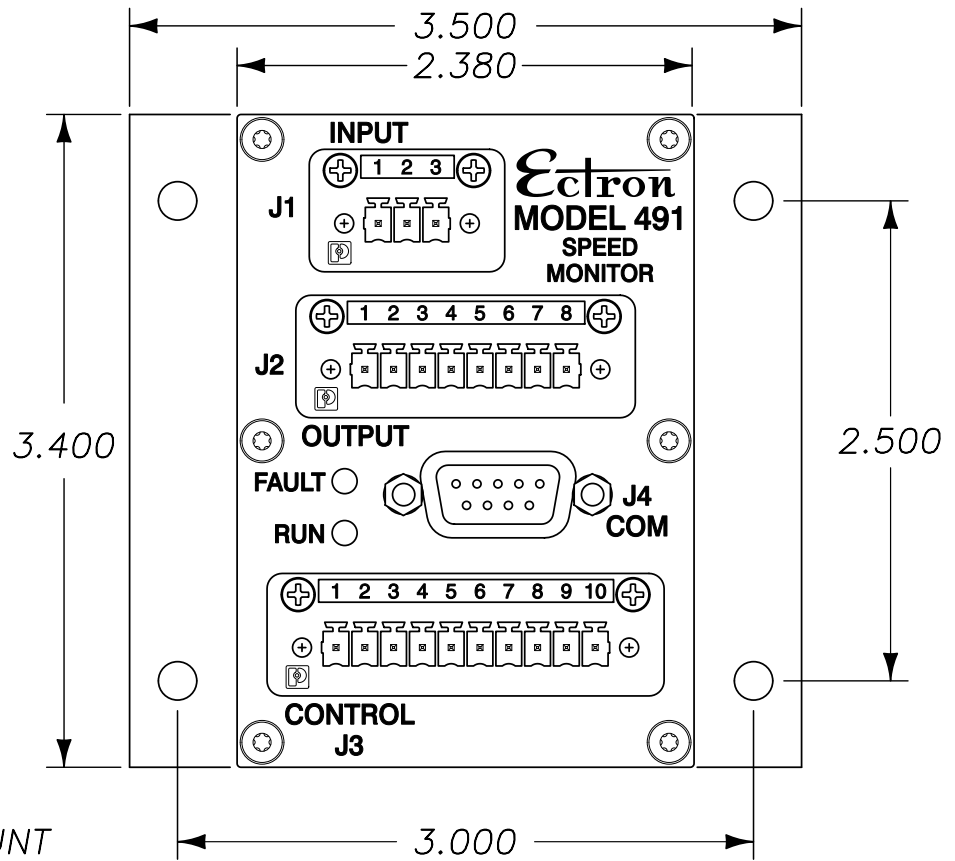
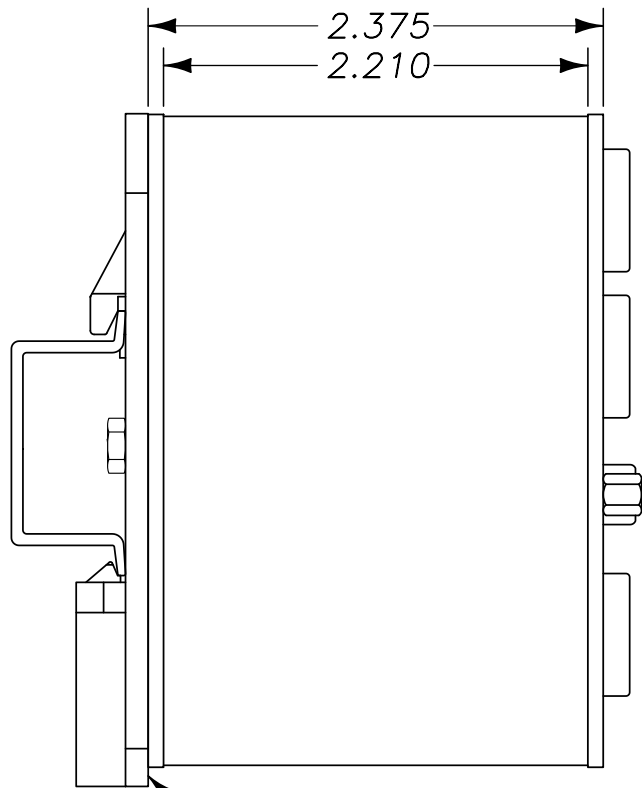
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Model 491 Turbine Engine Overspeed Monitor

The Ectron Model 491 is a Precision Overspeed Monitor that offers protection for mechanical devices that may be damaged by excessive speed such as turbine engines. Any device that produces a frequency output can use this instrument for protection by using its relay signals to initiate a shut-down process. High reliability and high accuracy plus millisecond reaction time are features of the Model 491.

Based on the popular Ectron Model 441A Frequency-to-Voltage Converter, the Model 491 has three principle circuit functions: (1) An input signal shaping circuit able to accept a wide range of input signals from either active or passive sensors, (2) a programmable microcontroller with appropriate firmware, and (3) three individually programmable set point relays plus analog outputs suitable for the application. The Model 491 has passed or will pass most safety regulations for US, Canada, and Europe including ATEX.

Input frequency range:	100 Hz to 30,000 Hz
Input voltage range:	0.25 V to 50 V peak
Probe excitation:	9 V @ up to 15 mA, open probe detection
Set point programming:	Three set points via RS-232 (USB optional) Set points non-volatile with loss of power Accuracy of set points $\pm 0.25\%$ over temperature range
Events held in memory:	Speed at last overspeed trip Maximum speed since last overspeed trip System test request status Reset status
Relay contacts:	(2) each form C, (1) each form A
Relay contact rating:	8 A at 24 V
Release time after overspeed:	Relay releases in 10 milliseconds maximum, 4 milliseconds typical (frequency over 1,000 Hz)
Analog output:	4 mA to 20 mA with 0.1% accuracy
Conversion algorithm:	Running median plus averaging filter
Digitized output (RS-232):	Current input frequency and all set points
Reliability:	Unsafe, undetectable failure: >3,500,000 hours at 85°C ambient
Power:	18 V to 33 V at 4 watts, reverse voltage protected to -42 V and transients to ± 600 V for 0.1 ms
Certifications:	CE, NEC Designed to meet CSA Class 1, Div 2 Groups A, B, C, D Designed per ATEX Cat 3 Zone 2 hazardous area
Environment:	-20°C to +85°C operating temperature to 10,000 ft. -55°C to +120°C storage temperature 20 g shock, 10 g vibration 95% humidity non-condensing Internal components encapsulated for protection
Size:	2.41" x 3.5" x 3.36" (~39 in ³); see outline drawing
Mounting:	Flange or DIN rail



OPTIONAL DIN RAIL MOUNT
SHOWN IN THIS VIEW ONLY