



409-S RPM Digital RPM Monitor

Monitor. Protect. Transmit

409-S RPM Monitor is for measuring the rotating speed of a Turbine or other rotating machines; it accepts input signal from proximity sensor/transducer based on eddy current principle, it can also accept input signal from other type of proximity sensors, photoelectric sensors, limit switches and rotary encoders, the unit has a isolated built-in 24V DC excitation supply to power the input sensors.

409-S RPM comes with 2 set points and relay outputs for Alarm and Trip purpose, the set points and relay logic can be user set for over speed/under speed Alarming and protection, the unit has built-in Acknowledge logic for maintained as well as momentary Alarms, the relays can be configured for normal or fail-safe operation. Isolated Analog output by way of Current/Voltage is available for interface with PLC/DCS systems, also Isolated RS485 Modbus RTU port is provided to incorporate the 409-S in a plant wide SCADA system.

409-S is compact, reliable and fit for most critical speed Monitoring and protection, the unit can be programmed for number of events/rotation and displays the speed from 1 RPM to 10000 RPM on a bright 5 digit display the brightness of which is adjustable to suit any environment.

Features

- Monitors, Protects & Transmits Turbine & Rotating machines speed
- Bright 5 digit Display with brightness control
- Programmable events per rotation
- 2 Set point with Relay output for Alarm/Trip
- Analog output for PLC/DCS interface
- Modbus RTU output on RS485 for SCADA

Applications

- Turbine speed Monitoring & protection
- Rotating machines speed control

TECHNICAL SPECIFICATIONS

Input		Power Supply	
Input Type	Proximity sensor-transducer/ photoelectric sensors/ limit switches/ rotary encoders	Supply Voltage	85 to 265 VAC, 50/60 Hz OR 18 to 36 V DC (Optional)
No of channel	1	Power Consumption	<10VA
Pulse per rotation	1 to 60 (user set)	Isolation (Withstanding voltage) Between primary terminals* and secondary terminals**: At least 1500 V AC for 1 minute Between secondary terminals**: At least 500 V AC for 1 minute * Primary terminals indicate power terminals and relay output terminals. ** Secondary terminals indicate I/O terminals and Communication Port.	
Max Pulse Input	RPM x slots (Pulse/roted) ≤ 600,000		
Input signal level	0-24V DC, min on pulse width 100 uSec		
Input high	>1 Volt		
Input low	<0.2 Volt		
Accuracy	±0.015% FS		
Resolution	1 RPM		
Display & Keys		Physical	
RPM	0.56", Red LED 5 digit	Mounting	Panel Mount
Relay & Communication	Discrete/Individual LEDs	Dimensions	96(W) x 48(H) x 112(D) mm
Operation keys	Menu, Enter, Up, Down (flap protected)	Panel Cutout	92(W) x 45(H) mm
		Weight	260 gms (Approx)
		Enclosure Material	ABS Plastic
Output		Environmental	
Alarm Output		Operating temperature	0 to 55 °C
Relays	2	Storage temperature	-40 to 85 °C
Function	Alarm/Trip	Humidity	20 to 95 % at 40 °C non-condensing
Logic	Normal/Failsafe		
Contacts	C, NO		
Rating	2A@230VAC / 30VDC		
Response time	<1 Sec		
Delay	0-9999 sec		
Retransmission output			
Current	0-20mA, 4-20mA @ 600Ω Max.		
Voltage	0-10V, 0-5V, 1-5V@ 2KΩ Min.		
Accuracy	±0.25% of FS		
Transmitter Supply	24VDC (±10%) @30mA (Current limited)		
Communication output			
Interface	RS485		
Protocol	Modbus-RTU		
Baud Rate	4800, 9600, 19200, 38400		

Ordering code

Model	Power Supply		Retransmission Output	
409-S RPM	X		X	
	1	85-265 VAC	N	None
	2	18-36 VDC	1	4-20mA
			2	0-20mA
			3	0-5V
			4	1-5V
		5	0-10V	

(Proximity Sensor Optional-On request)
X - Specify from table