



# Electronic Vibration Switches

Designed to provide continuous machinery protection

## Highlights

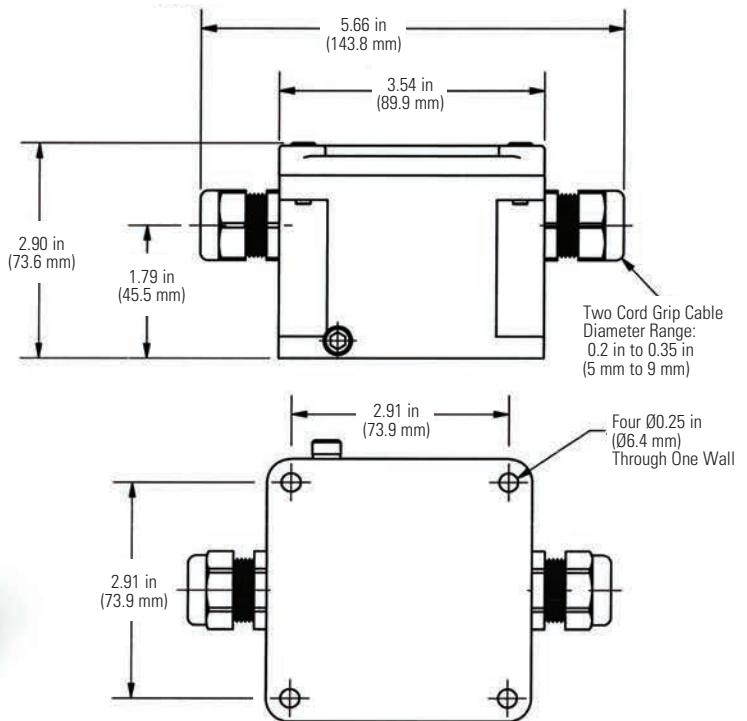
- Multiple available outputs:
  - Two independent alert and alarm relays
  - 4-20mA signal
  - Analog, 100mV/g raw vibration signal
- Configurable model with choice of accelerometer configuration, measurement range, power supply, relay type, enclosure type and enclosure connection ports.
- Adjustable time delays prevent false trips during unit start-up and chance occurrences of short term vibration spikes.
- Compatible with PLC, DCS and SCADA systems for data trending.
- Hazardous area approved versions available.



Electronic vibration switches offer highly-accurate continuous monitoring with excellent repeatability and reliability. They require power to operate and utilize an input signal provided by an electronic vibration sensor. The fully-configurable switch can either utilize either a built-in pellet accelerometer or be wired to a remote accelerometer.

## Typical Applications

- Cooling Tower Condition Monitoring
- HVAC Equipment Predictive Maintenance
- Vibratory Screens & Feeders Protection





Technical Specifications	
Model Number	685B Series
Performance	
Measurement Range	Configurable
Frequency Range ( $\pm 3$ dB)	2 to 1000 Hz
Relay	Latching/Non-Latching
Relay	Normally Open/Closed
Relay- Alert	Configurable
Relay- Alarm	Configurable
Setpoint- Alert	10 to 100% of Vibration Range
Setpoint- Alarm	10 to 100% of Alarm Setpoint
Delay- Power On	20 sec
Delay- Alert	Configurable
Delay- Alarm	Configurable
Acceleration Output ( $\pm 10\%$ )	100 mV/g
	10.2 mV/(m/sec <sup>2</sup> )
Current Output	4-20 mA
Control Interface	
Reset Function	Configurable
Self Test Function	Yes
Time Delay Adjustment	Single Turn Potentiometer
Power LED	Green
Alarm LED	Red
Alert LED	Yellow
Environmental	
Temperature Range (Continuous)	-22 to +158 °F
	-30 to +70 °C
Temperature Range (Storage)	-40 to +257 °F
	-40 to +125 °C
Hazardous Area Approval	Configurable
Enclosure Rating	NEMA 4X and IP66
Electrical	
Power Required	Configurable
Current Consumption	< 150 mA
External Calibration Input	4-20 mA
Physical (not applicable to enclosure type C1)	
Sensing Element	100 mV/g ICP <sup>®</sup> Accelerometer
Housing Material	Aluminum Alloy
Mounting Torque (Cover Screw)	4.1 ft-lb
	5.7 N-m
Mounting Screw (Base)	2 to 5 ft-lb
	3 to 7 N-m
Electrical Connector	Screw Terminals
Screw Terminal Wire Size	24-14 AWG
	0.2 - 2.5 mm <sup>2</sup>
Cable Input	Configurable
Mounting Hole Size	0.21 in
	5.4 mm
Size (W x H x D)	3.5 x 2.8 x 3.5 in
	90 x 70 x 90 mm
Weight	1.85 oz
	839 gm

Model Matrix	
Base Model	
685B	Electronic Vibration Switch with two set point relays, time delays, internal push button reset, remote reset via contact closure, 4-20 mA test/calibration insertion signal capability and both 4-20 mA and analog 100 mV/g output signals available on screw terminals.
Package Size and Sensitivity	
0	Built in accelerometer
1	Remote 100 mV/g accelerometer (Not supplied)
2	Remote 100 mV/g accelerometer low frequency ~1 Hz (Not supplied)
3	Built-in accelerometer, low frequency ~1 Hz
4	Remote 100 mV/g accelerometer w/sensor fault detection (Not supplied)
5	Remote 100 mV/g accelerometer w/sensor fault detection, low frequency ~1 Hz (Not supplied)
Measurement Range	
0	0 to 1.5 in/sec peak velocity
1	0 to 5 g peak acceleration
2	0 to 15 mils peak to peak displacement
3	0 to 50 mils peak to peak displacement
4	0 to 3.0 in/sec peak velocity
Power Required	
0	85 to 245 VAC, 50/60 Hz
1	24 VDC, $\pm 10\%$
Relay Type (Two provided)	
0	Triac, 5 amp, 230 VAC, 0-45 sec adjustable time delay
1	Electromechanical relay, 10 amp Form C, SPDT, 30 VDC/240 VAC, 0-45 sec adjustable time delay
Enclosure Type	
A1	Std enclosure, NEMA 4X, CSA Class I, Division 2, internal reset and analog signal
A2	Same as A1 plus external pushbutton reset
A3	Same as A1 plus external BNC jack for analog output
A4	Same as A1 plus external pushbutton reset and external BNC jack for analog output
C1	CSA approved explosion proof for Class I, Division 1 installation
Enclosure Connection Ports	
0	Two ports with cord grips
1	Two ports with 1/2" NPT conduit hubs
2	One port with cord grip
3	One port with 1/2" NPT conduit hub
4	Two 1/2" NPT ports (Must select C1 enclosure type)
5	Two ports with cord grip on left, conduit on right
6	Two ports with cord grip on right, conduit on left
Notes:	
Selections in blue are not available with CSA Class I, Division 2 hazardous area approval.	
CSA Class I, Division 2 approval supplied standard for switches where all options are black.	



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**ISO 9001 CERTIFIED ■ A2LA ACCREDITED to ISO 17025**

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