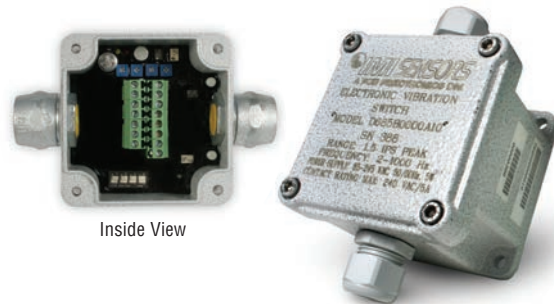




SERIES 685B

# ELECTRONIC VIBRATION SWITCHES



Inside View

- 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.

## DESIGNED TO PROVIDE CONTINUOUS MACHINERY PROTECTION

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.

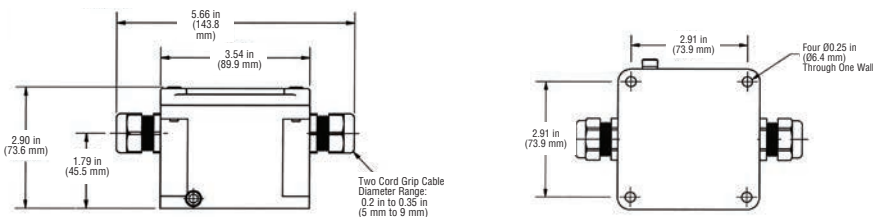
## APPLICATIONS

- Cooling Tower
- Evaporative Condensers
- Steam Condensers
- Air-Cooled Heat Exchangers (Fin-Fans®)
- Large Blowers and Fans

CE

SPECIFICATIONS	
<b>Model Number</b>	<b>685B Series</b>
<b>Performance</b>	
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
<b>Control Interface</b>	
Reset Function	Configurable
Self Test Function	Yes
Time Delay Adjustment	Single Turn Potentiometer
Power LED	Green
Alarm LED	Red
Alert LED	Yellow
<b>Environmental</b>	
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
<b>Electrical</b>	
Power Required	Configurable
Current Consumption	< 150 mA
External Calibration Input	4-20 mA
<b>Physical (not applicable to enclosure type C1)</b>	
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	
<b>Base Model</b>	
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.
<b>Package Size and Sensitivity</b>	
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)
<b>Measurement Range</b>	
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
<b>Power Required</b>	
0	85 to 245 VAC
1	24 VDC
<b>Relay Type (Two provided)</b>	
0	Triac, 5 amp, 230 VAC, 0-45 sec time delay
1	Electromechanical relay, 10 amp Form C, SPDT, 30 VDC/240 VAC, 0-45 sec time delay
<b>Enclosure Type</b>	
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
<b>Enclosure Connection Ports</b>	
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: Rows with <b>TEXT IN BLUE</b> are not available with CSA Class I, Division 2 hazardous area approval. Rows with <b>TEXT IN BLACK</b> are available with CSA Class I, Division 2 hazardous area approval as standard.	



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IMI Sensors, a division of PCB Piezotronics, Inc. manufactures industrial vibration monitoring instrumentation, such as accelerometers, vibration transmitters and switches that feature rugged stainless steel housings and survive in harsh environments like paper and steel mills, mines, gas turbines, water treatment facilities and power plants. Integrating with portable analyzers and PLC's, IMI instrumentation helps maintenance departments reduce downtime and protect critical machinery. Visit IMI Sensors at www.pcb.com. PCB Piezotronics, Inc. is a wholly owned subsidiary of MTS Systems Corporation. Additional information on MTS can be found at www.mts.com.

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IMI-SWC-685B-0720



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