



SERIES 683A

## VIBRATION INDICATOR WITH ALARM SET POINTS

- Provides excitation power for ICP® accelerometers or 4-20 mA industrial vibration sensors
- Highly visible, 4-digit, fully scalable LED display
- Up to four programmable set point relays alarm status indicators
- Adjustable time delay eliminates false alarm trips
- Field-selectable acceleration, velocity, or displacement units for display and signal retransmission (ICP® version)



### ICP® ACCELEROMETERS OR 4-20 mA INDUSTRIAL VIBRATION SENSORS

Model 683A indicator/alarm is specifically designed for continuous vibration monitoring requirements with ICP® or 4-20 mA industrial vibration sensors. The unit operates from universal AC or DC power, provides 24 VDC sensor excitation, and can retransmit a 4-20 mA signal for remote monitoring or recording. Two, user-programmable set points activate individual, 5 amp, Form-A relay contacts to provide early warning of deteriorating machinery conditions. An adjustable time delay for each set point eliminates potential for false alarm trips due to ambient, short duration vibratory upsets. The unit installs into a standard, 1/8 DIN, panel cutout and is available with an optional NEMA 4X front cover.

Model 683A bridges the gap between unmonitored machinery and sophisticated vibration analysis, by permitting continuous vibration monitoring with instrumentation familiar to the process control technician.

SERIES 683A	
Performance	English (SI)
Input Channels	1
Display (4-digit, red LED)	0.56 inch (14.2 mm)
Set Point Status Indicator	One LED per set point (up to four)
Decimal Point	Selectable, X•X•X•X•
Scale Factor (for display of units)	-1999 to +9999
Overrange Indication	Display flash on pos. or neg. overrange
Conversion (update) Rate	5 Hz
Accuracy	± 0.05% of reading, plus 2 counts
Environmental	
Operating Temperature Range	+32 to +140 °F (0 to +60 °C)
Storage Temperature Range	-4 to +158 °F (-20 to +70 °C)
Humidity (non-condensing)	< 95 %
Electrical	
Input Signal from Sensor	100 mV/g (ICP®) or 4-20 mA (10.2 mV/g(m/s²) or 4-20 mA)
Sensor/Transmitter Excitation Delivered	24 VDC @ 4 mA or 24 VDC
Relays (individually adjustable HI or LOW)	Two 5 A Form A
Time Delay on Relay Make or Break	0 to 9999 sec
Hysteresis (deadband) about Setpoint	± (9999/2) counts from setpoint
Power Required (auto sensing, wide range)	85 to 265 VAC or 95 to 370 VDC
Power Consumption	2.5 watt typical, 3.5 watt max
Warm-Up Time	< 2 min
Mechanical	
Size	Bezel: 1/8 DIN (96 × 48 mm)
Depth	4.61 inch (117 mm)
Connector Depth (add) (for right angle block)	0.47 inch (11.8 mm)
Connector Depth (add) (for straight thru block)	0.79 inch (20 mm)
Electrical Connections	Screw terminals on removable blocks
Weight	6.5 oz (184 gm)
Programmability	
Scale factor (Decimal point location)	Peak and valley view and reset
Offset (Set point adjustment)	Time delay on relay make or break
LED brightness (Relay hysteresis)	HI or LOW set point relay action
Options	
Low Voltage Operation	18-48 VAC or 10-72 VDC
Analog Output	4-20 mA retransmission
NEMA 4X Lens Cover with Key Lock	Field installable
Metal Surround Case	Must be factory installed
Two Additional Set Point Relays, 5 A Form A	Without time delay function
Two Additional Set Point Relays, 10 A Form C	Without time delay function

MODEL MATRIX	
Series 683	
683A	Indicator / alarm with two, time-delayed, Form A, set-point relays
Input	
0	4-20 mA DC with 24 VDC excitation delivered to sensor / transmitter
1	100 mV/g (10.2 mV/(m/s²)) ICP® accelerometer with 24 VDC @ 4 mA delivered to sensor
Power Required	
0	85 to 265 VAC or 95 to 370 VDC
1	18 to 48 VAC or 10 to 72 VDC
Analog Output	
0	None
1	Isolated 16 bit user scalable 4-20 mA retransmit
Additional Relay Outputs	
0	None (supplied standard with 2 Form A relays)
1	Dual 10 amp Form C relays (not time-delayed)
2	Dual 5 amp Form A relays (not time-delayed)
Frequency Response	
0	3 Hz to 10k Hz (must be used for 4-20 mA versions)
1	3 Hz to 1000k Hz
2	10 Hz to 10k Hz
3	10 Hz to 1000 Hz
Accessories	
0	None
1	NEMA 4x, clear lockable, splash-proof front cover
2	Metal surround case --- includes screw mounting clips
3	MEMA 4X, clear front cover and metal surround case
Example	
<b>683A</b>	<b>1 0 0 0 0 1</b> Indicator / alarm for 100 mV/g ICP® accelerometer input, includes optional NEMA 4X front cover

Note: ICP® input version features field-selectable pk or rms acceleration, pk or rms velocity, or pk-pk displacement units for display and signal retransmission option.

## SERIES 684 ALARM MODULE



- Economical solution to machinery shutdown protection
- Available with up to eight channels in NEMA 4X fiberglass or stainless steel enclosures



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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](http://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](http://www.mts.com).

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