

New product  
introduction

**883M digital triaxial  
accelerometer and  
temperature sensor**



# 883M product overview

## Triaxial MEMS accelerometer and temperature sensor

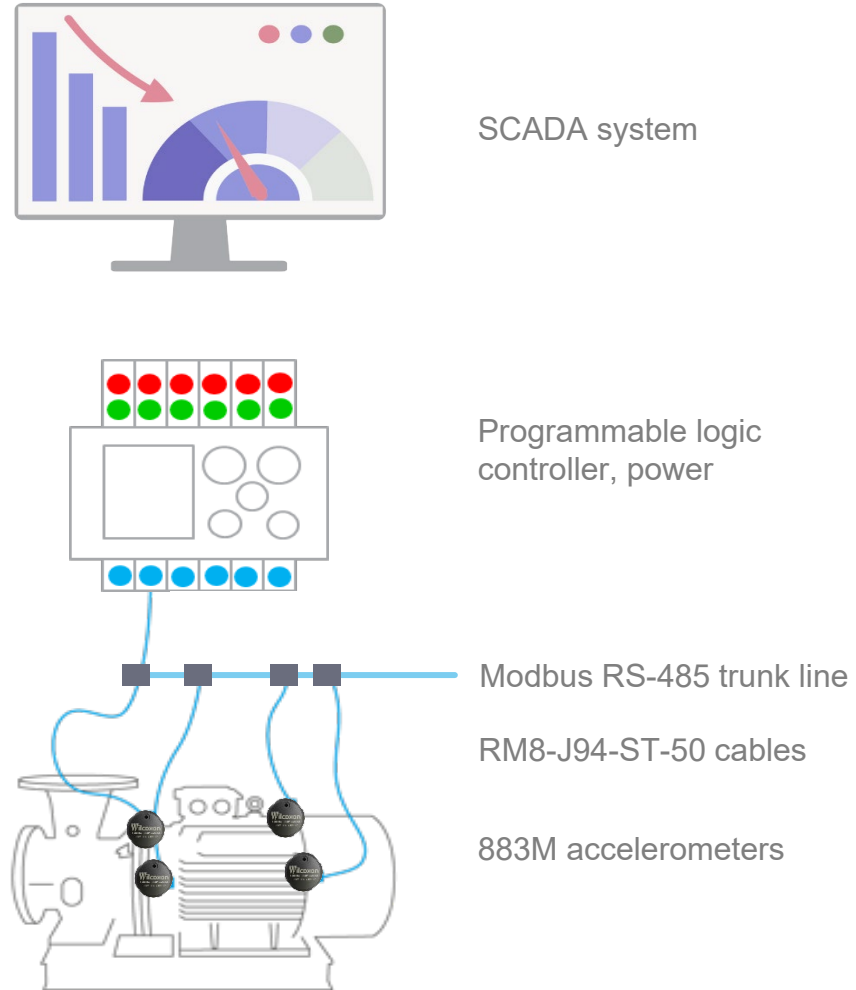


- Up to **5kHz high-frequency response**
- **IP67 design**, operates in harsh environments with excellent durability and reliability
- **Modbus RTU communication protocol** over an RS-485 serial bus ensures stable data transmission
- **Digital output** of vibration spectrum, time waveforms, and 12 frequency bands, facilitating machine fault diagnosis
- Frequency bands align with international standards for machine vibration measurement
  - **ISO 10816-3** and **ISO 20816-3** standards for mechanical vibrations
  - **ISO 17243** machine tool spindle vibrations
- **Condition monitoring applications**: balance-of-plant, process monitoring, energy, automated equipment, semiconductor manufacturing



# Deployment architecture

## Connected via SCADA system



# Specifications

## Click to download



### Digital triaxial MEMS accelerometer 883M



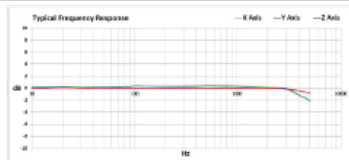
#### SPECIFICATIONS

DYNAMIC	
Acceleration range	±16 g, peak
Resolution	0.488 mg
Frequency response, ± 3 dB	2 Hz - 5 kHz
Resonance frequency	6.9 kHz
FREQUENCY BAND OUTPUTS (X, Y, AND Z AXES)	
Acceleration, RMS	2 Hz - 1 kHz, 10 Hz - 5 kHz
Acceleration, peak	2 Hz - 1 kHz, 10 Hz - 5 kHz
Velocity, RMS	10 Hz - 1 kHz, 10 Hz - 5 kHz
Velocity, peak	10 Hz - 1 kHz, 10 Hz - 5 kHz
Displacement, RMS	2 Hz - 1 kHz, 10 Hz - 1 kHz
Displacement, peak	2 Hz - 1 kHz, 10 Hz - 1 kHz
OTHER OUTPUTS	
Temperature	-20° to +70° C
True peak	Fs @ 13.333 kHz
Spectrum	0 Hz - 5 kHz, 6145 lines
Time wave	13,333 samples, 1 second
Other features	crest factor standard deviation
COMMUNICATION	
Interface	RS485
Protocol	Modbus RTU
Recommended baud rate	9,600 or 115,200 bps
Max. baud rate	921,600 bps



#### Key features

- Triaxial MEMS accelerometer and temperature sensor
- Modbus RTU communication protocol
- Digitally outputs vibration spectrum, time waveforms, and vibration characteristic values
- Frequency bands align with ISO 10816-3 and ISO 20816-3 guidelines



Note: Due to continuous process improvement, specifications are subject to change without notice. This document is cleared for public release.

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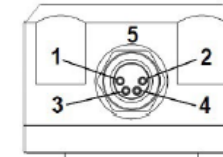
info@wilcoxon.com  
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### Digital triaxial MEMS accelerometer 883M

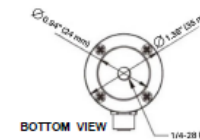
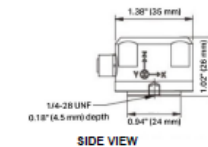


#### SPECIFICATIONS

ELECTRICAL	
Power	6 - 24 VDC
LED Indicator	1 (RGB)
ENVIRONMENTAL AND MECHANICAL	
Dimensions	35mm dia. x 28 mm h
Weight	75 grams
Sealing	IP67
Case material:	upper A6061 aluminum lower 303 stainless steel
Connector	4-socket M8
Mating connector	4-pin M8
Recommended cabling	4-conductor, PVC jacket, shielded
Mounting	adhesive mount via sensor flat base screw mount adapter* (optional) magnet mount adapter* (optional)
Operating temperature	-20° to +70° C
Storage temperature	-20° to +80° C
Operating humidity	5 - 95% RH

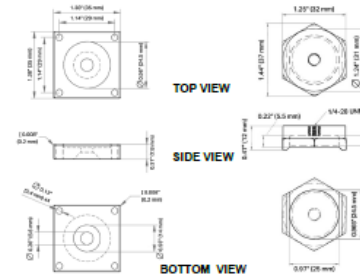


Connections	
Function	Connector pin
power	1
ground	2
signal +	3
signal -	4
shield	5 (housing)



Note: \* Mounting adapter allows the installer to mount the sensor in a specific orientation, as required for install sensors, and provides proper cable exit placement.

#### SCREW MOUNT ADAPTER MAGNET MOUNT ADAPTER



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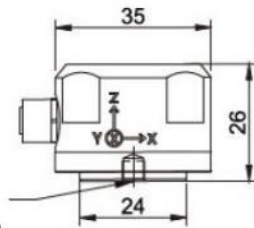
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# Key specifications

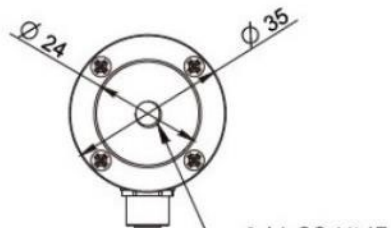


**TOP VIEW**



**SIDE VIEW**

1/4-28 UNF  
Effective Tapping Depth : 4.5mm



**BOTTOM VIEW**

DYNAMIC		ENVIRONMENTAL & MECHANICAL	
Acceleration range	±16 g, peak	IP Rating	IP67
Resolution	0.488 mg	Operating temperature	-20 to +70 °C
Frequency range	2 Hz – 5 kHz (± 3 dB)	Storage Temperature	-20 to +80 °C
		Connector	M8 4-socket female

COMMUNICATION	
Interface	RS485
Protocol	Modbus RTU
Max. baud rate	921,600 bps
Recommended baud rate	9,600 or 115,200 bps

# 883M digital sensor

## Output and programmed frequency bands

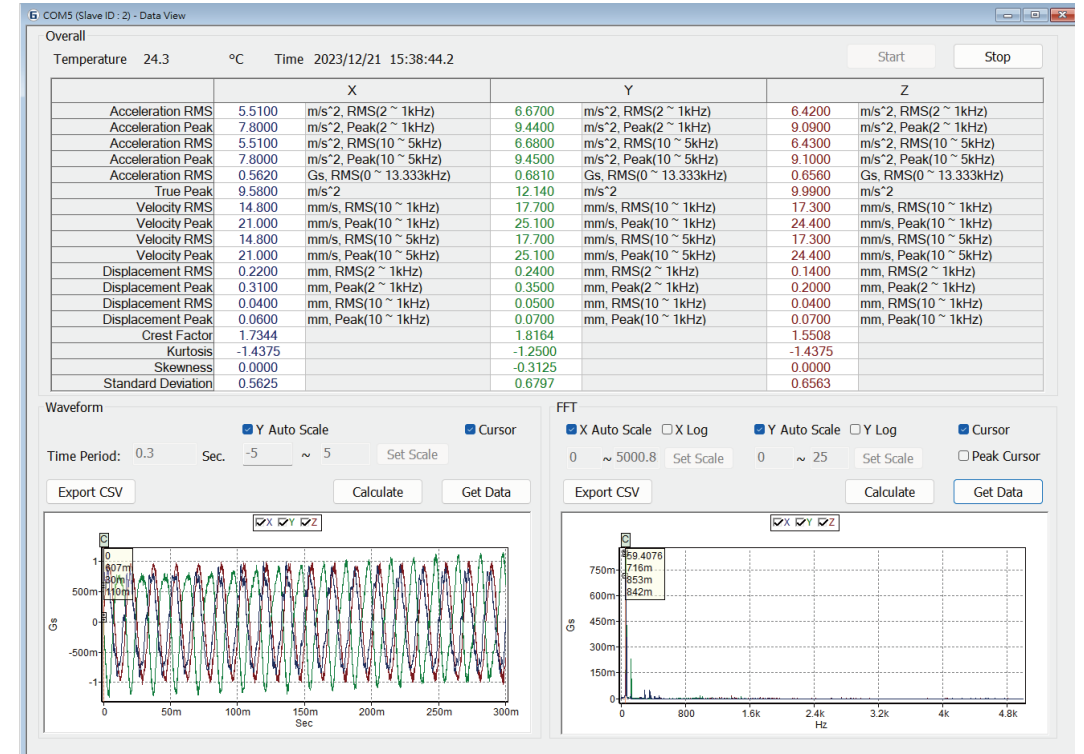


### Frequency bands (X, Y, and Z axes)

- Acceleration, RMS                    2 Hz - 1 kHz, 10 Hz - 5 kHz
- Acceleration, peak                    2 Hz - 1 kHz, 10 Hz - 5 kHz
- Velocity, RMS                         10 Hz - 1 kHz, 10 Hz - 5 kHz
  - Velocity RMS 10 Hz - 1 kHz frequency band aligns with ISO 10816-3 and 20816-3 guidelines
- Velocity, peak                         10 Hz - 1 kHz, 10 Hz - 5 kHz
- Displacement, RMS                    2 Hz - 1 kHz, 10 Hz - 1 kHz
  - Displacement RMS 2 Hz - 1 kHz and 10 Hz - 1 kHz frequency bands align with ISO 20816-3 guidelines
- Displacement, peak                    2 Hz - 1 kHz, 10 Hz - 1 kHz

### Other outputs

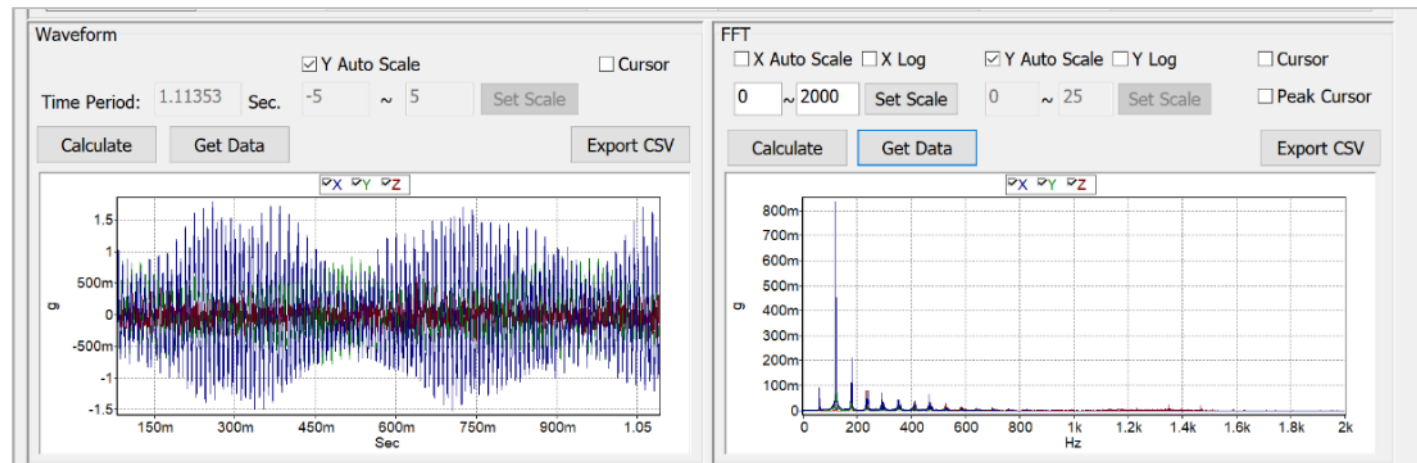
- Temperature sensor                     $-20^{\circ}$  to  $+70^{\circ}$  C
- True peak                                Fs @ 13.333 kHz
- Spectrum                                 0 Hz - 5 kHz, 6145 lines
- Time waveform                         13,333 samples, 13.333 kHz Fs
- Other features                         crest factor, standard deviation



# Key features Measurements



- Synchronous measurement of machine vibrations in three axes and temperature
- Detection of overall of vibration acceleration, velocity, and displacement
- Extraction of time-domain waveforms and calculation of FFT spectra
- True-peak detection for real-time bearing condition monitoring
- Built-in self testing with real-time LED status indicator



# Mounting options

## Adhesive, screw, or magnet mounting

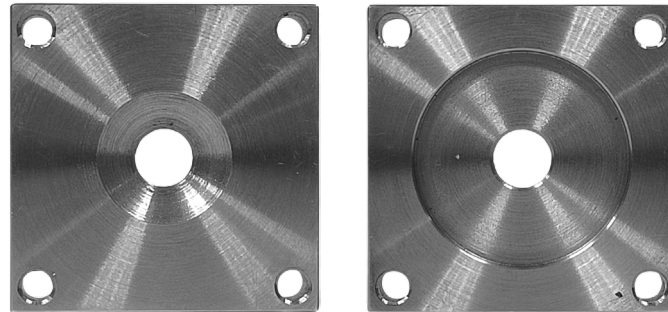
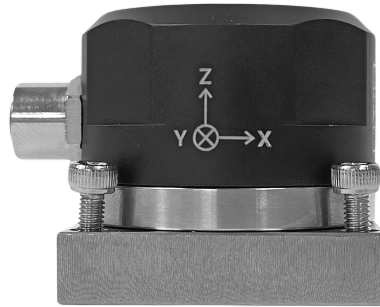


Adhesive / stud mount  
883M\*

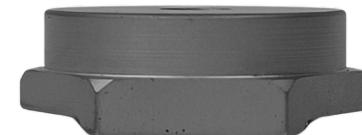
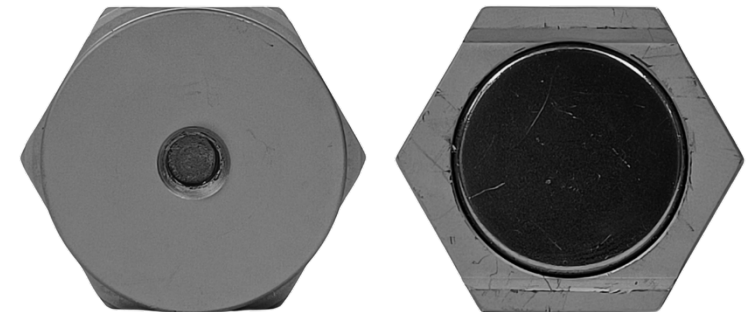


\*1/4-28 mounting stud included. No mounting adhesive included. The sensor's flat bottom surface can be used to adhere the sensor to the structure.

Screw mount kit  
883M-SMA



Magnet mount kit  
883M-MMA

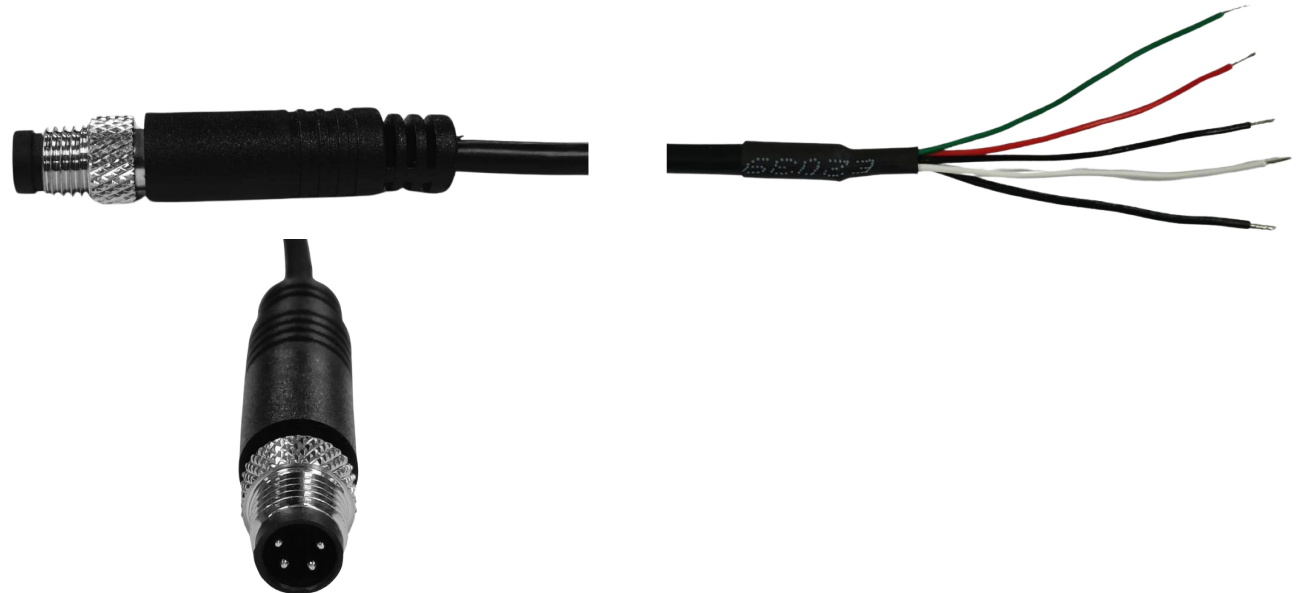
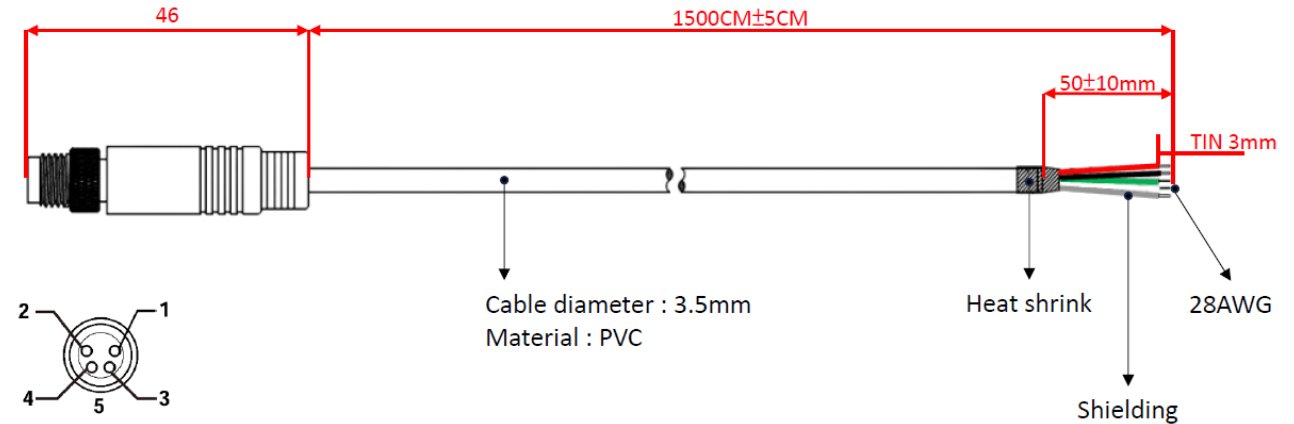




# Compatible cable, included RM8-ST-J94-50



- M8 4-pin (male) sensor connector, brass, -20 to +80 °C, IP67
- 4-conductor UL 2725 cable with black, PVC jacket, foil shielded, 28 AWG (3.5 mm diameter), -10 to +80 °C
- Stripped and tinned, heat shrink
- 50 ft (15 m) length standard
- CE, RoHS2.0 and REACH compliant





## Applications

- **Rotating machinery:** motors, fans, blowers, pumps, compressors, etc.
- **Transmission systems:** gearboxes, couplings, bearings, etc.
- **Manufacturing equipment:** CNC machines, conveyor belts, etc.
- **HVAC systems:** compressors, cooling towers, cranes, lifting equipment, road rollers, etc.



# Thank you

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