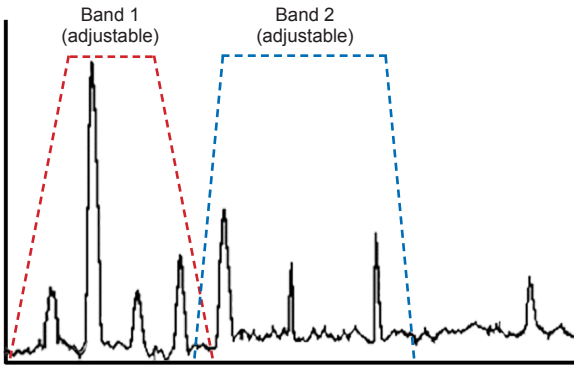
4-20 mA configurable vibration transmitter module

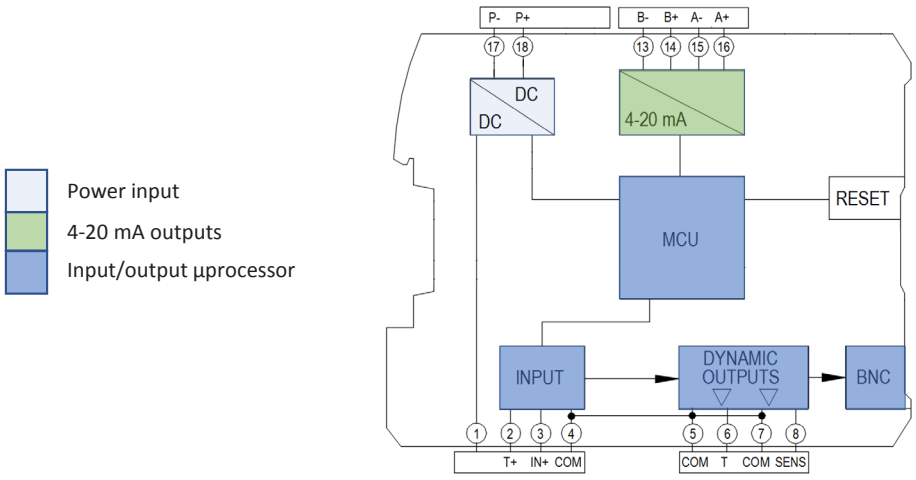
iT300

The iT300 transmitter provides an easy means to connect a standard IEPE vibration sensor to a PLC, DCS or SCADA system. The transmitter's input provides power to and measures the signal from either an accelerometer, piezovelocity sensor or dual output sensor. The input circuitry has a wide frequency response, capable of measuring signals between 0.2 Hz and 20,000 Hz.



The transmitter has two independent processing bands with flexible mapping options to two separate 4-20 mA analog outputs. The processing channels contain selectable integration, allowing input from accelerometers to be output as acceleration or velocity. Selectable band filters and detector types make it easy to tailor the processing to specific machines or applications.

System architecture – input/output



Certifications

CE

Key features

- Accepts input from accelerometers (single or dual output) or piezovelocity sensors
- Input signal is split into two independent processing bands
- Measures real-time sensor bands, BOV, true peak and temperature (if applicable)
- Built-in web server for custom configuration of bandwidth/detection type
- 2 x 4-20 mA outputs, user-defined
- Text field for user entry of machine information
- Configurations can be stored
- Selectable speed range
- Manufactured in an approved ISO 9001 facility

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

Wilcoxon Sensing Technologies
An Amphenol Company

8435 Progress Drive
Frederick, MD 21701
USA

Tel: +1 (301) 330-8811
Fax: +1 (301) 330-8873
info@wilcoxon.com

buy.wilcoxon.com
www.wilcoxon.com

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4-20 mA configurable vibration transmitter module

iT300

SPECIFICATIONS

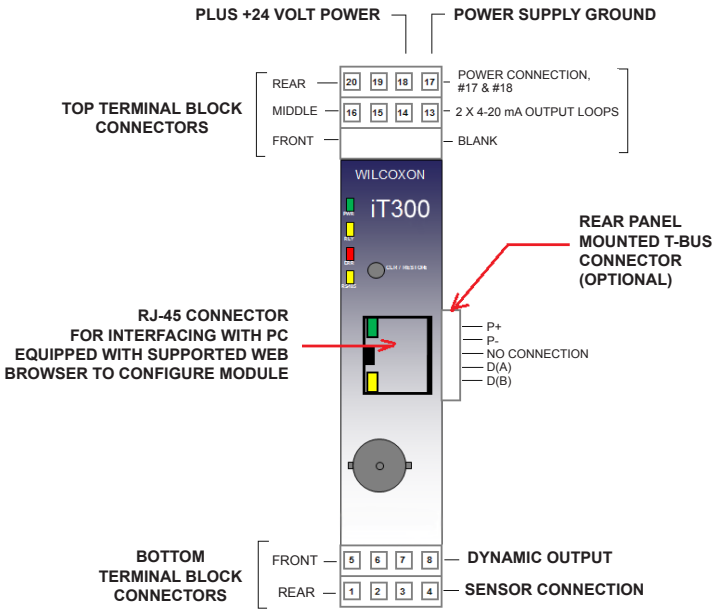
INPUT	
IEPE sensor type **Temperature sensor input**	Single-ended, DC coupled 10 mV/°C
IEPE power source	+24 VDC, 4.5 mA
Sensitivity range: **acceleration** **velocity**	 9 - 11,000 mV/g 9 - 11,000 mV/ips
Full scale input range	±10 VDC
Frequency response **Fmax options**	0.2 - 20 kHz (-3 dB, -0.1 dB) 200, 500 Hz; 1, 2, 5, 10, 20 kHz
Accuracy	±0.2% of full scale, 100 Hz
ADC sampling rate	48 kbps, 24 bits delta-sigma
FFT resolution, windowing	1,600 lines, Hanning window
Dynamic range	>90 dB
CONFIGURABLE OPTIONS	
Frequency bands 1 and 2	Sensor unit[1] or single integration[2] Fstart[3] Fstop[3] Detection type: rms, peak, pk-pk
Fixed measurement bands	True peak, BOV, temperature[4]

MAPPABLE OUTPUTS	
4-20 mA output	2 user-configurable, based on (5) mappable options
Max loop resistance	500 Ω
Output scaling[1]: **acceleration** **velocity** **displacement**	 g (m/sec²) - rms, peak, peak-peak ips (mm/sec) - rms, peak, peak-peak mils (mm) - rms, peak, peak-peak
Output ranges[1]: **acceleration** **velocity** **displacement**	 1 - 50 g (10 - 500 m/sec²) 0.1-5 ips (2-100 mm/sec) 10 - 200 mils (0.2 - 5.0 mm)
ENVIRONMENTAL	
Temperature range	–40° to +70°C (storage: –40°C to +85°C)
Power	11 - 32 VDC, 3.8 watts max (158 mA at 24 VDC)
Isolation	500 VAC
Connection type	screw terminal, 14 - 24 AWG
Mounting	35 mm DIN rail
Dimensions	W x H x D: 22.5 x 99.2 x 114.5 mm

Notes: [1] Based on IEPE sensor type (accelerometer or piezovelocity).
[2] Acceleration signal to velocity, velocity signal to displacement.
[3] The available selections are affected by the Fmax setting.
[4] 786T style sensors only.

System architecture

IO Port	Terminal numbers and signal assignments
Vibration sensor	1 – No connection 2 – Temperature sensor (in T+) 3 – Signal in / Sensor Power (IN+) 4 – Circuit Common (COM)
Temperature dynamic output	5 – Circuit Common (COM) 6 – Temperature out (T)
Sensor dynamic output	7 – Circuit Common (COM) 8 – Sensor out (SENS)
4-20 mA Loop B	13 – B- 14 – B+
4-20 mA Loop A	15 – A- 16 – A+
Power input	17 – P- 18 – P+
Not used	19 – 20 –



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