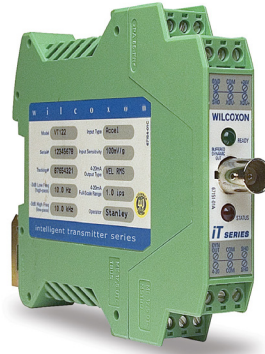


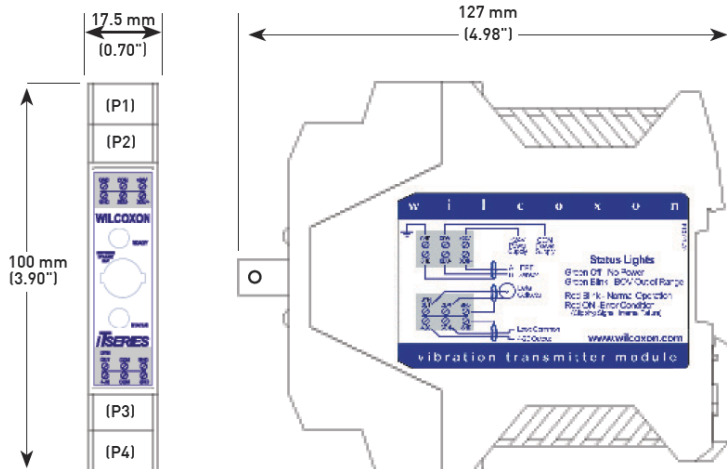
# 4-20 mA vibration transmitter modules

## iT100/iT200 series



The intelligent transmitter (iT) series from Wilcoxon is a complete family of 4-20 mA units providing signal conditioning for simplified online vibration monitoring. The iT series lowers the total cost of condition monitoring and predictive maintenance programs deployed by industrial, commercial and municipal facilities.

Some of the most common processes to benefit from the iT series are pharmaceutical, food and beverage, brewing, water and waste water, petrochemical, pulp and paper, and power generation facilities. The iT series is effective for 4-20 mA vibration monitoring of pumps, motors, fans, cooling towers, compressors, and gear boxes. Applying predictive maintenance techniques to these operations and machines can result in significant maintenance expense reductions. Moreover, trending of the overall vibration level does not require any sophisticated analysis skills. Observing a sustained increase in overall vibration usually provides enough evidence to warrant a more detailed inspection of the machine.



### Key features

- Slim 17.5 mm case
- Reverse wiring protection
- ESD protection
- Front panel BNC for dynamic signal output
- Communicates with other iT series modules through integrated communication bus
- Dynamic signal available for portable data collectors or hard-wired online systems (terminals)
- Units can be daisy chained, providing multiple 4-20 mA output from a single sensor

### Certifications



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### SPECIFICATIONS

#### OUTPUT, 4-20 MA LOOP CURRENT

<b>Full scale <math>\pm 2\%</math></b>	see chart on page 4	
<b>Output type</b>	peak (equivalent) or true RMS, true peak or true peak-peak	
<b>Frequency response, without filtering, <math>-3</math> dB</b>	<b>Acceleration</b>	18 to $1.2 \times 10^8$ RPM
	<b>Velocity</b>	60 to 300,000 RPM
<b>Repeatability</b>	2%	
<b>Maximum 4-20 mA loop load resistance<sup>1</sup></b>	2%	
<b>Zero (4 mA) accuracy</b>	$\pm 0.25$ mA	
<b>Reading accuracy</b>	$\pm 2\%$ of full scale	
<b>High-pass filtering, 2 pole, pre-set</b>	see chart on page 4	
<b>Low-pass filtering, 8 pole, pre-set</b>	see chart on page 4	
<b>Temperature offset, maximum</b>	0.1%/°F	
<b>Turn-on time</b>	120 seconds	

#### OUTPUT, BUFFERED DYNAMIC

<b>Gain, RTI sensor</b>	$1.0 \pm 2\%$	
<b>Noise RTO, broadband, 1 Hz - 10 kHz, RMS</b>	$\leq 0.0001$ volts	
<b>Frequency response</b>	<b>Amplitude <math>\pm 3</math> dB</b>	$\leq 0.3$ Hz to 20 kHz
	<b>Phase shift at 1 kHz</b>	$0^\circ \pm 1^\circ$
<b>Output type</b>	AC-AC/DC coupled	
<b>Sensor types</b>	IEPE accelerometers and IEPE piezovelocity transducers	
<b>Sensor sensitivities accepted</b>	<b>Accelerometer</b>	10 mV/g, 100 mV/g, 500 mV/g
	<b>Piezovelocity<sup>2</sup></b>	10 mV/ips, 100 mV/ips, 500 mV/ips
<b>Sensor powering</b>	<b>Open circuit voltage</b>	$V_{in} - 2 \pm 1$ volts
	<b>Constant current</b>	$3.6$ mA $\pm 20\%$
<b>Maximum dynamic signal input for linear response<sup>3</sup></b>	$\pm 7$ volts peak	

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### Notes:

<sup>1</sup> Determined at powering voltage of 24V.

<sup>2</sup> Under all conditions the input vibration should not exceed 50 ips.

<sup>3</sup> Limited by sensor type.

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### SPECIFICATIONS

<b>Power</b>	<b>Voltage (V<sub>in</sub>)</b>	24 ±4 VDC
	<b>Absolute maximum voltage</b>	32 VDC
	<b>Current draw, max</b>	145 mA
<b>Operating temperature</b>		-40 to 185° F
<b>Humidity, non-condensing</b>		≤95%
<b>Altitude limit, operating</b>		9842.5 ft
<b>Mounting</b>		snap fit 35 mm DIN rail
<b>Width</b>		0.70 in
<b>Depth, front of BNC to back of DIN rail</b>		4.98 in
<b>Height</b>		3.90 in

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<b>Wiring</b>		
Terminal designations		
P1	+24V COM GND	Positive power input for iT module Common for power input Earth ground connection (to ground iT module)
P2	XDU+ XDU- SHD	Sensor power/signal input Sensor common input Sensor shield wiring termination
P3	DYN OUT COM SHD	Dynamic signal out Common of dynamic signal out Shield point termination of dynamic out
P4	4-20 COM SHD	4-20 mA loop return signal Common reference for 4-20 mA return Shield point termination for loop wiring
Front panel		
BNC connector	Output BNC connection for buffered dynamic signal (for data collector)	
Green LED	"On" indicates 24 V power applied and sensor connection OK "Off" indicates no 24V power applied or unit not ready Flashing indicates BOV out of OK range (5V to 18V)	
Red LED	Blinking every 2 seconds indicates normal operation "ON" error condition indicates signal clipping or internal circuit failure	

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## iT100/iT200 series

### Ordering information

iT□□□- F□□- S□□□- L□□□□.□- H□□□□□  
(displayed on side label)

iT	iT model type	
	Input	Output
111	Acceleration	Acceleration; g-peak
112	Acceleration	Acceleration; g-RMS
113	Acceleration	Acceleration; g-true peak
114	Acceleration	Acceleration; g-true peak-peak
121	Acceleration	Velocity; ips-peak
122	Acceleration	Velocity; ips-RMS
221	Piezovelocity	Velocity; ips-peak
222	Piezovelocity	Velocity; ips-RMS
223	Piezovelocity	Velocity; ips-true peak
224	Piezovelocity	Velocity; ips-true peak-peak
231	Piezovelocity	Displacement; mil-peak
232	Piezovelocity	Displacement; mil-RMS

L	Low frequency corner* (high-pass)
0000.3	0.3 Hz (acceleration models only)
0001.0	1 Hz (lowest freq. velocity or displacement, S=500)
0002.0	2 Hz (lowest freq. velocity or displacement, S <sub>≥</sub> 100)
0005.0	5 Hz (lowest freq. velocity or displacement, S <sub>≥</sub> 010)
0010.0	10 Hz
0020.0	20 Hz
0030.0	30 Hz
0050.0	50 Hz
0080.0	80 Hz
0100.0	100 Hz
0200.0	200 Hz
0300.0	300 Hz
0500.0	500 Hz
1000.0	1000 Hz

F	Full-scale output		
	Acceleration	Velocity	Displacement
05	5 g	0.5 ips	
10	10 g	1.0 ips	10 mil
20	20 g	2.0 ips	20 mil
25			25 mil
30	30 g	3.0 ips	
50	50 g	5.0 ips (S100 only)	
99			99 mil

H	High frequency corner* (low-pass)
00200	200 Hz
00300	300 Hz
00500	500 Hz
00800	800 Hz
01000	1000 Hz
02000	2000 Hz (highest frequency for displacement models)
03000	3000 Hz
05000	5000 Hz (highest frequency for velocity models)
10000	10000 Hz (highest frequency for true peak or true peak-peak)
20000	20000 Hz (acceleration models only)

S	Input sensor sensitivity	
	Accelerometers	Piezovelocity transducers
010	10 mV/g	10 mV/ips
100	100 mV/g	100 mV/ips
500	500 mV/g	500 mV/ips

\* High frequency corner must be at least 10 times low frequency corner

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