

Model *i*T SERIES 4-20 mA Vibration Transmitter Modules



FEATURES:

- Field adjustable filter settings
- Slim 17.5mm case
- Reverse wiring protection
- ESD protection
- Front panel BNC for dynamic signal output

BENEFITS:

- Flexible filter frequencies allow users to make field adjustment easily, no hardware changes; easy to revert back to factory settings
- 17.5mm case allows installation of many more modules than ever before
- Dynamic signal available for portable Data Collectors (BNC) or hard wired on-line systems (terminals)

The *i*T SERIES vibration transmitter module operates from a 24 Volt DC (nominal) power supply. They accept input directly from ICP-type sensors. The module then processes the signal and produces an output 4-20 mA loop current proportional to the overall in-band vibration. The input dynamic vibration signal is buffered and presented as an output at the BNC connector and on one set of terminals. The standard 4-20 mA loop output signal is usually wired to a Programmable Logic Controller (PLC) or a Distributed Control System (DCS).

Ⓒ Ⓔ (Pending)

NOTES:

- ¹ Determined at powering voltage of 24 Volts
- ² In "Manual Set" mode the filters are continuously variable. LF: 2 Hz to 1 kHz, HF: 200 Hz to 20 kHz
- ³ Under all conditions the input vibration should not exceed 50ips.

OUTPUT, 4-20 mA Loop Current

Full Scale, $\pm 2\%$	See chart on back
Output Type	Peak (equivalent) or True RMS
Frequency Response, without filtering, -3dB:	
Acceleration	0.3 Hz to 20 kHz
Velocity	2.0 Hz to 20 kHz
Repeatability	2%
Maximum 4-20mA Loop Load Resistance	600 Ω
Zero (4mA) accuracy	± 0.25 mA
Reading accuracy	$\pm 2\%$ of Full Scale
High-Pass Filtering, 2-pole, pre-set	See chart on back
Low-Pass Filtering, 8-pole, pre-set	See chart on back
Temperature Offset, Maximum	0.1%/°C
Turn-On Time	120 seconds

OUTPUT, Buffered Dynamic

Gain, RTI sensor	1.0 \pm 2%
Noise RTO, Broadband, 1Hz - 10 kHz, RMS	≤ 0.0001 Volts
Frequency Response: Amplitude (± 3 dB)	≤ 0.3 Hz to ≥ 100 kHz
Phase Shift (at 1 kHz)	0° \pm 1°
Output Type	AC-coupled

INPUT

Sensor types	ICP Accelerometers and ICP Piezovelocity Transducers
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Sensor Sensitivities accepted:

Accelerometer	10 mV/g, 100 mV/g, 500 mV/g
PiezoVelocity	10 mV/ips, 100 mV/ips, 500 mV/ips

Sensor Powering:

Open circuit voltage	Vin - 2 \pm 1 Volts
Constant-Current	3.6 mA $\pm 20\%$

Maximum Dynamic Signal Input, for linear response³ ± 7 Volts peak

ENVIRONMENTAL

Power: Voltage (Vin)	24 \pm 4 Volts, DC
Absolute Maximum Voltage	32 Volts DC @65°C
Current draw	≤ 130 mA
Temperature	-40°C to +85°C
Humidity, non-condensing	$\leq 95\%$
Altitude limit, operating	3,000 Meters

PHYSICAL

Mounting	Snap into 35 mm DIN rail
Width	17.5 mm (0.70")
Depth, front of BNC to back of DIN rail	127 mm (4.98")
Height	100 mm (3.90")

WIRING

Terminal designations

P1	+24V COM GND	Positive power input for <i>i</i> T module Common for power input Earth ground connection (to ground <i>i</i> T 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 for 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

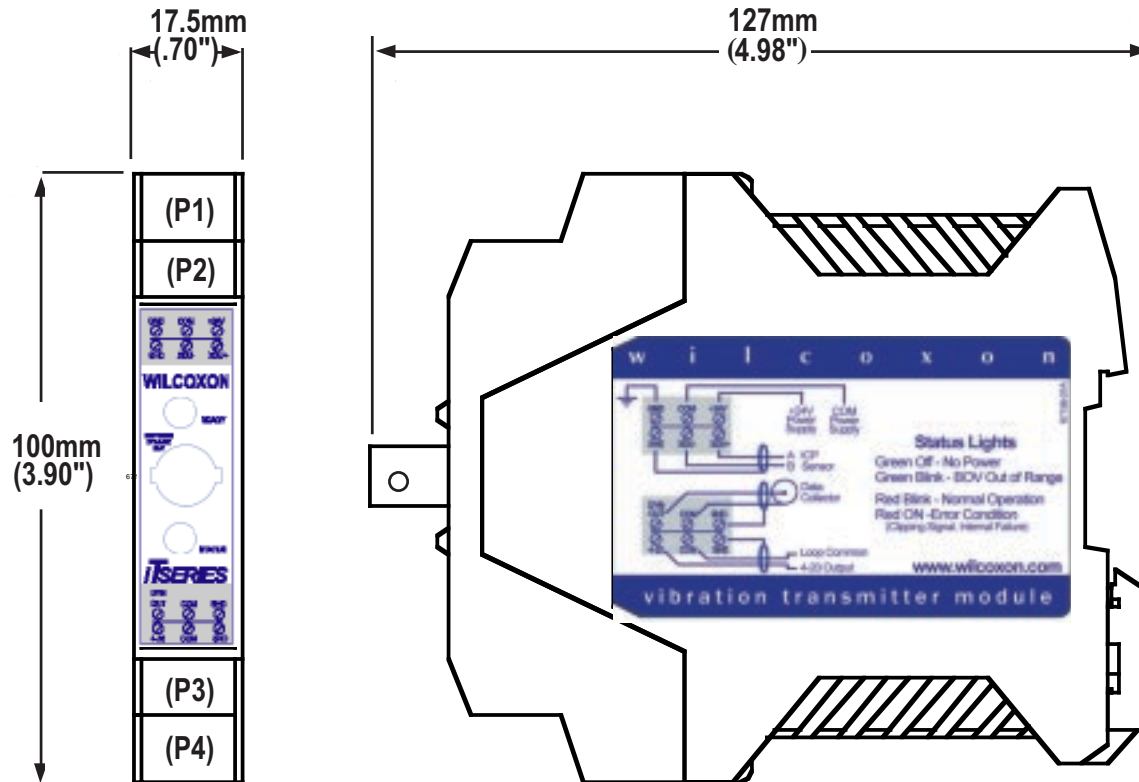
BNC connector	Output BNC connection for buffered dynamic signal (for data collector)
Green LED	"ON" indicates 24 Volt power applied and Sensor connection OK "OFF" indicates no 24 Volt power applied or unit not ready "FLASHING" indicates BOV out of OK range (5V to 18V)
Red LED	"ON" error condition, indicates signal clipping or internal circuit failure "Flashing" every 2 seconds, normal operation



Due to continued research and development, Wilcoxon Research reserves the right to amend this specification without notice.



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Ordering Information

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

<i>iT</i>	Model Type	<i>L</i>	Low Frequency Corner (High-Pass)																		
111	Acceleration Input, Acceleration 4-20 mA, Peak g	0000.3	0.3 Hz, Acceleration only																		
112	Acceleration Input, Acceleration 4-20 mA, RMS g	0002.0	2 Hz, Lowest velocity filter																		
121	Acceleration Input, Velocity 4-20 mA, Peak ips	0005.0	5 Hz																		
122	Acceleration Input, Velocity 4-20 mA, RMS ips	0010.0	10 Hz																		
221	PiezoVelocity Input, Velocity 4-20 mA, Peak ips	0020.0	20 Hz																		
222	PiezoVelocity Input, Velocity 4-20 mA, RMS ips	0030.0	30 Hz																		
F Full Scale Output <table border="1"> <thead> <tr> <th></th> <th>Acceleration</th> <th>Velocity</th> </tr> </thead> <tbody> <tr> <td>05</td> <td>5g</td> <td>0.5 ips</td> </tr> <tr> <td>10</td> <td>10g</td> <td>1.0 ips</td> </tr> <tr> <td>20</td> <td>20g</td> <td>2.0 ips</td> </tr> <tr> <td>30</td> <td>30g</td> <td>3.0 ips</td> </tr> <tr> <td>50</td> <td>50g</td> <td>5.0 ips</td> </tr> </tbody> </table>			Acceleration	Velocity	05	5g	0.5 ips	10	10g	1.0 ips	20	20g	2.0 ips	30	30g	3.0 ips	50	50g	5.0 ips	0050.0	50 Hz
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