

Model 8042-VR/-VP Submersible Velocity Transmitter

4-20mA Loop Power Transmitter
True RMS or Peak Output
IP68 Protection, >100meters
Integral Cable, Tefzel & Urethane



The Model 8042-VR/VP is a submersible velocity transmitter designed for harsh environments. The transmitter is available in ranges from 0.5 to 5.0 in/sec, in either 4-20mA RMS or Peak velocity output options, and features a welded Titanium housing. The model 8042 features an integral cable that is custom designed for submersible applications and features a unique water block feature that self-seals in the event of accidental cuts to the cable. The accelerometer includes internal shielding and a usable bandwidth to 1000Hz.

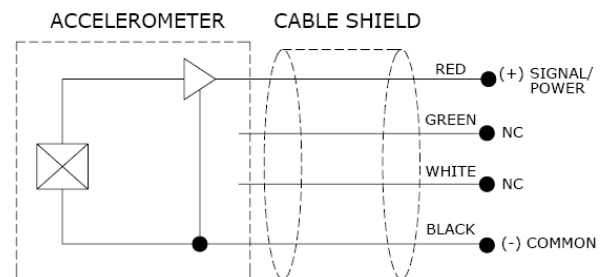
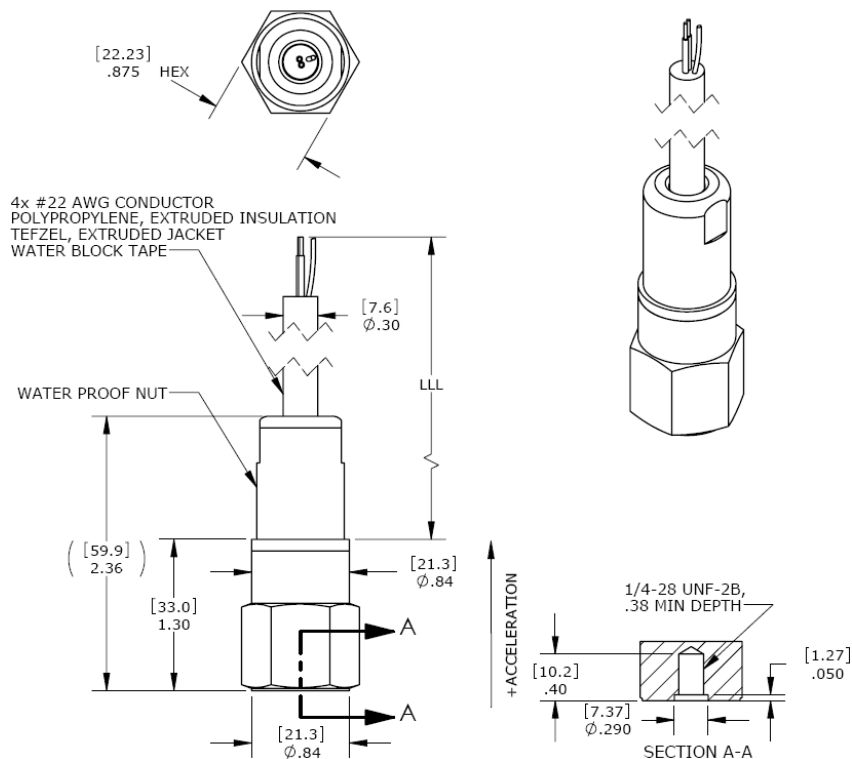
FEATURES

- 0.5 to 5.0 in/sec Dynamic Range
- 3-1000Hz Bandwidth
- Case Isolated, Internally Shielded
- Welded Titanium
- Annular Shear Mode Crystals
- Reverse Wiring Protection

APPLICATIONS

- Submersible Pumps
- Rotating Machinery Monitoring
- Underwater Vibration Monitoring
- Outdoor, Harsh Environments
- Gearbox Monitoring
- Shipboard Installations

dimensions



Model 8042-VR/-VP Submersible Velocity Transmitter

performance specifications

All values are typical at +24°C, 100Hz and 15Vdc excitation unless otherwise stated. Measurement Specialties reserves the right to update and change these specifications without notice. Standard product parameters are described in PSC-1003 for Plug & Play AC Accelerometers. Measurement Specialties family of [Piezoelectric Accelerometers](#) are used for vibration/shock monitoring, structural analysis, impact detection and machine monitoring.

Parameters

						Notes
DYNAMIC						
Measurement Range (in/sec)	0-0.5	0-1.00	0-2.00	0-3.00	0-5.00	
Measurement Range (mm/sec)	0-12.7	0-25.4	0-50.8	0-76.2	0-127	
Output (mA)	4-20	4-20	4-20	4-20	4-20	See Note 1
Frequency Response (cpm)	180-60000	180-60000	180-60000	180-60000	180-60000	±10%
Frequency Response (Hz)	3-1000	3-1000	3-1000	3-1000	3-1000	±10%
Non-Linearity (%FSO)	±1					
Transverse Sensitivity (%)	<5					
Shock Limit (g)	5000					

ELECTRICAL

Excitation Voltage (Vdc)	12 to 30					
Loop Resistance (Ohms)	900 max					See Note 2
Turn on Time (sec)	<15					
Grounding	Case Isolated, Internally Shielded					

ENVIRONMENTAL

Temperature Response (%)	±5					
Operating Temperature (°C)	-20 to +80 for T (Tefzel) option cable					
	-20 to +60 for U (Urethane) option cable					
Protection Rating	IP68, 100meter minimum submersion					

PHYSICAL

Sensing Element	Ceramic (shear mode)
Case Material	Titanium
Weight (grams)	70
Mounting Torque	24 lb-in (2.7 N-m)

Calibration supplied: CS-FREQ-0100 NIST Traceable Amplitude Calibration from 20Hz to ±10% Frequency Response Limit

Supplied accessories: AC-A03663 ¼-28 to ¼-28 mounting stud

Optional accessories: AC-D03664 ¼-28 to M5 mounting stud
 AC-D03665 ¼-28 to M6 mounting stud
 AC-A04209 Magnetic Mounting Adaptor
 AC-D04210 Adhesive Mounting Adaptor

Note 1

The signal output from the 8042 sensor can be calculated using the following formulas.

$$\text{Velocity Level in IPS (in/sec)} = (\text{Signal Output in mA} - 4\text{mA}) \times (\text{Full Scale Range in IPS} / 16\text{mA})$$

Typical outputs are illustrated in the tables below.

Signal Output	8042-VR & 8042-VP Velocity Transmitter Ranges				
	0.50in/sec	1.00in/sec	2.00in/sec	3.00in/sec	5.00in/sec
4mA	0.00in/sec	0.00in/sec	0.00in/sec	0.00in/sec	0.00in/sec
8mA	0.125in/sec	0.25in/sec	0.50in/sec	0.75in/sec	1.25in/sec
12mA	0.25in/sec	0.50in/sec	1.00in/sec	1.50in/sec	2.50in/sec
16mA	0.375in/sec	0.75in/sec	1.50in/sec	2.25in/sec	3.75in/sec
20mA	0.50in/sec	1.00in/sec	2.00in/sec	3.00in/sec	5.00in/sec

Note 2

Maximum Loop Resistance = (Excitation Voltage – 12Vdc) / 20mA

Model 8042-VR/-VP Submersible Velocity Transmitter

ordering info

PART NUMBERING Model Number+Output Type+Range+Cable Option+Cable Length

8042-XX-GG-TZZZZ

| | | | Cable Length (0360 is 360 inches)

| | | Cable Jacket Option (T is Tefzel, U is Urethane)

| | Dynamic Range (05 is 0-0.5 in/sec)

| Range Type (VR is RMS Velocity)

-XX

VR = RMS

VP = Peak

-GG

05 = 0-0.5 in/sec (0-12.7 mm/sec)

10 = 0-1.0 in/sec (0-25.4 mm/sec)

20 = 0-2.0 in/sec (0-50.8 mm/sec)

30 = 0-3.0 in/sec (0-76.2 mm/sec)

50 = 0-5.0 in/sec (0-127 mm/sec)

Example: 8042-VR-10-U0360

Model 8042, RMS Velocity Output, 0-1.0 in/sec, Urethane Cable, 360 inch (30ft) Cable Length

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