

VT9299 Indicating Vibration Transmitter



Overview



Model VT9299 is a shell-mounting vibration transmitter with OLED display. It is indeed a vibration-sensing instrument applied in industry and can work in a wide operating temperature range of $-40^{\circ}\text{C} \sim +70^{\circ}\text{C}$. Piezoelectric vibration sensor and signal conditioner are combined together in a precise stainless steel case of the digitized vibration transmitter. It outputs a 4-20mA proportional vibration signal and can be connected directly to the PLC, DCS and any monitoring devices where the vibration alarming values can be set. It also has a strong anti-interference ability and can resist any electromagnetic and RF interference in the field.



VT9299 can be selected with an option of Intelligent HART communication protocol, via which measuring range can be modified by HART communicator without any moving device.

With the notable anti-electromagnetic interference feature, it can be mounted directly on the bearing bush of the mechanical device and provide reliable protection for your machinery.

Product features



4 bit LCD display

Two-wire or three-wire system connection

Optional HART communication protocol

Digital circuit

Anti - electromagnetic and RF interference

Built-in surge protection

Options of measuring acceleration, velocity or displacement

The vibration value can be displayed in field

Connected directly to PLC, DCS or 4-20mA monitor



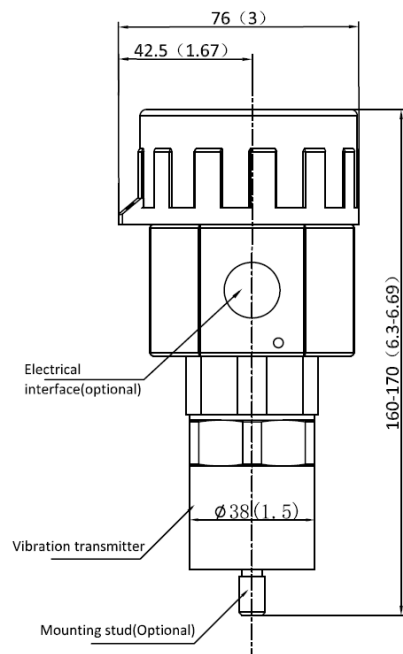
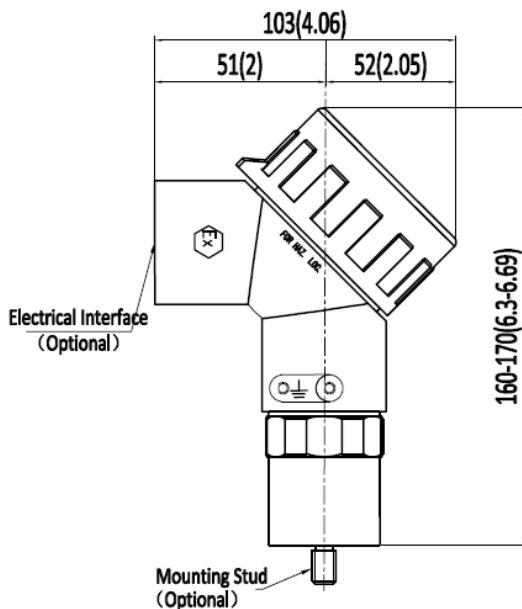
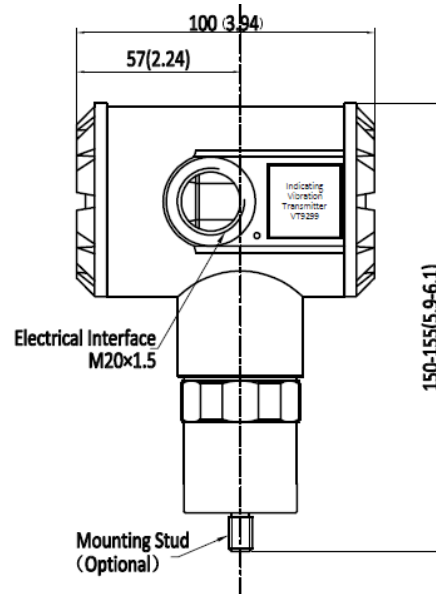
VT9299 Indicating Vibration Transmitter

- Optional high-pass filter and low-pass filter
- Optional different mounting stud thread
- Operating temperature range of -40°C~+70°C
- Extremely low axial cross sensitivity
- “slope-restriction” technology

Applications

- Blower Centrifuge
- Compressor Engine
- Motor Electrical generator Pump
- Fan Turbocharger Turbine

Dimension plan



Unit:mm(in)

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Technical specifications

Measurement range: Refer to model selection guide AAA, output 4-20mA signal proportional to vibration level. We can customize any range between 0-10mm/s and 0-200mm/s (RMS) for the user.

Accuracy: $\pm 1\%$ (repeatability)

Linearity: $\pm 0.5\%$

Display: 4 bit OLED, g, mm/s, um, peak(pk) or Root-Mean-Square (rms)

Electrical interface: Double chamber instrument head: M20 \times 1.5,

Single chamber instrument head: optional

Frequency response: 2-2000Hz (± 3 dB)

Sensing direction: along the sensor's vertical axis

Power supply (Vs) : 16-28VDC, non polarity connection

Insulation: 500Vrms, circuits and the case

Signal transmission distance: 4-20mA signal transmits up to 1500m

Connecting wire: 18AWG (0.75mm²) Double stranded shield wire

The maximum load resistance (RL) : $R_L = 50 \times (V_S - 12) \Omega$

Operating temperature: -40 $^{\circ}$ C~+70 $^{\circ}$ C

Storage temperature: -40 $^{\circ}$ C~+85 $^{\circ}$ C

Case material: standard: 304SS, optional: 316L

Protection grade: IP66

Explosion Proof Grade: NEPSI/CMExC/IECEX/ATEX, Ex ia IIC T4;

NEPSI/CMExC/IECEX/ATEX, Exd IIC T6

Application in hazardous area: use isolated safety barrier



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Model selection guide

VT9299X-AAA-BCD-EF-G

X: Transmitter function type

- B 2-wire
- C 3-wire
- H 2-wire with Hart enabled

AAA: Measuring range

Vibration velocity peak value

- 921 25.4mm/s (1.0ips) , pk
- 922 20mm/s (0.8ips) , pk
- 923 50mm/s (2.0ips) , pk
- 924 100mm/s (4.0ips) , pk
- 925 15mm/s (0.6ips) , pk
- 926 10mm/s (0.4ips) , pk
- 927 75mm/s (3.0ips) , pk
- 928 125mm/s (5.0ips) , pk

Vibration velocity effective value (RMS)

- 951 25.4mm/s (1.0ips) , rms
- 952 20mm/s (0.8ips) , rms
- 953 50mm/s (2.0ips) , rms
- 954 100mm/s (4.0ips) , rms
- 955 15mm/s (0.6ips) , rms
- 956 10mm/s (0.4ips) , rms
- 957 75mm/s (3.0ips) , rms
- 958 125mm/s (5.0ips) , rms

Vibration acceleration peak value

- 901 1g, pk
- 902 2g, pk
- 903 5g, pk

Vibration acceleration effective value (RMS)

- 931 1g, rms
- 932 2g, rms
- 933 5g, rms

Vibration displacement

- 911 0-100μm, pk- pk
- 912 0-150μm, pk- pk
- 913 0-200μm, pk- pk

B: Mounting stud

- 0 Integral 1/4" NPT
- 1 Integral 1/2" NPT
- 2 3/8"-24UNF×1/2"
- 3 M8×1-12
- 4 M10×1.25-12
- 5 1/4"-20UNC
- 6 1/4"-28UNF
- 7 M8×1.25-12
- 8 M10×1-12
- 9 M10×1.5-12
- 10 M12×1.75-12
- 11 M20×1.5-12
- X Customize, contact factory

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Model selection guide

VT9299X-AAA-BCD-EF-G

C: Hazardous Area Rating

- 1 Safety zone
- 2 NEPSI/CMEExC, Ex ia IIC T4 Gb
- 3 NEPSI/CMEExC, Ex d IIC T6 Gb
- 4 IECEx, Ex ia IIC T4 Gb(D=1)
- 5 IECEx, Ex db IIC T6 Gb(D=1)
- 6 ATEX, Ex ia IIC T4 Gb(D=1)
- 7 ATEX, Ex db IIC T6 Gb(D=1)

D: Display / electrical interface

- 1 Double chamber, M20×1.5
- 2 Single chamber, 1/2"NPT
- 3 Single chamber, M20×1.5
- 4 Single chamber, 3/4"NPT
- 5 Single chamber, 1/2"NPT Dual electrical interface
- 6 Single chamber, M20×1.5 Dual electrical interface

E: High-pass filter

- 0 unfiltered (2Hz) standard
- 1 5Hz
- 2 10Hz
- 3 20Hz
- 4 50Hz
- 5 100Hz
- 6 200Hz

F: Low-pass filter

- 0 unfiltered (1500Hz) standard
- 1 500Hz
- 2 1000Hz
- 3 2000Hz

G: Case material

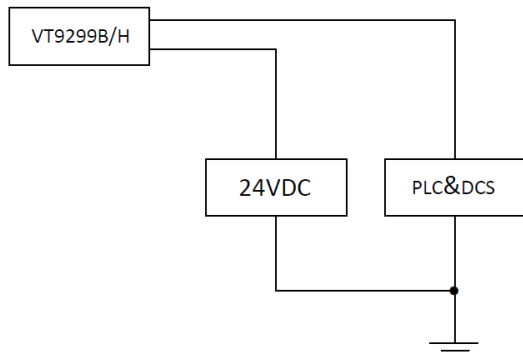
- 0 Head: aluminum alloy
Transmitter:304SS(blank represents default)
- 1 Head: aluminum alloy
Transmitter:316L

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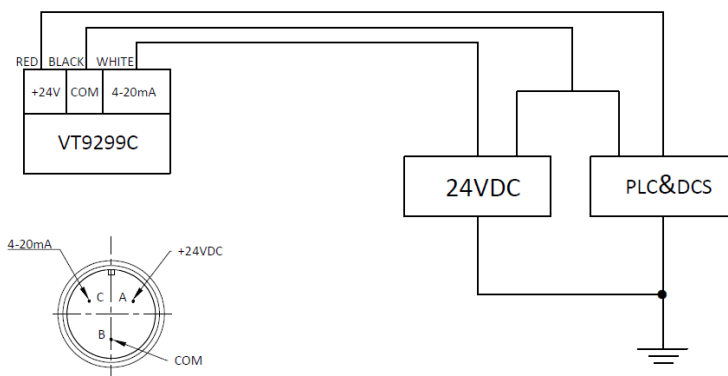


Wiring diagram

Safety zone and Flame-proof area



VT9299B/H schematic diagram



VT9299C schematic diagram

Intrinsically safe and explosion-proof area

