



## DM200 Dual-Channel A/V/D Vibration Monitor

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## Introduction

### Condition Monitoring

- ✓ Measuring rotation machinery vibration. Such as case vibration, bearing housing vibration, structural vibration. Output in acceleration, velocity or displacement.
- ✓ Monitoring vibration increase due to imbalance, misalignment, looseness, rolling-element bearing failure, defect gearbox.

### Testing Parameters

- ✓ Acceleration, velocity, displacement

### Machine Type

- ✓ All kinds of rotation machines. Such as Fan, compressor, electric motor, pump, gearbox, and power generators etc.

### Sensor Installation

- ✓ Only need to mill a flat base of 30mm in diameter, and drill a M6 hole in the middle to install the sensor. No need to do anything inside the machine.

### Output terminal

- ✓ Each channel owns 4-20mA output with power. First channel output terminal: A-4-20 and COM. Second channel output terminal: B-4-20 and COM.
- ✓ Each channel separately owns Two Levels SPDT output (6 output terminal "ALERT" and "DANGER"). We can use the alarm signal of DM200 as the input signal of protection machine when alarming, machines could be protected timely.
- ✓ Remote RESET/BYPASS ("RESET" and "COM"). Short RESET and COM will engage system reset and bypass.
- ✓ TRIP/MLTP. Short Trip/Multi and COM, then set Double Multiply or Triple Multiply by software, system alarm value will increase a factor of 2 or 3.
- ✓ Each channel owns Buffered output terminal.
- ✓ Use LED as the indicator, when it works ok, OK light is on. When CH1 light on, it will indicate the value of CH1; when CH2 light on, it will indicate the value of CH2. When output value meet ALERT level, relevant ALARM light on; When output value meet DANGER level, relevant ALARM light on.
- ✓ Vibration values could be indicated via PLC、

- DCS with current 4~20mA, field indicating also available.
- ✓ Available in all hazardous Area (Used with TM0401).
- ✓ Modbus communication port.



## Specifications

### Electrical

#### Power Supply:

90-250VAC, 40-60Hz, 0.5A

#### Frequency Response: ( $\pm 3\text{dB}$ ):

Standard: 4.0-3.0KHz;

Low: 0.5-100Hz.

#### External Sensor:

Sensitivity:

100mV/g for accelerometer;

4.0mV/mm/s for velocity sensor;

40mV/mm/s; 4.0mV/ $\mu\text{m}$  for low frequency velocity/displacement sensor.

#### External ICP sensor:

24VDC, 4mA

Connectors:

"P/A": with red;

"S/B": with white.

#### External low frequency sensor:

"P/A": with red;

"S/B": with white.

#### Buffered Output:

Original vibration, un-filtered;

Sensitivity/frequency: same as the sensor specification.

Impedance :< 150 $\Omega$ ;

Maximum cable distance: 300m (1000ft).

#### Overall Vibration:

4-20mA source driving load resistance up to 500 $\Omega$ .

System OK: Each channel output 4-20mA;

System Not OK: Output<3.5mA.



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### Two Level Alarm:

Alarm setup (Normal/Set):  
 Scale: 0-100%full scale;  
 Accuracy:  $\pm 0.1\%$ .  
 Relays (Alert/Danger):  
 Seal: Epoxy.  
 Capacity: 3A/220VAC or 3A/24VDC resistive load.  
 Relay Type: SPDT.  
 Isolation: 1000VDC  
 Alarm delay:  
 0-60 seconds.  
 With time interval of 1 second.  
 Alarm configuration\*:  
 Variable: OK, Alert, Danger.  
 Logic combination controls 2-path relay output.

### Alarm Multiply:

Short Trip/Multi and COM, then set Double Multiply or Triple Multiply by software, system alarm value will increase a factor of 2 or 3.

### RESET/BYPASS:

Local RESET;  
 Remote RESET/BYPASS: Short REST/BYP and COM

### LED Machine Condition Indicator:

CH1 (Green) light on: Display the value of CH1;  
 CH2 (Green) light on: Display the value of CH2;  
 OK (Green) light on: Self-test passed, System works OK;  
 ALARM (red) light on: Alarm indication.

### Bus Communication (TX/RX):

All setup and condition parameters can be obtained from the bus connector.

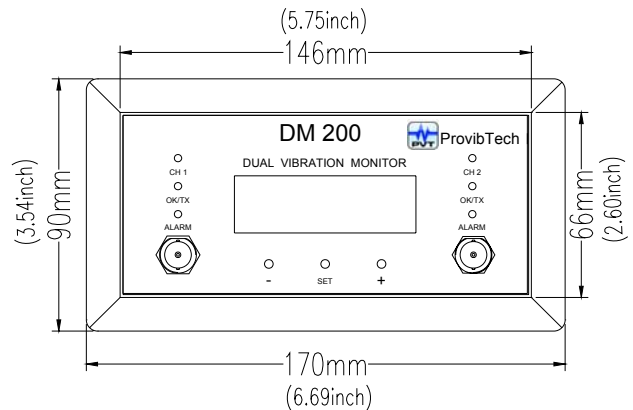
### Digital condition monitoring:

PCM360 condition management software or portable vibration data collector of ProvibTech could collect, store, and analyze machine health condition based on vibration via the bus communication of DM200.

\*: Completed by utilizing ProvibTech configuration modules and software.

### Physical

Size: 170\*90\*120mm (6.69\*3.54\*4.72inch)  
 Others as per drawing below:



### Weight:

1300 g.

### Installation:

With specific Holder.

### Environmental

#### Temperature:

Operation:  $-35^{\circ}\text{C} \sim +70^{\circ}\text{C}$ ;  
 Storage:  $-40^{\circ}\text{C} \sim +100^{\circ}\text{C}$ .

Humidity: 95%non-condensing.

### Ordering Information

#### DM200-AXX-BX-CX-DX-EX

#### AXX: Full Scale

A12: 0 ~ 5.0g pk  
 A13: 0 ~ 10g pk  
 A40\*: 0 ~ 20mm/s rms  
 A41: 0 ~ 25 mm/s rms  
 A42: 0 ~ 50mm/s rms  
 A43: 0 ~ 100mm/s rms  
 A46: 0 ~ 1.0 ips rms  
 A47: 0 ~ 2.0 ips rms  
 A48: 0 ~ 4.0 ips rms  
 A50: 0 ~ 20mm/s pk  
 A51: 0 ~ 25 mm/s pk  
 A52: 0 ~ 50mm/s pk  
 A53: 0 ~ 100mm/s pk  
 A56: 0 ~ 1.0 ips pk  
 A57: 0 ~ 2.0 ips pk  
 A58: 0 ~ 4.0 ips pk  
 A60: 0 ~ 100um pk-pk  
 A61: 0 ~ 125um pk-pk  
 A62: 0 ~ 200um pk-pk  
 A63: 0 ~ 250um pk-pk  
 A64: 0 ~ 500um pk-pk  
 A66: 0 ~ 5mil pk-pk



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A67: 0 ~ 10mil pk-pk

A68: 0 ~ 20mil pk-pk

### **BX: Sensor (not include)**

B0\*: TM0782A, TM0783A, TM0785A or any ICP accelerometer with 100mV/g (A60-A68 not applicable)

B1: TM0793V or any ICP velocity sensor with 4mV/mm/s (A12, 13 not applicable)

B2: TM079VD (A12, 13 not available)

BXXX: Seismic sensor, Sensitivity = XXX

### **CX: Frequency Response**

C0\*: Normal Frequency (B2 not applicable)

C1: Low Frequency (B2 only)

### **DX: Environmental Rating (front panel)**

D0\*: No rating

D1: IP65 or NEMA 4X (buffered output and setting not available)

### **EX: Digital Communication**

E0\*: No digital communication

E1: With Modbus

E2: With Modbus and digital condition monitoring

\* Factory default

## **DM200 Accessory**

DM200 must works with external accelerometer or velocity sensors as a system.

**TM0782A-K-M:** Accelerometer kit.

**TM0783A-K-M:** Accelerometer with integral cable.

**TM0795A-K-M:** Hi-Temperature Accelerometer kit

**TM0793V-K-M:** Velocity sensor kit.

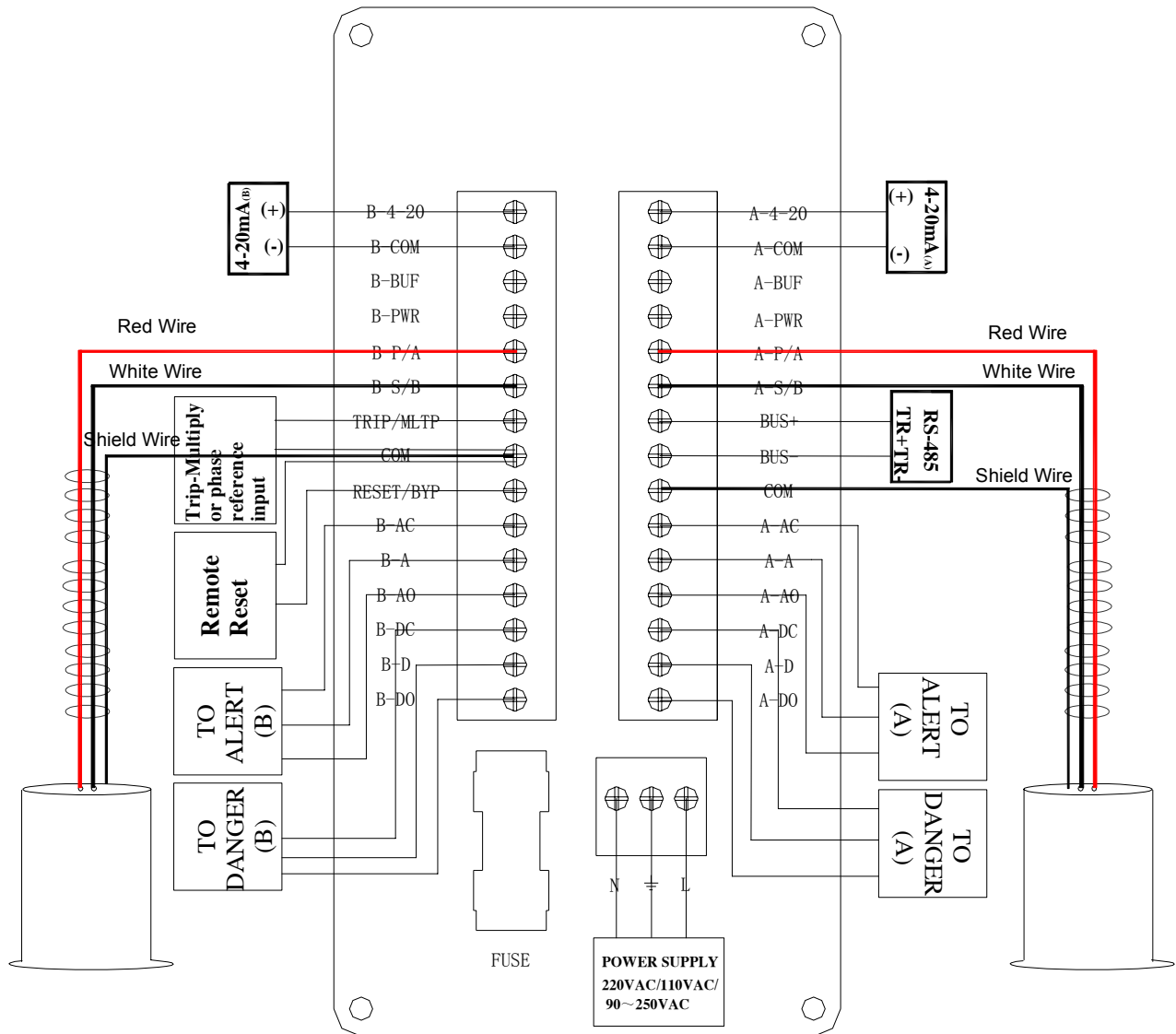
**TM079VD-V/H-K:** Low frequency velocity/displacement sensor.

**TM0401:** barrier.



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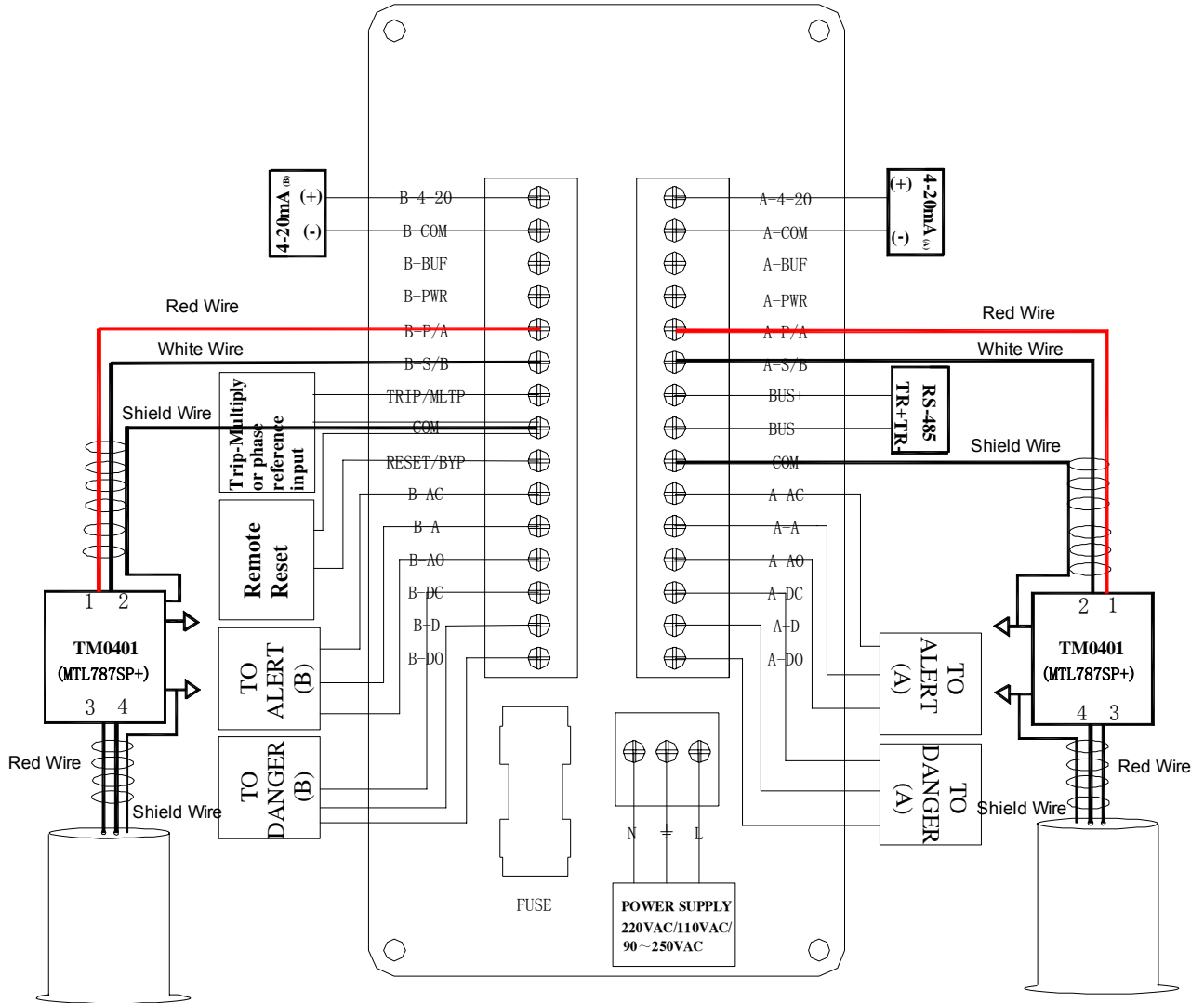
## DM200 Field-wiring Diagram for TM0782A, TM0793V, TM079VD or other ICP sensor



**DM200 Nonhazardous Area**



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## DM200 Hazardous Area