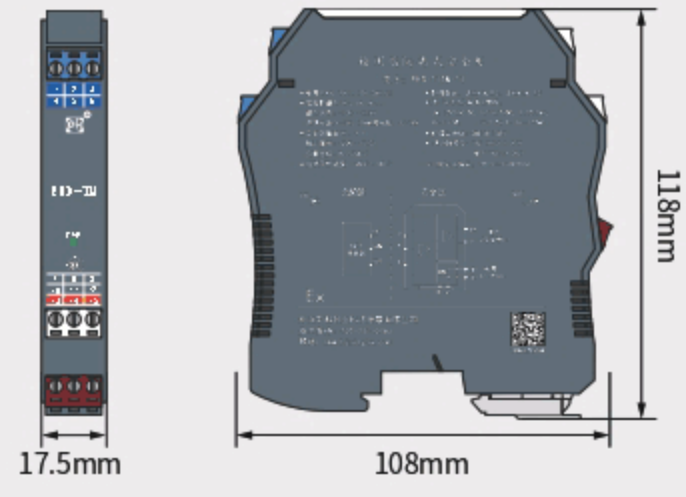
Vibration sensor input isolated safety barrier

PHD-11TM-11

1 input 1 output

Input：Vibration sensor signal

Output：1: 1 signal of vibration sensor



Overview

The vibration sensor signal is input into the isolated safety barrier, which can realize the 1: 1 isolated transmission of the negative voltage signal output by the vibration sensor in the dangerous area to the safe area, and can transmit AC and DC signals respectively, which has high anti-interference function. The circuit provides isolated power supply for the field instruments.

This product needs independent power supply, and the power supply, input and output are isolated.

Specifications

Input in harzadous area:

Input signal: -20V~0.5V

Distribution voltage: Open circuit voltage >-25V and 20mA: ≤-18V

Safety side output:

Output signal: -20V~0.5V

load resistance: RL≥20kΩ

Basic parameters:

Supply voltage: 20~35V DC

Power consumption: ≤60mA (24VDC power supply, when 20mA)

LED indicator : Green——Power indicator

DC transmission accuracy: ＜±50mV

AC transmission accuracy: 0Hz~1kHz，±1%

1kHz~10kHz，-2%~＋1%

10kHz~20kHz，-5%~＋1%

Phase response: Less than 10 μ S is equivalent to

-0.72°	200Hz
-2°	600Hz
-3.6°	1kHz
-36°	10kHz
-72°	20kHz

Voltage bandwidth (-3dB): ≥40kHz

Temperature drift: 0.01%F.S/℃

Temperature parameters: Working temperature: -20℃~+60℃

storage temperature:-40℃~+80℃

Relative humidity: 10%~95% RH no condensation

Insulation strength: Between intrinsically safe side and non-intrinsically safe side (≥3000VAC/min); between power supply and non-intrinsically safe side (≥1500VAC/min)

Insulation resistance: ≥100MΩ (between input/output/power supply)

EMC: According to IEC 61326-1(GB/T 18268), IEC 61326-3-1

MTBF: 100000h

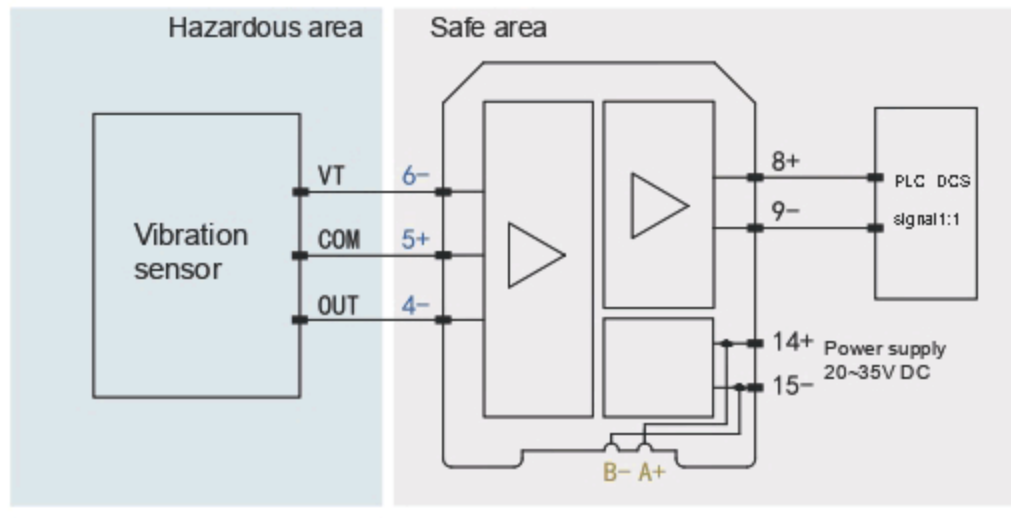
Wire requirements: Horizontal cutting surface ≥0.5mm²

Insulation strength ≥500V

Applicable field equipments: Vibration sensor, negative voltage generator

Installation place: Installed in a safe zone, it can be connected to intrinsic safety instruments in hazardous areas up to Zone 0, IIC, Zone 20, and IIIC

Schematic diagram



Note: The power rail function is an optional function, and users need to specify the power supply method when placing an order

The selection of power rail connectors can refer to page 89 of the "Annex"

Intrinsically safe certification

Explosion proof mark: [Ex ia Ga] IIC　[Ex ia Da] IIIC

Explosion-proof standard: GB/ T 3836.1-2021　GB/T 3836.4-2021

Terminals 4-5-6　Um：250V AC/DC　Uo=26.5V DC　Io=93mA

Po=0.687mW　Co=0.095μF　Lo=4.2mH

Certification body: CQST(China National Quality Supervision and Test Centre for Explosion Protected Electrical Products)