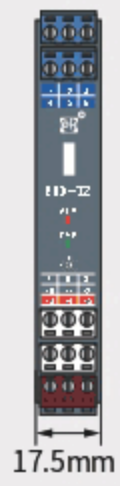
Surge Protection Type RTD input isolated safety barrier

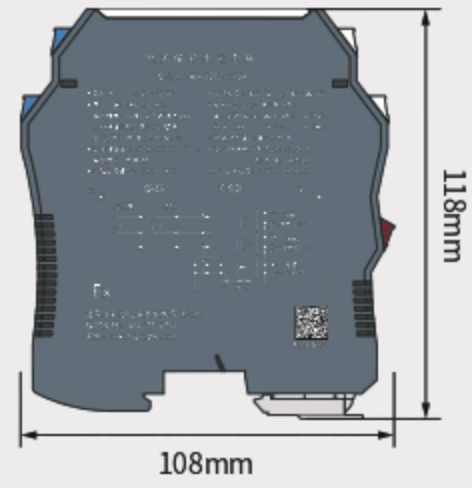
PHD-12TZ-466+

1 input 2 outputs

Input: Two-wire or three-wire RTD Pt100 signal

Output: RTD Pt100 signal





Overview

The thermistor input isolation safety barrier with surge protection function can convert the Pt100 signals of two wire and three wire thermistors (RTDs) in hazardous areas into a 1:1 signal of the thermistor and transmit it to the safety zone. It can be intelligently configured, and the actual range of the thermal resistance can be set through computer software. It has the functions of wire breakage alarm and out of range alarm.

This product requires independent power supply, with isolated power supply, input, and output terminals.

Specifications

Input in harzadous area:

Input signal: Two wire or three wire Pt100 signal

Measurement range: -150℃~850℃

Safety side output:

Output signal: RTD Pt100 signal

Load capacity: Load capacity 0~500 Ω (customizable)

Surge protection features:

Nominal discharge current In(8/20μs): 5kA

Voltage protection level Up(8/20μs): 60V(line to line)

Voltage protection level Up(8/20μs): 600V(line to ground)

According to standards: GB/T18802.21-2016
(equivalent to IEC61643-21:2012)

Basic parameters:

Supply voltage: 20~35V DC

Power consumption: ≤55mA (when 24VDC power supply)

LED indicator: Green: Power indicator
Short circuit alarm: ALM red light stays on for a long time
Open circuit alarm: ALM red light flashing

Output accuracy: 0.1% F.S

Temperature drift: 0.1% F.S/10℃

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

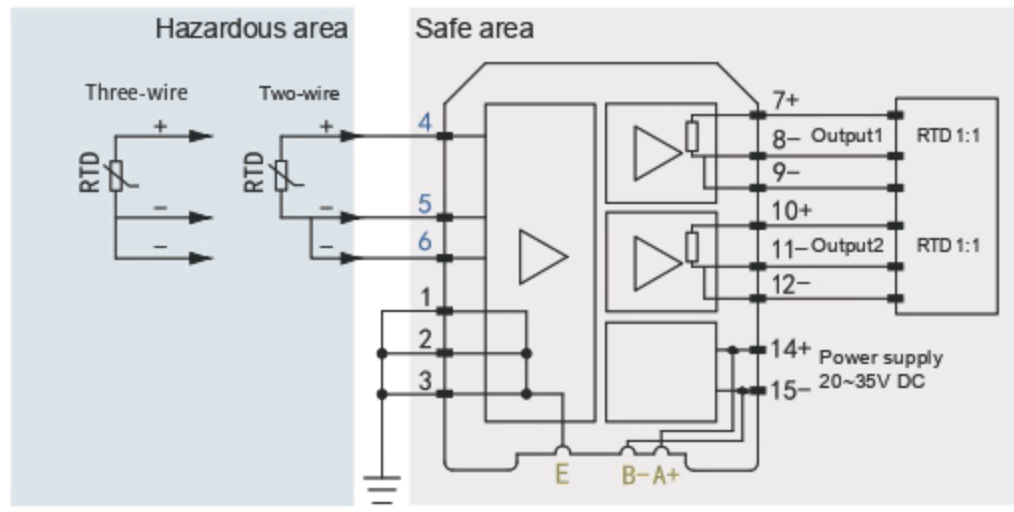
MTBF: 100000h

Wire requirements: Horizontal cutting surface ≥0.5mm²
Insulation strength ≥500V

Applicable field equipments: Two wire or three wire RTD Pt100

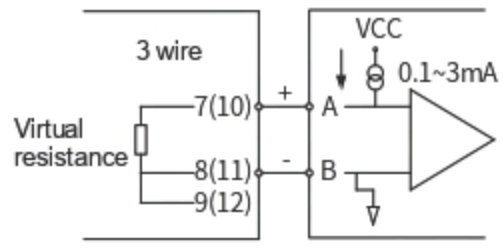
Installation place: Installed in a safe zone, it can be connected to intrinsic safety instruments in hazardous areas up to Zone 0, IIC, Zone 20, and IIIC

Connection wiring

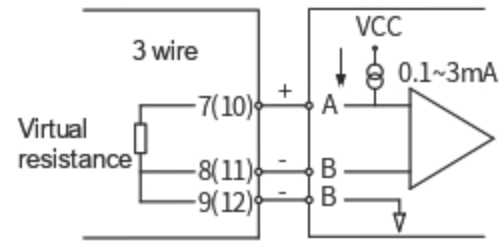


Note: 1. The power rail function is an optional function, and users need to specify the power supply method when placing an order
The selection of power rail connectors can refer to page 89 of the "Annex"
2. When inputting a three wire RTD, it is necessary to ensure that the three wires are of equal length as much as possible
3. When inputting a two-wire RTD, safety barrier terminals 6 and 5 must be short circuited

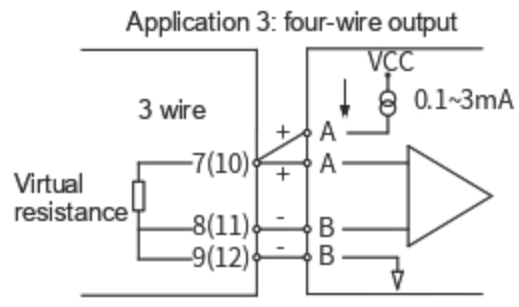
Application 1: Two-wire output



Application 2: Three-wire output



Application 3: four-wire output



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 4-6、5-6 Um：250V AC/DC Uo=8.4V DC Io=31mA
Po=65.1mW Co=4.8μF Lo=20mH

Certification body: CQST(China National Quality Supervision and Test Centre for Explosion Protected Electrical Products)
Shanghai lightning protection products testing center

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