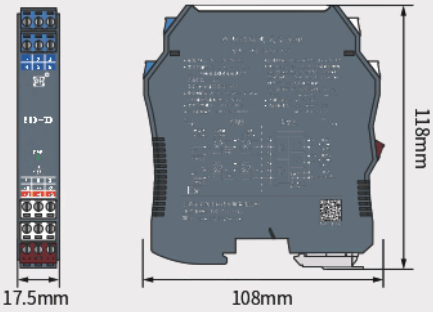
Analogue Input Isolated Safety Barrier

PHD-22TD-2121

2 inputs and 2 outputs

Input: two or three-wire transmitter or
current source(HART digital signal)
Output: 4~20mA (HART digital signal)



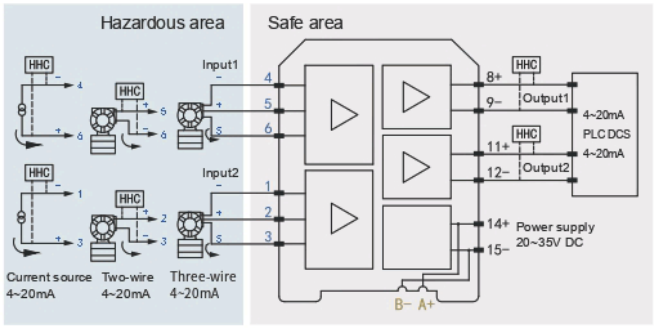
Overview

The analog input isolated safety barrier provides isolated power supply for two - and three wire transmitters in hazardous areas. The 4~20mA signal generated by the transmitter or current source is transmitted from the hazardous area to the safe area output, thereby driving the load in the safe area. For two - or three wire transmitters or current source signals, this safety barrier supports bidirectional communication of the Hart digital signal superimposed on the 4~20mA signal and has a wire breakage alarm function.
This product requires independent power supply, with isolated power supply, input, and output terminals.

Specifications

Input in harzadous area:
Input signal: Two or three-wire transmitter
or current source(HART digital signal)
Transmitter distribution voltage: The open circuit voltage is ≤28V,
and the output voltage is ≥15.5V when the circuit is 20mA
Output in safe area:
Output signal: 4~20mA(HART digital signal)
Output load: When outputting 20mA, 0~500Ω (customizable)
Optional voltage output type, load resistance R_L ≥330kΩ
Basic parameters:
Supply voltage: 20~35V DC
Power consumption: ≤130mA(24V power supply, 20mA output)
LED indicator: Green——power indicator
Output accuracy: 0.1%F.S (Typical value: 0.05% F.S)
Response time: 2ms to reach 90% of the final value
Temperature drift: 0.005%F.S/°C
Temperature parameters: Working temperature: -20°C ~ +60°C
Storage temperature: -40°C ~ +80°C
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, three-wire (HART) transmitter
or current source (HART) signal
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: The power supply of the power rail is an optional function. Users need to specify the power supply mode when ordering.
Please refer to attachment on page 89.

Intrinsically safe certification

Functional safety certification: SIL3 according to IEC 61508 standards
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 2-3、2-1: Um：250V AC/DC Uo=28V DC Io=93mA
5-6、5-4 Po=0.65W Co=0.083μF Lo=4.2mH
Terminals 1-3、4-6: Um：250V AC/DC Uo=7.2V DC Io=---
Po=--- Co=12μF Lo=---
Certification body: CQST(China National Quality Supervision and
Test Centre for Explosion Protected Electrical Products)