

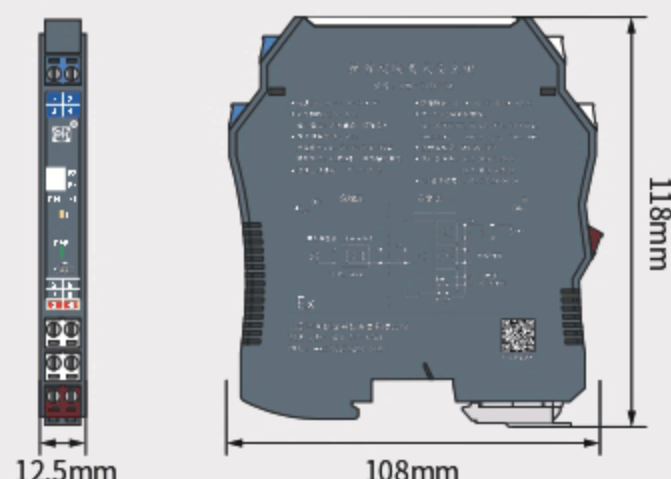
Digital Output Isolated Safety Barrier

PHC-11TF-14

1 input 1 output

Input: Switch contacts, logic levels

Output: 12V/45mA driver



Overview

The switching output isolated safety barrier drives the on-site intrinsically safe equipment in the hazardous area through the contact switch and logic level signal control in the safe area. Thereby controlling solenoid valves, sound and light alarms, etc. The signal status indicator light is set in red and yellow colors, the alarm displays red, and the output solenoid valve and other working tasks display yellow.

This product needs to be powered independently, and the power supply, input and output terminals are isolated between each other.

Specifications

Input in safe area:

Input signal: Switch contact, logic level

Dangerous side output:

Open circuit voltage: 22V~24V DC, UE/IE=12V/45mA

Inversion function: K1 is set to the ON side,
and the circuit output is inverted

Basic parameters:

Supply voltage: 20~35V DC

Power consumption: ≤80mA(24V power supply,
when 12V/45mA power distribution)

LED indicator: Green——Power indicator

Yellow——Output relay in normal working state

Alarm relay function: When dial switch K2 is at "ON" side, circuit
selection alarm function
Load resistance <50Ω, short circuit alarm (SC)
Load resistance >10kΩ, open circuit alarm (LB)

Characteristic response time of alarm relay:

Response time: 20ms

Driving capacity: 250VAC/2A, 30VDC/2A resistive load

Load type: Resistive load

Output accuracy: 0.1%F.S (typical value: 0.05%F.S)

Response time: 20ms to reach 90% of final value

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

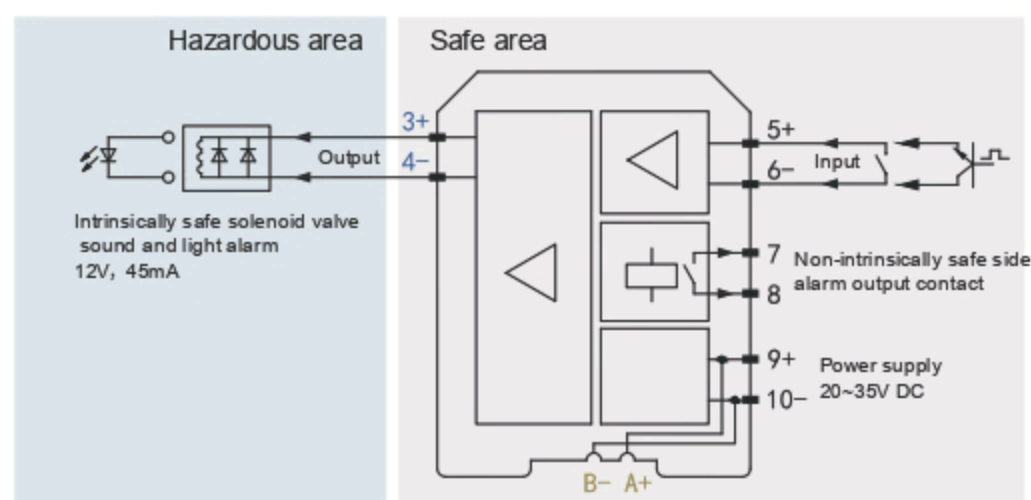
Wire requirements: Horizontal cutting surface ≥0.5mm²
Insulation strength ≥500V

Applicable field equipments:

Audible and visual alarm, intrinsically safe solenoid valve

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 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 3-4 Um: 250V AC/DC Uo=25.2V DC Io=115mA

Po=0.73mW Co=0.107μF Lo=1.5mH

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