

**PHD-12TF-277**

接近开关 触点输入/继电器输出  
一入二出

Switch or NAMUR proximity detector input /relay output  
1 input 2 outputs

## 概述 Overview

隔离式检测端安全栅：PHD-12TF-277，开关量输入输出，一路输入两路输出。

安全栅可实现将危险区的接近开关、触点输入，转换为继电器触点信号传送到安全区。输出触点设“常开/常闭”状态转换选择开关。另设输入信号短路或开路报警指示，电路为输入端传感器提供电源。

本产品需外接20~35VDC电源。

信号状态指示灯设红黄双色，表示输出继电器工作状态，报警呈现红色，正常工作为黄色。

\*总线端子供电，详见附录。

Isolated safety barrier at detection side: PHD-12TF-277, digital input and output, single input and dual output.

The isolated barrier can convert the switch or NAMUR proximity detector input in the dangerous area to the relay contact signal and transmit it to the safe area.

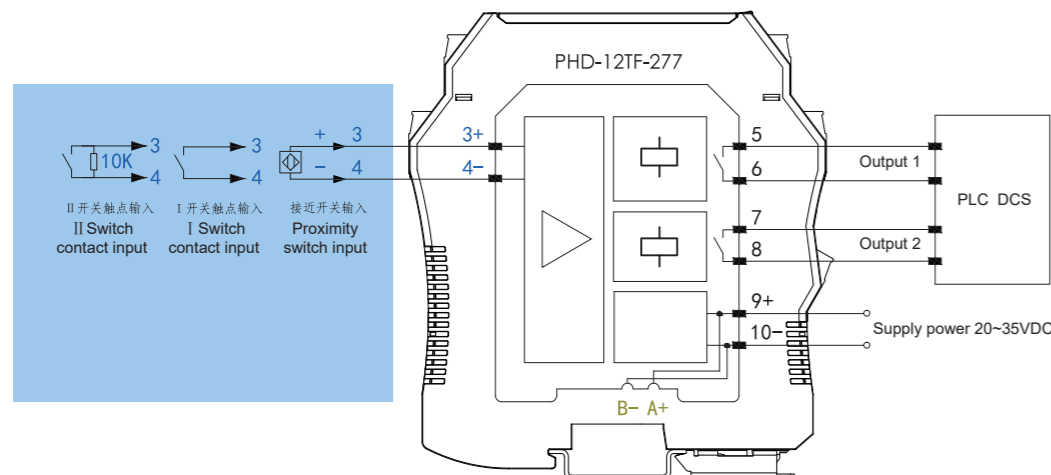
The output relay is equipped with selection switch of "ON/OFF" situation. In addition, there is an input signal short-circuit or open-circuit alarm indication, the circuit provides power for the input sensor.

This product needs an external 20~35VDC power supply.

The signal status indicator is set in red and yellow light to indicate the working status of the output relay, when it is for alarming then the light is red, during normal operation the light is yellow.

\* Bus power supply, please see appendix for details.

## 接线图 Wiring diagram



总线供电插接件 可选件 详细说明 见样本后附录  
Bus power supply plug connector Optional parts  
Detailed description please see appendix

危险区，本安端子：1~4  
Hazardous area, intrinsically safe terminals: 1~4

安全区，非本安端子：5~10  
Safe area, not intrinsically safe terminals: 5~10

## 技术数据 Specifications

供电电压 Supply voltage	20~35VDC, 功耗<1.5W 20~35VDC, Power consumption<1.5W
输入信号 Input signal	开关触点/接近开关 Switch or NAMUR proximity detector
现场传感器侧供电电压 Supply voltage of sensor on site	8V
信号输入特性 Signal input characteristics	现场输入电流: >2.1mA时, 表示ON; 现场输入电流: <1.2mA时, 表示OFF On-site input current: >2.1mA, it means ON; On-site input current: <1.2mA, it means OFF 开关滞后作用: 0.2ms Switch hysteresis: 0.2ms
继电器输出特性 Relay output characteristics	响应时间: 20ms, 驱动能力: 250VAC/2A, 30VDC/2A电阻性负载时 Response time: 20ms, driving capacity: 250VAC/2A, 30VDC/2A under resistive load
输出常开/常闭触点转换控制 Output "ON"/"OFF" contact conversion control	拨码开关K1、K3置“ON”侧, 继电器输出“常闭” When the dial switch K1, K3 is at "ON" side, the relay output is "OFF". 拨码开关K1、K3置“OFF”侧, 继电器输出“常开” When the dial switch K1, K3 is at "OFF" side, the relay output is "ON". 拨码开关K2、K4置“ON”侧, 电路选用指示灯红灯报警功能 When the dial switch K2, K4 is at "ON" side, the circuit selects indicating red light alarm function.
指示灯报警功能 Indicator light alarm function	现场输入电流>7mA, 短路报警(SC), 现场输入电流<0.1mA, 开路报警(LB) On-site input current>7mA, short-circuit alarm(SC), on-site input current<0.1mA, open-circuit alarm(LB) 开关触点输入, 需断线检测功能时, 须在开关两端并联10KΩ电阻(如接线图中开关触点II) For switch contact input, when the disconnection detection function is required, a 10KΩ resistor must be connected parallel at both ends of the switch (Please see the switch contact II in the wiring diagram)
输入输出路数 Number of input and output	一路输入, 两路输出 1 input 2 outputs
适用的现场设备 Applicable field equipments	干触点或符合DIN19234标准的NAMUR型接近开关等 Dry contact or NAMUR proximity switch in accordance with DIN 19234 standard.
温度参数 Temperature parameter	工作温度: -20℃~+60℃, 存储温度: -40℃~+80℃ Working temperature: -20℃~+60℃, storage temperature: -40℃~+80℃
空气相对湿度 Relative humidity	10%~95% RH无凝露 10%~95% RH no condensation
绝缘强度 Dielectric strength	本安端与非本安端(≥3000VAC/min); 电源与非本安端之间(≥1500VAC/min) Between intrinsically safe side and non-intrinsically safe side (≥3000VAC/min); between power supply and non-intrinsically safe terminal (≥1500VAC/min)
绝缘电阻 Insulation resistance	≥100MΩ (输入/输出/电源间) ≥100MΩ (between input/output/power supply)
电磁兼容性 Electromagnetic compatibility	符合IEC 61326-1 (GB/T 18268), IEC 61326-3-1 According to IEC 61326-1 (GB/T 18268), IEC 61326-3-1
防爆标志 Explosion-proof mark	[Exia Ga]IIC
功能安全认证 Functional safety certification	SIL3 符合IEC 61508 EN 61511标准 SIL3 according to IEC 61508 EN 61511 standards
认证机构 Certification body	国家防爆电气产品质量监督检验中心CQST认证 CQST (China National Quality Supervision and Test Centre for Explosion Protected Electrical Products)
认证参数 (端子3-4之间) Certified parameters (between terminals 3-4)	Um=250V Uo=10.5V Io=15mA Co=1.7μF Lo=150mH Po=39.4mW
安装场所要求 Installation place requirements	可与具有IIA、IIB、IIC危险气体的0区本安仪表相连接 It can be connected with instruments in 0 zone with IIA, IIB, IIC dangerous gas
平均无故障时间 MTBF	≤100000小时 (h)

## 端子定义及外形尺寸 Terminal assignments and dimensions

端子 Terminal	接线端子功能定义 Terminal assignments
9	供电电源+ Power supply +
10	供电电源- Power supply -
3	输入+ Input+
4	输入- Input-
5	继电器输出1 Relay output 1
6	继电器输出1 Relay output 1
7	继电器输出2 Relay output 2
8	继电器输出2 Relay output 2



厚12.5mm × 宽108mm × 高118mm  
Thickness 12.5mm\* width 108mm\* height 118mm