



M Series Product Catalogue

Isolated safety barriers, Signal isolators

SIL3
IEC 61508

TUV
FUNCTIONAL SAFETY
S.A.R.®

IECEx

Ex

NEPSI

CCC

CE

RoHS

G3

corrosion-
resistance

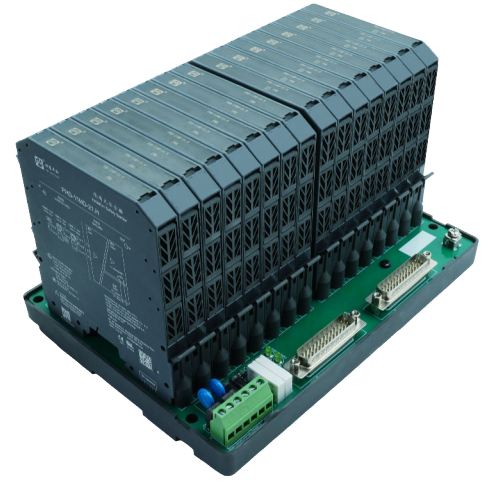


ABOUT BEIJING PINGHE

Beijing Pinghe Chuangye Technology Development Co.Ltd. was founded in January 2004, is a national high-tech enterprise dedicated to R&D, production and sales of signal interface modules. Our products such as isolated safety barriers, signal isolators and safety relays etc. are widely used in nuclear power, aerospace, petrochemical, metallurgical, energy and environmental protection, shipbuilding, biomedicine industries; So far, more than 8 million pieces run stable in domestic and foreign markets, our excellent quality and outstanding service have been highly recognized and praised by a vast number of partners.



- Terminal, Bus power, Backplane mounting (optional)
- Embedded PCB planar transformer, Insulation strength: $\geq 3000V$
- Specified Backplane realize module power supply and signal transmission
- Install in safe or Zone 2, wide-temperature design, meet G3 corrosion-resistance requirements
- Three port isolation, input/output/power supply
- 12.5mm thin design, high density installation
- Analog products have HART signal communication function
- Digital products have LFD line fault intelligent detection function
- Temperature products are intelligent configurable, RTD/TC type, measurement range, alarm method etc.
- TC cold junction temperature and RTD lead resistance intelligent compensation technology

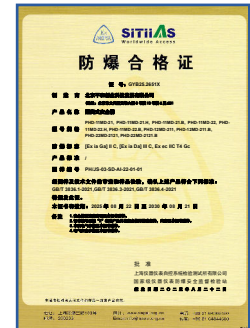
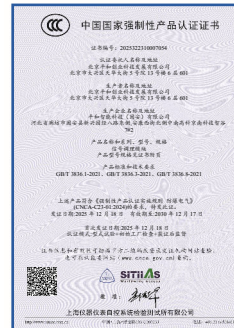


- National High-tech Enterprise
- Zhongguancun High-Tech Enterprise
- Beijing "Specialized" Small and Medium-sized enterprise
- Beijing new technology and new products(service) certificate
- National supervision and inspection of product quality stable and qualified enterprises
- China pharmaceutical equipment industry association member
- Member of China Instrument Society
- Joint Research Centre of the China Academy of machinery Science and Technology and the Beijing Institute of Automation
- Member of China Automation Industry Alliance
- Member of China Metrology Association

- TÜV functional safety certification
- ATEX ex-proof certification
- IECEx ex-proof quality management system certification
- EU CE certification
- Electromagnetic compatibility certification by FCC
- ISO 9001, ISO 14001, ISO 45001 management system certifications
- Ex-proof electrical products certification
- Ex-proof products of CCC mandatory certification
- China CCS certification
- EU Rohs certification

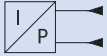
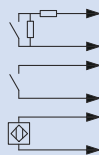
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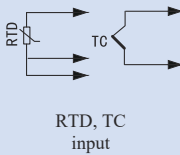
Contents

Isolated safety barriers

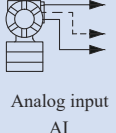
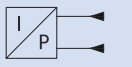
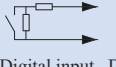
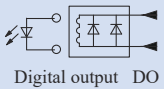
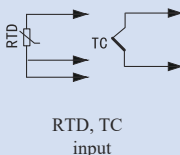
Input signal type	Model	Input signal	Output signal	Power type	Number of channels	Page
 Analog input AI	PHD-11MD-21	2 or 3 wire transmitter or current source 0/4~20mA(HART)	0/4~20mA, 0/1~5V, 0/2~10V	Terminal	1 input 1 output	5
	PHD-11MD-21.H	2 or 3 wire transmitter or current source 0/4~20mA(HART)	0/4~20mA, 0/1~5V, 0/2~10V	Backplane	1 input 1 output	5
	PHD-11MD-21.B	2 or 3 wire transmitter or current source 0/4~20mA(HART)	0/4~20mA, 0/1~5V, 0/2~10V	Bus	1 input 1 output	5
	PHD-11MD-22	2 or 3 wire transmitter or current source 0/4~20mA(HART)	Passive 0/4~20mA(HART)	Terminal	1 input 1 output	6
	PHD-11MD-22.H	2 or 3 wire transmitter or current source 0/4~20mA(HART)	Passive 0/4~20mA(HART)	Backplane	1 input 1 output	6
	PHD-11MD-22.B	2 or 3 wire transmitter or current source 0/4~20mA(HART)	Passive 0/4~20mA(HART)	Bus	1 input 1 output	6
	PHD-12MD-211	2 or 3 wire transmitter or current source 0/4~20mA(HART)	0/4~20mA, 0/1~5V, 0/2~10V	Terminal	1 input 2 outputs	7
	PHD-12MD-211.B	2 or 3 wire transmitter or current source 0/4~20mA(HART)	0/4~20mA, 0/1~5V, 0/2~10V	Bus	1 input 2 outputs	7
	PHD-22MD-2121	2 or 3 wire transmitter or current source 0/4~20mA(HART)	0/4~20mA, 0/1~5V, 0/2~10V	Terminal	2 inputs 2 outputs	8
	PHD-22MD-2121.B	2 or 3 wire transmitter or current source 0/4~20mA(HART)	0/4~20mA, 0/1~5V, 0/2~10V	Bus	2 inputs 2 outputs	8
 Analog output AO	PHC-11MD-11	0/4~20mA(HART)	0/4~20mA(HART)	Terminal	1 input 1 output	9
	PHC-11MD-11.H	0/4~20mA(HART)	0/4~20mA(HART)	Backplane	1 input 1 output	9
	PHC-11MD-11.B	0/4~20mA(HART)	0/4~20mA(HART)	Bus	1 input 1 output	9
	PHC-12MD-111	0/4~20mA(HART)	0/4~20mA(HART)	Terminal	1 input 2 outputs	10
	PHC-12MD-111.B	0/4~20mA(HART)	0/4~20mA(HART)	Bus	1 input 2 outputs	10
	PHC-22MD-1111	0/4~20mA(HART)	0/4~20mA(HART)	Terminal	2 inputs 2 outputs	11
	PHC-22MD-1111.B	0/4~20mA(HART)	0/4~20mA(HART)	Bus	2 inputs 2 outputs	11
 Digital input DI	PHD-11MF-27	Contact and NAMUR proximity switch	Relay+alarm(optional)	Terminal	1 input 1 output	12
	PHD-11MF-27.H	Contact and NAMUR proximity switch	Relay	Backplane	1 input 1 output	12
	PHD-11MF-27.B	Contact and NAMUR proximity switch	Relay+alarm(optional)	Bus	1 input 1 output	12
	PHD-11MF-28	Contact and NAMUR proximity switch	Transistor+alarm(optional)	Terminal	1 input 1 output	13
	PHD-11MF-28.H	Contact and NAMUR proximity switch	Transistor	Backplane	1 input 1 output	13
	PHD-11MF-28.B	Contact and NAMUR proximity switch	Transistor+alarm(optional)	Bus	1 input 1 output	13
	PHD-11MF-29	Contact and NAMUR proximity switch	Transistor(resistor)+alarm(optional)	Terminal	1 input 1 output	14
	PHD-11MF-29.H	Contact and NAMUR proximity switch	Transistor(resistor)	Backplane	1 input 1 output	14
	PHD-11MF-29.B	Contact and NAMUR proximity switch	Transistor(resistor)+alarm(optional)	Bus	1 input 1 output	14
	PHD-12MF-277	Contact and NAMUR proximity switch	Relay	Terminal	1 input 2 outputs	15
	PHD-12MF-277.B	Contact and NAMUR proximity switch	Relay	Bus	1 input 2 outputs	15
	PHD-12MF-288	Contact and NAMUR proximity switch	Transistor	Terminal	1 input 2 outputs	16
	PHD-12MF-288.B	Contact and NAMUR proximity switch	Transistor	Bus	1 input 2 outputs	16
	PHD-22MF-2727	Contact and NAMUR proximity switch	Relay	Terminal	2 inputs 2 outputs	17
	PHD-22MF-2727.B	Contact and NAMUR proximity switch	Relay	Bus	2 inputs 2 outputs	17
	PHD-22MF-2828	Contact and NAMUR proximity switch	Transistor	Terminal	2 inputs 2 outputs	18
	PHD-22MF-2828.B	Contact and NAMUR proximity switch	Transistor	Bus	2 inputs 2 outputs	18
 Digital output DO	PHC-11MF-14	Contact and logic level	Digital drive 45mA	Terminal	1 input 1 output	19
	PHC-11MF-14.H	Contact and logic level	Digital drive 45mA	Backplane	1 input 2 outputs	19
	PHC-11MF-14.B	Contact and logic level	Digital drive 45mA	Bus	1 input 2 outputs	19
	PHC-11MF-24	Contact control DC voltage	Digital drive 45mA	Terminal	1 input 2 outputs	20
	PHC-11MF-24.H	Contact control DC voltage	Digital drive 45mA	Backplane	2 inputs 2 outputs	20
	PHC-11MF-24.B	Contact control DC voltage	Digital drive 45mA	Bus	2 inputs 2 outputs	20
	PHC-11MF-34	Contact control DC voltage	Digital drive 45mA	Loop powered	2 inputs 2 outputs	21
	PHC-11MF-34.H	Contact control DC voltage	Digital drive 45mA	Loop powered	2 inputs 2 outputs	21

Contents

Isolated safety barriers

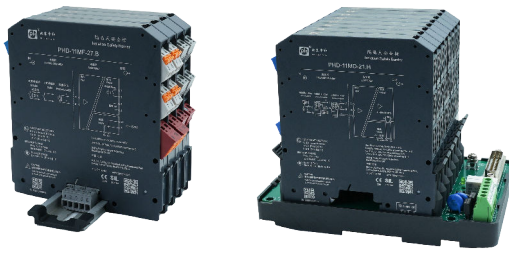
Input signal type	Model	Input signal	Output signal	Power type	Number of channels	Page
 RTD, TC input	PHD-11MZ/MT-01	RTD/TC	0/4~20mA, 0/1~5V, 0/2~10V	Terminal	1 input 1 output	22
	PHD-11MZ/MT-01.H	RTD/TC	0/4~20mA, 0/1~5V, 0/2~10V	Backplane	1 input 1 output	22
	PHD-11MZ/MT-01.B	RTD/TC	0/4~20mA, 0/1~5V, 0/2~10V	Bus	1 input 1 output	22
	PHD-11MZ/MT-02	RTD/TC	Passive 4~20mA(HART)	Terminal	1 input 1 output	23
	PHD-11MZ/MT-02.H	RTD/TC	Passive 4~20mA(HART)	Backplane	1 input 1 output	23
	PHD-11MZ/MT-02.B	RTD/TC	Passive 4~20mA(HART)	Bus	1 input 1 output	23

Signal Isolators

Input signal type	Model	Input signal	Output signal	Power type	Number of channels	Page
 Analog input AI	PHG-11ME-21	2 or 3 wire or current source 0/4~20mA(HART)	0/4~20mA, 0/1~5V, 0/2~10V	Terminal	1 input 1 output	24
	PHG-11ME-21.H	2 or 3 wire or current source 0/4~20mA(HART)	0/4~20mA, 0/1~5V, 0/2~10V	Backplane	1 input 1 output	24
	PHG-11ME-21.B	2 or 3 wire or current source 0/4~20mA(HART)	0/4~20mA, 0/1~5V, 0/2~10V	Bus	1 input 1 output	24
	PHG-11ME-22	2 or 3 wire or current source 0/4~20mA(HART)	Passive 0/4~20mA(HART)	Terminal	1 input 1 output	25
	PHG-11ME-22.H	2 or 3 wire or current source 0/4~20mA(HART)	Passive 0/4~20mA(HART)	Backplane	1 input 1 output	25
	PHG-11ME-22.B	2 or 3 wire or current source 0/4~20mA(HART)	Passive 0/4~20mA(HART)	Bus	1 input 1 output	25
 Analog output AO	PHG-11MD-11	0/4-20mA(HART)	0/4-20mA(HART)	Terminal	1 input 1 output	26
	PHG-11MD-11.H	0/4-20mA(HART)	0/4-20mA(HART)	Backplane	1 input 1 output	26
	PHG-11MD-11.B	0/4-20mA(HART)	0/4-20mA(HART)	Bus	1 input 1 output	26
 Digital input DI	PHG-11MF-27	Contact and NAMUR proximity switch	Relay+alarm(optional)	Terminal	1 input 1 output	27
	PHG-11MF-27.H	Contact and NAMUR proximity switch	Relay	Backplane	1 input 1 output	27
	PHG-11MF-27.B	Contact and NAMUR proximity switch	Relay+alarm(optional)	Bus	1 input 1 output	27
 Digital output DO	PHG-11MF-14.H	DC voltage	NO+NC(3A)	Backplane	1 input 1 output	28
	PHG-11MF-37.H	DC voltage	NO+NC(5A)	Loop powered	1 input 1 output	29
 RTD, TC input	PHG-11MZ/MT-01	RTD/TC	0/4~20mA, 0/1~5V, 0/2~10V	Terminal	1 input 1 output	30
	PHG-11MZ/MT-01.H	RTD/TC	0/4~20mA, 0/1~5V, 0/2~10V	Backplane	1 input 1 output	30
	PHG-11MZ/MT-01.B	RTD/TC	0/4~20mA, 0/1~5V, 0/2~10V	Bus	1 input 1 output	30
	PHG-11MZ/MT-02	RTD/TC	Passive 4~20mA(HART)	Terminal	1 input 1 output	31
	PHG-11MZ/MT-02.H	RTD/TC	Passive 4~20mA(HART)	Backplane	1 input 1 output	31
	PHG-11MZ/MT-02.B	RTD/TC	Passive 4~20mA(HART)	Bus	1 input 1 output	31
Pass-Through module	PH-M-ZT.H	DC signal	DC signal	Backplane	1 input 1 output	32

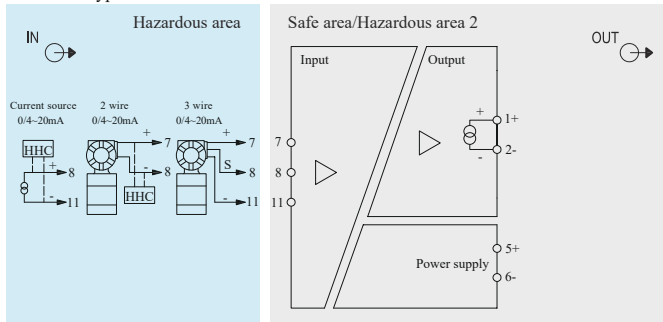
Backplane

Model	Number of channels	Installation place	Power voltage	Page
PH-M-DZ-8L	8	Left	24V DC dual redundant power supply	33
PH-M-DZ-8R	8	Left	24V DC dual redundant power supply	33
PH-M-DZ-16L	16	Right	24V DC dual redundant power supply	33
PH-M-DZ-16R	16	Right	24V DC dual redundant power supply	33

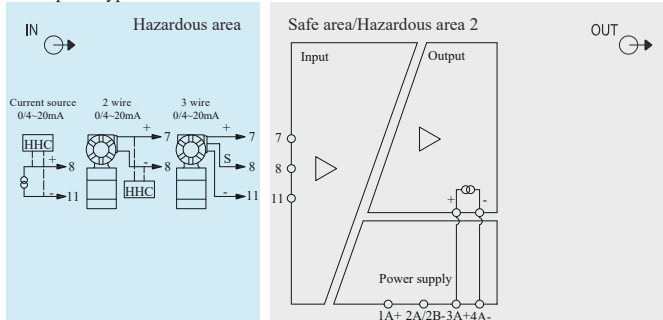


Connection diagram

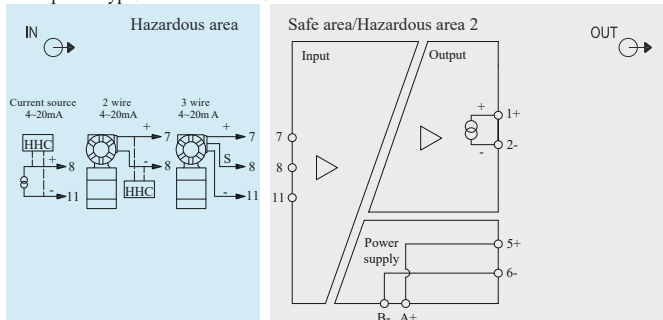
Terminal type: PHD-11MD-21



Backplane type: PHD-11MD-21.H



Bus power type: PHD-11MD-21.B



Safe certification

Functional safe: SIL3, according to IEC 61508 standard

ATEX mark: II 3 G Ex ec IIC T4 Gc II (1) D [Ex ia Da] IIIC II (1) G [Ex ia Ga] IIC

IECEx mark: Ex ec IIC T4 Gc [Ex ia Da] IIIC [Ex ia Ga] IIC

CCC mark: Ex ec IIC T4 Gc [Ex ia Da] IIIC [Ex ia Ga] IIC

Explosion-proof parameters:

Uo=28V, Io=93mA, Po=0.65W, Co=0.083μF, Lo=4.2mH at terminals 7-8, 7-11

Uo=7.2V, Io=-mA, Po=-W, Co=12μF, Lo=-mH at terminals 8-11

Um=250Vrms or Vdc Temp: -40 to +70°C

Overview

The analog input isolated safety barrier provides isolated power supply for two- and three wire transmitters in hazardous areas. The 0/4~20mA signal generated by the transmitter or current source is transmitted from hazardous area to the safe area or hazardous zone 2 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 0/4~20mA signal.

- Terminal, Bus power, Backplane montage (optional)
- Can be mounted in safe area or Zone 2, wide temperature range design, meet G3 corrosion-resistance requirements
- Active 0/4~20mA (HART), 0/1~5V, 0/2~10V output
- HART bidirectional digital communication signal
- Three port isolation, input/output/power supply
- High density, ultra-thin design

Specifications

Number of channels: 1 input 1 output

Power supply:

Power voltage: 20~35V DC, consumption ≤65mA (24V DC, output 20mA)

Power protection: reverse power protection

Input in hazardous area:

Input signal: two-, three wire transmitters or current source 0/4~20mA (HART)

Distribution voltage: open circuit voltage ≤28V, circuit is 20mA output voltage ≥15.5V

Output in safe area:

Output signal: active 0/4~20mA (HART), 0/1~5V, 0/2~10V

Output load: 20mA, 0~500Ω

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

LED indicator: PWR - Green ON, power supply ok

PWR - Green OFF, power supply failure

Response time: 2ms to reach 90% of the final value

Temperature drift: 0.005% F.S/°C

Insulation strength: between intrinsically safe side and non-intrinsically safe side (≥3000V AC/min);

between power supply and non-intrinsically safe side (≥500V AC/min)

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

Applicable field equipments: two-, three wire (HART) transmitters, current source (HART) signal

Environment characteristics:

Installation place: Installed in hazardous area 2 or safe area, it can be connected to intrinsic safety instruments in hazardous areas up to Zone 0, IIC, Zone 20, and IIIC

Applicable for G3 class (harsh) corrosion environment defined in ISA standard S71.04

Relative humidity: 5%~95%, no condensation

Working temperature: -40°C~+70°C

Storage temperature: -45°C~+85°C

EMC: comply with IEC 61326-1 (GB/T 18268), IEC 61326-3-1 according to

IEC 61010-1, applicable for altitude below to 5000m

Mounting specifications:

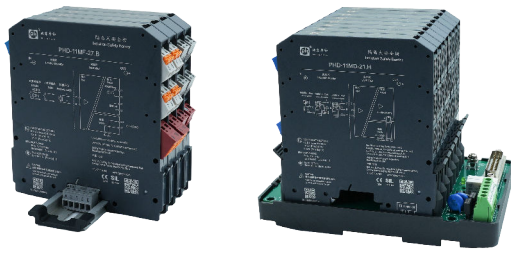
Dimensions: 114mm×99mm×12.5mm

Weight: 135g

Mounting type: customizable backplane or DIN35-rail

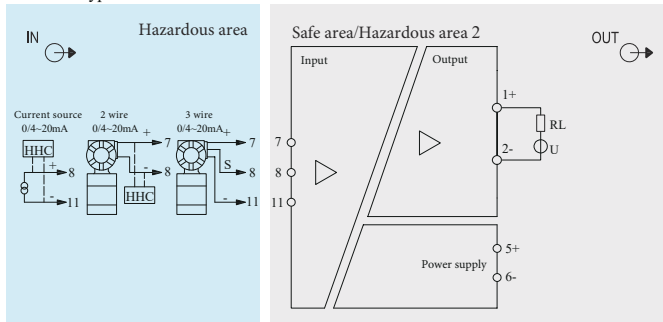
Enclosure protection level: IP20 (according to IEC60529)

Enclosure material/flame retardant grade: PC/V0 (UL94)

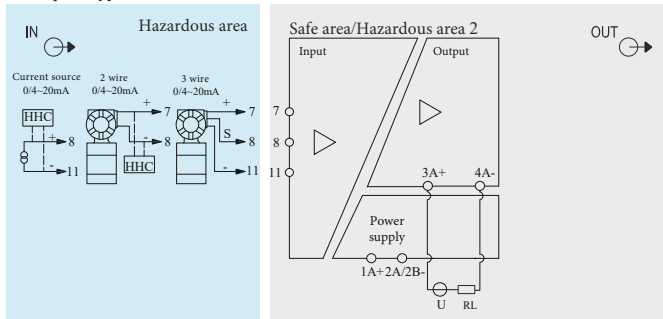


Connection diagram

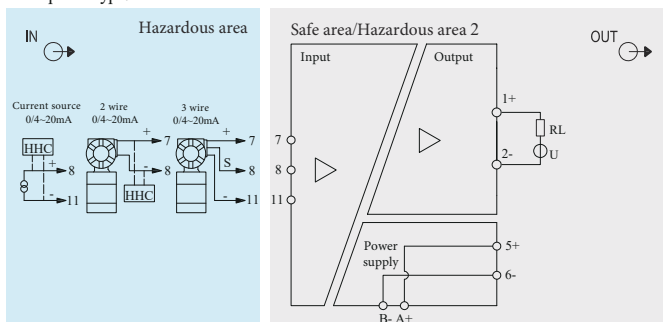
Terminal type: PHD-11MD-22



Backplane type: PHD-11MD-22.H



Bus power type: PHD-11MD-22.B



Safe certification

Functional safe: SIL3, according to IEC 61508 standard

ATEX mark: II 3 G Ex ec IIC T4 Gc II (1) D [Ex ia Da] IIIC II (1) G [Ex ia Ga] IIC

IECEx mark: Ex ec IIC T4 Gc [Ex ia Da] IIIC [Ex ia Ga] IIC

CCC mark: Ex ec IIC T4 Gc [Ex ia Da] IIIC [Ex ia Ga] IIC

Explosion-proof parameters:

$U_o=28V$, $I_o=93mA$, $P_o=0.65W$, $C_o=0.083\mu F$, $L_o=4.2mH$ at terminals 7-8, 7-11

$U_o=7.2V$, $I_o=-mA$, $P_o=-W$, $C_o=12\mu F$, $L_o=-mH$ at terminals 8-11

$U_m=250V_{rms}$ or V_{dc} Temp: -40 to $+70^\circ C$

Overview

The analog input isolated safety barrier provides isolated power supply for two- and three wire transmitters in hazardous areas. The 0/4~20mA signal generated by the transmitter or current source is transmitted from hazardous area to the safe area or hazardous zone 2 two wire 0/4~20mA 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 0/4~20mA signal.

- Terminal, Bus power, Backplane mounting (optional)
- Can be mounted in safe area or Zone 2, wide temperature range design, meet G3 corrosion-resistance requirements
- Passive 0/4~20mA (HART) output
- HART bidirectional digital communication signal
- Three port isolation, input/output/power supply
- High density, ultra-thin design

Specifications

Number of channels: 1 input 1 output

Power supply:

Power voltage: 20~35V DC, consumption $\leq 65mA$ (24V DC, output 20mA)

Power protection: reverse power protection

Input in hazardous area:

Input signal: two-, three wire transmitters or current source 0/4~20mA (HART)

Distribution voltage: open circuit voltage $\leq 28V$, circuit is 20mA output voltage $\geq 15.5V$

Output in safe area:

Output signal: passive 0/4~20mA (HART)

Output load: 20mA, 0~500 Ω

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

LED indicator: PWR - Green ON, power supply ok

PWR - Green OFF, power supply failure

Response time: 2ms to reach 90% of the final value

Temperature drift: 0.005% F.S/ $^\circ C$

Insulation strength: between intrinsically safe side and non-intrinsically safe side ($\geq 3000V$ AC/min);

between power supply and non-intrinsically safe side ($\geq 500V$ AC/min)

Insulation resistance: $\geq 100M\Omega$ (between input/output/power supply)

Applicable field equipments: two-, three wire (HART) transmitters, current source (HART signal))

Environment characteristics:

Installation place: Installed in hazardous area 2 or safe area, it can be connected to intrinsic safety

instruments in hazardous areas up to Zone 0, IIC, Zone 20, and IIIC

Applicable for G3 class (harsh) corrosion environment defined in ISA standard S71.04

Relative humidity: 5%~95%, no condensation

Working temperature: $-40^\circ C \sim +70^\circ C$

Storage temperature: $-45^\circ C \sim +85^\circ C$

EMC: comply with IEC 61326-1 (GB/T 18268), IEC 61326-3-1 according to

IEC61010-1, applicable for altitude below to 5000m

Mounting specifications:

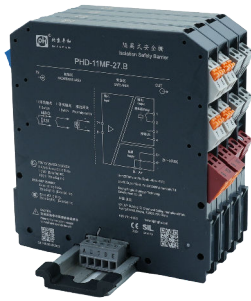
Dimensions: 114mm $\times$ 99mm $\times$ 12.5mm

Weight: 135g

Mounting type: customizable backplane or DIN35-rail

Enclosure protection level: IP20 (according to IEC 60529)

Enclosure material/flame retardant grade: PC/V0 (UL94)



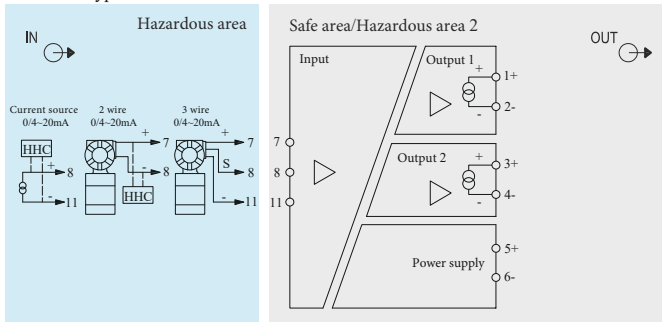
Overview

The analog input isolated safety barrier provides isolated power supply for two- and three wire transmitters in hazardous areas. The 0/4~20mA signal generated by the transmitter or current source is transmitted from hazardous area to the safe area or hazardous zone 2 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 0/4~20mA signal.

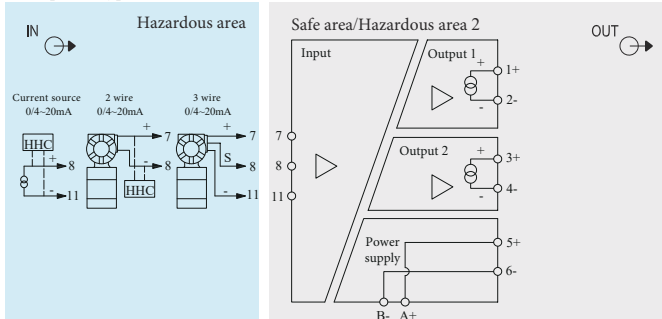
- Terminal, Bus power mounting (optional)
- Can be mounted in safe area or Zone 2, wide temperature range design, meet G3 corrosion-resistance requirements
- Active 0/4~20mA (HART), 0/1~5V, 0/2~10V output
- HART bidirectional digital communication signal
- Three port isolation, input/output/power supply
- High density, ultra-thin design

Connection diagram

Terminal type: PHD-12MD-211



Bus power type: PHD-12MD-211.B



Safe certification

Functional safe: SIL3, according to IEC 61508 standard

ATEX mark: II 3 G Ex ec IIC T4 Gc II (1) D [Ex ia Da] IIIC II (1) G [Ex ia Ga] IIC

IECEx mark: Ex ec IIC T4 Gc [Ex ia Da] IIIC [Ex ia Ga] IIC

CCC mark: Ex ec IIC T4 Gc [Ex ia Da] IIIC [Ex ia Ga] IIC

Explosion-proof parameters: $U_o=28V$, $I_o=93mA$, $P_o=0.65W$,

$C_o=0.083\mu F$, $L_o=4.2mH$ at terminals 7-8, 7-11

$U_o=7.2V$, $I_o=-mA$, $P_o=-W$, $C_o=12\mu F$, $L_o=-mH$ at terminals 8-11

$U_i=30V$, $I_i=115mA$, $P_i=1000mW$, $C_i=0nF$, $L_i=0nH$ at terminals 8-11 $U_m=250V_{rms}$

or V_{dc} Temp: -40 to +70°C

Specifications

Numbers of channels: 1 input 2 outputs

Power supply:

Power voltage: 20~35V DC, consumption $\leq 95mA$ (24V DC, output 20mA)

Power protection: reverse power protection

Input in hazardous area:

Input signal: two, three wire transmitters or current source 0/4~20mA (HART)

Distribution voltage: open circuit voltage $\leq 28V$, circuit is 20mA output voltage $\geq 15.5V$

Output in safe area:

Output signal: active 0/4~20mA (HART), 0/1~5V, 0/2~10V

Output load: 20mA, 0~500Ω

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

LED indicator: PWR - Green ON, power supply ok

PWR - Green OFF, power supply failure

Response time: 2ms to reach 90% of the final value

Temperature drift: 0.005% F.S/°C

Insulation strength: between intrinsically safe side and non-intrinsically safe side ($\geq 3000V$ AC/min);
between power supply and non-intrinsically safe side ($\geq 500V$ AC/min)

Insulation resistance: $\geq 100M\Omega$ (between input/output/power supply)

Applicable field equipments: two-, three wire (HART) transmitters, current source (HART) signal

Environment characteristics:

Installation place: Installed in hazardous area 2 or safe area, it can be connected to intrinsic safety instruments in hazardous areas up to Zone 0, IIC, Zone 20, and IIIC

Applicable for G3 class (harsh) corrosion environment defined in ISA standard S71.04

Relative humidity: 5%~95%, no condensation

Working temperature: -40°C~+70°C

Storage temperature: -45°C~+85°C

EMC: comply with IEC 61326-1 (GB/T 18268), IEC 61326-3-1

according to IEC 61010-1, applicable for altitude below to 5000m

Mounting specifications:

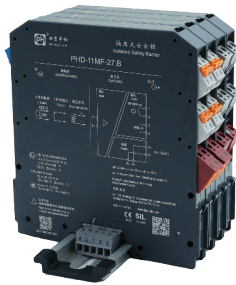
Dimensions: 114mm×99mm×12.5mm

Weight: 135g

Mounting type: customizable backplane or DIN35-rail

Enclosure protection level: IP20 (according to IEC 60529)

Enclosure material/flame retardant grade: PC/V0 (UL94)



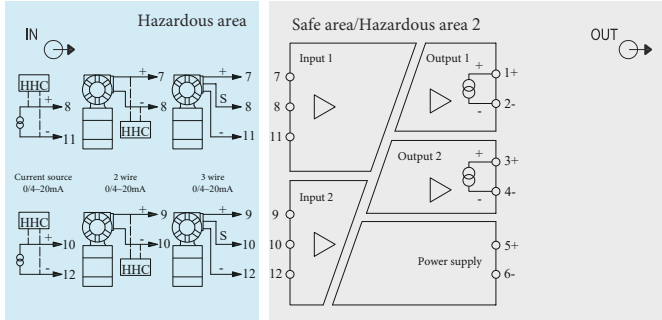
Overview

The analog input isolated safety barrier provides isolated power supply for two- and three wire transmitters in hazardous areas. The two way 0/4~20mA signals generated by the transmitter or current source is transmitted from hazardous area to the safe area or hazardous zone 2 as two way 0/4~20mA outputs, 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 0/4~20mA signal.

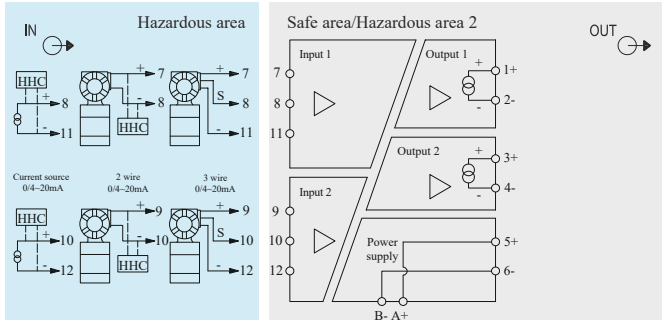
- Terminal, Bus power mounting (optional)
- Receive signals from hazardous 0/1 Zone
- Can be mounted in safe area or Zone 2, wide temperature range design, meet G3 corrosion-resistance requirements
- Active 0/4~20mA (HART), 0/1~5V, 0/2~10V output
- HART bidirectional digital communication signal
- Three port isolation, input/output/power supply
- High density, ultra-thin design

Connection diagram

Terminal type: PHD-22MD-2121



Bus power type: PHD-22MD-2121.B



Safe certification

Functional safe: SIL3, according to IEC 61508 standard

ATEX mark: II 3 G Ex ec IIC T4 Gc II (1) D [Ex ia Da] IIIC (1) G [Ex ia Ga] IIC

IECEx mark: Ex ec IIC T4 Gc [Ex ia Da] IIIC [Ex ia Ga] IIC

CCC mark: Ex ec IIC T4 Gc [Ex ia Da] IIIC [Ex ia Ga] IIC

Explosion-proof parameters:

$U_o=28V$, $I_o=93mA$, $P_o=0.65W$,

$C_o=0.083\mu F$, $L_o=4.2$ at terminals 7-8, 7-11, 9-10, 9-12

$U_o=7.2V$, $I_o=-mA$, $P_o=-W$, $C_o=12\mu F$, $L_o=-mH$ at terminals 8-11, 10-12

$U_i=30V$, $I_i=115mA$, $C_i=0nF$, $L_i=0nH$ at terminals 8-11, 10-12

$U_m=250VAC$ Temp: -40 to +70°C

Specifications

Number of channels: 2 inputs 2 outputs

Power supply:

Power voltage: 20~35V DC, consumption $\leq 130mA$ (24V DC, output 20mA)

Power protection: reverse power protection

Input in hazardous area:

Input signal: two, three wire transmitters or current source 0/4~20mA (HART)

Distribution voltage: open circuit voltage $\leq 28V$, circuit is 20mA output voltage $\geq 15.5V$

Output in safe area:

Output signal: active 0/4~20mA (HART), 0/1~5V, 0/2~10V

Output load: 20mA, 0~500Ω

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

LED indicator: PWR - Green ON, power supply ok

PWR - Green OFF, power supply failure

Response time: 2ms to reach 90% of the final value

Temperature drift: 0.005% F.S/°C

Insulation strength: between intrinsically safe side and non-intrinsically safe side ($\geq 3000V$ AC/min); between power supply and non-intrinsically safe side ($\geq 500V$ AC/min)

Insulation resistance: $\geq 100M\Omega$ (between input/output/power supply)

Applicable field equipments: two-, three wire (HART) transmitters, current source (HART) signal

Environment characteristics:

Installation place: Installed in hazardous area 2 or safe area, it can be connected to intrinsic safety instruments in hazardous areas up to Zone 0, IIC, Zone 20, and IIIC

Applicable for G3 class (harsh) corrosion environment defined in ISA standard S71.04

Relative humidity: 5%~95%, no condensation

Working temperature: -40°C ~ +70°C

Storage temperature: -45°C ~ +85°C

EMC: comply with IEC 61326-1 (GB/T 18268), IEC 61326-3-1

according to IEC 61010-1, applicable for altitude below to 5000m

Mounting specifications:

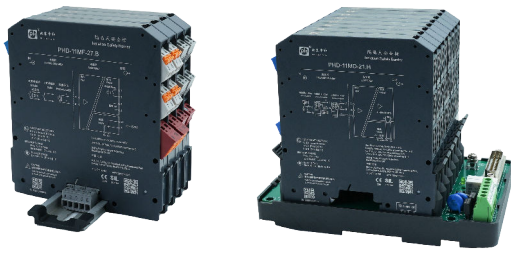
Dimensions: 114mm×99mm×12.5mm

Weight: 135g

Mounting type: customizable backplane or DIN35-rail

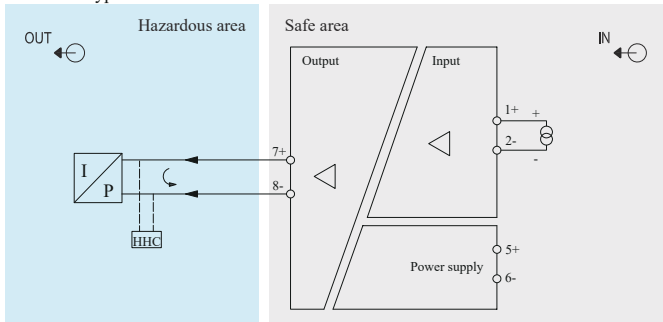
Enclosure protection level: IP20 (according to IEC 60529)

Enclosure material/flame retardant grade: PC/V0 (UL94)

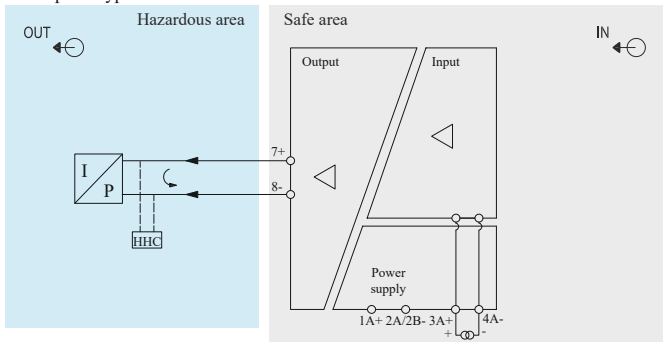


Connection diagram

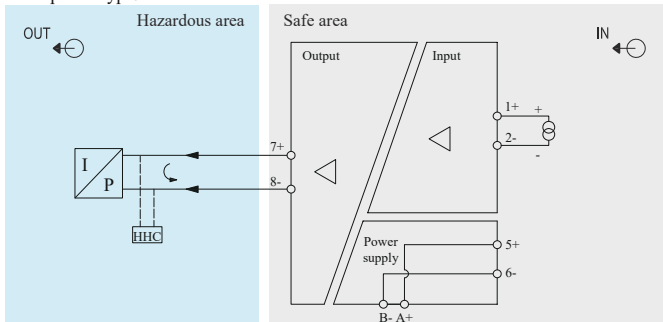
Terminal type: PHC-11MD-11



Backplane type: PHC-11MD-11.H



Bus power type: PHC-11MD-11.B



Safe certification

Functional safe: SIL2, according to IEC 61508 standard

ATEX mark: II 3 G Ex ec IIC T4 Ge II (1) D [Ex ia Da] IIIC II (1) G [Ex ia Ga] IIC

IECEx mark: Ex ec IIC T4 Ge [Ex ia Da] IIIC [Ex ia Ga] IIC

CCC mark: Ex ec IIC T4 Ge [Ex ia Da] IIIC [Ex ia Ga] IIC

Explosion proof parameters:

$U_o=28V$, $I_o=93mA$, $P_o=0.65W$, $C_o=0.083\mu F$, $L_o=4.2mH$ at terminals 7-8

$U_m=250VAC$ Temp: $-40^{\circ}C$ to $+70^{\circ}C$

Overview

The analog output isolated safety barrier can realize the isolated transmission of 0/4~20mA signals from the control system in the safe or zone 2 areas to the hazardous area, drive the valve positioner, electric/pneumatic converter and other equipment on site, and support the bidirectional transmission of HART digital signals, also have field equipment break and short circuit detection function.

- Terminal, Bus power, Backplane mounting (optional)
- Can be mounted in safe area or Zone 2, wide temperature range design, meet G3 corrosion-resistance requirements
- Active 0/4~20mA output
- Open and short circuit detection function
- HART bidirectional digital communication signal
- Three port isolation, input/output/power supply
- High density, ultra-thin design

Specifications

Number of channels: 1 input 1 output

Power supply:

Power voltage: 20~35V DC, consumption $\leq 42mA$ (24V DC, output 20mA)

Power protection: reverse power protection

Input in safe area:

Input signal: 0/4~20mA (HART)

Output in hazardous area:

Output signal: 0/4~20mA (HART)

Output load: 20mA, 0~800 Ω

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

LED indicator: PWR - Green ON, power supply ok

PWR - Green OFF, power supply failure

Response time: 2ms to reach 90% of the final value

Temperature drift: 0.005% F.S/ $^{\circ}C$

Insulation strength: between intrinsically safe side and non-intrinsically safe side ($\geq 3000V$ AC/min);

between power supply and non-intrinsically safe side ($\geq 500V$ AC/min)

Insulation resistance: $\geq 100M\Omega$ (between input/output/power supply)

Applicable field equipments: valve positioner, electric/pneumatic converter

Environment characteristics:

Installation place: Installed in hazardous area 2 or safe area, it can be connected to intrinsic safety instruments in hazardous areas up to Zone 0, IIC, Zone 20, and IIIC

Applicable for G3 class (harsh) corrosion environment defined in ISA standard S71.04

Relative humidity: 5%~95%, no condensation

Working temperature: $-40^{\circ}C \sim +70^{\circ}C$

Storage temperature: $-45^{\circ}C \sim +85^{\circ}C$

EMC: comply with IEC 61326-1 (GB/T 18268), IEC 61326-3-1

according to IEC 61010-1, applicable for altitude below to 5000m

Mounting specifications:

Dimensions: 114mm $\times$ 99mm $\times$ 12.5mm

Weight: 135g

Mounting type: customizable backplane or DIN35-rail

Enclosure protection level: IP20 (according to IEC 60529)

Enclosure material/flame retardant grade: PC/V0 (UL94)



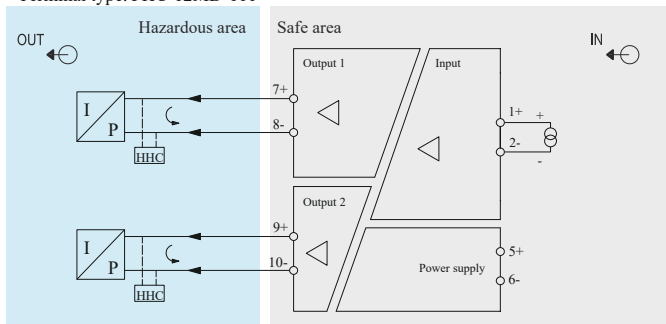
Overview

The analog output isolated safety barrier can realize the isolated transmission of 0/4~20mA signals from the control system in the safe or zone 2 areas and converts two way 0/4~20mA to the hazardous area, drive the valve positioner, electric/pneumatic converter and other equipment on site, and support the bidirectional transmission of HART digital signals.

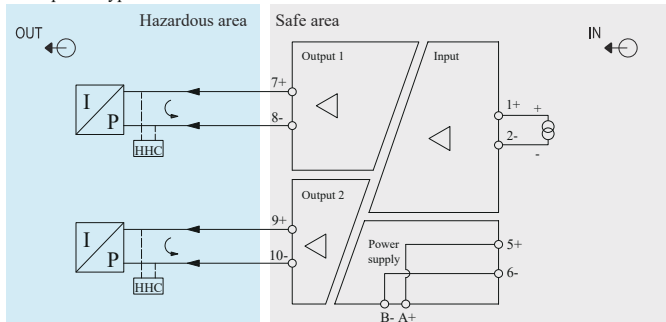
- Terminal, Bus power mounting (optional)
- Can be mounted in safe area or Zone 2, wide temperature range design, meet G3 corrosion-resistance requirements
- Active 0/4~20mA output
- Open and short circuit detection function
- HART bidirectional digital communication signal
- Three port isolation, input/output/power supply
- High density, ultra-thin design

Connection diagram

Terminal type: PHC-12MD-111



Bus power type: PHC-12MD-111.B



Safe certification

ATEX mark: II 3 G Ex ec IIC T4 Gc II (1) D [Ex ia Da] IIIC II (1) G [Ex ia Ga] IIC

IECEx mark: Ex ec IIC T4 Gc [Ex ia Da] IIIC [Ex ia Ga] IIC

CCC mark: Ex ec IIC T4 Gc [Ex ia Da] IIIC [Ex ia Ga] IIC

Explosion proof parameters:

$U_o=28V$, $I_o=93mA$, $P_o=0.65W$, $C_o=0.083\mu F$, $L_o=4.2mH$ at terminals 7-8

$U_m=250VAC$ Temp: $-40^{\circ}C$ to $+70^{\circ}C$

Specifications

Number of channels: 1 input 2 outputs

Power supply:

Power voltage: 20~35V DC, consumption $\leq 80mA$ (24V DC, output 20mA)

Power protection: reverse power protection

Input in safe area:

Input signal: 0/4~20mA (HART)

Output in hazardous area:

Output signal: 0/4~20mA (HART)

Output load: 20mA, 0~800 Ω

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

LED indicator: PWR - Green ON, power supply ok

PWR - Green OFF, power supply failure

Response time: 2ms to reach 90% of the final value

Temperature drift: 0.005% F.S/ $^{\circ}C$

Insulation strength: between intrinsically safe side and non-intrinsically safe side ($\geq 3000V$ AC/min)
between power supply and non-intrinsically safe side ($\geq 500V$ AC/min)

Insulation resistance: $\geq 100M\Omega$ (between input/output/power supply)

Applicable field equipments: valve positioner, electric/pneumatic converter

Environment characteristics:

Installation place: Installed in hazardous area 2 or safe area, it can be connected to intrinsic safety instruments in hazardous areas up to Zone 0, IIC, Zone 20, and IIIC

Applicable for G3 class (harsh corrosion environment defined in ISA standard S71.04)

Relative humidity: 5%~95%, no condensation

Working temperature: $-40^{\circ}C \sim +70^{\circ}C$

Storage temperature: $-45^{\circ}C \sim +85^{\circ}C$

EMC: comply with IEC 61326-1 (GB/T 18268), IEC 61326-3-1 according to IEC 61010-1, applicable for altitude below to 5000m

Montage specifications:

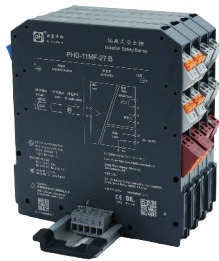
Dimensions: 114mm $\times$ 99mm $\times$ 12.5mm

Weight: 135g

Montage type: customizable backplane or DIN35-rail

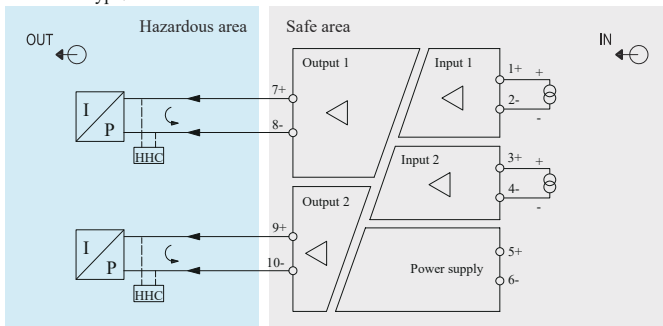
Enclosure protection level: IP20 (according to IEC 60529)

Enclosure material/flame retardant grade: PC/V0 (UL94)

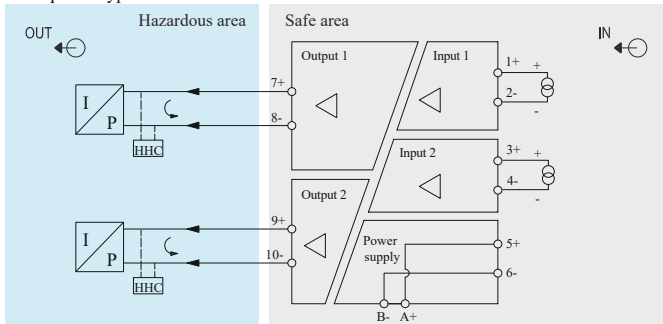


Connection diagram

Terminal type: PHC-22MD-1111



Bus power type: PHC-22MD-1111.B



Safe certification

Functional safe: SIL2, according IEC 61508 standard

ATEX mark: II 3 G Ex ec IIC T4 Gc II (1) D [Ex ia Da] IIIC II (1) G [Ex ia Ga] IIC

IECEx mark: Ex ec IIC T4 Gc [Ex ia Da] IIIC [Ex ia Ga] IIC

CCC mark: Ex ec IIC T4 Gc [Ex ia Da] IIIC [Ex ia Ga] IIC

Explosion proof parameters:

$U_o=28V$, $I_o=93mA$, $P_o=0.65W$, $C_o=0.083\mu F$, $L_o=4.2mH$
at terminals 7-8, 9-10

$U_m=250VAC$ Temp: $-40^{\circ}C$ to $+70^{\circ}C$

Overview

The analog output isolated safety barrier can realize the isolated transmission of 0/4~20mA signals from the control system in the safe or zone 2 areas and converts two way 0/4~20mA to the hazardous area, drive the valve positioner, electric/pneumatic converter and other equipment on site, and support the bidirectional transmission of HART digital signals.

- Terminal, Bus power mounting (optional)
- Can be mounted in safe area or Zone 2, wide temperature range design, meet G3 corrosion-resistance requirements
- Active 0/4~20mA output
- Open and short circuit detection function
- HART bidirectional digital communication signal
- Three port isolation, input/output/power supply
- High density, ultra-thin design

Specifications

Number of channels: 2 inputs 2 outputs

Power supply:

Power voltage: 20~35V DC, consumption $\leq 90mA$ (24V DC, output 20mA)

Power protection: reverse power protection

Input in safe area:

Input signal: 0/4~20mA (HART)

Output in hazardous area:

Output signal: 0/4~20mA (HART)

Output load: 20mA, 0~800 Ω

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

LED indicator: PWR - Green ON, power supply ok

PWR - Green OFF, power supply failure

Response time: 2ms to reach 90% of the final value

Temperature drift: 0.005% F.S/ $^{\circ}C$

Insulation strength: between intrinsically safe side and non-intrinsically safe side ($\geq 3000V$ AC/min)
between power supply and non-intrinsically safe side ($\geq 500V$ AC/min)

Insulation resistance: $\geq 100M\Omega$ (between input/output/power supply)

Applicable field equipments: valve positioner, electric/pneumatic converter

Environment characteristics:

Installation place: Installed in hazardous area 2 or safe area, it can be connected to intrinsic safety instruments in hazardous areas up to Zone 0, IIC, Zone 20, and IIIC

Applicable for G3 class (harsh corrosion environment defined in ISA standard S71.04

Relative humidity: 5%~95%, no condensation

Working temperature: $-40^{\circ}C$ ~ $+70^{\circ}C$

Storage temperature: $-45^{\circ}C$ ~ $+85^{\circ}C$

EMC: comply with IEC 61326-1 (GB/T 18268, IEC 61326-3-1 according to

IEC 61010-1, applicable for altitude below to 5000m

Mounting specifications:

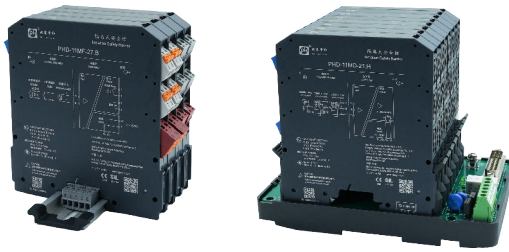
Dimensions: 114mm $\times$ 99mm $\times$ 12.5mm

Weight: 135g

Mounting type: customizable backplane or DIN35-rail

Enclosure protection level: IP20 (according to IEC 60529)

Enclosure material/flame retardant grade: PC/V0 (UL94)



SIL3
IEC 64508

TÜV
FUNCTIONAL SAFETY
S.A.R.B.

IECEx

Ex

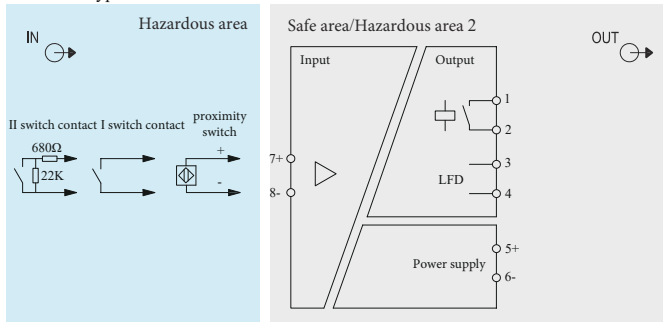
Ex
NEPS

CCC

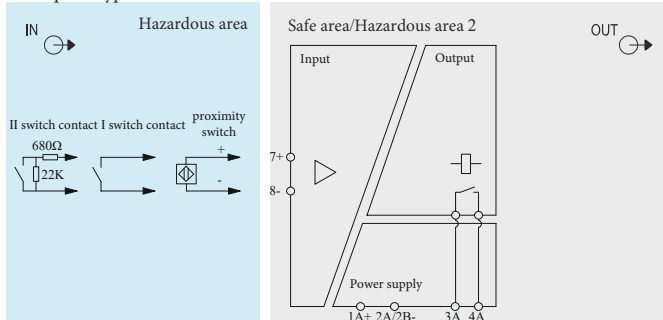
CE

Connctcion diagram

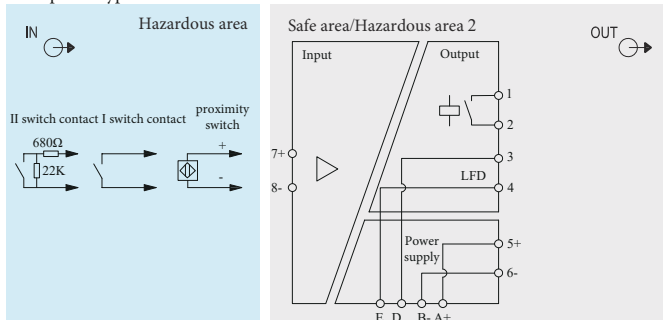
Terminal type: PHD-11MF-27



Backplane type: PHD-11MF-27.H



Bus power type: PHD-11MF-27.B



Safety certification

Functional safe: SIL3, according to IEC 61508 standard

ATEX mark: II 3 G Ex ec nc IIC T4 Gc II (1) D [Ex ia Da] IIIC II (1) G [Ex ia Ga] IIC

IECEx mark: Ex ec nc IIC T4 Gc [Ex ia Da] IIIC [Ex ia Ga] IIC

CCC mark: Ex ec nc IIC T4 Gc [Ex ia Da] IIIC [Ex ia Ga] IIC

Explosion proof parameters:

Uo=10.5V, Io=15mA, Po=0.0394W, Co=1.7μF, Lo=158mH at terminals 7-8

Um=250VAC Temp: -40°C to +70°C

Overview

The digital input isolated safety barrier isolates and transmits input signals from switch contacts or proximity switches in hazardous areas to the safe or hazardous 2 zone with output relay through the safety barrier. Line fault detection is achieved through a separate relay output and displayed on the top LED of the module. The DIP switch of the module is used to set input and output in-phase or reverse control, as well as to enable or disable the line fault detection alarm indication function.

- Terminal, Bus power, Backplane mounting (optional)
- Can be mounted in safe area or Zone 2, wide temperature range design, meet G3 corrosion-resistance requirements
- LFD line fault detection
- DIP switch settings output in-phase or reversed phase
- Three port isolation, input/output/power supply
- High density, ultra-thin design

Specifications

Number of channels: 1 input 1 output

Power supply:

Power voltage: 20~35V DC, consumption about 20mA (24V DC, relay contact close)

Power protection: reverse power protection

Input in hazardous area:

Input signal: contact and NAMUR proximity switch

The supply voltage of the sensor: about 8V

Switching rate: <10Hz

On site input current: >2.1mA, the output is closed, indicating ON

<1.2mA, the output is open, indicating OFF

Output in safe area:

Output signal: relay + alarm (optional)

Contact capacity: 250V AC/2A, 30V DC/2A when subjected resistive load

Response time: 10ms

Alarm output characteristics: MOSFET, Umax=30V, Imax=100mA

Output normally "Open"/"Closed" contact conversion control:

When DIP switch K1 is at "ON" side, the relay output is "Normally closed"

When DIP switch K1 is at "OFF" side, the relay output is "Normally open"

When DIP switch K2 is at "ON" side, the circuit selects indicating red light LFD alarm function

LED indicator: PWR - Green ON, power supply ok; PWR - Green OFF, power supply failure

STS - Yellow ON, input circuit ON (closed) state

STS - Yellow OFF, input circuit OFF (open) state

FLT - red light flickering, input open/short circuit

Alarm function: DIP switch K2 is at "ON" side, circuit selects alarm function, response time 10ms

Load resistance < 50Ω, short circuit alarm (SC); Load resistance > 10kΩ, open circuit alarm (LB)

Insulation strength: between intrinsically safe side and non-intrinsically safe side (≥3000V AC/min) between power supply and non-intrinsically safe side (≥500V AC/min)

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

Applicable field equipments: Field equipment such as dry contacts or NAMUR type proximity switch inputs that comply with DIN19234 standard

Environment characteristics:

Installation place: Installed in hazardous area 2 or safe area, it can be connected to intrinsic safety instruments in hazardous areas up to Zone 0, IIC, Zone 20, and IIIC

Applicable for G3 class (harsh) corrosion environment defined in ISA standard S71.04

Relative humidity: 5%~95%, no condensation

Working temperature: -40°C~+70°C

Storage temperature: -45°C~+85°C

EMC: comply with IEC 61326-1 (GB/T 18268), IEC 61326-3-1 according to IEC 61010-1, applicable for altitude below to 5000m

Mounting specifications:

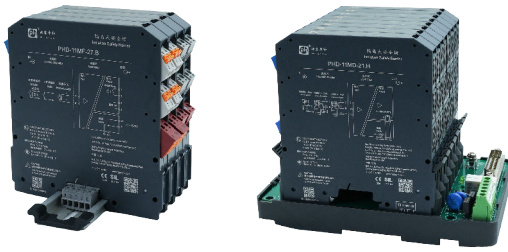
Dimensions: 114mm×99mm×12.5mm

Weight: 135g

Mounting type: customizable backplane or DIN35-rail

Enclosure protection level: IP20 (according to IEC 60529)

Enclosure material/flame retardant grade: PC/V0 (UL94)



SIL3
IEC 61508

TUV
FUNCTIONELLE SICHERHEIT
S.A.R.B.

IECEx

Ex

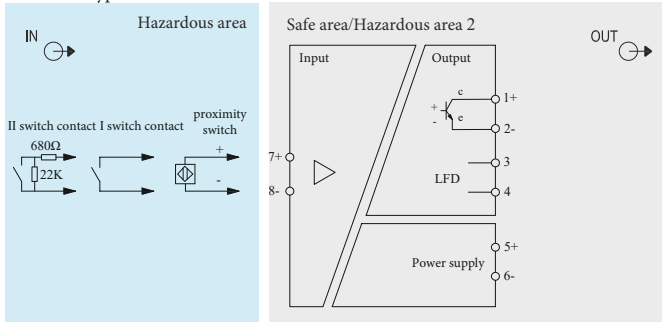
NEPS

CCC

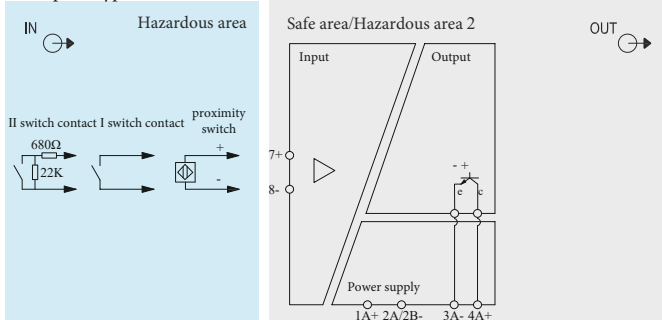
CE

Connection diagram

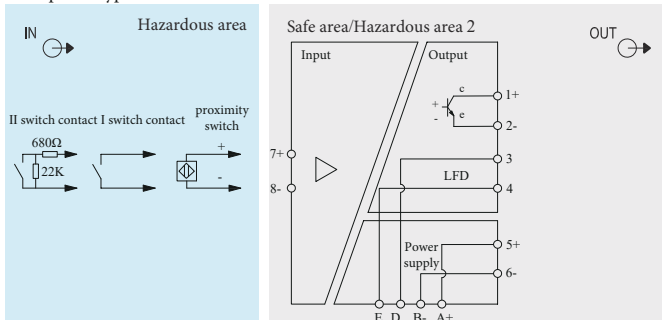
Terminal type: PHD-11MF-28



Backplane type: PHD-11MF-28.H



Bus power type: PHD-11MF-28.B



Safe certification

Functional safe: SIL3, according to IEC 61508 standard

ATEX mark: II 3 G Ex ec IIC T4 Gc II (1) D [Ex ia Da] IIIC II (1) G [Ex ia Ga] IIC

IECEx mark: Ex ec IIC T4 Gc [Ex ia Da] IIIC [Ex ia Ga] IIC

CCC mark: Ex ec IIC T4 Gc [Ex ia Da] IIIC [Ex ia Ga] IIC

Explosion proof parameters:

$U_o=10.5V$, $I_o=15mA$, $P_o=0.0394W$, $C_o=1.7\mu F$, $L_o=158mH$ at terminals 7-8

$U_m=250VAC$ Temp: $-40^{\circ}C$ to $+70^{\circ}C$

Overview

The digital input isolated safety barrier with switch input transistor output, which isolates and transmits input signals from switch contacts or proximity switches in hazardous areas to the safe or hazardous 2 zone with output transistor through the safety barrier. Line fault detection is achieved through LED on the top of the module. The DIP switch of the module is used to set input and output in-phase or reverse control, as well as to enable or disable the line fault detection alarm indication function.

- Terminal, Bus power, Backplane mounting (optional)
- Can be mounted in safe area or Zone 2, wide temperature range design, meet G3 corrosion-resistance requirements
- LFD line fault detection
- DIP switch settings output in-phase or reversed phase
- Three port isolation, input/output/power supply
- High density, ultra-thin design

Specifications

Number of channels: 1 input 1 output

Power supply:

Power voltage: $20\sim 35V$ DC, consumption about 30mA (24V DC, transistor conducting)

Power protection: reverse power protection

Input in hazardous area:

Input signal: contact and NAMUR proximity switch

The supply voltage of the sensor: about 8V

Switching rate: $< 5kHz$

On site input current: $> 2.1mA$, output is closed, indicating ON

$< 1.2mA$, output is open, indicating OFF

Output in safe area:

Output signal: transistor

Output characteristics: NPN type transistor emitter or collector open circuit output

Drive capability: output current $\leq 20mA$ (1.2k Ω), max. internal current 100mA, equipped with

short-circuit current protection

Alarm output characteristics: MOSFET, $U_{max}=30V$, $I_{max}=100mA$

Output e-c conduction/cutoff state transition control:

DIP switch K1 is at "ON" side, the transistor output e-c are in conduction

DIP switch K1 is at "OFF" side, the transistor output e-c are in cutoff

DIP switch K2 is at "ON" side, the circuit selects red light LFD indication alarm function

LED indicator: PWR - Green ON, power supply ok; PWR - Green OFF, power supply failure

STS - Yellow ON, input circuit ON (closed) state

STS - Yellow OFF, input circuit OFF (open) state

FLT - red light flickering, input open/short circuit

Alarm function: DIP switch K2 is at "ON" side, circuit selects alarm function, response time 10ms

Load resistance $< 50\Omega$, short circuit alarm (SC); Load resistance $> 10k\Omega$, open circuit alarm (LB)

Insulation strength: between intrinsically safe side and non-intrinsically safe side ($\geq 3000V$ AC/min)

between power supply and non-intrinsically safe side ($\geq 500V$ AC/min)

Insulation resistance: $\geq 100M\Omega$ (between input/output/power supply)

Applicable field equipments: Field equipment such as dry contacts or NAMUR type proximity switch inputs that comply with DIN19234 standard

Environment characteristics:

Installation place: Installed in hazardous area 2 or safe area, it can be connected to intrinsic safety

instruments in hazardous areas up to Zone 0, IIC, Zone 20, and IIIC

Applicable G3 class (harsh) corrosion environment defined in ISA standard S71.04

Relative humidity: 5%~95%, no condensation

Working temperature: $-40^{\circ}C \sim +70^{\circ}C$

Storage temperature: $-45^{\circ}C \sim +85^{\circ}C$

EMC: comply with IEC 61326-1 (GB/T 18268), IEC 61326-3-1 according to

IEC 61010-1, applicable for altitude below to 5000m

Mounting specifications:

Dimensions: 114mm $\times$ 99mm $\times$ 12.5mm

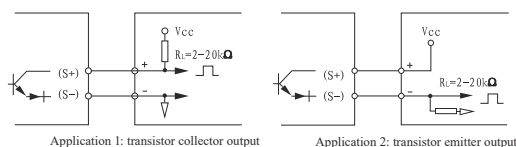
Weight: 135g

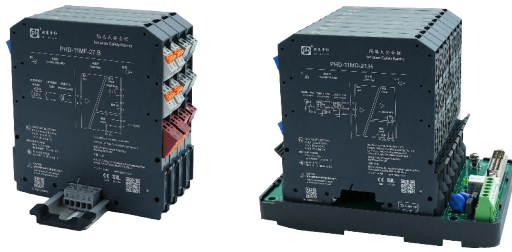
Mounting type: customizable backplane or DIN35-rail

Enclosure protection level: IP20 (according to IEC 60529)

Enclosure material/flame retardant grade: PC/V0 (UL94)

Note:





SIL3
IEC 61508

TUV
FUNCTIONAL SAFETY
S.A.S.R.

IECEx

Ex

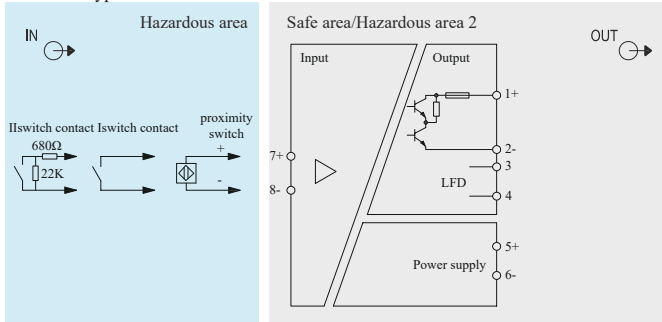
NEPS

CCC

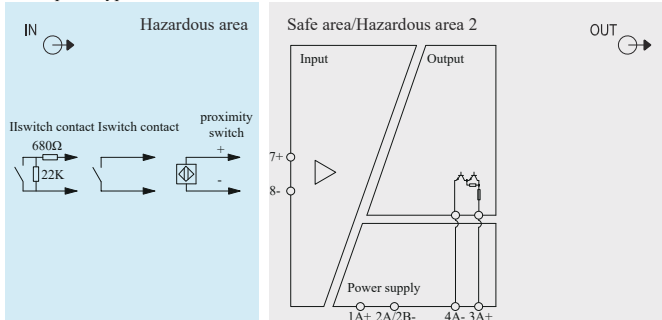
CE

Connection diagram

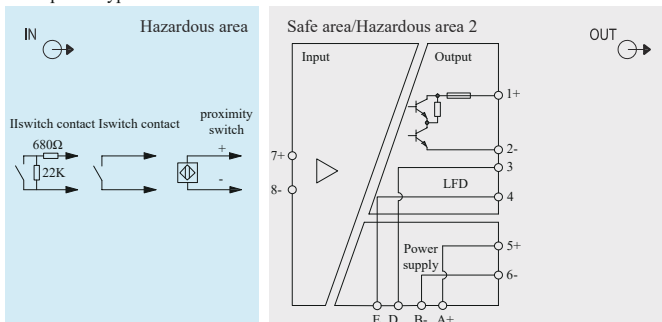
Terminal type: PHD-11MF-29



Backplane type: PHD-11MF-29.H



Bus power type: PHD-11MF-29.B



Safe certification

Functional safe: SIL3, according to IEC 61508 standard

ATEX mark: II 3 G Ex ec IIC T4 Gc II (1) D [Ex ia Da] IIIC II (1) G [Ex ia Ga] IIC

IECEx mark: Ex ec IIC T4 Gc [Ex ia Da] IIIC [Ex ia Ga] IIC

CCC mark: Ex ec IIC T4 Gc [Ex ia Da] IIIC [Ex ia Ga] IIC

Explosion proof parameters:

Uo=10.5V, Io=15mA, Po=0.0394W, Co=1.7μF, Lo=158mH at terminals 7-8

Um=250VAC Temp: -40°C to +70°C

Overview

The digital input isolated safety barrier transmits input signals from switching contacts or proximity switches in the hazardous area through the safety barriers in isolation to the safe area with transistor outputs. The input controls a passive transistor output with resistive characteristics. The output has four defined states. This output characteristic reacts to the line state on the signal line. The DIP switches of the module are used to set the input and output in the same direction or reverse control, as well as to set the line fault alarm indication function.

- Terminal, Bus power, Backplane mounting (optional)
- Can be mounted in safe area or Zone 2, wide temperature range design, meet G3 corrosion-resistance requirements
- LFD line fault detection
- DIP switch settings output in-phase or reversed phase
- Three port isolation, input/output/power supply
- High density, ultra-thin design

Specifications

Number of channels: 1 input 1 output

Power supply:

Power voltage: 20~35V DC, consumption about 30mA (24V DC, transistor conducting)

Power protection: reverse power protection

Input in hazardous area:

Input signal: contact and NAMUR proximity switch

The supply voltage of the sensor: about 8V, max. withstand voltage ≤ 30V DC

Switching rate: < 5kHz

On site input current: > 2.1mA, output closed, indicating ON

< 1.2mA, output open, indicating OFF

Output in safe area:

Output signal: transistor (resistor)

Output characteristics: external power voltage 8V, short circuit alarm resistance ≤ 240Ω,

1-signal 1.4kΩ ≤ resistance ≤ 1.6kΩ, 0-signal 13kΩ ≤ resistance ≤ 14kΩ,

open circuit alarm resistance > 100kΩ

Alarm output characteristics: MOSFET, Umax=30V, Imax=100mA

Output e-c conduction/cutoff state transition control:

DIP switch K1 is at "ON" side, the transistor output e-c in inverted phase

DIP switch K1 is at "OFF" side, the transistor output e-c in normal phase

DIP switch K2 is at "ON" side, the circuit selects red light LFD indication alarm function

LED indicator: PWR - Green ON, power supply ok; PWR - Green OFF, power supply failure

STS - Yellow ON, input circuit ON (closed) state

STS - Yellow OFF, input circuit OFF (open) state

FLT - red light flickering, input open/short circuit

Alarm function: DIP switch K2 is at "ON" side, circuit selects alarm function, response time 10ms

Load resistance < 50Ω, short circuit alarm (SC); Load resistance > 10kΩ, open circuit alarm (LB)

Insulation strength: between intrinsically safe side and non-intrinsically safe side (≥ 3000V AC/min)

between power supply and non-intrinsically safe side (≥ 500V AC/min)

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

Applicable field equipments: Field equipment such as dry contacts or NAMUR type proximity switch inputs that comply with DIN 19234 standard

Environment characteristics:

Installation place: Installed in hazardous area 2 or safe area, it can be connected to intrinsic safety instruments in hazardous areas up to Zone 0, IIC, Zone 20, and IIIC

Applicable for G3 class (harsh) corrosion environment defined in ISA standard S71.04

Relative humidity: 5%~95%, no condensation

Working temperature: -40°C ~ +70°C

Storage temperature: -45°C ~ +85°C

EMC: comply with IEC 61326-1 (GB/T 18268), IEC 61326-3-1 according to

IEC 61010-1, applicable for altitude below to 5000m

Mounting specifications:

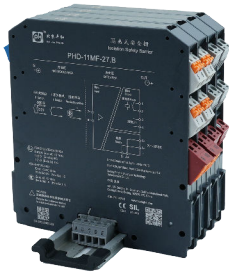
Dimensions: 114mm×99mm×12.5mm

Weight: 135g

Mounting type: customizable backplane or DIN35-rail

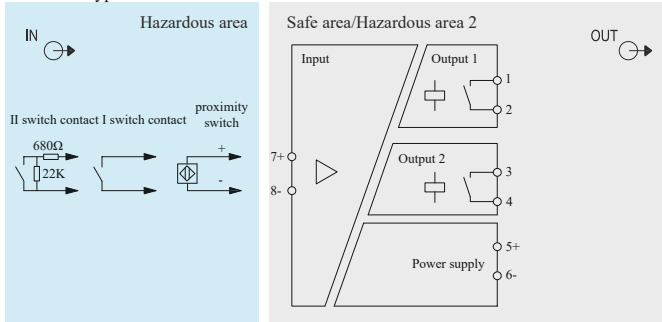
Enclosure protection level: IP20 (according to IEC 60529)

Enclosure material/flame retardant grade: PC/V0 (UL94)

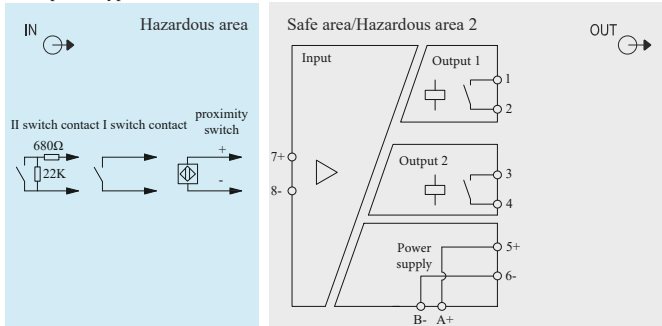


Connection diagram

Terminal type: PHD-12MF-277



Bus power type: PHD-12MF-277.B



Safe certification

Functional safe: SIL3, according to IEC 61508 standard

ATEX mark: II 3 G Ex ec nc IIC T4 Gc II (1) D [Ex ia Da] IIIC II (1) G [Ex ia Ga] IIC

IECEx mark: Ex ec nc IIC T4 Gc [Ex ia Da] IIIC [Ex ia Ga] IIC

CCC mark: Ex ec nc IIC T4 Gc [Ex ia Da] IIIC [Ex ia Ga] IIC

Explosion proof parameters:

$U_o=10.5V$, $I_o=15mA$, $P_o=0.0394W$, $C_o=1.7\mu F$, $L_o=158mH$ at terminals 7-8

$U_m=250VAC$ Temp: $-40^{\circ}C$ to $+70^{\circ}C$

Overview

The digital input isolated safety barrier isolates and transmits input signals from switch contacts or proximity switches in hazardous areas to the safe or hazardous 2 zone with output relay through the safety barrier. Line fault detection is achieved through a separate relay output and displayed on the top LED of the module. The DIP switch of the module is used to set input and output in-phase or reverse control, as well as to enable or disable the line fault detection alarm indication function.

- Terminal, Bus power mounting (optional)
- Can be mounted in safe area or Zone 2, wide temperature range design, meet G3 corrosion-resistance requirements
- LFD line fault detection
- DIP switch settings output in-phase or reversed phase
- Three port isolation, input/output/power supply
- High density, ultra-thin design

Specifications

Number of channels: 1 input 2 outputs

Power supply:

Power voltage: 20~35V DC, consumption about 30mA (24V DC, relay contact closed)

Power protection: reverse power protection

Input in hazardous area:

Input signal: contact and NAMUR proximity switch

The supply voltage of the sensor: about 8V

Switching rate: $<10Hz$

On site input current: $>2.1mA$, output closed, indicating ON

$<1.2mA$, output open, indicating OFF

Output in safe area:

Output signal: relay

Contact capacity: 250V AC/2A, 30V DC/2A when subjected resistive load

Response time: 10ms

Output normally "Open"/"Closed" contact conversion control:

DIP switch K1, K3 is at "ON" side, relay output "Normally closed"

DIP switch K1, K3 is at "OFF" side, relay output "Normally open"

DIP switch K2, K4 is at "ON" side, the circuit selects indicating red light LFD alarm function

LED indicator: PWR - Green ON, power supply ok; PWR - Green OFF, power supply failure

STS - Yellow ON, input circuit ON (closed)state

STS - Yellow OFF, input circuit OFF (open)state

FLT - red light flickering, input open/short circuit

Alarm function: DIP switch K2, K4 is at "ON" side, circuit selects alarm function, response time 10ms

Load resistance $<50\Omega$, short circuit alarm (SC), Load resistance $>10k\Omega$, open circuit alarm (LB)

Insulation strength: between intrinsically safe side and non-intrinsically safe side ($\geq 3000V$ AC/min)

between power supply and non-intrinsically safe side ($\geq 500V$ AC/min)

Insulation resistance: $\geq 100M\Omega$ (between input/output/power supply)

Applicable field equipments: Field equipment such as dry contacts or NAMUR type proximity switch inputs that comply with DIN19234 standard

Environment characteristics:

Installation place: Installed in hazardous area 2 or safe area, it can be connected to intrinsic safety instruments in hazardous areas up to Zone 0, IIC, Zone 20, and IIIC

Applicable for G3 class (harsh) corrosion environment defined in ISA standard S71.04

Relative humidity: 5%~95%, no condensation

Working temperature: $-40^{\circ}C \sim +70^{\circ}C$

Storage temperature: $-45^{\circ}C \sim +85^{\circ}C$

EMC: comply with IEC 61326-1 (GB/T 18268), IEC 61326-3-1 according to

IEC 61010-1, applicable for altitude below to 5000m

Mounting specifications:

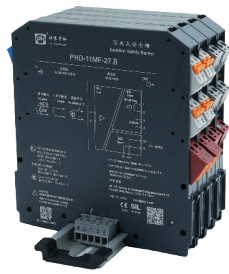
Dimensions: 114mm×99mm×12.5mm

Weight: 135g

Mounting type: customizable backplane or DIN35-rail

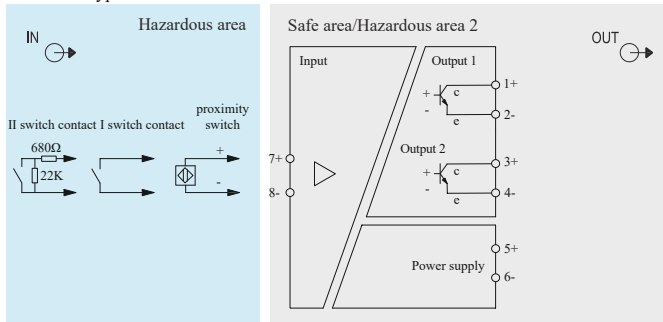
Enclosure protection level: IP20 (according to IEC 60529)

Enclosure material/flame retardant grade: PC/V0 (UL94)

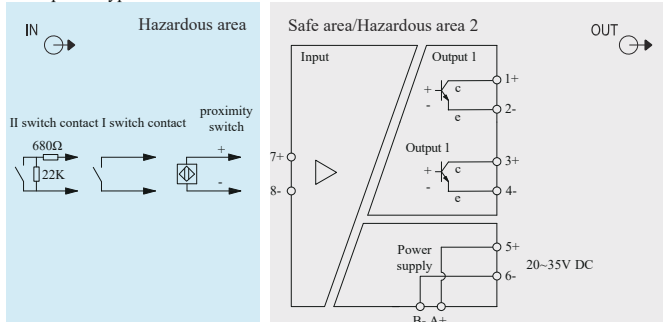


Connection diagram

Terminal type: PHD-12MF-288



Bus power type: PHD-12MF-288.B



Functional safe: SIL3, according to IEC 61508 standard

ATEX mark: II 3 G Ex ec IIC T4 Gc II (1) D [Ex ia Da] IIIC II (1) G [Ex ia Ga] IIC

IECEx mark: Ex ec IIC T4 Gc [Ex ia Da] IIIC [Ex ia Ga] IIC

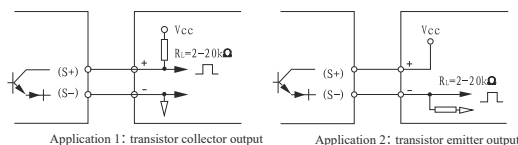
CCC mark: Ex ec IIC T4 Gc [Ex ia Da] IIIC [Ex ia Ga] IIC

Explosion proof parameters:

$U_o=10.5V$, $I_o=15mA$, $P_o=0.0394W$, $C_o=1.7\mu F$, $L_o=158mH$ at terminals 7-8

$U_m=250VAC$ Temp: $-40^{\circ}C$ to $+70^{\circ}C$

Note:



Overview

The digital input isolated safety barrier with switch input transistor output, which isolates and transmits input signals from switch contacts or proximity switches in hazardous areas to the safe or hazardous 2 zone with output transistor through the safety barrier. Line fault detection is achieved through LED on the top of the module. The DIP switch of the module is used to set input and output in-phase or reverse control, as well as to enable or disable the line fault detection alarm indication function.

- Terminal, Bus power mounting (optional)
- Can be mounted in safe area or Zone 2, wide temperature range design, meet G3 corrosion-resistance requirements
- LFD line fault detection
- DIP switch settings output in-phase or reversed phase
- Three port isolation, input/output/power supply
- High density, ultra-thin design

Specifications

Number of channels: 1 input 2 outputs

Power supply:

Power voltage: 20~35V DC, consumption about 30mA (24V DC, transistor conducting)

Power protection: reverse power protection

Input in hazardous area:

Input signal: contact and NAMUR proximity switch

The supply voltage of the sensor: about 8V

Switching rate: $<5kHz$

On site input current: $>2.1mA$, output closed, indicating ON
 $<1.2mA$, output open, indicating OFF

Output in safe area:

Output signal: transistor

Output characteristics: NPN type resistor emitter or collector open circuit output

Load capacity: output current $\leq 20mA$ ($1.2k\Omega$), max. internal current $100mA$, equipped with short circuit current protection

Output e-c conduction/cutoff state transition control:

DIP switch K1, K3 is at "ON" side, transistor output e-c are in inverted phase

DIP switch K1, K3 is at "OFF" side, transistor output e-c are in normal phase

DIP switch K2, K4 is at "ON" side, the circuit selects red LFD indication alarm function

LED indicator: PWR - Green ON, power supply ok; PWR - Green OFF, power supply failure

STS - Yellow ON, input circuit ON (closed) state

STS - Yellow OFF, input circuit OFF (open) state

FLT - red light flickering, input open/short circuit

Alarm function: DIP switch K2, K4 is at "ON" side, circuit selects alarm function, response time 10ms

Load resistance $< 50\Omega$, short circuit alarm (SC); Load resistance $> 10k\Omega$, open alarm (LB)

Insulation strength: between intrinsically safe and non-intrinsically safe side ($\geq 3000V AC/min$)

between power supply and non-intrinsically safe side ($\geq 500V AC/min$)

Insulation resistance: $\geq 100M\Omega$ (between input/output/power supply)

Applicable field equipments: Field equipment such as dry contacts or NAMUR type proximity switch inputs that comply with DIN19234 standard

Environment characteristics:

Installation place: Installed in hazardous area 2 or safe area, it can be connected to intrinsic safety

instruments in hazardous areas up to Zone 0, IIC, Zone 20, and IIIC

Applicable for G3 class (harsh) corrosion environment defined in ISA standard S71.04

Relative humidity: 5%~95%, no condensation

Working temperature: $-40^{\circ}C \sim +70^{\circ}C$

Storage temperature: $-45^{\circ}C \sim +85^{\circ}C$

EMC: comply with IEC 61326-1 (GB/T 18268), IEC 61326-3-1 according to

IEC 61010-1, applicable for altitude below to 5000m

Mounting specifications

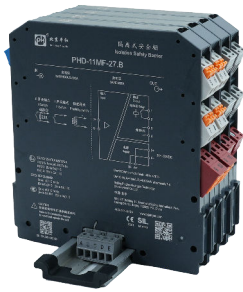
Dimensions: 114mm×99mm×12.5mm

Weight: 135g

Mounting type: customizable backplane or DIN35-rail

Enclosure protection level: IP20 (according to IEC 60529)

Enclosure material/flame retardant grade: PC/V0 (UL94)



SIL3
IEC 61508

SGS
TUV
FUNCTIONAL SAFETY
SAAB

IECEx

Ex

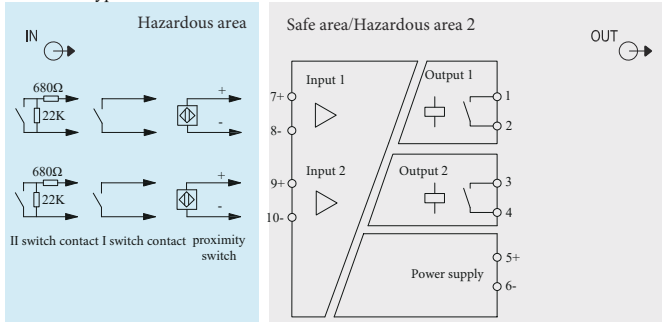
Ex
NEPSI

CCC

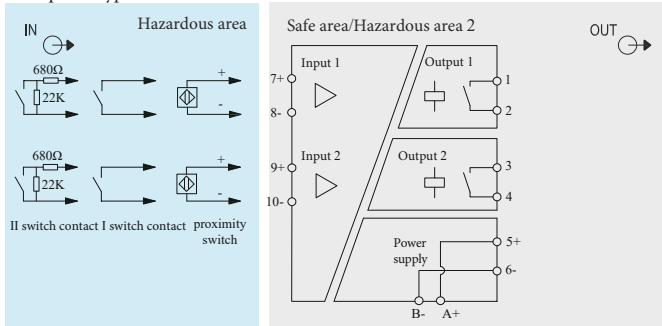
CE

Connection diagram

Terminal type: PHD-22MF-2727



Bus power type: PHD-22MF-2727.B



Safe certification

Functional safe: SIL3, according to IEC 61508 standard

ATEX mark: II 3 G Ex ec nc IIC T4 Gc II (1) D [Ex ia Da] IIIC II (1) G [Ex ia Ga] IIC

IECEx mark: Ex ec ec IIC T4 Gc [Ex ia Da] IIIC [Ex ia Ga] IIC

CCC mark: Ex ec ec IIC T4 Gc [Ex ia Da] IIIC [Ex ia Ga] IIC

Explosion proof parameters: $U_0=10.5V$, $I_0=15mA$, $P_0=0.0394W$,

$C_0=1.7\mu F$, $L_0=158mH$ at terminals 7-8, 9-10

$U_m=250VAC$ Temp: $-40^{\circ}C$ to $+70^{\circ}C$

Overview

The digital input isolated safety barrier isolates and transmits input signals from switch contacts or proximity switches in hazardous areas to the safe or hazardous 2 zone with output relay through the safety barrier. Line fault detection is achieved through a separate relay output and displayed on the top LED of the module. The DIP switch of the module is used to set input and output in-phase or reverse control, as well as to enable or disable the line fault detection alarm indication function.

- Terminal, Bus power mounting (optional)
- Can be mounted in safe area or Zone 2, wide temperature range design, meet G3 corrosion-resistance requirements
- LFD line fault detection
- DIP switch settings output in-phase or reversed phase
- Three port isolation, input/output/power supply
- High density, ultra-thin design

Specifications

Number of channels: 2 inputs 2 outputs

Power supply:

Power voltage: $20\sim 35V$ DC, consumption about 40mA (24V DC, relay contact closed)

Power protection: reverse power protection

Input in hazardous area:

Input signal: contact and NAMUR proximity switch

The supply voltage of the sensor: about 8V

Switching rate: $< 10Hz$

On site input current: $> 2.1mA$, output closed, indicating ON
 $< 1.2mA$, output open, indicating OFF

Output in safe area:

Output signal: relay

Contact capacity: 250V AC/2A, 30V DC/2A when subjective resistive load

Response time: 10ms

Output normally "Open"/"Closed" contact conversion control:

DIP switch K1, K3 is at "ON" side, relay output "Normally closed"

DIP switch K1, K3 is at "OFF" side, relay output "Normally open"

DIP switch K2, K4 is at "ON" side, the circuit selects red light LFD indicating alarm function

LED indicator: PWR - Green ON, power supply ok; PWR - Green OFF, power supply failure

STS - Yellow ON, input circuit ON (closed) state

STS - Yellow OFF, input circuit OFF (open) state

FLT - red light flickering, input open/short circuit

Alarm function: DIP switch K2, K4 is at "ON" side, circuit selects alarm function, response time 10ms

Load resistance $< 50\Omega$, short circuit alarm (SC); Load resistance $> 10k\Omega$, open circuit alarm (LB)

Insulation strength: between intrinsically safe side and non-intrinsically safe side ($\geq 3000V$ AC/min)
between power supply and non-intrinsically safe side ($\geq 500V$ AC/min)

Insulation resistance: $\geq 100M\Omega$ (between input/output/power supply)

Applicable field equipments: Field equipment such as dry contacts or NAMUR type proximity switch inputs that comply with DIN19234 standard

Environment characteristics:

Installation place: Installed in hazardous area 2 or safe area, it can be connected to intrinsic safety instruments in hazardous areas up to Zone 0, IIC, Zone 20, and IIIC

Applicable for G3 class (harsh) corrosion environment defined in ISA standard S71.04

Relative humidity: 5%~95%, no condensation

Working temperature: $-40^{\circ}C\sim +70^{\circ}C$

Storage temperature: $-45^{\circ}C\sim +85^{\circ}C$

EMC: comply with IEC 61326-1 (GB/T 18268), IEC 61326-3-1 according to IEC 61010-1, applicable for altitude below to 5000m

Mounting specifications:

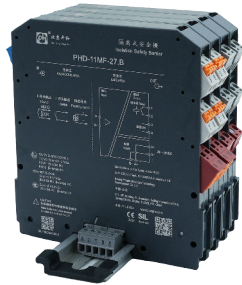
Dimensions: 114mm×99mm×12.5mm

Weight: 135g

Mounting type: customizable backplane or DIN35-rail

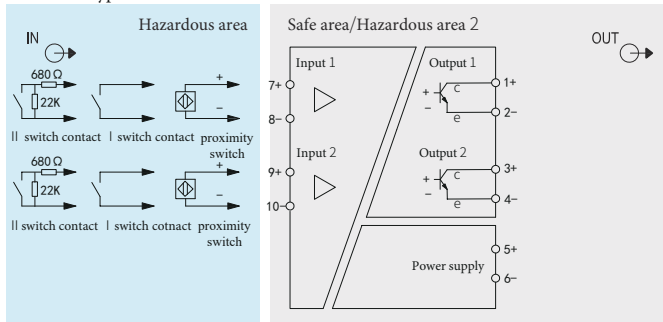
Enclosure protection level: IP20 (according to IEC 60529)

Enclosure material/flame retardant grade: PC/V0 (UL94)

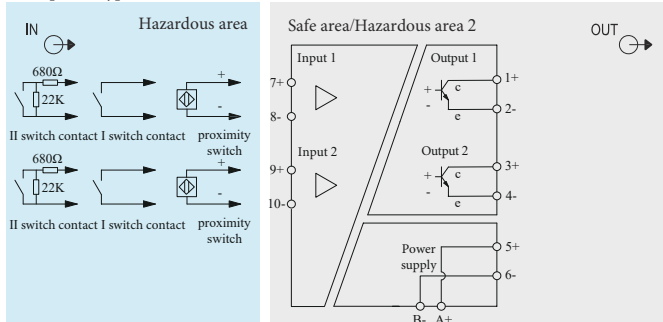


Connection diagram

Terminal type: PHD-22MF-2828



Bus power type: PHD-22MF-2828.B



Safe certification

Functional safe: SIL3, according to IEC 61508 standard

ATEX mark: II 3 G Ex ec IIC T4 Gc II (1) D [Ex ia Da] IIIC II (1) G [Ex ia Ga] IIC

IECEx mark: Ex ec IIC T4 Gc [Ex ia Da] IIIC [Ex ia Ga] IIC

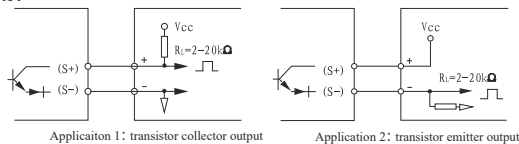
CCC mark: Ex ec IIC T4 Gc [Ex ia Da] IIIC [Ex ia Ga] IIC

Explosion proof parameters: $U_0=10.5V$, $I_0=15mA$, $P_0=0.0394W$,

$C_0=1.7\mu F$, $L_0=158mH$ at terminals 7-8, 9-10

$U_m=250VAC$ Temp: $-40^{\circ}C$ to $+70^{\circ}C$

Note:



Overview

The digital input isolated safety barrier with switch input transistor output, which isolates and transmits input signals from switch contacts or proximity switches in hazardous areas to the safe or hazardous 2 zone with output transistor through the safety barrier. Line fault detection is achieved through LED on the top of the module. The DIP switch of the module is used to set input and output in-phase or reverse control, as well as to enable or disable the line fault detection alarm indication function.

- Terminal, Bus power mounting (optional)
- Can be mounted in safe area or Zone 2, wide temperature range design, meet G3 corrosion-resistance requirements
- LFD line fault detection
- DIP switch settings output in-phase or reversed phase
- Three port isolation, input/output/power supply
- High density, ultra-thin design

Specifications

Number of channels: 2 inputs 2 outputs

Power supply:

Power voltage: 20~35V DC, consumption about 40mA (24V DC, transistor conducting)

Power protection: reverse power protection

Input in hazardous area:

Input signal: contact and NAMUR proximity switch

The supply voltage of the sensor: about 8V

Switching rate: $<5kHz$

On site input current: $>2.1mA$, output closed, indicating ON

$<1.2mA$, output open, indicating OFF

Output in safe area:

Output signal: transistor

Output characteristic: NPN type transistor emitter or collector open circuit output

Drive capacity: output current $\leq 20mA$ ($1.2k\Omega$), max. internal current 100mA, equipped with short circuit current protection

Outputs e-c conduction/cutoff state transition control:

DIP switch K1, K3 is at "ON" side, transistor output e-c are in inverted phase

DIP switch K1, K3 is at "OFF" side, transistor output e-c are in normal phase

DIP switch K2, K4 is at "ON" side, the circuit selects red light LFD indication alarm function LED indicator: PWR - Green ON, power supply ok; PWR - Green OFF, power supply failure

STS - Yellow ON, input circuit ON (closed) state

STS - Yellow OFF, input current OFF (open) state

FLT - red light flickering, input open/short circuit

Alarm function: DIP switch K2, K4 is at "ON" side, circuit selects alarm function, response time 10ms

Load resistance $<50\Omega$, short circuit alarm (SC); Load resistance $>10k\Omega$, open circuit alarm (LB)

Insulation strength: between intrinsically safe side and non-intrinsically safe side ($\geq 3000V AC/min$)

between power supply and non-intrinsically safe side ($\geq 500V AC/min$)

Insulation resistance: $\geq 100M\Omega$ (between input/output/power supply)

Applicable field equipments: Field equipment such as dry contacts or NAMUR type proximity switch inputs that comply with DIN19234 standard

Environment characteristics:

Installation place: Installed in hazardous area 2 or safe area, it can be connected to intrinsic safety instruments in hazardous areas up to Zone 0, IIC, Zone 20, and IIIC

Applicable for G3 class (harsh) corrosion environment defined in ISA standard S71.04

Relative humidity: 5%~95%, no condensation

Working temperature: $-40^{\circ}C \sim +70^{\circ}C$

Storage temperature: $-45^{\circ}C \sim +85^{\circ}C$

EMC: comply with IEC 61326-1 (GB/T 18268), IEC 61326-3-1 according to IEC 61010-1, applicable for altitude below to 5000m

Mounting specifications:

Dimensions: 114mm×99mm×12.5mm

Weight: 135g

Mounting type: customizable backplane or DIN35-rail

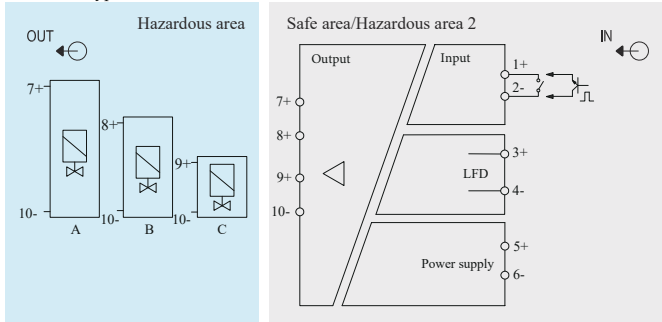
Enclosure protection level: IP20 (according to IEC 60529)

Enclosure material/flame retardant grade: PC/V0 (UL94)

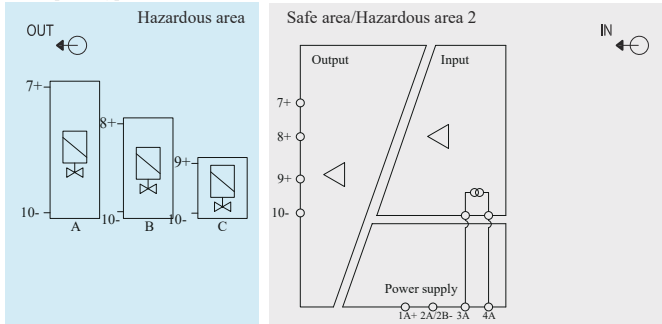


Connection diagram

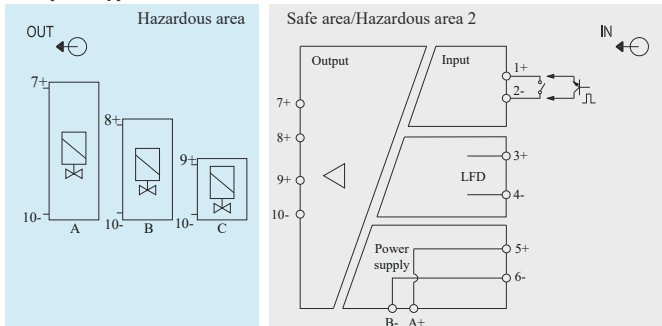
Terminal type: PHC-11MF-14



Backplane type: PHC-11MF-14.H



Bus power type: PHC-11MF-14.B



Safe certification

Functional safe: SIL2, according to IEC 61508 standard

ATEX mark: II 3 G Ex ec IIC T4 Gc II (1) D [Ex ia Da] IIIC II (1) G [Ex ia Ga] IIIC

IECEx mark: Ex ec IIC T4 Gc [Ex ia Da] IIIC [Ex ia Ga] IIIC

CCC mark: Ex ec IIC T4 Gc [Ex ia Da] IIIC [Ex ia Ga] IIIC

Explosion proof parameters: Um=250VAC Temp: -40°C to +70°C

Uo=24.8V, Io=147mA, Po=907mW, Co=0.113uF, Lo=1.6mH at terminals 7-10

Uo=24.8V, Io=108 mA, Po=667mW, Co=0.113uF, Lo=3.0mH at terminals 8-10

Uo=24.8V, Io=93 mA, Po=571mW, Co=0.113uF, Lo=4.1mH at terminals 9-10

Overview

The digital output operation side isolation safety barrier can convert the switch contacts and logic level inputs of the safety zone into intrinsic safety equipment driving , and output them to the hazardous zone site, thereby controlling solenoid valves, sound and light alarms, etc. The signal status indicator light is set to red and yellow dual colors, the alarm display is red, and the output solenoid valve and other working displays are yellow.

- Terminal, Bus power, Backplane mounting (optional)
- Can be mounted in safe area or Zone 2, wide temperature range design, meet G3 corrosion-resistance requirements
- Signal state display
- Output signal to hazardous 0/1 zone equipments
- Three port isolation, input/output/power supply
- High density, ultra-thin design

Specifications

Number of channels: 1 input 1 output

Power supply:

Power voltage: 20~35V DC, consumption about 1.8W (output 13V/45mA)

Power protection: reverse power protection

Input in safe area:

Input signal: switch contact, logic level

Output in hazardous area:

Output signal: 22V~24V DC, UE/IE=13V/45mA (7,10)

UE/IE=10.2V/45mA (8,10)

UE/IE=8.5V/45mA (9,10)

Reverse function: K1 is at "ON" side, circuit output reversed

LED indicator: PWR - Green ON, power supply ok; PWR - Green OFF, power supply failure

STS - Yellow ON, output circuit ON (closed) state

STS - Yellow OFF, output circuit OFF (open) state

FLT - red light, output open/short circuit

Alarm function: DIP switch K2 is at "ON" side, the circuit selects alarm function, response time 20ms

Load resistance < 50Ω, short circuit alarm (SC)

Load resistance > 10kΩ, open circuit alarm (LB)

Alarm output characteristics: MOSFET, Umax=30V, Imax=100mA

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

Insulation strength: between intrinsically safe side and non-intrinsically safe side (≥3000V AC/min)

between power supply and non-intrinsically safe side (≥500V AC/min)

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

Applicable field equipments: audible/visual alarms, intrinsically safe solenoid valves

Environment characteristics:

Installation place: Installed in hazardous area 2 or safe area, it can be connected to intrinsic safety instruments in hazardous areas up to Zone 0, IIC, Zone 20, and IIIC

Applicable for G3 class (harsh) corrosion environment defined in ISA standard S71.04

Relative humidity: 5%~95%, no condensation

Working temperature: -40°C~+70°C

Storage temperature: -45°C~+85°C

EMC: comply with IEC 61326-1 (GB/T 18268), IEC 61326-3-1 according to

IEC 61010-1, applicable for altitude below to 5000m

Mounting specifications:

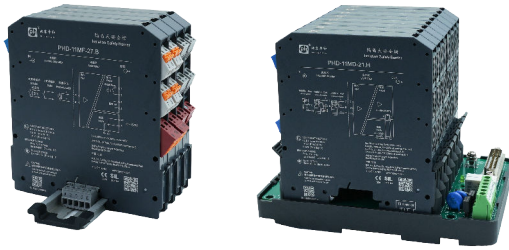
Dimensions: 114mm×99mm×12.5mm

Weight: 135g

Mounting type: customizable backplane or DIN35-rail

Enclosure protection level: IP20 (according to IEC 60529)

Enclosure material/flame retardant grade: PC/V0 (UL94)



SIL 2
IEC 61508

TUV
FUNCTIONAL SAFETY
CLASS 2

IECEx

Ex

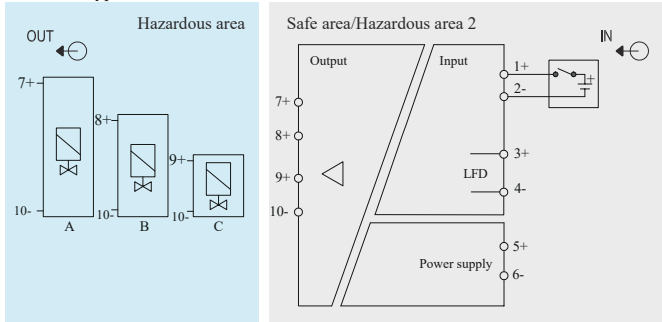
Ex
MEPS

CCC

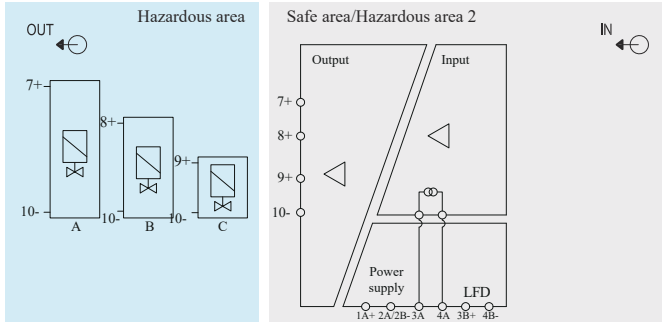
CE

Connection diagram

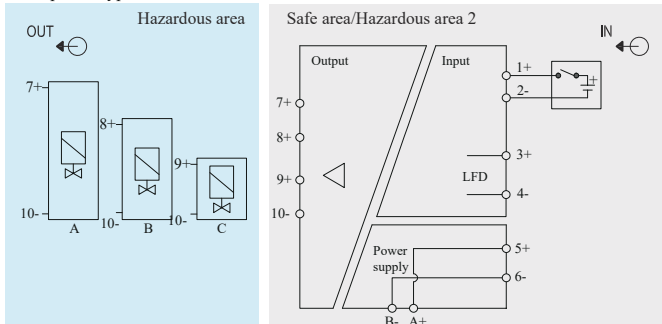
Terminal type: PHC-11MF-24



Backplane type: PHC-11MF-24.H



Bus power type: PHC-11MF-24.B



Safe certification

Functional safe: SIL2, according to IEC 61508 standard

ATEX mark: II 3 G Ex ec IIC T4 Gc II (1) D [Ex ia Da] IIIC II (1) G [Ex ia Ga] IIC

IECEx mark: Ex ec IIC T4 Gc [Ex ia Da] IIIC [Ex ia Ga] IIC

CCC mark: Ex ec IIC T4 Gc [Ex ia Da] IIIC [Ex ia Ga] IIC

Explosion proof parameters: Um=250VAC Temp: -40°C to +70°C

Uo=24.8V, Io=147mA, Po=907mW, Co=0.113uF, Lo=1.6mH at terminals 7-10

Uo=24.8V, Io=108 mA, Po=667mW, Co=0.113uF, Lo=3.0mH at terminals 8-10

Uo=24.8V, Io=93 mA, Po=571mW, Co=0.113uF, Lo=4.1mH at terminals 9-10

Overview

The digital output operation isolation safety barrier can convert the DC voltage controlled by the contacts in the safe area into intrinsic safety equipment driving quantity, and output it to the hazardous area site, thereby controlling solenoid valves, sound and light alarms, etc. The signal status indicator light is set to red and yellow dual colors, the alarm display is red, and the output solenoid valve and other working displays are yellow.

The product requires independent isolation of input, output and power supply

- Terminal, Bus power, Backplane mounting (optional)
- Can be mounted in safe area or hazardous zone 2, wide temperature range design, meet G3 corrosion-resistance requirements
- Signal state display
- Output signal to hazardous 0/1 zone equipments
- Three port isolation, input/output/power supply
- High density, ultra-thin design

Specifications

Number of channels: 1 input 1 output

Power supply:

Power voltage: 20~35V DC, consumption about 1.8W (output 13V/45mA)

Power protection: reverse power protection

Input in safe side:

Input signal: contact control DC voltage

Voltage: 0 V≤close≤5V; 20V≤open≤30V

Output in hazardous area:

Output signal: 22V~24V DC, UE/IE=13V/45mA (7,10)

UE/IE=10.2V/45mA (8,10)

UE/IE=8.5V/45mA (9,10)

Reverse function: K1 is at "ON" side, circuit output reversed

LED indicator: PWR - Green ON, power supply ok; PWR - Green OFF, power supply failure

STS - Yellow ON, output circuit ON (closed) state

STS - Yellow OFF, output circuit OFF (open) state

FLT - red light, output open/short circuit

Alarm function: DIP switch K2 is at "ON" side, the circuit selects alarm function, response time 20ms

Load resistance<50Ω, short circuit alarm (SC)

Load resistance>10kΩ, open circuit alarm (LB)

Alarm output characteristics: MOSFET, Umax=30V, Imax=100mA

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

Insulation strength: between intrinsically safe side and non-intrinsically safe side (≥3000V AC/min)

between power supply and non-intrinsically safe side (≥500V AC/min)

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

Applicable field equipments: audible/visual alarms, intrinsically safe solenoid valves

Environment characteristics:

Installation place: Installed in hazardous area 2 or safe area, it can be connected to intrinsic safety instruments in hazardous areas up to Zone 0, IIC, Zone 20, and IIIC

Applicable for G3 class (harsh) corrosion environment defined in ISA standard S71.04

Relative humidity: 5%~95%, no condensation

Working temperature: -40°C~+70°C

Storage temperature: -45°C~+85°C

EMC: comply with IEC 61326-1 (GB/T 18268), IEC 61326-3-1 according to

IEC 61010-1, applicable for altitude below to 5000m

Mounting specifications:

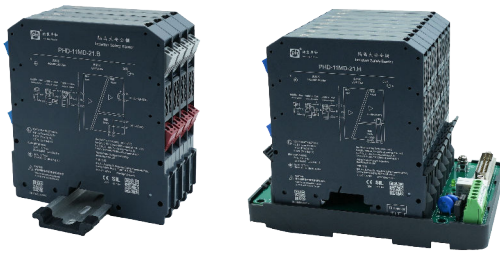
Dimensions: 114mm×99mm×12.5mm

Weight: 135g

Mounting type: customizable backplane or DIN35-rail

Enclosure protection level: IP20 (according to IEC 60529)

Enclosure material/flame retardant grade: PC/V0 (UL94)



SIL3
IEC 61508

TUV
FUNCTIONAL SAFETY
SAAB

IECEx

Ex

ATEX

CCC

CE

Overview

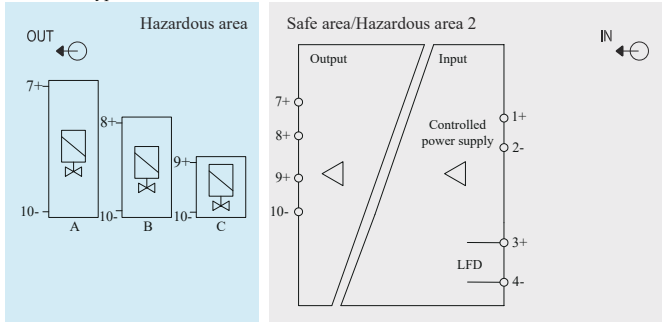
The digital output isolated safety barrier from the safe area input and converts contact control DC voltage and driving to intrinsically safe field devices such as solenoid valves and audible/visual alarms to hazardous area. Signal state indicator equipped with red-yellow colors, alarm indicates red, output solenoid valve and etc. works indicates yellow.

Input in safe side through contact connects with power supply.

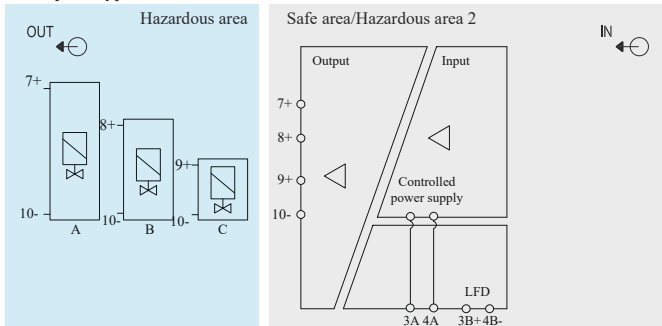
- Terminal, Backplane mounting (optional)
- Can be mounted in safe area or Zone 2, wide temperature range design, meet G3 corrosion-resistance requirements
- Signal state display
- Output signal to hazardous 0/1 zone equipments
- Three port isolation, input/output/power supply
- High density, ultra-thin design

Connection diagram

Terminal type: PHC-11MF-34



Backplane type: PHC-11MF-34.H



Safe certification

Functional safe: SIL3, according to IEC 61508 standard

ATEX mark: II 3 G Ex ec IIC T4 Gc II (1) D [Ex ia Da] IIIC II (1) G [Ex ia Ga] IIC

IECEx mark: Ex ec IIC T4 Gc [Ex ia Da] IIIC [Ex ia Ga] IIC

CCC mark: Ex ec IIC T4 Gc [Ex ia Da] IIIC [Ex ia Ga] IIC

Explosion proof parameters: Um=250VAC Temp: -40°C to +70°C

Uo=24.8V, Io=147mA, Po=907mW, Co=0.113uF, Lo=1.6mH at terminals 7-10

Uo=24.8V, Io=108 mA, Po=667mW, Co=0.113uF, Lo=3.0mH at terminals 8-10

Uo=24.8V, Io=93 mA, Po=571mW, Co=0.113uF, Lo=4.1mH at terminals 9-10

Specifications

Number of channels: 1 input 1 output

Input in safe area:

Input signal: contact control DC voltage

Voltage range: 24V nominal DC (20~35V DC), provide reverse polarity protection

Consumption: about 1.8W (output 13V/45mA)

Output in hazardous area:

Output signal: 22V~24V DC, UE/IE=13V/45mA (7,10)

UE/IE=10.2V/45mA (8, 10)

UE/IE=8.5V/45mA (9, 10)

LED indicator: PWR - Green ON, power supply ok; PWR - Green OFF, power supply failure

STS - Yellow ON, output circuit ON (closed) state

STS - Yellow OFF, output circuit OFF (open) state

FLT - red light, output open/short circuit

Alarm function: DIP switch K2 is at "ON" side, the circuit selects alarm function, response time 20ms

Load resistance<50kΩ, short circuit alarm (SC)

Load resistance>10kΩ, open circuit alarm (LB)

Alarm output characteristics: MOSFET, Umax=30V, Imax=100mA

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

Insulation strength: between intrinsically safe side and non-intrinsically safe side (≥3000V AC/min)

between power supply and non-intrinsically safe side (≥500V AC/min)

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

Applicable field equipments: audible/visual alarms, intrinsically safe solenoid valves

Environment characteristics:

Installation place: Installed in hazardous area 2 or safe area, it can be connected to intrinsic safety

instruments in hazardous areas up to Zone 0, IIC, Zone 20, and IIIC

Applicable for G3 class (harsh) corrosion environment defined in ISA standard S71.04

Relative humidity: 5%~95%, no condensation

Working temperature: -40°C~+70°C

Storage temperature: -45°C~+85°C

EMC: comply with IEC 61326-1 (GB/T 18268), IEC 61326-3-1 according to

IEC 61010-1, applicable for altitude below to 5000m

Mounting specifications

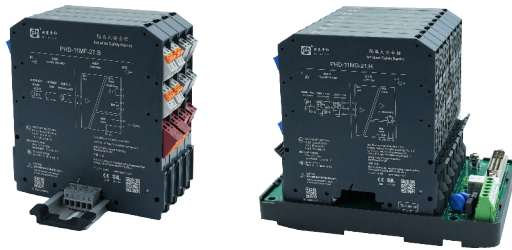
Dimensions: 114mm×99mm×12.5mm

Weight: 135g

Mounting type: customizable backplane or DIN35-rail

Enclosure protection level: IP20 (according to IEC 60529)

Enclosure material/flame retardant grade: PC/V0 (UL94)



Overview

The temperature input isolated safety barrier can isolate and convert 2 wire, 3 wire or 4 wire RTD or TC signals in hazardous area and output into safe or hazardous zone 2. This safety barrier has built-in cold junction compensation and can be intelligently configured. RTD and TC actual measurement range can be set up through computer software. It has the functions of disconnection and out of range alarm.

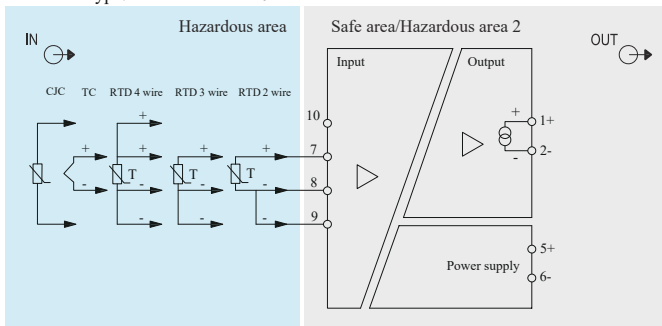
- Terminal, Bus power, Backplane mounting (optional)
- Wide temperature range design, meet G3 corrosion-resistance requirements
- Signal receive from hazardous 0/1 area
- Output 0/4~20mA, 0/1~5V, 0/2~10V
- Intelligent configured, measurement range can be set up
- Three port isolation, input/output/power supply
- High density, ultra-thin design

Code	Model	Measurement range	Minimum range	Conversion accuracy
1	GS3	-50~150°C	20°C	0.2°C/0.1%
2	Cu50	-50~150°C	20°C	0.2°C/0.1%
4	PH100	-200~850°C	20°C	0.2°C/0.1%
6	PH1000	-200~850°C	20°C	0.2°C/0.1%
7	NI1000	-40~250°C	20°C	0.2°C/0.1%
1	K	-200~1370°C	50°C	0.5°C/0.1%
2	S	-50~1760°C	500°C	1.5°C/0.1%
3	E	-140~1000°C	50°C	0.5°C/0.1%
4	J	-180~1200°C	50°C	0.5°C/0.1%
5	B	250~1800°C	500°C	1.5°C/0.1%
6	T	-200~400°C	50°C	0.5°C/0.1%
7	R	-50~1760°C	500°C	1.5°C/0.1%
8	N	-200~1380°C	50°C	0.5°C/0.1%

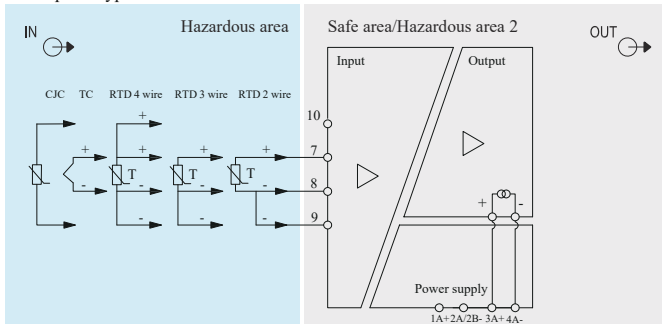
Note: The "% of output accuracy is relative to the set measurement range, and the larger value between the measurement range error and the absolute error should be taken during application

Connection diagram

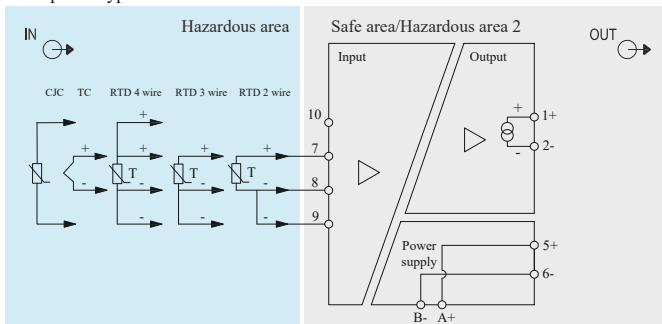
Terminal type: PHD-11MZ/MT-01



Backplane type: PHD-11MZ/MT-01.H



Bus power type: PHD-11MZ/MT-01.B



Safe certification

Functional safe: SIL2, according to IEC 61508 standard

ATEX mark: II 3 G Ex ec IIC T4 Gc II (1) D [Ex ia Da] IIIC II (1) G [Ex ia Ga] IIC

IECEx mark: Ex ec IIC T4 Gc [Ex ia Da] IIIC [Ex ia Ga] IIC

CCC mark: Ex ec IIC T4 Gc [Ex ia Da] IIIC [Ex ia Ga] IIC

Explosion proof parameters: $U_0=7.2V$, $I_0=23mA$, $P_0=40mW$,

$C_0=13.5\mu F$, $L_0=67mH$ at terminals 7-8-9-10

$U_m=250VAC$ Temp: $-40^{\circ}C$ to $+70^{\circ}C$

Specifications

Number of channels: 1 input 1 output

Power supply:

Power voltage: 20~35V DC, consumption $\leq 40mA$ (24V DC, output 20mA)

Power protection: reverse power protection

Input in hazardous area:

Input signal: RTD, TC signals (see "Input Signal Type and Range Table" for details)

Input disconnection: default "low alarm," can be modified to "high alarm" through configuration software

Signal range: corresponding input signal measurement range

Measurement range: users make their own configuration when ordering, and indicate it at the end of number or otherwise.

TC cold junction compensation; $\pm 1^{\circ}C$ (compensation range $-45^{\circ}C \sim +99^{\circ}C$)

RTD excitation current: 2 50 μA

Output in safe area:

Output signal: 0/4~20mA, 0/1~5V, 0/2~10V

Load capacity: 0 ~500 Ω (customizable)

voltage output type (optional), load resistance $R_L \geq 330k\Omega$

LED indicator: PWR - Green ON, power supply ok; PWR - Green OFF, power supply failure (RTD/TC)

High range alarm, ALM2 - Red ON; Low range alarm, ALM2 - Yellow ON (RTD/TC)

Short circuit alarm, ALM1 - yellow light flickering (RTD); Disconnection alarm ALM1 - red light flickering (RTD/TC)

Output accuracy: see "Input Signal Type and Range Table" for details

Response time: 300ms to reach the final value of 90%

Temperature drift: 0.005% F.S/ $^{\circ}C$

Insulation strength: between intrinsically safe side and non-intrinsically safe side ($\geq 3000V$ AC/min)

between power supply and non-intrinsically safe side ($\geq 500V$ AC/min)

Insulation resistance: $\geq 100M\Omega$ (between input/output/power supply)

Applicable field equipments: 2 wire, 3 wire, 4 wire RTD, TC sensors

Environment characteristics:

Installation place: Installed in hazardous area 2 or safe area, it can be connected to intrinsic safety instruments in hazardous areas up to Zone 0, IIC, Zone 20, and IIIC

Applicable for G3 class (harsh) corrosion environment defined in ISA standard S71.04

Relative humidity: 5%~95%, no condensation

Working temperature: $-40^{\circ}C \sim +70^{\circ}C$

Storage temperature: $-45^{\circ}C \sim +85^{\circ}C$

EMC: comply with IEC 61326-1 (GB/T 18268), IEC 61326-3-1 according to

IEC 61010-1, applicable for altitude below to 5000m

Mounting specifications:

Dimensions: 114mm $\times$ 99mm $\times$ 12.5mm

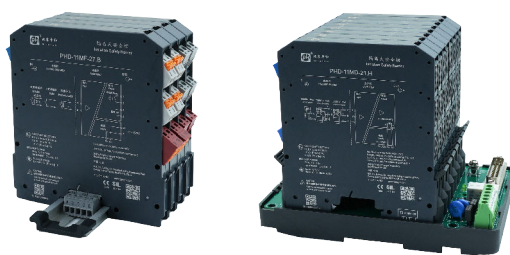
Weight: 135g

Mounting type: customizable backplane or DIN35-rail

Enclosure protection level: IP20 (according to IEC 60529)

Enclosure material/flame retardant grade: PC/V0 (UL94)

Temperature Input Isolated Safety Barrier PHD-11MZ/MT-02 Series



SIL 2
IEC 61508

TUV
S A R R
FUNCTIONAL SAFETY
APPROVED

IECEx

Ex

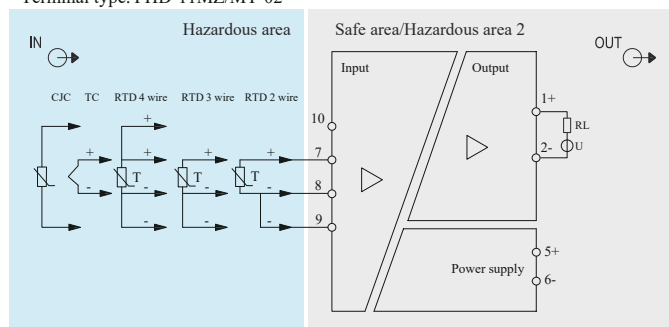
NEPSA

CCC

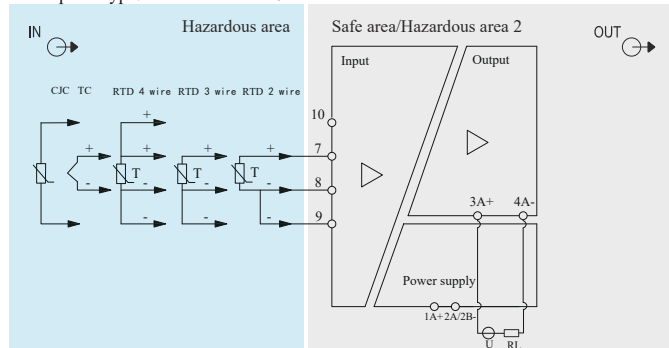
CE

Connection diagram

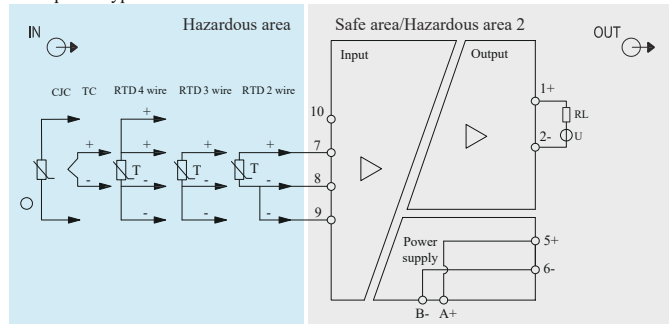
Terminal type: PHD-11MZ/MT-02



Backplane type: PHD-11MZ/MT-02.H



Bus power type: PHD-11MZ/MT-02.B



Safe certification

Functional safe: SIL2, according to IEC 61508 standard

ATEX mark: II 3 G Ex ec IIC T4 Gc II (1) D [Ex ia Da] IIIC II (1) G [Ex ia Ga] IIC

IECEx mark: Ex ec IIC T4 Gc [Ex ia Da] IIIC [Ex ia Ga] IIC

CCC mark: Ex ec IIC T4 Gc [Ex ia Da] IIIC [Ex ia Ga] IIC

Explosion proof parameters: $U_o=7.2V$, $I_o=23mA$, $P_o=40mW$,

$C_o=13.5\mu F$, $L_o=67mH$ at terminals 7-8-9-10

$U_m=250VAC$ Temp: $-40^{\circ}C$ to $+70^{\circ}C$

Overview

The temperature input isolated safety barrier can convert 2 wire, 3 wire or 4 wire RTD or TC signals in hazardous area to 2 wire 4~20mA signal, and output into safe or hazardous zone 2. This safety barrier has built-in cold junction compensation and can be intelligently configured. RTD and TC actual measurement range can be set up through computer software. It has the functions of disconnection and out of range alarm.

- Terminal, Bus power, Backplane mounting (optional)
- Wide temperature range design, meet G3 corrosion-resistance requirements
- Signal receive from hazardous 0/1 area
- Passive 4~20mA output
- Intelligent configured, measurement range can be set up
- Three port isolation, input/output/power supply
- High density, ultra-thin design

Input signal type and range table				
Code	Model	Measurement range	Minimum range	Conversion accuracy
1	GS3	-50~150°C	20°C	0.2°C/0.1%
2	Cu50	-50~150°C	20°C	0.2°C/0.1%
4	PH100	-200~850°C	20°C	0.2°C/0.1%
6	PH1000	-200~850°C	20°C	0.2°C/0.1%
7	NI1000	-40~250°C	20°C	0.2°C/0.1%
1	K	-200~1370°C	50°C	0.5°C/0.1%
2	S	-50~1760°C	500°C	1.5°C/0.1%
3	E	-140~1000°C	50°C	0.5°C/0.1%
4	J	-180~1200°C	50°C	0.5°C/0.1%
5	B	250~1800°C	500°C	1.5°C/0.1%
6	T	-200~400°C	50°C	0.5°C/0.1%
7	R	-50~1760°C	500°C	1.5°C/0.1%
8	N	-200~1380°C	50°C	0.5°C/0.1%

Note: The "% of output accuracy is relative to the set measurement range, and the larger value between the measurement range error and the absolute error should be taken during application

Specifications

Number of channels: 1 input 1 output

Power supply:

Power voltage: 20~35V DC, consumption $\leq 40mA$ (24V DC, output 20mA)

Power protection: reverse power protection

Input in hazardous area:

Input signal: RTD, TC signals (see "Input Signal Type and Range Table" for details)

Input disconnection: default "low alarm", can be modified to "high alarm" through configuration software

Signal range: corresponding input signal measurement range

Measurement range: users make their own configuration when ordering, and indicate it at the end of number or otherwise.

TC cold junction compensation: $\pm 1^{\circ}C$ (compensation range $-45^{\circ}C \sim +99^{\circ}C$)

RTD excitation current: 250 μA

Output in safe area:

Output signal: passive 4~20mA

Load capacity: 0~500 Ω (customizable)

voltage output type (optional), load resistance $R_L \geq 330k\Omega$

LED indicator: PWR - Green ON, power supply ok; PWR - Green OFF, power supply failure (RTD/TC)

High range alarm, ALM2 - Red ON; Low range alarm, ALM2 - Yellow ON (RTD/TC)

Short circuit alarm, ALM1 - yellow light flickering (RTD); Disconnection alarm ALM1 - red light flickering (RTD/TC)

Output accuracy: see "Input Signal Type and Range Table" for details

Response time: 300ms to reach 90% of the final value

Temperature drift: 0.005% F./ $^{\circ}C$

Insulation strength: between intrinsically safe side and non-intrinsically safe side ($\geq 3000V AC/min$)

between power supply and non-intrinsically safe side ($\geq 500V AC/min$)

Insulation resistance: $\geq 100M\Omega$ (between input/output/power supply)

Applicable field equipments: 2 wire, 3 wire, 4 wire RTD, TC sensors

Environment characteristics:

Installation place: Installed in hazardous area 2 or Safe area, it can be connected to intrinsic safety instruments in hazardous areas up to Zone 0, IIC, Zone 20, and IIIC

Applicable for G3 class (harsh) corrosion environment defined in ISA standard S71.04

Relative humidity: 5%~95%, no condensation

Working temperature: $-40^{\circ}C \sim +70^{\circ}C$

Storage temperature: $-45^{\circ}C \sim +85^{\circ}C$

EMC: comply with IEC 61326-1 (GB/T 18268), IEC 61326-3-1 according to

IEC 61010-1, applicable for altitude below to 5000m

Mounting specifications:

Dimensions: 114mm $\times$ 99mm $\times$ 12.5mm

Weight: 135g

Mounting type: customizable backplane or DIN35-rail

Enclosure protection level: IP20 (according to IEC 60529)

Enclosure material/flame retardant grade: PC/V0 (UL94)

Overview

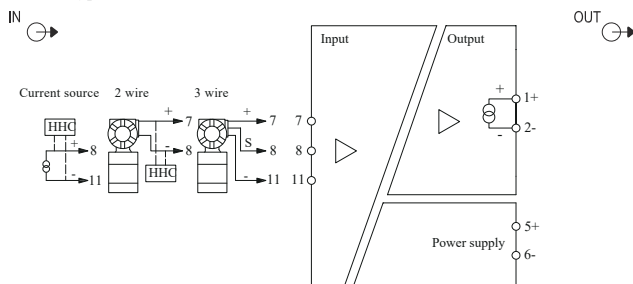
The analog input signal isolator converts isolated two-, three wire 0/4~20mA signal or current source into output. For two - or three wire transmitters or current source signals, this signal isolator supports bidirectional communication of the Hart digital signal superimposed on the 0/4~20mA signal. The product requires independent power supply, with isolated input, output and power supply.

- Terminal, Bus power, Backplane mounting (optional)
- Wide temperature range design, meet G3 corrosion-resistance
- requirements HART bidirectional digital communication signal
- Output 0/4~20mA (HART), 0/1~5V, 0/2~10V
- Three port isolation, input/output/power supply
- High density, ultra-thin design

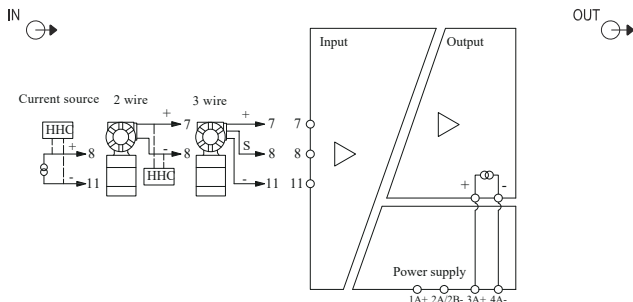


Connection diagram

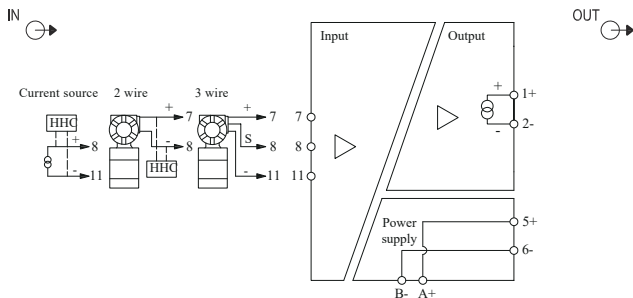
Terminal type: PHG-11ME-21



Backplane type: PHG-11ME-21.H



Bus power type: PHG-11ME-21.B



Safe certification

ATEX mark: II 3 G Ex ec IIC T4 Gc

IECEx mark: Ex ec IIC T4 Gc

CCC mark: Ex ec IIC T4 Gc

Certification standards: GB/T 3836.1-2021, GB/T 3836.3-2021,

EN IEC 60079-0:2018, EN IEC 60079-7: 2015/ A1: 2018

Specifications

Number of channels: 1 input 1 output

Power supply:

Power voltage: 20~35V DC, consumption $\leq 65\text{mA}$ (24V DC, output 20mA)

Power protection; reverse power protection

Input:

Input signal: two-, three wire transmitters or current source 0/4~20mA (HART)

Distribution voltage: open circuit voltage $\leq 28\text{V}$, circuit is 20mA output voltage $\geq 15.5\text{V}$

Output:

Output signal: 0/4~20mA (HART), 0/1~5V, 0/2~10V

Output load: 20mA, 0~500 Ω (customizable)

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

LED indicator: PWR - green light is ON, normal power

PWR - green light is OFF, no power

Response time: 2ms to reach 90% of the final value

Temperature drift: 0.005% F.S/ $^{\circ}\text{C}$

Insulation strength: $\geq 2000\text{V AC/min}$ (between input/output/power supply)

Insulation resistance: $\geq 100\text{M}\Omega$ (between input/output/power supply)

Applicable field equipments: two-, three wire (HART transmitters, current source (HART signal))

Environment characteristics:

Installation place: Installed in hazardous area 2 or safe area

Applicable for G3 class (harsh) corrosion environment defined in ISA standard S71.04

Relative humidity: 5%~95%, no condensation

Working temperature: $-40^{\circ}\text{C} \sim +70^{\circ}\text{C}$

Storage temperature: $-45^{\circ}\text{C} \sim +85^{\circ}\text{C}$

EMC: comply with IEC 61326-1 (GB/T 18268), IEC 61326-3-1 according to

IEC 61010-1, applicable for altitude below to 5000m

Mounting specifications:

Dimensions: 114mm $\times$ 99mm $\times$ 12.5mm

Weight: 135g

Mounting type: customizable backplane or DIN35-rail

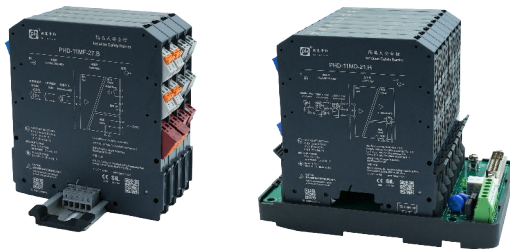
Enclosure protection level: IP20 (according to IEC 60529)

Enclosure material/flame retardant grade: PC/V0 (UL94)

Overview

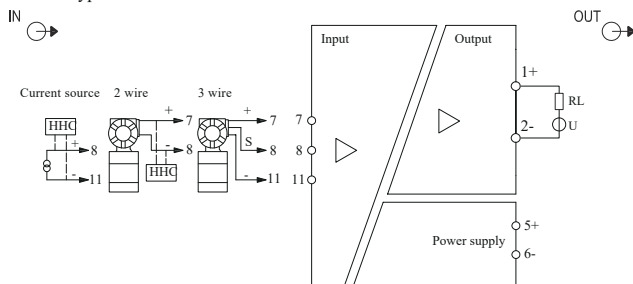
The analog input signal isolator converts isolated two-, three wire 0/4~20mA signal or current source into two wire 0/4~20mA output. For two - or three wire transmitters or current source signals, this signal isolator supports bidirectional communication of the Hart digital signal superimposed on the 0/4~20mA signal. The product requires independent power supply, with isolated input, output and power supply.

- Terminal, Bus power, Backplane mounting (optional)
- Wide temperature range design, meet G3 corrosion-resistance requirements
- HART bidirectional digital communication signal
- Passive 4~20mA output
- Three port isolation, input/output/power supply
- High density, ultra-thin design

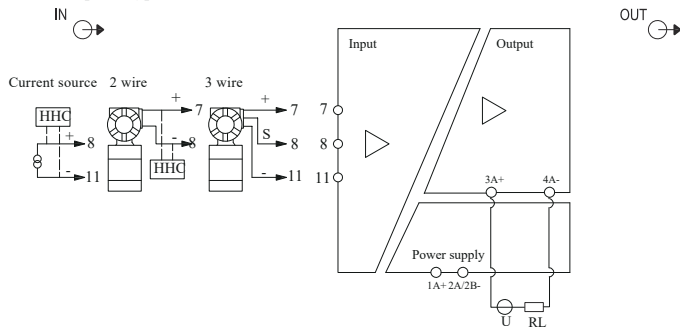


Connection diagram

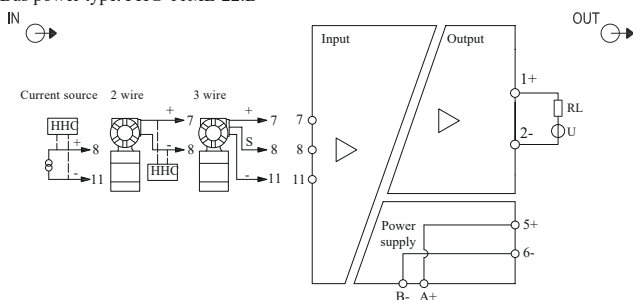
Terminal type: PHG-11ME-22



Backplane type: PHG-11ME-22.H



Bus power type: PHG-11ME-22.B



Safe certification

ATEX mark: II 3 G Ex ec IIC T4 Gc

IECEx mark: Ex ec IIC T4 Gc

CCC mark: Ex ec IIC T4 Gc

Certification standards: GB/T 3836.1-2021, GB/T 3836.3-2021,

EN IEC 60079-0:2018, EN IEC 60079-7: 2015/ A1: 2018

Specifications

Number of channels: 1 input 1 output

Power supply:

Power voltage: 20~35V DC, consumption $\leq 65\text{mA}$ (24V DC, output 20mA)

Power protection: reverse power protection

Input:

Input signal: two-, three wire transmitters or current source 0/4~20mA (HART)

Distribution voltage: open circuit voltage $\leq 28\text{V}$, circuit is 20mA output voltage $\geq 15.5\text{V}$

Output:

Output signal: passive 0/4~20mA (HART)

Output load: 20mA, 0~500 Ω (customizable)

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

LED indicator: PWR - Green ON, power supply ok

PWR - Green OFF, power supply failure

Response time: 2ms to reach the final value of 90%

Temperature drift: 0.005% F.S/ $^{\circ}\text{C}$

Insulation strength: $\geq 2000\text{V AC/min}$ (between input/output/power supply)

Insulation resistance: $\geq 100\text{M}\Omega$ (between input/output/power supply)

Applicable field equipments: two-, three wire (HART transmitters, current source (HART signal))

Environment characteristics:

Installation place: Installed in hazardous area 2 or safe area

Applicable for G3 class (harsh) corrosion environment defined in ISA standard S71.04

Relative humidity: 5%~95%, no condensation

Working temperature: $-40^{\circ}\text{C} \sim +70^{\circ}\text{C}$

Storage temperature: $-45^{\circ}\text{C} \sim +85^{\circ}\text{C}$

EMC: comply with IEC 61326-1 (GB/T 18268), IEC 61326-3-1 according to

IEC 61010-1, applicable for altitude below to 5000m

Mounting specifications:

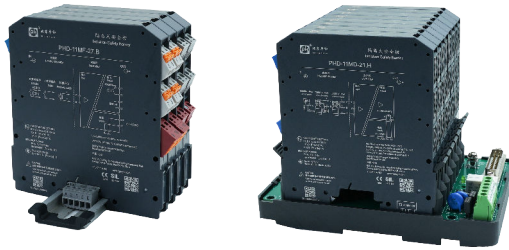
Dimensions: 114mm $\times$ 99mm $\times$ 12.5mm

Weight: 135g

Mounting type: customizable backplane or DIN35-rail

Enclosure protection level: IP20 (according to IEC 60529)

Enclosure material/flame retardant grade: PC/V0 (UL94)



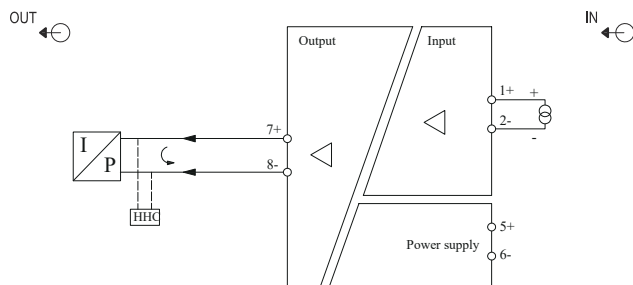
Overview

The analog output signal isolator can realize 0/4~20mA signal and converts into DC signal. Support the bidirectional transmission of HART digital signals. It has field equipment disconnection and short circuit detection function. This product requires independent power supply, with isolated power supply, input, and output terminals.

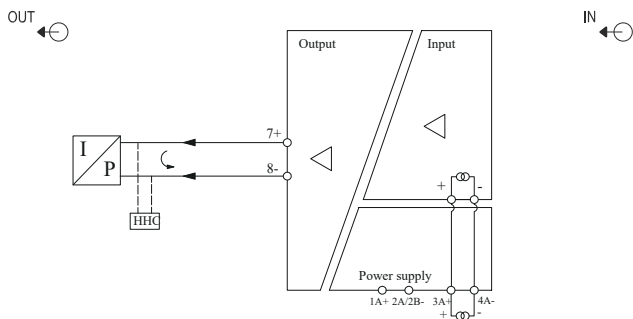
- Terminal, Bus power, Backplane mounting (optional)
- Wide temperature range design, meet G3 corrosion-resistance requirements
- HART bidirectional digital communication signal
- Field equipment disconnection and short circuit detection function
- Active 0/4~20mA, 0/1~5V, 0/2~10V output
- Three port isolation, input/output/power supply
- High density, ultra-thin design

Connection diagram

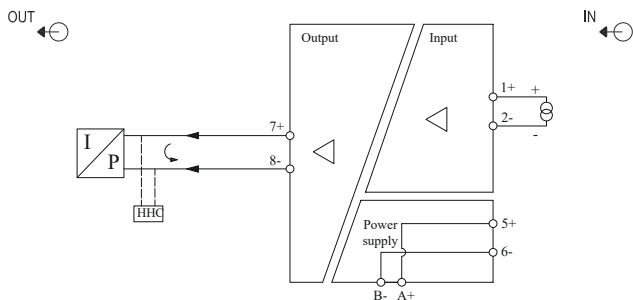
Terminal type: PHG-11MD-11



Backplane type: PHG-11MD-11.H



Bus power type: PHG-11MD-11.B



Safe certification

ATEX mark: II 3 G Ex ec IIC T4 Gc

IECEx mark: Ex ec IIC T4 Gc

CCC mark: Ex ec IIC T4 Gc

Certification standards: GB/T 3836.1-2021, GB/T 3836.3-2021,

EN IEC 60079-0:2018, EN IEC 60079-7: 2015/ A1: 2018

Specifications

Number of channels: 1 input 1 output

Power supply:

Power voltage: 20~35V DC, consumption ≤50mA (24V DC, output 20mA)

Power protection: reverse power protection

Input:

Input signal: 0/4~20mA (HART)

Output:

Output signal: 0/4~20mA (HART), 0/1~5V, 0/2~10V

Output load: 20mA, 0~800Ω (customizable)

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

LED indicator: PWR - Green ON, power supply ok

PWR - Green OFF, power supply failure

Response time: 2ms to reach the final value of 90%

Temperature drift: 0.005% F.S/°C

Insulation strength: ≥ 2000V AC/min (between input/output/power supply)

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

Applicable field equipments: valve positioner, electric/pneumatic converter

Environment characteristics:

Installation place: Installed in hazardous area 2 or safe area

Applicable for G3 class (harsh) corrosion environment defined in ISA standard S71.04

Relative humidity: 5%~95%, no condensation

Working temperature: -40°C~+70°C

Storage temperature: -45°C~+85°C

EMC: comply with IEC 61326-1 (GB/T 18268), IEC 61326-3-1 according to

IEC 61010-1, applicable for altitude below to 5000m

Mounting specifications:

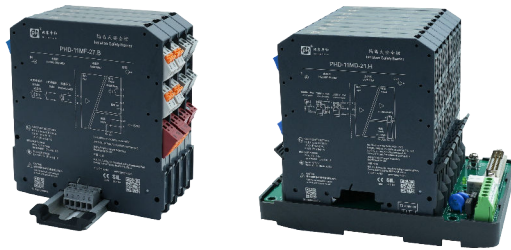
Dimensions: 114mm×99mm×12.5mm

Weight: 135g

Mounting type: customizable backplane or DIN35-rail

Enclosure protection level: IP20 (according to IEC 60529)

Enclosure material/flame retardant grade: PC/V0 (UL94)



Overview

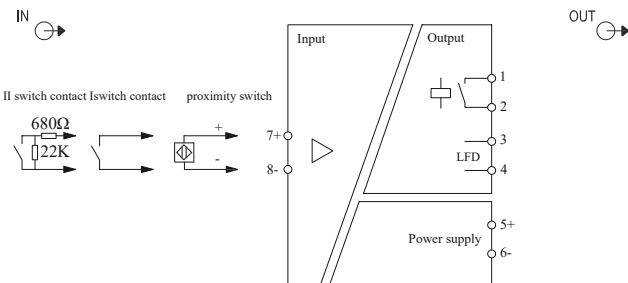
The digital input signal isolator converts switch contacts or proximity switches into relay output. Line fault detection is achieved through a separate relay output and displayed on the top LED of the module. The DIP switch of the module is used to set input and output in-phase or reverse control, as well as to enable or disable the line fault detection alarm indication function.

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

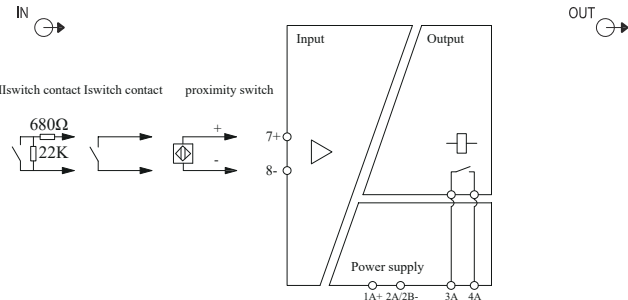
- Terminal, Bus power, Backplane mounting (optional)
- Wide temperature range design, meet G3 corrosion-resistance requirements
- DIP switch settings output in-phase or reversed phase
- Relay and alarm output
- Three port isolation, input/output/power supply
- High density, ultra-thin design

Connection diagram

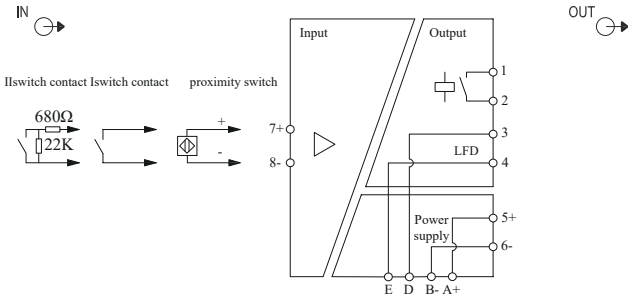
Terminal type: PHG-11MF-27



Backplane type: PHG-11MF-27.H



Bus power type: PHG-11MF-27.B



Safe certification

ATEX mark: II 3 G Ex ec nC IIC T4 Gc

IECEx mark: Ex ec nC IIC T4 Gc

CCC mark: Ex ec nC IIC T4 Gc

Certification standards: GB/T 3836.1-2021, GB/T 3836.3-2021, GB/T3836.8-2021

EN IEC 60079-0:2018, EN IEC 60079-7: 2015/ A1: 2018

EN 60079-15:2010, IEC60079-15:2017

Specifications

Number of channels: 1 input 1 output

Power supply:

Power voltage: 20~35V DC, consumption≤1W (24V DC, relay contact close)

Power protection: reverse power protection

Input:

Input signal: switch contact/proximity switch

The supply voltage of the sensor: about 8V

Switching rate: <10Hz

Input/output characteristics:

On site input current: >2.1mA, the output is closed, indicating ON<1.2mA, the output is open, indicating OFF

Output normally "Open"/"Closed" contact conversion control:

DIP switch K1 is at "ON" side, the relay output is "Normally closed"

DIP switch K1 is at "OFF" side, the relay output is "Normally open"

DIP switch K2 is at "ON" side, the circuit selects indicating red light LFD alarm function

Output:

Output signal: relay + alarm (optional)

Contact capacity: 250V AC/2A, 30V DC/2A when subjected resistive load

Response time: 10ms

Alarm output characteristics: MOSFET, U_{max}=30V, I_{max}=100mA

LED indicator: PWR - Green ON, power supply ok; PWR - Green OFF, power supply failure

STS - Yellow ON, input circuit ON (closed) state

STS - Yellow OFF, input circuit OFF (open) state

FLT - red flickering, input open/short circuit

Alarm function: DIP switch K2 is at "ON" side, circuit selects alarm function, response time 10ms

Load resistance<50Ω, short circuit alarm (SC)

Load resistance>10kΩ, open circuit alarm (LB)

Insulation strength: ≥2000V AC/min (between input/output/power supply)

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

Applicable field equipments: Field equipment such as dry contacts or NAMUR type proximity switch inputs that comply with DIN19234 standard

Environment characteristics:

Installation place: Installed in hazardous area 2 or safe area

Applicable for G3 class (harsh) corrosion environment defined in ISA standard S71.04

Relative humidity: 5%~95%, no condensation

Working temperature: -40°C~+70°C

Storage temperature: -45°C~+85°C

EMC: comply with IEC 61326-1 (GB/T 18268), IEC 61326-3-1 according to

IEC 61010-1, applicable for altitude below to 5000m

Mounting specifications:

Dimensions: 114mm×99mm×12.5mm

Weight: 135g

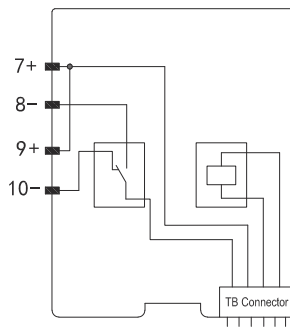
Mounting type: customizable backplane or DIN35-rail

Enclosure protection level: IP20 (according to IEC 60529)

Enclosure material/flame retardant grade: PC/V0 (UL94)



Connection diagram



Safe certification

ATEX mark: II 3 G Ex ec nC IIC T4 Gc

IECEX mark: Ex ec nC IIC T4 Gc

CCC mark: Ex ec nC IIC T4 Gc

Certification standards: GB/T 3836.1-2021, GB/T 3836.3-2021, GB/T3836.8-2021

EN IEC 60079-0:2018, EN IEC 60079-7: 2015/ A1: 2018

EN 60079-15:2010, IEC60079-15:2017

Overview

PHG-11MF-14.H - digital output signal isolator, provides SPDT (Single Pole Double Throw) contact. The load is powered by the module's backplane power supply.

- Can be mounted in safe area or Zone 2
- Max. nominal working current 3A, impulse current 6A
- Wide-temperature design, meet G3 corrosion-resistance requirements
- Provides NO and NC two type of contacts
- High density, ultra-thin design, backplane mounting

Specifications

Power supply:

Power voltage: backplane provides 24V DC (20~30V DC)

Input:

Nominal 24 V DC (21.6 to 27.6 V DC), relay coil is protected internally by a suppression diode

Current consumption: typical value 10mA, 24 V DC

Consumption: typical value 0.24 W, 24 V DC

Output:

No voltage SPDT relay contact: terminals 7-8 is NO contact, terminals 9-10 is NC contact

When relay is Powered OFF, terminals 7-8 (NO contact) are disconnected. Relay is Powered ON, terminals are closed

When relay is Powered Off, terminals 9-10 (NC contact) are closed. Relay is Powered ON, terminals are disconnected

Contact material: silver alloy (no cadmium) , gold-plate

Contact nominal rating: 3A (resistive load)

Min. contact switch current: 10mA

Contact inrush current: 6 A@24 V DC

Mechanical/electrical lifetime: typical value 1*10⁷/3*10⁴

Operation/release time: 6ms/12ms, include contact bounce time

LED indicator: STS - Yellow ON, input circuit ON (closed) state

STS - Yellow OFF, input circuit OFF (open) state

Environment characteristics:

Installation place: Installed in hazardous area 2 or safe area

Applicable for G3 class (harsh) corrosion environment defined in ISA standard S71.04

Relative humidity: 5%~95%, no condensation

Working temperature: -40°C~+70°C

Storage temperature: -45°C~+85°C

EMC: comply with IEC 61326-1 (GB/T 18268), IEC 61326-3-1 according to

IEC 61010-1, applicable for altitude below to 5000m

Mounting specifications:

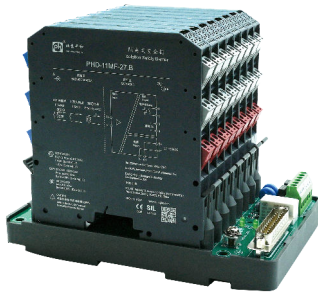
Dimensions: 114mm×99mm×12.5mm

Weight: 135g

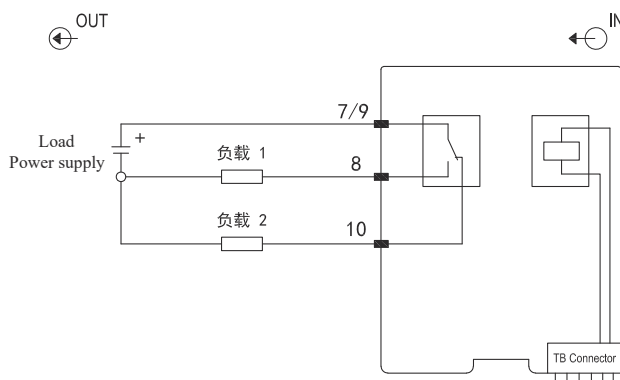
Mounting type: customizable backplane

Enclosure protection level: IP20 (according to IEC 60529)

Enclosure material/flame retardant grade: PC/V0 (UL94)



Connection diagram



Safe certification

ATEX mark: II 3 G Ex ec nC IIC T4 Gc

IECEx mark: Ex ec nC IIC T4 Gc

CCC mark; Ex ec nC IIC T4 Gc

Certifications standards: GB/T 3836.1-2021, GB/T 3836.3-2021, GB/T3836.8-2021

EN IEC 60079-0:2018, EN IEC 60079-7: 2015/ A1: 2018

EN 60079-15:2010, IEC60079-15:2017

Overview

PHG-11MF-37.H - digital output signal isolator, provides SPDT (Single Pole Double Throw) contact isolated from the input.

- Max. nominal working current 5A, impulse current 6A
- Provides NO and NC two types of contacts
- Wide temperature range design, meet G3 corrosion-resistance requirements
- Low activation coil current (<10 mA)
- Input/output isolation
- High density, ultra-thin design, backplane mounted

Specifications

Input:

Nominal 24 V DC (21.6 to 27.6 V DC), relay coil is protected internally by a diode
Current consumption; typical value 10mA, 24 V DC

Consumption: typical value 0.24 W, 24 V DC

Output:

No voltage SPDT relay contact: terminals 7-8 is NO contact, terminals 9-10 is NC contact
When relay is Powered OFF, terminals 7-8 (NO contact) are disconnected. Relay is Powered ON, terminals are closed

When relay is Powered OFF, terminals 9-10 (NC contact) are closed. Relay is Powered ON, terminals are disconnected

Contact material: silver alloy (no cadmium), gold-plate

Contact nominal rating: 5A 250 Vac 1250VA, 5A 250 Vdc 140 W (resistive load)

Min. contact switch current: 10mA

Contact inrush current: 6 A@24 V DC, @250V AC

Mechanical/electrical lifetime: typical value 1*10⁷/3*10⁴

Operation/release time: 6ms/12ms, include contact bounce time

Isolation: Input/output 1.5 kV

LED indicator: STS - Yellow ON, input circuit ON (closed) state

STS - Yellow OFF, input circuit OFF (open) state

Environment characteristics:

Installation place: Installed in hazardous area 2 or safe area

Applicable for G3 class (harsh) corrosion environment defined in ISA standard S71.04

Relative humidity: 5%~95%, no condensation

Working temperature: -40°C~+70°C

Storage temperature: -45°C~+85°C

EMC: comply with IEC 61326-1 (GB/T 18268), IEC 61326-3-1 according to

IEC 61010-1, applicable for altitude below to 5000m

Mounting specifications:

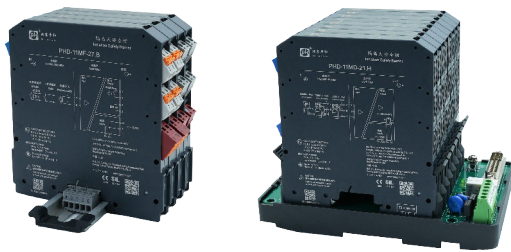
Dimensions: 114mm×99mm×12.5mm

Weight: 135g

Mounting type: customizable backplane

Enclosure protection level: IP20 (according to IEC 60529)

Enclosure material/flame retardant grade: PC/V0 (UL94)



Overview

The temperature input signal isolator can isolate and convert 2 wire, 3 wire or 4 wire RTD or TC signals to output. This signal isolator has built-in cold junction compensation and can be intelligently configured. RTD and TC actual measurement range can be set up through computer software. It has the functions of disconnection and out of range alarm.

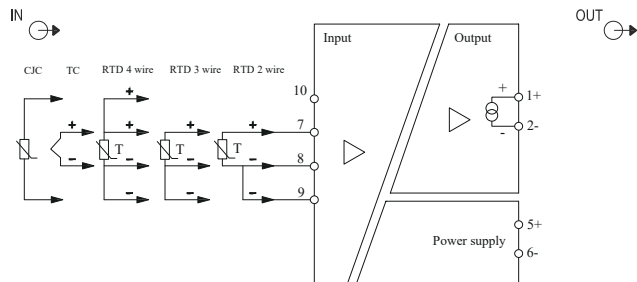
- Terminal, Bus power, Backplane mounting (optional)
- Output 0/4~20mA, 0/1~5V, 0/2~10V
- Wide temperature range design, meet G3 corrosion-resistance requirements
- Disconnection and out of range alarm function
- Intelligent configuration
- Three port isolation, input/output/power supply
- High density, ultra-thin design

Code	Model	Measurement range	Minimum range	Conversion accuracy
1	GS3	-50~150°C	20°C	0.2°C/0.1%
2	Cu50	-50~150°C	20°C	0.2°C/0.1%
4	PH100	-200~850°C	20°C	0.2°C/0.1%
6	PH1000	-200~850°C	20°C	0.2°C/0.1%
7	NI1000	-40~250°C	20°C	0.2°C/0.1%
1	K	-200~1370°C	50°C	0.5°C/0.1%
2	S	-50~1760°C	500°C	1.5°C/0.1%
3	E	-140~1000°C	50°C	0.5°C/0.1%
4	J	-180~1200°C	50°C	0.5°C/0.1%
5	B	250~1800°C	500°C	1.5°C/0.1%
6	T	-200~400°C	50°C	0.5°C/0.1%
7	R	-50~1760°C	500°C	1.5°C/0.1%
8	N	-200~1380°C	50°C	0.5°C/0.1%

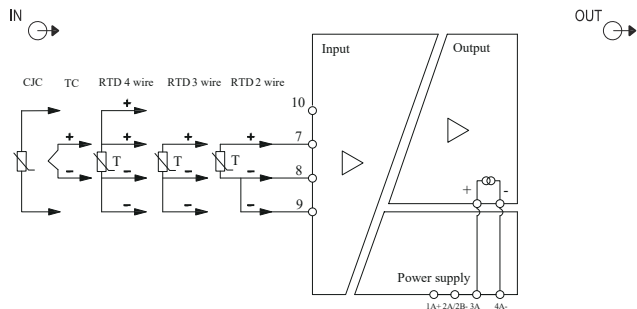
Note: The "% of output accuracy is relative to the set measurement range, and the larger value between the measurement range error and the absolute error should be taken during application

Connection diagram

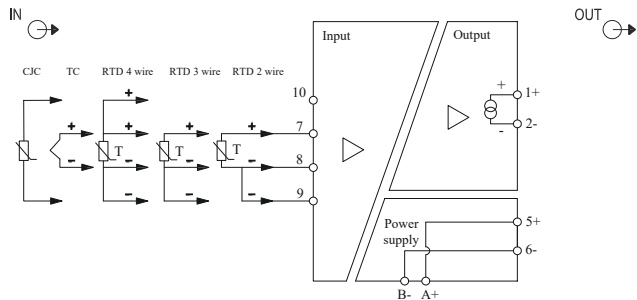
Terminal type: PHG-11MZ/MT-01



Backplane type: PHG-11MZ/MT-01.H



Bus power type: PHG-11MZ/MT-01.B



Safe certification

ATEX mark: II 3 G Ex ec IIC T4 Gc

IECEx mark: Ex ec IIC T4 Gc

CCC mark: Ex ec IIC T4 Gc

Certification standards: GB/T 3836.1-2021, GB/T 3836.3-2021,

EN IEC 60079-0:2018, EN IEC 60079-7: 2015/ A1: 2018

Specifications

Number of channels: 1 input 1 output

Power supply:

Power voltage: 20~35V DC, consumption ≤40mA (24V DC, output 20mA)

Power protection: reverse power protection

Input:

Input signal: RTD, TC signals (see "Input Signal Type and Range Table" for details)

Input disconnection: default "low alarm", can be modified to "high alarm" through configuration software

Signal range: corresponding input signal measurement range

Measurement range: users make their own configuration when ordering, and indicate it at the end of number or otherwise.

TC cold junction compensation: ± 1°C (compensation range -45°C~+99°C)

RTD excitation current: 250μA

Output:

Output signal: 0/4~20mA, 0/1~5V, 0/2~10V

Load capacity: 0~500Ω (customizable)

voltage output type (optional), load resistance $R_L \geq 330k\Omega$

LED indicator: PWR - Green ON, power supply ok; PWR - Green OFF, power supply failure (RTD/TC)

High range alarm, ALM2 - Red ON; Low range alarm, ALM2 - Yellow ON (RTD/TC)

Short circuit alarm ALM1 - yellow light flickering (RTD); Disconnection alarm ALM1 - red light flickering (RTD/TC)

Output accuracy: see "Input Signal Type and Range Table" for details

Response time: 300ms to reach 90% of the final value

Temperature drift: 0.005% F.S./°C

Insulation strength: ≥ 2000V AC/min (between input/output/power supply)

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

Applicable field equipments: 2 wire, 3 wire, 4 wire RTD, TC sensors

Environment characteristics:

Installation place: Installed in hazardous area 2 or safe area

Applicable for G3 class (harsh) corrosion environment defined in ISA standard S71.04

Relative humidity: 5%~95%, no condensation

Working temperature: -40°C~+70°C

Storage temperature: -45°C~+85°C

EMC: comply with IEC 61326-1 (GB/T 18268), IEC 61326-3-1 according to

IEC 61010-1, applicable for altitude below to 5000m

Mounting specifications:

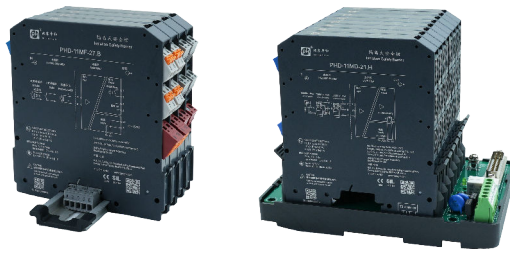
Dimensions: 114mm×99mm×12.5mm

Weight: 135g

Mounting type: customizable backplane or DIN35-rail

Enclosure protection level: IP20 (according to IEC 60529)

Enclosure material/flame retardant grade: PC/V0 (UL94)



Overview

The temperature input signal isolator can isolate and convert 2 wire, 3 wire or 4 wire RTD or TC signals to 2 wire 4~20mA signal output. This signal isolator has built-in cold junction compensation and can be intelligently configured. RTD and TC actual measurement range can be set up through computer software. It has the functions of disconnection and out of range alarm.

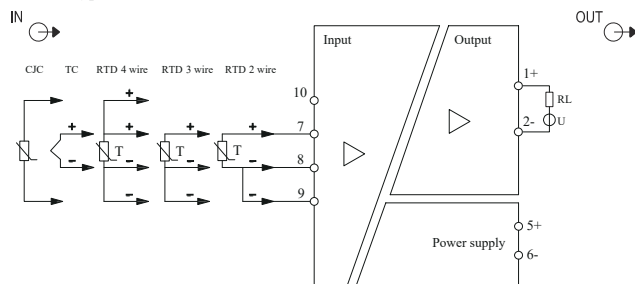
- Terminal, Bus power, Backplane mounting (optional)
- Passive 4~20mA output
- Wide temperature range design, meet G3 corrosion-resistance requirements
- Disconnection and out of range alarm function
- Intelligent configuration
- Three port isolation, input/output/power supply
- High density, ultra-thin design

Code	Model	Measurement range	Minimum range	Conversion accuracy
1	GS3	-50~150°C	20°C	0.2°C/0.1%
2	Cu50	-50~150°C	20°C	0.2°C/0.1%
4	PH100	-200~850°C	20°C	0.2°C/0.1%
6	PH1000	-200~850°C	20°C	0.2°C/0.1%
7	NI1000	-40~250°C	20°C	0.2°C/0.1%
1	K	-200~1370°C	50°C	0.5°C/0.1%
2	S	-50~1760°C	500°C	1.5°C/0.1%
3	E	-140~1000°C	50°C	0.5°C/0.1%
4	J	-180~1200°C	50°C	0.5°C/0.1%
5	B	250~1800°C	500°C	1.5°C/0.1%
6	T	-200~400°C	50°C	0.5°C/0.1%
7	R	-50~1760°C	500°C	1.5°C/0.1%
8	N	-200~1380°C	50°C	0.5°C/0.1%

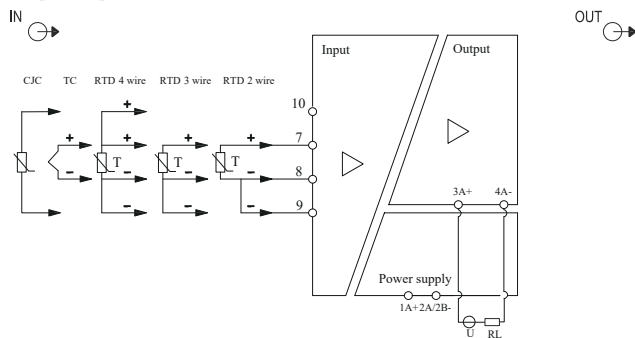
Note: The "% of output accuracy is relative to the set measurement range, and the larger value between the measurement range error and the absolute error should be taken during application

Connection diagram

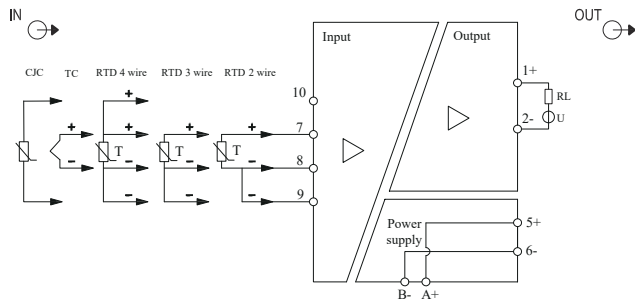
Terminal type: PHG-11MZ/MT-02



Backplane type: PHG-11MZ/MT-02.H



Bus power type: PHG-11MZ/MT-02.B



Safe certification

ATEX mark: II 3 G Ex ec IIC T4 Gc

IECEx mark: Ex ec IIC T4 Gc

CCC mark: Ex ec IIC T4 Gc

Certification standards: GB/T 3836.1-2021, GB/T 3836.3-2021,

EN IEC 60079-0:2018, EN IEC 60079-7: 2015/ A1: 2018

Specifications

Number of channels: 1 input 1 output

Power supply:

Power voltage: 20~35V DC, consumption ≤40mA (24V DC, output 20mA)

Power protection: reverse power protection

Input:

Input signal: RTD, TC signals (see "Input Signal Type and Range Table" for details)

Input disconnection: default "low alarm", can be modified to "high alarm" through configuration software

Signal range: corresponding input signal measurement range

Measurement range: users make their own configuration when ordering, and indicate it at the end of number or otherwise.

TC cold junction compensation: ± 1°C (compensation range -45°C~+99°C)

RTD exciting current: 250μA

Output:

Output signal: passive 4~20mA

Load capacity: 0~500Ω (customizable)

voltage output type (optional), load resistance $R_L \geq 330k\Omega$

LED indicator: PWR - Green ON, power supply ok; PWR - Green OFF, power supply failure (RTD/TC)

High range alarm, ALM2 - Red ON; Low range alarm, ALM2 - Yellow ON (RTD/TC)

Short circuit alarm ALM1 - yellow light flickering (RTD); Disconnection alarm ALM1 - red light flickering (RTD/TC)

Output accuracy: see "Input Signal Type and Range Table" for details

Response time: 300ms to reach 90% of the final value

Temperature drift: 0.005% F.S./°C

Insulation strength: ≥ 2000V AC/min (between input/output/power supply)

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

Applicable field equipments: 2 wire, 3 wire, 4 wire RTD, TC sensors

Environment characteristics:

Installation place: Installed in hazardous area 2 or safe area

Applicable for G3 class (harsh) corrosion environment defined in ISA standard S71.04

Relative humidity: 5%~95%, no condensation

Working temperature: -40°C~+70°C

Storage temperature: -45°C~+85°C

EMC: comply with IEC 61326-1 (GB/T 18268), IEC 61326-3-1 according to

IEC 61010-1, applicable for altitude below to 5000m

Mounting specifications:

Dimensions: 114mm×99mm×12.5mm

Weight: 135g

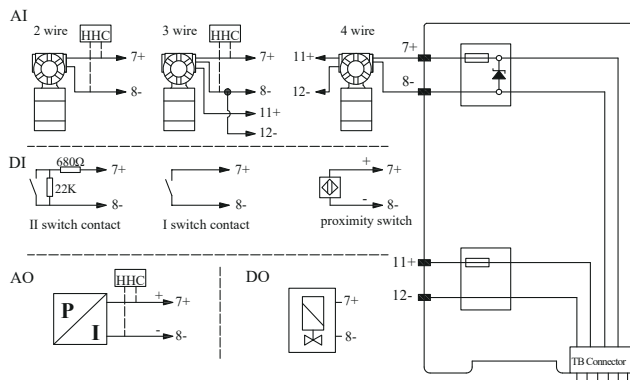
Mounting type: customizable backplane or DIN35-rail

Enclosure protection level: IP20 (according to IEC 60529)

Enclosure material/flame retardant grade: PC/V0 (UL94)



Connection diagram



Safe certification

ATEX mark: II 3 G Ex ec IIC T4 Gc

IECEx mark: Ex ec IIC T4 Gc

CCC mark: Ex ec IIC T4 Gc

Certification standards: GB/T 3836.1-2021, GB/T 3836.3-2021,

EN IEC 60079-0:2018, EN IEC 60079-7: 2015/ A1: 2018

Overview

PH-M-ZT - signal isolator directly connects the system to the site to achieve flexible grouping. It provides overvoltage and overflowing protection, and power supply for three-, four wire transmitters.

- Install in safe area or Zone 2
- Overvoltage and overflowing protection function
- Provides for three-, four wire transmitters power supply
- Wide-temperature design, meet G3 corrosion-resistance requirements
- High density, ultra-thin design

Specifications

Number of channels: 1 input 1 output

Power supply:

Power voltage: 20~30V DC

Power protection: 0.5 A (resettable fuse protection), linear derate to 0.4A, range 25°C~70°C

Input/output

Input signal: DC

Nominal voltage: 30V

Nominal current: 0.1A (resettable fuse protection), linear derate to 0.05A, range 25°C~70°C

Environment characteristics:

Installation place: Installed in hazardous area 2 or safe area

Applicable for G3 class (harsh) corrosion environment defined in ISA standard S71.04

Relative humidity: 5%~95%, no condensation

Working temperature: -40°C~+70°C

Storage temperature: -45°C~+85°C

EMC: comply with IEC 61326-1 (GB/T 18268), IEC 61326-3-1 according to

IEC 61010-1, applicable for altitude below to 5000m

Mounting specifications:

Dimensions: 114mm×99mm×12.5mm

Weight: 135g

Mounting type: customizable backplane

Enclosure protection level: IP20 (according to IEC 60529)

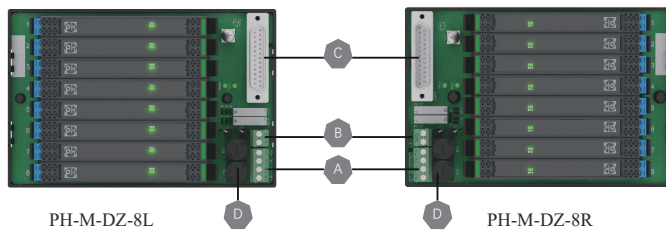
Enclosure material/flame retardant grade: PC/V0 (UL94)



Model specifications

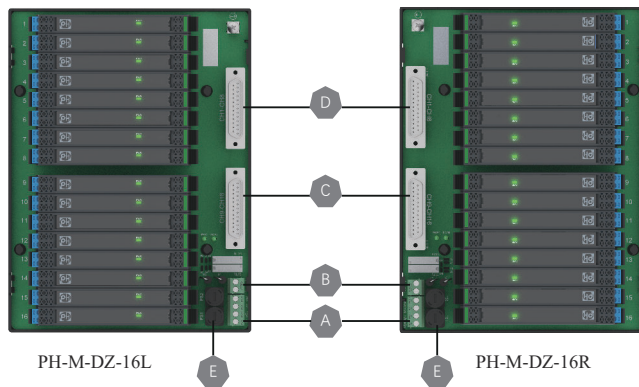
Model	Number of channels	Installation place	Applicable modules
PH-M-DZ-8L	8 channles	Left	Beijing Pinghe M Series modules
PH-M-DZ-8R	8 channles	Right	
PH-M-DZ-16L	16 channles	Left	
PH-M-DZ-16R	16 channles	Right	

Function schematic diagram



A: Redundant power interface
B: Power alarm output

C: DB25 interface
D: Replaceable fuse



A: Redundant power interface
B: Power alarm output
C: DB25 interface
(9-16 channles)

D: DB25 interface (1-8channles)
E: Replaceable fuse

Overview

The PH-M-DZ series backplane is used for various DCS systems, providing installation and power supply for various intrinsic or non intrinsic safety signal isolator modules, and providing signal access for DCS system IO modules.

- Redundant power interface, provides power circuit fuse burn out alarm
- LED indicator
- Replaceable power fuse
- Support signal isolator modules hot swapping
- Support DIN-rail or screw mounting
- Ex e [ia Ga] IIC T4 Gc increased safety certification

Specifications

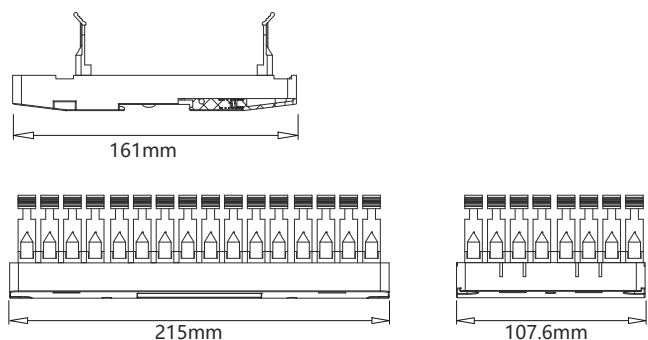
Number of channels: 8 or 16
Modules quantity: 8 or 16
Power voltage: 20-35V DC double redundant power
Power outage alarm output: alarm for power outage on any power supply, relay output open circuit
Internal connection type: DB25 interface (male end)
Field connection type: screw
Terminals crimping specifications: 0.3~2.5mm²
Power fuse: square fuse 5A (replaceable)
Weight: 220g

Environment characteristics:

Installation place: Installed in hazardous area 2 or safe area
Applicable for G3 class (harsh) corrosion environment defined in ISA standard S71.04
Relative humidity: 5%~95%, no condensation
Working temperature: -40°C~+70°C
Storage temperature: -45°C~+85°C
EMC: comply with IEC 61326-1 (GB/T 18268), IEC 61326-3-1 according to IEC 61010-1, applicable for altitude below to 5000m

Mounting specifications:

Mounting type: DIN35-rail
Enclosure material/flame retardant grade: PC/V0 (UL94)
Dimensions: 8-channels: 161mm×107.6mm; 16-channels: 215mm×107.6mm



Safe certification

ATEX mark: II 3 G Ex ec IIC T4 Gc
IECEx mark: Ex ec IIC T4 Gc
CCC mark: Ex ec IIC T4 Gc
Certification standards: GB/T 3836.1-2021, GB/T 3836.3-2021,
EN IEC 60079-0:2018, EN IEC 60079-7: 2015/ A1: 2018



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