



北京平和
Bei Jing Ping He

Focus on sophisticated industrial
signal interface modules



智能I/O模块 Intelligent I/O modules

Harsh environment/various signal types/stable performance

www.bjpinghe.com

About Beijing Pinghe>>>

Beijing Pinghe was founded in January 2004, is a national high-tech enterprise that dedicated to research and development, production and sales of industrial signal interface modules. Beijing Pinghe products such as Isolated safety barriers, Signal isolators, SPD's, Safety relays, Intelligent I/O modules are extensive used in military, nuclear, aviation, petrochemical, metallurgical, electricity, energy, environment, shipbuilding, biomedicine etc. industries. Our outstanding products quality and excellent services achieved domestic and overseas customers approval and trust.

Certifications **300+**

R&D:total number of employee **30%**

Patents, copyrights **50+**

Pieces steady operation **8M+**

- National high-tech enterprise
- Zhongguancun high-tech enterprise
- Specialization, refinement, differentiation, innovation of Beijing small and medium-sized enterprise
- Beijing New Technology and New Product (Service) certificate
- National Supervision and Inspection product qualified enterprise of stable quality
- Member of China Association For Pharmaceutical Equipment
- Member of China Instrument and Control Society
- Joint Research Center of the North Automation Institute, China Academy of Machinery Science & Technology
- TUV Functional safety certification
- ATEX Ex-proof certification
- IECEx Ex-proof quality management system certification
- European CE certification
- USA FCC Federal Communication Commission of Electromagnetic Compatibility certification
- ISO 9001、ISO 14001、ISO 45001 management system certifications
- National Ex-proof Electrical Products Certification
- CCC National Compulsory Product Certifications
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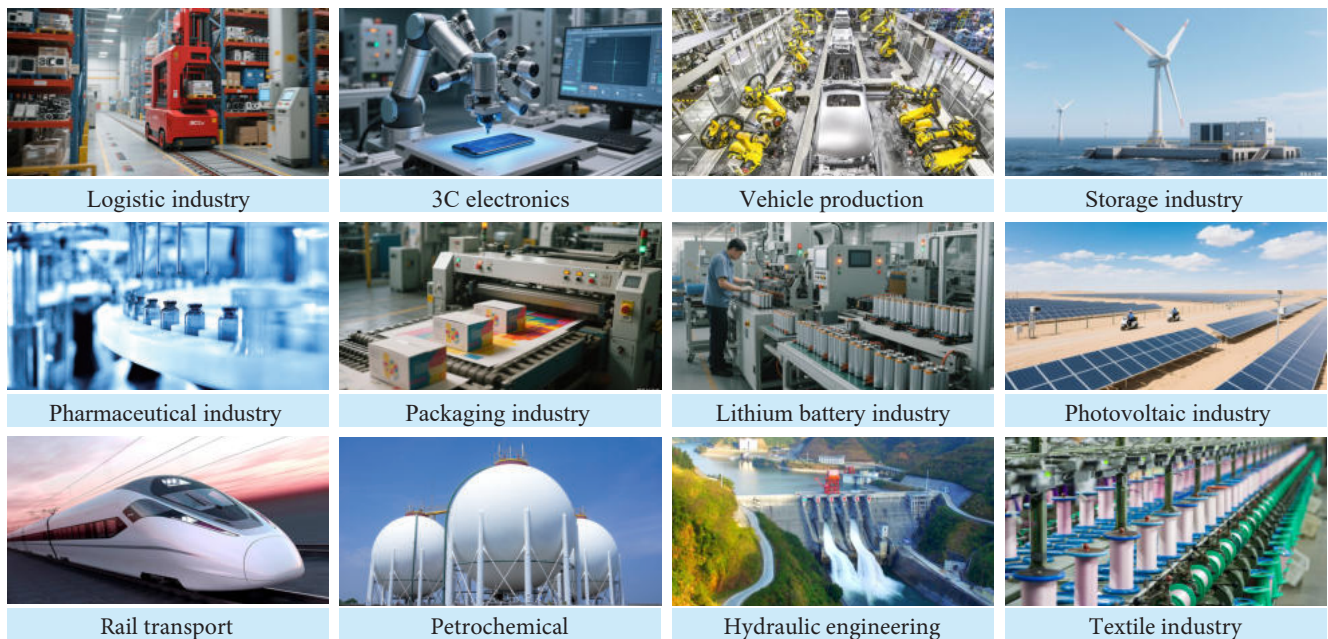


Products overview >>>

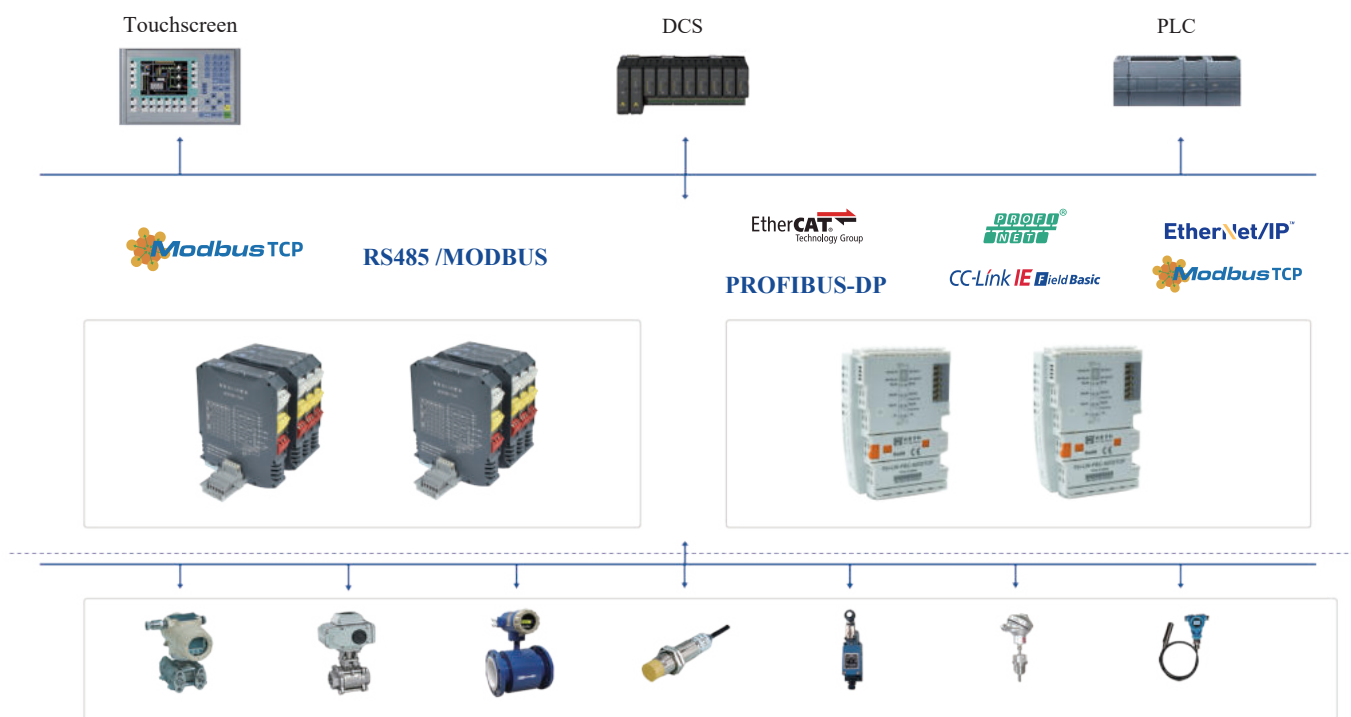
Beijing Pinghe intelligent I/O modules, support multi-industrial communication protocols, include: EtherCAT、P rofinet、P rofibus、E therNet/IP、Modbus/TCP、CC-Link IEFB、CC-Link* etc.

The expand IO modules support not only Analog and Digital outputs, Analog input-output, Temperature acquisition, Pressure acquisition, Pulse counter, Pulse output etc. general modules, but also each type of gateways, include: Modbus RTU main and slave station, IO-link main station etc.

• Field of applications



• Topological diagram



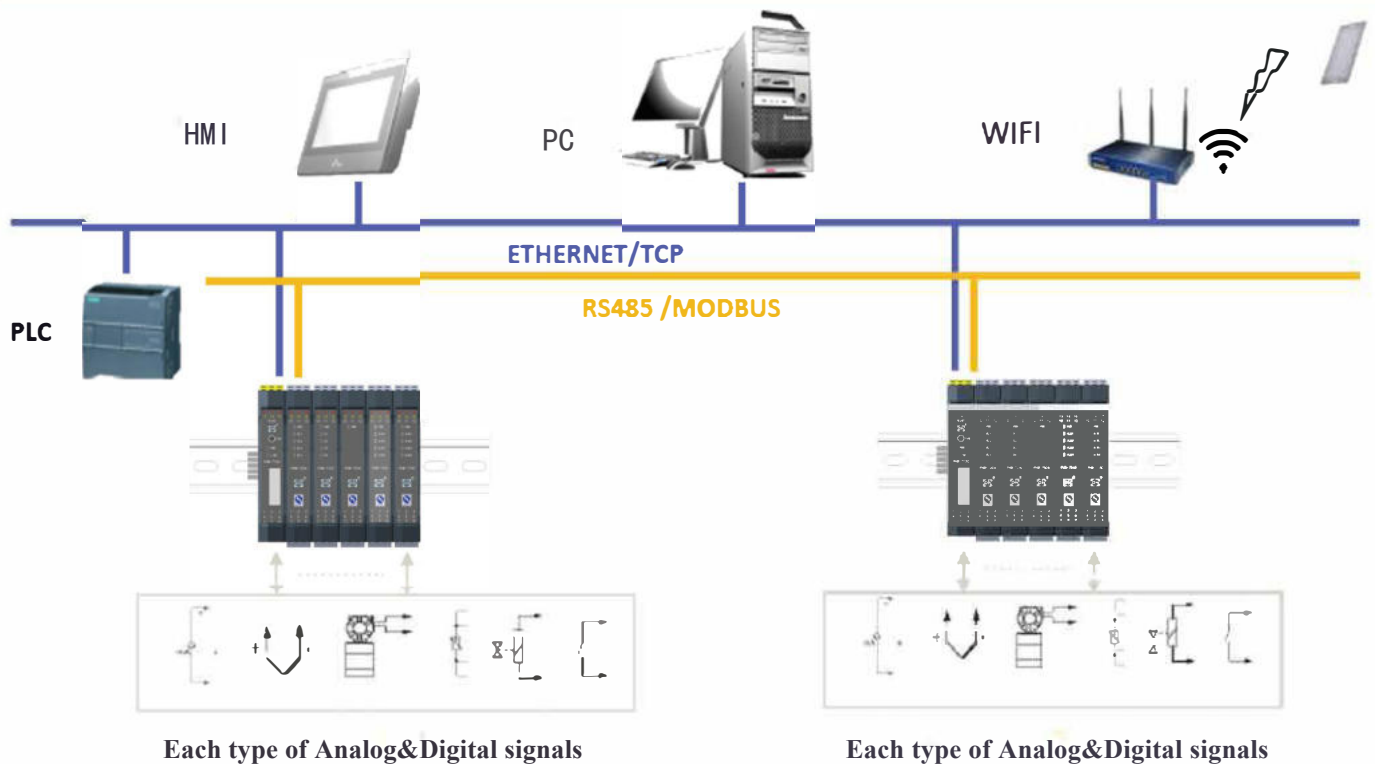
Device type	Model	Signal type	Number of channels	Page
Isolated I/O module application				6
Isoalted I/O module PHM-7000 Series	PHM-7100	Ethernet	1	7
	PHM-7540	Analog input	4	8
	PHM-7504	Analog output	4	9
	PHM-7240	Digital input	4	10
	PHM-7204	Digital output	4	11
	PHM-7740	Temperature input	4	12
Intrinsically safe I/O module PHM-7000 Series	PHM-7230.Ex	Digital input	3	13
	PHM-7530.Ex	Analog input	3	14
	PHM-7730.E	Temperature input	3	15
PH-LW Remote I/O module				16
PH-LW Remote I/O module Coupler	PH-LW-FBC-EC	ETHERCAT	2	17
	PH-LW-FBC-MODTCP	MODBUS/TCP	2	17
	PH-LW-FBC-EIP	ETHERNET/IP	2	17
	PH-LW-FBC-IEFB	CC-LINK IEFB	2	17
	PH-LW-FBC-PN	PROFINET	2	18
	PH-LW-FBC-DP	PROFIBUS-DP	1	18
PH-LW Remote I/O module Digital input	PH-LW-8DI-N	Digital NPN type	8	19
	PH-LW-8DI-P	Digital PNP type	8	19
	PH-LW-16DI-N	Digital NPN type	16	19
	PH-LW-16DI-P	Digital PNP type	16	19
	PH-LW-32DI-N	Digital NPN type	32	20
	PH-LW-32DI-P	Digital PNP type	32	20
PH-LW Remote I/O module Digital output	PH-LW-8DO-N	Digital NPN type	8	21
	PH-LW-8DO-P	Digital PNP type	8	21
	PH-LW-16DO-N	Digital NPN type	16	21
	PH-LW-16DO-P	Digital PNP type	16	21
	PH-LW-32DO-N	Digital NPN type	32	22
	PH-LW-32DO-P	Digital PNP type	32	22

Device type	Model	Signal type	Number of channels	Page
PH-LW Remote I/O module Relay output	PH-LW-4JDQ-NO	Digital NPN type	4	23
PH-LW Remote I/O module Digital input-output	PH-LW-8DI8DO-N	Digital NPN type	16	24
	PH-LW-8DI8DO-P	Digital PNP type	16	24
PH-LW Remote I/O module Analog input	PH-LW-4AI-V	Analog voltage type	4	25
	PH-LW-8AI-V	Analog voltage type	8	25
	PH-LW-4AI-A	Analog current type	4	25
	PH-LW-8AI-A	Analog current type	8	25
PH-LW Remote I/O module Analog output	PH-LW-4AO-V	Analog voltage type	4	26
	PH-LW-8AO-V	Analog voltage type	8	26
	PH-LW-4AO-A	Analog current type	4	26
	PH-LW-8AO-A	Analog current type	8	26
PH-LW Remote I/O module Temperature input	PH-LW-2AI-RTD	RTD input	2	27
	PH-LW-4AI-RTD	RTD input	4	27
	PH-LW-4AI-TC	TC input	4	27
	PH-LW-8AI-TC	TC input	8	27
PH-LW Remote I/O module Pressure input	PH-LW-2YL-16	Pressure sensor	2	28
PH-LW Remote I/O module Pulse counter input	PH-LW-1M-5	5V Encoder	1	29
	PH-LW-1M-24	24V Encoder	1	29
	PH-LW-1CNT-5	5V Encoder	2	29
	PH-LW-1CNT-24	24V Encoder	2	29
PH-LW Remote I/O module Pulse output	PH-LW-2PWM-5	5V Pulse output	1	30
PH-LW Remote I/O module Communication signal	PH-LW-1COM-MOD	MODBUS RTU	2	31
PH-LW Remote I/O module Power supply auxiliary module	PH-LW-POW-24	24V Power distribution	2	32
	PH-LW-POW-0	0V Power distribution	8	32
PH-ER Remote I/O module				33
PH-ER Remote I/O module Coupler	PH-ER-FBC-EC	EtherCAT	2	34
	PH-ER-FBC-PN	Profinet	2	34
PH-ER Remote I/O module Digital input	PH-ER-16DI	Digital PNP, NPN type	16	35
	PH-ER-32DI	Digital PNP, NPN type	32	35

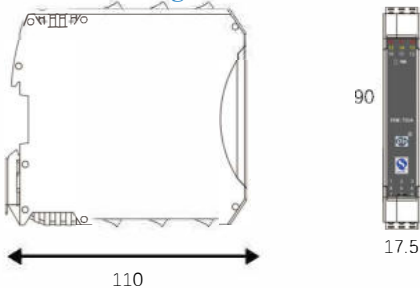
Device type	Model	Signal type	Number of channels	Page
PH-ER Remote I/O module Digital output	PH-ER-16DO-N	Digital NPN type	16	36
	PH-ER-16DO-P	Digital PNP type	16	36
	PH-ER-32DO-N	Digital NPN type	32	36
	PH-ER-32DO-P	Digital PNP type	32	36
PH-ER Remote I/O module Analog input	PH-ER-4AI-VA	Analog voltage/current type	4	37
	PH-ER-8AI-V	Analog voltage type	8	37
	PH-ER-8AI-A	Analog current type	8	37
PH-ER Remote I/O module Analog output	PH-ER-4AO-VA	Analog voltage/current type	4	38
	PH-ER-8AO-V	Analog voltage type	8	38
	PH-ER-8AO-A	Analog current type	8	38
PH-ER Remote I/O module Temperature detection	PH-ER-4AI-RTD-TC	RTD/TC input	4	39
	PH-ER-8AI-TC	TC input	8	39
PH-ER Remote I/O module Pulse counter input	PH-ER-2CNT	Pulse counter input	2	40
PH-ER Remote I/O module Pulse counter output	PH-ER-4CNT-4PWM	Pulse counter output	16	41
PH-ER Remote I/O module Power supply auxiliary module	PH-ER-AUX-24	24V Power distribution	16	42
	PH-ER-AUX-0	0V Power distribution	16	42

Typical of application

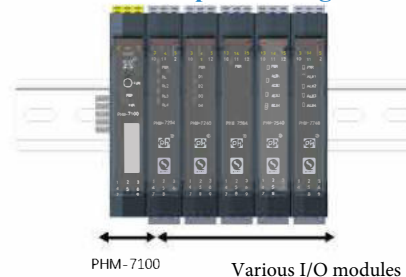
- ◆ Front-end data acquisition for plant process control systems, compared with the traditional data acquisition method of PLC+ signal isolator, Beijing Pinghe remote I/O and data acquisition system can widely save equipment mounting and calibration expenditures.
- ◆ Intensive temperature and humidity collection and monitoring system for large-scale storage, warehouses, constant temperature laboratories, etc. Use front-end I/O isolated design; guarantee system reliability and stability.
- ◆ Environment monitoring, water treatment and other real-time data monitoring system; support TCP/IP protocols; can easily use the third-party remote data transmission channel to complete remote data centralized monitoring.
- ◆ Building control: for buiding control gradually use industiral control structure; Beijing Pinghe remote I/O module and data acquisition system provides low expenditure and high reliability solutions.
- ◆ Other small or medium size SCADA system.



Dimension diagram

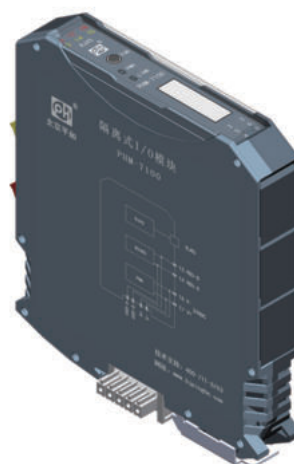


Basic component diagram



PHM-7100 Ethernet Gateway

- Support MODBUS RTU and MODBUS TCP/IP protocols
- LAN interface max. support 5 connections
- Support power bus and connection terminal - two types of power supply and communicate
- When use in conjunction with various expansion modules, it can be flexibly configured to form the ideal solution; Support two types of power supply and communicate through bus power connector and connection terminal for remote monitor and control, distributed control and SCADA system



Technical parameters

LAN interface	MODBUS TCP (simultaneously support 5 clients terminal connection)
EMC	IEC 6132
Isolation capability	1500V AC
Working temperature	-20°C~+60°C
Storage temperature	-40°C~+85°C
Environment humidity	≤95%RH no condensation
Protection class	IP20
Dimension specifications	110mmx17.5mmx90mm (LWH)
Mounting type	DIN35 rail

PHM-7540 Four channels Analog input module

- Low consumption design, low temperature drift, automatic zero calibration
- Support hot swapping
- Support MODBUS RTU communicate protocol, communicate rate reach 115200bps
- Complete isolation between four circuits input signal/communicate/power supply
- Support two types of power supply and communication through bus power connector and connection terminal
- Combine with PHM-7100 and support MODBUS TCP/IP, simplify installation and maintenance, increase data transmission performance



Technical parameters

Power voltage	24V DC
Input signal	two-、 three-wire system or 4~20mA
Input channels	4
Communicate interface	RS485
Accuracy	0.10%
Communicate protocol	MODBUS
Response time	≤10ms
Temperature drift	0.005% FS /°C
Configuration mode	PC programmable
EMC	IEC 61326
Isolation capability	1500V AC
Working temperature	-20°C~+60°C
Storage temperature	-40°C~+85°C
Environment humidity	≤95%RH no condensation
Protection class	IP20
Dimension specifications	110mmx17.5mmx90mm (LWH)
Mounting type	DIN35 rail

PHM-7504 Four channels Analog output module

- Low consumption design, low temperature drift, automatic zero calibration
- Support hot swapping
- Support MODBUS RTU communication protocol, communicate rate reach 115200bps
- Complete isolation between four circuits input signal/communication/ power supply
- Support two types of power supply and communication through bus power connector and connection terminal
- Combine with PHM-7100 and support MODBUS TCP/IP, simplify installation and maintenance, increase data transmission performance



Technical parameters

Power voltage	24V DC
Output signal	4~20mA
Output channels	4
Communication interface	RS485
Accuracy	0.10%
Communication protocol	MODBUS
Response time	≤10ms
Temperature drift	0.005% FS /°C
Configuration mode	PC programmable
EMC	IEC 61326
Isolation capability	1500VAC
Working temperature	-20°C~+60°C
Storage temperature	-40°C~+85°C
Environment humidity	≤95%RH no condensation
Protection class	IP20
Dimension specifications	110mmx17.5mmx90mm (LWH)
Mounting type	DIN35 rail

PHM-7240 Four channels Digital input module

- Each circuit input provides contact detection of power supply
- Support hot swapping
- Support MODBUS RTU communication protocol , communication rate reach 115200bps
- Complete isolation between four circuits input signal/communication/power supply
- Support two types of power supply and communication through bus power connector and connection terminal
- Combine with PHM-7100 and support MODBUS TCP/IP, simplify installation and maintenance, increase data transmission performance



Technical parameters

Power voltage	24V DC
Input signal	Contact and proximity switch
Output channels	4
Communication interface	RS485
Communication protocol	MODBUS
Response time	≤10ms
Configuration mode	PC programmable
EMC	IEC 61326
Isolation capability	1500V AC
Working temperature	-20°C~+60°C
Storage temperature	-40°C~+85°C
Environment humidity	≤95%RH no condensation
Protection class	IP20
Dimension specifications	110mmx17.5mmx90mm (LWH)
Mounting type	DIN35 rail

PHM-7204 Four channels Digital output module

- Extremely strong anti-interference performance
- Support hot swapping
- Support MODBUS RTU communication protocol , communication rate reach 115200bps
- Complete isolation between four circuits input signal/communication/ power supply
- Support two types of power supply and communication through bus power connector and connection terminal
- Combine with PHM-7100 and support MODBUS TCP/IP, simplify installation and maintenance, increase data transmission performance



Technical parameters

Power voltage	24V DC
Output signal	Relay contact
Output channels	4
Communication interface	RS485
Communication protocol	MODBUS
Response time	≤10ms
Configuration mode	PC programmable
EMC	IEC 61326
Isolation mode	1500V AC
Working temperature	-20°C~+60°C
Storage temperature	-40°C~+85°C
Environment humidity	≤95%RH no condensation
Protection class	IP20
Dimension specifications	110mmx17.5mmx90mm (LWH)
Mounting type	DIN35 rail

PHM-7740 Four channels Temperature input module

- Low consumption design, low temperature drift, automatic zero calibration
- Support hot swapping
- Support MODBUS RTU communication protocol, communication rate reach 115200bps
- Each line of input signal can through program set up: RTD/TC/Resistance/mV
- Complete isolation between four circuits input signal/communication/power supply
- Support two types of power supply and communication through bus power connector and connection terminal
- Combine with PHM-7100 and support MODBUS TCP/IP, simplify installation and maintenance, increase data transmission performance



Temperature parameters

Power voltage	24V DC
Input signal	RTD/TC/Resistance/mV
Input channels	4
Communication interface	RS485
Communication protocol	MODBUS
Cold junction accuracy	1°C
Temperature drift	0.005% FS /°C
Configuration mode	PC programmable
EMC	IEC 61326
Isolation capability	1500V AC
Working temperature	-20°C~+60°C
Storage temperature	-40°C~+85°C
Environment humidity	≤95%RH no condensation
Protection class	IP20
Dimension specifications	110mmx17.5mmx90mm (LWH)
Mounting type	DIN35 rail

PHM-7230. Ex Three channels Digital input module

- Support hot swapping
- Support MODBUS RTU communication protocol, communication rate reach 115200bps
- Complete isolation between input signal/communication/power supply
- Support two types of power supply and communication through bus power connector and connection terminal
- Combine with PHM-7100 and support MODBUS TCP/IP, simplify installation and maintenance, increase data transmission performance



Technical parameters

Power voltage	20~35V DC
Input signal	Switch contact/proximity switch
Sensor side power voltage	8.2V DC
Signal input characteristics	Field input current: $>2\text{mA}$, show logic 1 Field input current: When $<1.2\text{mA}$, show logic 0, hysteresis: 0.2ms
Number of channels	3 channels
Communication interface	RS485
Communication protocol	MODBUS RTU
Insulation strength	$\geq 2500\text{V AC}$ (intrinsically safe terminal and non-intrinsically safe terminal)
Insulation resistance	$\geq 100\text{M}\Omega$
Applicable field equipments	according to DIN19234 and NAMUR proximity switch
Working temperature	$-20^{\circ}\text{C}\sim+60^{\circ}\text{C}$
Storage temperature	$-40^{\circ}\text{C}\sim+85^{\circ}\text{C}$
Environment humidity	$\leq 95\%\text{RH}$ no condensation
Ex-proof mark	[Exia Ga] IIC
Certified parameters	$U_m=250\text{V}$ $U_o=10.5\text{V}$ $I_o=15\text{mA}$ $C_o=1.7\mu\text{F}$ $L_o=100\text{mH}$ $P_o=39.4\text{mW}$
Installation requirements	Connec to Zone 0 intrinsically safe instruments with IIA ,IIB ,IIC hazardous areas
Dimension specifications	110mmx17.5mmx90mm (LWH)
Mounting type	DIN35 rail

PHM-7530. Ex Three channels Analog input module

- Support hot swapping
- Low consumption design, low temperature drift, automatic zero calibration
- Support MODBUS RTU communication protocol, communication rate reach 115200bps
- Complete isolation between input signal/communication/power supply
- Support two types of power supply and communication through bus power connector and connection terminal
- Combine with PHM-7100 and support MODBUS TCP/IP, simplify installation and maintenance, increase data transmission performance



Technical parameters

Power voltage	20~35V DC
Distribution power output	When circuit output 20mA DC, distribution voltage >16V DC
Input signal	two, three-wire system or 4~20mA DC
Accuracy	0.1%
Response time	≤10ms
Number of channels	3 channels
Communication interface	RS485
Communication protocol	MODBUS RTU
Insulation strength	≥2500VAC(intrinsically safe terminal and non-intrinsically safe terminal)
Insulation resistance	≥100MΩ
Applicable field equipment	two, three-wire system transmitter or current source
Working temperature	-20°C~+60°C
Storage temperature	-40°C~+85°C
Environment humidity	≤95%RH no condensation
Ex-proof mark	[Exia Ga] IIC
Certified parameters	terminal 2-3,5-6,8-9: $U_o=28V\ DC$ $I_o=93mA$ $C_o=0.05\ \mu F$ $L_o=2.4mH$ $P_o=0.65W$
	terminal 1-2,4-5,7-8: $U_o=3.5V\ DC$ $I_o=-mA$ $C_o=100\ \mu F$ $L_o=-mH$ $P_o=-mH$
Installation requirements	Connect to Zone 0 intrinsically safe instruments with IIA ,IIB ,IIC hazardous areas
Dimension specifications	110mmx17.5mmx90mm (LWH)
Mounting type	DIN35 rail

PHM-7730. Ex Three channels Temperature input module

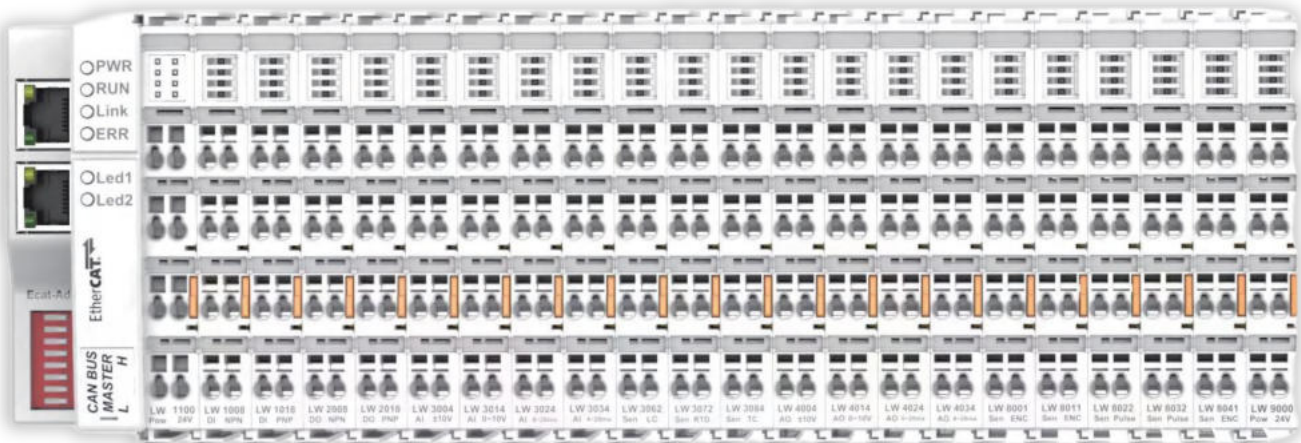
- Support hot swapping
- Each line of input signal can through program set up: RTD/TC/Resistance/mV
- Support MODBUS RTU communication protocol, communication rate reach 115200bps
- Complete isolation between four circuits input signal/communication/power supply
- Support two types of power supply and communication through bus power connector and connection terminal
- Combine with PHM-7100 and support MODBUS TCP/IP, simplify installation and maintenance, increase data transmission performance



Technical parameters

Power voltage	20~35V DC
Input signal	RTD/TC/Resistance/mV
Number of channels	3 channels
Communication interface	RS485
Communication protocol	MODBUS RTU
Cold junction accuracy	1°C
Temperature drift	0.005% FS /°C
Configuration mode	PC programmable
Insulation strength	≥2500VAC(intrinsically safe terminal and non-intrinsically safe terminal)
Insulation resistance	≥100MΩ
Applicable field equipment	B、E、J、K、N、R、S、T TC millivolt signal instrument sensor
	two-wire or three-wire RTD Cu50、Cu100、Pt100、Pt10
Working temperature	-20°C~+60°C
Storage temperature	-40°C~+85°C
Environment humidity	≤95%RH no condensation
Ex-proof mark	[Exia Ga] IIC
Certified parameters	Um= 250V Uo =8.4V Io =31mA Co =4.8 μ F Lo = 20mH Po =65mW
Installation requirements	Connect to Zone 0 intrinsically safe instruments with IIA ,IIB ,IIC hazardous areas
Dimension specifications	110mmx17.5mmx90mm (LWH)
Mounting type	DIN35 rail

PH-LW Remote IO module



- Support multi-industrial communication protocols, include: EtherCAT、Profinet、Profibus、EtherNet/IP、Modbus/TCP、CC-Link IEFB、CC-Link* etc.
- The expand IO modules support not only Analog and Digital outputs, Analog input-output, Temperature acquisition, Pressure acquisition, Pulse counter, Pulse output etc. general modules, but also each type of gateways, include: Modbus RTU main and slave station, IO-link main station etc.
- This Series of modules dimension 100mm×12mm×67mm (LWH), applicable for high mounting size requirements.

Ambient parameters

Working ambient temperature	-25°C~75°C
Storage ambient temperature	-40°C~85°C
Relative humidity	5%~95%RH no condensation
Protection type	IP20
EMC anti-interference class	according to EC 61000-4 standard
Vibration resistance	1g according to IEC 60068-2-6 standard
Shock resistance	15g according to IEC 60068-2-27 standard
Pollution class	2 class, according to IEC 61131-2 standard
Corrosion resistance	according to IEC 60068-2-42 and IEC 60068-2-43 standards
Working altitude	0~2000m

Coupler module



Technical parameters

Product model	PH-LW-FBC-EC	PH-LW-FBC- MODTCP	PH-LW-FBC- EIP	PH-LW-FBC- IEFB
Product description	EtherCAT Coupler	Modbus/TCP Coupler	EtherNet/IP Coupler	CC-Link IEFB Coupler
Can expand number of modules	32			
Connection mode	2×RJ45, integrated with switch function			
Transmission rate	2×RJ45, integrated with switch function			
Transmission distance	100m (station to station)			
PDO data	1024Byte			RX, RY:256 bits; RWR, RWW:128 Words
Bus address setting	Support			
Transmission medium	5 class, twisted pair cable			
Alarm function	Diagnostic alarm, process alarm			
Type of isolation	Electrically isolated from the site			
System power input	24V DC(18~36V)			
System power output	5V DC/2A			
Common port of power input	24V DC(±20%)			
Common port of power output	24V DC(±20%)/8A			
Dimension standard	100mm×48mm×67mm(LWH)			
Mounting type	DIN-35 rail			

Coupler module



Technical parameters

Product model	PH-LW-FBC-PN	PH-LW-FBC-DP
Product definition	Profinet Coupler	Profibus-DP Coupler
Can expand number of modules	32	
Connection mode	2×RJ45, integrated switch function	/
Transmission rate	10/100Mbps, full duplex	9.6Kbps~12Mbps
Transmission distance	100m (station to station)	1200m (Max.)
PDO data	1024Byte	340Byte
Bus address setting	Support	Support
Transmission medium	5 class, twister pair cable	Profibus-DP special cable
Alarm function	Diagnostic alarm, process alarm	
Type of isolation	Electrically isolated from the site	
System power input	24V DC(18~36V)	
System power output	5V DC/2A	
Common port of power input	24V DC(±20%)	
Common port of power output	24V DC(±20%)/8A	
Dimension standard	100mm×48mm×67mm(LWH)	
Mounting type	DIN-35 rail	

Digital input module



Technical parameters

Product model	PH-LW-8DI-N	PH-LW-8DI-P	PH-LW-16DI-N	PH-LW-16DI-P
Product definition	8-channels digital input module NPN type	8-channels digital input module PNP type	16-channels digital input module NPN type	16-channels digital input module PNP type
Number of channels	8	8	16	16
“ON” signal voltage	<5V DC	>11V DC	<5V DC	>11V DC
“OFF” signal voltage	>11V DC	<5V DC	>11V DC	<5V DC
System bus input current rating	15mA	15mA	30mA	30mA
Typical value of channel input current	3mA			
Hardware response time	200us/200us			
Input impedance	>7.5kΩ			
Input filtering	Default 3ms, 0.2ms~40ms configurable			
Reverse circuit protection	Support			
Communication error diagnostic	Support			
Type of isolation	Optically isolated from the field layer			
Dimension standard	100mm×12mm×67mm(LWH)			
Mounting type	DIN-35 rail			

Digital input module



Technical parameters

Product model	PH-LW-32DI-N	PH-LW-32DI-P
Product definition	32-channels input module, NPN type	32-channels input module, PNP type
Number of channels	32	32
“ON”signal voltage	<5V DC	>11V DC
“OFF”signal voltage	>11V DC	<5V DC
System bus input current rating	60mA	60mA
Typical value of channel input current	3mA	
Hardware response time	200us/200us	
Input impedance	>7.5kΩ	
Input filtering	Default 3ms, 0.2ms~40ms configurable	
Reverse circuit protection	Support	
Communication error diagnostic	Support	
Type of isolation	Optically isolated from the field layer	
Dimension standard	100mm×24mm×67mm (LWH)	
Mounting type	DIN-35 rail	

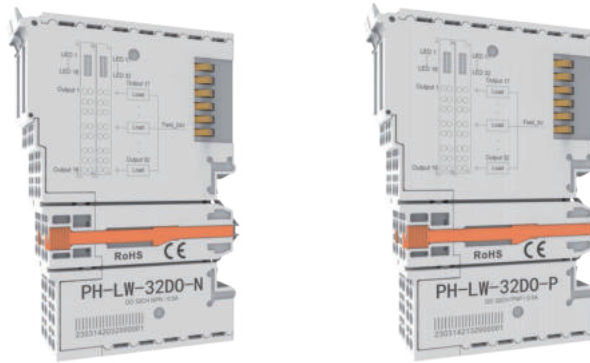
Digital output module



Technical parameters

Product model	PH-LW-8DO-N	PH-LW-8DO-P	PH-LW-16DO-N	PH-LW-16DO-P
Product definition	8-channels	8-channels	16-channels	16-channels
	Output module, NPN type	Output module, PNP type	Output module, NPN type	Output module, PNP type
Number of channels	8	8	16	16
“ON”signal voltage	0V DC	24V DC	0V DC	24V DC
“OFF”signal voltage	High resistance state	High resistance state	High resistance state	High resistance state
System bus input current rating	50mA	50mA	75mA	75mA
Max. output current	0.5A/channel, 3A/module		0.5A/channel, 6A/module	
Hardware response time	OFF to ON: Max.100us , ON to OFF: Max.150us			
Output impedance	<200mΩ			
Load type	Inductive loads, resistive loads, lamp loads			
Short-circuit/overflowing protection	Support			
Reverse circuit protection	Support			
Communication error diagnostic	Support			
Isolation mode	Optically isolated from the field layer			
Dimension standard	100mm×12mm×67mm(LWH)			
Mounting type	DIN-35 rail			

Digital output module



Technical parameters

Product model	PH-LW-32DO-N	PH-LW-32DO-P
Product definition	32-channels output module, NPN type	32-channels output module, PNP type
Number of channels	32	32
“ON”signal voltage	0V DC	24V DC
“OFF”signal voltage	High resistance state	High resistance state
System bus input current rating	130mA	
Max. output current	0.5A/channel, 6A/module	0.5A/channel, 6A/module
Hardware response time	OFF to ON: Max.100us , ON to OFF: Max.150us	
Output impedance	<200mΩ	
Load type	Inductive loads, resistive loads, lamp loads	
Short-circuit/overflowing protection	Support	
Reverse circuit protection	Support	
Communication error diagnostic	Support	
Isolation mode	Optically isolated from the field layer	
Dimension standard	100mm×24mm×67mm(LWH)	
Mounting type	DIN-35 rail	

Four channels Relay output module



Technical parameters

Product model	PH-LW-4JDQ-NO
Product definition	4-channels relay output module
Number of channels	4
Contact type	N.O. contact
Max. output current	5A/channel, 20A/module
System bus input current rating	20mA
Max. switch voltage	250V AC/30V DC
Hardware response time	OFF to ON: Max.10ms, ON to OFF: Max.5ms
Output impedance	<200mΩ
Load type	Resistive(5A/point, 20A/module)
Switch frequency	30Hz
Short-circuit protection	Support
Reverse circuit protection	Support
Communication error diagnostic	Support
Isolation mode	Optically isolated from the field layer
Dimension standard	100mm×12mm×67mm(LWH)
Mounting type	DIN-35 rail

Digital input-output module



Technical parameters

Product model	PH-LW-8DI8DO-N	PH-LW-8DI8DO-P
Product definition	Digital module, NPN type	Digital module, PNP type
Number of channels	8 inputs 8 outputs	8 inputs 8 outputs
System bus input current rating	50mA	50mA
Input channel characteristics		
“ON”signal voltage	<5V DC	>11V DC
“OFF”signal voltage	>11V DC	<5V DC
Typical value of channel input current	3mA	
Hardware response time	200us/200us	
Input impedance	>7.5kΩ	
Input filtering	Default 3ms, 0.2ms~40ms configurable	
Output channel characteristics		
“ON”signal voltage	0V DC	24V DC
“OFF”signal voltage	High resistive state	High resistive state
Max. output current	0.5A/channel, 3A/module	0.5A/channel, 3A/module
Hardware response time	OFF to ON: Max.100us, ON to OFF: Max.150us	
Output impedance	<200mΩ	
Load type	Inductive loads, resistive loads, lamp loads	
Communication error diagnostic/overflowing protection	Support	
Isolation mode	Optically isolated from the field layer	
Dimension standard	100mm×12mm×67mm(LWH)	
Mounting type	DIN-35 rail	

Analog input module



Technical parameters

Product model	PH-LW-4AI-V	PH-LW-8AI-V	PH-LW-4AI-A	PH-LW-8AI-A
Product definition	4-channels	8-channels	4-channels	8-channels
	Input module, voltage type	Input module, voltage type	Input module, current type	Input module, current type
Number of channels	4	8	4	8
Signal type	Voltage/single end, Differential	Voltage/single end	Current/single end, Differential	Current/single end
System bus input current rating	120mA	20mA	120mA	20mA
ADC resolution	16Bit			
Measurement range	±10V、0~10V、2~10V、±5V、0~5V、1~5V		0~20mA、4~20mA	
Input impedance	>400KΩ		100Ω	
Input accuracy (full temp. range)	0.2%			
Signal input limits	±15V		Instantaneous 30mA, average 24mA	
Input diagnostic	2~10V,1~5V Support broken wire detection		4~20mA Support broken wire detection	
Input filtering	300Hz~20Hz config.	1000Hz~50Hz config.	300Hz~20Hz config.	1000Hz~50Hz config
Reverse circuit protection	Support			
Communication error diagnostic	Support			
Isolation mode	Optically isolated from the field layer			
Dimension standard	100mm×12mm×67mm(LWH)			
Mounting type	DIN-35 rail			

Analog output module



Technical parameters

Product module	PH-LW-4AO-V	PH-LW-8AO-V	PH-LW-4AO-A	PH-LW-8AO-A
Product definition	4-channels	8-channels	4-channels	8-channels
Signal type	Output module, voltage type	Output module, voltage type	Output module, circuit type	Output module, circuit type
Number of channels	4	8	4	8
Signal type	Voltage/single end, Differential	Voltage/single end	Current/single end, Differential	Current/single end
System bus input current rating	500mA	35mA	600mA	35mA
ADC resolution	16Bit			
Signal range	±10V、0~10V、2~+10V、±5V、0~5V、1~5V		0~20mA、4~20mA	
Output load	>1kΩ		<600Ω	
Output accuracy (full temp. range)	0.1%			
Reverse circuit protection	Support			
Communication error diagnostic	Support			
Isolation mode	Optically isolated from the field layer			
Dimension standard	100mm×12mm×67mm(LWH)			
Mounting type	DIN-35 rail			

Temperature detection module



Technical parameters

Product model	PH-LW-2AI-RTD	PH-LW-4AI-RTD	PH-LW-4AI-TC	PH-LW-8AI-TC
Product definition	2-channels RTD measurement module	4-channels RTD measurement module	4-channels TC measurement module	8-channels TC measurement module
System bus input current rating	70mA	70mA	70mA	80mA
Sensor type	Pt100, Pt200, Pt500, Pt1000, Ni100, Ni120, Ni 200, Ni500, Ni1000, Cu10,Cu50,Cu53,Cu100KTY83-110, KTY83-120,KTY83-121,KTY83-122,KTY83-150,KTY83-151, NTC-5K,NTC-20K,TY84-130,KTY84-150,KTY84-151, 40 Ω, 80 Ω, 150 Ω,300 Ω, 500 Ω, 1 kΩ, 2 kΩ, 4 kΩ		K、E、T、J、B、S、R、N、L and millivolt voltage sensor	
Resolution/display sensitivity	16bit, 0.1℃/bit			
Accuracy	±0.3%			
Connection type	two-wire/three-wire system		two-wire system	
Sampling frequency	1.25Hz~7.5Hz config.	1.25Hz~5Hz config.	1Hz~8Hz config.	7200ms~56.25ms config.
Channel diagnostic	Upper limit exceeded alarm, lower limit exceeded alarm, disconnection alarm, overflow error			
Reverse circuit protection	Support			
Communication error diagnostic	Support			
Isolation mode	Optically isolated from the field layer			
Dimension standard	100mm×12mm×67mm(LWH)			
Mounting type	DIN-35 rail			

Pressure sensor module



Technical parameters

Product module	PH-LW-2YL-16
Product definition	2-channels pressure sensor input module
Number of channels	2
Signal type	Differential/single end
System bus input current rating	210mA
ADC resolution	16Bit
Measurement range	0~10mv
Excitation power output	5V DC
Output accuracy (full temp. range)	0.2%
Input filtering	300Hz~20Hz configurable
Reverse circuit protection	Support
Communication error diagnostic	Support
Isolation mode	Optically isolated from the field layer
Dimension standard	100mm×12mm×67mm(LWH)
Mounting type	DIN-35 rail

Pulse input counter module



Technical parameters

Product model	PH-LW-1M-5	PH-LW-1M-24	PH-LW-1CNT-5	PH-LW-1CNT-24
Product definition	1-channel encoder counter module	1-channel encoder counter module	2-channels encoder/pulse counter module	2-channels encoder/pulse counter module
Number of channels	1	1	2	2
Input signal voltage	5V	24V	5V	24V
System bus input current raited	30mA	30mA	65mA	65mA
Sensor type	Incremental encoder AB signal		Incremental encoder AB signal/pulse+ direction signal	
Max. sampling frequency	500KHz		1MHz	
Resolution/accuracy	32bit/±1 pulse		32bit/±1 pulse	
Quadrature encoder frequency doubling	x4		x1/x2/x4	
Counter mode	Linear counter form		Linear counter form, ring counter form	
Filtering function	/		Support, configurable	
Counter range	-2147483648~2147483647			
Reverse circuit protection	Support			
Communication error diagnostic	Support			
Isolation mode	Optically isolated from the field layer			
Dimension standard	100mm×12mm×67mm (LWH)			
Mounting type	DIN-35 rail			

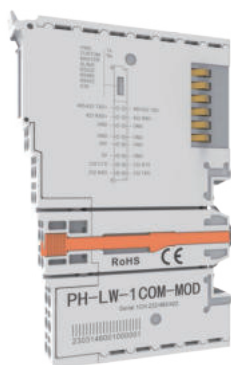
Pulse output module



Technical parameters

Product model	PH-LW-2PWM-5
Product definition	2-channels pulse output module
Number of channels	2
Signal voltage	5V
System bus input current rating	40mA
Output signal mode	Pulse+direction/PWM, configurable
Max. output frequency	Pulse differential signal output: 2MHz
	Pulse open-drain signal output: 500KHz
	PWM signal output: 12KHz
Reverse circuit protection	Support
Communication error diagnostic	Support
Isolation mode	Optically isolated from the field layer
Dimension standard	100mm×12mm×67mm(LWH)
Mounting type	DIN-35 rail

Communication module



Technical parameters

Product model	PH-LW-1COM-MOD
Product definition	1-channel serial module, support RS232/RS485/RS422
Number of channels	1
Communication protocol	Modbus RTU master and slave modes; free pass-through mode
System bus input current rating	75mA
Baud rate	2400bps~256000bps
Data bit	7bit/8bit
Check bit	None/Even/Odd
Stop bit	1bit/2bit
Reverse circuit protection	Support
Communication error diagnostic	Support
Isolation mode	Optically isolated from the field layer
Dimension standard	100mm×12mm×67mm(LWH)
Mounting type	DIN-35 rail

Power supply auxiliary module



Technical parameters

Product model	PH-LW-POW-24	PH-LW-POW-0
Product definition	24V distribution module	0V distribution module
System power supply	/	/
Common terminal power supply	Power input: 24V DC($\pm 20\%$)	Power input: 0V DC($\pm 20\%$)
	Power output: 24V DC($\pm 20\%$)/8A	Power output: 0V DC($\pm 20\%$)/8A
Reverse circuit protection	Support	
Communication error diagnostic	Support	
Isolation mode	Optically isolated from the field layer	
Dimension standard	100mm $\times$ 12mm $\times$ 67mm(LWH)	
Mounting type	DIN-35 rail	

PH-ER Remote IO module



- Support multi-industrial communication protocols, include: EtherCAT、Profinet、Profibus、EtherNet/IP、Modbus/TCP、CC-Link IEFB、CC-Link* etc.
- The expand IO modules support Digital input-output, Analog input-output, Temperature acquisition, Pressure acquisition, Pulse counter, Pulse output etc. general modules
- The module support PC firmware update

Ambient parameters

Working ambient temperature	-25°C~75°C
Storage humidity temperature	40°C~85°C
Relative humidity	5%~95%RH no condensation
Protection type	IP20
EMC anti-interference class	according to IEC 61000-4 standard
Vibration resistance	1g according IEC 60068-2-6 standard
Shock resistance	15g according to IEC 60068-2-27 standard
Pollution class	2 class, according IEC 61131-2 standard
Corrosion resistance	according IEC 60068-2-42 and IEC 60068-2-43 standards
Working altitude	0~2000m

Coupler module



Technical parameters

Product module	PH-ER-FBC-EC	PH-ER-FBC-PN
Product description	EtherCAT Coupler	2 X RJ45, integrated switch function
Can expand number of modules	32	
Connection type	2 X RJ45, integrated switch function	
Transmission rate	10/100Mbps, full duplex	
Transmission distance	100m (station to station)	
PDO data	1024Byte	
Bus address setting	Software	
Transmission medium	5 class, twisted pair cable	
Alarm function	Diagnostic alarm, process alarm	
Insulation mode	Electrically isolated from the side	
System power output	5V DC/2A	
Power input	24V DC(±20%)/8Amax	
Power output	24V DC(±20%)/8Amax	
Dimension standard	104mm×24mm×80mm(LWH)	
Mounting type	DIN-35 rail	

Digital input module



Technical parameters

Product model	PH-ER-16DI	PH-ER-32DI
Product description	16-channels digital input module PNP, NPN type	32-channels digital input module PNP, NPN type
Number of channels	16	32
"ON" signal voltage	Differential pressure>11VDC (differential pressure from common terminal input)	
"OFF" signal voltage	Differential pressure<5VDC (differential pressure from common terminal input)	
System bus input current rating	<50mA	<100mA
Typical value of channel input current	3mA (24V DC)	
Hardware response time	100us/100us	
Input impedance	>7.5kΩ	
Input filtering	No filter, 0.25ms, 0.5ms, 1ms (default setting) 2ms, 4ms, 8ms, 16ms, 32ms, 64ms, 128ms, 256ms can be set individually for each channel	
Reverse circuit protection	Support	
Communication error diagnostic	Support	
Isolation mode	Optically isolated from the field layer	
Dimension standard	104mm×12mm×80mm(LWH)	104mm×24mm×80mm(LWH)
Mounting type	DIN-35 rail	

Digital output module



Technical parameters

Product model	PH-ER-16DO-N	PH-ER-16DO-P	PH-ER-32DO-N	PH-ER-32DO-P
Product description	16-channels digital output module NPN type	16-channels digital output module PNP type	32-channels digital output module NPN type	32-channels digital output module PNP type
Number of channels	16		32	
"ON" signal voltage	0V DC	24V DC	0V DC	24V DC
"OFF" signal voltage	High resistance state			
System bus input current rating	60mA		120mA	
Power input	4A (24V DC)		8A (24V DC)	
Max. output current	0.5A/channel, 4A/module		0.5A/channel, 8A/module	
Hardware response time	OFF to ON: Max.100us, ON to OFF: Max.150us			
Output impedance	<200mΩ			
Load type	Inductive loads, resistive loads, lamp loads			
Short-circuit/overflowing protection	Support			
Reverse circuit protection	Support			
Communication error diagnostic	Support			
Isolation mode	Optically isolated from the field layer			
Dimension standard	104mm×12mm×80mm(LWH)		104mm×24mm×80mm(LWH)	
Mounting type	DIN-35 rail			

Analog input module



Technical parameters

Product model	PH-ER-4AI-VA		PH-ER-8AI-V	PH-ER-8AI-A
Product description	4-channels analog input		8-channels analog input	8-channels analog input
Number of channels	4		8	8
Signal type	Voltage/current		Voltage	Current
System bus input current rating	<50mA			
ADC resolution	16bit			
Measurement range	±10V、0~10V、2~10V、±5V、0~5V、1~5V、0~10mA、0~20mA、4~20mA		±10V、0~10V、2~10V、±5V、0~5V、1~5V	0~10mA、0~20mA、4~20 mA
Input impedance	Voltage port: >400KΩ	Current port: 250Ω	>400KΩ	250Ω
Input accuracy (full temp. range)	0.2%			
Signal input limits	Voltage port: ±15V Current port: 30mA		±15V	30mA
Input diagnostic	2~10V, 1~5V, 4~20mA Support broken wire detection		2~10V、1~5V Support broken wire detection	4~20mA Support broken wire detection
Sampling period	1ms (4 channels)		1ms (4 channels)	1ms (4 channels)
Filtering method	Sliding window filtering, de-jitter filtering, 50HZ, 60HZ filter			
Reverse circuit protection	Support			
Communication error diagnostic	Support			
Isolation mode	Optically isolated from the field layer			
Dimension standard	104mm×12mm×80mm(LWH)			
Mounting type	DIN-35 rail			

Analog output module



Technical parameters

Product model	PH-ER-4AO-VA	PH-ER-8AO-V	PH-ER-8AO-A
Product description	4-channels analog output module, voltage type/current type	8-channels analog output module, voltage type	8-channels analog output module, current type
Number of channels	4	8	8
Signal type	Voltage/Current	Voltage	Current
System bus input current rating	<35mA (5V DC)		
ADC resolution	16bit		
Signal range	$\pm 10V$ 、 $0\sim 10V$ 、 $2\sim 10V$ 、 $\pm 5V$ 、 $0\sim 5V$ 、 $1\sim 5V$ 、 $0\sim 10mA$ 、 $0\sim 20mA$ 、 $4\sim 20mA$	$\pm 10V$ 、 $0\sim 10V$ 、 $2\sim 10V$ 、 $\pm 5V$ 、 $0\sim 5V$ 、 $1\sim 5V$	$0\sim 10mA$ 、 $0\sim 20mA$ 、 $4\sim 20mA$
Output load	Voltage port: $> 1K\Omega$, Current port: $< 600\Omega$	$> 1K\Omega$	$< 600\Omega$
Output accuracy (full temp. range)	0.1%		
Reverse circuit protection	Support		
Communication error diagnostic	Support		
Isolation mode	Optically isolated from the field layer		
Dimension standard	104mm×12mm×80mm(LWH)		
Mounting type	DIN-35 rail		

Temperature detection module



Technical parameters

Product model	PH-ER-4AI-RTD-TC	PH-ER-8AI-TC
Product description	4-channels RTD/TC measurement module	8-channels TC measurement module
Number of channels	4	8
Sensor type	PT series, Ni series, Cu10, KTY83 series, KTY84 Series RTD, 40Ω~2 kΩ Resistance, K, E, T, J, B, S, R, N, C, L TC, 15.625mV ~ 2000mV voltage signals	K, E, T, J, B, S, R, N, C, L TC, 15.625mV ~ 2000mV voltage signal
System bus input current rating	<60mA	
Resolution/display sensitivity	16bit, 0.1°C/bit	
Connection method	RTD: two-/three-/four-wire system; TC: two-wire system	Two-wire system
Sampling period	RTD: 250ms~1000ms configurable, TC: 500ms~2000ms configurable	Configurable
Channel diagnostic	Upper limit exceeded alarm, lower limit exceeded alarm, disconnection alarm, overflow error	
Reverse circuit protection	Support	
Communication error diagnostic	Support	
Isolation mode	Optically isolated from the field layer	
Dimension standard	104mm×12mm×80mm(LWH)	
Mounting type	DIN-35 rail	

Pulse counter module



Technical parameters

Product model	PH-ER-2CNT
Product description	2-channels pulse counting
Differential counter input characteristics	
Input type	Differential Input
Number of channels	2
Differential input voltage level	RS422 level (logic 0 < 200 mA; logic 1 > 200 mA)
Max. input frequency	4M Hz
Counting range	32-bit
Counting accuracy	100ppm
Single end input characteristics	
Input type	Digital input
Input method	Single-ended input, NPN / PNP
Input channels	4 (counting channels are 2 channels, each channel AB phase)
Frequency range	0.04Hz~500kHz
Input voltage rating	24V DC (20.4V DC~28.8V DC)
Input current (typical)	50 mA (24V)
"ON" signal voltage	Differential pressure >11VDC (differential pressure to common terminal input)
"OFF" signal voltage	Differential pressure <5VDC (differential pressure from common terminal input)
Output characteristics	
Output channels	2
Output signal type	NPN
Output load	0.5A/point, 1A/module
General parameters	
Reverse circuit protection	Support
Communication error diagnostic	Support
Isolation mode	Optically isolated from the field layer
Dimension standard	104mm×12mm×80mm(LWH)
Mounting type	DIN-35 rail

Pulse counter module



Technical parameters

Product model	PH-ER-4CNT-4PWM
Product description	4-channels pulse input/output module
Input characteristics	
Input type	Counter input (DI, single-phase pulse plus direction, AB phase)
Input method	Single end
Number of channels	Max. 16 channels input
Input filtering	Configurable
Max. input frequency	200k Hz
Counting range	32-bit
Counting accuracy	100ppm
Output characteristics	
Output type	DO/PWM/pulse plus direction/AB phase output
Output signal type	NPN
Output frequency	200kHz
General parameters	
Reverse circuit protection	Support
Communication error diagnostic	Support
Isolation mode	Optically isolated from the field layer
Dimension standard	104mm×12mm×80mm(LWH)
Mounting type	DIN-35 rail

Auxiliary module



Technical parameters

Product model	PH-ER-AUX-24	PH-ER-AUX-0
Number of channels	16	16
Working voltage	24V DC (-15%~+20%) via power across contacts	0V DC (-15% to +20%) via power across contacts
Providing field voltage	24V DC (-15%~+20%)	0V DC (-15%~+20%)
Max. providing field current	8A	
Number of input power trans-contacts	2	
Number of external power supply cross-contacts	2	
Dimension standard	104mm×12mm×80mm(LWH)	
Mounting type	DIN-35 rail	



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