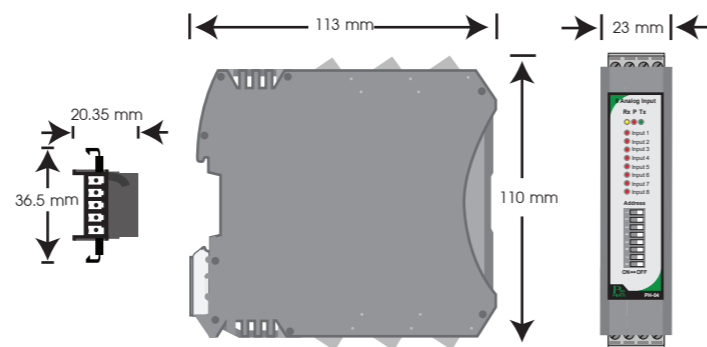


TECHNICAL SPECIFICATION

Power Supply	9-30 VDC/VAC		
Power Consumption	2 VA		
Display	LED		
Input	Inputs Points	8	
	Input Current/mV	0-20mA / 0-10V	
	Input Type	Range Resolution	
	0	0 - 20 mA	1 uA
	1	4 - 20 mA	1 uA
	2	0 - 1 VDC	0.1 mV
	3	± 1 VDC	0.1 mV
	4	0 - 5 VDC	0.1 mV
5	± 5 VDC	1 mV	
6	0 - 10 VDC	1 mV	
7	± 10 VDC	1 mV	
Accuracy	1% of Full Scale		
Display Input	0	แสดงค่าตาม Input Type	
	1	แสดงค่า 0-65535 16 Bits	
	2	Scale zero span	
	3		
Communication	PROTOCOL	MODBUS RTU	
	Baud Rate	2400, 4800, 9600, 19200	
	Parity	None, Even, Odd	
	Stop Bits	1, 2	
	Data Bits	8	
	Maximum Support Node	255	
Ambient Operation	Temperature	-10 °C to 60 °C	
	Humidity	<85% RH Non-Condensing	
Ambient Storage	Temperature	-20 °C to 80 °C	
	Humidity	<85% RH Non-Condensing	
Protection Degree	IP20		
Installation	DIN RAIL		
Enclosure	ABS-V0		
Size	23 x 113 x 110 mm.		
Weight	155 g.		

DIMENSION



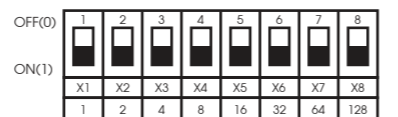
DESCRIPTION

- is the device which uses with RS-485 MODBUS RTU PROTOCOL system.
- 8 Analog Input 0-20mA/0-10VDC, 16 bits, Isolated.
- Operate via RS-485 MODBUS RTU PROTOCOL.
- LED show Input status.

OPERATION

PH-04 can receive 8 Analog Input can choose both 0-20mA and 0-10 VDC in one device Resolution 16 Bits high resolution to convert value into system and send Data to MODBUS Master Device such as PC or PLC for works for operate follow required function and relate to Analog Output Module.

Device Address ID setting



$$\text{Address} = X1 + X2 + X3 + X4 + X5 + X6 + X7 + X8$$

Example Device Address ID setting

Request Address to be 21 can do by choose switch as picture below



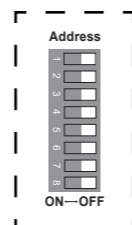
$$\text{Address} = 1 + 4 + 16 = 21$$

OPERATION DISPLAY

Symbol	Input Type	Reading Range		
		Display Input = 0	Display Input = 1	Display Input = 2
0	0-20 mA	0 to 20000	0 to 65535	Zero to Span
1	4 - 20 mA.	4000 to 20000	0 to 65535	Zero to Span
2	0-1 VDC	0 to 10000	0 to 65535	Zero to Span
3	± 1 VDC	-10000 to 10000	0 to 65535	Zero to Span
4	0-5 VDC	0 to 50000	0 to 65535	Zero to Span
5	± 5 VDC	-5000 to 5000	0 to 65535	Zero to Span
6	0-10 VDC	0 to 10000	0 to 65535	Zero to Span
7	± 10 VDC	-10000 to 10000	0 to 65535	Zero to Span

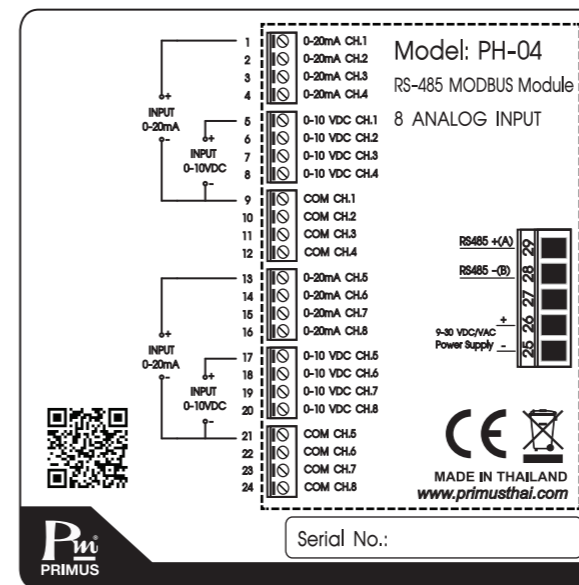
Reset Baud Rate, Parity, Stop bits setting

- Set all Dip Switch Address of PH-04 to be OFF as picture 1 after slide Dip Switch to OFF then wait for 4 second until all LED are ON continuously.
- Start value after Reset are Baud Rate 9600, Parity None, Stop Bits 1.



Picture 1

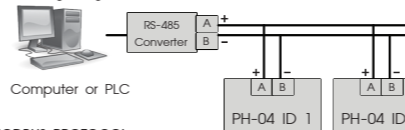
WIRING DIAGRAM



SERIAL COMMUNICATION

The PH-04 are Equipped With a RS-485 Series Communication Interface to Allow Connection to Computer or PLCs. MODBUS PROTOCOL is Provided as Standard Communication. The User Can Connect PH-04 as Network Up to 128 Meters.

Wiring Diagram



MODBUS PROTOCOL

This MODBUS PROTOCOL Has Been Implement In Accordance With MODBUS.ORG MODBUS Application PROTOCOL Specification V1.1 With The Following Conditions Applying. The Following Conditions Apply Baudrate Can Selected Refer 22. Speed Setting The Format Is MODBUS RTU Refer 22. Speed Setting The Format Is MODBUS RTU UART Data Can Selected Refer 23. Communication Setting Data is Considered To Be Half Duplex Using 2 Wire.

Modbus Function code

Function code	Operation	Broadcast
0x03	Read Holding Registers	No
0x04	Read Multiple Registers	No
0x06	Preset Single Registers	Yes
0x10	Preset Multiple Registers	Yes

Modbus Exception code

Code	Name	Meaning
01	ILLEGAL FUNCTION	The function code received in the query is not an allowable action for the server (or slave).
02	ILLEGAL DATA ADDRESS	The data address received in the data field is not an allowable value for server (or slave).
03	ILLEGAL DATA VALUE	A value contained in the query data field is not an allowable value for server (or slave).

Example of a client request and server exception response

Request		Response	
Field Name	(Hex)	Field Name	(Hex)
Slave Address	01	Slave Address	01
Function	04	Function	84
Starting Address Hi	00	Exception Code	02
Starting Address Lo	00	CRC Hi	C2
Quantity of Input Reg. Hi	00	CRC Lo	C1
Quantity of Input Reg. Lo	1E		
CRC Hi	70		

Data Registers

Address	Register Name	Low Limit	High Limit	Access	Format	Comment
0	Analog Input 1	0	65535	R	Int	
1	Analog Input 2	0	65535	R	Int	
2	Analog Input 3	0	65535	R	Int	
3	Analog Input 4	0	65535	R	Int	

Address	Register Name	Low Limit	High Limit	Access	Format	Comment
4	Analog Input 5	0	65535	R	Int	
5	Analog Input 6	0	65535	R	Int	
6	Analog Input 7	0	65535	R	Int	
7	Analog Input 8	0	65535	R	Int	
8	Status Inputs	0	255	R	Int	
9	Input Over Range	0	255	R	Int	
10	Input 1 Type	0	7	R/W	Int	0 = 0-20 mA
11	Input 2 Type	0	7	R/W	Int	1 = 4-20 mA
12	Input 3 Type	0	7	R/W	Int	2 = 0-1 VDC
13	Input 4 Type	0	7	R/W	Int	3 = ± 1 VDC
14	Input 5 Type	0	7	R/W	Int	4 = 0-5 VDC
15	Input 6 Type	0	7	R/W	Int	5 = ± 5 VDC
16	Input 7 Type	0	7	R/W	Int	6 = 0-10 VDC
17	Input 8 Type	0	7	R/W	Int	7 = ± 10 VDC
18	Display input 1	0	2	R/W	Int	
19	Display input 2	0	2	R/W	Int	
20	Display input 3	0	2	R/W	Int	
21	Display input 4	0	2	R/W	Int	0 = แสดงค่าตาม Input Type
22	Display input 5	0	2	R/W	Int	1 = แสดงค่า 0-65535 16 Bits
23	Display input 6	0	2	R/W	Int	2 = แสดงค่าตาม Zero Span
24	Display input 7	0	2	R/W	Int	
25	Display input 8	0	2	R/W	Int	
26	Zero Input 1	-32768	32767	RW	Int	
27	Span Input 1	-32768	32767	RW	Int	
28	Zero Input 2	-32768	32767	RW	Int	
29	Span Input 2	-32768	32767	RW	Int	
30	Zero Input 3	-32768	32767	RW	Int	
31	Span Input 3	-32768	32767	RW	Int	
32	Zero Input 4	-32768	32767	RW	Int	
33	Span Input 4	-32768	32767	RW	Int	
34	Zero Input 5	-32768	32767	RW	Int	
35	Span Input 5	-32768	32767	RW	Int	
36	Zero Input 6	-32768	32767	RW	Int	
37	Span Input 6	-32768	32767	RW	Int	
38	Zero Input 7	-32768	32767	RW	Int	
39	Span Input 7	-32768	32767	RW	Int	
40	Zero Input 8	-32768	32767	RW	Int	
41	Span Input 8	-32768	32767	RW	Int	
42	Baud Rate	2400	57600	R/W	Int	2400, 4800, 9600, 19200, 38400, 57600
43	Parity	0	2	R/W	Int	0 = None 1 = Even 2 = Odd
44	Stop bits	1	2	R/W	Int	1 = 1 Stop bit 2 = 2 Stop bits
45	Delay Reply	0	255	R/W	Int	0 = Disable >0 = Enable.(x10ms)
46	Software Version	n/a	n/a	R	Int	Software Version = 401

ORDERING CODE

PH - 04



PH-04

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