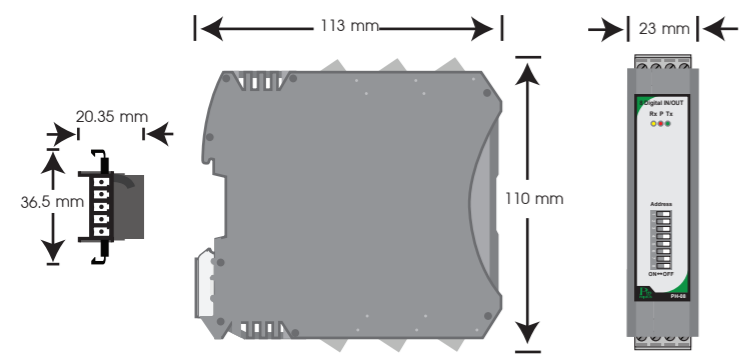




### TECHNICAL SPECIFICATION

Power Supply	9-30 VDC	
Power Consumption	2 VA	
Display	LED	
Communication	PROTOCOL	MODBUS RTU
	Baud Rate	2400, 4800, 9600, 19200 38400, 57600
	Parity	None, Even, Odd
	Stop Bits	1, 2
	Data Bits	8
	Maximum Support Node	127
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	150 g.	

### DIMENSION



### DESCRIPTION

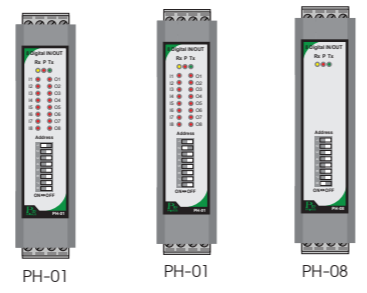
- Point to Point Communication Device for receiving command from Module to another Module.
- For RS-485 MODBUS RTU PROTOCOL system without MODBUS Master Device in system (PC or PLC).
- Operate via RS-485 MODBUS RTU PROTOCOL system.
- Configuration for Mapping by PC.
- LED show operation status.
- Able to Mapper Slave Device 50 pairs per PH-08 1 device.

### OPERATION

PH-06 is used with RS-485 MODBUS RTU PROTOCOL in form of Point to Point Communication. It is remote command via RS-485 system because in system does not have MODBUS Master Device such as PC or PLC is manager that pair address of module together such as 16 Digital Input Module Address 1 pair with 16 Digital Output Module Address 2 when Input 1 of Address 1 ON. It will made Output 1 of Address 2 ON too or in the same way 8 analog Input (0-20 mA/0-10 VDC) Address 3 will pair with 8 Analog Output (0-20mA/0-10 VDC) Address 4 when Analog Input 1 of Address 3 receive 12mA signal. It will made Analog output 1 of Address 4 drive signal 12mA too by Configured for Mapping via PC (Computer).

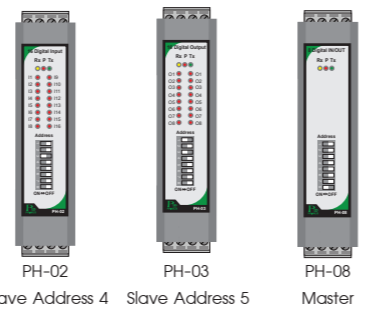
#### Example of application in each mode

**Example : Mode 1**  
PH-01 to PH-01 is Digital 8 Input reading of Address then transmits command to control 8 Digital Output other Address via PH-08.  
Setting program Config PH-08 Mode to be PH-01 to PH-01 choose ID Input equal to Address 2 and ID Output equal to Address 1 as picture.



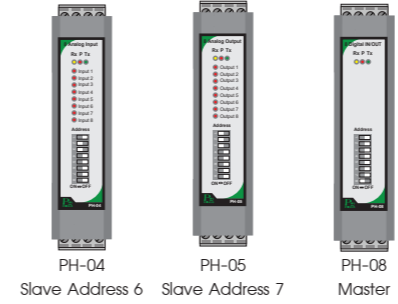
such as input channel 1 of Address 2 has changed made Output channel 2 of Address 1. It will be changed follow status of Input channel 2 of Address 1.

**Example : Mode 2**  
PH-02 to PH-03 are reading Digital 16 Input of Address then send command to control 16 Digital Output another Address via PH-08.  
Setting program Config PH-08 Mode to be PH-02 to PH-03 choose ID Input equal to Address 4 and ID Output equal to Address 5 as picture



such as Input channel 10 of Address 4 has changed made Output channel 10 of Address 5. It will change as Input status channel 10 of Address 4.

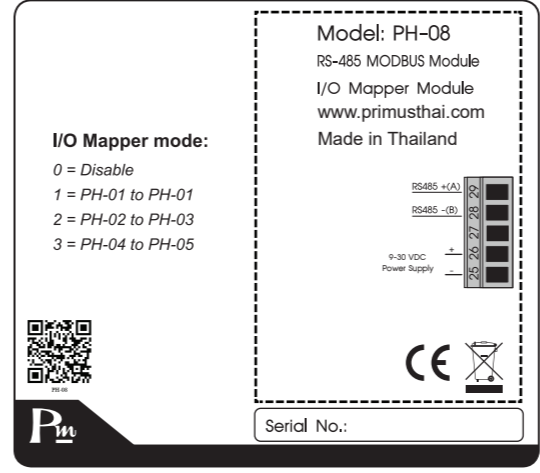
**Example : Mode 3**  
PH-04 to PH-05 is the reading 8 Analog Input of Address then send command to control 8 Analog Output another Address via PH-08  
Setting Program Config PH-08 Mode to be PH-04 to PH-05 choose ID Input equal to Address 6 and ID Output equal to Address 7 as



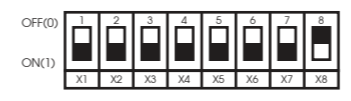
such as Input channel 5 of Address 6 can read current 8 mA it made Output channel 5 of Address 7 then it will supply 8 mA which value will be changed as value of Analog Input channel 5 of Address 6.

\*\* MUST set Input Type of PH-04 to match with Output Type of PH-05 such as Input Type of PH-04 is 4-20 mA.  
Output Type of PH-05 it must be 4-20 mA.

### WIRING DIAGRAM



### MASTER MODE SETTING

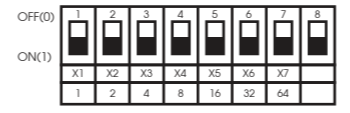


Master Mode setting make by Dip Switch channel 8 ON or Address equal to 128

Master Mode is PH-08 command to control the operation of slave device Address to another slave device by Config via PC or PLC.

### SLAVE MODE SETTING

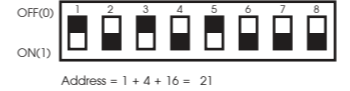
Slave Mode is PC or PLC need to connect with PH-08 for setting Configuration inside PH-08 can set Address since 1-127



Address = X1 + X2 + X3 + X4 + X5 + X6 + X7

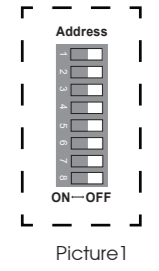
Example of Device Address ID setting

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



Address = 1 + 4 + 16 = 21

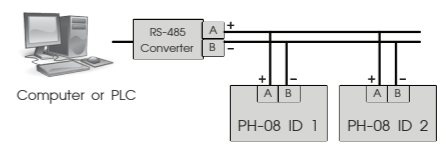
- Reset Buad Rate, Parity, Stop bits
- Set Dip Switch Address of PH-08 device to all OFF as picture 1 after slide Dip Switch to be OFF wait for 4 seconds until all LED steady turn on
  - Default value after Reset are  
Buad Rate 9600, Parity None, Stop Bits 1



### SERIAL COMMUNICATION

The PH-08 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-08 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		

### ORDERING CODE

PH - 08

**Data Registers**

Modbus Address	Register Name	Low Limit	High Limit	Access	Format	Comment
0	Software Version	n/a	n/a	R	Int	Software Version = 801
1	Master Timeout	0	65536	R/W	Int	
2	Baud Rate	2400	57600	R/W	Int	2400, 4800, 9600, 19200, 38400 57600
3	Parity	0	2	R/W	Int	0 = None 1 = Even 2 = Odd
4	Stop Bits	1	2	R/W	Int	1 = 1 Stop bit 2 = 2 Stop bits
5	Module Pair 1	0	3	R/W	Int	
6	Module Pair 2	0	3	R/W	Int	
7	Module Pair 3	0	3	R/W	Int	
8	Module Pair 4	0	3	R/W	Int	
9	Module Pair 5	0	3	R/W	Int	
10	Module Pair 6	0	3	R/W	Int	
11	Module Pair 7	0	3	R/W	Int	
12	Module Pair 8	0	3	R/W	Int	
13	Module Pair 9	0	3	R/W	Int	
14	Module Pair 10	0	3	R/W	Int	
15	Module Pair 11	0	3	R/W	Int	
16	Module Pair 12	0	3	R/W	Int	
17	Module Pair 13	0	3	R/W	Int	
18	Module Pair 14	0	3	R/W	Int	
19	Module Pair 15	0	3	R/W	Int	
20	Module Pair 16	0	3	R/W	Int	
21	Module Pair 17	0	3	R/W	Int	
22	Module Pair 18	0	3	R/W	Int	
23	Module Pair 19	0	3	R/W	Int	
24	Module Pair 20	0	3	R/W	Int	
25	Module Pair 21	0	3	R/W	Int	
26	Module Pair 22	0	3	R/W	Int	
27	Module Pair 23	0	3	R/W	Int	
28	Module Pair 24	0	3	R/W	Int	
29	Module Pair 25	0	3	R/W	Int	
30	Module Pair 26	0	3	R/W	Int	
31	Module Pair 27	0	3	R/W	Int	
32	Module Pair 28	0	3	R/W	Int	
33	Module Pair 29	0	3	R/W	Int	
34	Module Pair 30	0	3	R/W	Int	
35	Module Pair 31	0	3	R/W	Int	
36	Module Pair 32	0	3	R/W	Int	
37	Module Pair 33	0	3	R/W	Int	
38	Module Pair 34	0	3	R/W	Int	
39	Module Pair 35	0	3	R/W	Int	
40	Module Pair 36	0	3	R/W	Int	
41	Module Pair 37	0	3	R/W	Int	
42	Module Pair 38	0	3	R/W	Int	
43	Module Pair 39	0	3	R/W	Int	
44	Module Pair 40	0	3	R/W	Int	
45	Module Pair 41	0	3	R/W	Int	
46	Module Pair 42	0	3	R/W	Int	
47	Module Pair 43	0	3	R/W	Int	
48	Module Pair 44	0	3	R/W	Int	
49	Module Pair 45	0	3	R/W	Int	
50	Module Pair 46	0	3	R/W	Int	
51	Module Pair 47	0	3	R/W	Int	
52	Module Pair 48	0	3	R/W	Int	
53	Module Pair 49	0	3	R/W	Int	
54	Module Pair 50	0	3	R/W	Int	
55	ID Input 1	0	255	R/W	Int	
56	ID Input 2	0	255	R/W	Int	
57	ID Input 3	0	255	R/W	Int	
58	ID Input 4	0	255	R/W	Int	
59	ID Input 5	0	255	R/W	Int	
60	ID Input 6	0	255	R/W	Int	
61	ID Input 7	0	255	R/W	Int	
62	ID Input 8	0	255	R/W	Int	
63	ID Input 9	0	255	R/W	Int	
64	ID Input 10	0	255	R/W	Int	
65	ID Input 11	0	255	R/W	Int	
66	ID Input 12	0	255	R/W	Int	
67	ID Input 13	0	255	R/W	Int	
68	ID Input 14	0	255	R/W	Int	
69	ID Input 15	0	255	R/W	Int	
70	ID Input 16	0	255	R/W	Int	

Mode  
0 : Disable  
1 : PH-01 to PH-01  
2 : PH-02 to PH-03  
3 : PH-04 to PH-05

71	ID Input 17	0	255	R/W	Int	
72	ID Input 18	0	255	R/W	Int	
73	ID Input 19	0	255	R/W	Int	
74	ID Input 20	0	255	R/W	Int	
75	ID Input 21	0	255	R/W	Int	
76	ID Input 22	0	255	R/W	Int	
77	ID Input 23	0	255	R/W	Int	
78	ID Input 24	0	255	R/W	Int	
79	ID Input 25	0	255	R/W	Int	
80	ID Input 26	0	255	R/W	Int	
81	ID Input 27	0	255	R/W	Int	
82	ID Input 28	0	255	R/W	Int	
83	ID Input 29	0	255	R/W	Int	
84	ID Input 30	0	255	R/W	Int	
85	ID Input 31	0	255	R/W	Int	
86	ID Input 32	0	255	R/W	Int	
87	ID Input 33	0	255	R/W	Int	
88	ID Input 34	0	255	R/W	Int	
89	ID Input 35	0	255	R/W	Int	
90	ID Input 36	0	255	R/W	Int	
91	ID Input 37	0	255	R/W	Int	
92	ID Input 38	0	255	R/W	Int	
93	ID Input 39	0	255	R/W	Int	
94	ID Input 40	0	255	R/W	Int	
95	ID Input 41	0	255	R/W	Int	
96	ID Input 42	0	255	R/W	Int	
97	ID Input 43	0	255	R/W	Int	
98	ID Input 44	0	255	R/W	Int	
99	ID Input 45	0	255	R/W	Int	
100	ID Input 46	0	255	R/W	Int	
101	ID Input 47	0	255	R/W	Int	
102	ID Input 48	0	255	R/W	Int	
103	ID Input 49	0	255	R/W	Int	
104	ID Input 50	0	255	R/W	Int	
105	ID Output 1	0	255	R/W	Int	
106	ID Output 2	0	255	R/W	Int	
107	ID Output 3	0	255	R/W	Int	
108	ID Output 4	0	255	R/W	Int	
109	ID Output 5	0	255	R/W	Int	
110	ID Output 6	0	255	R/W	Int	
111	ID Output 7	0	255	R/W	Int	
112	ID Output 8	0	255	R/W	Int	
113	ID Output 9	0	255	R/W	Int	
114	ID Output 10	0	255	R/W	Int	
115	ID Output 11	0	255	R/W	Int	
116	ID Output 12	0	255	R/W	Int	
117	ID Output 13	0	255	R/W	Int	
118	ID Output 14	0	255	R/W	Int	
119	ID Output 15	0	255	R/W	Int	
120	ID Output 16	0	255	R/W	Int	
121	ID Output 17	0	255	R/W	Int	
122	ID Output 18	0	255	R/W	Int	
123	ID Output 19	0	255	R/W	Int	
124	ID Output 20	0	255	R/W	Int	
125	ID Output 21	0	255	R/W	Int	
126	ID Output 22	0	255	R/W	Int	
127	ID Output 23	0	255	R/W	Int	
128	ID Output 24	0	255	R/W	Int	
129	ID Output 25	0	255	R/W	Int	
130	ID Output 26	0	255	R/W	Int	
131	ID Output 27	0	255	R/W	Int	
132	ID Output 28	0	255	R/W	Int	
133	ID Output 29	0	255	R/W	Int	
134	ID Output 30	0	255	R/W	Int	
135	ID Output 31	0	255	R/W	Int	
136	ID Output 32	0	255	R/W	Int	
137	ID Output 33	0	255	R/W	Int	
138	ID Output 34	0	255	R/W	Int	
139	ID Output 35	0	255	R/W	Int	
140	ID Output 36	0	255	R/W	Int	
141	ID Output 37	0	255	R/W	Int	
142	ID Output 38	0	255	R/W	Int	
143	ID Output 39	0	255	R/W	Int	
144	ID Output 40	0	255	R/W	Int	
145	ID Output 41	0	255	R/W	Int	
146	ID Output 42	0	255	R/W	Int	
147	ID Output 43	0	255	R/W	Int	

148	ID Output 44	0	255	R/W	Int	
149	ID Output 45	0	255	R/W	Int	
150	ID Output 46	0	255	R/W	Int	
151	ID Output 47	0	255	R/W	Int	
152	ID Output 48	0	255	R/W	Int	
153	ID Output 49	0	255	R/W	Int	
154	ID Output 50	0	255	R/W	Int	



PH-08

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