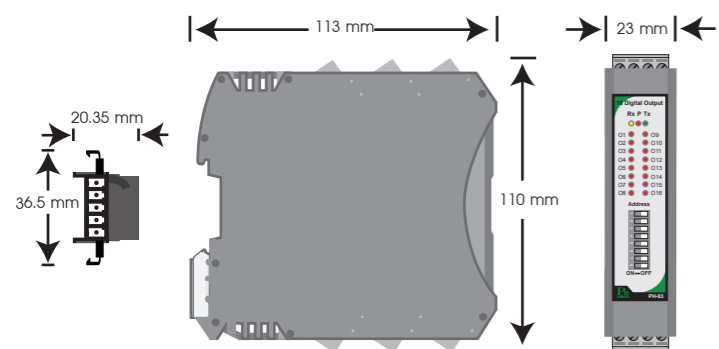




TECHNICAL SPECIFICATION

Power Supply	9-30 VDC/VAC	
Power Consumption	2 VA	
Display	LED	
Output	Output Points	16
	Maximum Voltage	36 VDC
	Maximum Current	100 mA Per Output
	Isolation	1500 Vrms Between Field And Logic
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	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	150 g.	

DIMENSION



DESCRIPTION

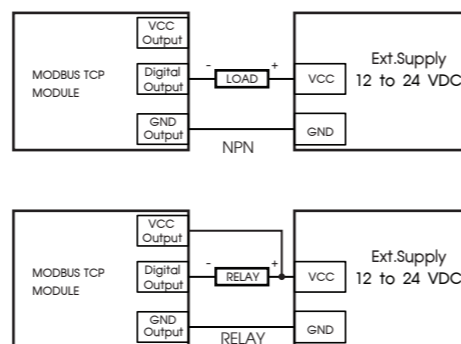
- is the device which uses with RS-485 MODBUS PROTOCOL 16 Output.
- Output NPN Open Collector, Isolated.
- Operation via RS-485 MODBUS PROTOCOL.
- LED show Output status

OPERATION

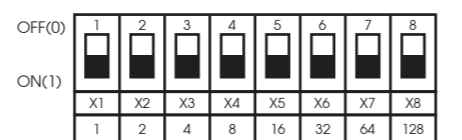
PH-03 has 16 Output NPN Open Collector for connect to Relay or other devices. PH-03 will be ordered by MODBUS Master Device to operate follow function as require and relate to Digital Input Module.

Output of PH-03 has 16 Output NPN Open Collector type can connect to loads by Input and Output will send Data and receive Data from MODBUS Master Device such as PC or PLC for operate follow Function and relate to other I/O Module

Output Wiring Diagram



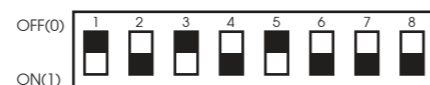
Device Address ID setting



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

Example Device Address ID setting

User needs set Address to 21 can do by choose switch as picture below



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

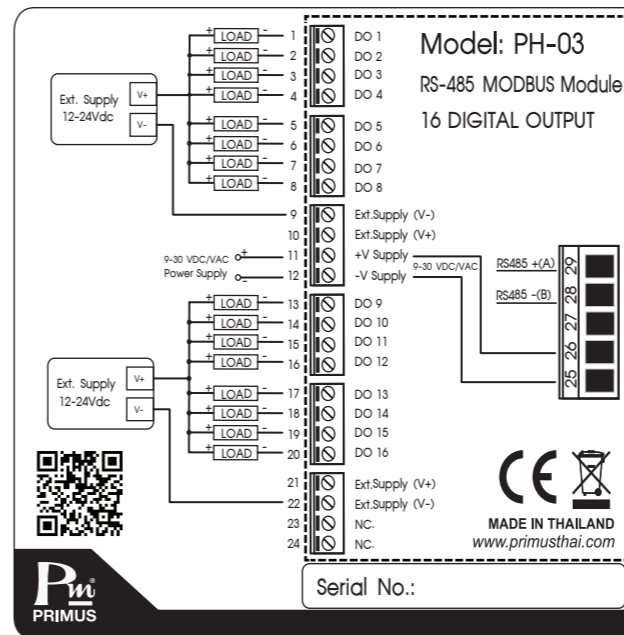
Reset Baud Rate, Parity, Stop bits

1. Set all Dip Switch Address of PH-03 to OFF as picture 1 after slide Dip Switch to OFF wait for 4 seconds until all LED turn On continuously.
2. Start value after reset are
Baud Rate 9600, Parity None, Stop Bits 1.



Picture 1

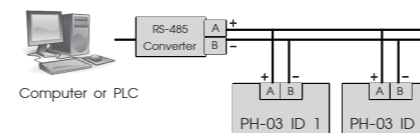
WIRING DIAGRAM



SERIAL COMMUNICATION

The PH-03 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-03 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
0x01	Read Coil Status	No
0x03	Read Holding Registers	No
0x04	Read Multiple Registers	No
0x05	Force Single Coil	Yes
0x06	Preset Single Registers	Yes
0x0F	Force Multiple Coil	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		

Coil Registers

Modbus Address	Register Name	Low Limit	High Limit	Access
0	Digital Output 1	0	1	R/W
1	Digital Output 2	0	1	R/W
2	Digital Output 3	0	1	R/W
3	Digital Output 4	0	1	R/W
4	Digital Output 5	0	1	R/W
5	Digital Output 6	0	1	R/W
6	Digital Output 7	0	1	R/W
7	Digital Output 8	0	1	R/W
8	Digital Output 9	0	1	R/W
9	Digital Output 10	0	1	R/W
10	Digital Output 11	0	1	R/W
11	Digital Output 12	0	1	R/W
12	Digital Output 13	0	1	R/W
13	Digital Output 14	0	1	R/W
14	Digital Output 15	0	1	R/W
15	Digital Output 16	0	1	R/W

Data Registers

Modbus Address	Register Name	Low Limit	High Limit	Access	Format	Comment
0	Digital Output 1	0	1	R/W	Int	Status of Digital Outputs
1	Digital Output 2	0	1	R/W	Int	-
2	Digital Output 3	0	1	R/W	Int	-
3	Digital Output 4	0	1	R/W	Int	-
4	Digital Output 5	0	1	R/W	Int	-
5	Digital Output 6	0	1	R/W	Int	-
6	Digital Output 7	0	1	R/W	Int	-
7	Digital Output 8	0	1	R/W	Int	-
8	Digital Output 9	0	1	R/W	Int	-
9	Digital Output 10	0	1	R/W	Int	-
10	Digital Output 11	0	1	R/W	Int	-
11	Digital Output 12	0	1	R/W	Int	-
12	Digital Output 13	0	1	R/W	Int	-
13	Digital Output 14	0	1	R/W	Int	-
14	Digital Output 15	0	1	R/W	Int	-
15	Digital Output 16	0	1	R/W	Int	-
16	Digital Outputs LSB	0	255	R/W	Int	Digital Output in 8 bits. 1-8
17	Digital Outputs MSB	0	255	R/W	Int	Digital Output in 8 bits. 9-16
18	Baud Rate	2400	57600	R/W	Int	2400, 4800, 9600, 19200 38400, 57600
19	Parity	0	2	R/W	Int	0 = None 1 = Even 2 = Odd
20	Stop bits	1	2	R/W	Int	1 = 1 Stop bit 2 = 2 Stop bits
21	Delay Reply	0	255	R/W	Int	0 = Disble > 0 = Enable.(x10 ms)
22	Software Version	n/a	n/a	R	Int	Software Version = 301

ORDERING CODE

PH - 03



PH-03

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