



Description

- Modbus RS-485 I/O Module Digital Input / Digital Output PH-01: A device used with the RS-485 Modbus protocol system. It is available in models with 8 digital inputs / 8 digital outputs, 4 digital inputs / 4 digital outputs, and 2 digital inputs / 2 digital outputs.
- Inputs support NPN and PNP open-collector and contact signals with channel-isolated design.
- Isolated NPN open-collector outputs.
- Built-in counter modes: Count Up and Count Up + Down.
- Operation via the RS-485 Modbus protocol.
- Suitable for use as remote I/O or for expanding I/O for a PLC.
- LEDs indicate the status of each input and output.

Specification

Model		PH-01-8	PH-01-4	PH-01-2
Power Supply		15-30VDC		
Power Consumption		2VA		
Display		LED		
Input	Inputs Points	8	4	2
	Input Voltage Range	12-24VDC		
	Input Current Per Input	5mA @12VDC, 11mA @ 24VDC		
	Isolation	1500 Vrms Between Field And Logic		
Output	Output Points	8	4	2
	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 (mm.)		23 x 113 x 100		
Weight (kg.)		150		

Operation

PH-01 is available in three models: 8 inputs + 8 outputs, 4 inputs + 4 outputs, and 2 inputs + 2 outputs, with built-in isolation. It can read and write data via the RS-485 Modbus protocol by receiving commands from a PLC or software. It functions as I/O expansion for a PLC or as remote I/O for collecting and distributing input/output signals located far from the main controller (PLC or software).

In addition, the inputs can operate as a 32-bit counter function to count the number of input events detected.

Operation of the digital input

The inputs of the PH-01 can be used with proximity switches, photo switches, encoders, contacts, etc., supporting both NPN and PNP types. The counter function provides three selectable modes:

Mode 0: Operates as a digital input, reading only the ON/OFF status with no counting.

Mode 1: Operates as a digital input, reading the ON/OFF status and the counter up function of each input is active. The counted values are stored in 32-bit registers from Counter 1 to Counter 8.

Mode 2: Operates as both a digital input, reading the ON/OFF status and a counter up/down function. In this mode, two inputs are used for counting.

Input 1 counts up and Input 2 counts down; the resulting value is stored in Counter 1 register.

Input 3 counts up and Input 4 counts down; the resulting value is stored in Counter 2 register.

Input 5 counts up and Input 6 counts down; the resulting value is stored in Counter 3 register.

Input 7 counts up and Input 8 counts down; the resulting value is stored in Counter 4 register.

Operation(Continue)

Input Filter (operation characteristics of the input filter)

0: Can read an input frequency with a maximum counting rate of 1 kHz.

1: Can read an input frequency with a maximum counting rate of 10 Hz. If the input frequency exceeds 10 Hz, the device cannot count correctly. This setting is suitable for switch-type inputs.

Input type selection

- NPN: The input counts when the signal changes from +12V to +24V to 0V (Active Low).

- PNP: The input counts when the signal changes from 0V to +12V to +24V (Active High).

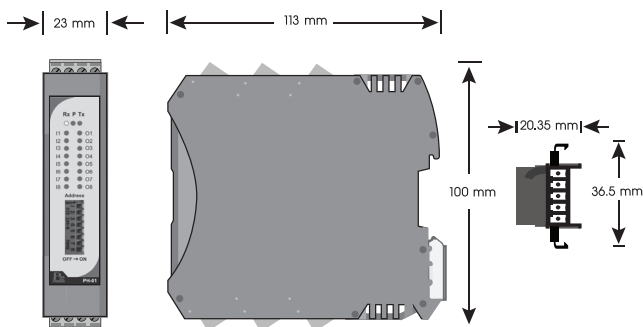
Operation of the digital output

The PH-01-8 has 8 NPN outputs.

The PH-01-4 has 4 NPN outputs.

The PH-01-2 has 2 NPN outputs.

Dimension

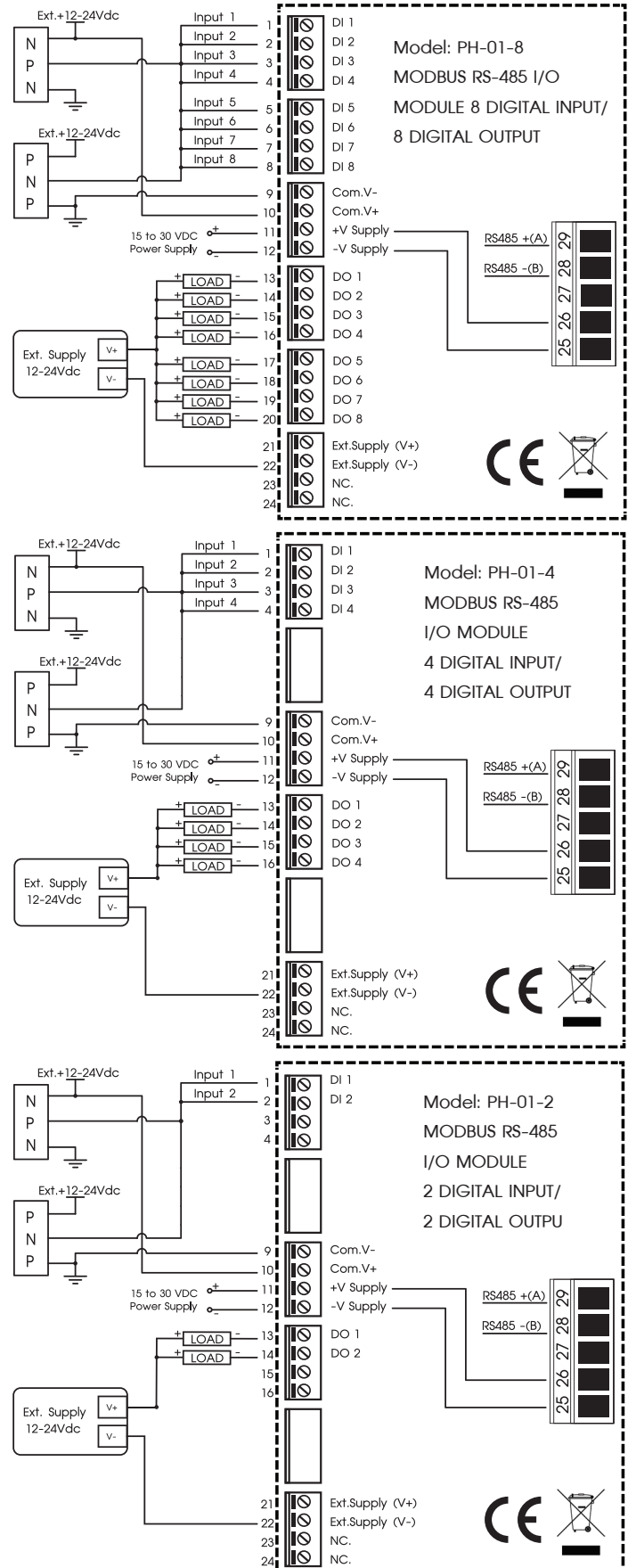


Ordering Code

PH -01-

Input/Output Signal	
8	8DI & 8DO
4	4DI & 4DO
2	2DI & 2DO

Wiring Diagram



WARNING

- Make sure the correct wiring connection before turning on electricity. Mis-wiring may cause malfunction of the unit and fire.
- Never modify the unit to prevent damage or incident such as malfunction and fire etc.