● I/O MODULE

PH-02-SERIES

MODBUS RS-485 I/O MODULE DIGITAL INPUT



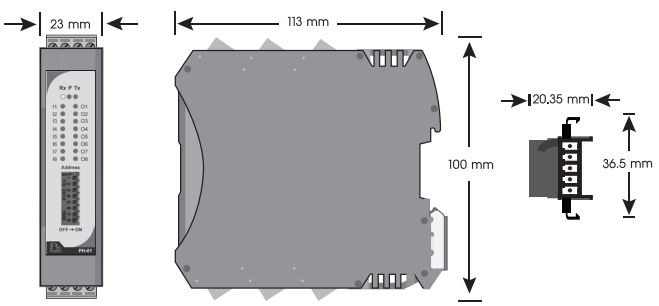
Description

- Modbus RS-485 I/O Module Digital Input PH-02: A device used with the RS-485 Modbus protocol system. It is available in 4 models: 16, 8, 4, and 2 digital inputs.
- Inputs support NPN and PNP open-collector and contact signals with channel-isolated design.
- 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-02-16	PH-02-8	PH-02-4	PH-02-2
Power Supply		15-30VDC			
Power Consumption		4 VA			
Display		LED			
Input	Inputs Points	16	8	4	2
	Input Voltage Range	12-24 VDC			
	Input Current Per Input	5mA @12VDC, 11mA @ 24VDC			
	Isolation	1500Vrms Between Field And Logic			
Communi-cation	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			

Dimension



Operation

The PH-02 is available in four models: 16, 8, 4, and 2 isolated digital inputs. It can read and write data via the RS-485 Modbus protocol, 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 output

The inputs of the PH-02 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.

Input 9 counts up and Input 10 counts down; the resulting value is stored in Counter 5 register.

Input 11 counts up and Input 12 counts down; the resulting value is stored in Counter 6 register.

Input 13 counts up and Input 4 counts down; the resulting value is stored in Counter 7 register.

Input 15 counts up and Input 16 counts down; the resulting value is stored in Counter 8 register.

Operation (Con)

Input Filter (input filter operation characteristics)

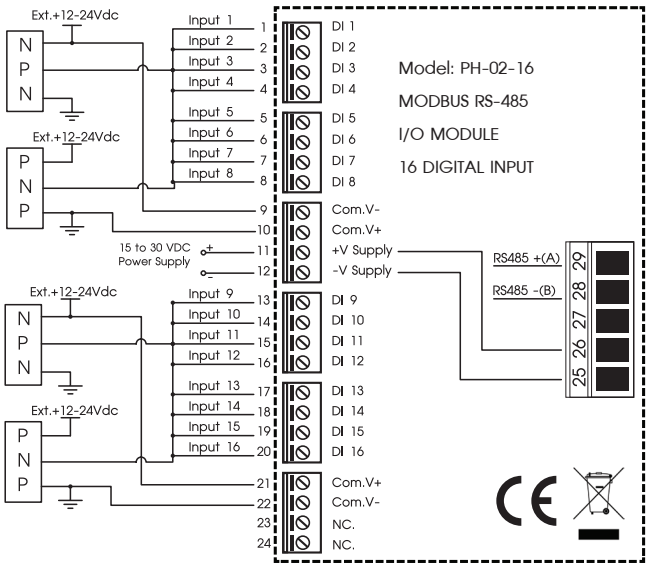
0: Can read an input frequency with a maximum counting rate of 1 kHz.

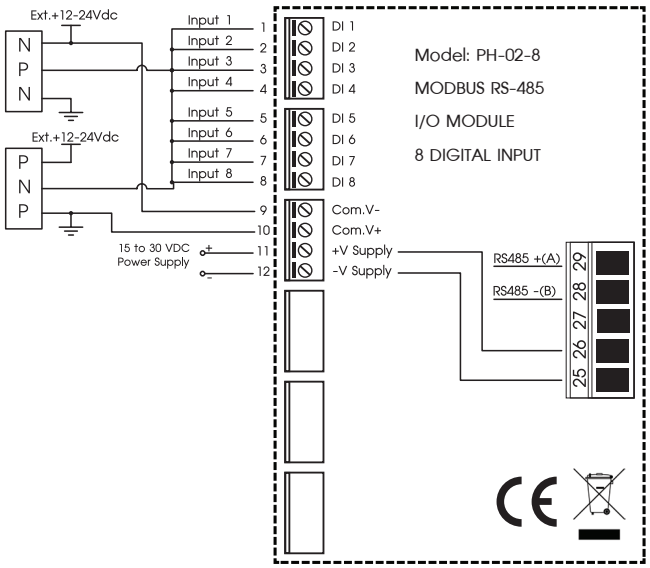
1: Can read an input frequency with a maximum counting rate of 10 Hz. If the input frequency is higher than 10 Hz, the device cannot count correctly. This setting is suitable for switch-type inputs.

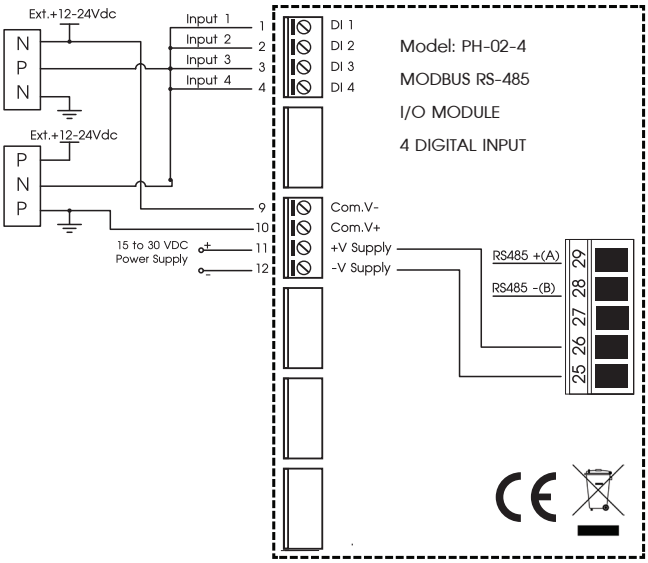
Input Type Selection

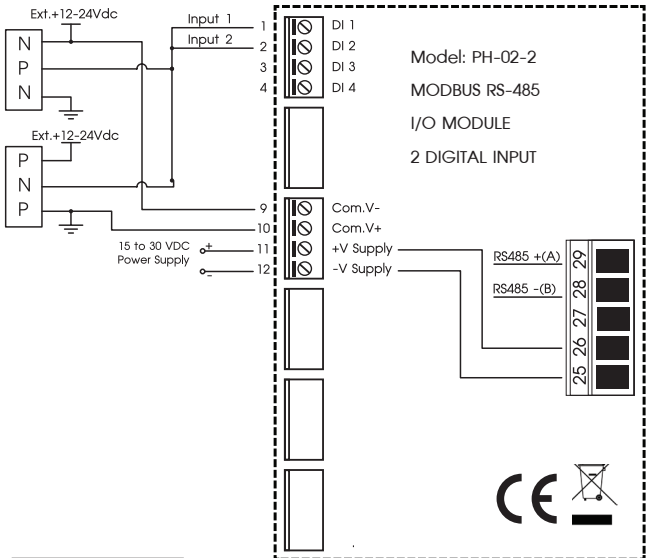
- NPN: The input is counted when the signal changes from +12V to +24V down to 0V (Active Low).
- PNP: The input is counted when the signal changes from 0V up to +12V to +24V (Active High).

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.

Ordering Code

PH -02- [ ]

Input/Output Signal	
16	16DI Digital Input
8	8DI Digital Input
4	4DI Digital Input
2	2DI Digital Input