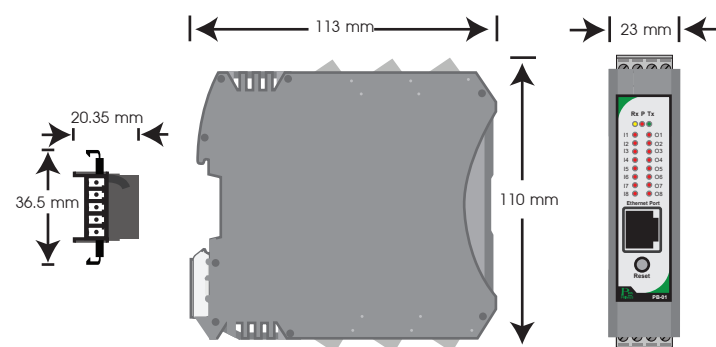




TECHNICAL SPECIFICATION

Power Supply		9-30 VAC/VDC
Power Consumption		2 VA
Display		LED
Input	Digital Inputs	
	Points	8
	Voltage Range	12-24 VDC
	Current Per Input	5 mA @12 VDC /11 mA @ 24 VDC
	Isolation	1500 Vrms between field and logic
Output	Digital Outputs	
	Output Points	8
	Maximum Voltage	36 VDC
	Maximum Current	100 mA per output
	Isolation	1500 Vrms between field and logic
Communication	Protocol	MODBUS TCP/IP
	Ethernet	10/100Mbps/s
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
Material		ABS-V0
Size		23 x 113 x 110 mm.
Weight		180 g.

DIMENSION



DESCRIPTION

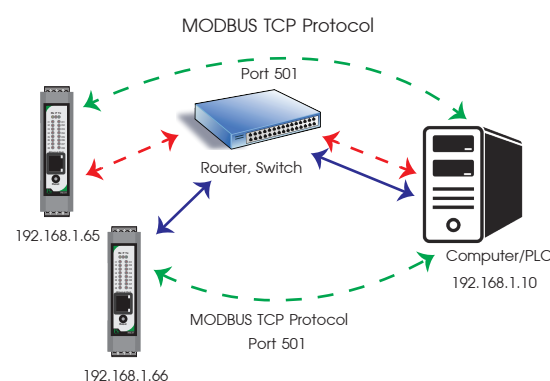
- I/O device by 8 Digital Input and 8 Digital Output.
- Input can receive the signal both of NPN or PNP and Contact.
- Can choose counter operation mode by 3 operation mode are Disable, Count up, Count up and down.
- Control by MODBUS TCP Protocol (RTU Mode).
- Can set operation via Web Browser.
- Output NPN Open Collector, Isolated.

OPERATION

I/O Module have 8 Digital Input and 8 Digital Output suitable with the application that require to add I/O more can use with PLC or PC. Communicate via MODBUS TCP(RTU Mode) on Ethernet or Lan and Input/Output designed Isolated by Bi-Directional Opto-Couplers so Input has Counters inside.

Communication

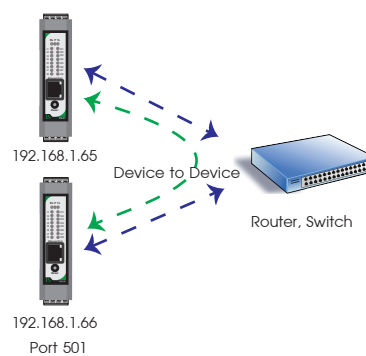
MODBUS TCP Protocol Communication



Form 1

is MODBUS TCP Protocol communication between Computer with MODBUS TCP I/O Module Computer device can read or read data of MODBUS TCP I/O Module by using Communication Port is 501.

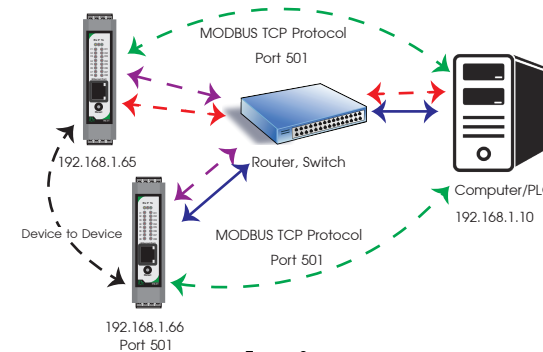
Device to Device communication by No Toggle Mode



Form 2

is Device to Device by No Toggle Mode between MODBUS TCP I/O Module Device with MODBUS TCP I/O Module device such as require to bring Input IP 192.168.1.65 send order to control Output IP 192.168.1.66 operation If computer needs to control Output IP 192.168.1.66 It will can not control because Device to Device communication No Toggle Mode the device IP 192.168.1.65 IP 192.168.1.65 will send data to IP 192.168.1.66 all the time it will control Output at IP 192.168.1.66

Device to Device Communication in Toggle Mode



Form 3

Is Device to Device communication by Toggle Mode between MODBUS TCP I/O Module device with MODBUS TCP I/O Module Device and Computer such as Request Input IP 192.168. 1.65 order to control the operation Output IP 192.168.1.66 in this mode Computer can control Output IP 192.168.1.66 operation. Because Input IP 192. 168. 1.65 will order command to Output IP 192.168. 1.66 when Input has changed only.

Input Counter Mode

can choose the operation by 3 Mode as follow:

Mode 0 : Operate Input in On/Off only.

Mode 1 : Count by Input 8 channel will have Counters 32 Bits. The Resetting in this Register can do by write 0 to Registers or write other default value as require.

Mode 2 : Count Up/Count down by operation characteristics is 2 Input Channel in counting of counters are

Input Channel 1 to count up and Input Channel 2 to count down. Counted value will be collect in Registers Counter 1.

Input Channel 3 to count up and Input Channel 4 to count down. Counted will be collect in Registers Counter 2.

Input Channel 5 to count up and Input Channel 6 to count down. Counted will be collect in Registers Counter 3.

Input Channel 7 to count up and Input Channel 8 to count down. Counted will be collect in Registers Counter 4.

Input Filter (Operation characteristics Input Filter)

0 is able to read Input frequency maximum that can measure 1 KHz

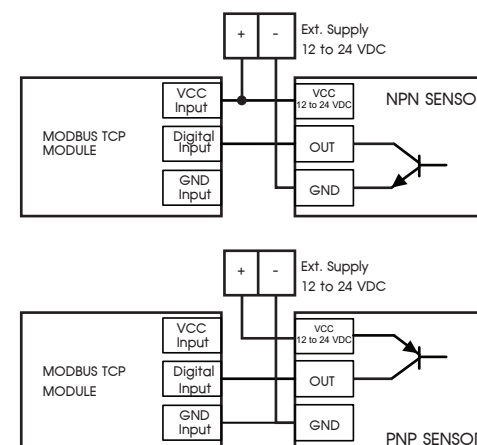
1 is able to read Input frequency maximum that can measure 10 Hz if Input frequency more than 10 Hz the device is not able to count suitable use to count Input from Switch.

How to choose Type of Input

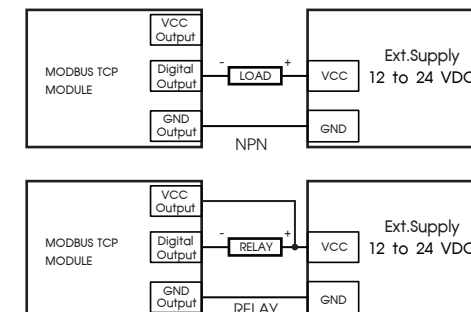
- NPN : Input count when it changes from +12V to +24V to be 0V (Active Low)

- PNP : Input count when it changes from 0V to +12V to +24V (Active High)

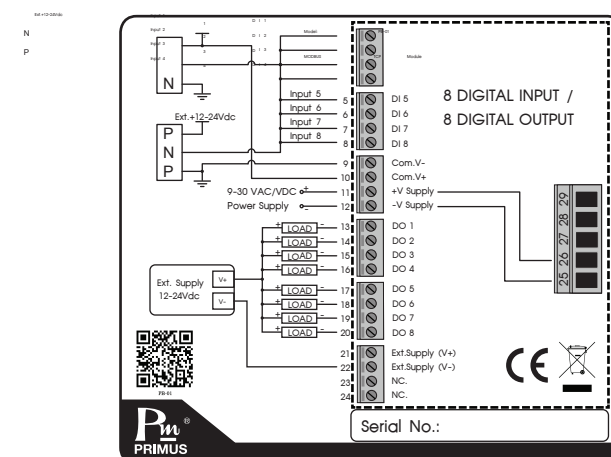
Input wiring diagram



Output Wiring Diagram



WIRING DIAGRAM



ORDERING CODE

PB -

01

Data Registers

Modbus Address	Register Name	Low Limit	High Limit	Access	Format	Comment
0	Digital Input 1	0	1	R	Int	Status of Digital Inputs
1	Digital Input 2	0	1	R	Int	"
2	Digital Input 3	0	1	R	Int	"
3	Digital Input 4	0	1	R	Int	"
4	Digital Input 5	0	1	R	Int	"
5	Digital Input 6	0	1	R	Int	"
6	Digital Input 7	0	1	R	Int	"
7	Digital Input 8	0	1	R	Int	"
8	Digital Output 1	0	1	R/W	Int	Status of Digital Outputs
9	Digital Output 2	0	1	R/W	Int	"
10	Digital Output 3	0	1	R/W	Int	"
11	Digital Output 4	0	1	R/W	Int	"
12	Digital Output 5	0	1	R/W	Int	"
13	Digital Output 6	0	1	R/W	Int	"
14	Digital Output 7	0	1	R/W	Int	"
15	Digital Output 8	0	1	R/W	Int	"
16	Counter Mode	0	2	R/W	Int	0 = ไม่มีการนับ 1 = นับขึ้น 2 = นับขึ้น-ลง
17	Input Filter	0	1	R/W	Int	0 = อ่านความถี่สูงสุดได้ 1kHz 1 = อ่านความถี่สูงสุดได้ 10Hz

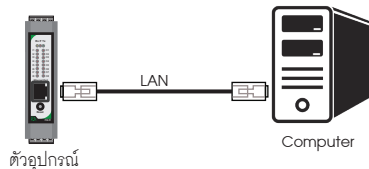
Data Registers

Modbus Address	Register Name	Low Limit	High Limit	Access	Format	Comment
256	Counter 1 MSB	0	4294967295	R/W	Long	Counter MSB and LSB combine to give a 32 bit Counter with range 0 to 4294967295
257	Counter 1 LSB					
258	Counter 2 MSB	0	4294967295	R/W	Long	"
259	Counter 2 LSB					
260	Counter 3 MSB	0	4294967295	R/W	Long	"
261	Counter 3 LSB					
262	Counter 4 MSB	0	4294967295	R/W	Long	"
263	Counter 4 LSB					
264	Counter 5 MSB	0	4294967295	R/W	Long	"
265	Counter 5 LSB					
266	Counter 6 MSB	0	4294967295	R/W	Long	"
267	Counter 6 LSB					
268	Counter 7 MSB	0	4294967295	R/W	Long	"
269	Counter 7 LSB					
270	Counter 8 MSB	0	4294967295	R/W	Long	"
271	Counter 8 LSB					
272	Digital Inputs MSB	0	255	R	Long	Digital Input in 8 Bits. 1-8
273	Digital Inputs LSB					
274	Digital Outputs MSB	0	255	R/W	Long	Digital Output in 8 Bits. 1-8
275	Digital Outputs LSB					

SETTING

1. Connect Device to Computer

1.1 Connect LAN with device and Computer.



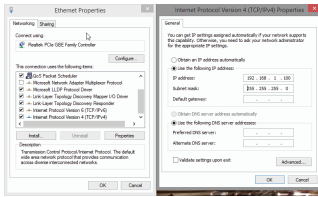
1.2 Device from manufacture IP Address is 192.168.1.10

User Name : admin Password : 1234

1.3 In case user does not know IP Address, User Name or Password then press Reset button for 4 second until all LED will turn to red.

2. Set IP Address of Computer to 192.168.1.100

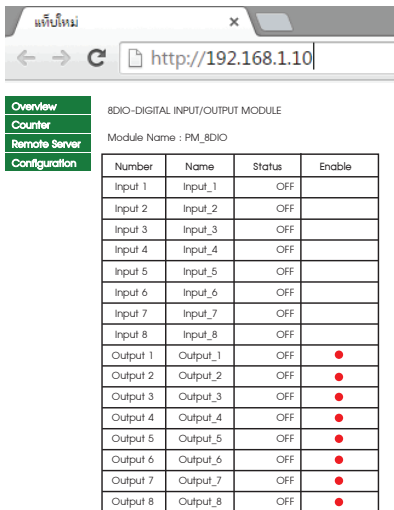
follow example below



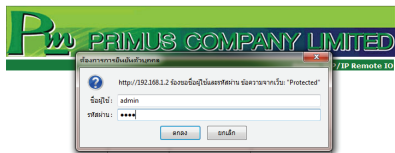
* Do not set IP Address to 192.168.1.10 or same as other devices because it will made IP Address error *

3. Open Web Browser and fill Address http://192.168.1.10

Homepage will show up.

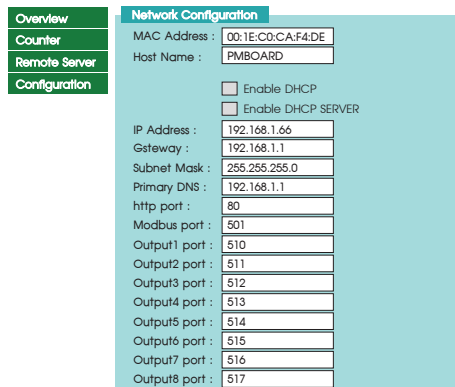


4. Click Configuration device ask User Name & Password for log in to setting.

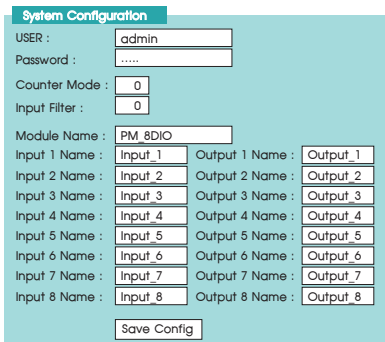


For default from manufacturer User Name is "admin" Password is "1234" which can change in later.

5. Configuration page and setting data.



Name	Description	Default
MAC Address	MAC Address value is specific value for each device, it has form HH:HH:HH:HH:HH:HH can not change value.	-
Host Name	Host name of device you can enter to device by use name Host. And beside log in by IP Address directly such as Http://pmboard maximum 15 letters and do not have gap.	PMBOARD
Enable DHCP	DHCP is a choice for the case that require to receive value automatic if it is enable, module will be set value such as IP Address from Router or Switch.	Disable
Enable DHCP Server	Enable DHCP Server is device for setting value such as IP Address to other device	Enable
IP Address	Device IP Address	192.168.1.10
Gateway	IP Address of Gateway device by normally. It usually to be Router or Switch.	192.168.1.1
Subnet Mask	Subnet Mask	255.255.255.0
Primary DNS	Primary DNS (In normal it is usually point to Gateway)	192.168.1.1
http port :	Can set 80 or 8,000-8,200	80
MODBUS Port	Port number of this device for MODBUS protocol.	501
Output 1 Port	Port number for Client that required to connect to Output 1	510
Output 2 Port	Port number for Client that required to connect to Output 2	511
Output 3 Port	Port number for Client that required to connect to Output 3	512
Output 4 Port	Port number for Client that required to connect to Output 4	513
Output 5 Port	Port number for Client that required to connect to Output 5	514
Output 6 Port	Port number for Client that required to connect to Output 6	515
Output 7 Port	Port number for Client that required to connect to Output 7	516
Output 8 Port	Port number for Client that required to connect to Output 8	517



Name	Description	Default
USER	User Name for log in to Configuration page Maximum 10 letters.	admin
Password	Password for log in to Configuration page maximum 10 letters.	1234
Counter Mode	Mode for count Input.	0
Input Filter	Choosing Input signal filter that come in device.	0
Module Name	Module Name for device maximum 10 letters.	PM_8DIO
Input 1 Name	Name Input 1 maximum 10 letters.	Input_1

Name	Description	Default
Input 2 Name	Name Input 2 Maximum 10 letters	Input_2
Input 3 Name	Name Input 3 Maximum 10 letters	Input_3
Input 4 Name	Name Input 4 Maximum 10 letters	Input_4
Input 5 Name	Name Input 5 Maximum 10 letters	Input_5
Input 6 Name	Name Input 6 Maximum 10 letters	Input_6
Input 7 Name	Name Input 7 Maximum 10 letters	Input_7
Input 8 Name	Name Input 8 Maximum 10 letters	Input_8
Output 1 Name	Name Output 1 Maximum 10 letters	Output_1
Output 2 Name	Name Output 2 Maximum 10 letters	Output_2
Output 3 Name	Name Output 3 Maximum 10 letters	Output_3
Output 4 Name	Name Output 4 Maximum 10 letters	Output_4
Output 5 Name	Name Output 5 Maximum 10 letters	Output_5
Output 6 Name	Name Output 6 Maximum 10 letters	Output_6
Output 7 Name	Name Output 7 Maximum 10 letters	Output_7
Output 8 Name	Name Output 8 Maximum 10 letters	Output_8

After press Save Config module will Restart device.

Reboot In Progress...

You settings were successfully saved, and the board is now rebooting to configure itself with the new settings.

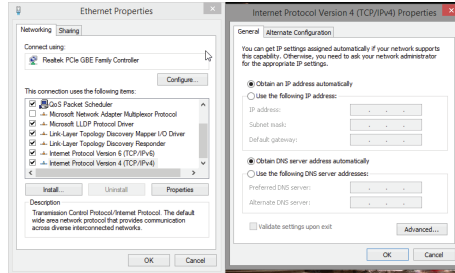
Your board is now located at : [http:// PMBOARD/](http://PMBOARD/)

Reconnection Instruction

- Did you change the hostname, IP or MAC address?
It is necessary to clear the address caches in you web browser and OS. From the command prompt in Windows, enter "nbtstat-R" to clear the hostname cache, close you current web browser, open a new web browser, and then try to access the web address above.
- Did you try the IP address?
Try accessing the board directly at the IP address shown on the LCD screen. (ex : enter "http://192.168.5.23/" into you browser). If this fails, then the IP address you set is not reachable. Try the step below.

6. Connection between Computer with device

If Computer connect with Network system will must change IP Address that receive from Local Network



Example

Device IP Address is 192.168.1.50 then need to check Network system has device IP Address or not.

- Open the windows start Menu.
- Click Run.
- Fill "ping 192.168.1.50" in gap.

if device can connect with Network program will reply

" Reply from 192.168.1.50 : and the data that use to reply.

* If it found program program will reply " Request time out " to check Power Supply. Check Power Supply Configuration setting of device.



PB-01

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