

**Product Type**

107-D122-NNT

16-channel digital input and 16-channel digital output module with upright conformation

**Specifications**

Size: (L122 x W66 x H114 mm)

Series Interface: Half duplex RS-485 with transformer isolation

Cable Type: CAT5 UTP/STP Ethernet Cable

Surge Protection: 10KV

Transfer Rate: 2.5Mbps, 5Mbps, 10Mbps, 20Mbps

IO Isolation Voltage: 2.5KVrms

Input Impedance: 5.6KΩ/0.5W. Input Current: ±5mA (Max)

Output Type: NPN open collector Darlington transistors

Switch Capacity: each output channel is 350mA/channel maximum at 24V DC

Response Time: On to Off about 50µs, Off to On about 8µs

Over Current Protection: 3A (max) for each port (8-channel)

Input Voltage: +24 VDC ±10%

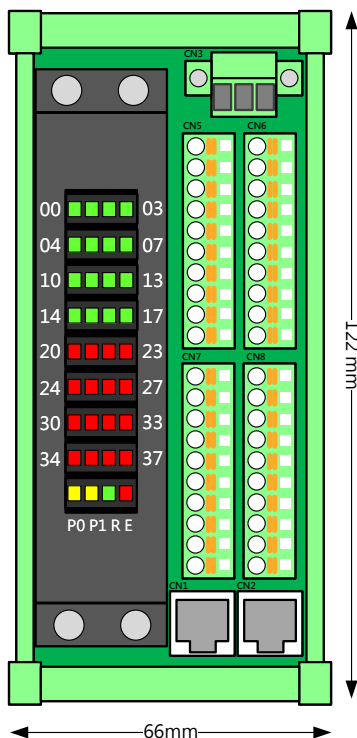
Power Consumption: 3W typical

Working Temperature: 0 ~ 60°C

**Ordering Information**

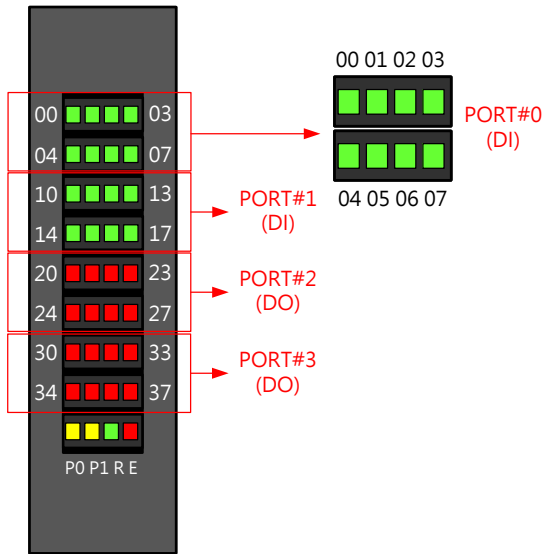
107-D122-NNT – 16-channel digital input with NPN and 16-channel digital input with NPN

**IO interface**

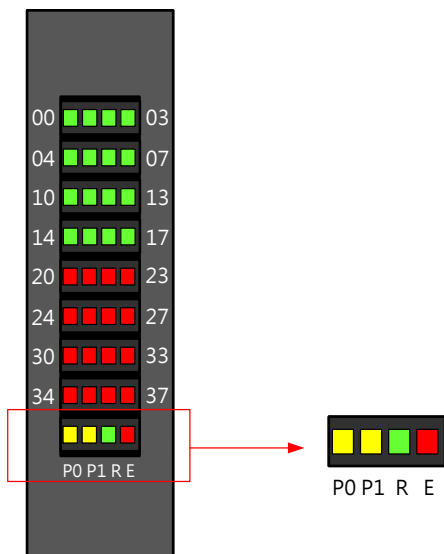


Label	Function
CN1	Motionnet Communication Control Connector
CN2	Motionnet Communication Control Connector
CN3	Power Connector
CN5	I/O Signal Connector
CN6	I/O Signal Connector
CN7	I/O Signal Connector
CN8	I/O Signal Connector

### LED Description



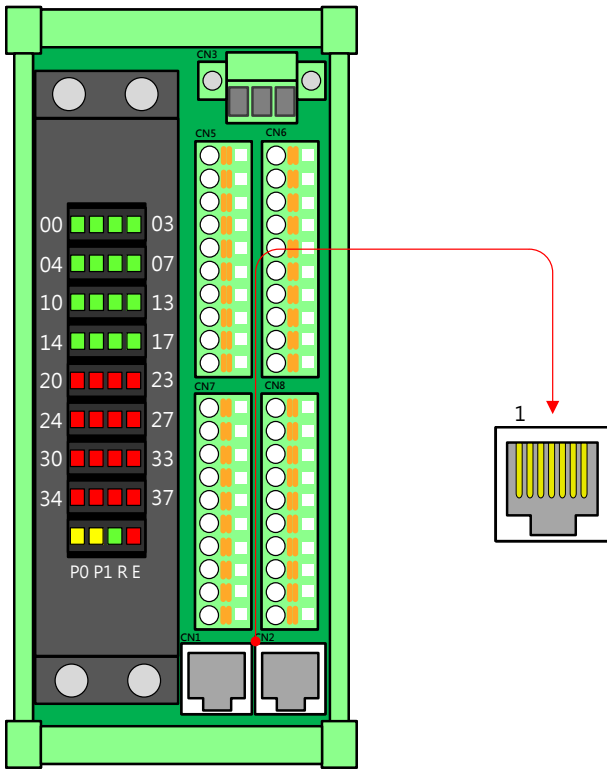
Disp	Label	Disp	Label	Disp	Label
00	Port#0 Bit0	14	Port#1 Bit4	30	Port#3 Bit0
01	Port#0 Bit1	15	Port#1 Bit5	31	Port#3 Bit1
02	Port#0 Bit2	16	Port#1 Bit6	32	Port#3 Bit2
03	Port#0 Bit3	17	Port#1 Bit7	33	Port#3 Bit3
04	Port#0 Bit4	20	Port#2 Bit0	34	Port#3 Bit4
05	Port#0 Bit5	21	Port#2 Bit1	35	Port#3 Bit5
06	Port#0 Bit6	22	Port#2 Bit2	36	Port#3 Bit6
07	Port#0 Bit7	23	Port#2 Bit3	37	Port#3 Bit7
10	Port#1 Bit0	24	Port#2 Bit4	P0	DC 24V
11	Port#1 Bit1	25	Port#2 Bit5	P1	DC 5V
12	Port#1 Bit2	26	Port#2 Bit6	R	RUN
13	Port#1 Bit3	27	Port#2 Bit7	E	ERROR



LED	Description
P0 - Yellow	DC +3.3V In Normal Level
P1 - Yellow	DC +3.3V Supply
R - Green	In Normal Communication
E - Red	Error Communication

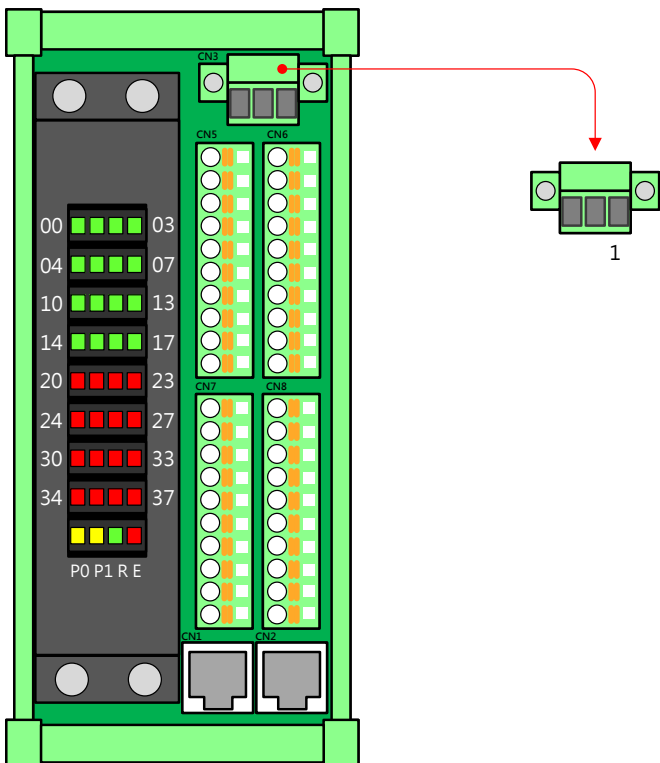
Connector Reference

- Motionnet communication control connector



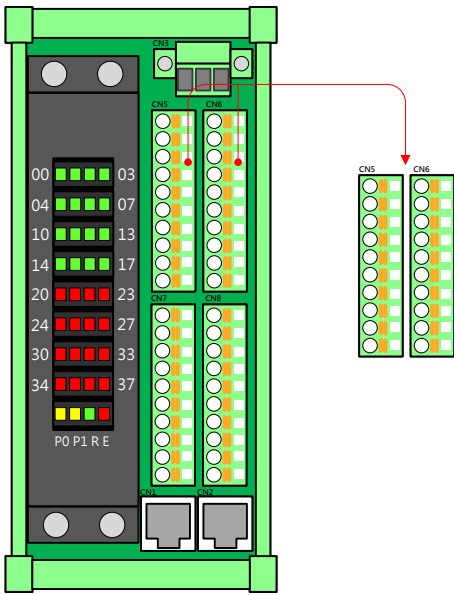
Pin	Label	Function
1	NC	Reserved
2	NC	Reserved
3	D+	Differential D+ signal
4	NC	Reserved
5	NC	Reserved
6	D-	Differential D- signal
7	NC	Reserved
8	NC	Reserved

- Power connector



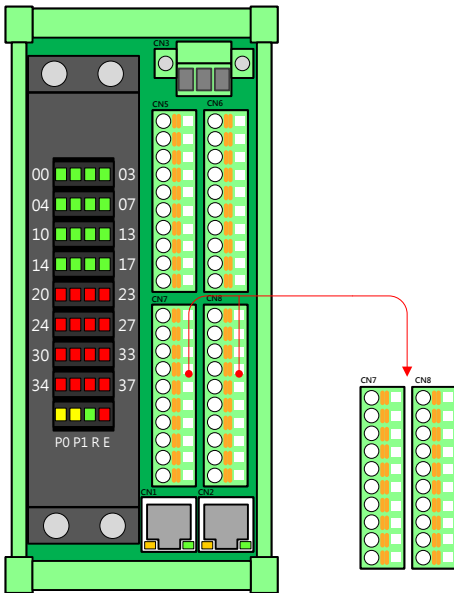
Pin	Label	Function
1	24V	DC 24V
2	GND	DC 24V ground
3	FG	Field ground

● I/O control connector



CN5		
Pin	Label	Function
0	IN_00	Port#0 Bit0 Input
1	IN_01	Port#0 Bit1 Input
2	IN_02	Port#0 Bit2 Input
3	IN_03	Port#0 Bit3 Input
4	IN_04	Port#0 Bit4 Input
5	IN_05	Port#0 Bit5 Input
6	IN_06	Port#0 Bit6 Input
7	IN_07	Port#0 Bit7 Input
8	24V	+24V Power Input
9	GND	24V Ground Input

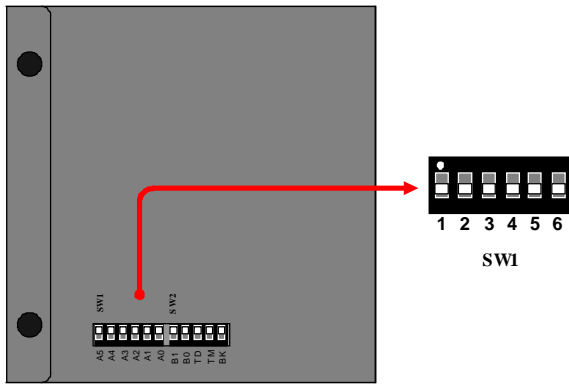
CN6		
Pin	Label	Function
0	IN_10	Port#1 Bit0 Input
1	IN_11	Port#1 Bit1 Input
2	IN_12	Port#1 Bit2 Input
3	IN_13	Port#1 Bit3 Input
4	IN_14	Port#1 Bit4 Input
5	IN_15	Port#1 Bit5 Input
6	IN_16	Port#1 Bit6 Input
7	IN_17	Port#1 Bit7 Input
8	24V	+24V Power Input
9	GND	24V Ground Input



CN7		
Pin	Label	Function
0	Out_20	Port#2 Bit0 Output
1	Out_21	Port#2 Bit1 Output
2	Out_22	Port#2 Bit2 Output
3	Out_23	Port#2 Bit3 Output
4	Out_24	Port#2 Bit4 Output
5	Out_25	Port#2 Bit5 Output
6	Out_26	Port#2 Bit6 Output
7	Out_27	Port#2 Bit7 Output
8	24V	+24V Power Input
9	GND	24V Ground Input

CN8		
Pin	Label	Function
0	Out_30	Port#3 Bit0 Output
1	Out_31	Port#3 Bit1 Output
2	Out_32	Port#3 Bit2 Output
3	Out_33	Port#3 Bit3 Output
4	Out_34	Port#3 Bit4 Output
5	Out_35	Port#3 Bit5 Output
6	Out_36	Port#3 Bit6 Output
7	Out_37	Port#3 Bit7 Output
8	24V	+24V Power Input
9	GND	24V Ground Input

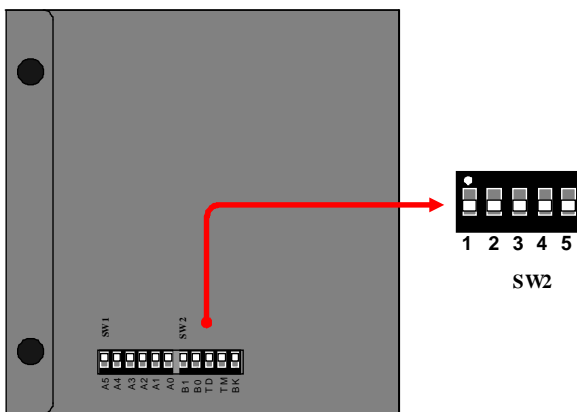
● SW1: node number setting



Pin	Label	On	Off
1	A5	1	0
2	A4	1	0
3	A3	1	0
4	A2	1	0
5	A1	1	0
6	A0	1	0

Note that node number = 32 x A5+16 x A4+8 x A3+4 x A2+2 x A1+A0. Default values are all off.

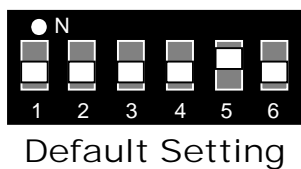
● SW2: function setting



Pin	Label	Description	On	Off
1	B0	*Baud-Rate Setting	1	0
2	B1	*Baud-Rate Setting	1	0
3	TD	Time-Out Status Latch	Enable	Disable
4	TM	Watch Dog Mode	Enable	Disable
5	TR	Termination Resistance	Enable	Disable

Note: BK Function work on to off and return to on.

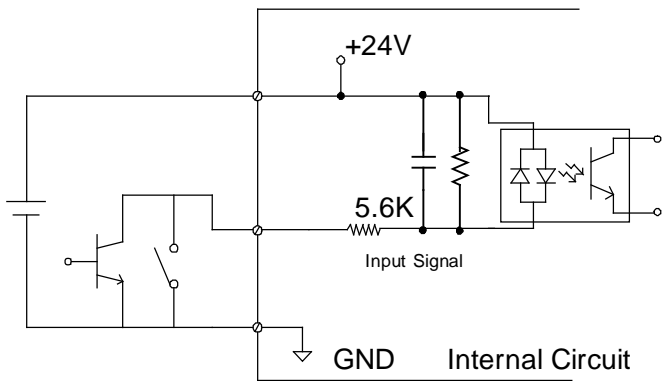
The table below shows the settings of transfer rates. Default values are all off.



B0	B1	Transfer rate
OFF	OFF	20Mbps
ON	OFF	10Mbps
OFF	ON	5Mbps
ON	ON	2.5Mbps

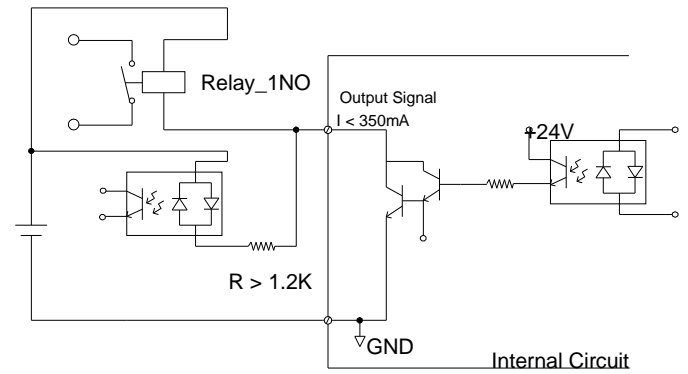
### Input Signal Circuit

- NPN

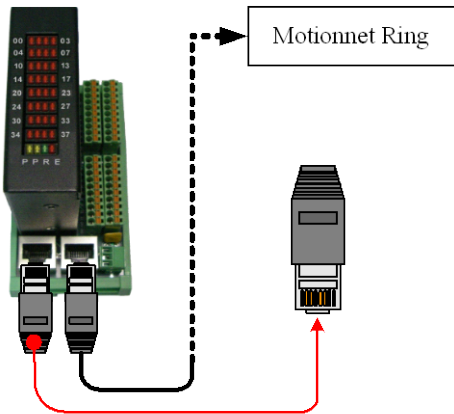


### Output Signal Circuit

- NPN



### RS-485 Terminal Resistance



When you use 107-D1xx series Module as the last one in Motionnet Ring, it is necessary to put RS-485 terminate resistance on the RJ-45 connector (CN2).

Since 2016.07.01, 107-D1xx series has built in TR function, so you could turn on TR to replace RJ-45 terminate resistance