



TNDE IO Modules



TNDE helps industrial automation to achieve seamless integration, interconnection, interoperability.

T&D
ENGINEERING

All of Smarts

IO Modules		
1	TNDE-IO12684	3
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5	TNDE-IO8400	18
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Product Models	DI/(UI)	BO/DO	AI	AO
TNDE-IO12684	12	6	8	4
TNDE-IO8442	8	4	4	2
TNDE-IO16800	16	8	0	0
TNDE-IO16000	16	0	0	0
TNDE-IO8400	8	4	0	0
TNDE-NIO6442	6	4	4	2
TNDE-NIO8400	8	4	0	0

Environmental Range: 0° to 60°C and 10–95% relative humidity
Protection rate: IP20
Conformity: BTL, CE, FCC, C-UL, UL-917

IO Module Product Model: **TNDE-IO12684**

Overview:

This product uses the mainstream ARM kernel 32-bit microprocessor, Modbus RTU and BACnet MS/TP supports two protocols (choose one), can realize the rapid expansion of I/O module controller with MAC Address DIP Switch.

Protocol specification:

1. Modbus support RTU protocol can quickly realize the controller with the support of the implementation of the protocol of network connection, fast I/O port expansion. Please refer to the specific use of the Modbus RTU test tools.
2. BACnet support MS/TP protocol can quickly realize the controller with the support of the implementation of the protocol of network connection, fast I/O port expansion. Please refer to the specific use of the BACnet MS/TP test tools.

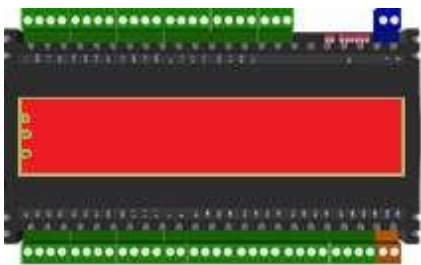
Main Parameter:

Processor	32-bit
Clock Frequency	72MHZ
Memory	64KB/1MB flash*, 20KB random access memory
Power Supply	DC 24V
Communication	Modbus RTU (2.4k/4.8k/9.6k/19.2k) BACnet MS/TP (9.6k/19.2k/38.4k/76.8k)
Digital / Universal Input	Dry contact / 10 bit - support dry; 0-5v, 0-10V, 10kΩ, 4-20mA*
Digital Output	Supports dry contact output, up to 220V/8A
Analog Input	10bit - support 0-10V, 0-20mA input, NTC10K(B=3950) input
Analog Output	10bit - support 0-10V, 0-20mA output

Model specification:

Product Model	DI/(UI)	BO/DO	AI	AO
TNDE-IO12684	12	6	8	4

Product display:



Size/mm: 185*119*42 (L*W*H)

Weight/g: 350

Material: plastic shell

Installation method: DIN-Rail Mounting

*: on request

IO Module Product Model: **TNDE-IO12684**

Register definition specification:

1. Modbus RTU corresp. register

DI/(UI)---Input Status(0x02)

DI/(UI) Register Address	DI/(UI)	instruction
10001	1	Digital/(UI) input port
10002	2	Digital/(UI) input port
10003	3	Digital/(UI) input port
10004	4	Digital/(UI) input port
10005	5	Digital/(UI) input port
10006	6	Digital/(UI) input port
10007	7	Digital/(UI) input port
10008	8	Digital/(UI) input port
10009	9	Digital/(UI) input port
10010	10	Digital/(UI) input port
10011	11	Digital/(UI) input port
10012	12	Digital/(UI) input port

BO/DO—Coil Status(0x01/0x05)

BO/DO Register Address	BO/DO	instruction
00001	1	Digital output port
00002	2	Digital output port
00003	3	Digital output port
00004	4	Digital output port
00005	5	Digital output port
00006	6	Digital output port

2. BACnet MS/TP corresponding register DI/(UI)

DI/(UI) Register Address	DI/(UI)	instruction
0	1	Digital/(UI) input port
1	2	Digital/(UI) input port
2	3	Digital/(UI) input port
3	4	Digital/(UI) input port
4	5	Digital/(UI) input port
5	6	Digital/(UI) input port
6	7	Digital/(UI) input port
7	8	Digital/(UI) input port
8	9	Digital/(UI) input port
9	10	Digital/(UI) input port
10	11	Digital/(UI) input port
11	12	Digital/(UI) input port

BO/DO

BO/DO Register Address	BO/DO	instruction
0	1	Digital output port
1	2	Digital output port
2	3	Digital output port
3	4	Digital output port
4	5	Digital output port
5	6	Digital output port

IO Module Product Model: **TNDE-IO12684**

Register definition specification.

1. Modbus RTU corresponding register

AI---Input Register(0x04)

AI Register Address	AI port	Instruction
30001	1	Analog input port
30002	2	Analog input port
30003	3	Analog input port
30004	4	Analog input port
30005	5	Analog input port
30006	6	Analog input port
30007	7	Analog input port
30008	8	Analog input port

AO---Holding Register(0x03/0x06)

AO Register Address	AO port	Instruction
40001	--	Device address 1 (1-127)
40002	--	baud rate 9600 (19200/9600/4800/2400)
40003	--	Parity 0 (0- None /1- odd /2- even)
40011	1	Analog output port
40012	2	Analog output port
40013	3	Analog output port
40014	4	Analog output port

BACnet MS/TP corresponding register

AI

AI Register Address	AI port	Instruction
0	1	Analog input port
1	2	Analog input port
2	3	Analog input port
3	4	Analog input port
4	5	Analog input port
5	6	Analog input port
6	7	Analog input port
7	8	Analog input port

AO

AO Register Address	AO port	Instruction
0	1	Analog output port
1	2	Analog output port
2	3	Analog output port
3	4	Analog output port

AV

AV Register Address	AV port	Instruction
0	--	baud rate 38400 (76800/38400/19200/9600)

IO Module Product Model: **TNDE-IO12684**

Common Question

1. Modbus RTU common question:

Q 1: What are the default communication parameter of the module?

A 1: The default communication parameters of Modbus RTU module are baud rate 9600, data bit 8, stop bit 1, no calibration, and the default ID number of the device is 1.

Q 2: How to modify the communication parameters of the module?

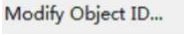
A 2: Modbus Poll software (a third-party tool) was used to read the data of registers 40001, 40002 and 40003 to in turn represent the device address, communication baud rate and calibration. The communication parameters of the module were modified according to the "Register definition specification". After power off and restart, the parameters set will take effect.

2. BACnet MSTP common question:

Q 1: What are the default communication parameter of the module?

A 1: The default communication parameters of BACnet MSTP module are baud rate 38400, data bit 8, stop bit 1, no calibration, and the default ID of the device is 1.

Q 2 : How to modify the device number of the module? (i.e., address)

A 2: The computer is connected to ports A and B of the module through USB to 485 communication line. After scanning the point position of the module with The BACnetScan software of TNDE, right-click the point named " (Device, 1) " and select"  "to modify the device number (i.e., address) of the module.

TNDE-IO Modules

IO Module Product Model: **TNDE-IO8442**

Overview:

This product uses the mainstream ARM kernel 32-bit microprocessor, Modbus RTU and BACnet MS/TP supports two protocols (choose one), can realize the rapid expansion of I/O module controller with MAC Address DIP Switch.

Protocol specification:

1. Modbus support RTU protocol, can quickly realize the controller with the support of the implementation of the protocol of network connection, fast I/O port expansion. Please refer to the specific use of the Modbus RTU test tools.
2. BACnet support MS/TP protocol can quickly realize the controller with the support of the implementation of the protocol of network connection, fast I/O port expansion. Please refer to the specific use of the BACnet MS/TP test tools.

Main Parameter:

Processor	32-bit
Clock Frequency	72MHZ
Memory	64KB/1MB flash*, 20KB random access memory
Power Supply	DC 24V
Communication	Modbus RTU (2.4k/4.8k/9.6k/19.2k) BACnet MS/TP (9.6k/19.2k/38.4k/76.8k)
Digital / Universal Input	Dry contact / 10 bit - support dry; 0-5v, 0-10V, 10kΩ, 4-20mA*
Digital Output	Supports dry contact output, up to 220V/8A
Analog Input	10bit - support 0-10V, 0-20mA input, NTC10K(B=3950) input
Analog Output	10bit - support 0-10V, 0-20mA output

Model specification:

Product Model	DI/(UI)	BO/DO	AI	AO
TNDE-IO8442	8	4	4	2

Product display:



Size/mm: 185*119*42 (L*W*H)

Weight/g: 350

Material: plastic shell

Installation method: DIN-Rail Mounting

*: on request

IO Module Product Model: **TNDE-IO12684**

Register definition specification:

1. Modbus RTU corresp. register

DI/(UI)---Input Status(0x02)

DI/(UI) Register Address	DI/(UI)	instruction
10001	1	Digital/(UI) input port
10002	2	Digital/(UI) input port
10003	3	Digital/(UI) input port
10004	4	Digital/(UI) input port
10005	5	Digital/(UI) input port
10006	6	Digital/(UI) input port
10007	7	Digital/(UI) input port
10008	8	Digital/(UI) input port

BO/DO—Coil Status(0x01/0x05)

BO/DO Register Address	BO/DO	instruction
00001	1	Digital output port
00002	2	Digital output port
00003	3	Digital output port
00004	4	Digital output port

2. BACnet MS/TP corresponding register

DI/(UI)

DI/(UI) Register Address	DI/(UI)	instruction
0	1	Digital/(UI) input port
1	2	Digital/(UI) input port
2	3	Digital/(UI) input port
3	4	Digital/(UI) input port
4	5	Digital/(UI) input port
5	6	Digital/(UI) input port
6	7	Digital/(UI) input port
7	8	Digital/(UI) input port

BO/DO

BO/DO Register Address	BO/DO	instruction
0	1	Digital output port
1	2	Digital output port
2	3	Digital output port
3	4	Digital output port

IO Module Product Model: **TNDE-IO12684**

Register definition specification.

1. Modbus RTU corresponding register

AI---Input Register(0x04)

AI Register Address	AI port	Instruction
30001	1	Analog input port
30002	2	Analog input port
30003	3	Analog input port
30004	4	Analog input port

2. BACnet MS/TP corresponding register

AI

AI Register Address	AI port	Instruction
0	1	Analog input port
1	2	Analog input port
2	3	Analog input port
3	4	Analog input port

AO---Holding Register(0x03/0x06)

AO Register Address	AO port	Instruction
40001	--	Device address 1 (1-127)
40002	--	baud rate 9600 (19200/9600/4800/2400)
40003	--	Parity 0 (0- None /1- odd /2- even)
40011	1	Analog output port
40012	2	Analog output port

AO

AO Register Address	AO port	Instruction
0	1	Analog output port
1	2	Analog output port

AV

AV Register Address	AV port	Instruction
0	--	baud rate 38400 (76800/38400/19200/9600)

IO Module Product Model: **TNDE-IO12684**

Common Question

1. Modbus RTU common question:

Q 1: What are the default communication parameter of the module?

A 1: The default communication parameters of Modbus RTU module are baud rate 9600, data bit 8, stop bit 1, no calibration, and the default ID number of the device is 1.

Q 2: How to modify the communication parameters of the module?

A 2: Modbus Poll software (a third-party tool) was used to read the data of registers 40001, 40002 and 40003 to in turn represent the device address, communication baud rate and calibration. The communication parameters of the module were modified according to the "Register definition specification". After power off and restart, the parameters set will take effect.

Q 3: How to modify the device ID?

A 3: The hardware: dial the internal dial key.

Dial number	1	2	3	4	5	6	7	8
Device ID	1	2	4	8	16	32	64	128

Dial number	12	123	1234	12345	123456	1234567
Device ID	3	7	15	31	63	127

2. BACnet MSTP common question:

Q 1: What are the default communication parameter of the module?

A 1: The default communication parameters of BACnet MSTP module are baud rate 38400, data bit 8, stop bit 1, no calibration, and the default ID number of the device is 1.

Q 2: How to modify the device ID (i.e., address)?

A 2: The hardware: dial the internal dial key.

Dial number	1	2	3	4	5	6	7	8
Device ID	1	2	4	8	16	32	64	0

Dial number	12	123	1234	12345	123456	1234567
Device ID	3	7	15	31	63	127

IO Module Product Model: **TNDE-IO16800**

Overview:

This product uses the mainstream ARM kernel 32-bit microprocessor, Modbus RTU and BACnet MS/TP supports two protocols (choose one), can realize the rapid expansion of I/O module controller with MAC Address DIP Switch.

Protocol specification:

1. Modbus support RTU protocol, can quickly realize the controller with the support of the implementation of the protocol of network connection, fast I/O port expansion. Please refer to the specific use of the Modbus RTU test tools.
2. BACnet support MS/TP protocol can quickly realize the controller with the support of the implementation of the protocol of network connection, fast I/O port expansion. Please refer to the specific use of the BACnet MS/TP test tools.

Main Parameter:

Processor	32-bit
Clock Frequency	72MHZ
Memory	64KB/1MB flash*, 20KB random access memory
Power Supply	DC 24V
Communication	Modbus RTU (2.4k/4.8k/9.6k/19.2k) BACnet MS/TP (9.6k/19.2k/38.4k/76.8k)
Digital/Universal Input	Dry contact / 10 bit - support dry; 0-5v, 0-10V, 10kΩ, 4-20mA*
Digital Output	Supports dry contact output, up to 220V/8A

Model Instruction :

Product Model	DI/(UI)	BO/DO	AI	AO
TNDE-IO16800	16	8	0	0

Product display :



Size/mm: 185*119*42 (L*W*H)

Weight/g: 350

Material: plastic shell

Installation method: DIN-Rail Mounting

*: on request

IO Module Product Model: **TNDE-IO16800**

Register definition specification:

1. Modbus RTU corresp. register

DI/(UI)---Input Status(0x02)

DI/(UI) Register Address	DI/(UI)	Instruction
10001	1	Digital/(UI) input port
10002	2	Digital/(UI) input port
10003	3	Digital/(UI) input port
10004	4	Digital/(UI) input port
10005	5	Digital/(UI) input port
10006	6	Digital/(UI) input port
10007	7	Digital/(UI) input port
10008	8	Digital/(UI) input port
10009	9	Digital/(UI) input port
10010	10	Digital/(UI) input port
10011	11	Digital/(UI) input port
10012	12	Digital/(UI) input port
10013	13	Digital/(UI) input port
10014	14	Digital/(UI) input port
10015	15	Digital/(UI) input port
10016	16	Digital/(UI) input port

2. BACnet MS/TP corresponding register

DI/(UI)

DI/(UI) Register Address	DI/(UI)	Instruction
0	1	Digital/(UI) input port
1	2	Digital/(UI) input port
2	3	Digital/(UI) input port
3	4	Digital/(UI) input port
4	5	Digital/(UI) input port
5	6	Digital/(UI) input port
6	7	Digital/(UI) input port
7	8	Digital/(UI) input port
8	9	Digital/(UI) input port
9	10	Digital/(UI) input port
10	11	Digital/(UI) input port
11	12	Digital/(UI) input port
12	13	Digital/(UI) input port
13	14	Digital/(UI) input port
14	15	Digital/(UI) input port
15	16	Digital/(UI) input port

IO Module Product Model: **TNDE-IO16800**

Register definition specification:

1. Modbus RTU corresponding register

BO/DO—Coil Status(0x01/0x05)

BO/DO Register Address	BO/DO port	Instruction
00001	1	Digital output port
00002	2	Digital output port
00003	3	Digital output port
00004	4	Digital output port
00005	5	Digital output port
00006	6	Digital output port
00007	7	Digital output port
00008	8	Digital output port

AO---Holding Register(0x03/0x06)

AO Register Address	AO port	Instruction
40001	--	Device address 1 (1-127)
40002	--	baud rate 9600 (19200/9600/4800/2400)
40003	--	Parity 0 (0- None /1- odd /2- Even)

2. BACnet MS/TP corresponding register

BO/DO

BO/DO Register Address	BO/DO port	Instruction
0	1	Digital output port
1	2	Digital output port
2	3	Digital output port
3	4	Digital output port
4	5	Digital output port
5	6	Digital output port
6	7	Digital output port
7	8	Digital output port

AV

AV Register Address	AV port	Instruction
0	--	Baud rate 38400 (76800/38400/19200 /9600)

IO Module Product Model: **TNDE-IO16800**

Common Question

1. Modbus RTU common question:

Q 1: What are the default communication parameter of the module?

A 1: The default communication parameters of Modbus RTU module are baud rate 9600, data bit 8, stop bit 1, no calibration, and the default ID number of the device is 1.

Q 2: How to modify the communication parameters of the module?

A 2: Modbus Poll software (a third-party tool) was used to read the data of registers 40001, 40002 and 40003 to in turn represent the device address, communication baud rate and calibration. The communication parameters of the module were modified according to the " Register definition specification". After power off and restart, the parameters set will take effect.

Q 3: How to modify the device ID?

A 3: The hardware: dial the internal dial key.

Dial number	1	2	3	4	5	6	7	8
Device ID	1	2	4	8	16	32	64	128

Dial number	12	123	1234	12345	123456	1234567
Device ID	3	7	15	31	63	127

2. BACnet MSTP common question:

Q 1: What are the default communication parameter of the module?

A 1: The default communication parameters of BACnet MSTP module are baud rate 38400, data bit 8, stop bit 1, no calibration, and the default ID number of the device is 1.

Q 2: How to modify the device ID (i.e., address)?

A 2: The hardware: dial the internal dial key.

Dial number	1	2	3	4	5	6	7	8
Device ID	1	2	4	8	16	32	64	0

Dial number	12	123	1234	12345	123456	1234567
Device ID	3	7	15	31	63	127

TNDE-IO Modules

IO Module Product Model: **TNDE-IO16000**

Overview:

This product uses the mainstream ARM kernel 32-bit microprocessor, Modbus RTU and BACnet MS/TP supports two protocols (choose one), can realize the rapid expansion of I/O module controller with MAC Address DIP Switch.

Protocol specification:

- 1. Modbus support RTU protocol, can quickly realize the controller with the support of the implementation of the protocol of network connection, fast I/O port expansion. Please refer to the specific use of the Modbus RTU test tools.
- 2. BACnet support MS/TP protocol can quickly realize the controller with the support of the implementation of the protocol of network connection, fast I/O port expansion. Please refer to the specific use of the BACnet MS/TP test tools.

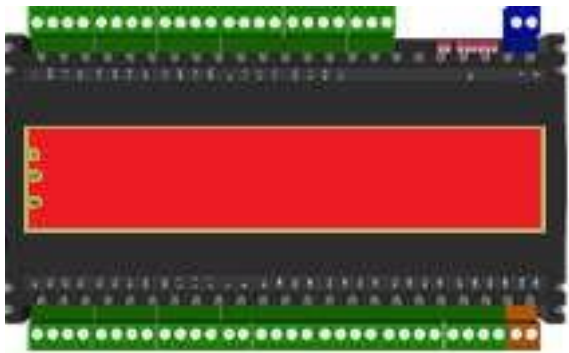
Main Parameter:

Processor	32-bit
Clock Frequency	72MHZ
Memory	64KB/1MB flash*, 20KB random access memory
Power Supply	DC 24V
Communication	Modbus RTU (2.4k/4.8k/9.6k/19.2k) BACnet MS/TP (9.6k/19.2k/38.4k/76.8k)
Digital/Universal Input	Dry contact/10 bit - support dry; 0-5v, 0-10V, 10kΩ, 4-20mA*
Digital Output	Supports dry contact output, up to 220V/8A

Model Instruction :

Product Model	DI/(UI)	BO/DO	AI	AO
TNDE-IO16000	16	0	0	0

Product display:



Size/mm: 185*119*42 (L*W*H)

Weight/g: 350

Material: plastic shell

Installation method: DIN-Rail Mounting

*: on request

IO Module Product Model: **TNDE-IO16800**

Register definition specification:

1. Modbus RTU corresp. register

DI/(UI)---Input Status(0x02)

DI/(UI) Register Address	DI/(UI)	Instruction
10001	1	Digital/(UI) input port
10002	2	Digital/(UI) input port
10003	3	Digital/(UI) input port
10004	4	Digital/(UI) input port
10005	5	Digital/(UI) input port
10006	6	Digital/(UI) input port
10007	7	Digital/(UI) input port
10008	8	Digital/(UI) input port
10009	9	Digital/(UI) input port
10010	10	Digital/(UI) input port
10011	11	Digital/(UI) input port
10012	12	Digital/(UI) input port
10013	13	Digital/(UI) input port
10014	14	Digital/(UI) input port
10015	15	Digital/(UI) input port
10016	16	Digital/(UI) input port

2. BACnet MS/TP corresponding register

DI/(UI)

DI/(UI) Register Address	DI/(UI)	Instruction
0	1	Digital/(UI) input port
1	2	Digital/(UI) input port
2	3	Digital/(UI) input port
3	4	Digital/(UI) input port
4	5	Digital/(UI) input port
5	6	Digital/(UI) input port
6	7	Digital/(UI) input port
7	8	Digital/(UI) input port
8	9	Digital/(UI) input port
9	10	Digital/(UI) input port
10	11	Digital/(UI) input port
11	12	Digital/(UI) input port
12	13	Digital/(UI) input port
13	14	Digital/(UI) input port
14	15	Digital/(UI) input port
15	16	Digital/(UI) input port

IO Module Product Model: **TNDE-IO16000**

Common Question

1. Modbus RTU common question:

Q 1: What are the default communication parameter of the module?

A 1: The default communication parameters of Modbus RTU module are baud rate 9600, data bit 8, stop bit 1, no calibration, and the default ID number of the device is 1.

Q 2: How to modify the communication parameters of the module?

A 2: Modbus Poll software (a third-party tool) was used to read the data of registers 40001, 40002 and 40003 to in turn represent the device address, communication baud rate and calibration. The communication parameters of the module were modified according to the " Register definition specification". After power off and restart, the parameters set will take effect.

Q 3: How to modify the device ID?

A 3: The hardware: dial the internal dial key.

Dial number	1	2	3	4	5	6	7	8
Device ID	1	2	4	8	16	32	64	128

Dial number	12	123	1234	12345	123456	1234567
Device ID	3	7	15	31	63	127

2. BACnet MSTP common question:

Q 1: What are the default communication parameter of the module?

A 1: The default communication parameters of BACnet MSTP module are baud rate 38400, data bit 8, stop bit 1, no calibration, and the default ID number of the device is 1.

Q 2: How to modify the device ID (i.e.,

address)? A 2: The hardware: dial the

Dial number	1	2	3	4	5	6	7	8
Device ID	1	2	4	8	16	32	64	0

Dial number	12	123	1234	12345	123456	1234567
Device ID	3	7	15	31	63	127

IO Module Product Model: **TNDE-IO8400**

Overview:

This product uses the mainstream ARM kernel 32-bit microprocessor, Modbus RTU and BACnet MS/TP supports two protocols (choose one), can realize the rapid expansion of I/O module controller with MAC Address DIP Switch.

Protocol specification:

1. Modbus support RTU protocol can quickly realize the controller with the support of the implementation of the protocol of network connection, fast I/O port expansion. Please refer to the specific use of the Modbus RTU test tools.
2. BACnet support MS/TP protocol can quickly realize the controller with the support of the implementation of the protocol of network connection, fast I/O port expansion. Please refer to the specific use of the BACnet MS/TP test tools.

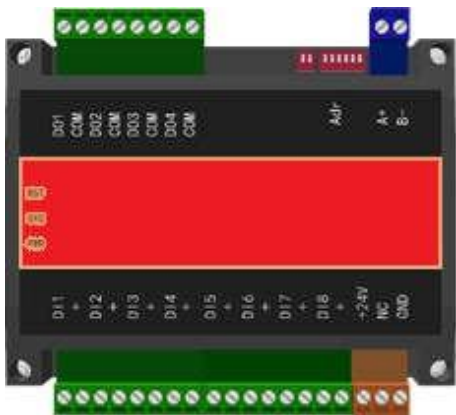
Main Parameter:

Processor	32-bit
Clock Frequency	72MHZ
Memory	64KB/1MB flash*, 20KB random access memory
Power Supply	DC 24V
Communication	Modbus RTU (2.4k/4.8k/9.6k/19.2k) BACnet MS/TP (9.6k/19.2k/38.4k/76.8k)
Digital/Universal Input	Dry contact/10 bit - support dry; 0-5v, 0-10V, 10kΩ, 4-20mA*
Digital Output	Supports dry contact output, up to 220V/8A

Model Instruction :

Product Model	DI/(UI)	BO/DO	AI	AO
TNDE-IO8400	8	4	0	0

Product display:



*: on request

Size/mm: 125*110*42 (L*W*H)

Weight/g: 250

Material: plastic shell

Installation method: DIN-Rail Mounting

IO Module Product Model: **TNDE-IO8400**

Register definition specification:

1. Modbus RTU corresponding register

DI/(UI)---Input Status(0x02)

DI/(UI) Register Address	DI/(UI)	Instruction
10001	1	Digital/(UI) input port
10002	2	Digital/(UI) input port
10003	3	Digital/(UI) input port
10004	4	Digital/(UI) input port
10005	5	Digital/(UI) input port
10006	6	Digital/(UI) input port
10007	7	Digital/(UI) input port
10008	8	Digital/(UI) input port

BO/DO—Coil Status(0x01/0x05)

BO/DO Register Address	BO/DO port	Instruction
00001	1	Digital output port
00002	2	Digital output port
00003	3	Digital output port
00004	4	Digital output port

AO---Holding Register(0x03/0x06)

AO Register Address	AO port	Instruction
40001	--	Device address 1 (1-127)
40002	--	baud rate 9600 (19200/9600/4800/ 2400)
40003	--	Parity 0 (0- None /1- odd /2- Even)

2. BACnet MS/TP corresponding register

DI/(UI)

DI/(UI) Register Address	DI/(UI)	Instruction
0	1	Digital/(UI) input port
1	2	Digital/(UI) input port
2	3	Digital/(UI) input port
3	4	Digital/(UI) input port
4	5	Digital/(UI) input port
5	6	Digital/(UI) input port
6	7	Digital/(UI) input port
7	8	Digital/(UI) input port

BO/DO

BO/DO Register Address	BO/DO port	Instruction
0	1	Digital output port
1	2	Digital output port
2	3	Digital output port
3	4	Digital output port

AV

AV Register Address	AO port	Instruction
0	--	baud rate 38400 (76800/38400/ 19200/9600)

IO Module Product Model: **TNDE-IO8400**

Common Question

1. Modbus RTU common question:

Q 1: What are the default communication parameter of the module?

A 1: The default communication parameters of Modbus RTU module are baud rate 9600, data bit 8, stop bit 1, no calibration, and the default ID number of the device is 1.

Q 2: How to modify the communication parameters of the module?

A 2: Modbus Poll software (a third-party tool) was used to read the data of registers 40001, 40002 and 40003 to in turn represent the device address, communication baud rate and calibration. The communication parameters of the module were modified according to the "Register definition specification". After power off and restart, the parameters set will take effect.

Q 3: How to modify the device ID?

A 3: The hardware: dial the internal dial key.

Dial number	1	2	3	4	5	6	7	8
Device ID	1	2	4	8	16	32	64	128

Dial number	12	123	1234	12345	123456	1234567
Device ID	3	7	15	31	63	127

2. BACnet MSTP common question:

Q 1: What are the default communication parameter of the module?

A 1: The default communication parameters of BACnet MSTP module are baud rate 38400, data bit 8, stop bit 1, no calibration, and the default ID number of the device is 1.

Q 2: How to modify the device ID (i.e., address)?

A 2: The hardware: dial the internal dial key.

Dial number	1	2	3	4	5	6	7	8
Device ID	1	2	4	8	16	32	64	0

Dial number	12	123	1234	12345	123456	1234567
Device ID	3	7	15	31	63	127

TNDE-IO Modules

IO Module Product Model: **TNDE-NIO6442**

Overview:

This product uses the mainstream ARM kernel 32-bit microprocessor, TCP supports Modbus protocol, can realize the rapid expansion of I/O module controller with MAC Address DIP Switch.

Protocol specification:

Modbus support Modbus TCP protocol can quickly realize the controller with the support of the implementation of the protocol of network connection, fast I/O port expansion. Please refer to the specific use of the Modbus RTU test tools.

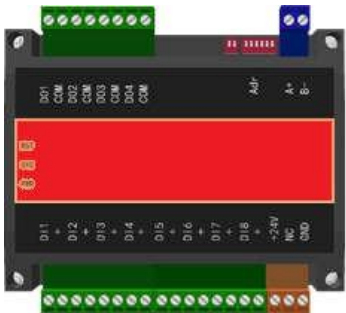
Main Parameter:

Processor	32-bit
Clock Frequency	72MHZ
Memory	64KB/1MB flash*, 20KB random access memory
Power Supply	DC 24V
Communication	Modbus TCP 10/100M
Digital/Universal Input	Dry contact/10 bit - support dry; 0-5v, 0-10V, 10kΩ, 4-20mA*
Digital Output	Support dry contact output, up to 220V/8A
Analog Input	10bit - support 0-10V, 0-20mA input, NTC10K(B=3950) input
Analog Output	10bit - support 0-10V, 0-20mA output

Model Instruction :

Product Model	DI/(UI)	BO/DO	AI	AO
TNDE-NIO6442	6	4	4	2

Product display:



Size/mm: 125*110*42 (L*W*H)

Weight/g: 200

Material: plastic shell

Installation method: DIN-Rail Mounting

*: on request

IO Module Product Model: **TNDE-NIO6442**

Register definition specification:

1. Modbus TCP/UDP corresponding register

DI/(UI)---Input Status(0x02)

DI/(UI) Register Address	DI/(UI)	Instruction
10001	1	Digital/(UI) input port
10002	2	Digital/(UI) input port
10003	3	Digital/(UI) input port
10004	4	Digital/(UI) input port
10005	5	Digital/(UI) input port
10006	6	Digital/(UI) input port

BO/DO—Coil Status(0x01/0x05)

BO/DO Register Address	BO/DO port	Instruction
00001	1	Digital output port
00002	2	Digital output port
00003	3	Digital output port
00004	4	Digital output port

AI---Input Register(0x04)

AI Register Address	AI Port	Instruction
30001	1	Analog input port
30002	2	Analog input port
30003	3	Analog input port
30004	4	Analog input port

AO---Holding Register(0x03/0x06)

AO Register Address	AO Port	Instruction
40001	1	Analog output port
40002	2	Analog output port

Common Question

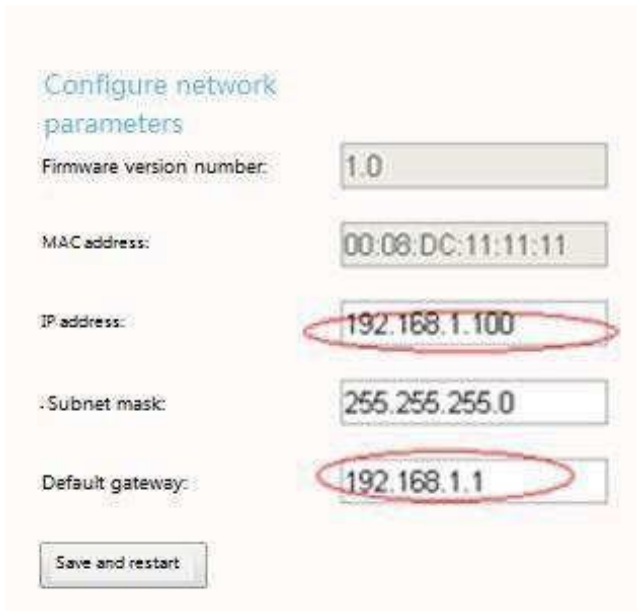
1. ModbusTCP common question:

Q 1: What are the default communication parameter of the module?

A 1: The default IP of ModbusTCP module is 192.168.1.88, port number 502.

Q 2: How to modify IP address of module?

A 2: Input module IP through the browse and enter the backstage web page to modify IP.



Configure network parameters

Firmware version number: 1.0

MAC address: 00:08:DC:11:11:11

IP address: 192.168.1.100

Subnet mask: 255.255.255.0

Default gateway: 192.168.1.1

Save and restart

Q 3: What If forgot IP, how do we restore IP?

A 3: In the case of power supply, dial the red dial key 2 to NO and reset, then restart after power failure. IP will revert to the default factory IP.

IO Module Product Model: **TNDE-NIO8400**

Overview:

This product uses the mainstream ARM kernel 32-bit microprocessor, support Modbus TCP protocol, can realize the rapid expansion of I/O module controller with MAC Address DIP Switch.

Protocol specification:

Modbus support Modbus TCP/UDP protocol, can quickly realize the controller with the support of the implementation of the protocol of network connection, fast I/O port expansion. Please refer to the specific use of the Modbus RTU test tools.

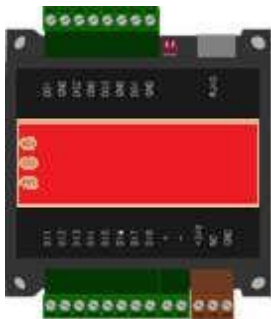
Main Parameter:

Processor	32-bit
Clock Frequency	72MHZ
Memory	64KB/1MB flash, 20KB random access memory
Power Supply	DC24V
Communication	Modbus TCP 10/100M
Digital/Universal Input	Support dry contact input
Digital Output	Supports dry contact output, up to 220V/8A

Model Instruction :

Product Model	DI/(UI)	BO/DO	AI	AO
TNDE-NIO8400	8	4	0	0

Product display:



Size/mm: 95*110*42 (L*W*H)

Weight/g: 150

Material: plastic shell

Installation method: DIN-Rail Mounting

IO Module Product Model: **TNDE-NIO8400**

Register definition specification:

1. Modbus TCP/UDP corresponding register DI/(UI)---Input Status(0x02)

DI/(UI) Register Address	DI/(UI)	Instruction
10001	1	Digital/(UI) input port
10002	2	Digital/(UI) input port
10003	3	Digital/(UI) input port
10004	4	Digital/(UI) input port
10005	5	Digital/(UI) input port
10006	6	Digital/(UI) input port
10007	7	Digital/(UI) input port
10008	8	Digital/(UI) input port

BO/DO—Coil Status(0x01/0x05)

BO/DO Register Address	BO/DO port	Instruction
00001	1	Digital output port
00002	2	Digital output port
00003	3	Digital output port
00004	4	Digital output port

IO Module Product Model: **TNDE-NIO8400**

Common Question

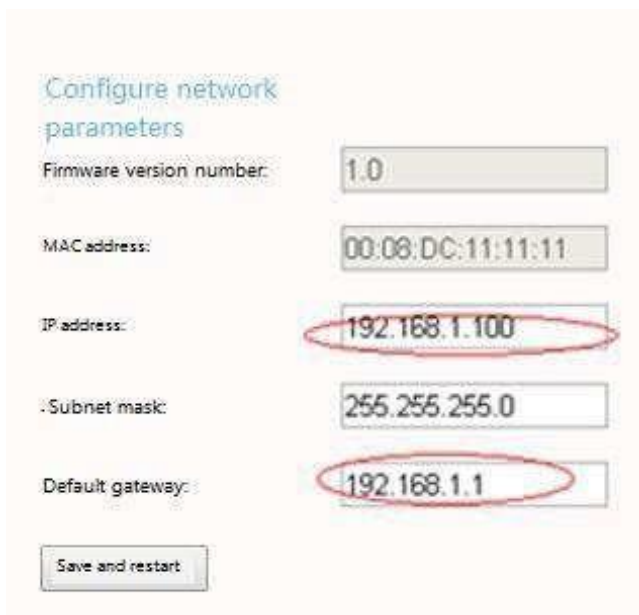
1. ModbusTCP common question:

Q 1: What are the default communication parameter of the module?

A 1: The default IP of ModbusTCP module is 192.168.1.88, port number 502.

Q 2: How to modify the module's IP address?

A 2: Input module IP through the browser and enter the backstage web page to modify IP.



Configure network parameters

Firmware version number:	1.0
MAC address:	00:08:DC:11:11:11
IP address:	192.168.1.100
Subnet mask:	255.255.255.0
Default gateway:	192.168.1.1

Save and restart

Q 3: What If forgot IP, how do we restore IP?

A 3: In the case of power supply, dial the red dial key 2 to NO and reset, then restart.

After power failure, IP will revert to the default factory IP.



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