

## Content

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# CN-8021 CANopen Network Adapter

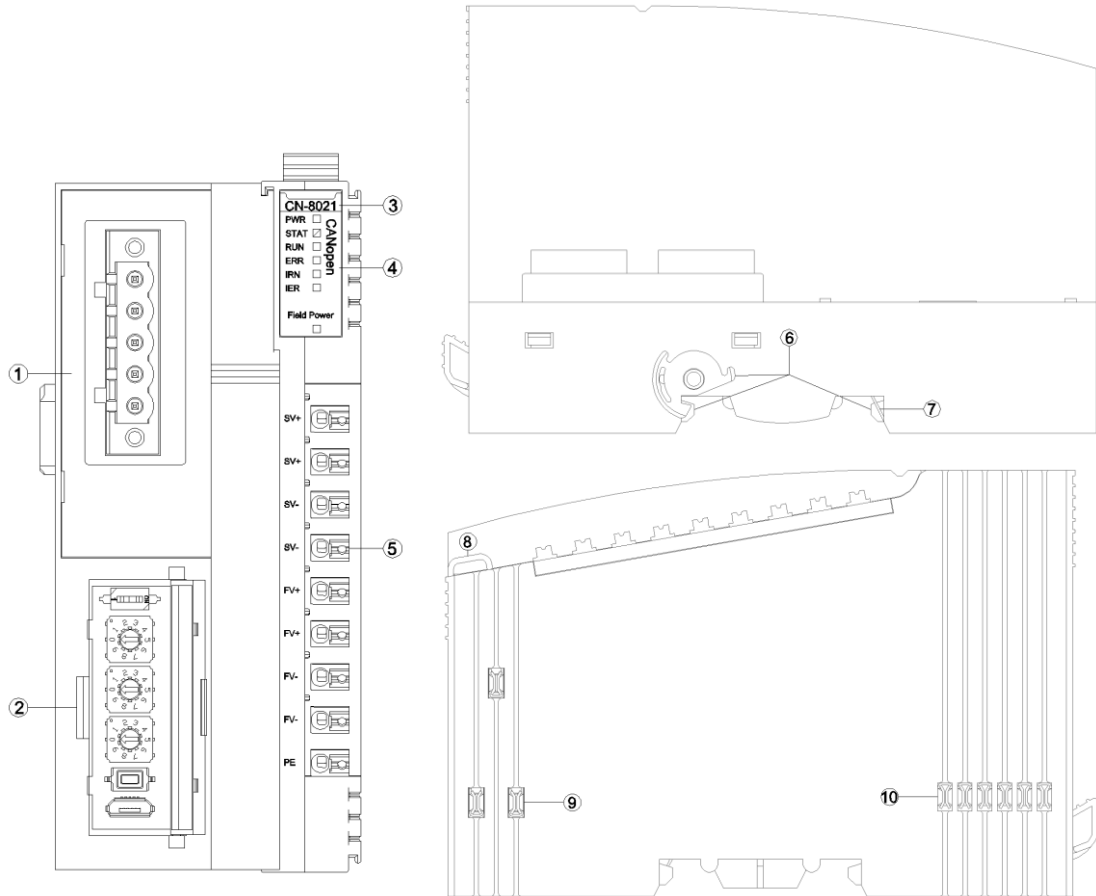
## 1 Module Overview

CN-8021 CANopen network adapter supports standard CANopen communication and device specification DS401.

## 2 Technical Parameter

Adapter Hardware Parameter	
System Power	Nominal:24Vdc, Range: 9-36Vdc Reverse Protection: YES
Power Consumption	50mA@24Vdc
Internal Bus Supply Current	Max: 2.5A@5VDC
Isolation	System Power to Field Power Isolation
Power Supply	Nominal:24Vdc, Range:22-28Vdc
Field Power Current	Max. DC 8A
IO Modules Supported	32 pcs
Wiring	Max.1.5mm (AWG 16)
Size	115*51.5*75mm
Weight	130g
Environment Specification	
Operation Temperature	-40~85°C
Operation Humidity	5%-95% (No Condensation)
Protection Class	IP20
CANOPEN Parameter	
Protocol	CANopen DS401
Connect the interface	5PIN terminal
Station Address	Dial code setting (1-127)
Process Data	Input Max. 512 Byte Output Max. 512 Byte
Configuration Interface	Type-C
Transmission Rate	10 kbit/s, 20 kbit/s, 50 kbit/s, 100 kbit/s, 125 kbit/s, 250 kbit/s, 500 kbit/s, 800 kbit/s,1000 kbit/s

### 3 Hardware Interface



- ① CANopen port
- ② Config Interface
- ③ Module type
- ④ LED Indicator
- ⑤ Wiring Terminal
- ⑥ Buckle
- ⑦ Grounding Resilient Sheet
- ⑧ Fixed Wiring Harness
- ⑨ Field Power
- ⑩ Internal Bus

### 3.1 CANopen Interface

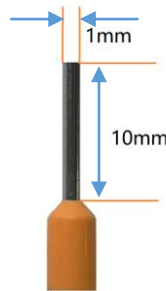
The device wiring adapts 5 Pin screw terminals and its Pin definition is as below:

CANopen interface pin definition

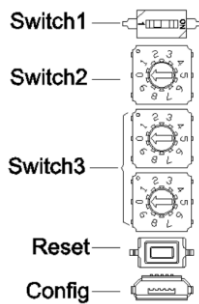
Pin	Definition	Description
1	NC	Empty
2	CANH	CAN_H signal bus line
3	PE	Protecting Earthing
4	CANL	CAN_L signal terminal bus line
5	GND	Signal Grounded

It is recommended to use cables with cores smaller than 1mm<sup>2</sup>

The cold-pressed terminal parameters are as follows:



### 3.2 Configuration Interface



Switch1: DIP switch is used to set the terminal resistance.

Switch2: DIP switch is used to set the communication baud rate

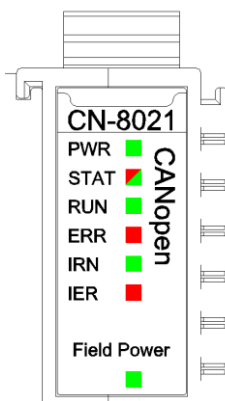
Switch3: DIP switch is used to set the address of the adapter module. It is set by a 2-bit decimal hardware DIP switch, and each CANopen adapter has a unique station address (1~99).

Reset: Module reset button, long pressing the button for more than 5 seconds and

all parameters of the module will be restored to the default value. When the Reset button is activated, a green indicator will light up in the upper left corner of the button.

Config: configured ports, it is standard MicroUSB interface for configuring device parameters and firmware upgrades.

### 3.4 LED Indicator

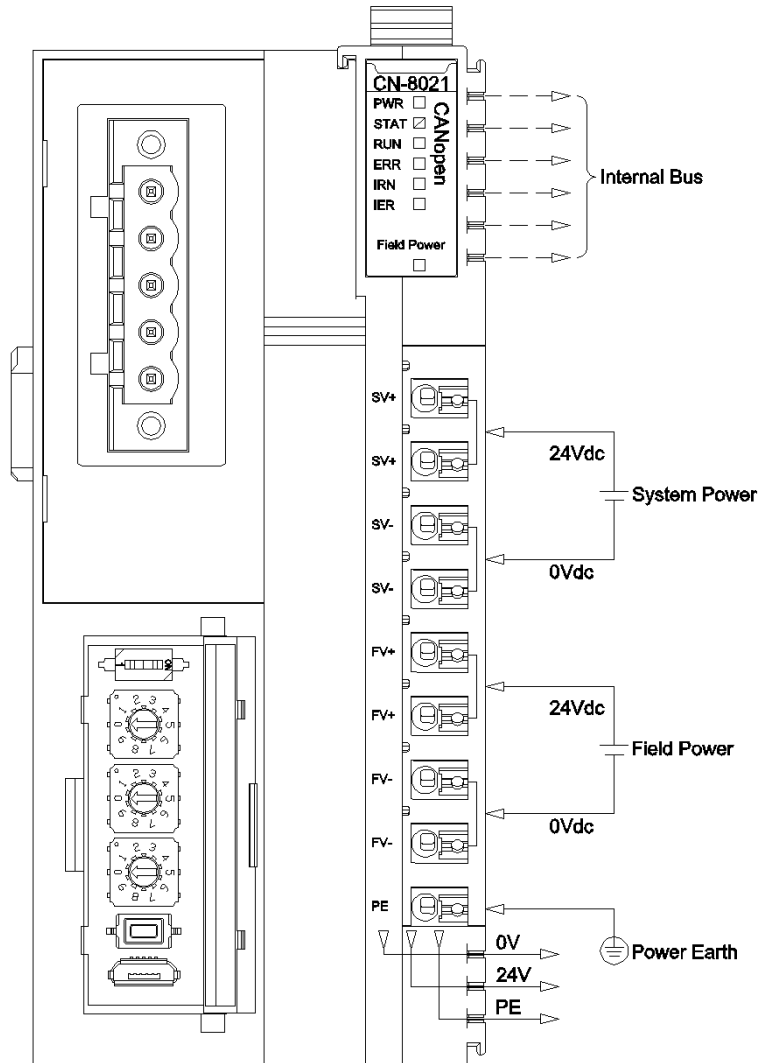


PWR Power State (GREEN)	Definition
ON	System Power Normal
OFF	System Power Failure
STAT Module State (RED/GREEN)	Definition
Double Flash (RED)	Module Soft Restarted by Hard-Fault
ON(GREEN)	Running
Single Flash (GREEN)	Stopping
Flash(2.5Hz) (RED/GREEN)	Boot Mode
Flash(10Hz) (RED/GREEN)	Firmware Updating
RUN Network State (GREEN)	Definition
ON	CAN communication has been established
Flash	The CAN communication is not established
ERR Network Error (RED)	Definition
OFF	no error
Flash	error existing
IRN IO Run Indicator (GREEN)	Definition
ON	IO initialization normal
OFF	IO initialization failure

IER IO Error Indicator (RED)	Definition
OFF	IO communication normal
Double Flash	IO communication failure
Field Power State Indicator (GREEN)	Definition
ON	Field Power Normal
OFF	Field Power Failure

## 4 Wiring

Please note when wiring: for the internal construction, two terminals of SV+ have been short-connected, two terminals of SV- have been short-connected, two terminals of FV+ have been short-connected, and two terminals of FV- have been short-connected. For external it only needs to access one system power supply and one field power supply.



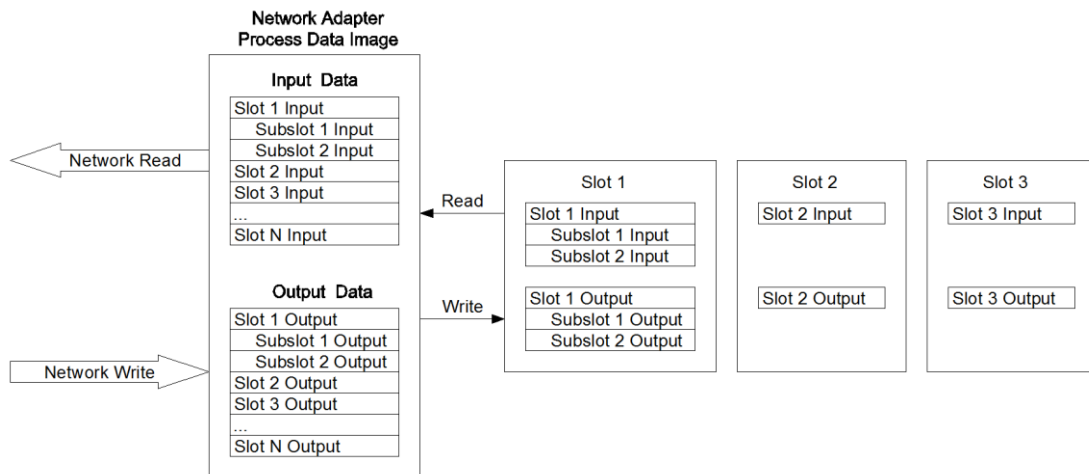
## 5 Process data definition

### 5.1 Adapter process data definition

CANopen Adapter itself has no input-output process data.

### 5.2 IO Module process data mapping

The network adapter reads and writes input and output process data of IO module in real time through the internal bus, and its data mapping model is shown as follow:



Input and output data of the IO module are mapped to objects 6000,6200, 6401,6411 based on data types. TPDO and RPDO both support variable PDO mapping.



## 6 Configuration Parameter Definition

Configuration Parameter				
No.	Description			
Byte 0	Reserved	Fault Action for Output	Fault Action for Input	Source of Configuration Data
Byte 1	CAN BaudRate			
Byte 2	CANopen Slave Address			
Byte 3	Reserved		Auto Start	Auto Generate PDO COB-ID
Byte 4				
Byte 5 ... Byte 19	Reserved			

Data declaration:

**Source of Configuration Data:** Parameter configuration mode (Default: 0)

0: Configured software configuration is valid

1: Fieldbus controller configuration is valid

**Fault Action for Input:** Input data handling mode when IO occurs fault (Default: 0)

0: Hold Last Input Value

1: Clear Input Value

**Fault Action for Output:** Output data handling mode when IO occurs fault

(Default: 1)

0: Hold Last Output Value

1: Clear Output Value

**CANopen Slave Address:** CANopen slave device number (read only, default: 1)

**CAN BaudRate:** CAN bus baud rate Settings (default: 2)

0: 1 MBit/sec

1: 800 kBit/sec

2: 500 kBit/sec

3: 250 kBit/sec

4: 125 kBit/sec

5: 100 kBit/sec

6: 50 kBit/sec

7: 20 kBit/sec

8: 10 kBit/sec

**Auto Generate PDO COB-ID:** PDO identifiers can be automatically assigned, the Enable and the Disable is optional. After the PDO identifier is enabled, the PDO identifier could be automatically assigned to the I/O module. After the PDO identifier is disabled, only 4 predefined PDO are available, and more PDO need to be set by the CANOPEN master. It is disabled by default.

**Auto Start:** The slave is automatically started. Enable and disable is optional. After this function is enabled, the site will proactively send a PDO message and uploads the message when there is data. It is disabled by default.

## A Dimension drawing

