CT-2218 8 channels digital output/24VDC/NPN
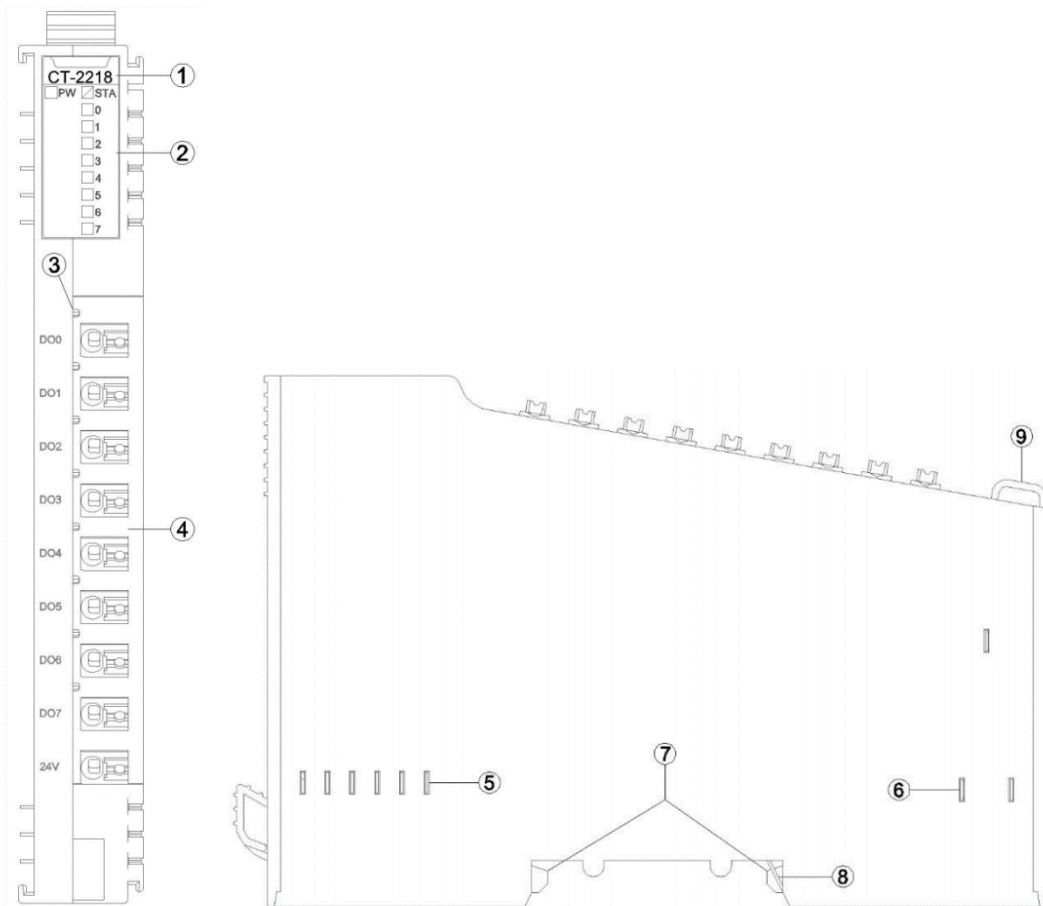
1 Module features

◆The module supports 8-channel digital output, the output voltage is 0VDC and the output low level is valid.

◆The module could drive field equipment (relay, solenoid valve, etc.).

◆The module internal bus and field output are isolated by optocoupler.

◆The module carries with 8 digital output channel LED indicator.

◆The module has the functions of thermal shutdown and short-circuit protection.
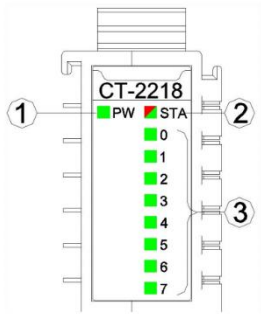
2 Technical Parameters

General parameters	
Power Consumption	Max.64mA@5.0Vdc
Isolation	I/O to internal bus: opto-couple isolation (3KVrms)
Field Power	Nominal:24Vdc, Range:22-28Vdc
Wiring	Max.1.0mm² (AWG 17)
Mounting Type	35mm DIN-Rail
Size	115*14*75mm
Weight	65g
Environment Specification	
Operational Temperature	-40~85℃
Operational Humidity	5%~95% RH (No Condensation)
Ingress Protection Rating	IP20
Output parameters	
Channel Number	8 Channels
LED Indicator	8 channels output LED indicator
Rated Current	Single channel output：Max. 1000mA Simultaneously output: Max.500mA
Leak Current	Max. value：3uA
Output Impedance	< 200mΩ
Output Delay	OFF to ON:Max.50us ON to OFF:Max.300us
Protection Function	Over temperature shutdown: typical 135℃ Overcurrent protection: typical value 3A Short-circuit protection: Supported

3 Hardware Interface

① Module Type

② State indicator

③ Channel indicator

④ Wiring Terminal and identification

⑤ Internal Bus

⑥ Field Power

⑦ Buckle

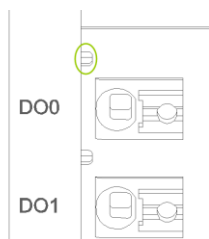⑧ Grounding Spring Sheet

⑨ Fixed Wiring Harness

3.1 LED indicator definition

①   Power LED indicator (green)

②   Module state LED indicator (red/green)

③   Output channel LED indicator (green)

PW Power State (GREEN)	Definition
ON	Internal bus Power Normal
OFF	Internal bus Power Failure
STA Module State (RED/GREEN)	Definition
Green slow flash (2.5Hz)	Module internal bus is not started
Red slow flash (2.5Hz)	Module internal bus offline
ON (GREEN)	Operation normal
Flash(2.5Hz) (RED/GREEN)	Upgrading mode
Flash(10Hz) (RED/GREEN)	Firmware Update
Double Flash (RED)	Module Exception has been soft-restarted
0-7 channel LED indicator (GREEN)	Definition
ON	Output signal valid
OFF	Output signal invalid

3.2 Field channel LED indicator (Green)

When the output signal of the output channel is valid, the corresponding field channel
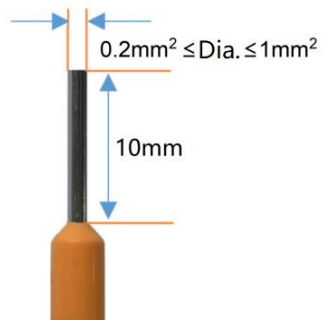
LED indicator is lit.

3.3 Terminal definition

Terminal Number	Symbol	Description
1	DO0	Signal output
2	DO1	
3	DO2	
4	DO3	
5	DO4	
6	DO5	
7	DO6	
8	DO7	
9	24V	Power input *(Note1)*

Note: This power input port has two access methods depending on the load type.
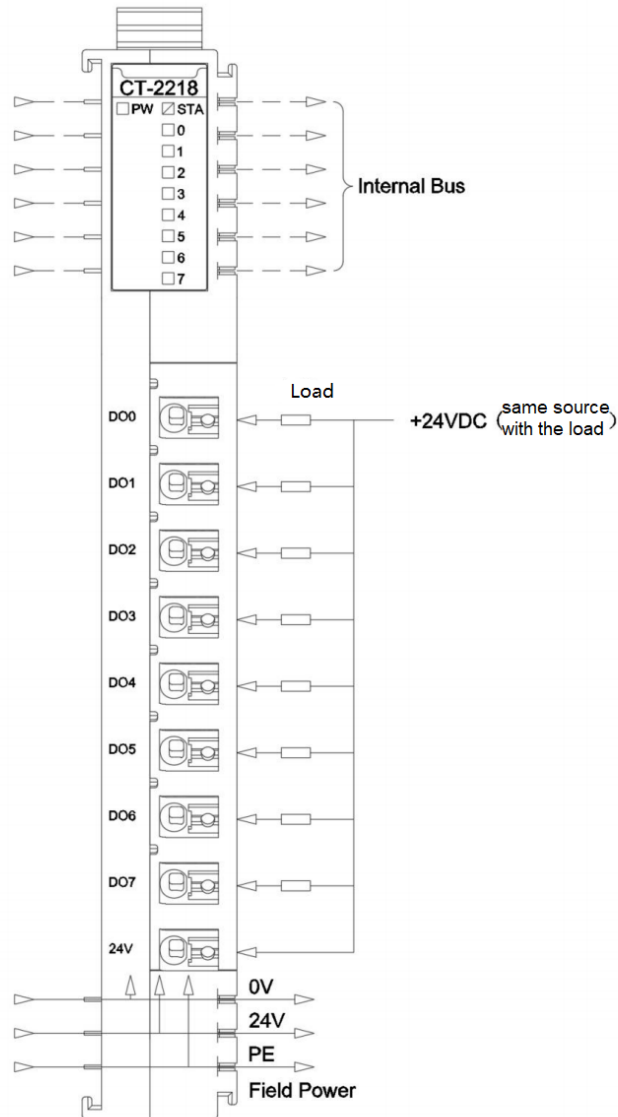
It is recommended to use cables with cores greater than 0.2mm² and smaller than 1mm².

When connecting cables (terminals)with cores, need to check and connect them

according to the corresponding node serial number.

The cold-pressed terminal parameters are as follows:

4 Wiring

5 Process data definition

5.1 Module Process data

Output Data							
Bit No	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Byte 0	DO Ch#7	DO Ch#6	DO Ch#5	DO Ch#4	DO Ch#3	DO Ch#2	DO Ch#1	DO Ch#0

Data description：

DO Ch#(0-7)：When the bit is 1, the output signal of the corresponding channel is effective, the output is low level, and the output is invalid when it is 0.

0: The output signal is invalid

1: The output signal is valid

5.2 Sub-Module Process data

Input Data								
Bit No	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Byte 0	Alarm (CH 7)	Alarm Ch#6	Alarm Ch#5	Alarm Ch#4	Alarm Ch#3	Alarm Ch#2	Alarm Ch#1	Alarm Ch#0

Alarm (CH 0-7)：When the bit is 1, the corresponding channel is working abnormally, when it is 0, the channel is working normally.

0: The channel is working normally

1: The channel is working abnormally

6 Configuration parameters definition

6.1 Module Configuration Parameters

Configured Parameter								
Bit No	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Byte 0	Fault Action for Output Ch#7	Fault Action for Output Ch#6	Fault Action for Output Ch#5	Fault Action for Output Ch#4	Fault Action for Output Ch#3	Fault Action for Output Ch#2	Fault Action for Output Ch#1	Fault Action for Output Ch#0
Byte 1	Fault Value for Output Ch#7	Fault Value for Output Ch#6	Fault Value for Output Ch#5	Fault Value for Output Ch#4	Fault Value for Output Ch#3	Fault Value for Output Ch#2	Fault Value for Output Ch#1	Fault Value for Output Ch#0

Data description:

Fault Action for Output Ch#(0-7)：When IO module detects the internal bus communication is abnormal and enters offline mode, and output data will be processed in this mode. (Default: 0)

0：Hold Last Output State

1：Output Fault Value

Fault Value for Output Ch#(0-7)：When the fault output mode is 1, this bit sets the fault output value, and when the internal bus of IO module is offline, this setting value will be output. (Default: 0)

0: Output low level.

1: Output high level.

6.2 Sub-Module Configuration Parameters

Configure Parameter								
Bit No	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Byte 0	Handle Mode (CH 7)	Handle Mode (CH 6)	Handle Mode (CH 5)	Handle Mode (CH 4)	Handle Mode (CH 3)	Handle Mode (CH 2)	Handle Mode (CH 1)	Handle Mode (CH 0)
Byte 1	Output Turn off Time(s)							
Byte 2	Reserved							

Handle Mode (CH 0-7): When the channel is detected to be abnormal condition (short circuit or overcurrent), the channel will immediately shut off.

Output Turn off Time(s): When the channel is detected to be abnormal condition (short circuit or overcurrent), the time for the channel to be turned off can be set 16-bit unsigned data, the range is "1-255", (Default: 2s).

A Dimension drawing