CT-2228 8 channels digital output/24VDC/ PNP

1 Module features

◆the module supports 8-channel digital output, the output voltage is 24VDC and the output high 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 overcurrent protection

◆the module supports short circuit protection and overload protection

2 Technical Parameters

General parameters	
Power Consumption	Max.80mA@5.0Vdc
Isolation	I/O to internal bus: opto-couple isolation (3KVrms)
Field Power	Nominal:24Vdc, Range:22-28Vd
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	Typical value：500mA
Leak Current	Max. value：100uA
Output Impedance	<280mΩ
Output Delay	OFF to ON:Max.100us ON to OFF:Max.150us
Protection Function	Over temperature turn-off: typical 135℃ Overcurrent protection: typical value 1.1A

3 Hardware Interface
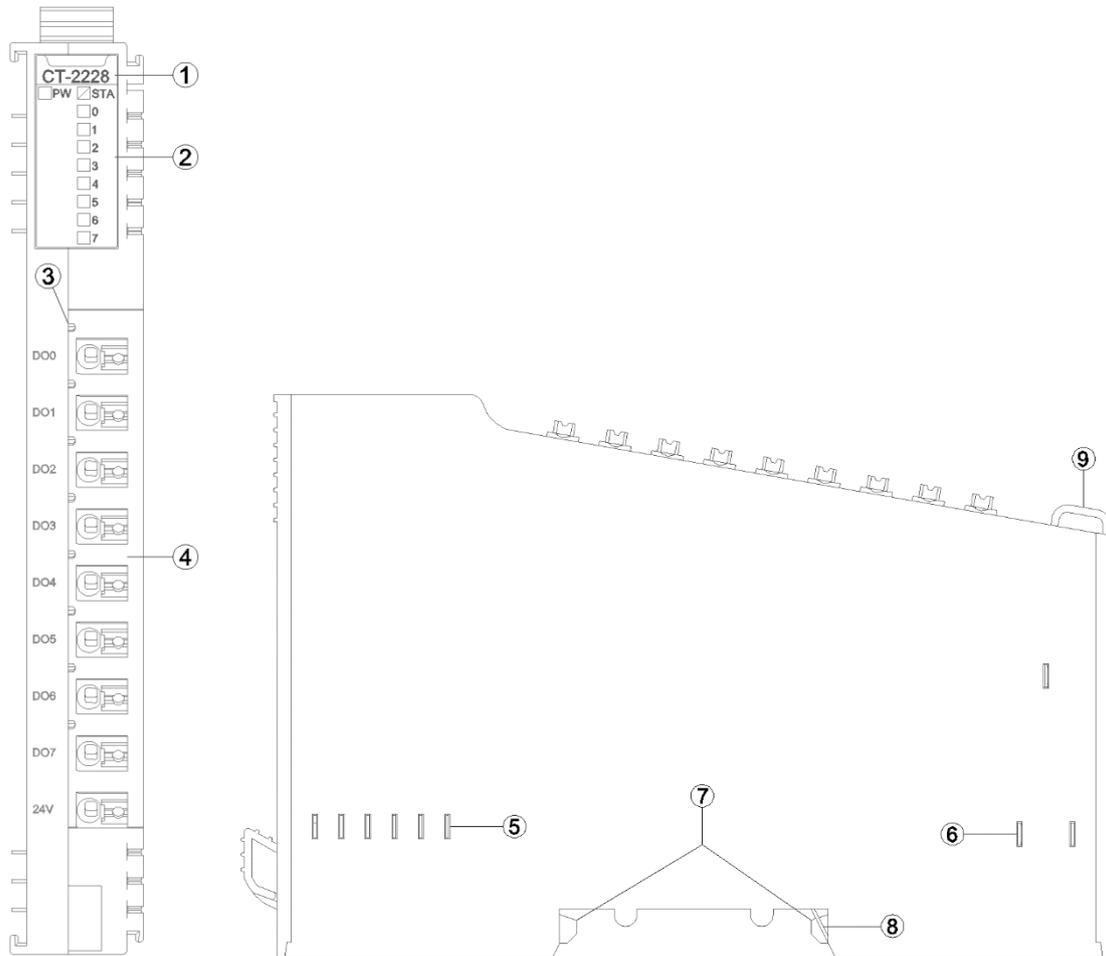
① Module Type

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
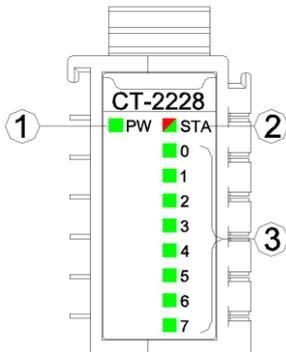
① Power LED indicator (green)

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)
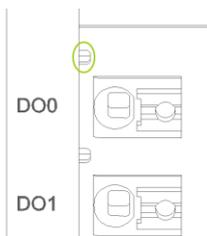
When the output signal of the output channel is valid, the corresponding field channel

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 intput *(Note1)*

Note 1: When the red LED indicator beside the 24V terminals lights up, this is indicating that the module output has passed the field bus, so the 24V terminals could be disconnected. The max. output current of each channel is 500mA, and the max. sum of the current of all the output channels is 4A. When the total current exceeds 2A, and it is suggested to connect the power in the 24V terminal at the same time to avoid the on-site power current exceeding its limit.

When the red LED indicator beside the 24V terminal goes off, it means that the module output is not powered. In this case, the power supply needs to be connected in the 24V terminal. At this point, the max. output current of each channel is 500mA, and the sum of all output channel currents is 4A.

It is recommended to use cables with cores smaller than 1mm².

The cold-pressed terminal parameters are as follows:
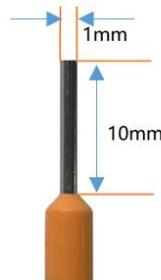
4 Wiring
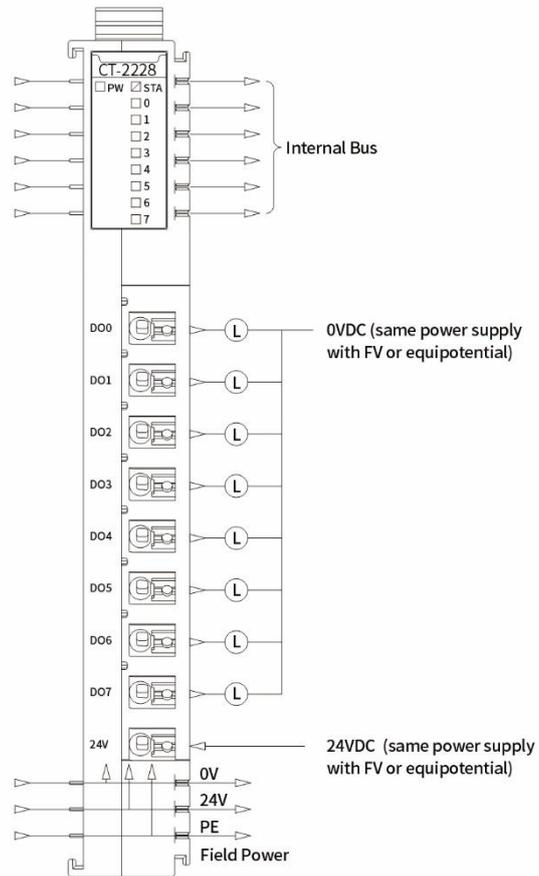
5 Process data definition

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 high level, and the output is invalid when it is 0.

0: The output signal is invalid

1: The output signal is valid

6 Configuration parameters definition

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.

A Dimension drawing