CT-2224 4 channels digital output/24VDC/ PNP

1 Module features

◆the module supports 4-channel digital output, the output voltage is 24VDC and the output high level is valid.

◆the max output current of DO single channel is 3.3 A.

◆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 4 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.30mA@5.0Vdc
Isolation	I/O to internal bus: opto-couple isolation (3KVrms)
Field Power	Nominal:24Vdc, Range: 12~30Vdc
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	4 Channels
LED Indicator	4 Channels output LED Indicator
Rated Current	Typical value：2.2A
Leak Current	Max. value：10uA
Output Impedance	<90mΩ
Output Delay	OFF to ON:Max.5us ON to OFF:Max.200us
Protection Function	Over temperature turn-off: typical value 150℃ Overcurrent protection: typical value 12A

3 Hardware Interface
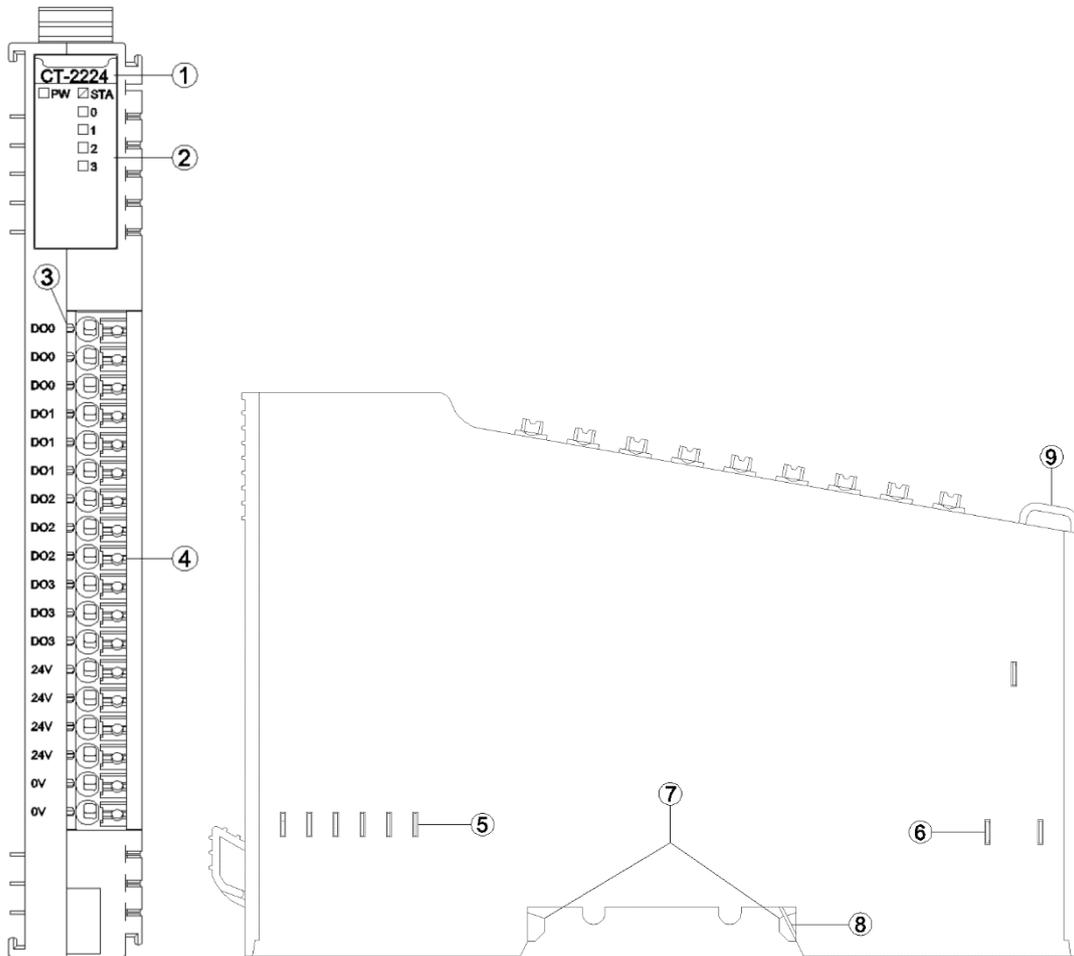
① Module Type

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
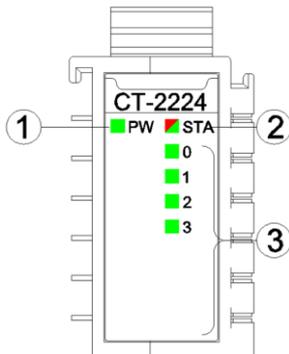
① Power LED indicator (green)

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
0-3 channel LED indicator (GREEN)	Definition
ON	Output signal valid
OFF	Output signal invalid

3.2 Field channel LED indicator (Green)
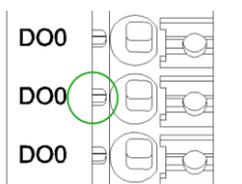
When the output signal of the output channel is valid, the corresponding field channel LED indicator is lit.

3.3 Terminal definition

| Terminal Number	Symbol	Description
1	DO0	Signal output
2	DO0	
3	DO0	
4	DO1	
5	DO1	
6	DO1	
7	DO2	
8	DO2	
9	DO2	
10	DO3	
11	DO3	
12	DO3	
13	24V	Power intput *(Note1)*
14	24V	
15	24V	
16	24V	
17	0V	
18	0V	

Note 1: The module must be connected to a 24V power supply. Otherwise, the module cannot work properly. The input power of the power supply must be greater than that of all channel loads.

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

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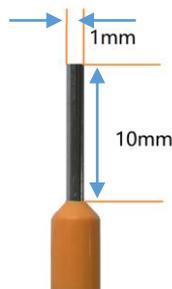
4 Wiring
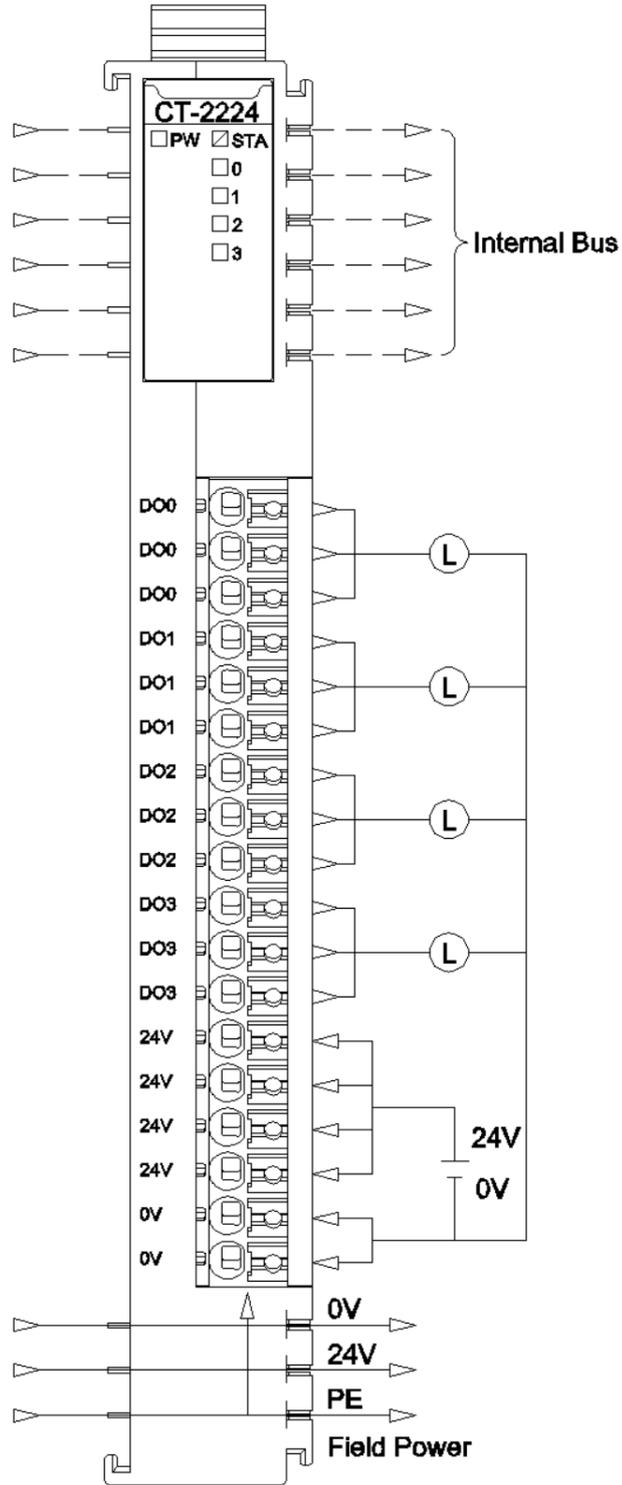
5 Process data definition

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

Data description：

DO Ch#(0-3)：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	Reserve				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	Reserve				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#(0-3)：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#(0-3)：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