Content

CT-222F 16 channel digital output/24VDC/source type

1 Module features

◆ the module supports 16 channels digital output, the output voltage is 24VDC and the output high level is valid.

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

◆ the internal bus of the module and field output are using opto-coupler.

◆ the module carries 16 digital output channel LED indicator light.

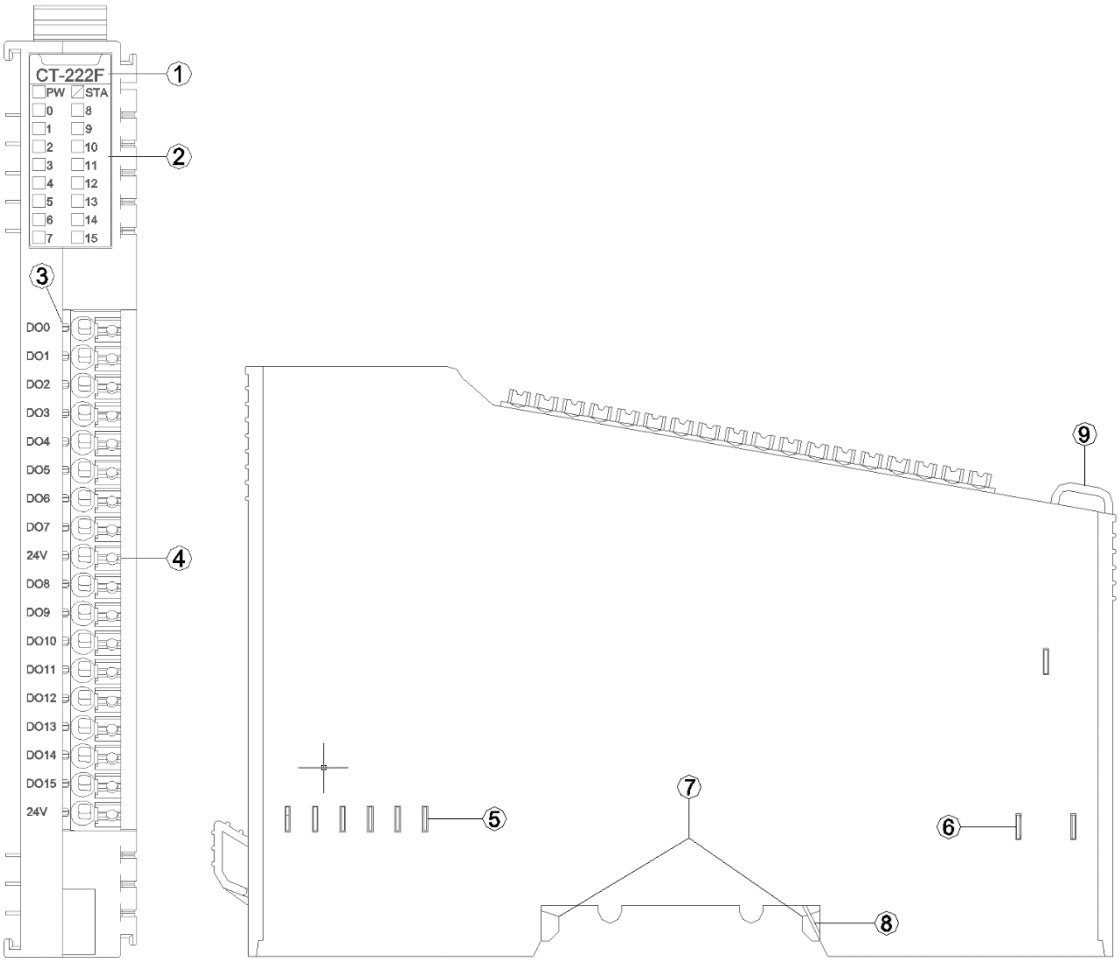
◆ the module has the functions of thermal shutdown and overcurrent protection.

◆ the module supports short circuit protection and overload protection.

2 Technical parameters

General Parameters	
Power	Max.175mA@5.0Vdc
Isolation	I/O to internal bus: opto-couple isolation (3KVrms)
Field Power	Nominal:24Vdc, Range:22-28Vdc
Wiring	Max.1.5mm ²(AWG 16)
Mounting Type	35mm DIN-Rail
Size	115*14*75mm
Weight	65g
Environment Specification	
Operational Temperature	-40~85℃
Operational Humidity	5%-95% (No Condensation)
Protection Class	IP20
Output Parameters	
Channel Number	16 channel source type output
LED Indicator	16 channel output LED indicator
Rated Current	Typical value: 500mA
Leakage Current	Max：10uA
Output Impedance	<200mΩ
Output Delay	OFF to ON: Max.100us ON to OFF: Max.150us
Protection	Overtemperature shutdown: typical value is 135℃ Overcurrent protection: typical value 1.1A Short circuit protection support

3 Hardware interfaces



① Module Type

② State indicator

③ Channel indicator

④ Wiring Terminal and identification

⑤ Internal Bus

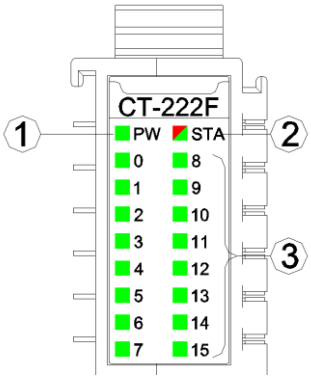
⑥ Field Power

⑦ Buckle

⑧ Grounding Resilient Sheet

⑨ Fixed Wiring Harness

3.1 LED indicator definition



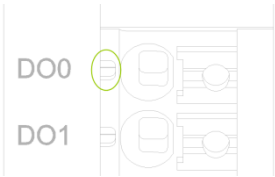
① Power LED indicator (green)

② Module State indicator LED (red/green)

③ Output channel indicator LED (green)

PW Power State	Definition
ON	Internal bus power supply normal
OFF	Internal bus power supply failure
STA Module State (RED/GREEN)	Definition
Green slow flash (2.5 Hz)	Module internal bus is not started
Red slow flash (2.5 Hz)	Module internal bus offline
ON (GREEN)	Operation normal
Flash (2.5 Hz) (RED/GREEN)	updating mode
Flash (10 Hz) (RED/GREEN)	firmware update
Double Flash (RED)	Module exception has been soft-restarted
0-15 channel indicator LED	Definition
ON	Output signal valid
OFF	Output signal invalid

3.2 Field channel LED indicator (Green)



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

3.3 Terminal definition

Terminal Number	Symbol	The Description
1	DO0	Signal output
2	DO1	

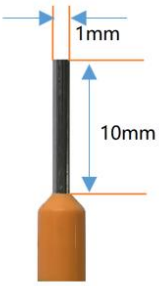
3	DO2	
4	DO3	
5	DO4	
6	DO5	
7	DO6	
8	DO7	
9	24V	Power input *(note1)*
10	DO8	Signal output
11	DO9	
12	DO10	
13	DO11	
14	DO12	
15	DO13	
16	DO14	
17	DO15	
18	24V	Power input*(note1)*

Note 1: when the red LED indicator beside the 24V wiring terminal is on, it indicates that the fieldbus is powered on, then the maximum output current of each channel is 500mA, and the maximum sum of all output channel currents is 4A.

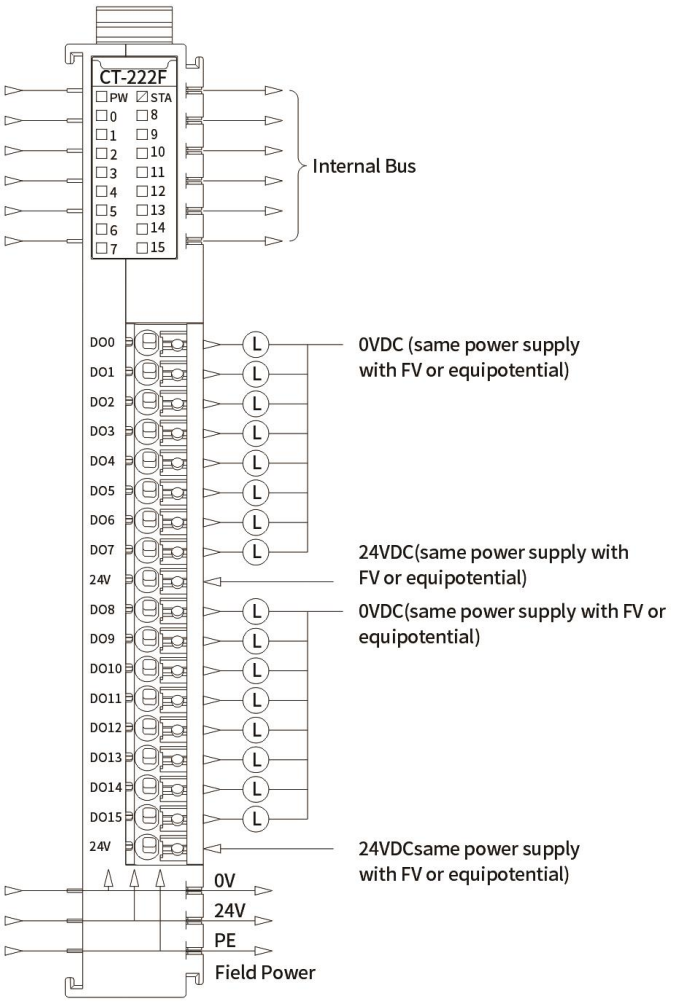
When the 24VDC power is supplied to the 24V wiring terminal separately, the maximum sum of all the output channel currents is 8A (Regardless of whether the fieldbus is powered or not, 24V wiring terminals can be connected to 24VDC power supply).

It is recommended to use cables with cores smaller than 1mm ²

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
Byte 1	DO Ch#15	DO Ch#14	DO Ch#13	DO Ch#12	DO Ch#11	DO Ch#10	DO Ch#9	DO Ch#8

Data declaration:

DO Ch#(0-15): when this bit is 1, the corresponding channel output signal is

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

0：Output signal is invalid

1：Output signal is valid

6 Configuration parameter definitions

Configuration parameters								
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 Action for Output Ch#15	Fault Action for Output Ch#14	Fault Action for Output Ch#13	Fault Action for Output Ch#12	Fault Action for Output Ch#11	Fault Action for Output Ch#10	Fault Action for Output Ch#9	Fault Action for Output Ch#8
Byte 2	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
Byte 3	Fault Value for Output Ch#15	Fault Value for Output Ch#14	Fault Value for Output Ch#13	Fault Value for Output Ch#12	Fault Value for Output Ch#11	Fault Value for Output Ch#10	Fault Value for Output Ch#9	Fault Value for Output Ch#8

Data description:

Fault Action for Output Ch#(0-15)：Fault Output mode. When the IO module detects an internal bus exception and fails to communicate with the adapter. And the module will turn to offline mode, so the output data is processed in this way. (default: 0)

0: keep the last time output State.

1: output fault value.

Fault Value for Output Ch#(0-15)：when the Fault Output mode is 1, this bit sets the Fault Output Value, and this setting value will be outputted when the interal bus of IO module is offline. (default: 0)

0: Output low level.

1: Output high level.

A Dimension drawing