CT-2794 4 channel relay output,2A/250VAC/500VA

## 1 Module features

◆ 4-channels relay normally on output

◆ 4 LED channel indicators

◆ Low on resistance (≤100mΩ)

◆ With isolation between channels

◆ Resistive and inductive loads can be connected

2 Technical Parameters

General Parameters	
Power Consumption	Max.160mA@5.0VDC
Isolation	I/O to internal bus isolation voltage AC 3kV The isolation voltage between the channels is AC 600V
On-site Power Supply	Unused
Connection	I/O wiring: Max.1.0mm^2 (AWG 17)
Installation:	35mm rail mounting
Size	115*14*75mm
Weight	70g
Environmental parameters	
Operating Temperature of Horizontal Installation	-35°C~70°C
Operating Temperature of Vertical Installation	-35°C~60°C
Relative Humidity	< 95%RH non-condensing
Storage Temperature	-40°C~85°C
Storage Humidity	< 95%RH non-condensing
Manufacturing Test Temperature	-40°C~75°C
Ingress Protection Rating	IP20
Output Parameters	
Number of Channels	4-channel relay normally open output
LED Indicator	4 channel output indicators
Maximum Switching Current	Resistive: 2A Sensibility: 1A
Maximum Switching Voltage	250VAC
Maximum Switching Power	500VA
Switching Frequency	Resistance: Max 2Hz Inductive: Max 0.5Hz
Contact Resistance	≤100mΩ
Output Delay	ON to OFF:Max.10ms OFF to ON:Max.5ms
Mechanical Durability	2x10^7 times
Electrical Durability	5x10^4 times
Vibration	10Hz~55Hz 1.5mm double amplitude
Impact	Stability: 98m/s^2 Intensity: 980m/s^2

3 Hardware Interface
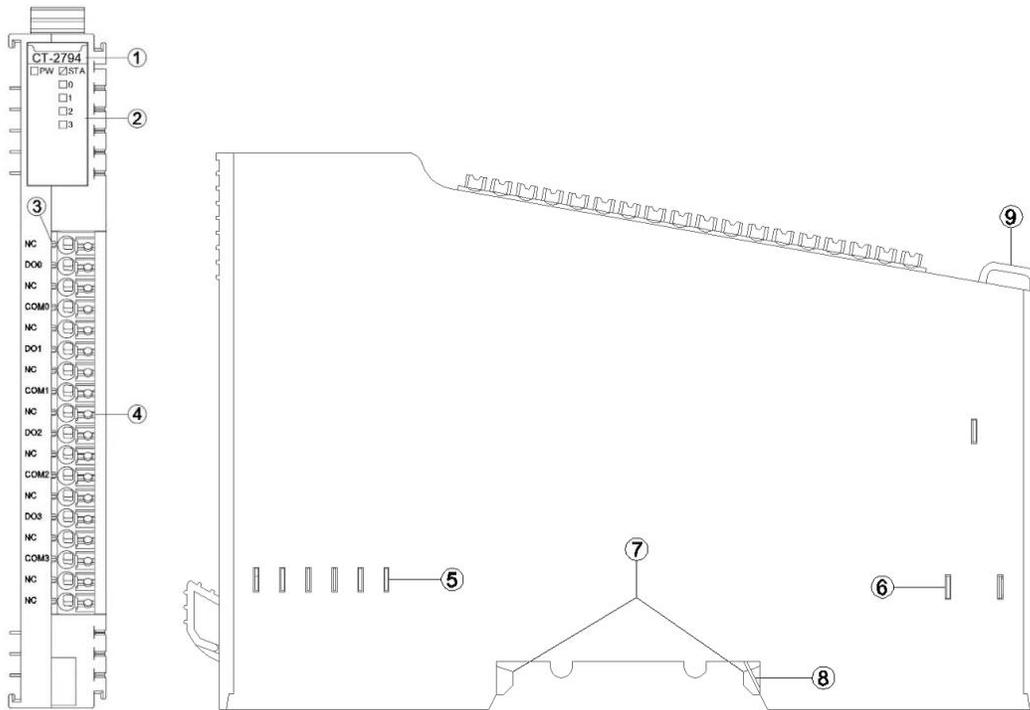
① Module Type

② State indicator

③ N/A

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
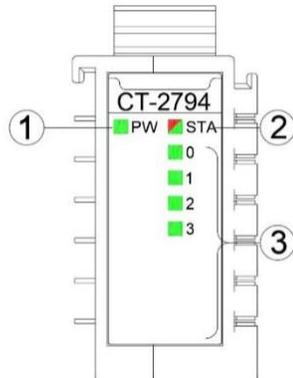
① Power LED indicator (green)

② Module State LED indicator (red/green)

④ Output channel LED indicator (green)

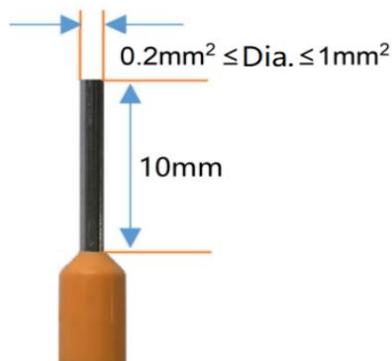| PW Power State (GREEN)	Definition
ON	Internal bus Power Normal
OFF	Internal bus Power Failure
STA Module State (RED/GREEN)	Definition
Green slow flash (2.5Hz)	Module internal bus is not started
Red slow flash (2.5Hz)	Module internal bus offline
ON (GREEN)	Operation normal
Flash(2.5Hz) (RED/GREEN)	Upgrading mode
Flash(10Hz) (RED/GREEN)	Firmware Upgrading
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 Terminal definition

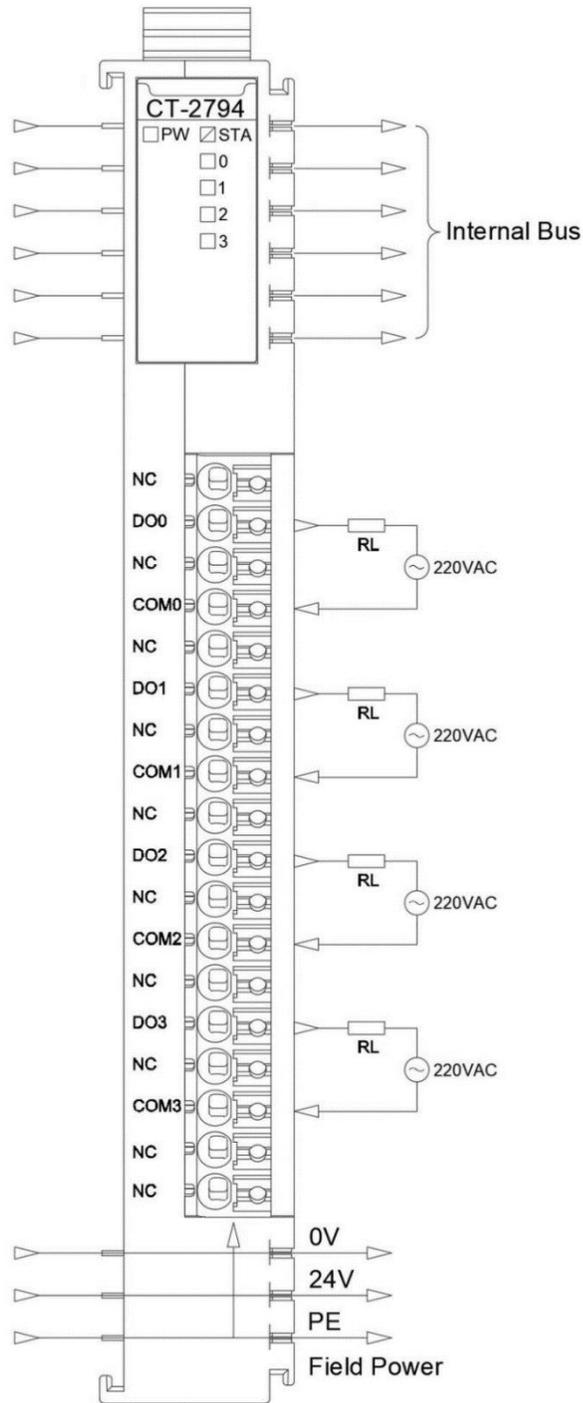| Terminal serial number	Definition	Illustrate
1	NC	Not connected
2	DO0	Channel 0 with power supply
3	NC	Not connected
4	COM0	Channel 0
5	NC	Not connected
6	DO1	Channel 1 with power supply
7	NC	Not connected
8	COM1	Channel 1
9	NC	Not connected
10	DO2	Channel 2with power supply
11	NC	Not connected
12	COM2	Channel 2
13	NC	Not connected
14	DO3	Channel 3with power supply
15	NC	Not connected
16	COM3	Channel 3
17	NC	Not connected
18		

When connecting cables (terminals)with cores, need to check and connect them according to the corresponding node serial number.

It is recommended to use cables with cores greater than 0.2mm² and smaller than 1mm².

The cold-pressed terminal parameters are as follows:

4 Wiring

CT-2794

- PW
- STA
- 0
- 1
- 2
- 3

Internal Bus

NC
DO0
NC
COM0
NC
DO1
NC
COM1
NC
DO2
NC
COM2
NC
DO3
NC
COM3
NC
NC

RL 220VAC
RL 220VAC
RL 220VAC
RL 220VAC

0V
24V
PE
Field Power

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	Reserved				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 corresponding channel is effective and the relay output contact is closed. When the bit is 0, the output is invalid and the relay contact is disconnected.

　　0: The output signal is invalid

　　1: The output signal is valid

6 Configuration parameters definition

Configuration parameters							
Bit No	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Byte 0	Reserved				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	Reserved				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)：Fault output mode. When IO module detects that internal bus communication is failed and enters offline mode, the output data will be processed in this mode. (Default: 0)
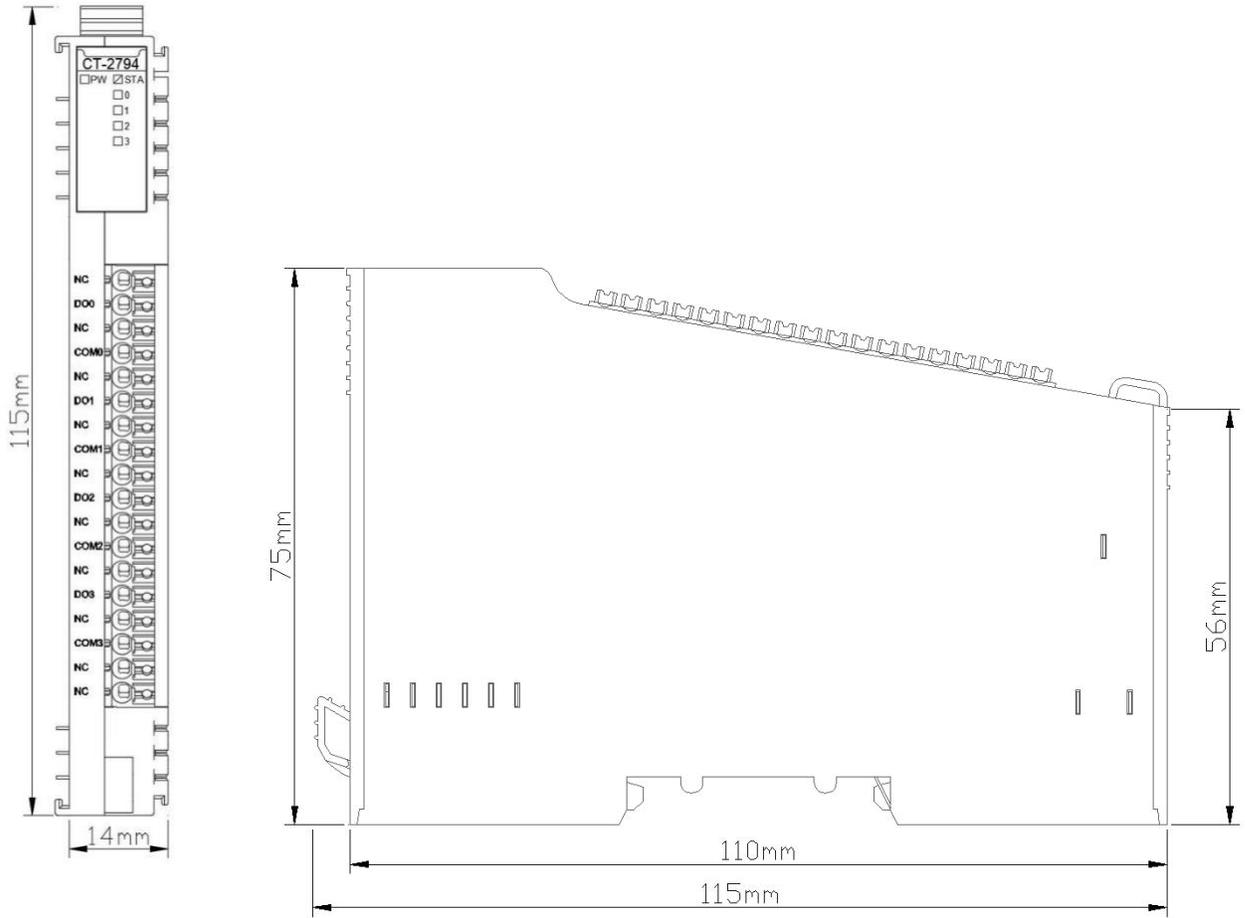
　　0: Hold the last output state.

　　1: Output fault value

Fault Value for Output Ch#(0-3)：When the fault output mode is 1, this bit would set 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

CT-3134 4 channels Voltage Input 0~5/0~10/±5/±10VDC,15 bits /16 bits

1 Module features

◆ The module supports 4 channels of voltage signal input

◆ The module can collect 0~5VDC, 0~10VDC, ±5VDC, ±10VDC, with 15 bits and 16 bits resolution

◆ The module carries with 4 analog input channel LED indicator

◆ Filtering time can be set

◆ Channels can be disabled independently

◆ With isolation between channels

2 Technical Parameters

General Parameters	
Power	Max.260mA@5.0Vdc
Isolation	I/O to internal bus isolation voltage AC 500V The isolation voltage between channels is AC 500V
Field Power	Not used
Wiring	Max.1.0mm² (AWG 17)
Mounting Type	35mmDIN-Rail
Size	115*14*75mm
Weight	65g
Vibration Resistance	Comply with IEC 61131-2 and EC 60068-2-6
Impact resistance	Comply with IEC 61131-2 and IEC 60068-2-27
EMC Performance	Comply with IEC 61131-2 and IEC 61000-4
Environment Specification	
Operating Temperature of Horizontal Installation	-35°C~70°C
Operating Temperature of Vertical Installation	-35°C~60°C
Relative Humidity	< 95%RH (No Condensation)
Storage Temperature	-40°C~85°C
Storage Humidity	< 95%RH (No Condensation)
Manufacturing Test Temperature	-40°C~75°C
Ingress Protection Rating	IP20
Input Parameter	
Channel Number	4 channel voltage input
LED Indicator	4 channel input indicators
Input Voltage Range	0~5VDC, 0~10VDC, ±5VDC and ±10VDC
Resolution	16 bits
Accuracy	±0.3%@25°C ±0.5%@-40~55°C
Sampling Rate	12ms/4 channel
Output Impedance	100KΩ （±5%)
Channel Disable	supported
Diagnostic Function	Channel disabled fault value: -32767 Overflow: 32767 (Overflow failure value supported only in standard mode) Underflow: -32768(Underflow fault value supported only in standard mode)

3 Hardware Interface
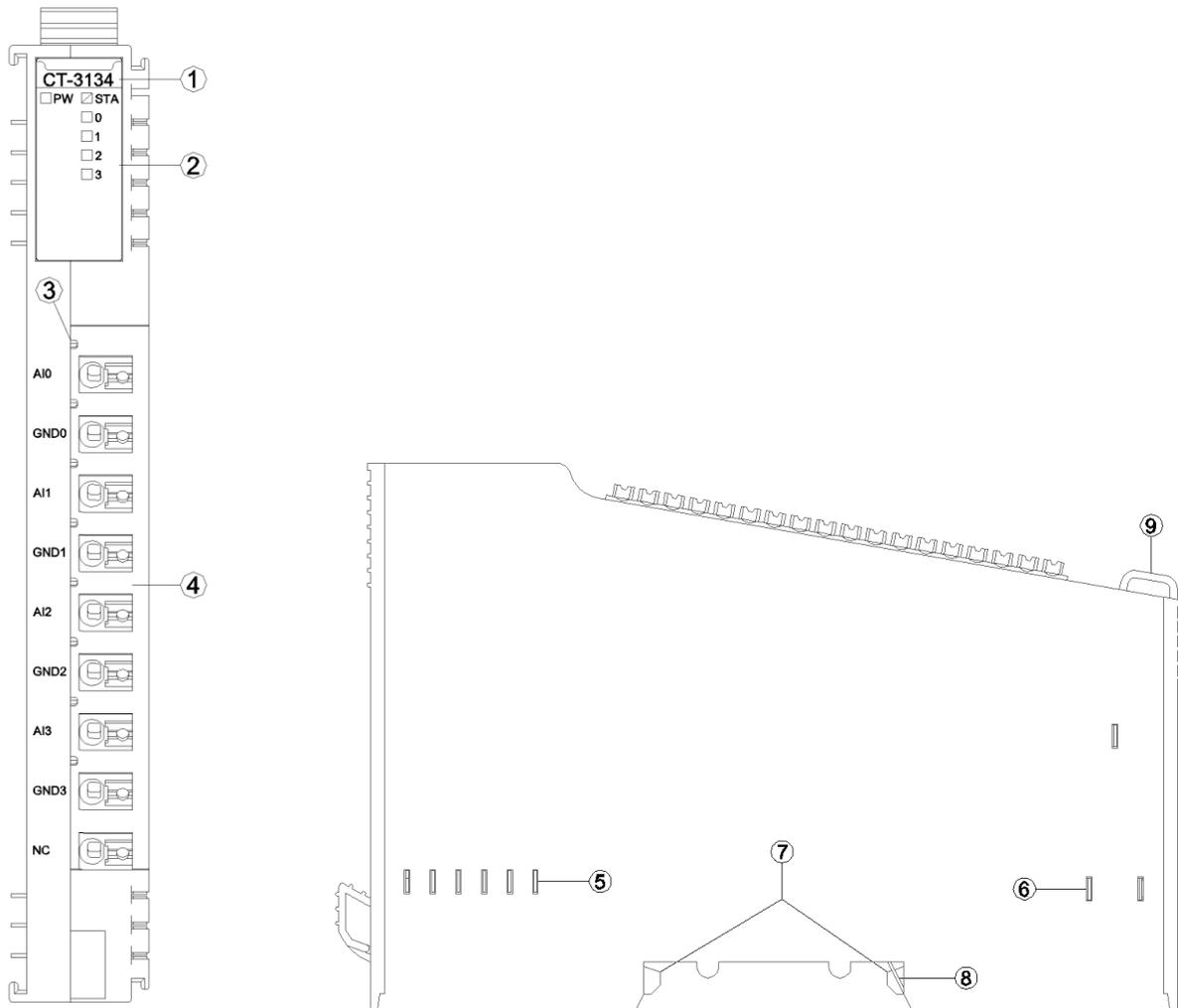
①   **Module Type**

②   **State indicator**

③   **N/A**

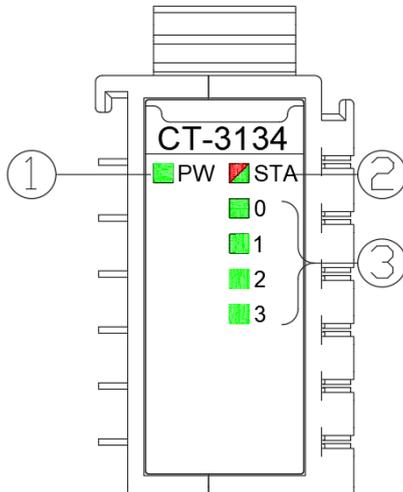④   **Wiring Terminal and identification**

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 Input 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 is 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	The input signal exceeds 0.15Vor - 0.15V
OFF	Input signal invalid

3.2 Terminal definition

Terminal Number	Definition	Definition
1	AI0	Signal Input CH0
2	GND0	Common port CH0
3	AI1	Signal Input CH1
4	GND1	Common port CH1
5	AI2	Signal Input CH2
6	GND2	Common port CH2
7	AI3	Signal Input CH3
8	GND3	Common port CH3
9	NC	Not Connected

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:

$$0.2mm^2 \leq Dia. \leq 1mm^2$$

10mm
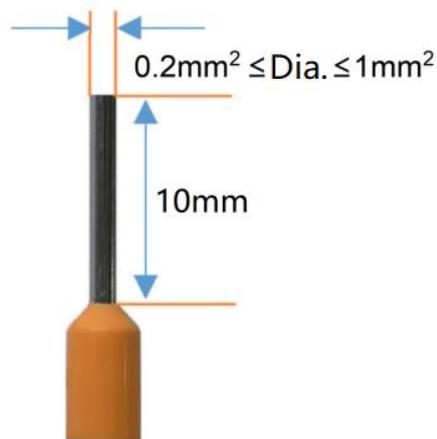
4 Wiring
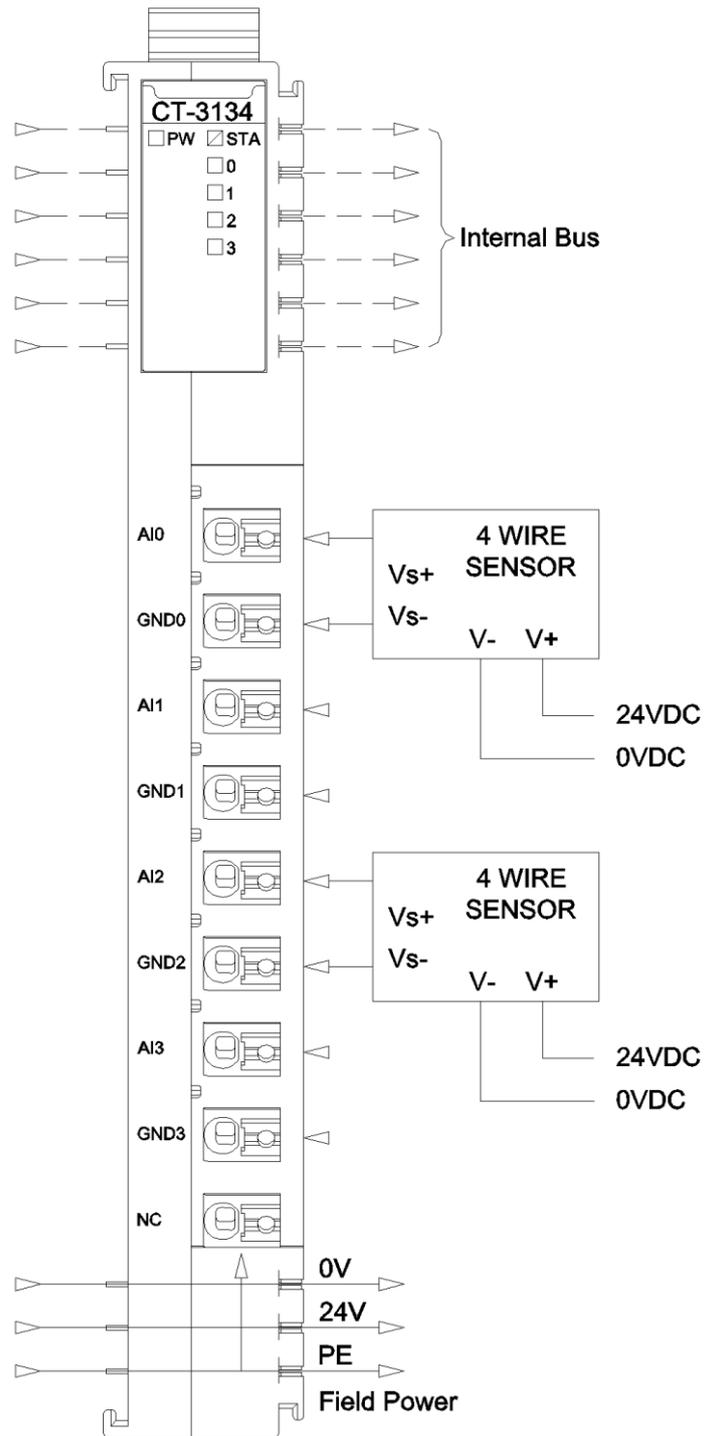
5 Process data definition

Input Data								
Bit No	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Byte 0	Analog Input Data (CH 0)							
Byte 1								
Byte 2	Analog Input Data (CH 1)							
Byte 3								
Byte 4	Analog Input Data (CH 2)							
Byte 5								
Byte 6	Analog Input Data (CH 3)							
Byte 7								
Byte 8	Analog Input Data (CH 4)							
Byte 9								
Byte 10	Analog Input Data (CH 5)							
Byte 11								
Byte 12	Analog Input Data (CH 6)							
Byte13								
Byte 14	Analog Input Data (CH 7)							
Byte 15								

5.1 Process data definition (Standard mode)

Data description：

Analog Input Data (CH0-7)：Voltage input data value

Process data definition(8AI)						
Voltage (0-5V)	Voltage (0-10V)	Voltage (±5V)	Voltage (±10V)	Decimal	HEX	
>5.06	>10.12	>5.06	>10.12	32767	0x7FFF	Overflow
5.06	10.12	5.06	10.12	27979	0x6D4B	Exceeds the upper limit
5V+0.1808mv	10V+0.3617mv	5V+0.1808mv	10V+0.3617mv	27649	0x6C01	
5	10	5	10	27648	0x6C00	Rated range
.	.	.	.	.	.	
.	.	.	.	.	.	
2.5	5	2.5	5	13824	0x3600	
.	.	.	.	.	.	
.	.	.	.	.	.	
0	0	0	0	0	0x0000	
/	/	.	.	.	.	
/	/	.	.	.	.	
/	/	-2.5	-5	-13824	0XCA00	
/	/	.	.	.	.	
/	/	.	.	.	.	
/	/	-5	-10	-27648	0x9400	
/	/	-5V-0.1808mv	-10V-0.3617mv	-27649	0x93FF	Exceeds the lower limit
/	/	-5.06	-10.12	-27979	0x92B5	
/	/	-5.06<	-10.12<	-32768	0x8000	Underflow

5.2 Process data definition（special mode）

Process data definition (8AI)					
Voltage (0-5V)	Voltage (0-10V)	Voltage (±5V)	Voltage (±10V)	Decimal	HEX
5	10	5	10	32767	0x7FFF
.	.	.	.	.	.
.	.	.	.	.	.
2.5	5	2.5	5	16383	0x3FFF
.	.	.	.	.	.
.	.	.	.	.	.
0	0	0	0	0	0x0000
/	/	.	.	.	.
/	/	.	.	.	.
/	/	-2.5	-5	-16384	0xC000
/	/	.	.	.	.
/	/	.	.	.	.
/	/	-5	-10	-32768	0x8000

6 Configuration parameters definition

Configuration Parameters								
Bit No	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Byte 0	Reserved						Range_Mode	16Bit Data Format
Byte 1	Voltage Type (CH 1)				Voltage Type (CH 0)			
Byte 2	Voltage Type (CH 3)				Voltage Type (CH 2)			
Byte 3	Reserved							
Byte 4								
Byte 5	Filtering Time (CH0)							
Byte 6								
Byte 7	Filtering Time (CH1)							
Byte 8								
Byte 9	Filtering Time (CH2)							
Byte 10								
Byte 11	Filtering Time (CH3)							
Byte 12								

Byte 13 … Byte 29	Reserved

Data description：

16Bit Data Format：Sequence of 16-bit data byte transmission (Default:0)

0：A_B

1：B_A

Range_Mode：Process data mode (default: standard mode)

Standard mode: same with SIEMENS process data definition

Special mode: max range of the hardware.

Voltage Type(CH 0-3)：Input voltage type (Default:3)

0：disabled

1：0~5Vdc

2：-5~5Vdc

3：0~10Vdc

4：-10~10Vdc

Filtering Time(CH0-CH3)：The input filtering time of the channel, unit in "ms".

(Default：10)

A Dimension drawing

CT-3134

☐PW ☑STA
☐0
☐1
☐2
☐3

AI0
GND0
AI1
GND1
AI2
GND2
AI3
GND3
NC

115mm

14mm

75mm

56mm

110mm

115mm