

# **CT-3734 4 channels RTD-PT100 temperature acquisition module**

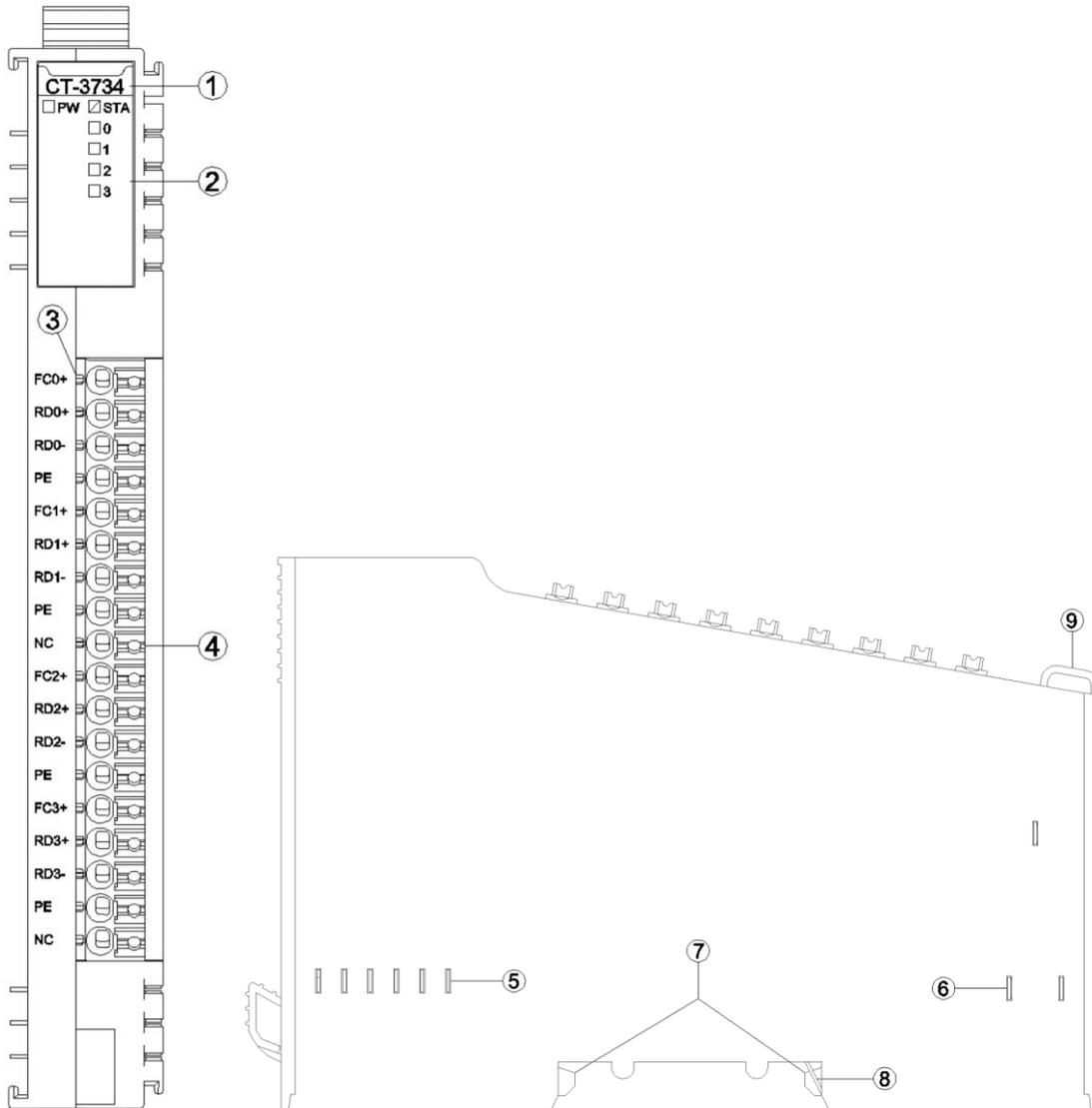
## **1 Module features**

- ◆ The module supports 4-channel RTD thermal resistance (PT100) temperature acquisition
- ◆ The channels are isolated, and the isolation voltage is 1500V
- ◆ The module could be connected to a 2-wire or 3-wire PT100 temperature sensor
- ◆ The internal bus of the module and field input adopts magnetic isolation
- ◆ The module carries with 4 analog input channel LED indicator
- ◆ 15-bits ADC resolution

## 2 Technical Parameters

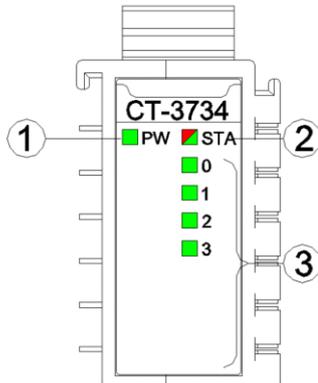
General parameters	
Power	Max.65mA@5.0Vdc
Isolation	I/O to internal bus: magnetic isolation (2.5KVrms)
Field Power	Not used
Wiring	I/O wiring Max.1.0mm <sup>2</sup> (AWG 17)
Mounting Type	35mm Din-rail
Size	115*14*75mm
Weight	65g
Environment Specification	
Operational Temperature	-40~85°C
Operational Humidity	5%~95% RH (No Condensation)
Ingress Protection Rating	IP20
Input Parameter	
Channel Number	4 channels
LED Indicator	4 Green LED
Resolution	15 Bits
Sensor Type	PT100
Measurement Range	-240~880°C
Measurement Accuracy	0.5°C
Conversion Rate	400ms/4 channels
Diagnostic function	32766: The sensor is not connected or disconnected -32766: Short Circuited 32765: Chip failure 32767: Overflow -32768: Underflow

### 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 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 Indicator	Definition
ON	The input signal exceeds 1% of the range
OFF	Invalid input signal

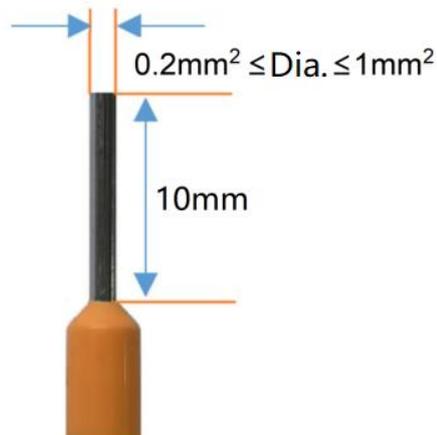
### 3.2 Terminal definition

Terminal Number	Definition	Description
1	FC0+	Signal Input CH0
2	RD0+	
3	RD0-	
4	PE	
5	FC1+	Signal Input CH1
6	RD1+	
7	RD1-	
8	PE	
9	NC	N/A
10	FC2+	Signal Input CH2
11	RD2+	
12	RD2-	
13	PE	
14	FC3+	Signal Input CH3
15	RD3+	
16	RD3-	
17	PE	
18	NC	N/A

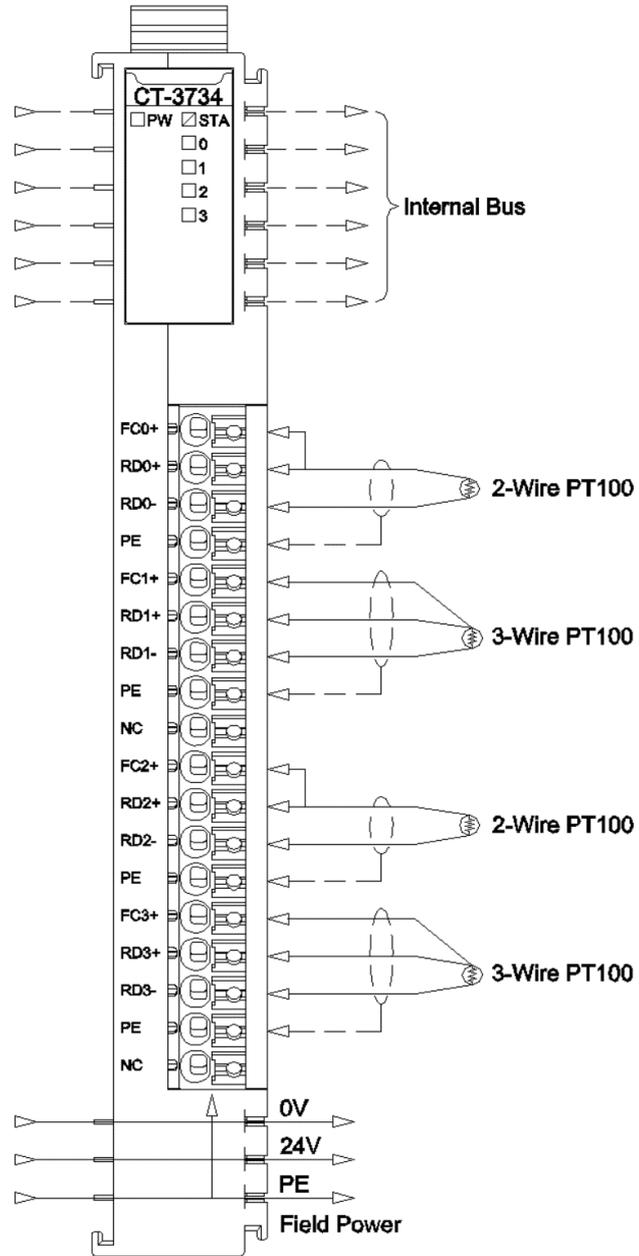
It is recommended to use cables with cores greater than 0.2mm<sup>2</sup> and smaller than 1mm<sup>2</sup>.

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

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								

Data description:

Analog Input Data (CH0-2): Analog channel input data values

Process Data Definition			
Temperature	Decimal	Hex	Location
>880.0	32767	7FFF	Overflow
880.0	8800	2260	Exceeds the upper limit
.	.	.	
.	.	.	
850.1	8501	2135	
850.0	8500	2134	Rated range
.	.	.	
.	.	.	
-200.0	-2000	F830	
-200.1	-2001	F82F	Exceeds the lower limit
.	.	.	
.	.	.	
-240.0	-2400	F6A0	
<-240.0	-32768	8000	Underflow

## 6 Configuration parameters definition

Configuration parameter								
Bit No	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Byte 0	Reserved							16Bits Data Format

Data description:

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

0: A\_B

1: B\_A

## A Dimension drawing

