

CT-4158 8 channels Voltage Output

0~5VDC/0~10VDC/±5VDC/±10VDC,16bits

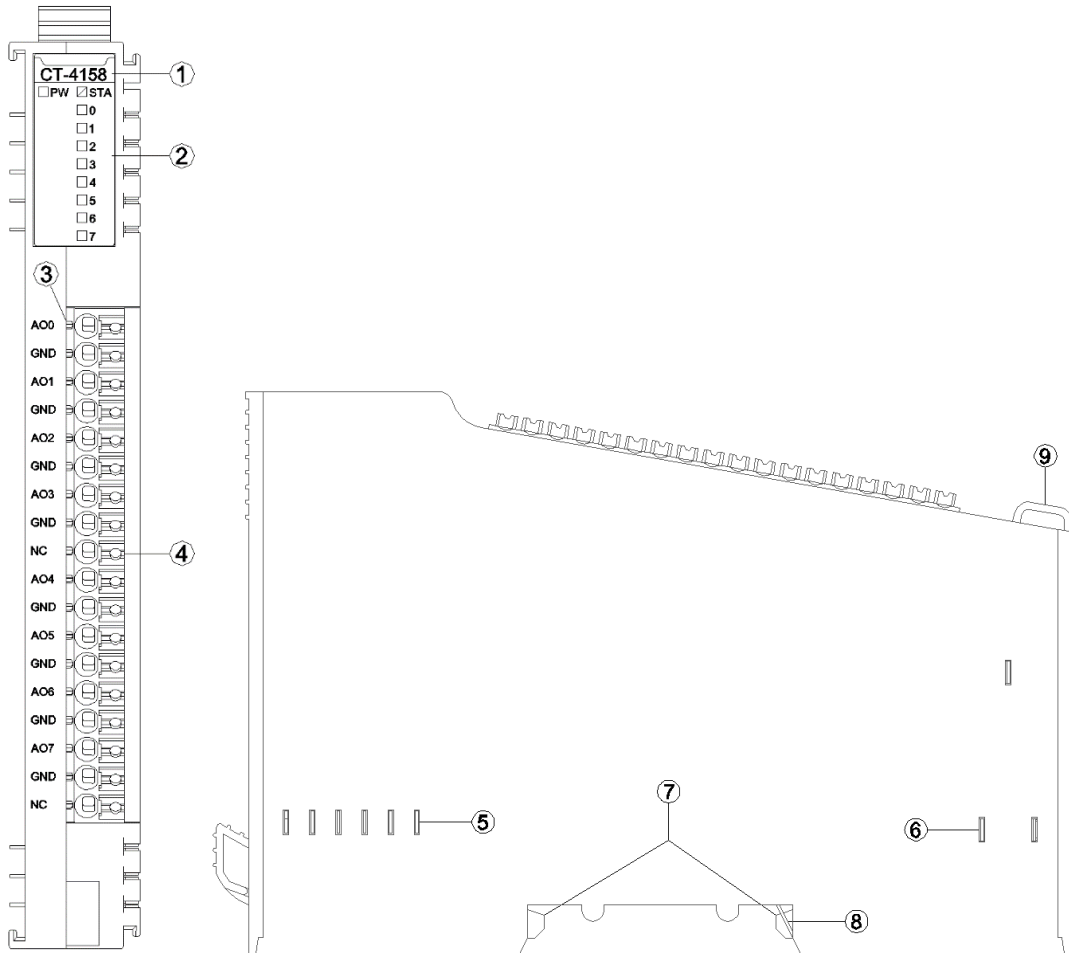
1 Module features

- ◆ The module supports 8 channels voltage signal output
- ◆ Output range: 0~5VDC, 0~10VDC, ±5VDC, ±10VDC, 16 bits
- ◆ The module carries with 8 analog output LED indicators
- ◆ Module output signal is single - ended common - grounded output

2 Technical Parameters

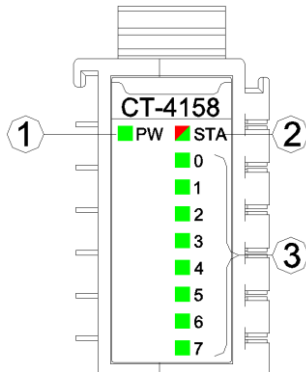
| General parameters | |
|---------------------------|--|
| Power | Max.500mA@5.0Vdc |
| Isolation | I/O to internal bus: magnetic isolation (3KVrms) |
| Field Power | Not used |
| Wiring | Max.1.0mm ² (AWG 17) |
| Mounting Type | 35mmDIN-Rail |
| Size | 115*14*75mm |
| Weight | 65g |
| Environment Specification | |
| Operational Temperature | -40~85°C |
| Operational Humidity | 5%~95% RH(No Condensation) |
| Ingress Protection Rating | IP20 |
| Output Parameter | |
| Channel Number | 8Channels voltage output |
| LED Indicator | 8 Channels voltage output indicator |
| Output Voltage Range | 0~5VDC、0~10VDC、±5VDC、±10VDC |
| Load Resistance | Max.5kΩ |
| Resolution | 16 bits |
| Acquisition Accuracy | ±0.1%(Full Scale)@25°C ±0.3(Full Scale)@-40~85°C |
| Conversion Time | 1 ms / all channels |
| Diagnose | Overtemperature/overcurrent status monitoring |
| Protection Current | 20mA. |
| Common Port | Common grounded output |

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)

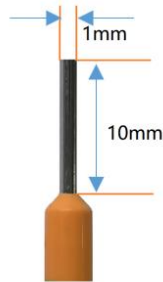
| PW POWER STATE (GREEN) | Definition |
|---------------------------------|--|
| ON | Internal bus Power Normal |
| OFF | Internal bus Power Failure |
| STA MODULE STATE (RED/GREEN) | Definition |
| Green slow flash (2.5Hz) | Module internal bus is not started |
| Red slow flash (2.5Hz) | Module internal 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 output value is not 0 |
| OFF | The output value is 0 |

3.2 Terminal definition

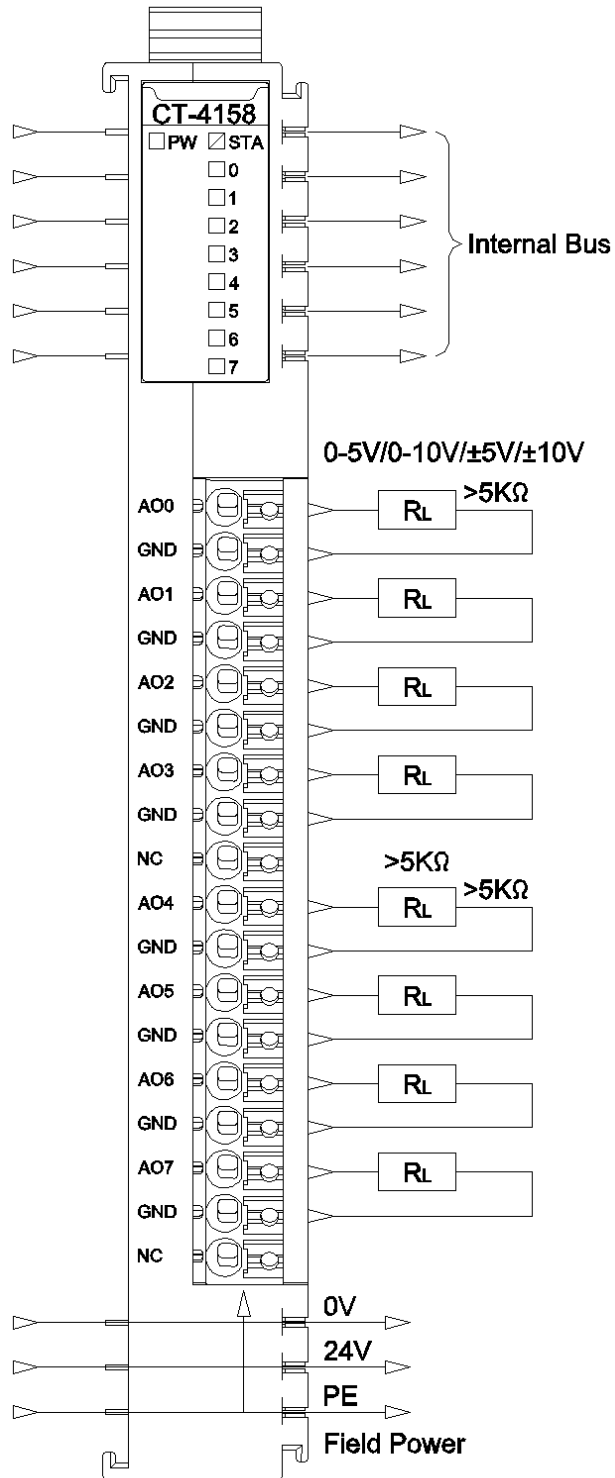
| Terminal Number | Definition | Description |
|-----------------|------------|-------------------|
| 1 | AO0 | Signal Output CH0 |
| 2 | GND | |
| 3 | AO1 | Signal Output CH1 |
| 4 | GND | |
| 5 | AO2 | Signal Output CH2 |
| 6 | GND | |
| 7 | AO3 | Signal Output CH3 |
| 8 | GND | |
| 9 | NC | Not Connected |
| 10 | AO4 | Signal Output CH4 |
| 11 | GND | |
| 12 | AO5 | Signal Output CH5 |
| 13 | GND | |
| 14 | AO6 | Signal Output CH6 |
| 15 | GND | |
| 16 | AO7 | Signal Output CH7 |
| 17 | GND | |
| 18 | NC | Not Connected |

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

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 | Reserved | | | | | | | Overtem perature |
| Output Data | | | | | | | | |
| Bit No | Bit 7 | Bit 6 | Bit 5 | Bit 4 | Bit 3 | Bit 2 | Bit 1 | Bit 0 |
| Byte 0 | Analog Output Data (CH 0) | | | | | | | |
| Byte 1 | | | | | | | | |
| Byte 2 | Analog Output Data (CH 1) | | | | | | | |
| Byte 3 | | | | | | | | |
| Byte 4 | Analog Output Data (CH 2) | | | | | | | |
| Byte 5 | | | | | | | | |
| Byte 6 | Analog Output Data (CH 3) | | | | | | | |
| Byte 7 | | | | | | | | |
| Byte 8 | Analog Output Data (CH 4) | | | | | | | |
| Byte 9 | | | | | | | | |
| Byte 10 | Analog Output Data (CH 5) | | | | | | | |
| Byte 11 | | | | | | | | |
| Byte 12 | Analog Output Data (CH 6) | | | | | | | |
| Byte 13 | | | | | | | | |
| Byte 14 | Analog Output Data (CH 7) | | | | | | | |
| Byte 15 | | | | | | | | |

Data Declaration:

Analog Output Data (CH0-7): voltage output value

Unipolarity 0-5V/0-10V output value

5.1 Process data definition (standard mode)

Data Declaration:

Analog Output Data (CH0-7): voltage output value

Unipolarity 0-5V/0-10V output value

| Analog Output Data (CT-4158) (0-5V/0-10V) | | | |
|---|--------------------|---------|-----|
| Voltage (0-5V) | Voltage (0-10V) | Decimal | Hex |

| | | | |
|-----|----|-------|--------|
| 5 | 10 | 27648 | 0x6C00 |
| . | . | . | . |
| . | . | . | . |
| 2.5 | 5 | 13824 | 0x3600 |
| . | . | . | . |
| . | . | . | . |
| 0 | 0 | 0 | 0x0000 |

Bipolar $\pm 5V/\pm 10V$ Output value

| Analog Output Data (CT-4158) ($\pm 5V/\pm 10V$) | | | |
|---|-----------------------|---------|--------|
| Voltage ($\pm 5V$) | Voltage ($\pm 10V$) | Decimal | Hex |
| 5 | 10 | 27648 | 0x6C00 |
| . | . | . | . |
| . | . | . | . |
| 2.5 | 5 | 13824 | 0x3600 |
| . | . | . | . |
| . | . | . | . |
| 0 | 0 | 0 | 0x0000 |
| . | . | . | . |
| . | . | . | . |
| -2.5 | -5 | -13824 | 0xCA00 |
| . | . | . | . |
| . | . | . | . |
| -5 | -10 | -27648 | 0x9400 |

5.2 Process data definition (special mode)

Data Declaration:

Analog Output Data (CH0-7): voltage output value

Unipolarity 0-5V/0-10V output value

| Analog Output Data (CT-4158) (0-5V/0-10V) | | | |
|---|-----------------|---------|--------|
| Voltage (0-5V) | Voltage (0-10V) | Decimal | Hex |
| 5 | 10 | 65535 | 0xFFFF |
| . | . | . | . |
| . | . | . | . |
| 2.5 | 5 | 32767 | 0x7FFF |
| . | . | . | . |
| . | . | . | . |
| 0 | 0 | 0 | 0x0000 |

Bipolar $\pm 5V/\pm 10V$ Output value

| Analog Output Data (CT-4158) ($\pm 5V/\pm 10V$) | | | |
|---|-----------------------|---------|--------|
| Voltage ($\pm 5V$) | Voltage ($\pm 10V$) | Decimal | Hex |
| 5 | 10 | 32767 | 0x7FFF |
| . | . | . | . |
| . | . | . | . |
| 2.5 | 5 | 16383 | 0x3FFF |
| . | . | . | . |
| . | . | . | . |
| 0 | 0 | 0 | 0x0000 |
| . | . | . | . |
| . | . | . | . |
| -2.5 | -5 | -16384 | 0xC000 |
| . | . | . | . |
| . | . | . | . |
| -5 | -10 | -32768 | 0x8000 |

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 | | | | | | | 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 | Voltage Type (CH 5) | | | | Voltage Type (CH 4) | | | |
| Byte 4 | Voltage Type (CH 7) | | | | Voltage Type (CH 6) | | | |

Data Declaration:

16Bit Data Format: 16 bits data byte transmission sequence (default value:

A_B)

A_B: Big-endian format transmission

B_A: Little-endian format transmission

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 0-7): Output voltage type (default value: 0~10Vdc)

Disable: Output disable

0~5Vdc: 0~5V Direct-current output

0~10Vdc: 0~10V Direct-current output

-5~5Vdc: -5~5V Direct-current output

-10~10Vdc: -10~10V Direct-current output

A Dimension drawing

