# 6 PT100 PROBES TO MODBUS RS485 CONVERTER

**CPT1006-485**

- 6 inputs for 2- or 3-wire Pt100 probes.
- Analogue inputs isolated from communication and power supply.
- Break detection of the Pt100 and of the compensation wire.
- RS485 communication with Modbus protocol.
- Each probe can be enabled individually.
- 35 mm DIN rail mounting (EN 60715).



Converter with 6 Pt100 inputs with compensation wire input to a digital output with RS485 communication port and Modbus protocol. The analogue inputs are isolated from the communication output and from the power supply, which is DC with galvanic isolation. Each input detects breakage of the Pt100 wire and of the compensation wire.

## SPECIFICATIONS

| | |
|---|---|
| Format | 105.5 × 90.5 × 58.5 mm |
| Mounting | 35 mm DIN rail (EN 60715) |

## POWER SUPPLY

| | |
|---|---|
| Voltage | 24 VDC (18 … 75 VDC) |
| Isolation | Galvanic |

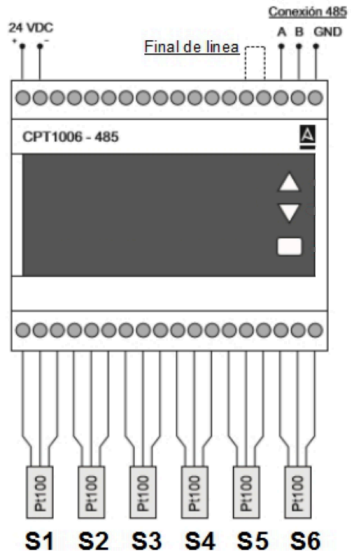
## INPUTS

| | |
|---|---|
| Inputs | 6 x Pt100 (2 or 3 wires) |
| Isolation | From communication and power supply |
| Probe break | Pt100 and compensation wire |
| Units | ºC or ºF |

## COMMUNICATION

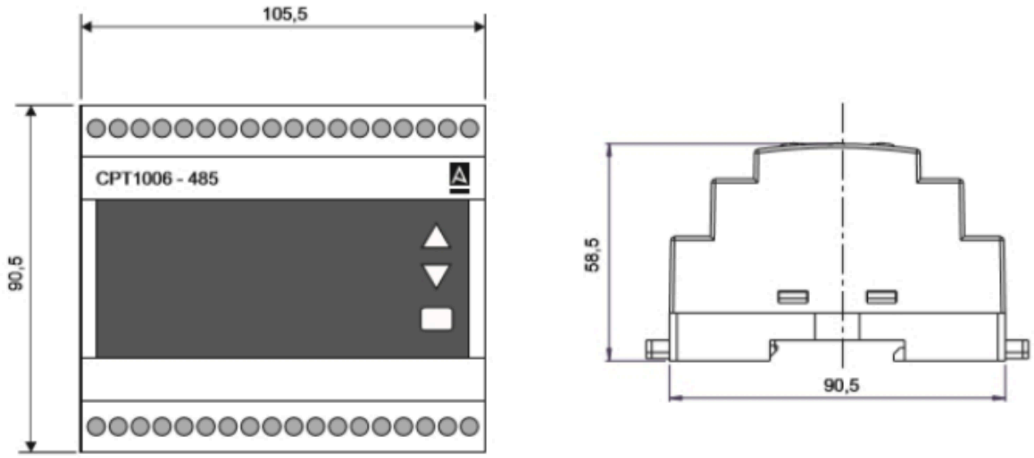
| | |
|---|---|
| Port | RS485 |
| Protocol | Modbus |
| Speed | 9600 baud |
| Parity / stop | Even · 1 stop bit |
| Address | 1 … 255 |

## CONNECTION DIAGRAM




| | |
|---|---|
| **24 VDC** | Power supply (+ / −) |
| **A · B · GND** | RS485 connection |
| **Line termination** | Jumper on the first / last module |
| **S1 … S6** | Pt100 probes |

## DIMENSIONS



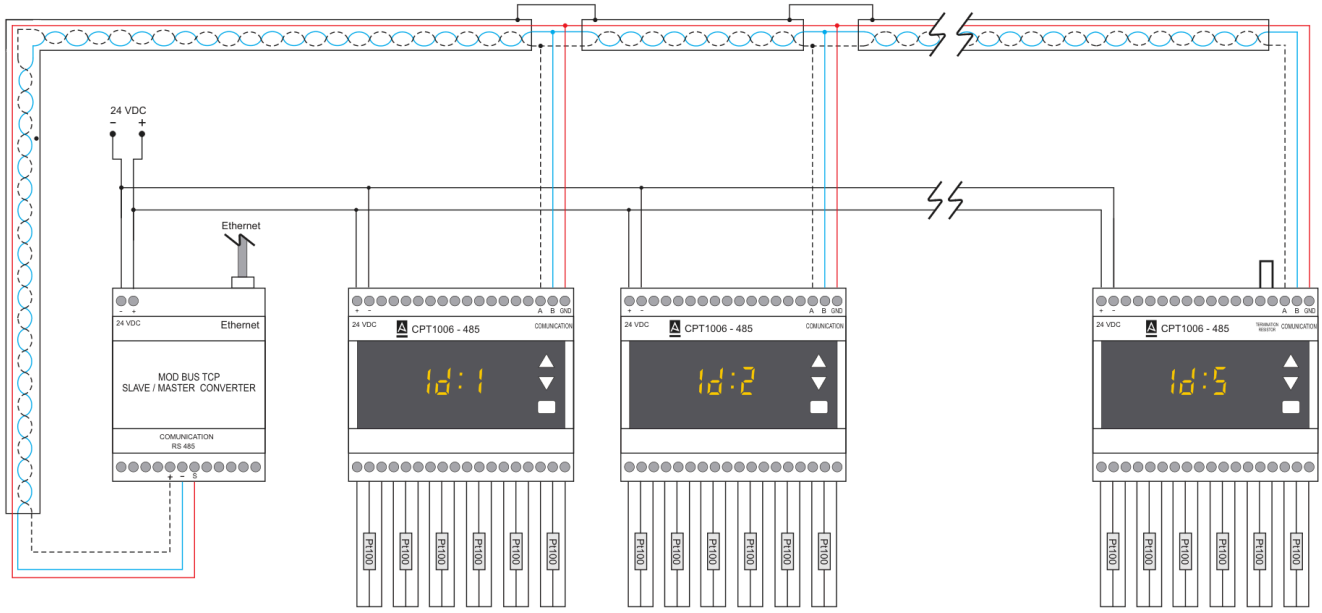

## OPERATION

1. With 3 wires, the unit compensates the wire resistance. For a 2-wire Pt100, join the compensation wire terminal to the Pt100 common.
2. On the 485 communication terminals, fit the line-termination jumper if the module is at the beginning or at the end of the line.
3. Each probe is enabled or disabled by parameter (S1 … S6: On / OFF); an enabled probe that is badly connected is flagged as an error.
4. The module address (Id, 1 to 255) must match the communication frame; to change it, press Validation for 5 s.

## MODBUS COMMUNICATION MAP

| Item | Traditional address | IEC address | Format |
|---|---|---|---|
| Probe 1 … 6 | 30001 … 30006 | %IW0 … %IW5 | Integer |
| Enabled probes | 30007 | %IW6 | Binary (bit 0 = Pt100 1 … bit 5 = Pt100 6) |
| Probe error | 30008 | %IW7 | Binary (bit 0 = Pt100 1 … bit 5 = Pt100 6) |

## RS485 NETWORK EXAMPLE




## PRECAUTIONS

.- Before connecting the unit, make sure the supply voltage is within the range stated on the label, otherwise internal components of the unit may be damaged.

.- Use wire-end ferrules for wiring. Stranded wire can cause a short circuit if a loose strand gets in.

.- If the units are permanently powered, leave some free space between them for better ventilation, as excessive temperature can shorten the life of the internal components.

.- If the units are used in environments with excessive electrical noise, keep the unit and its wiring away from the noise source.

.- Do not expose the unit to solvents or acids, as they can damage the housing. In highly corrosive or very humid environments, both the internal components and the printed circuit board (PCB) may be affected.