

PENDOTECH® CONDUCTIVITY SENSOR TRANSMITTER

CT-2

User's Guide



Please read this User's Guide before mounting and operating.
Save the Manual for future references.

PENDOTECH
Adding Value To Your Process

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Each prospective user must test the measurement unit for its proposed application to determine its suitability for the purpose intended prior to incorporating into any process or application. The measurement unit is not intended for use as a component in life support. It is not designed for any application in which the failure of the product could result in property damage, personal injury, or death. Proper safeguards must be put into place for the process in which the unit is used.

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Used throughout this guide:

WARNING: “WARNING” is used to indicate the presence of a hazard which can cause severe personal injury, death, or substantial property damage if the warning is ignored.

Note: “Note” is used to notify the user of installation or operation information which is important but not hazard related.

	WARNING: DANGEROUS VOLTAGE INSIDE THE CONTROL BOX. CONTROL BOX ONLY TO BE OPENED BY PENDOTECH OR AUTHORIZED REPRESENTATIVE. NO USER SERVICEABLE PARTS INSIDE.
	WARNING: POTENTIAL SHOCK HAZARD. UNLESS PROPERLY PANEL MOUNTED, DO NOT USE THIS PRODUCT NEAR WATER OR IF YOU ARE WET. DO NOT SUBMERGE THIS PRODUCT. USE ONLY IN A GROUNDED ELECTRICAL OUTLET. UNLESS PROPERLY PANEL MOUNTED, UNPLUG THE PRODUCT FROM THE OUTLET BEFORE CLEANING WITH ANY LIQUIDS. INSTALL SECURELY ON A STABLE SURFACE. INSTALL IN A LOCATION WHERE NO ONE CAN STEP ON OR TRIP OVER THE POWER CORD AND WHERE THE POWER CORD WILL NOT BE DAMAGED.

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Overview

The PendoTECH CT-2 is a 2 wire DIN rail mountable conductivity transmitter with automatic temperature compensation. The transmitter accommodates one PendoTECH Single Use Conductivity Sensor. The conductivity is normalized to 25°C and this value is transmitted by a 4 to 20 mA signal.

Conductivity Measurement

- ◆ PendoTECH Single Use Conductivity Sensors can measure conductivity in the range of 0.1 to 100 mS
- ◆ The sensors have a pre-determined cell constant printed on the sensor label, which must be managed by the device to which the transmitter is connected
- ◆ The default cell constant value of the transmitter is 1.00. Entry of the sensor's cell constant is typically done by the system HMI to which the transmitter is connected
- ◆ The actual conductivity value is calculated via the PLC/control system.
- ◆ An example: if a sensor has a k of 0.8 and the CT-2 measures 10mS, the PLC/control system would multiply 10mS by 0.8 to arrive at the actual reading of 8mS

Temperature Compensation

- ◆ Conductivity measurements are highly dependent on temperature
- ◆ Temperature is measured in the range of 2 to 50°C
- ◆ By default, the CT-2 uses the actual temperature value measured by the built-in thermistor of the PendoTECH conductivity sensor for temperature compensation
- ◆ The coefficient for temperature compensation is 2.1%/°C.

Components supplied:

- ◆ CT-2 Transmitter
- ◆ 12 ft (3.7 m) sensor interface cable (PN: CN-650-298)
- ◆ User's Guide
- ◆ Certificate of Quality



Note: Conductivity sensor (shown in picture) not included and must be purchased separately

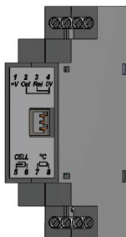
Mounting and Wiring

Power/Output

Terminals	Function
1	24 VDC Power +
2	4-20 mA output +
3	Not used
4	Power/ mA -

Sensor Cable

Terminals	Function
5	Conductivity: White
6	Conductivity: Green
7	Temperature: Red
8	Temperature: Black



Wiring details



Wiring information conveniently printed on the unit

Mounting

CT-2 can be easily mounted on a 35 mm rail conforming to EN50022.

Wiring

- ◆ Connect a PendoTECH Conductivity sensor cable, CN-650-298 to terminals 5, 6, 7, and 8.
 - 5: Conductivity Low (White)
 - 6: Conductivity High (Green)
 - 7: Temperature (Red)
 - 8: Temperature GND (Black)



Note: Terminals 6 and 7 are internally connected.

- ◆ Connect the analog output signal via terminals 2(+) and 4(-).
- ◆ Connect 24 VDC \pm 20%, (max. 100 mA) power supply via terminals 1(+) and 4(-).

Note: In order to minimize measuring errors, make sure the connecting screws are fully tightened.



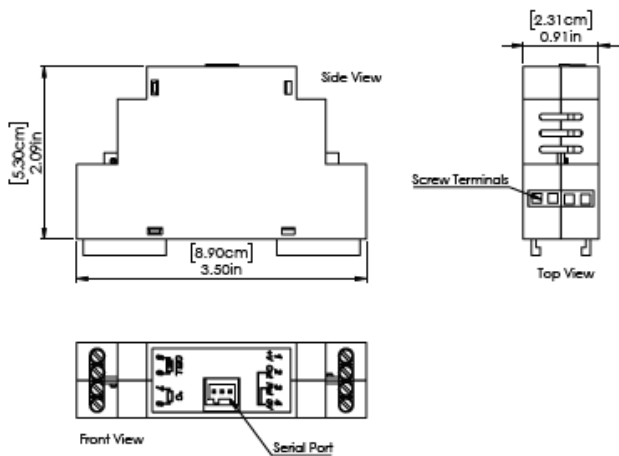
WARNING: Confirm the unit is secured to the DIN rail and all wires are secured to the screw terminals before applying power to the unit.

Specifications

Part Number	CT-2
Conductivity Input Signal	0.1 mS/cm to 150 mS/cm
Cell Constant	0.5 to 3 (See sensor label)
Temperature Input	PendoTECH Single Use Temperature Sensor Thermistor (NTC 2.252K)
Temperature Compensation	2.1%/°C
Output Signal	4 mA to 20 mA = 0 mS to 150 mS
Admissible Current Load	max. 500 Ω at 20 mA
Admissible Voltage Load	max. 2 k Ω at 10 V
Serial Interface	CT-2-RS232
Power Supply	24 VDC \pm 20%, max. 100 mA
Input Isolation	1500 VAC for 1 min
Conductivity Measurement Accuracy (with sensor connected)	0.1 to 2 mS/cm: \pm 0.1 mS/cm; 2 to 50 mS/cm: \pm 5% of reading; 50 to 100 mS/cm: typically \pm 5% of reading
Temperature Measurement Accuracy (with sensor connected)	2 to 50 °C: \pm 0.2 °C
Ambient Temperature / Humidity	-20 to 85 °C / 0 to 85% RH, non-condensing
Protection Class	IP20
Mounting Specification	DIN Rail



CT-2 Dimensions



CT-2 dimensions (inches/cm)

Support

Technical support

In the unlikely event that you encounter a problem with your PendoTECH device, please contact your local distributor or directly contact our support team.

PendoTECH can be contacted at:
Email: request@pendoTECH.com
Phone: +1 (609) 799-2299

Waste Disposal



Do not dispose of electronic devices together with household waste material.

If disposed of within European Union, this product should be treated and recycled in accordance with the laws of your jurisdiction implementing Directive 2012/19/EU on waste electrical and electronic equipment (WEEE).

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