Conductivity Transmitters Using 4-Ring Technology

CDTX1201 Series

1 YEAR WARRANTY

- **Virtually Immune to Contamination**
- **Built-In Temperature Sensor on the Probe and the Transmitter's ATC Circuitry with a ß of 2%**
- **Direct Connection of the Probe to the Transmitter Ensures a Positive Electrical Connection with No Signal Loss over Long Distances**
- **2 Versions are Available: CDTX1200 (Without an LCD), and the CDTX1200-D [With LCD (Allows Easy Verification and Monitoring of Measured Values, and is Easier to Calibrate and Maintain)]**
- **Should be Used in Conjunction with the CDE-1201 In-Line Probe or CDE-1202 Tank Probe with External Threads**

CONDUCTIVITY, 4-RING TECHNOLOGY

The CDTX1200 Series conductivity transmitters use top-of-the-line, 4-ring potentiometric probes. The 4-ring potentiometric method provides much higher accuracy and repeatability than the 2-ring amperometric method. When measuring liquids that have a high conductivity, the 2-ring system is susceptible to polarization. This condition makes it difficult to obtain accurate measurements. Polarization is directly related to the electrode's current load, and will cause a considerable non-linear drop in the voltage. As a result, the solution around the electrode simulates a low-conductivity condition.

4-ring electrodes eliminate the polarization effect by splitting the 4 rings into 2 current electrodes and 2 voltage electrodes. When placed in a conductive liquid, the 2 current electrodes take the alternating voltage and create a current. This alternating current produces a buffer field from which polarization is absent. The voltage is then measured in this field, which ensures accurate readings.

Voltage electrodes carry very little current. This allows the electrodes to be arranged in such a way that the current electrodes, which are the most susceptible to polarization, are placed where they cannot affect the voltage electrodes. Consequently, the buffer field is large enough for the voltage electrodes to take accurate readings without being affected by polarization.

All products shown smaller than actual size.

CDTX1201-D.

CDTX1201.

The wide range of OMEGA® conductivity probes includes models for industrial applications. Flow-thru and DIP versions are available. The latest additions to this family are probes with ½" and ¾" external threads for mounting on commercial pipe tees.

The 4-pin CDE-1201 is a molded conductivity probe with pipe threads at both ends. The housing is fiber-reinforced polypropylene and can work with pressures up to 5 bar (72.5 psi) and temperatures as high as 80°C (176°F).

These probes combine the proven 4-ring potentiometric method with platinum sensors and a stainless steel external thread. The removable protective sleeve is made of Ultem®, which resists the harmful effects of most chemicals, and can be unscrewed for quick and easy maintenance. The new probes withstand temperatures up to 120°C (248°F) and pressures of up to 5 bar (72.5 psi). CDE-1202 incorporates an NTC sensor. A 10 m (33') cable is an available option.

Specifications

Range:
- **CDTX1201:** 0.0 to 199.9 mS/cm
- **CDTX1202:** 0.00 to 19.99 mS/cm
- **CDTX1203:** 0 to 1999 µS/cm
- **CDTX1204:** 0.0 to 199.9 µS/cm

Resolution:
- **CDTX1201:** 0.1 mS/cm
- **CDTX1202:** 0.01 mS/cm
- **CDTX1203:** 1 µS/cm
- **CDTX1204:** 0.1 µS/cm

Accuracy: ±2% FS
Calibration: 4 mA (zero) ±0.8 mA
Slope: ±1.6 mA (90 to 110%)
Temperature Compensation:
Automatic from 0 to 50°C (32 to 122°F) with a ß of 2%
Output: 4 to 20 mA non-isolated; max 500 Ω sinking signal
Power:
- **Without LCD:** 15 to 30 Vdc
- **With LCD:** 20 to 36 Vdc

Probe: CDE-1201 or CDE-1202 (not included)
Cable Length: 3 m (10')
Protection: NEMA 4 (IP65)
Operating Environment: 0 to 50°C (32 to 122°F)
0 to 95% RH (non-condensing)
Dimensions: 165 L x 110 W x 90 mm H (6.5 x 4.3 x 3.5")
Weight: 1 kg (2.2 lb)

CDTX1201-D, shown smaller than actual size.

Probe Specifications

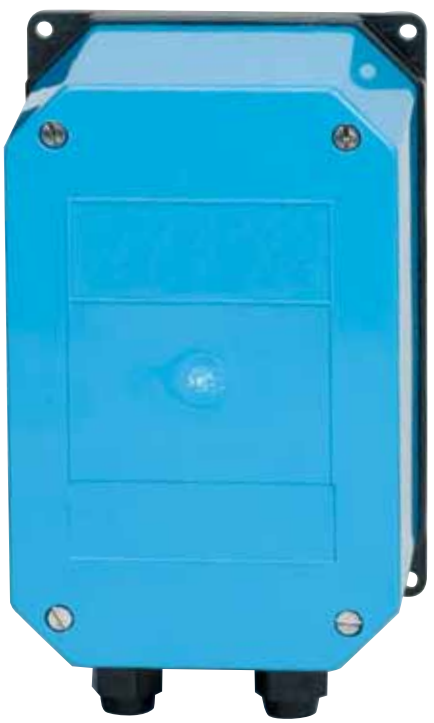
Temp Compensation:
- **CDE1201 and CDE1202:**
  ATC 0 to 50°C (32 to 122°F)

Body Material:
- **CDE-1201:** Polypropylene
- **CDE-1202:** Ultem®

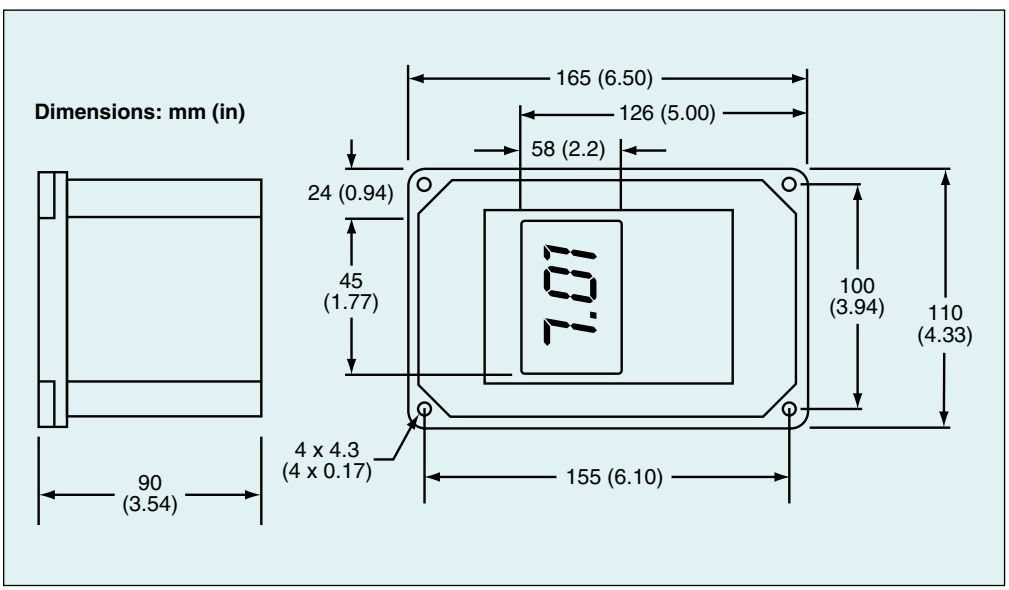
Working Temperature:
- **CDE-1201:** 0 to 80°C (32 to 176°F)
- **CDE-1202:** 0 to 120°C (32 to 248°F)

Max Pressure [@25°C(77°F)]:
- **CDE-1201 and CDE-1202:** 5 bar (72.5 psi)

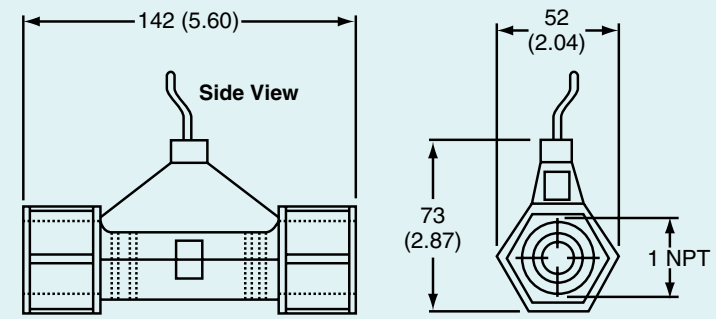
Cable Length: 3 m (10')



CDTX1201, shown smaller than actual size.

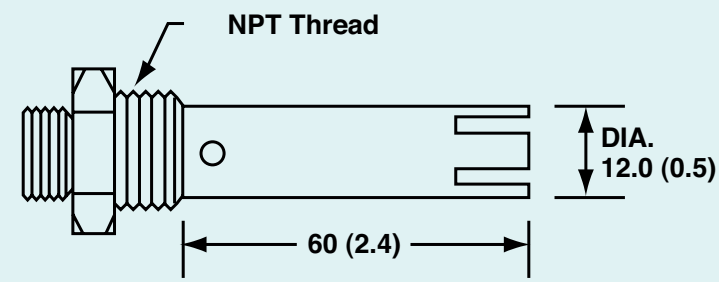


Dimensions for CDE-1201 Electrode



Dimensions: mm (in)

Dimensions for CDE-1202 Electrode



Dimensions: mm (in)

CDE-1202, submersible platinum conductivity probe.

To Order

Model No.	Range	Description
CDTX1201	0.0 to 199.9 mS/cm	Conductivity transmitter
CDTX1201-D	0.0 to 199.9 mS/cm	Conductivity transmitter with display
CDTX1202	0.0 to 19.99 mS/cm	Conductivity transmitter
CDTX1202-D	0.0 to 19.99 mS/cm	Conductivity transmitter with display
CDTX1203	0.0 to 1999 µS/cm	Conductivity transmitter
CDTX1203-D	0.0 to 1999 µS/cm	Conductivity transmitter with display
CDTX1204	0.0 to 199.9 µS/cm	Conductivity transmitter
CDTX1204-D	0.0 to 199.9 µS/cm	Conductivity transmitter with display
CDE-1201	—	In-line 1 NPT polypropylene conductivity probe
CDE-1202	—	Submersible platinum conductivity probe
CDE-1200-CABLE	—	11.6 m (38') extension cable for CDE-1200 probes
CDSA-450	—	450 microSiemen conductivity standard, 1 qt
CDSA-1500	—	1500 microSiemen conductivity standard, 1 qt
CDSA-4500	—	4500 microSiemen conductivity standard, 1 qt
CCT-100	—	Loop isolator

Comes with complete operator's manual.

***Ordering Examples: CDTX1203-D,** 0.0 to 199.9 µS/cm conductivity transmitter with display, **CDE-1202,** submersible platinum probe, **CDS-1500,** 1500 µS/cm standard.*

***CDTX1201,** conductivity transmitter with display, **CDE-1201,** in-line probe.*