CDCE-90-X SERIES
Conductivity Sensors

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SAFETY INSTRUCTIONS FOR IN-LINE ELECTRODE INSTALLATION

1. Do not remove from pressurized lines.
2. Do not exceed maximum temperature/pressure specifications.
3. Wear safety goggles or face shield during installation/service.
4. Do not alter product construction.

Failure to follow safety instructions may result in severe personal injury!

1. Wiring

- Use three conductor shielded cable for cable extensions up to 30 m (100 ft) max.
- Shield must be maintained through cable splice

2. Recommended Position

- In-line
- Submersible

2821-1

OR

Use caution to avoid air bubble or sediment trapping inside the electrode cavity.

3. CDCE-90-001/CDCE-90-01/CDCE-90-1

In-line Installation

Standard fitting kit
Mark hole position
Hole up
3/4 in. NPT

Customer supplied pipe tee/reducer

Optional fitting kit
Mark hole position
Hole up
1/2 in. NPT

Customer supplied pipe tee/reducer

Hand tighten only!
4. CDCE-90-10 In-line Installation

Install behind hole ONLY!

Customer supplied pipe tee/reducer

Customer supplied pipe tee/reducer

Sealant

Sealant

1-1/4 turns past finger tight

5. CDCE-90-20 In-Line Installation

Mark hole position

Customer supplied pipe tee/reducer

3/4 in. NPT

Install behind hole ONLY!

1-1/4 turns past finger tight

6. CDCE-90-001/CDCE-90-01/CDCE-90-1 Submersible Installation

Customer supplied coupling

Customer supplied pipe tee/reducer

Standard fitting kit

Optional fitting kit

Sealant

Sealant

3/4 in. NPT

1/2 in. NPT

7. CDCE-90-10 Submersible Installation

Attach 3/4 in. watertight pipe to the top of the sensor. Secure the threaded connection to prevent any leakage.

For additional defense against possible accumulation of condensation at the back seal area of the sensor, fill the lower 3-4 inches (75-100 mm) of conduit or extension pipe with a flexible sealant such as silicone.

8. CDCE-90-20 Submersible Installation

Submersion fitting kit (customer supplied)

Customer supplied pipe

Customer supplied coupling

3/4 in. NPT

1-1/4 turns past finger tight

Fill with 3 to 4 in. of sealant
9. Specifications
Alternate wetted materials and overall lengths are available through special order. Cable length extensions to 100 ft. (30 m) are available through special order. For resistivity measurements above 10 MΩ and/or below 20°C, maximum cable length is 25 ft. (7.6 m).

CDCE-90-001, CDCE-90-01, CDCE-90-1

- CDCE-90-001 cell: 0.01
  CDCE-90-001 range: 0.01 to 100 µS (10 kΩ to 100 MΩ)
- CDCE-90-01 cell: 0.10
  CDCE-90-01 range: 1 to 1000 µS
- CDCE-90-1 cell: 1.0
  CDCE-90-1 range: 10 to 10,000 µS

Temperature compensation: PT1000

Wetted materials:
- O-rings: EPR
- Insulator material: PTFE
- Electrodes: 316 stainless steel
- Standard fitting: Polypropylene
- Max. pressure: 6.9 bar (100 psi)
- Max. temperature: 100 °C (212 °F)
- Optional 3-2820.391 fitting: 316 stainless steel (1/2 in. NPT)
  Max. pressure: 13.8 bar (200 psi)
  Max. temperature: 120 °C (248 °F)

Sanitary fitting size: 1 and 1½ in.

CDCE-90S-01-S15/CDCE-90S-01-S15/CDCE-90S-1-S15

CDCE-90S-001-T15

- CDCE-90S-001 cell: 0.01
  CDCE-90S-001 range: 0.01 to 100 µS (10 kΩ to 100 MΩ)
- CDCE-90S-01 cell: 0.10
  CDCE-90S-01 range: 1 to 1000 µS
- CDCE-90S-1 cell: 1.0
  CDCE-90S-1 range: 10 to 10,000 µS

Sanitary fitting size: 2 in.

Temperature compensation: PT1000

Wetted materials:
- O-rings: EPR
- Insulator material: PTFE
- Electrodes: 316 stainless steel or titanium
- Sanitary fitting: 316 stainless steel or titanium
- Max. pressure: 6.9 bar (100 psi)
- Max. temperature: 120 °C (248 °F)

CDCE-90S-01-S20/CDCE-90S-1-S20

- CDCE-90S-001 cell: 0.01
  CDCE-90S-001 range: 0.01 to 100 µS (10 kΩ to 100 MΩ)
- CDCE-90S-01 cell: 0.10
  CDCE-90S-01 range: 1 to 1000 µS
- CDCE-90S-1 cell: 1.0
  CDCE-90S-1 range: 10 to 10,000 µS

Sanitary fitting size: 2 in.

Temperature compensation: PT1000

Wetted materials:
- O-rings: EPR
- Insulator material: PTFE
- Electrodes: 316 stainless steel or titanium
- Sanitary fitting: 316 stainless steel or titanium
- Max. pressure: 6.9 bar (100 psi)
- Max. temperature: 120 °C (248 °F)
**10. Maintenance**

Any coatings on electrodes will cause readings to drift or show poor response. Clean metallic surfaces with a mild detergent and a non-abrasive brush or cotton swab.

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**CDCE-90-10**

- **Cell:** 10.0
- **Range:** 100 to 200,000 µS
- **Temperature compensation:** PT1000
- **Wetted materials:**
  - O-rings: EPR
  - Insulator material: CPVC
  - Electrodes: 316 stainless steel

**Standard fitting:** 316 stainless steel

**Max. pressure:** 6.9 bar (100 psi)

**Max. temperature:** 95 °C (203 °F)

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**CDCE-90-20**

- **Cell:** 20.0
- **Range:** 200 to 400,000 µS
- **Temperature compensation:** PT1000
- **Wetted materials:**
  - O-rings: EPR
  - Insulator material: PEEK®
  - Electrodes: 316 stainless steel

**Fitting:** 316 stainless steel

**Max. pressure:** 6.9 bar (100 psi)

**Max. temperature:** 150 °C (302 °F)

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**CDCE-90-20 Sensor Tip Removal Procedure:**

1. Use pliers to grip the sensor tip, as shown in **A**.
2. Pull the insulator off using the pliers, as shown in **B**.
3. Clean the electrodes and metal body using a cotton swab, as shown in **C**.
4. Remove any remaining sensor tip, as shown in **D**.
WARRANTY/DISCLAIMER

OMEGA ENGINEERING, INC. warrants this unit to be free of defects in materials and workmanship for a period of 13 months from date of purchase. OMEGA’s WARRANTY adds an additional one (1) month grace period to the normal one (1) year product warranty to cover handling and shipping time. This ensures that OMEGA’s customers receive maximum coverage on each product.

If the unit malfunctions, it must be returned to the factory for evaluation. OMEGA’s Customer Service Department will issue an Authorized Return (AR) number immediately upon phone or written request. Upon examination by OMEGA, if the unit is found to be defective, it will be repaired or replaced at no charge. OMEGA’s WARRANTY does not apply to defects resulting from any action of the purchaser, including but not limited to mishandling, improper interfacing, operation outside of design limits, improper repair, or unauthorized modification. This WARRANTY is VOID if the unit shows evidence of having been tampered with or shows evidence of having been damaged as a result of excessive corrosion; or current, heat, moisture or vibration; improper specification; misapplication; misuse or other operating conditions outside of OMEGA’s control. Components in which wear is not warranted, include but are not limited to contact points, fuses, and triacs.

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Direct all warranty and repair requests/inquiries to the OMEGA Customer Service Department. BEFORE RETURNING ANY PRODUCT(S) TO OMEGA, PURCHASER MUST OBTAIN AN AUTHORIZED RETURN (AR) NUMBER FROM OMEGA’S CUSTOMER SERVICE DEPARTMENT (IN ORDER TO AVOID PROCESSING DELAYS). The assigned AR number should then be marked on the outside of the return package and on any correspondence.

The purchaser is responsible for shipping charges, freight, insurance and proper packaging to prevent breakage in transit.

FOR WARRANTY RETURNS, please have the following information available BEFORE contacting OMEGA:
1. Purchase Order number under which the product was PURCHASED,
2. Model and serial number of the product under warranty, and
3. Repair instructions and/or specific problems relative to the product.

OMEGA’s policy is to make running changes, not model changes, whenever an improvement is possible. This affords our customers the latest in technology and engineering.

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