“HC / DA” Electrodeless Conductivity Sensors

Introduction

Anderson-Negele’s Model HC1 Electrodeless Conductivity Sensors are rugged, non-fouling sensors designed for cleaning solutions with conductivity ranges from 0-200 up to 0-2,000,000 microSiemens/cm and temperature compensated over a range of 0° and 175°C. Because these sensors are electrodeless, there is no instance of polarization, process coating or contamination. For greatest performance accuracy, the HC1 can be installed in a standard 2-1/2” x 2” or 3” x 2” short outlet reducing tee, or can be ordered with our 2” x 2” special Inductive Conductivity Sensor sanitary tee.

Used in conjunction with our inductive conductivity sensor, the DA2 transmitter is specifically designed for CIP systems within the dairy, fluid food, beverage and/or biopharmaceutical markets. This loop powered transmitter has an operator interface that offers 2 lines to display conductivity, % concentration, total dissolved solids, temperature and a range selectable 4-20mA output. The NEMA 4X transmitter may be panel, wall pipe or integral sensor mounted.

Detailed specifications and ordering information can be found on the reverse. For more information, visit our website, or contact our Customer Service Department at 1-800-833-0081.

Features

- NEMA 4X stainless steel sensor housing
- Electrodeless design eliminates polarization and electrode coating problems
- Probe operates at temperatures up to 347°F or 175°C
- Wide measuring range from 0-200 up to 0 - 2,000,000 microSiemens/cm
- Analyzer allows multiple measurements along with built-in concentration tables viewable via a clear back-lit LCD display
- 3-A compliant

Authorizations
Specifications

Operational (HC1 Sensor)

- Wetted Materials: PVDF (complies with 3-A) or PFA Teflon®
- Operating Temperature Range: 14° to 347°F (-10° to 175°C)
- Maximum Flow Rate: 10ft. (3m) per sec.
- Measuring Range: From 0-200 to 0-2,000,000 microSiemens/cm
- Temperature Compensator: Pt 1000 RTD
- Sensor Cable: 5-conductor (plus two isolated shields) cable with Teflon®-coated jacket;
rated to 347°F (175°C); 20 ft. (6m) long
- Pressure Temperature Limits: 200 psi at 347°F
- Mounting: 2” Tri-Clamp® process connection for mounting in:
  - 2” x 2” special tee (73223-A0001)
  - 2-1/2” x 2” short outlet reducing tee
  - 3” x 2” short outlet reducing tee
- Wiring Style: Sealed cable with Strain Relief, or Sealed cable with male 1/2” NPT & Strain Relief

Operational DA2 Transmitter

- Display: Two-line by 16 character LCD
- Measurement: Selectable Ranges
- Conductivity: µS/cm: 0-200.0 or 0-2000
  mS/cm: 0-2.000, 0-20.00, 0-200.0 or 0-2000
  S/cm: 0-2.000
- % Concentration: 0-99.99% or 0-200%
- TDS: 0-9999 ppm
- Temperature: -4 to 347°F (-20 to 175°C)
- Analog Outputs: 0.00-20.00 mA or 4.00-20.00mA
- Ambient Conditions: -4 to 140°F (-20 to 60°C); 0-95% relative humidity, non-condensing
- Temperature Compensation:
  - Automatic from 14.0° to 347°F (-10°C to 175°C), with selection for Pt 1000 Ohm RTD temperature element or manually fixed at a user selected temperature

Memory Backup (non-volatile):
- All settings retained indefinitely in EEPROM

Performance (DA2 Transmitter)

- Accuracy: ± 0.1% of span
- Sensitivity: ± 0.05% of span
- Repeatability: ± 0.05% of span
- Temperature Drift: Zero and span: ± 0.02% of span per °C
- Response Time: 1-60 sec. to 90% of value upon step change
  (with sensor filter setting of zero)

Mechanical (DA2 Transmitter)

- General: Polycarbonate; NEMA 4X (IP65) general purpose; choice of panel or wall/pipe/ integral mounting hardware
- Panel Mount: 3.75”w X 3.75”h X 0.75”d (95mm X 95mm X 19mm)
- Wall/Pipe/Integral: 3.75”w X 3.75”h X 2.32”d (95mm X95mm X 60mm)

Electrical (DA2 Transmitter)

- Operating Power (Class 2 Power Supply)
  - Two-wire hookup: 16-30 VDC
  - Three-wire hookup: 14-30 VDC
  - Four-wire hookup: 12-30 VDC
- Output (Analog) One (1) isolated 0/4-20mA output; with
  0.004 ma (12 bit) resolution

Order Information

SENSOR

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<thead>
<tr>
<th>PROCESS CONNECTION</th>
<th>HC1</th>
<th>0</th>
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<tbody>
<tr>
<td></td>
<td>2” Tri-Clamp®</td>
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PRODUCT CONTACT

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<thead>
<tr>
<th>PRODUCT CONTACT</th>
<th>PVDF</th>
<th>PFA Teflon®</th>
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WIRING STYLE

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<th>WIRING STYLE</th>
<th>Sealed cable (20 ft.)</th>
<th>Strain Relief</th>
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<tbody>
<tr>
<td></td>
<td>w/ Strain Relief</td>
<td></td>
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<tr>
<td></td>
<td>2</td>
<td>Sealed cable (20 ft.) w/ male 1/2” NPT &amp; Strain Relief</td>
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JUNCTION BOX

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<tr>
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<th>No Junction box</th>
<th>Thermoplastic surface mount junction box</th>
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INTERCONNECT CABLE LENGTH

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<tr>
<th>INTERCONNECT CABLE LENGTH</th>
<th>No Junction box</th>
<th>25 ft. (additional cable)</th>
<th>50 ft. (additional cable)</th>
<th>75 ft. (additional cable)</th>
<th>100 ft. (additional cable)</th>
<th>125 ft. (additional cable)</th>
<th>150 ft. (additional cable)</th>
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<tbody>
<tr>
<td></td>
<td>0</td>
<td>05</td>
<td>10</td>
<td>15</td>
<td>20</td>
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TRANSMITTER

DA2

MOUNTING STYLE

<table>
<thead>
<tr>
<th>MOUNTING STYLE</th>
<th>Panel Mount Kit</th>
<th>Wall/pipe/integral mounting</th>
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<tr>
<td></td>
<td>(includes gasket, retainer plate and four screws)</td>
<td>(for integral mounting, sensor Wiring Style option 2 required)</td>
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FIXED CHARACTER

<table>
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<tr>
<th>FIXED CHARACTER</th>
<th>A Fixed Character</th>
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ACCESSORIES

73223A0001 2” Inductive Conductivity Sensor Sanitary Tee

NOTES:

- Junction box required where interconnect distances of more than 20 ft. (6m) are required.
- This 6-conductor must be used to connect between the junction box and the receiver.