

## Data Sheet

# E2 Sanitary Pressure Transducer

### FEATURES

- Available with 1.5" and 2.0" Tri-Clamp® connection
- Ranges vacuum through 1000 psi
- Glycerin fill fluid is standard for ranges from 0 to 1000 psi, mineral oil fill fluid is standard on vacuum, compound and absolute ranges.
- Wide selection of electrical terminations
- Customizable configurations
- External magnetic offset & span adjustment
- SIL 3 capable

### TYPICAL USES

- Food, dairy and beverage production
- Pharmaceutical
- 3-A Sanitary applications
- Biotech and medical equipment
- Filtration



E2 Sanitary Pressure Transducer

### PERFORMANCE SPECIFICATIONS

Reference Temperature: 21 °C ±2 °C (70 °F ±3 °F)

Static Accuracy: ±0.25% of span, ±0.50% of span, ±1.0% of span, Terminal Point Method includes: hysteresis, linearity, repeatability, offset and span

Stability: ±0.25% year at reference conditions

### ENVIRONMENTAL SPECIFICATIONS

Thermal Offset: ±0.009% /°C from -40 °C to 125 °C  
Coefficients: Span: ±0.009% /°C from -40 °C to 125 °C

Additional Offset Temperature Error (21 °C Reference Temp.)

|              | Glycerin       | Silicone       |
|--------------|----------------|----------------|
| 1.5" Fitting | 0.8 psi/100 °C | 1.4 psi/100 °C |
| 2.0" Fitting | 0.5 psi/100 °C | 0.7 psi/100 °C |

Temperature Limits: (Subject to Fill Fluid)

| Code | Fill Fluid          | Storage Operating and Media Temperature   |
|------|---------------------|---|
| CG*  | Glycerine           | 0 °F to 257 °F (-18 °C to 125 °C) (STD.)<br><b>*Standard on ranges from 0 to 1000 psig.</b>         |
| CZ   | Food grade Silicone | -40 °F to 257 °F (-40 °C to 125 °C)   |
| FJ   | Distilled water     | 40 °F TO 185 °F (4 °C TO 85 °C)   |
| MY*  | Mineral oil         | 10 °F to 257 °F (-12 °C to 125 °C)<br><b>*Standard on all vacuum, compound and absolute ranges.</b> |
| NM   | Neobee® M20         | 5 °F to 257 °F (-5 °C to 125 °C)  |

Note: Contact Ashcroft for alternate fill fluids

Humidity: 0-100% (non-condensing)

### FUNCTIONAL SPECIFICATIONS

|                                 |                                   |
|---------------------------------|-----------------------------------|
| Response Time (Output)          | 4 ms                              |
| Gauge/Compound Pressure Ranges: | VAC to 1000 psig                  |
| Absolute Pressure Ranges:       | 0 to 500 psia                     |
| Proof Pressure:                 | 1.2X - 2X (See Table 1 on page 2) |
| Burst Pressure:                 | 3X - 8X (See Table 1 on page 2)   |



### KEY BENEFITS

- Highly configurable
- Easy calibration of offset and span
- SIL certified

### ELECTRICAL SPECIFICATIONS

Circuit Protection: Reverse polarity protected

#### INTRINSICALLY SAFE INSTALLATIONS

##### Supply Voltage: Output

**9-28 Vdc:** 0-5 Vdc, 1-5 Vdc, 1-6 Vdc, 0.1-5 Vdc, 0.5-4.5 Vdc

**14-28 Vdc:** 0-10 Vdc, 1-11 Vdc, 0.1-10 Vdc

**9-30 Vdc:** 4-20 mA, 20-4 mA (2-wire)

#### NON-INCENDIVE INSTALLATIONS:

##### Supply Voltage: Output

**9-28 Vdc:** 0-5 Vdc, 1-5 Vdc, 1-6 Vdc, 0.1-5 Vdc, 0.5-4.5 Vdc

**14-28 Vdc:** 0-10 Vdc, 1-11 Vdc, 0.1-10 Vdc

**9-30 Vdc:** 4-20 mA, 20-4 mA (2-wire)

Adjustability: ±5% of span non-interactive offset & span

Supply Current: <8 mA (Vout)

Current Source/Sink for Voltage Output: 1 mA (source)/ 0.1 mA (sink) MAX.

Withstand/Breakdown: 100 Vdc/Vac, optional 500 Vdc/Vac

# Data Sheet

## E2 Sanitary Pressure Transducer

### PHYSICAL SPECIFICATIONS

Ingress Rating: IP66 (NEMA 4X) (STD.)  
IP67 (IP69K Consult factory)

### WETTED MATERIAL

Diaphragm: 316L Stainless steel (12-20 Ra Surface finish)  
Process Connection: 316L Stainless steel (Electro-polished)

### NON-WETTED MATERIAL

Housing: 316L Stainless steel  
Sensor: A - 17-4PH® Stainless steel  
C - 316L Stainless steel

### EMC TESTING

EMC: Directive 2014/30/EU, EN61326-1,  
EN61326-2-3 (Industrial Env.)

| Immunity: | 61000-4-2 (ESD)                 | ±4 kV/±8 kV (Contact/Air)                        |
|-----------|---------------------------------|--|
|           | 61000-4-3 (Radiated RF)         | 10 V/m to 1GHz, 3 V/m to 2 GHz, 1 V/m to 2.7 GHz |
|           | 61000-4-4 (EFT/Burst)           | ±1k V (5/50 ns, 5 kHz)                           |
|           | 61000-4-5 (Surge)               | ±1k V, Earth to Shield over all I/O lines        |
|           | 61000-4-6 (Conducted RF)        | 3 V/ (0.15 to 80 MHz)                            |
|           | 61000-4-8 (Line Freq. Magnetic) | 30 A/m   |

Emissions: EN 55011 (CISPR 11) Class A, Group 1 & FCC (47 CFR 15)

### APPROVALS

CE, UL/cUL Recognized component (UL 61010-1, CSA 22.2 61010-1),  
Electrical Equipment for Measurement, Control, and Laboratory Use.

### TABLE 1: PROOF & BURST PRESSURE MULTIPLIERS

| Sensor Range      | Sensor A - 17-4PH® SS |       | Sensor C - 316L SS |       |
|-------------------|-----------------------|-------|--------------------|-------|
|                   | Proof                 | Burst | Proof              | Burst |
| <b>(psi)</b>      |                       |       |                    |       |
| 30                |                       |       | 60                 | 150   |
| 45                | 90                    | 360   | 90                 | 225   |
| 50                | 100                   | 400   | 100                | 250   |
| 60                | 120                   | 480   | 120                | 300   |
| 75                | 150                   | 600   | 150                | 375   |
| 100               | 200                   | 800   | 200                | 500   |
| 150               | 300                   | 1000  | 300                | 600   |
| 200               | 400                   | 1000  | 400                | 600   |
| 300               | 600                   | 1000  | 600                | 900   |
| 500               | 1000                  | 1000  | 1000               | 1000  |
| 750               | 1000                  | 1000  |                    |       |
| 1000              | 1000                  | 1000  |                    |       |
| <b>(Compound)</b> |                       |       |                    |       |
| VAC#              |                       |       | 30                 | 75    |
| V&15#             |                       |       | 60                 | 150   |
| V&30#             |                       |       | 90                 | 225   |
| V&45#             | 120                   | 480   |                    |       |
| V&60#             | 150                   | 600   | 150                | 375   |
| V&100#            | 230                   | 920   |                    |       |
| V&150#            | 330                   | 1000  | 330                | 660   |
| V&200#            | 430                   | 1000  |                    |       |
| V&300#            | 630                   | 1000  | 630                | 945   |
| <b>(psia)</b>     |                       |       |                    |       |
| 15                |                       |       | 30                 | 75    |
| 30                |                       |       | 60                 | 150   |
| 70                |                       |       | 140                | 350   |
| 150               |                       |       | 300                | 600   |
| 300               |                       |       | 600                | 900   |
| 500               |                       |       | 1000               | 1000  |

# Data Sheet

## E2 Sanitary Pressure Transducer

| ORDERING CODE   | Example: | E2G | A | 5 | C | S15 | 42 | CC | X | 10 | F | 100# | -XNH |
|---|----------|-----|---|---|---|-----|----|----|---|----|---|------|------|
| <b>Model</b>  |          |     |   |   |   |     |    |    |   |    |   |      |      |
| E2G - Sanitary Pressure Transducer  |          | E2G |   |   |   |     |    |    |   |    |   |      |      |
| <b>Sensor Materials - See Table 2 on page 4 for range options</b>   |          |     |   |   |   |     |    |    |   |    |   |      |      |
| A - 17-4PH® Stainless steel   |          |     | A |   |   |     |    |    |   |    |   |      |      |
| C - 316L Stainless steel (liquid isolated)  |          |     |   |   |   |     |    |    |   |    |   |      |      |
| <b>Accuracy</b>   |          |     |   |   |   |     |    |    |   |    |   |      |      |
| 3 - ±0.25% span   |          |     |   |   |   |     |    |    |   |    |   |      |      |
| 5 - ±0.50% span   |          |     |   | 5 |   |     |    |    |   |    |   |      |      |
| 7 - ±1.00% span   |          |     |   |   |   |     |    |    |   |    |   |      |      |
| <b>Calibration Chart</b>  |          |     |   |   |   |     |    |    |   |    |   |      |      |
| N - Without calibration chart   |          |     |   |   |   |     |    |    |   |    |   |      |      |
| C - With <a href="#">Traceable calibration certificate</a>  |          |     |   |   | C |     |    |    |   |    |   |      |      |
| <b>Pressure Connections - See Table 3 on page 4 for dimensional information</b>   |          |     |   |   |   |     |    |    |   |    |   |      |      |
| S15 - 1.5" Tri-Clamp®   |          |     |   |   |   | S15 |    |    |   |    |   |      |      |
| S20 - 2.0" Tri-Clamp®   |          |     |   |   |   |     |    |    |   |    |   |      |      |
| <b>Output Type - Note: Consult factory for additional outputs</b>   |          |     |   |   |   |     |    |    |   |    |   |      |      |
| 05 - 0-5 Vdc (Not available with X1L variation)   |          |     |   |   |   |     |    |    |   |    |   |      |      |
| 10 - 0-10 Vdc (Not available with X1L variation)  |          |     |   |   |   |     |    |    |   |    |   |      |      |
| 11 - 1-11 Vdc   |          |     |   |   |   |     |    |    |   |    |   |      |      |
| 12 - 1-10 Vdc   |          |     |   |   |   |     |    |    |   |    |   |      |      |
| 15 - 1-5 Vdc  |          |     |   |   |   |     |    |    |   |    |   |      |      |
| 16 - 1-6 Vdc  |          |     |   |   |   |     |    |    |   |    |   |      |      |
| 42 - 4-20 mA  |          |     |   |   |   |     | 42 |    |   |    |   |      |      |
| 45 - 0.5-4.5 Vdc non-ratiometric  |          |     |   |   |   |     |    |    |   |    |   |      |      |
| 00 - Custom   |          |     |   |   |   |     |    |    |   |    |   |      |      |
| <b>Electrical Terminations - See Table 4 on page 5 for more options</b>   |          |     |   |   |   |     |    |    |   |    |   |      |      |
| CC - (½ NPT conduit w/cable)  |          |     |   |   |   |     |    | CC |   |    |   |      |      |
| <b>Mating Connector</b>   |          |     |   |   |   |     |    |    |   |    |   |      |      |
| M - With mating connector   |          |     |   |   |   |     |    |    |   |    |   |      |      |
| X - Without mating connector  |          |     |   |   |   |     |    |    | X |    |   |      |      |
| <b>Cable Length</b>   |          |     |   |   |   |     |    |    |   |    |   |      |      |
| Max cable length of 30 ft for outputs 05, 10, 11, 12, 13, 15, 16 and 45. Max cable length of 99 ft for outputs 24 and 42. |          |     |   |   |   |     |    |    |   |    |   |      |      |
| 00 - No cable   |          |     |   |   |   |     |    |    |   |    |   |      |      |
| XX - 01 to 99   |          |     |   |   |   |     |    |    |   | 10 |   |      |      |
| <b>Unit of Length</b>   |          |     |   |   |   |     |    |    |   |    |   |      |      |
| F - Feet  |          |     |   |   |   |     |    |    |   |    | F |      |      |
| M - Meter   |          |     |   |   |   |     |    |    |   |    |   |      |      |
| N - Inches  |          |     |   |   |   |     |    |    |   |    |   |      |      |
| 0 - No cable  |          |     |   |   |   |     |    |    |   |    |   |      |      |
| <b>Pressure Ranges - Coding example only, see Table 5 on page 6 for more options</b>                                      |          |     |   |   |   |     |    |    |   |    |   |      |      |
| 100# - 100 psig   |          |     |   |   |   |     |    |    |   |    |   | 100# |      |
| <b>Options (if choosing an option(s) must include an "X")</b>   |          |     |   |   |   |     |    |    |   |    |   |      |      |
| -X__  |          |     |   |   |   |     |    |    |   |    |   |      |      |
| NN - Paper tag  |          |     |   |   |   |     |    |    |   |    |   |      |      |
| NH - Stainless steel tag  |          |     |   |   |   |     |    |    |   |    |   |      | NH   |
| CZ - Silicone fill fluid (3-A certified)  |          |     |   |   |   |     |    |    |   |    |   |      |      |
| MY - Light mineral oil fill fluid (3-A certified)   |          |     |   |   |   |     |    |    |   |    |   |      |      |
| NM - Neobee® M20 fill fluid (3-A certified)   |          |     |   |   |   |     |    |    |   |    |   |      |      |
| FJ - Distilled water fill fluid (3-A certified)   |          |     |   |   |   |     |    |    |   |    |   |      |      |
| 1L - SIL certification for E2 series transducer   |          |     |   |   |   |     |    |    |   |    |   |      |      |

| Accessory | Part Number |
|-----------|-------------|
|-----------|-------------|

|                                   |            |
|-----------------------------------|------------|
| Offset and Span Adjustment Magnet | 266A143-01 |
|-----------------------------------|------------|

Accessories must be ordered separately



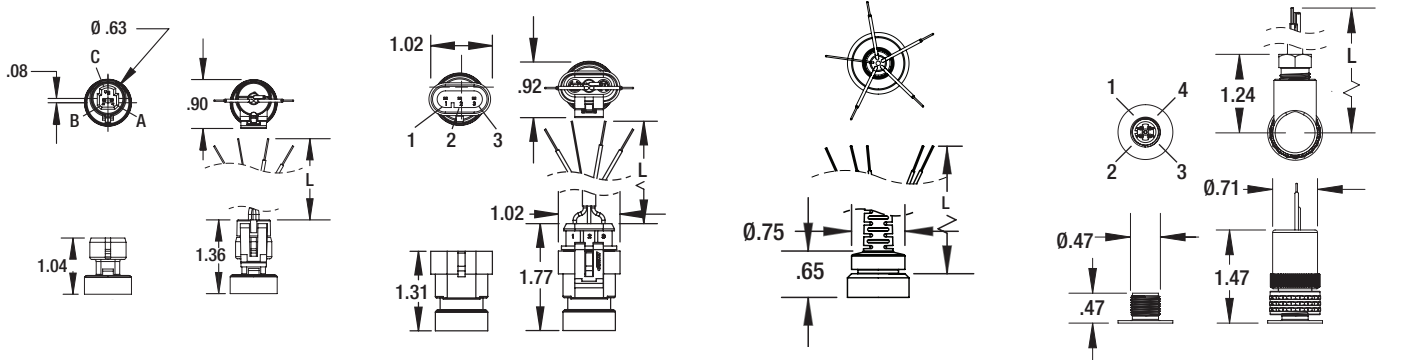
**Data Sheet**

**E2 Sanitary Pressure Transducer**

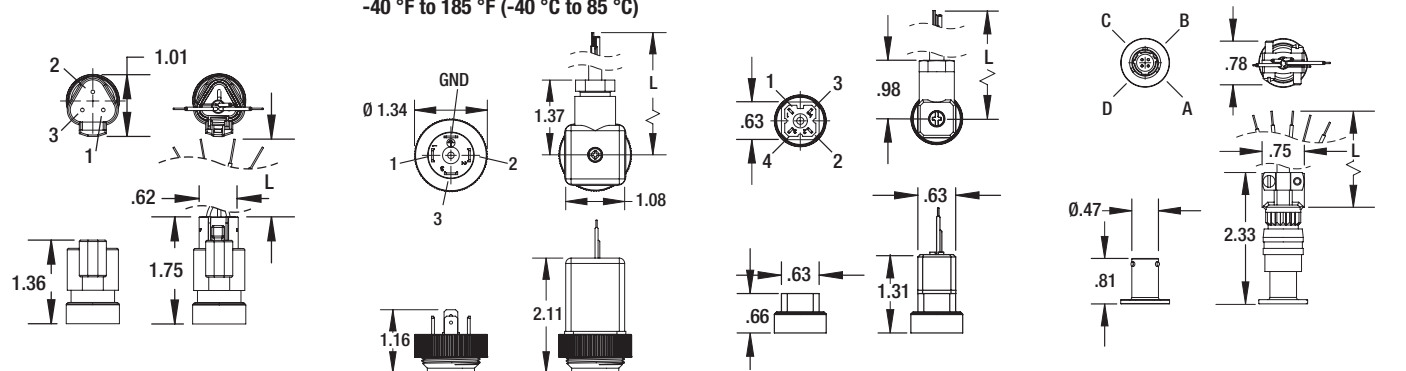
**TABLE 4 - ELECTRICAL TERMINATION DIMENSIONS**

Maximum temperature range listed

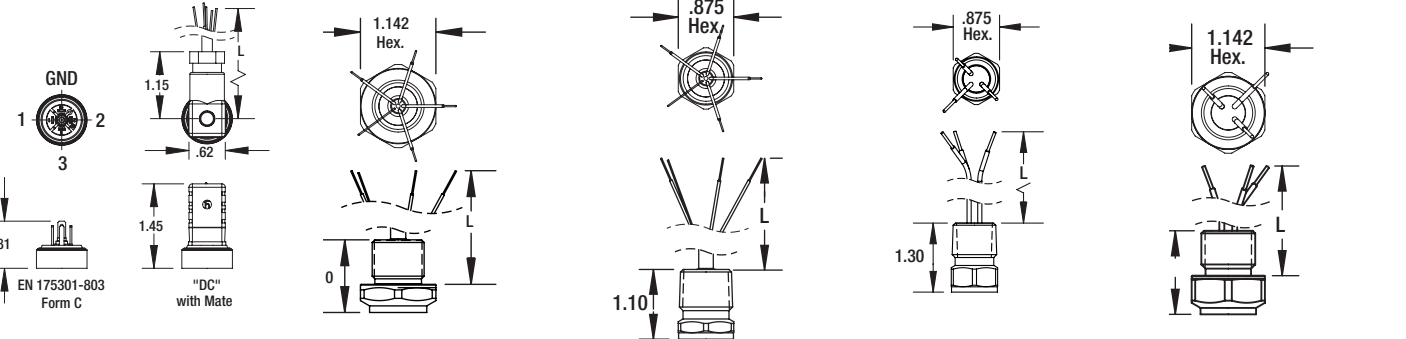
| Metri-Pack® 3-Pin                  | AMP® Superseal® 3-Pin              | Over-Mold Cable                    | M12 4-Pin                          |
|------------------------------------|------------------------------------|------------------------------------|------------------------------------|
| Code: GN – IP67 (NEMA 4X)          | Code: AP – IP66 (NEMA 4X)          | Code: FC, FV* – IP67 (NEMA 4X)     | Code: EW – IP66 (NEMA 4X)          |
| -40 °F to 185 °F (-40 °C to 85 °C) | -40 °F to 185 °F (-40 °C to 85 °C) | -40 °F to 185 °F (-40 °C to 85 °C) | -40 °F to 185 °F (-40 °C to 85 °C) |



| DEUTSCH® DT04 3-Pin                | Hirschmann® EN 175301-803 Form A   | Mini-Hirschmann®                   | MIL DTL 26482 8 4-Pin               |
|------------------------------------|------------------------------------|------------------------------------|-------------------------------------|
| Code: DT – IP66 (NEMA 4X)          | Code: DA – IP66 (NEMA 4X)          | Code: HM – IP66 (NEMA 4X)          | Code: B4 – No IP or NEMA rating     |
| -40 °F to 185 °F (-40 °C to 85 °C) | -40 °F to 185 °F (-40 °C to 85 °C) | -40 °F to 185 °F (-40 °C to 85 °C) | -40 °F to 221 °F (-25 °C to 105 °C) |



| Hirschmann® EN 175301-803 Form C   | M20 Conduit With Cable              | ½ NPT Conduit With Cable            | ½ NPT Conduit With Flying Leads     | M20 Conduit With Flying Leads       |
|------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| Code: DC IP66 (NEMA 4X)            | Code: MC, MV* IP67 (NEMA 4X)        | Code: CC, CV* IP67 (NEMA 4X)        | Code: CF IP67 (NEMA 4X)             | Code: MF IP67 (NEMA 4X)             |
| -40 °F to 185 °F (-40 °C to 85 °C) | -40 °F to 257 °F (-40 °C to 125 °C) | -40 °F to 257 °F (-40 °C to 125 °C) | -40 °F to 257 °F (-40 °C to 125 °C) | -40 °F to 257 °F (-40 °C to 125 °C) |



Note: \* Indicates Vented Cable

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# E2 Sanitary Pressure Transducer

**TABLE 5 - PRESSURE RANGES**

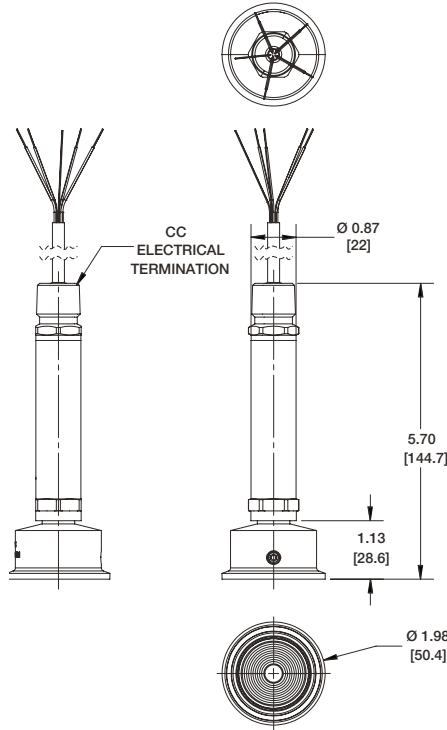
|                      | PSI                      | bar                    |
|----------------------|--------------------------|------------------------|
| Vac.                 | VAC# <sup>(1)</sup>      | VACBR <sup>(1)</sup>   |
|                      | V&15# <sup>(1)</sup>     | V&1BR <sup>(1)</sup>   |
| Compound             | —                        | V&1.6BR <sup>(1)</sup> |
|                      | V&30# <sup>(1)</sup>     | V&2BR <sup>(1)</sup>   |
|                      | V&45# <sup>(1)</sup>     | —                      |
|                      | V&60# <sup>(1)</sup>     | V&4BR <sup>(1)</sup>   |
|                      | —                        | V&6BR <sup>(1)</sup>   |
|                      | V&100# <sup>(1)</sup>    | —                      |
|                      | V&150# <sup>(1)</sup>    | —                      |
|                      | V&200# <sup>(1)</sup>    | —                      |
|                      | V&300# <sup>(1)</sup>    | —                      |
|                      | Absolute Pressure (psia) | 30#                    |
| —                    |                          | 2.5BR                  |
| 45#                  |                          | —                      |
| 50#                  |                          | —                      |
| 60#                  |                          | 4BR                    |
| 75#                  |                          | —                      |
| —                    |                          | 6BR                    |
| 15#A <sup>(1)</sup>  |                          | 1BRA                   |
| —                    |                          | 1.6BRA                 |
| 30#A <sup>(1)</sup>  |                          | 2BRA                   |
| —                    |                          | 2.5BRA                 |
| 50# <sup>(1)</sup>   |                          | —                      |
| —                    |                          | 4BRA                   |
| —                    |                          | 6BRA                   |
| 100#A <sup>(1)</sup> |                          | —                      |
| —                    | 10BRA                    |                        |
| —                    | 16BRA                    |                        |
| —                    | 20BRA                    |                        |
| —                    | —                        |                        |
| 500#A <sup>(1)</sup> | —                        |                        |

<sup>(1)</sup>All vacuum, compound and absolute ranges must be selected with mineral oil fill fluid (XMY)

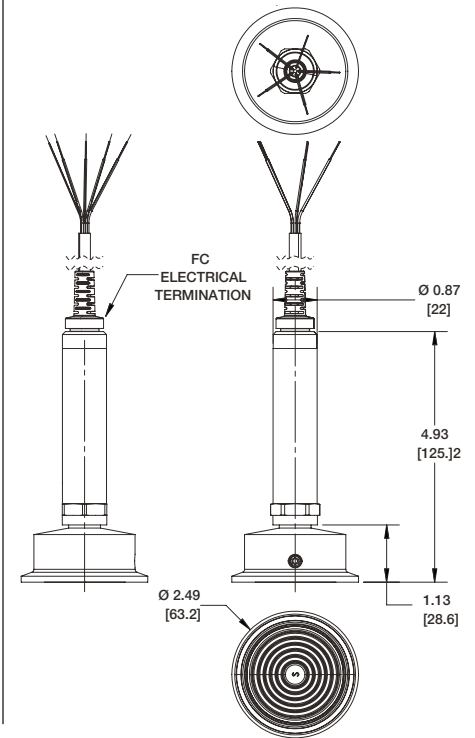
## DIMENSIONS

For reference only, consult Ashcroft for specific dimensional drawings

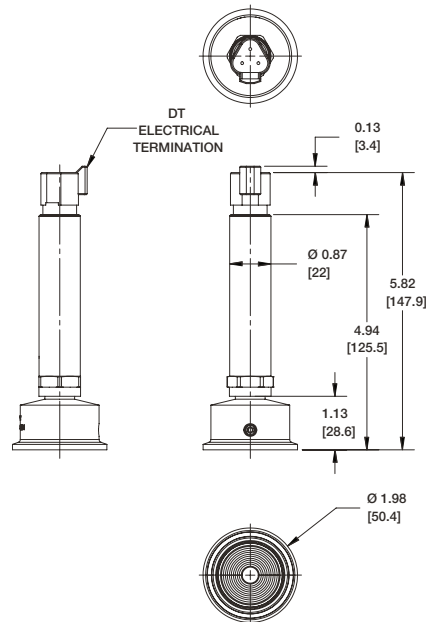
E2 Transducer with S15 Sanitary Seal and CC Electrical Termination



E2 Transducer with S20 Sanitary Seal and FC Electrical Termination



E2 Transducer with S15 Sanitary Seal and DT Electrical Termination



E2 Transducer with S20 Sanitary Seal and GN Electrical Termination

