

DESCRIPTION

The Model DCT is an extremely accurate, Digital Compensated Transducer designed for general industrial and commercial uses, over a wide range of applications. It incorporates stainless steel wetted parts with an isolated diaphragm, making it compatible with most media types. An economical, non-isolated brass transducer, used for clean, dry media, is also available.

Multiple mounting options and electrical output options are available, with both stainless steel or brass construction, and numerous pressure ranges. The DCT is fully digitally compensated for the effects of pressure and temperature change, and calibration to produce industry standard electrical outputs. It accepts both unregulated and regulated excitation voltages, and provides output signals such as 1 to 5 VDC, 1 to 6VDC, 0 to 5 VDC, and 4 to 20 mA.

SUPPLY

Input Supply Voltage: **9 to 30 VDC, 11 to 30 VDC**

ACCURACY

Null Offset (at 25° C): **± 2% span**

Span (at 25° C): **± 2% span**

Reference Accuracy: **± 0.2% full scale typical, ± 0.3% full scale maximum (includes repeatability, hysteresis, non-linearity - BFSL)**

One Year Stability: **< 0.25% full scale**

Thermal Effect on Zero (Null): **± 1% span (typical) over compensated temperature range**

Thermal Effect on Span: **± 1% span (typical) over compensated temperature range, 2% max**

TEMPERATURE RANGE

Operating Temperature Range: **-40 to 80° C**

Compensated Temperature Range: **-25 to 75° C**

Process Temperature: **-40 to 100° C**

OUTPUT

| Output | 1 to 5 VDC | 1 to 6 VDC | 0 to 5 VDC | 4 to 20 mA |
|----------------------|---------------|---------------|---------------|---------------|
| Input Supply Voltage | 9 to 30 VDC | 9 to 30 VDC | 9 to 30 VDC | 11 to 30 VDC |
| Load Limitation | 50K Ω Minimum | 50K Ω Minimum | 50K Ω Minimum | 900 Ω Maximum |

FEATURES

- Digitally Compensated — Low total accuracy errors for interchangeability and high precision measurements.
- Multiple Pressure Port Options — Ease of installation and attachment with no adapters.
- 0.2% Typical Accuracy — Offers superior accuracy to competitive models and can be used on critical applications.
- Factory Calibrated for Pressure and Temperature — No need for field calibration. Plug and play reliability.
- Rugged, Compact Design — Easy to package or install.
- Custom Designs Available — Adaptable to special needs.
- Numerous Weatherproof Electrical Connection Options — Quick hook-up and remote applications.
- Numerous Electrical Outputs — Can be used with standard process equipment, conventional receivers, and compatible with microprocessors.
- RFI/EMI Protection Option — For use in high noise environments.
- Reverse Polarity Protection — Installation safety and not damaged by reverse wiring.



Model DCT Digital Compensated Pressure Transducer

STANDARD CONNECTIONS

All Model DCT Pressure Transducers are available with stainless steel or brass construction, with 1/8" or 1/4" NPT style threads.

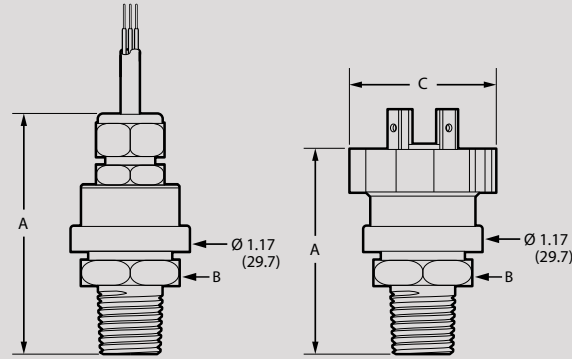


Figure 1

Figure 2

| Cable Output (Figure 1) | Brass (Up to 500 psig) | 316 / 316 L Stainless Steel | >500 psig and all Absolute Ranges |
|-------------------------|---------------------------|--------------------------------|--------------------------------------|
| Dimension A* | 2.46 (62.5) | 2.61 (66.3) | 2.84 (72.1) |
| Dimension B | 7/8 Hex | 7/8 Hex | 1-1/8 Hex |
| DIN-A Output (Figure 2) | Brass (Up to 500 psig) | 316 / 316 L Stainless Steel | >500 psig and all Absolute Ranges |
| Dimension A* | 1.88 (47.2) | 2.08 (52.9) | 2.30 (58.3) |
| Dimension B | 7/8 Hex | 7/8 Hex | 1-1/8 Hex |
| Dimension C | 1.37 (34.7) | 1.37 (34.7) | 1.37 (34.7) |

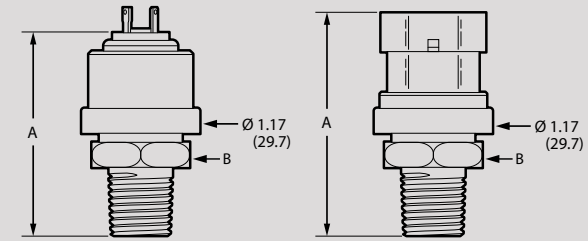


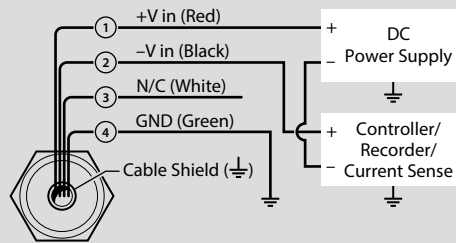
Figure 3

Figure 4

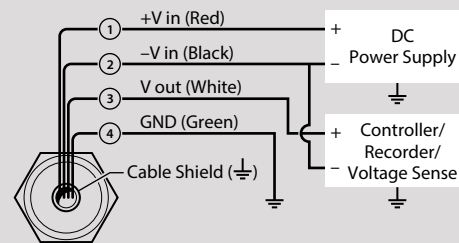
| DIN-C Output (Figure 3) | Brass (Up to 500 psig) | 316 L Stainless Steel | >500 psig and all Absolute Ranges |
|---------------------------|---------------------------|--------------------------|--------------------------------------|
| Dimension A* | 1.79 (45.6) | 1.87 (47.5) | 2.10 (53.2) |
| Dimension B | 7/8 Hex | 7/8 Hex | 1-1/8 Hex |
| Packard Output (Figure 4) | Brass (Up to 500 psig) | 316 L Stainless Steel | >500 psig and all Absolute Ranges |
| Dimension A* | 2.30 (58.3) | 2.48 (63.0) | 2.69 (68.2) |
| Dimension B | 7/8 Hex | 7/8 Hex | 1-1/8 Hex |

* Dimension A should be used as a general measurement. The exact dimension will be based on final configuration. Consult the factory for proper dimensions. Dimensions are in inches/millimeters.

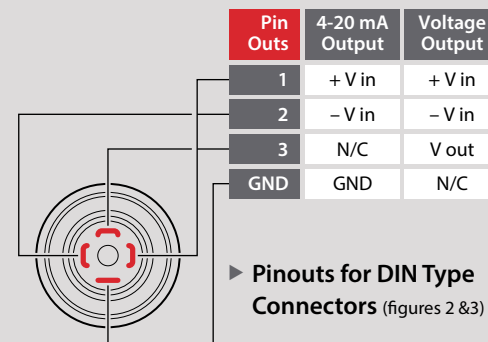
WIRING DIAGRAMS



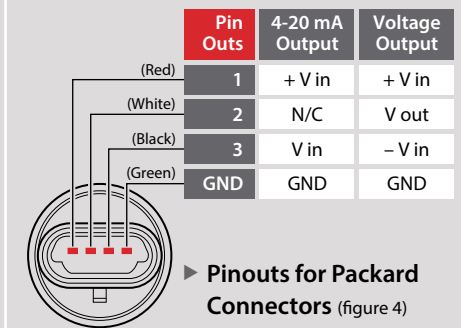
► 4-20 mA Output Typical Wiring



► VDC Output Typical Wiring



► Pinouts for DIN Type Connectors (figures 2 & 3)



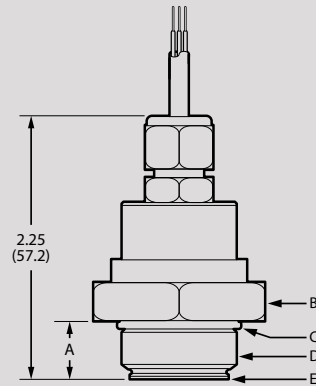
► Pinouts for Packard Connectors (figure 4)

Model DCT Digital Compensated Pressure Transducer

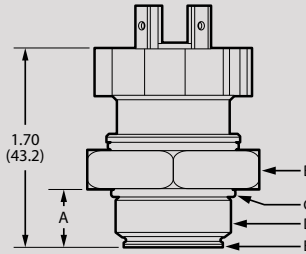
FLUSH CONNECTIONS

The Model DCT Pressure Transducer is also offered in two flush diaphragm process connection versions: a 1-20 UNEF-2A straight thread with an o-ring seal, and a 1/2" NPT style thread. These models are ideal for higher viscosity media or media with solids (heavy oils, pulp, sealants, paints, coatings, etc.) that may clog a transducer with a traditional NPT cavity.

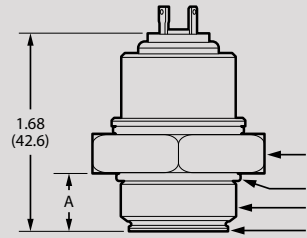
► DCT Flush Diaphragm 1-20 UNEF-2A Process Connection (Type 08)



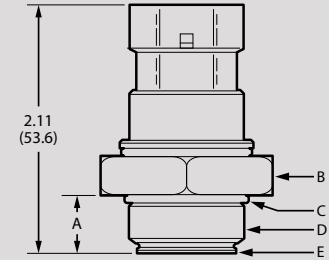
Cable Output 18" long, 24 AWG



DIN-A output to DIN 43 650-A



DIN-C output to DIN 43 650-C

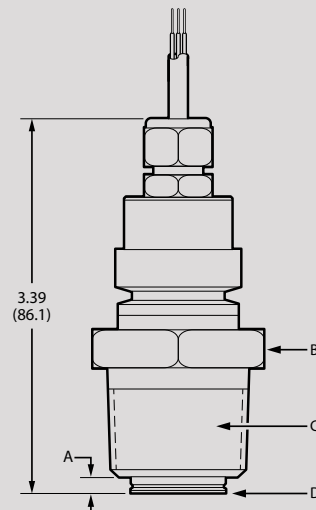


Packard output to 4 pin #12162189

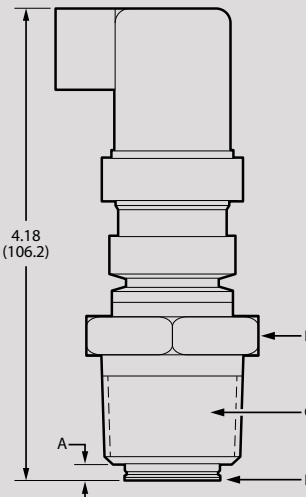
| | |
|-------------|--------------------------------|
| Dimension A | 0.50 (12.6) |
| Dimension B | 1-1/4 Hex |
| Part C | AS558A-021 O-ring |
| Part D | 1-20 UNEF-2A |
| Part E | 0.86 (21.8) Isolated Diaphragm |

Dimensions in inches/millimeters

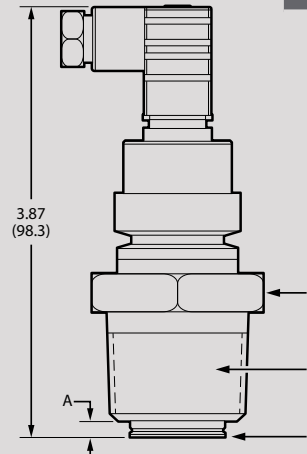
► DCT Flush Diaphragm 1" NPT Process Connection (Type 09)



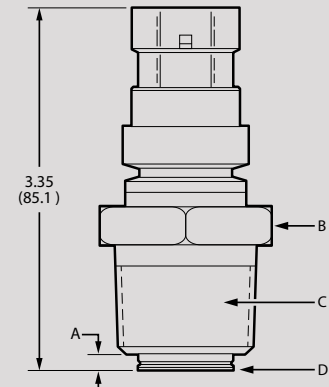
Cable Output 18" long, 24 AWG



DIN-A output



DIN-C



Packard output

| | |
|-------------|--------------------------------|
| Dimension A | 0.15 (3.7) |
| Dimension B | 1-3/8 Hex |
| Dimension C | 1" NPT |
| Part D | 0.86 (21.8) Isolated Diaphragm |

ENCLOSURE

Shock: **30 g; MIL-STD-202F, Method 213B, Condition A**

Vibration: **10 g, 55 to 2000 Hz; MIL-STD-202F, Method 204D, Part 1 and Part 2**

Weight: **< 140 grams**

Electrical Terminations: **Cable, DIN, or Packard (18" long, 20 AWG)**

Wetted Parts: (STAINLESS STEEL) **316/316L stainless steel**
All welded, with a permanently filled diaphragm seal.
(BRASS) **Brass, 316/316L stainless steel, and Viton**
Additional materials may be present. Contact factory for details.

Housing Material: **Aluminum or ULTEM (for Packard connector)**

Process Connection: **1/8 or 1/4 NPT, 1" NPT flush, and 1-20 UNEF**
Other options available. Consult factory.

BURST PRESSURE

3x full scale for all ranges except 300 and 500 psi, which have a burst pressure of 750 psi

See the Model Numbering table below for a complete list of available ranges.

MODEL NUMBERING

| Model | Pressure Type | Pressure Range | Input/Output | Electrical Connection | Pressure Connection Type* | Pressure Connection Material |
|-------|--|---|---|--|--|--|
| DCT | | | | | | |
| | Gauge Pressure G | to 1 psi full scale 0001 | 11 to 30 VDC/4-20 mA . . . B | 18" long , 24 AWG cable PT | 1/8 NPT 01 | 316 Stainless Steel 1 |
| | Absolute Pressure A | to 6 psi full scale 0006 | 9 to 30 VDC/1-6 VDC C | 18" long , 24 AWG cable PE | 1/4 NPT 02 | Brass (500 psi or less) 2 |
| | Static Pressure S (1000, 2000, 3000 psi) | to 15 psi full scale 0015 | 9 to 30 VDC/1-5 VDC D | double-shielded EMI version | 1-20 UNEF-2A flush (stainless 08 steel only; BUNA N o-ring standard) | * Consult factory for additional options and o-rings for pressure connection type 08. |
| | | to 30 psi full scale 0030 | 9 to 30 VDC/0-5 VDC F | Packard (4-pin #12162189) PK | | |
| | Compound C (-14.7 psi to full scale) | to 50 psi full scale 0050 | | DIN 43 650-A DA | 1" NPT flush (stainless steel only) . . . 09 | ** Higher pressure ranges are available upon request at usg.sales@ametek.com. |
| | | to 100 psi full scale 0100 | | DIN 43 650-C (Industrial Type) . . . DC | | |
| | | to 150 psi full scale 0150 | | | | |
| | | to 200 psi full scale 0200 | SAMPLE PART NUMBERS | | | |
| | | to 300 psi full scale 0300 | DCTG0100BPT012 100 psi gauge-pressure pressure transducer; input of 11 to 30 VDC and output of 4-20 mA; 18", 24 AWG cable; and 1/8 NPT, brass connector. | | | |
| | | to 500 psi full scale 0500 | | | | |
| | | to 1000 psi full scale 1000 | DCTA500CPK021 500 psi absolute-pressure pressure transducer; input of 9 to 30 VDC and output of 1-6 VDC; Packard (4-pin #12162189) connection; and 1/4 NPT, 316 stainless steel connector. | | | |
| | | to 2000 psi full scale 2000 | | | | |
| | | to 3000 psi full scale 3000 | | | | |
| | | Custom ranges available** xxxx | | | | |