AMETEK®
SENSORS, TEST & CALIBRATION

Model DCT Digital Compensated Pressure Transducer

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.



PMT pressure SENSORS AMETEK

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.

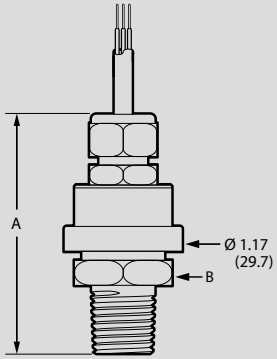


Figure 1

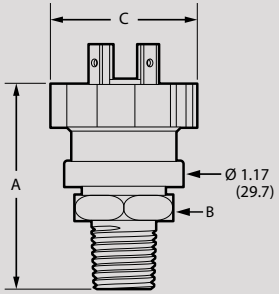


Figure 2

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)

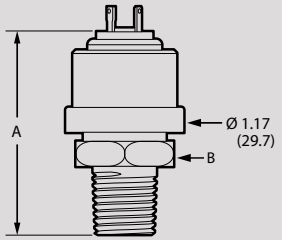


Figure 3

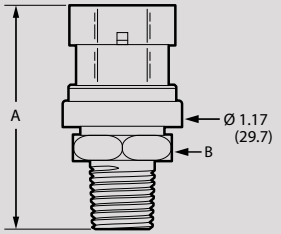


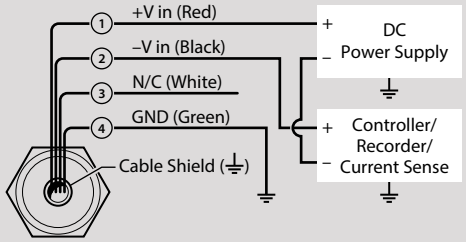
Figure 4

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

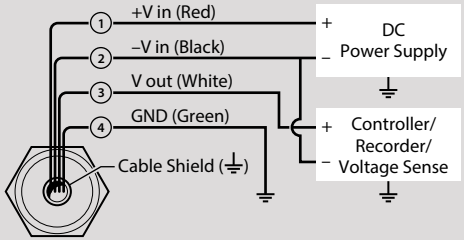
Packard Output (Figure 4)	Brass (Up to 500 psig)	316 L Stainless Steel	>500 psig and all Absolute Ranges
Dimension A*	2.30 (58.3)	2.48 (63.0)	2.69 (68.2)
Dimension B	7/8 Hex	7/8 Hex	1-1/8 Hex

* 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.

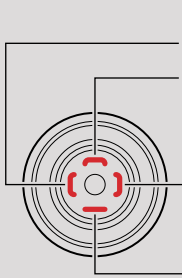
WIRING DIAGRAMS



▶ **4-20 mA Output Typical Wiring**

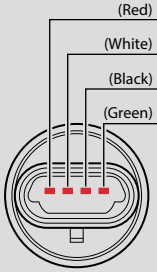


▶ **VDC Output Typical Wiring**



Pin Outs	4-20 mA Output	Voltage Output
1	+ V in	+ V in
2	– V in	– V in
3	N/C	V out
GND	GND	N/C

▶ **Pinouts for DIN Type Connectors** (figures 2 &3)



Pin Outs	4-20 mA Output	Voltage Output
1	+ V in	+ V in
2	N/C	V out
3	V in	– V in
GND	GND	GND

▶ **Pinouts for Packard Connectors** (figure 4)

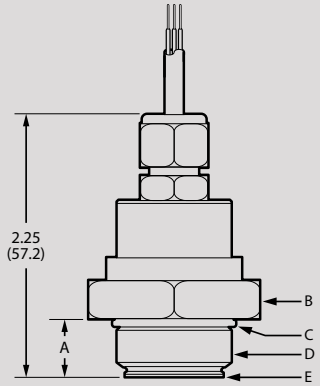
Model DCT Digital Compensated Pressure Transducer

FLUSH CONNECTIONS

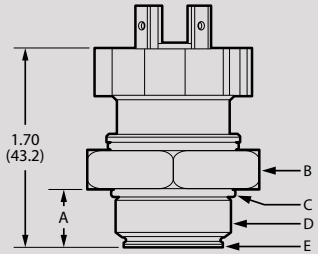
The Model DCT Pressure Transducer is also offered in two flush diaphragm process connection versions: a 1-20 UNEF-2A straight thread with an o-ring seal, and a 1/2" NPT style thread. These models are ideal for higher viscosity media or media with solids (heavy oils, pulp, sealants, paints, coatings,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

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

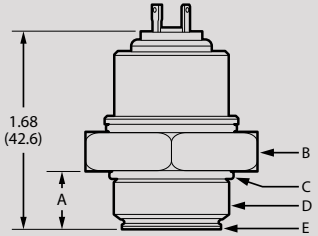
Dimension A	0.50 (12.6)
Dimension B	1-1/4 Hex
Part C	AS558A-021 O-ring
Part D	1-20 UNEF-2A
Part E	0.86 (21.8) Isolated Diaphragm



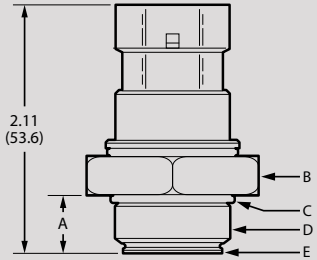
Cable Ouput 18" long, 24 AWG



DIN-A output to DIN 43 650-A



DIN-C output to DIN 43 650-C

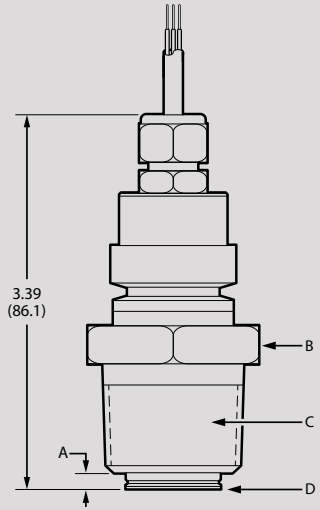


Packard output to 4 pin #12162189

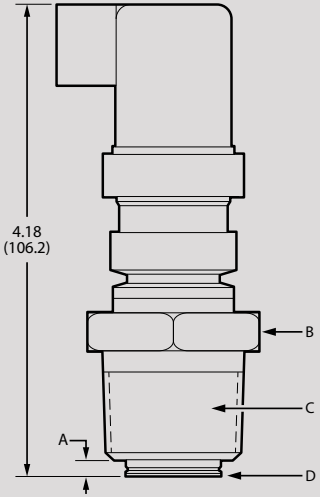
Dimensions in inches/millimeters

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

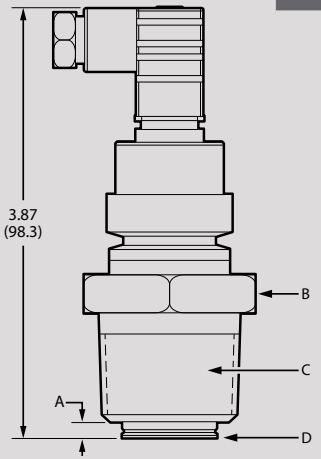
Dimension A	0.15 (3.7)
Dimension B	1-3/8 Hex
Dimension C	1" NPT
Part D	0.86 (21.8) Isolated Diaphragm



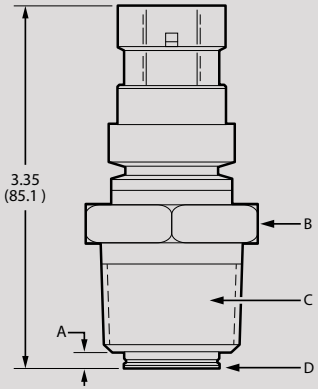
Cable Ouput 18" long, 24 AWG



DIN-A output



DIN-C



Packard output

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 double-shielded EMI version	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		1" NPT flush (stainless steel only)... 09	
		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		
		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				
		to 300 psi full scale..... 0300				
		to 500 psi full scale..... 0500				
		to 1000 psi full scale..... 1000				
		to 2000 psi full scale..... 2000				
		to 3000 psi full scale..... 3000				
		Custom ranges available** ...xxxx				

* Consult factory for additional options and o-rings for pressure connection type 08.

** Higher pressure ranges are available upon request at usg.sales@ametek.com.

SAMPLE PART NUMBERS

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.

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.

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