



ELECTRONIC PRESSURE MEASUREMENT PRODUCTS

Model DCT Digitally Compensated Pressure Transducer

DESCRIPTION

The Model DCT Pressure Transducer is designed for general industrial and commercial requirements offering excellent performance over a wide range of applications. This model is based on proven micro-machined silicon technology providing high reliability, long-term stability, and low cost relative to competing technologies. AMETEK has been developing and manufacturing high performance pressure sensing products for nearly 100 years, and the DCT brings a new level of accuracy to the AMETEK product portfolio.

This product is offered in a variety of mounting and electrical output options, stainless steel or brass construction, and numerous pressure ranges. It is fully digitally compensated for the effects of pressure and temperature change and calibrated to produce industry standard electrical outputs. The DCT accepts both unregulated and regulated excitation voltages and provides output signals such as 1 to 5 VDC, 1 to 6 VDC, 0 to 5 VDC, 0.5 to 4.5 VDC ratiometric and 4 to 20mA. The DCT Transducer is offered in pressure ranges from 1 psi up to and including 3000 psi.

The Model DCT is extremely accurate, less than $\pm 0.3\%$ full scale over pressure and less than $\pm 1.0\%$ full scale over a wide compensated temperature range ($\pm 0.5\%$ full scale optional). The design incorporates a stainless steel isolation diaphragm and 316 stainless steel construction for use with most media types. An economical non-isolated brass transducer, used for clean, dry media is optional.

The DCT offers premium performance and versatility of use for many applications, both for the general industrial end user and original equipment manufacturers (OEM). It combines precision along with the durability to operate under difficult environmental conditions.

Also available is the ACT, an analog compensated 0-100 mV unit in brass and SST.

The DCT and the ACT are manufactured in the United States under ISO 9001:2008 control.

FEATURES

- Digitally Compensated - Low total accuracy errors for interchangeability and high precision measurements.
- Multiple Pressure Port Options - Ease of installation and attachment and no adapters required.
- Numerous Weatherproof Electrical Connection Options - Quick hook-up and remote applications.
- Stainless Steel Construction and Wetted Materials - Resists the corrosive effects of caustic medias or washdowns and is compatible with a variety of media.
- 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.
- Wide Pressure Ranges and Types (PSIG, PSIA, PSIS, Compound) - Can be used in a variety of applications. PSIA and compound units can be used for vacuum to absolute or atmospheric pressures.
- Numerous Electrical Outputs - Can be used with standard process equipment, conventional receivers, and compatible with microprocessors.
- Rugged, Compact Design - Easy to package or install.
- RFI/EMI Protection - For use in high noise environments.
- Reverse Polarity Protection - Installation safety and not damaged by reverse wiring.
- Custom Designs Available - Adaptable to special needs.
- Flush Diaphragm Versions - For viscous media or media with solids that might clog a traditional NPT cavity.

Digitally Compensated Transducers (DCT)

with various output options in brass and stainless steel





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SPECIFICATIONS

Pressure Ranges*: Vacuum to 3000 psi

- 1 psi full scale
- 6 psi full scale
- 15 psi full scale
- 30 psi full scale
- 60 psi full scale
- 100 psi full scale
- 150 psi full scale
- 200 psi full scale
- 300 psi full scale
- 500 psi full scale
- 1000 psi full scale
- 2000 psi full scale
- 3000 psi full scale

Reference Accuracy (includes repeatability, hysteresis, non-linearity – BFSL): ±0.2% full scale TYP, ±0.3% full scale maximum (consult factory for ranges below 15 psi)

Total Error Band (includes temperature effects and null and span set points): ±1% full scale (±0.5% typical, consult factory for ranges below 15 psi)

1 Yr. Stability: <0.25% full scale

Operating Temperature: -40°C to 80°C

Process Temperature: -40°C to 100°C

Compensated Temperature: -25°C to 75°C

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

Vibration: 10G, 55 to 2000 Hz

Shock: 30G

EMC: Rated 3 V/m (requires “PE” option)

Process Wetted Material: 316L stainless steel; (borosilicate silicon, RTV, epoxy on brass models)

Housing Material: Aluminum or ULTEM (for Packard connector)

Process Connection: 7/16-20 SAE, 1/8 NPT, 1/4 NPT*

Electrical Connection: Cable, DIN, Packard, conduit (1/2 NPT only)*

Weight: Less than 5 oz. (140 grams)

Temperature Measurement Option: Additional linear temperature measurement available, please consult factory

* Other options available. Consult factory.

Outputs				
1 to 5 VDC	1 to 6 VDC	0 to 5 VDC	4 to 20 mA	0.5 to 4.5 VDC ratiometric
Input Supply Voltage				
9 to 30 VDC	9 to 30 VDC	9 to 30 VDC	11 to 30 VDC	4.75 to 5.25 VDC
Load Limitation				
50K Ω minimum	50K Ω minimum	50K Ω minimum	900 Ω maximum	50K Ω minimum

Connection Type	Process Connection		Electrical Termination
	Stainless Steel	Brass ≤ 500 psi	
Figure 1	1/8 NPT 1/4 NPT 7/16-20 SAE	1/8 NPT 1/4 NPT	18 inch 24 AWG Shielded Cable
Figure 2	1/8 NPT 1/4 NPT 7/16-20 SAE	1/8 NPT 1/4 NPT	DIN-43-650-A
Figure 3	1/8 NPT 1/4 NPT 7/16-20 SAE	1/8 NPT 1/4 NPT	Industrial DIN-43-650-C
Figure 4	1/8 NPT 1/4 NPT 7/16-20 SAE	1/8 NPT 1/4 NPT	Packard Connector #12162189
Figure 5	1/8 NPT 1/4 NPT 7/16-20 SAE	1/8 NPT 1/4 NPT	Conduit

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Model ▶	DCT	DCT	DCT
Dimensions – Inches (mm)	Brass	316 SST	>500 PSIG
▼ Drawing/Output Type	(up to 500 PSIG)		All Absolute Ranges
Figure 1 — Cable Output			
Dimension A	2.46 (62.5)	2.61 (66.3)	2.84 (72.1)
Dimension D	7/8 HEX	7/8 HEX	1-1/8 HEX
Figure 2 — DIN - A Output			
Dimension A	1.86 (47.2)	2.08 (52.9)	2.30 (58.3)
Dimension C	1.37 (34.7)	1.37 (34.7)	1.37 (34.7)
Dimension D	7/8 HEX	7/8 HEX	1-1/8 HEX
Figure 3 — DIN - C Output			
Dimension A	1.79 (45.6)	1.87 (47.5)	2.10 (53.2)
Dimension D	7/8 HEX	7/8 HEX	1-1/8 HEX
Figure 4 — Packard Output			
Dimension A	2.30 (58.3)	2.48 (63.0)	2.69 (68.2)
Dimension D	7/8 HEX	7/8 HEX	1-1/8 HEX
Figure 5 — Cable 1/2 NPT Conduit			
Dimension A	3.20 (81.2)	3.32 (84.3)	3.55 (90.0)
Dimension D	7/8 HEX	7/8 HEX	1-1/8 HEX

FIG. 1
Shielded Cable
18 Inch, 24 AWG

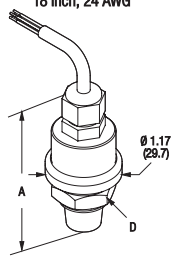


FIG. 2
Includes Mating Connector
DIN43-650-A

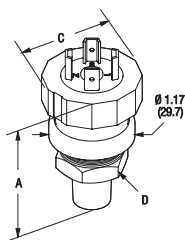


FIG. 3
Includes Mating Connector
DIN43-650-C

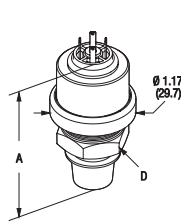


FIG. 4
Includes Mating Connector with
18 Inch Leads

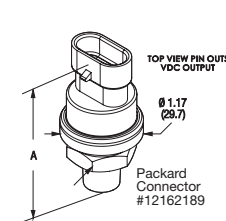
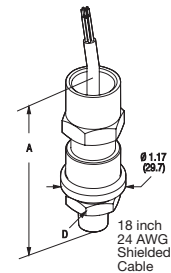
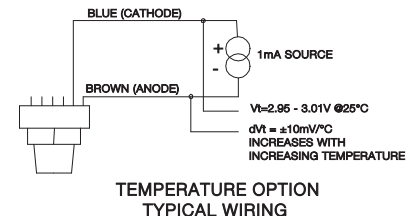
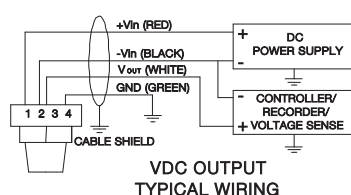
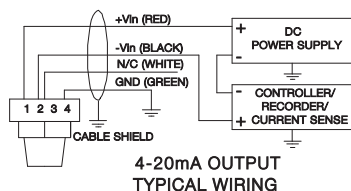
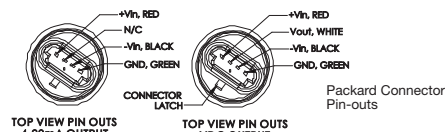


FIG. 5



4-20mA OUTPUT	VOLTAGE OUTPUT	CONNECTOR PINS
+Vin	+Vout	1
-Vin	-Vout	2
N/C	Vout	3
GND	NC	GND

PIN-OUTS FOR DIN TYPE CONNECTORS (figures 2 and 3)





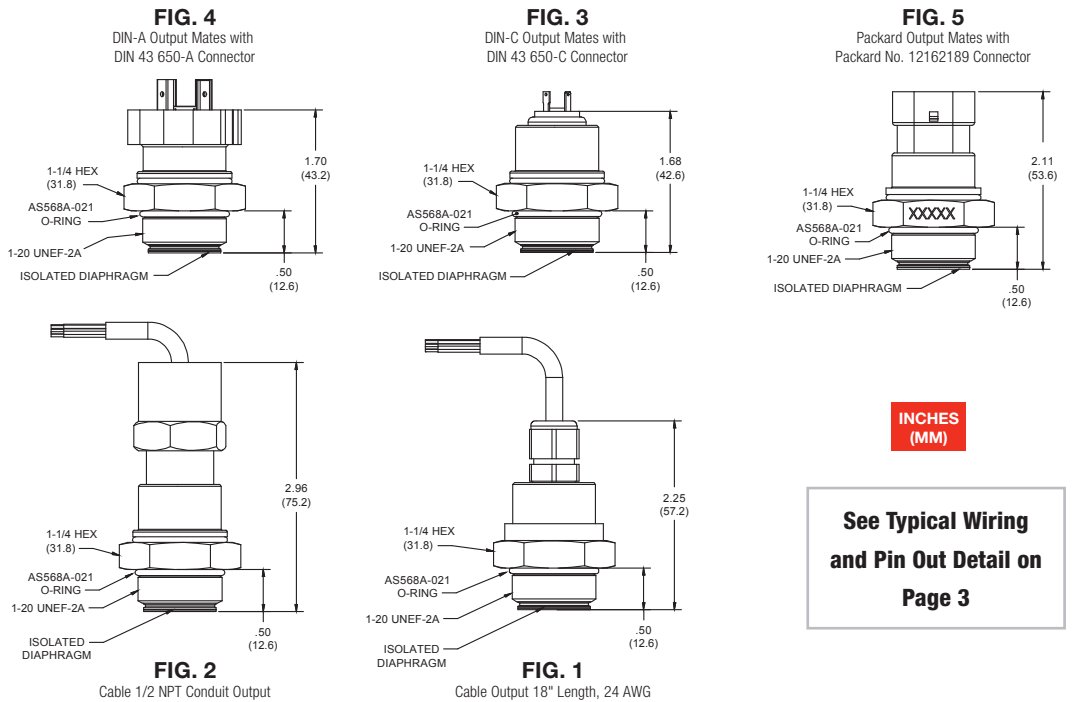
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Model DCT Digitally Compensated Pressure Transducer Flush Connections

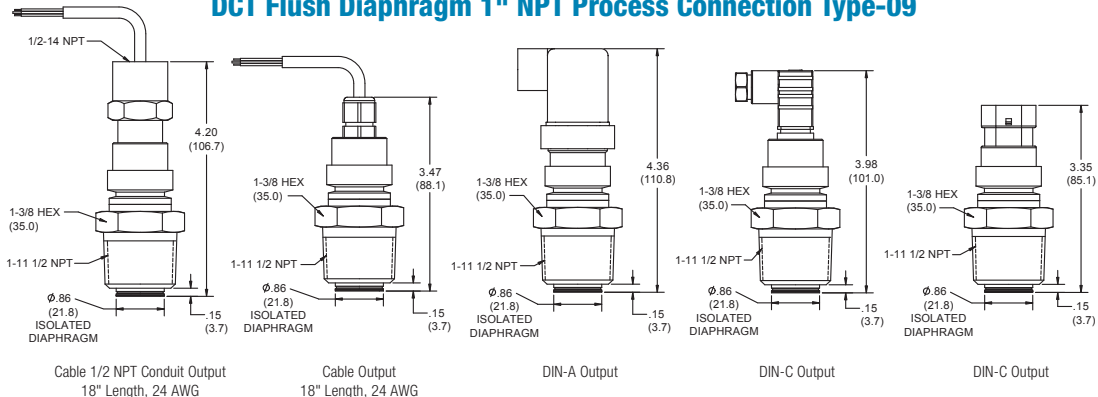
FLUSH DIAPHRAGM MODELS AVAILABLE IN STAINLESS STEEL ONLY

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" NPT style thread. These models are ideal for higher viscosity media or media with solids that may tend to clog a transducer with a traditional NPT cavity. Some of these materials are heavy oils, pulp, sealants, paints, coatings, etc.

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



DCT Flush Diaphragm 1" NPT Process Connection Type-09





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Model Numbering:							
● DCT Pressure Transducer							
DCT	Digitally compensated transducer						
● Pressure type							
G	Gauge pressure						
A	Absolute pressure						
V	Vacuum (use pressure code 0015)						
S	Static pressure (1000, 2000, and 3000 psi ranges)						
C	Compound (-14.7 psi to full scale)						
● Pressure ranges							
0001	to 1 psi full scale						
0006	to 6 psi full scale						
0015	to 15 psi full scale						
0030	to 30 psi full scale						
0060	to 60 psi full scale						
0100	to 100 psi full scale						
0150	to 150 psi full scale						
0200	to 200 psi full scale						
0300	to 300 psi full scale						
0500	to 500 psi full scale						
1000	to 1000 psi full scale						
2000	to 2000 psi full scale						
3000	to 3000 psi full scale						
XXXX	Custom ranges available						
● Input/Output							
B	11 to 30 VDC / 4 to 20 mA						
C	9 to 30 VDC / 1 to 6 VDC						
D	9 to 30 VDC / 1 to 5 VDC						
E	9 to 30 VDC / 0.5 to 4.5 VDC						
F	9 to 30 VDC / 0 to 5 VDC						
R	5 VDC / 0.5 to 4.5 VDC (ratiometric from 4.75 to 5.25 VDC input)						
<i>(Note: For mV output see ACT analog transducer)</i>							
● Electrical connection option*							
PT	18 in. long, 24 AWG cable						
PE	18 in. long, 24 AWG cable, double-shielded EMI version						
PK	Packard (4 PIN # 12162189)						
DA	DIN 43 650-A						
DC	DIN 43 650-C (Industrial Type)						
CD	Conduit; 1/2 NPT female						
● Pressure connection type*							
01	1/8 NPT						
02	1/4 NPT						
03	7/16-20 SAE (stainless steel only; BUNA N O-ring standard)						
08	1-20 UNEF-2A flush (stainless steel only; BUNA N O-ring standard)						
09	1" NPT flush (stainless steel only)						
● Pressure connection material							
1	316L stainless steel						
2	Brass (500 psi or less)						
● Temperature measurement option							
T	Yes (available only with PT, PE or CD electrical connection option)						
Leave blank	No						
DCT	G	0100	B	PT	01	1	T

* Consult factory for additional options and O-rings for pressure connection types 03 and 08