

APPLICATIONS BULLETIN

PRESSURE TRANSDUCER SPECIFICATION FOR TECHSYS CORPORATION PUMP SYSTEM

Techsys Corporation uses three types of pressure transducers:

- Standard Manufactured Transducer
- Trafag ECO style transducer
- Trafag 8891 transducer
- Trafag Submersible Transducer



Techsys Corporation Standard Pressure Transducer



24PC SERIES PERFORMANCE CHARACTERISTICS at 10.0 ±0.01 VDC Excitation, 25°C

Min. Typ. Max. Units

Excitation --- 10 12 VDC

Null Shift, 25° to 0°, 25° to 50°C --- ±0.5 --- mV

Null Offset -30 0 +30 mV

Linearity, P2 > P1, BFSL --- ±0.25 --- %Span

Sensitivity Shift, 25° to 0°, 25° to 50°C --- ±5.0* --- %Span

Repeatability & Hysteresis --- ±0.15 --- %Span

Response Time --- --- 1.0 msec

Input Resistance --- 5.0 K --- ohms

Output Resistance --- 5.0 K --- ohms

Stability over One Year --- ±0.5 --- %Span

Weight --- 2 --- grams

* Can be significantly reduced with constant current excitation (2 mA).

ENVIRONMENTAL SPECIFICATIONS

Operating Temperature -40° to +85°C (-40° to +185°F)

Storage Temperature -55° to +100°C (-67° to +212°F)

Shock Qualification tested to 150 g

Vibration Qualification tested to 0 to 2 kHz, 20 g sine

Media (P1 & P2) Limited only to those media which will not attack polyetherimide, silicon and fluorosilicone seal

Trafag Eco transducer



MAIN CHARACTERISTICS

Sensor: Thin film on steel (see material)

Measuring range: 0...1 to 0...600 bar

Signal output: 4...20 mA

0...5 VDC

0...10 VDC

1...6 VDC

ACCURACY

TEB @ -25...+85°C: ± 2.0 % FS typ.

Accuracy @ +25°C: ± 0.5 % FS typ.

NLH @ +25°C (BSL through 0): ± 0.3 % FS typ.

TC zero point and span: ± 0.03 % FS/K typ.

Long term stability

1 year @ +25°C: ± 0.2 % FS typ.

ELECTRICAL DATA

Output/Supply voltage

4...20 mA: 24 (10...32) VDC

0...5 VDC: 24 (10...30) VDC

0...10 VDC: 24 (15...30) VDC

1...6 VDC: 24 (12...30) VDC

Rise time: typ. 1 ms/10...90%

nominal pressure

ENVIRONMENTAL CONDITIONS

Operating temperature: -25...+85°C

Media temperature: -25...+125°C

Protection: ²⁾ min. IP65

Humidity: max. 95% relative

Vibration: 15g (20...2000 Hz)

Shock: 50g/11 ms

EMC PROTECTION

(Output: 4...20mA)

Emission: EN/IEC 61000-6-3

Immunity: EN/IEC 61000-6-2

MECHANICAL DATA

Material

Sensor: 1.4542 (AISI630)

Housing: 1.4301 (AISI304)

O-Ring (media contacting): FKM 70°Sh

Male electrical plug: see ordering information

Mounting torque: 25 Nm

Weight: ~ 85...110 g

Trafag 8891 transducer



MAIN CHARACTERISTICS

Sensor: Thick film on ceramic (see material)

Measuring range: 0...1 to 0...250 bar

Signal output: 4...20 mA

¹⁾ 0...5 VDC

¹⁾ 0...10 VDC

1...6 VDC

0.5...4.5 VDC (ratiometric)

ACCURACY

TEB @ -25...+85°C: ± 3.0 % FS typ.

Accuracy @ +25°C: ± 0.5 % FS typ.

NLH @ +25°C (BSL through 0)

δ 160 bar: ± 0.3 % FS typ.

> 160 bar: ± 0.5 % FS typ.

TC zero point and span: ± 0.03 % FS/K typ.

Long term stability

1 year @ +25°C: ± 0.3 % FS typ.

ELECTRICAL DATA

Output/ Supply voltage

4...20 mA: 24 (9...30) VDC

¹⁾ 0...5 VDC: 24 (10...30) VDC

¹⁾ 0...10 VDC: 24 (15...30) VDC

1...6 VDC: 24 (12...30) VDC

0.5...4.5 VDC: 5 VDC ratiometric

0...10 VDC: 24 (18...30) VDC

Rise time: typ. 1 ms/ 10...90%

nominal pressure

ENVIRONMENTAL CONDITIONS

Operating temperature

U_{supply} = 24 VDC: -25...+85°C

U_{supply} = 24 VAC: -10...+70°C

Media temperature

δ 60 bar: -25...+85°C

> 60 bar: -10...+85°C

Protection: ²⁾ min. IP65

Humidity: max. 95% relative

Vibration: 4g (10...2000 Hz)

Shock: 50g/ 11 ms

EMC PROTECTION

(Output: 4...20mA)

Emission: EN/IEC 61000-6-3

Immunity: EN/IEC 61000-6-2

MECHANICAL DATA

Material

Sensor: Ceramic, Al₂O₃(96%)

Pressure connection: CuZn39Pb3 or 1.4435 (AISI316L)

Housing: as pressure connection

Housing by Execution 04.37

Pressure connection: CuZn39Pb3 or

1.4435 (AISI316L)

Tube: anodized aluminium

O-Ring (media contacting): FKM 70°ShCR, EPDM

Male electrical plug: see ordering information

Mounting torque: 15...20 Nm

Weight: ~ 110 g



Supply voltage

4...20mA: 9...33V DC

0...10V DC: 15...30V DC VDC

Load:

4...20mA: $R_L \delta (U_s - 9V) / 20mA$

0...10V DC: $R_L > 10 K\Omega$

Repeatability: $\pm 0.05\%$ d.S.

Rise time: typ. 1 ms/10...90%

Rated pressure 31 mA

ENVIRONMENTAL CONDITIONS

Operating temperature: 0...+70°C

(opt. -25...+85°C)

Media temperature: 0...+80°C

(opt. -25...+100°C)

Protection: min. IP68

Humidity: max. 95% relative

Vibration: 6g (25...2000 Hz)

Shock: 50g/ 1 ms

EMC PROTECTION

Emission: IEC 61000-6-3

Immunity: IEC 61000-6-2

MECHANICAL DATA

Material

Sensor: 1.4435 (AISI316-L)

Housing: 1.4435 (AISI316-L) or PVDF

Seal: Viton

Male electrical plug: see ordering information

Mounting torque: 25 Nm

Weight: ~ 220 g