

THIN-FILM PRESSURE TRANSDUCER FOR OIL WELL LOGGING TOOLS ULTRA-HIGH LONG-TERM STABILITY

PX3400 Series

mV/V Output

0-1000 to 0-20,000 psi absolute

0-70 to 0-1400 bar absolute

1 bar = 14.5 psi

1 kg/cm² = 14.22 psi

1 atmosphere = 14.7 psi = 29.93

inHg = 760.2 mmHg = 1.014 bar

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PX3425-0004, \$1395,
shown smaller than
actual size.



Starts at
\$1395



- ✓ High Shock and Vibration Resistance
- ✓ Outstanding Stability at High Temperatures
- ✓ Small 19 mm (0.75") Body Diameter
- ✓ High Operating Temperature—Up To 177°C (350°F)
- ✓ Solid State Reliability
- ✓ Gaged Diaphragm for Accurate Data and Fast Warm-Up
- ✓ Built-In Temperature Sensor for Thermal Correction
- ✓ Stainless Steel Wetted Parts
- ✓ Available with Inconel® Wetted Parts for Wells with Sour Gas or for Brine-Induced Wells

OMEGA's PX3400 Series pressure transducers have earned a reputation for high performance, reliability, and stability in tough, real-world applications. They are particularly useful in deep well tools, with a narrow body diameter of 19 mm (0.75") and pressure ranges up to 20,000 psi (1400 bar). Two models are available: the PX3425 operates at up to 121°C (250°F),

and the high-temperature PX3435 operates at up to 177°C (350°F). These outstanding transducers use OMEGA's advanced sputtered thin-film sensor technology. Thousands of them are used on oil well logging tools throughout the world.

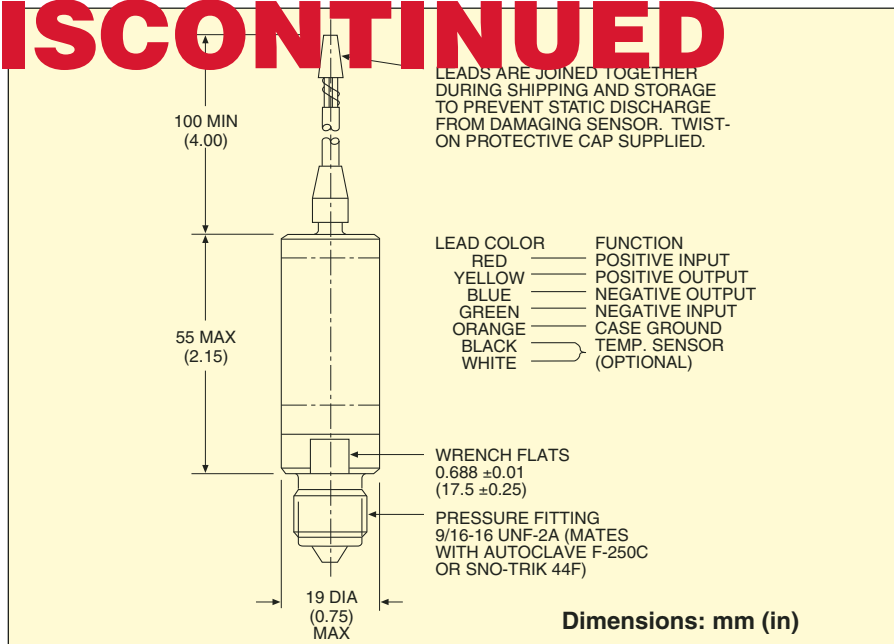
Stability in such operations is critical. A transducer that shifts during a logging cycle invalidates costly data. The PX3400 Series uses thin-film strain gages, sputter deposited on a metal diaphragm. This advanced-technology gage system provides superior stability, especially at the high temperatures often found in oil wells.

The diaphragm is machined from vacuum-remelted 17-4 PH stainless steel with elaborate annealing,

aging, and stress-relieving processes to ensure a stable system. The gaged-diaphragm design minimizes the number of components and welds in the transducer, increasing the reliability and precision of logging data. The heat-sink effect of the diaphragm and the high bridge resistance reduce gage self-heating, decrease warm-up time, and conserve battery power. A built-in platinum resistance temperature element (RTD) provides data for correcting temperature effects using an external microprocessor.

OMEGA's PX3400 Series transducer can be modified to meet your design requirements. A broad selection of optional features is available, including pressure and electrical connections, special testing, additional thermal compensation, and 200°C (400°F) operating temperatures.

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DEEP HOLE LOGGING TRANSDUCER

SPECIFICATIONS

@ 25°C ±1°C

Excitation: 10 Vdc

Full Scale Output:

30 mV typical, 26 mV minimum

Zero Balance: 0 mV, +3 mV, -0 mV

Input and Output Resistance: 2000 Ω minimum, 3000 Ω maximum

Insulation Resistance: 500 MΩ minimum @ 45 Vdc between any connection and case over the calibrated temperature range

Sensing Element: 4-active-arm bridge gages are sputter-deposited on the pressure summing diaphragm

Linearity: ±0.15% FSO maximum measured best-fit straight line through all data points

Hysteresis: ±0.06% FSO (max) at constant temperature for a complete pressure cycle

Long-Term Stability: Zero and sensitivity stability is better than ±0.1% over a 6-month period when the transducer is operated within the specified environment

Operating Temp Range:

PX3425: -54 to 121°C (-65 to 250°F)

PX3435: -54 to 177°C (-65 to 350°F)

Compensated Temp Range:

PX3425: -18 to 121°C (0 to 250°F)

PX3435: -18 to 177°C (0 to 350°F)

Thermal Effects (Over the

Compensated Range):

Span: ±0.03% FSO/°F

Zero: ±0.03% FSO/°F

Vibration Sensitivity: At 35 g peak sinusoidal vibration from 10 Hz to 2000 Hz (½" D.A.), the output shall not exceed 0.003% FSO/g

Natural Frequency: >50,000 Hz

Shock: Qualification level of 100 g, 11 ms half sine wave without damage

Temperature: Platinum resistance device to DIN43760 (alpha = 0.00385 Ω/ohm/°C). See order chart for resistance at 0°C (32°F).

Proof Pressure: 1.5 times rated pressure or 25,000 psi, whichever is less, will not cause the performance to shift beyond the specified tolerances

Burst Pressure: 2 times rated pressure or 30,000 psi, whichever is less, will not cause rupture of the pressure containment cavity

Wetted Parts: 17-4 PH stainless steel

Electrical Connection: 7 separate PTFE-insulated stranded wires 0.6 m ±0.05 m (25" ± 2") in length

Pressure Fitting: ½-18 UNF-2A (mates with Autoclave F 250C or Sno-Trik 44F)

Weight: 114 g (4 oz) max including cable

Calibration Record: OMEGA's calibration record is supplied. Also documented is the pre-ship output at atmospheric pressure and the temperature sensor resistance at 25°C ±2.8°C (77°F ±5°F).

Options: Special electrical and pressure connections, special testing and calibration procedures, higher operating temperatures

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To Order (Specify Model Number)

RANGE		MODEL NO. FOR OPERATING RANGE				TEMP SENSOR
psi	bar	-18 to 121°C	PRICE	-18 to 177°C	PRICE	(Ω @ 0°C)
0 to 1000	0 to 68.9	PX3425-0001	\$1395	PX3435-0001	\$1850	NONE
0 to 2500	0 to 172	PX3425-0002	1395	PX3435-0002	1850	NONE
0 to 5000	0 to 345	PX3425-0003	1395	PX3435-0003	1850	NONE
0 to 10,000	0 to 689	PX3425-0004	1395	PX3435-0004	1850	NONE
0 to 15,000	0 to 1034	PX3425-0005	1395	PX3435-0005	1850	NONE
0 to 20,000	0 to 1379	PX3425-0006	1395	PX3435-0006	1850	NONE
0 to 1000	0 to 68.9	PX3425-0007	1395	PX3435-0007	1850	100
0 to 2500	0 to 172	PX3425-0008	1395	PX3435-0008	1850	100
0 to 5000	0 to 345	PX3425-0009	1395	PX3435-0009	1850	100
0 to 10,000	0 to 689	PX3425-0010	1395	PX3435-0010	1850	100
0 to 15,000	0 to 1034	PX3425-0011	1395	PX3435-0011	1850	100
0 to 20,000	0 to 1379	PX3425-0012	1395	PX3435-0012	1850	100
0 to 1000	0 to 68.9	PX3425-0013	1395	PX3435-0013	1850	500
0 to 2500	0 to 172	PX3425-0014	1395	PX3435-0014	1850	500
0 to 5000	0 to 345	PX3425-0015	1395	PX3435-0015	1850	500
0 to 10,000	0 to 689	PX3425-0016	1395	PX3435-0016	1850	500
0 to 15,000	0 to 1034	PX3425-0017	1395	PX3435-0017	1850	500
0 to 20,000	0 to 1379	PX3425-0018	1395	PX3435-0018	1850	500
0 to 1000	0 to 68.9	PX3425-0019	1395	PX3435-0019	1850	1000
0 to 2500	0 to 172	PX3425-0020	1395	PX3435-0020	1850	1000
0 to 5000	0 to 345	PX3425-0021	1395	PX3435-0021	1850	1000
0 to 10,000	0 to 689	PX3425-0022	1395	PX3435-0022	1850	1000
0 to 15,000	0 to 1034	PX3425-0023	1395	PX3435-0023	1850	1000
0 to 20,000	0 to 1379	PX3425-0024	1395	PX3435-0024	1850	1000

Comes with operator's manual. Custom calibrations available by quotation. Metric ranges available – consult Engineering.

Ordering Examples: PX3425-0005, 15,000 psi absolute pressure transducer with operating range of -18 to 121°C (0 to 250°F) and no temperature sensor, \$1395. PX3435-0015, 5000 psi absolute pressure transducer with operating range of -18 to 177°C (0 to 350°F) and temperature sensor with 500 Ω resistance at 0°C (32°F), \$1850.

ACCESSORY

MODEL NO.	PRICE	DESCRIPTION
EE-2590	\$190	Reference Book: Measurement Instrumentation and Sensors Handbook

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MILLIVOLT OUTPUT
PRESSURE TRANSDUCERS

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