



TE SENSOR SOLUTIONS



PRESSURE SENSORS

We design and manufacture pressure sensors ranging from the sensing element to system packaging for harsh environments. We are an industry leader for our range of both standard and custom pressure sensors, from board level components to fully amplified and packaged transducers. Based on piezoresistive Microelectromechanical (MEMS) and silicon strain gage (Microfused, Krystal Bond) technology, our sensors measure everything from inches of water column (<5 mbar) to 100K psi (7K bar). Sophisticated design and advanced manufacturing techniques create reliable cost-effective solutions for medical, HVACR, off road/heavy equipment and general industrial applications. We manufacture one of the world's lowest power and smallest package pressure sensors for altimeter/NAV applications. Our sensors are signal conditioned, calibrated over temperature and include digital or analog outputs.



BOARD LEVEL PRESSURE SENSORS

Digital Output and Altimeter



MEAS MS4515DO, MS4525DO

Package	8 pin DIL
Type	Gage, compound (MS4515DO) Gage, absolute, differential, compound (MS4525DO)
Pressure Range	0 - 2 to 30" H ₂ O (MS4515DO) 0 - 1 to 150 psi (MS4525DO)
Output / Span	14-bit ADC SPI or I ² C
Resolution	—
Unique Features	<ul style="list-style-type: none"> • Optional gel coat, low power • Pressure and temperature measurement • Single supply of 3.3 or 5.0 VDC • Top, side barbed or manifold o-ring port • J lead or thru hole pins
Linearity/Absolute Accuracy	0.25% / 1% TEB
Overpressure	300 psi
Operating Temp.	-10°C to 85°C (MS4515DO) -25°C to 105°C (MS4525DO)
Dimensions (mm)	12.5 x 9.9
Typical Applications	Medical instruments, air flow measurements, process control, leak detection



MEAS MS5803

Package	Surface mountable
Type	Absolute
Pressure Range	0 - 1 to 30 bar
Output / Span	24-bit ADC I ² C and SPI (Mode 0, 3)
Resolution	12 µbar (MS5803-01BA) 0.5 mbar (MS5803-30BA)
Unique Features	<ul style="list-style-type: none"> • 24-bit digital sensor, software calibration and temperature compensation (I²C and SPI), no external components • Supply voltage 1.8 to 3.6 V
Linearity/Absolute Accuracy	±1.5 mbar at 25°C (MS5803-01BA) ±250 mbar at 0°C to 40°C (MS5803-30BA)
Overpressure	10 bar (1, 2 bar), 30 bar (5, 7, 14 bar) 50 bar(30 bar)
Operating Temp.	-40°C to 85°C
Dimensions (mm)	6.4 x 6.2 x 2.9
Typical Applications	Precision altimeter, diving and multi-mode watches, in-building navigation, variometers / flight instruments



MEAS MS5837

Package	Surface mountable
Type	Absolute
Pressure Range	0 - 30 bar
Output / Span	24-bit ADC I ² C
Resolution	0.2 mbar
Unique Features	<ul style="list-style-type: none"> • Supply voltage: 1.5 to 3.6 V • Excellent long term stability • Hermetically sealable for outdoor devices • Sealing designed for 1.8 x 0.88 mm o-ring
Linearity/Absolute Accuracy	±400 mbar
Overpressure	50 bar
Operating Temp.	-20 to 85 °C
Dimensions (mm)	3.3 x 3.3 x 2.75
Typical Applications	Mobile water depth measurement systems, diving computers, adventure or multi-mode watches, data loggers



MEAS MS5525DSO

Package	SOIC-14
Type	Gage, absolute, differential, compound
Pressure Range	0 - 1 to 30 psi
Output / Span	24-bit ADC SPI or I ² C protocol
Resolution	—
Unique Features	<ul style="list-style-type: none"> • 24-bit digital small outline sensor • Pressure and temperature measurement • Single supply of 1.8 or 3.6 VDC • Barb, tube and hole package style options
Linearity/Absolute Accuracy	0.25% / 2.5% TEB
Overpressure	3X range
Operating Temp.	-40°C to 125°C
Dimensions (mm)	12.5 x 7.9
Typical Applications	Medical respirators, ventilators, factory automation, altitude and airspeed measurements, leak detection, home appliances



MEAS MS5607, MS5611, MS5637

Package	Surface mountable
Type	Absolute
Pressure Range	10 - 2K mbar
Output / Span	24-bit ADC I ² C
Resolution	0.016 mbar
Unique Features	<ul style="list-style-type: none"> • 24-bit digital sensor • 13 cm resolution (MS5607, MS5637) • 10 cm resolution (MS5611) • Supply voltage: 1.5 to 3.6 V (MS5637) • Supply voltage: 1.8 to 3.6 V (MS5607, MS5611) • Low power, 0.6 µA (Standby ≤ 0.1 µA at 25°C)
Linearity/Absolute Accuracy	±2.0 mbar at 25°C
Overpressure	6 bar
Operating Temp.	-40 to 85°C
Dimensions (mm)	3 x 3 x 0.9 (MS5637) 5 x 3 x 1 (MS5607, MS5611)
Typical Applications	Smart phones, tablets, personal navigation devices, tire pressure monitoring, compressors



MEAS MS5805

Package	Surface mountable
Type	Absolute
Pressure Range	10 - 2K mbar
Output / Span	24-bit ADC I ² C
Resolution	0.02 mbar
Unique Features	<ul style="list-style-type: none"> • 24-bit digital sensor • 20 cm resolution • Supply voltage: 1.8 to 3.6 V • Sealing designed for 2.5 x 1 mm o-ring • Silicone gel protection • Waterproof
Linearity/Absolute Accuracy	±2.0 mbar at 25°C
Overpressure	5 bar
Operating Temp.	-40 to 85°C
Dimensions (mm)	4.5 x 4.5 x 3.5
Typical Applications	Mobile altimeter and barometer systems, bike computers, adventure or multi-mode watches, variometers, data loggers



MEAS MS8607

Package	Surface mountable
Type	Absolute
Pressure Range	10 - 2K mbar
Output / Span	24 bit ADC I ² C
Resolution	0.016 mbar
Unique Features	<ul style="list-style-type: none"> • Integrated pressure, humidity and temperature • Supply voltage: 1.5 to 3.6 V • Fully factory calibrated sensor
Linearity/Absolute Accuracy	±4 mbar
Overpressure	6 bar
Operating Temp.	-40°C to 85°C
Dimensions (mm)	5 x 3 x 1
Typical Applications	Smart phones, tablets, HVACR, weather stations, printers, home appliances and humidifiers

BOARD LEVEL PRESSURE SENSORS

Amplified Output



MEAS MS4515, MS4525

Package	8 pin DIL
Type	Gage, differential (MS4515) Gage, absolute, differential, compound (MS4525)
Pressure Range	0 - 2 to 30" H ₂ O (MS4515) 0 - 1 to 150 psi (MS4525)
Output / Span	10% to 90% or 5% to 95% of supply
Unique Features	<ul style="list-style-type: none"> • Ratiometric analog output sensor • Single supply of either 3.3 or 5.0 VDC • Top, side barbed or manifold o-ring port • J lead or thru-hole pins • Optional gel coat
Accuracy	0.25% span / 1% TEB
Operating Temp.	-10°C to 85°C (MS4515), -25°C to 105°C (MS4525)
Dimensions (mm)	12.5 x 9.9
Typical Applications	Medical instruments, air flow measurements, process control, leak detection



MEAS MS5525ASO

Package	SOIC-14
Type	Gage, absolute, differential, compound
Pressure Range	0 - 1 to 30 psi
Output / Span	10 - 90% VDC
Unique Features	<ul style="list-style-type: none"> • Temperature compensated • 2.75 to 5.5 VDC supply voltage • Amplified ratiometric analog output • Barb, tube and hole package style options
Accuracy	±0.5% span / 2.5% TEB
Operating Temp.	-25°C to 105°C
Dimensions (mm)	12.5 x 7.9
Typical Applications	Factory automation, altitude and airspeed measurements, medical instruments, leak detection

mV Output



MEAS 1210, 1220, 1230, 1240

Package	8 pin DIL
Type	Gage, absolute, differential
Pressure Range	0 - 5 and 10" H ₂ O 0 - 1 to 100 psi
Output / Span	50 mV and 100 mV typical
Unique Features	<ul style="list-style-type: none"> • Temperature compensated • High performance UltraStable die (1230, 1240) • Current excitation (1210, 1230) • Voltage excitation (1220, 1240)
Accuracy	±0.1% non-linearity
Operating Temp.	-40°C to 125°C
Dimensions (mm)	15.2 x 14.7
Typical Applications	Medical instruments, air flow measurement, process control, factory automation, leak detection



MEAS 13, 23, 33, 43, 17, 27, 37, 47

Package	TO-8
Type	Gage, absolute, differential
Pressure Range	0 - 1 to 250 psi
Output / Span	100 mV typical
Unique Features	<ul style="list-style-type: none"> • Temperature compensated • High performance UltraStable die (17, 27, 37, 47) • Can gel fill for humid conditions
Accuracy	±0.1% non-linearity
Operating Temp.	-40°C to 125°C
Dimensions (mm)	Ø11.4, application dependent
Typical Applications	Medical instruments, air flow measurement, HVACR, process control, factory automation, leak detection



MEAS MS4425, MS4426

Package	6 pin DIL
Type	Gage, absolute, differential
Pressure Range	0 - 1 to 300 psi
Output / Span	60 mV, 90 mV, 100 mV, and 150 mV typical
Unique Features	<ul style="list-style-type: none"> • Temperature compensated • High performance UltraStable die • Voltage excitation
Accuracy	±0.1% non-linearity
Operating Temp.	-25°C to 85°C
Dimensions (mm)	15.2 x 13.7
Typical Applications	Drop-in for 6 pin industrial sensor for PCB mounted medical

BOARD LEVEL PRESSURE SENSORS

mV Output



MEAS MS1451, MS1471

Package	Surface mountable
Type	Gage, absolute
Pressure Range	0 - 5 to 500 psi
Output / Span	60 mV typical
Unique Features	<ul style="list-style-type: none"> • Low cost • Coarse calibrated at room temp. (MS1471) • With gel to protect against moisture • Tube or hole
Accuracy	±0.25% non-linearity
Operating Temp.	-40°C to 125°C
Dimensions (mm)	7.6 x 7.6, application dependent
Typical Applications	Altitude measurement, barometric pressure, medical instrumentation, consumer appliances, tire pressure

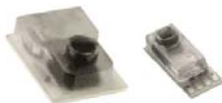


MEAS MS52xx, MS54xx

Package	Surface mountable
Type	Gage, absolute
Pressure Range	0 - 1 to 12 bar
Output / Span	150 mV, 240 mV
Unique Features	<ul style="list-style-type: none"> • Small size (MS54xx) • High linearity or high sensitivity options • Plastic tube or metal ring options • With gel to protect against moisture • High endurance (Option HM)
Accuracy	±0.05%, ±0.15% FS non-linearity (MS52xx) ±0.05%, ±0.2% FS non-linearity (MS54xx)
Operating Temp.	-40°C to 125°C
Dimensions (mm)	7.6 x 7.6, application dependent (MS52xx) 6.4 x 6.2 (MS54xx)
Typical Applications	Absolute pressure sensor systems, engine controls, high resolution altimeters, variometers, waterproof watches, diver computers, barometers, tire pressure monitoring systems (TPMS), medical instrumentation, pneumatic controls

DISPOSABLE MEDICAL PRESSURE SENSORS

mV Output



MEAS 1620, 1630

Package	Hybrid assembly
Type	Gage
Pressure Range	-30 to 300 mmHg
Output / Span	5 μ V/V/mmHg
Unique Features	<ul style="list-style-type: none"> • Low cost, disposable design • Supplied in tape and reel • Compliant to AAMI spec • ISO13485 certified
Accuracy	±1.0% FSO
Operating Temp.	10°C to 40°C
Dimensions (mm)	1620: 11.43 x 8.13 x 4.20 1630: 12.7 x 5.08 x 3.94
Typical Applications	Disposable blood pressure, surgical procedures, ICU, kidney dialysis machines, medical instrumentation



MEAS Fully Assembled 1620 (Customized per customer specifications)

Package	Plastic housing
Type	Gage
Pressure Range	-30 to 300 mmHg
Output / Span	5 μ V/V/mmHg
Unique Features	<ul style="list-style-type: none"> • Low cost, disposable design • Compliant to AAMI spec • Custom designs available
Accuracy	±1.0% FSO
Operating Temp.	10°C to 40°C
Dimensions (mm)	42.8 x 30.3 x 19.0
Typical Applications	Disposable blood pressure, kidney dialysis machines, surgical procedures and intensive care units. Ready to use, fully assembled disposable sensor units with cable, connector, stop cock, flush device in a plastic housing.

MEDIA ISOLATED PRESSURE SENSOR MODULES

Digital Output



MEAS 85BSD

Package	<ul style="list-style-type: none"> • 13 mm diaphragm diameter • Weldable or threaded process fittings
Type	Gage, absolute
Pressure Range	0 - 0.35 to 20 bar / 0 - 5 to 300 psi
Output / Span	14-bit ADC I ² C or SPI
Unique Features	<ul style="list-style-type: none"> • Pressure and temperature read-out • Cable and connector options • Low power option
Accuracy	±0.25% span
Total Error Band	±1.0% FSO
Overpressure	2X
Operating Temp.	-40°C to 125°C
Dimensions (mm)	Ø15.85 x 7.9
Typical Applications	Level controls, tank level measurement, corrosive fluids and gas measurement systems, sealed systems, manifold pressure measurement, submersible depth monitoring



MEAS 86BSD

Package	<ul style="list-style-type: none"> • 16 mm diaphragm diameter • O-ring mount
Type	Gage, absolute
Pressure Range	0 - 0.07 to 20 bar / 0 - 1 to 300 psi
Output / Span	14-bit ADC I ² C or SPI
Unique Features	<ul style="list-style-type: none"> • Pressure and temperature read-out • Cable and connector options • Low power option
Accuracy	±0.25% span
Total Error Band	±1.0% FSO
Overpressure	2X
Operating Temp.	-40°C to 125°C
Dimensions (mm)	Ø15.82 x 9.3
Typical Applications	Level controls, tank level measurement, corrosive fluids and gas measurement systems, sealed systems, manifold pressure measurement, submersible depth monitoring



MEAS 89BSD

Package	<ul style="list-style-type: none"> • 9 mm diaphragm diameter • Threaded or weldable
Type	Absolute, sealed gage
Pressure Range	0 - 6 to 30 bar
Output / Span	24-bit ADC I ² C
Unique Features	<ul style="list-style-type: none"> • Pressure and temperature read-out • Low power: 1 µA (Standby < 0.15 µA) • Low power option
Accuracy	±0.3% span
Total Error Band	±3.0% FSO max.
Overpressure	2X
Operating Temp.	-40°C to 85°C
Dimensions (mm)	Ø9.04 x 7.5
Typical Applications	Level controls, tank level measurement, corrosive fluids and gas measurement systems, sealed systems, manifold pressure measurement, dive computers



MEAS 154BSD

Package	<ul style="list-style-type: none"> • 19 mm diaphragm diameter • O-ring mount
Type	Gage, absolute
Pressure Range	0 - 1 to 300 psi
Output / Span	14-bit ADC I ² C or SPI
Unique Features	<ul style="list-style-type: none"> • Pressure and temperature read-out • Cable and connector options • Low power option
Accuracy	±0.25% span
Total Error Band	±1.0% FSO
Overpressure	2X
Operating Temp.	-40°C to 125°C
Dimensions (mm)	Ø19 x 13.8
Typical Applications	Level controls, tank level measurement, corrosive fluids and gas measurement systems, sealed systems, manifold pressure measurement, submersible depth monitoring

MEDIA ISOLATED PRESSURE SENSOR MODULES

Analog Output



MEAS 82, 85 with Fittings

Package	Weldable (85) or process fitting
Type	Gage, absolute, vacuum gage
Pressure Range	0 - 5 to 500 psi (85) 0 - 1 to 500 psi (82)
Output / Span	100 mV typical
Unique Features	<ul style="list-style-type: none"> • Modular design
Non-linearity	±0.3% FSO (1 psi) ±0.2% FSO (5 psi) ±0.1% FSO (≥15 psi)
Operating Temp.	-40°C to 125°C
Dimensions (mm)	Fittings: application dependent
Typical Applications	Medical, process control, refrigeration compressor, oceanography, level systems



MEAS 89 Button, 89 with Fittings

Package	Weldable or process fitting
Type	Sealed gage, absolute
Pressure Range	0 - 1K to 10K psi
Output / Span	100 mV typical
Unique Features	<ul style="list-style-type: none"> • High pressure • Modular design
Non-linearity	±0.25% FSO
Operating Temp.	-40°C to 125°C
Dimensions (mm)	89 Button: Ø9.04 x 13.2 89 with Fittings: application dependent
Typical Applications	Air tank pressure, hydraulics, process control, robotics, refrigeration compressors, oceanography



MEAS 86A Amplified

Package	5/8" (16 mm) diameter o-ring mount
Type	Gage, absolute
Pressure Range	0 - 1 to 150 psi
Output / Span	0.5 - 4.5 VDC
Unique Features	<ul style="list-style-type: none"> • Small diameter, amplified output • Bar ranges available
Non-linearity	±1.0% FSO
Operating Temp.	-20°C to 85°C
Dimensions (mm)	Ø15.82 x 9.3
Typical Applications	Level measurement, OEM transmitters and transducers, process control

MEDIA ISOLATED PRESSURE SENSOR MODULES

Analog Output



MEAS 82, 85, 85F, 86, 154N

Package	<ul style="list-style-type: none"> • 3/4" (19 mm) diameter o-ring mount (82, 154N) • 5/8" (16 mm) diameter o-ring mount (86) • 1/2" (13 mm) diameter o-ring flush mount (85F) • 1/2" (13 mm) diameter o-ring mount (85)
Type	Gage, absolute, vacuum gage (82, 85, 86, 154N) Gage, absolute (85F)
Pressure Range	0 - 1 to 500 psi (Absolute, gage: 82, 154N) 0 - 5 to 500 psi (Absolute, gage: 85, 86) 0 - 15 to 500 psi (85F, vacuum gage: 82, 85, 86, 154N)
Output / Span	100 mV typical
Unique Features	<ul style="list-style-type: none"> • High performance • High stability for OEM applications • Minimizes trapped volume (85F)
Non-linearity	±0.3% FSO (1 psi), ±0.2% FSO (5 psi) ±0.1% FSO (≥15 psi), ±0.1% FSO (85F)
Operating Temp.	-40°C to 125°C (82 / 85 / 86 / 154N), -20°C to 125°C (85F)
Dimensions (mm)	82: Ø19 x 6.48 86: Ø15.82 x 11.4 154N: Ø18.97 x 13.8 85F: Ø17.2 x 11.33 85: Ø15.85 x 9.3
Typical Applications	Hydraulic controls, process control, oceanography, refrigeration/compressors, pressure transmitters, level systems, dialysis machines, infusion pumps, medical systems



MEAS DP86 O-Ring Mount, with Fittings/Cable

Package	• 5/8" (16 mm) diameter o-ring mount or threaded process fittings
Type	Differential
Pressure Range	0 - 1 to 500 psi
Output / Span	100 mV typical / sensitivity dependent
Unique Features	<ul style="list-style-type: none"> • Wet/wet differential pressure • Line pressure max. 1000 psi
Non-linearity	±0.3% FSO (1 psi) ±0.2% FSO (5 psi) ±0.1% FSO (≥15 psi)
Operating Temp.	-40°C to 125°C
Dimensions (mm)	O-ring: Ø15.82 x 17.5 Fittings: Application dependent
Typical Applications	Level controls, tank level measurement, corrosive fluids and gas measurement systems, flow measurement



MEAS U86B

Package	• Mountable with o-ring seal
Type	Sealed gage, absolute
Pressure Range	0 - 5 to 13 bar / 0 - 50 to 200 psi
Output / Span	0.5 - 4.5 VDC (Ratiometric output)
Unique Features	• Amplified
Non-linearity	±0.5% FSO
Operating Temp.	-7°C to 105°C
Dimensions (mm)	Ø15.82 x 13.6 Socket spacing: 31.75
Typical Applications	Urea level, urea pressure, air brakes, corrosive fluid measurement for E&V applications

TRANSDUCERS AND TRANSMITTERS

Wireless



MEAS M5600, U5600

Type	Gage, sealed, absolute, compound
Pressure Range	0 - 50 to 15K psi (M5600) 0 - 5 to 10K psi (U5600)
Output / Span	24-bit ADC I ² C
Unique Features	<ul style="list-style-type: none"> • Pressure and temperature • 2.3 - 3.6 V supply voltage • Compact and battery-powered • Weather resistant (IP66 and IP67) • Stainless steel and polycarbonate enclosure
Accuracy	±0.25% FS (M5600) Down to ±0.1% FS (U5600)
Operating Temp.	-20°C to 85°C
Dimensions (mm)	24 x 24 x 69
Typical Applications	Industrial process control and monitoring, advanced HVACR systems, refrigeration systems, automotive test stands, off-road vehicles, pumps and compressors, hydraulic and pneumatic systems, agriculture equipment, energy generation and management
Agency Approvals	CE, FCC

Industrial



MEAS MSP100

Type	Gage
Pressure Range	0 - 100 to 500 psi
Output / Span	100 mV typical
Unique Features	<ul style="list-style-type: none"> • Microfused • Low cost stainless steel isolated transducer • No threads needed for pressure connect • Highly customized for OEM application • Small size • Solid state reliability
Accuracy	±0.5% FSO
Operating Temp.	0°C to 55°C
Dimensions (mm)	12.7 x 24.38 x 20.32
Typical Applications	Beverage dispensing systems, automation, HVACR controls, energy and water management, pumps, compressors, pneumatic equipment
Agency Approvals	—



MEAS MSP300, MSP340

Type	Gage
Pressure Range	0 - 100 to 10K psi (MSP300) 0 - 50 to 10K psi (MSP340)
Output / Span	0 - 100 mV, 0.5 - 4.5 VDC, 1 - 5 VDC, 4 - 20 mA
Unique Features	<ul style="list-style-type: none"> • Microfused • Highly customized for OEM applications • Small size • Solid state reliability
Accuracy	±1% FSO
Operating Temp.	-20°C to 85°C
Dimensions (mm)	MSP300: 22.23 x 22.23 x 55.88 MSP340: 15.88 x 15.88 x 75.44
Typical Applications	Paint sprayers, braking systems, HVACR controls, energy and water management, pumps, compressors, pneumatic equipment, off road heavy equipment, agriculture equipment
Agency Approvals	UL 508 (MSP300)

TRANSDUCERS AND TRANSMITTERS

Industrial



MEAS US300

Type	Gage, absolute
Pressure Range	0 - 15 to 5K psi
Output / Span	0 - 10 mV/V, 0.5 - 4.5 V, 1 - 5 V, 4 - 20 mA
Unique Features	<ul style="list-style-type: none"> • UltraStable technology • Highly customized for OEM applications • Small size • Solid state reliability
Accuracy	±0.15% FSO (15 - 1K psi), ±0.25% FSO (>1K psi)
Operating Temp.	-40°C to 105°C
Dimensions (mm)	15.88 x 15.88 x 98.00
Typical Applications	Paint sprayers, braking systems, HVACR controls, energy and water management, pumps, compressors, pneumatic equipment, off road heavy equipment, agriculture equipment
Agency Approvals	—



AST20HA, AST20PT, AST20SW

Type	Gage, sealed gage, absolute
Pressure Range	0 - 1 to 60K psi
Output / Span	0.5 - 4.5 V [Ratiometric] 1 - 5 V, 4 - 20 mA, 0 - 5 V, 0 - 10 V, switch (AST20SW)
Unique Features	<ul style="list-style-type: none"> • Excellent performance over temperature • Semi-custom designs available • Fault mode condition settings • Four standard sensor material options • Additional temperature output (AST20PT)
Accuracy	±0.1% FSO
Operating Temp.	-40°C to 85°C
Dimensions (mm)	Application dependent
Typical Applications	Test and measurement, industrial controls
Agency Approvals	ABS, CE



AST4000

Type	Gage, sealed gage, compound
Pressure Range	0 - 25 to 10K psi
Output / Span	0.5 - 4.5 V [Ratiometric], 1 - 5 V, 1 - 10 V, 4 - 20 mA, 0.5 - 2.5 V
Unique Features	<ul style="list-style-type: none"> • Four standard sensor material options • Rugged construction • 100 V/m EMI/RFI protection • Semi-custom designs available
Accuracy	—
Operating Temp.	-40°C to 85°C
Dimensions (mm)	Application dependent
Typical Applications	Water, hydraulic equipment, HVACR, industrial controls
Agency Approvals	UL/cUL508, ABS, CE



MEAS M5200

Type	Gage, sealed, compound
Pressure Range	0 - 3.5 to 1K bar / 0 - 50 to 15K psi
Output / Span	0.5 - 4.5 V, 1 - 5 V, 0 - 5 V, 0 - 10 V, 4 - 20 mA, 1 - 6 V
Unique Features	<ul style="list-style-type: none"> • Microfused technology • High performance at a low cost • Solid state reliability • ±1% FSO TEB (-20°C to 85°C) • Weatherproof • 17 - 4 PH or 316L SS
Accuracy	±0.25% FSO
Operating Temp.	-40°C to 125°C
Dimensions (mm)	24 X 24 X 82 max.
Typical Applications	Industrial process control and monitoring, advanced HVACR systems, refrigeration systems, automotive test stands, off road vehicles, pumps and compressors, hydraulic and pneumatic systems, agriculture equipment, energy generation and management
Agency Approvals	CE (EMC)



MEAS U5200, U5300

Type	Gage, sealed, absolute, compound
Pressure Range	0 - 0.14 to 700 bar / 0 - 2 to 10K psi
Output / Span	0.5 - 4.5 V, 1 - 5 V, 0 - 5 V, 0 - 10 V, 4 - 20 mA, 1 - 6 V
Unique Features	<ul style="list-style-type: none"> • UltraStable technology • High performance at a low cost • ±0.75% FSO TEB (-20°C to 85°C, >5 psi and ≤5000 psi) (U5200) • ±0.5% FSO TEB (-20°C to 85°C) (U5300) • Weatherproof • High accuracy (U5300)
Accuracy	±0.1% FSO (>5 and ≤500 psi)
Operating Temp.	-40°C to 125°C
Dimensions (mm)	24 X 24 X 82 max.
Typical Applications	Industrial process control and monitoring, advanced HVACR systems, refrigeration systems, automotive test stands, off road vehicles, pumps and compressors, hydraulic and pneumatic systems, agriculture equipment, energy generation and management, military and aerospace test stands, calibration equipment, high accuracy applications, stationary motor fuel control, high end industry machinery
Agency Approvals	CE (EMC), UL 508



MEAS D5100

Type	Differential wet/wet
Pressure Range	0 - 0.07 to 35 bar / 0 - 1 to 500 psi
Output / Span	80 mV / 100 mV, 0.5 - 4.5 VDC, 1 - 5 VDC, 4 - 20 mA
Unique Features	<ul style="list-style-type: none"> • UltraStable technology • High performance at a low cost • Solid state reliability • ±1% FSO TEB (-20°C to 85°C) • Line pressure max. 1000 psi
Accuracy	±0.3% FSO (<5 psi), ±0.25% FSO (5 psi), ±0.1% FSO (≥15 psi)
Operating Temp.	-40°C to 125°C
Dimensions (mm)	25.4 x 58.4 x 72.0
Typical Applications	Process controls, tank level measurement, filter performance monitoring, corrosive fluids and gas measurement systems, flow measurement
Agency Approvals	CE (EMC)

TRANSDUCERS AND TRANSMITTERS

Industrial



MEAS M7100, U7100

Type	Gage, no vent gage (M7100) Gage, sealed gage, absolute (U7100)
Pressure Range	0 - 10 to 700 bar / 0 - 150 to 10K psi (M7100) 0 - 1 to 10 bar / 0 - 15 to 150 psi (U7100)
Output / Span	0.5 - 4.5 VDC [Ratiometric output] 1 - 5 VDC [Regulated] (M7100) 0.5 - 4.5 VDC [Ratiometric output] (U7100)
Unique Features	<ul style="list-style-type: none"> • ±1% FSO TEB (-20°C to 85°C) • Solid state reliability • Survives high vibration and immersion • Microfused technology (M7100) • UltraStable technology (U7100) • Copper tube for HVACR (M7100)
Accuracy	0.25% FSO
Operating Temp.	-40°C to 125°C
Dimensions (mm)	26.7 x 26.7 x 50.0
Typical Applications	HVACR refrigeration controls, off road vehicles engine control, compressors, hydraulic, energy and water management
Agency Approvals	CE (EMC), UL 508

Heavy Industrial



MEAS P900, P981, P1200, P700, P9000

Type	Gage, absolute
Pressure Range	0 - 5 bar to 700 bar / 0 - 75 to 10K psi
Output / Span	0 - 5 VDC, 0 - 10 VDC, 4 - 20 mA
Unique Features	<ul style="list-style-type: none"> • High overpressure (10X over pressure) • Shock and vibration resistant • Heavy industrial grade transducer (P9000) • Advanced digital compensation / calibration • Mechanical over pressure stops • High temperature operation
Accuracy	0.1% to 0.2% FSO
Operating Temp.	-54°C to 120°C
Dimensions (mm)	Application dependent
Typical Applications	Steel mills, hydraulic controls, power generation equipment, torpedo depth, military and aerospace, vehicle braking systems
Agency Approvals	CE, CENELEC (Intrinsically Safe)



MEAS P101, P105, P125

Type	Gage
Pressure Range	0 - 10 to 7K bar / 0 - 150 to 100K psi
Output / Span	7.5 to 20 mV (4 V; 5 V optional)
Unique Features	<ul style="list-style-type: none"> • Stainless steel diaphragm • Female pressure connectors: M16 x 1.5, M20 x 1.5, 1/4 NPT • Metal to metal seal
Accuracy	±0.3% FSO
Operating Temp.	-20°C to 80°C
Dimensions (mm)	Ø29 x 85 max.
Typical Applications	Harsh environments, aggressive liquids
Agency Approvals	—

TRANSDUCERS AND TRANSMITTERS

Miniature



MEAS XP Series

Type	Gage, sealed, absolute
Pressure Range	0 - 1 to 350 bar / 0 - 15 to 5K psi (XP5, XPM10) 0 - 5 to 200 bar / 0 - 75 to 3K psi (XPM4) 0 - 100 to 1K bar / 0 - 1.5K to 15K psi (XPM6)
Output / Span	20 - 100 mV, 4 V FSO (Amplified)
Unique Features	<ul style="list-style-type: none"> • Titanium construction (XP5, XPM4) • Stainless steel housing (XPM6, XPM10) • Amplified output options (XP5, XPM6, XPM10) • Cable and connector options • For static and dynamic applications
Accuracy	Down to ±0.25% FSO (XP5, XPM6, XPM10), down to ±0.35% FSO (XPM4)
Operating Temp.	-40°C to 120°C
Dimensions (mm)	XPM4: M4 x 0.7 thread; Hex 8 XP5: M5 x 0.8 or 10-32 UNF thread; Hex 10 XPM6: M6 x 1 thread; Hex 12 XPM10: M10 x 1 thread; Hex 15
Typical Applications	Corrosive liquids and gases, braking system pressure, onboard equipment monitoring, military and aerospace, explosive test benches, robotics and effectors, laboratory and research, extreme miniature devices



MEAS XPC10

Type	Gage, sealed, absolute
Pressure Range	0 - 10 to 500 bar / 0 - 150 to 7.5K psi
Output / Span	12 mV FSO, 4 V FSO (Amplified)
Unique Features	<ul style="list-style-type: none"> • Amplified output available • For static and dynamic applications • Optional IP67 ingress protection • High temperature operation
Accuracy	Down to ±0.25% FSO
Operating Temp.	-40°C to 220°C
Dimensions (mm)	M10 x 1 or 3/8-24 UNF thread; Hex 15
Typical Applications	Aerospace, test benches, oven monitoring equipment, cooling regulation systems

TRANSDUCERS AND TRANSMITTERS

Miniature



MEAS EB, EPRB

Type	Gage, sealed, absolute
Pressure Range	0 - 0.35 to 700 bar / 0 - 5 to 10K psi
Output / Span	0.5 to 4.5 VDC
Unique Features	<ul style="list-style-type: none"> • High accuracy • Miniature design • UltraStable technology • EMI protected • Combined pressure and temperature
Accuracy	±0.25% FSO
Operating Temp.	-40°C to 125°C (Available option up to 150°C)
Dimensions (mm)	11 body diameter
Typical Applications	Motor sport, hydraulic / pneumatic systems, automotive test stands, military and aerospace test stands
Agency Approvals	CE (EMC)



MEAS EPIH

Type	Gage, sealed, absolute
Pressure Range	0 - 0.35 to 20 bar / 0 - 5 to 300 psi
Output / Span	12 mV to 75 mV
Unique Features	<ul style="list-style-type: none"> • Diffused silicon diaphragm with a large variety of sizes and shapes available as small as 0.05" outside diameter • High frequency response (To 1.7 MHz) • Ultra-miniature design
Accuracy	±1.0% FSO
Operating Temp.	-40°C to 120°C
Dimensions (mm)	Application dependent
Typical Applications	Aerospace testing, wind tunnels, biomedical testing, aircraft body and wing dynamics, high frequency measurements
Agency Approvals	—



MEAS EPB, EPB-PW, EPL

Type	Gage, sealed, absolute
Pressure Range	0 - 0.35 to 350 bar / 0 - 5 to 5K psi
Output / Span	10 mV to 125 mV
Unique Features	<ul style="list-style-type: none"> • Miniature flush mountable • Flush stainless steel diaphragm, flanged or non-flanged • Bonded silicon gage, high frequency response (To 400 KHz) • IP68 ingress protection in Titanium construction (EPB-PW)
Accuracy	±0.5 to ±1% FSO
Operating Temp.	-40°C to 120°C
Dimensions (mm)	3.2 to 7 outside diameter
Typical Applications	Air flow testing, hydraulic pressure systems, air pressure systems, bearing studies, ballistics, water hammer, miniature scale model testing, centrifuge pore water pressure measurements
Agency Approvals	—

TRANSDUCERS AND TRANSMITTERS

Liquid Level



MEAS U5700

Type	Gage, sealed, absolute, compound
Pressure Range	0 - 2 to 10K psi
Output / Span	0.5 - 4.5 V, 1 - 5 V, 0 - 5 V, 0 - 10 V, 4 - 20 mA, 1 - 6 V
Unique Features	<ul style="list-style-type: none"> • UltraStable technology • High accuracy • IP68 rated connection and submersible polyurethane jacketed cable • Optional Polyoxymethylene cap
Accuracy	0.1 % FSO
Operating Temp.	-10°C to 60°C
Dimensions (mm)	22.23 x 22.23 x 98.04
Typical Applications	Industrial process control and monitoring, advanced HVACR systems, refrigeration systems, automotive test stands, off road vehicles, pumps and compressors, hydraulic / pneumatic systems, agriculture equipment, energy generation and management, liquid level applications
Agency Approvals	CE (EMC)



AST45xx

Type	Gage, absolute
Pressure Range	0 - 1 to 100 psi (AST4500, AST4510, AST4520)
Output / Span	0.5 - 4.5 V [Ratiometric], 1 - 5 V, 4 - 20 mA, 0.5 - 2.5 V
Unique Features	<ul style="list-style-type: none"> • Intrinsically safe ratings • Material options including: 316L, alloy C276, and PVDF • Low power options • High quality cable options
Accuracy	±0.25% FSO
Operating Temp.	-40°C to 85°C
Dimensions (mm)	Application dependent
Typical Applications	Diesel tanks, chemical tanks, water tanks
Agency Approvals	UL/CSA Class I Div I, ATEX/IECEX Exia, ABS, CE

TRANSDUCERS AND TRANSMITTERS

Hazardous Location



AST43xx, AST44xx

Type	Gage, sealed gage, compound, absolute
Pressure Range	0 - 1 to 15 psi (AST43LP, AST44LP) 0 - 25 to 20K psi (AST4300, AST4400, AST4401)
Output / Span	0.5 - 4.5 V [Ratiometric], 1 - 5 V, 4 - 20 mA, 0.5 - 2.5 V
Unique Features	<ul style="list-style-type: none"> • Available with 316L, alloy C276, or alloy 718 materials • Low current consumption options • Low power options • High proof and burst pressure
Accuracy	±0.25% FSO
Operating Temp.	-40°C to 85°C
Dimensions (mm)	Application dependent
Typical Applications	Compressors, well sites, ships, factory automation, SCADA equipment, offshore equipment
Agency Approvals	UL/CSA Class I Div I and II, ATEX/IECEX Exia/Exn, CCOE, CNEX, ABS, CE



AST46xx

Type	Gage, sealed gage, compound, absolute
Pressure Range	0 - 1 to 20K psi
Output / Span	0.5 - 4.5 V [Ratiometric], 1 - 5 V, 4 - 20 mA, 0.5 - 2.5 V, switch (AST46SW)
Unique Features	<ul style="list-style-type: none"> • Available with 316L, alloy C276, or alloy 718 materials • Low current consumption options • Low power options • Local display (AST46DS) • Additional temperature output
Accuracy	±0.25% FSO (AST4600, AST46DS), ±0.1% FSO (AST46HA, AST46PT)
Operating Temp.	-40°C to 85°C
Dimensions (mm)	Application dependent
Typical Applications	SCADA/RTU, well sites, offshore equipment, hydraulic controls
Agency Approvals	CSA Class I/II Div I, ATEX/IECEX Exd, ABS, CE



AST5100, AST5300, AST5400

Type	Differential
Pressure Range	0 - 5 H ₂ O" to 5K psi
Output / Span	0.5 - 4.5 V [Ratiometric], 0 - 5 V, 1 - 5 V, 4 - 20 mA
Unique Features	<ul style="list-style-type: none"> • Wide range of pressures available • Full line pressure on either side without zero shifts • Hazardous location approvals (AST5300, AST5400)
Accuracy	±0.25% FSO (AST5100, AST5300), 1% TEB (AST5400)
Operating Temp.	-40°C to 85°C
Dimensions (mm)	Application dependent
Typical Applications	Filter monitoring, flow measurement, tank level measurement
Agency Approvals	CSA Class I/II Div I and II, ATEX/IECEX Exd/Exn, ABS, CE

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Calibration

Testing of a sensor to confirm output is within a specified range for particular values of the input.

Compensated Temperature Range

The temperature range in which the sensor meets the specifications for Thermal Zero Shift and Thermal Sensitivity Shift.

DeviceNet™

Device level network for industrial automation.

Excitation

The recommended voltage with which a standard sensor should be excited.

Full Scale Output (FSO)

Full Scale Output (FSO) is the span between the lowest range limit and the highest range limit of the sensor. Published values are approximate values and may vary with each sensor.

Hysteresis

Hysteresis is the difference in sensor output signal at a specific input when applied in the increasing and then decreasing sectors of a single cycle of short time duration at constant temperature. It is expressed as a percentage of FSO.

Natural Frequency

Natural Frequency is the frequency at which the sensor's active sensing element goes into resonance and responds with maximum movement for a specific applied input.

Non-linearity

Non-linearity is the deviation of the sensor output signal from a theoretical straight line which has been fitted to the data points of an actual calibration. It expresses the maximum deviation of all data points in that calibration and is sometime expressed as a percentage of FSO, usually as a $\pm\%$ error band, or % of reading.

Non-Repeatability

Non-repeatability is the deviation in sensor output signal levels when a specific input is applied in consecutive cycles of short time duration under the same conditions, such as temperature and direction of increasing or decreasing input. It can be determined by performing two consecutive short time duration calibration cycles and can be expressed as $\pm\%$ FSO.

Operating Temperature

The temperature range within which a sensor will meet all of its stated specifications while powered and in operation.

Over-range Limit

The over-range limit is the maximum input to which the sensor can be exposed without damage.

Plug and Play

Sensors designed for end-users who expect sensors to meet calibration performance standards once power and signal cables are properly connected to instrumentation.

Root Mean Square

The square root of the arithmetical mean of a set of squared instantaneous values

Sealing

Sealing is the assembly method by which the sensor is protected from moisture in the surrounding environment. The most desirable sealing method is hermetically seal. This can be achieved by joining the individual piece parts together by soldering, welding, brazing, glassing, or other commonly accepted manufacturing processes. Another common sealing method is epoxy seal. It is achieved by joining the piece parts by applying adhesive or potting compound to mitigate the incursion of moisture into the sensor assembly.

Sensitivity

The sensor's change in output per the unit change in the physical parameter being measured. The change may be linear or non-linear.

Thermal Sensitivity Shift (TSS)

The change in sensitivity of the sensor as a function of temperature. It is usually expressed as a percent reading change in sensitivity for a specified change in temperature such as $\pm 0.01\%/^{\circ}\text{C}$ and is generally linear with moderate temperature changes. The Thermal Sensitivity Shift can be eliminated or minimized by using sensitivity numbers determined at or near the temperature of use.

Thermal Zero Shift (TZS)

The change in the Zero Offset as a function of temperature is the Thermal Zero Shift. It may be expressed as either a %FSO for a specific temperature change such as $\pm 0.01\%\text{FSO}/^{\circ}\text{C}$ or in voltage units such as $\pm 0.2\text{ mV}/^{\circ}\text{C}$ and it is not a linear function.

Total Error Band (TEB)

Typically expressed as a percentage, the TEB is the combination of possible errors for a sensing device within its measurement range and temperature of operation.

GLOSSARY OF COMMON SENSOR ABBREVIATIONS

ABS	American Bureau of Shipping	IP	Ingress Protection	PSIS	Pounds Per Square Inch-Sealed Gage Reference
AC	Alternating Current	ISO	International Organization for Standardization	PTFE	Polytetrafluoroethylene
ANSI	American National Standards Institute	ITAR	International Traffic in Arms Regulations	PUDF	Public Use Data File
ASIC	Application-Specific Integrated Circuit	KHZ	Kilohertz	PWM	Pulse Width Modulation
ATEX	Appareils destinés à être utilisés en ATMosphères EXplosibles	LED	Light Emitting Diode	R&D	Research and Development
BOP	Blow Out Prevention	LIN	Local Interconnect Network	RDT&E	Research, Development, Test & Evaluation
CAN	Controller Area Network	LVD	Low Voltage Differential	RFI	Radio Frequency Interference
CE	Communauté Européenne	LVDT	Linear Variable Displacement Transducers	RH	Relative Humidity
CENELEC	European Committee for Electrotechnical Standardization	mA	Milliamp	RMS	Root Mean Square
CSA	Canadian Standards Association	MAF	Mass Air Flow	RoHS	Restriction of Hazardous Substances
CT	Computed Tomography	mbar	Millibar	RPM	Revolutions Per Minute
cUL	Tested to Canadian Standards by Underwriters' Laboratories	MCR	Main Control Room	RTD	Resistance Temperature Detector
DC	Direct Current	MEMS	Microelectromechanical Systems	RTU	Remote Terminal Unit
DCS	Distributed Control System	mHZ	Megahertz	RVDT	Rotary Variable Differential Transformer
DEF	Diesel Exhaust Fluid	mm	Millimeter	SAE	Society of Automotive Engineering
DTC	Digital Temperature Compensation	MQS	Military Qualification Standards	SCADA	Supervisory Control and Data Acquisition
ECU	Engine Control Unit	MR	Magnetostrictive	SCR	Selective Catalytic Reduction
EGR	Exhaust Gas Recirculation	mV	Millivolt	SDI-12	Serial Data Interface at 1200 Baud
EMC	Electromagnetic Compatibility	NAV	Navigation	SMD	Surface Mount Device
EMI	Electromagnetic Interference	NASA	National Aeronautics and Space Administration	SpO₂	Pulse Oximeter Oxygen Saturation
ESA	European Space Agency	NEMA	National Electrical Manufacturers Association	SPDT	Single Pole, Double Throw
FLS	Field Loadable Software	NIST	National Institute of Standards and Technology	SPI	Serial Peripheral Interface
FM	Factory Mutual	NOx	Nitrogen Oxide	SPST	Single Pole, Single Throw
FPGA	Field Programmable Gate Array	NPT	National Pipe Tapered	T&M	Test & Measurement
FS	Full Scale	NSF	National Science Foundation	TDFN	Thin Dual Flats No Leads
FSO	Full Scale Output	NTC	Negative Temperature Coefficient	TE	TE Connectivity
FT LBS	Foot Pounds	OEM	Original Equipment Manufacturer	TEB	Total Error Band
GPS	Global Positioning System	PCB	Printed Circuit Board	TESS	TE Sensor Solutions
HUMS	Health Usage and Monitoring System	PDF	Portable Document Format	THSA	Trimmable Horizontal Stabilizer Actuators
HVACR	Heating, Ventilation, Air Conditioning, and Refrigeration	PDM	Pulse Density Modulation	TPMS	Tire Pressure Monitoring System
HVD	High-Voltage Differential	PE	Piezoelectric	TSYS	Temperature System Sensor
HZ	Hertz	PLCD	Permanent Magnet Linear Displacement Sensor	UAV	Unmanned Aerial Vehicle
I²C	Inter-Integrated Circuit	PPS	Polyphenylene Sulfide	uC	Microcontroller
IEC	International Electrical Commission	PSI	Pounds Per Square Inch	UL	Underwriters Laboratories
IECEX	International Electrotechnical Commission Explosive	PSIA	Pounds Per Square Inch-Absolute Reference	USB	Universal Serial Bus
IEEE	Institute of Electrical and Electronics Engineers	PSID	Pounds Per Square Inch-Differential Reference	VAV	Variable Air Volume
IEPE	Integral Electronic Piezoelectric	PSIG	Pounds Per Square Inch-Gage Reference	VDC	Volts Direct Current
				WEEE	Waste Electrical and Electronic Equipment

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