



Analog - Digitale  
Mikromechanische  
Sensorsysteme

# **PRODUKTE** **PRODUCTS**

Analog - Digital  
Mikromechanical  
Sensor Systems

Solutions by Sensor type:

Pressure

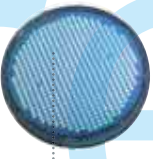



# Pressure

Measurement Specialties leads the industry with a wide array of standard and custom products ranging from board level components to fully amplified and packaged transducers, based on piezoresistive microelectromechanical (MEMS) and silicon strain gauge (Microfused™) technology. Our products measure pressure ranging from inches of water (<5 mbar) to 30,000 psi (>2 kbar), making us ideally suited for medical, HVAC, off-road/heavy equipment and general industrial applications. Our sensors are signal conditioned and calibrated over temperature, and include digital or analog outputs. Our customized packaging and electronics make MEAS the supplier of choice for OEMs.



# MEMS Silicon Pressure Chips (die)

## For OEM Applications

				
	<b>1100</b>	<b>7399</b>	<b>MS7720-01-A, MS7801A, MS761A, MS767A, MS7901A, MS7912A, MS7212A</b>	<b>MS7305D, MS7310D, MS7801D, MS7901D, MS761D, MS7912D</b>
<b>Unique Features</b>	Piezoresistive pressure chip for mid pressure ranges, open bridge (two independent half bridges) 3.0 x 4.0mm.	Piezoresistive pressure chip for high pressure ranges, open bridge (two independent half bridges), 3.2 x 3.2mm	Piezoresistive pressure die, several versions including: very small sizes (down to 0.8 x 0.8mm), low cost, high linearity 0.05% FSO, high sensitivity up to 392mV FSO, high over pressure up to 30 bar (450psi) and harsh environment	Piezoresistive pressure die, sizes (down to 2x1.86mm), several versions including: low pressure, high linearity 0.05% FSO, high sensitivity up to 240mV FSO, high over pressure up to 30 bar (450psi).
<b>Linearity</b>	±0.1% FSO	±0.25% FSO	±0.05% FSO (MS7720-01A, MS7801A, MS7901, MS7912A, MS7212A) ±0.15% FSO (MS761A, MS767A)	±0.05% FSO (MS7901, MS7801D, MS7912D) ±0.15% FSO (MS761D) ±0.3% FSO (MS7305D) ±0.35% FSO (MS7310D)
<b>Output / Span</b>	80mV @ full scale pressure	125 mV @1.5mA and full scale pressure	150 mV FSO (MS7720-01-A, MS7801A, MS7901A, MS7912A, MS7212A) 240 mV FSO (MS761A) 392 mV FSO (MS767A)	110 mV FSO (MS7305D, MS7310D) 150 mV FSO (MS7801D, MS7901D, MS7912D) 240 mV FSO (MS761D)
<b>Type</b>	Gage, Absolute	Absolute	Absolute	Differential
<b>Pressure</b>	0-2, 5, 10, 15, 30, 50, 100, 250, 500psi (0.1, 0.3, 0.7, 1, 2, 3, 7, 17, 35bar)	0-500, 1000psi (35, 70bar)	0 to 1 bar (MS7720-01-A, MS7801A, MS7901A, MS761A) 0 to 7 bar (MS767A) 0 to 12 bar (MS7912A, MS7212A)	0 to 0.05 bar (MS7305D) 0 to 0.1 bar (MS7310D) 0 to 1 bar (MS7801D, MS7901D, MS761D) 0 to 12 bar (MS7912D)
<b>Overpressure</b>	5X	5X	5 bar (MS7720-01-A, MS7801A, MS7901A, MS761A) 21 bar (MS767A) 30 bar (MS7912A, MS7212A)	5 bar (MS7801D, MS7901D, MS761D) 6 bar (MS7305D, MS7310D) 30 bar (MS7912D)
<b>Operating Temp</b>	-40° to 125°C	-40° to 85°C	-40° to 125°C	-40° to 125°C
<b>Typical Applications</b>	Can be packaged in an isolated oil filled transmitter for harsh media or packaged as a board level device for non-corrosive gases.	Can be packaged in an isolated oil filled transmitter for harsh media.	Harsh environments, absolute pressure sensor systems, braking systems, tire pressure, engine control, diving computers, electronic scales	Washing machines, leak detection, level indicators, industrial control
<b>Legacy Brand</b>	MEAS	MEAS	Intersema	Intersema

# Surface Mount Pressure Sensors

## Miniature Board Level with mV Output

All use piezoresistive silicon die technology and are suitable for use with non-corrosive gases.

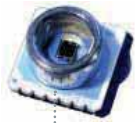
			
	<b>1451 and 1471</b>	<b>MS5201, MS5201D, MS5212</b>	<b>MS5401, MS5407, MS5412</b>
<b>Package</b>	Surface Mount	Surface Mount	Surface Mount
<b>Type</b>	Gage, Absolute	Gage, Absolute	Absolute
<b>Pressure Range</b>	0-5, 15, 30, 50, 100, 250*, 500* psi (consult factory for units in bar)	0-1, 12 bar (consult factory for units in psi)	0-1, 7, 12 bar (consult factory for units in psi)
<b>Output / Span</b>	60mV typical	150mV, 240mV	150mV, 240mV
<b>Unique Feature</b>	- Low cost - Coarse calibrated at room temp (1471) - Can gel fill for humid conditions - Tube or hole	- Low cost - Low drift - High linearity or high sensitivity options - Plastic tube or metal ring options - Can gel fill for humid conditions	- Small Size 6.2 x 6.4mm - Low cost - Low drift - High linearity or high sensitivity options - Metal ring - Can gel fill for humid conditions
<b>Accuracy</b>	±0.25% Non-linearity	±0.05% or ±0.2% Non-linearity	±0.05% or ±0.2% Non-linearity
<b>Operating Temp</b>	-40° to 125°C	-40° to 125°C	-40° to 125°C
<b>Typical Apps</b>	Altitude measurement, barometric pressure, medical instrumentation, consumer appliances, tire pressure	Absolute pressure sensor systems, engine controls, high resolution altimeters, variometers, water proof watches, divers' computers, barometers, tire pressure monitoring systems (TPMS), medical instrumentation, pneumatic controls	Absolute pressure sensor systems, engine controls, high resolution altimeters, variometers, water proof watches, divers' computers, barometers, tire pressure monitoring systems (TPMS)
<b>Legacy Brand</b>	MEAS	Intersema	Intersema

\*High pressure ranges for absolute sensing only. Entire sensor must be in pressure chamber.



## Surface Mount Pressure Sensors

### Miniature Board Level with Digital Output



#### MS5534, MS5535

<b>Unique Features</b>	15 bit-digital sensor, very low noise ( $\pm 0.1$ mbar), software calibration and temperature compensation, Pressure and temperature measurement (35 ms / meas.) Low power, low voltage (2.2 to 3.6V / $< 4/0.1\mu\text{A}$ ) No external components required, Extended temperature range SMD ceramic carrier 9 x 9 mm
<b>Absolute Pressure Accuracy</b>	$\pm 1.5$ mbar @ 25°C (consult factory for units in psi) 750 to 1100 mbar (MS5534)  -25 to +20mbar @ 0° to +40°C 0 to 5 bar (MS5535)
<b>Resolution</b>	0.1 mbar (MS5534) 1.2 mbar (MS5535)
<b>Output / Span</b>	Digital 16 bit data word, 3-wire SPI like serial interface
<b>Pressure</b>	10 to 1100 mbar (MS 5534, barometric range) 0 to 14 bar (MS 5535, diving range)
<b>Overpressure</b>	10 bar (MS5534) 30 bar (MS5535)
<b>Operating Temp Range</b>	-40° to 125°C
<b>Typical Applications</b>	Mobile altimeter, barometer systems, weather monitoring systems, adventure or multi-mode watches, GPS receivers, diving computers and divers' watches, mobile water depth measurement systems
<b>Legacy Brand</b>	Intersema



#### MS5540, MS5541

<b>Unique Features</b>	16 bit-digital sensor, very low noise ( $\pm 0.1$ mbar), software calibration and temperature compensation, Pressure and temperature measurement (35 ms / meas.) Low power, low voltage (2.2 to 3.6V / $< 4/0.1\mu\text{A}$ ) No external components required, Small SMD ceramic carrier 6.2x6.4 mm Gel provides water protection.
<b>Absolute Pressure Accuracy</b>	$\pm 1.5$ mbar @ 25°C (consult factory for units in psi) 750 to 1100 mbar (MS5534)  -25 to +20mbar @ 0° to +40°C 0 to 5 bar (MS5535)
<b>Resolution</b>	0.1 mbar (MS5534) 1.2 mbar (MS5535)
<b>Output / Span</b>	Digital 16 bit data word, 3-wire SPI like serial interface
<b>Pressure</b>	10 to 1100 mbar (MS 5540, barometric range) 0 to 14 bar (MS 5541, diving range)
<b>Overpressure</b>	10 bar (MS5540) 30 bar (MS5541)
<b>Operating Temp Range</b>	-40° to 85°C
<b>Typical Applications</b>	Mobile altimeter, barometer systems, weather monitoring systems, adventure or multi-mode watches, GPS receivers, diving computers and divers' watches, mobile water depth measurement systems
<b>Legacy Brand</b>	Intersema



#### MS5536-PJU, MS5536-NJU

<b>Unique Features</b>	15 bit-differential digital sensor, software calibration and temperature compensation, Pressure and temperature measurement (35 ms / meas.) Low power, low voltage (2.2 to 3.6V / $5\mu\text{A}$ ) No external components required, Small SMD ceramic carrier 13.3x10.1 mm
<b>Absolute Pressure Accuracy</b>	$\pm 2.5$ mbar @ 10° to 40°C (consult factory for units in psi) -100 to +700 mbar (5536PJU)  $\pm 2.5$ mbar @ 10° to 40°C (0.04psi) -700 to +100 mbar (5536NJU)
<b>Resolution</b>	0.1 mbar
<b>Output / Span</b>	Digital 16 bit data word, 3-wire SPI like serial interface
<b>Pressure</b>	-400 to 1000 mbar (-5.8 to 14.5psi) (MS5536-PJU) -1000 to 400 mbar (-14.5 to 5.8psi) (MS5536-NJU)
<b>Overpressure</b>	$\pm 5$ bar
<b>Operating Temp Range</b>	-40° to +60°C
<b>Typical Applications</b>	Medical application, blood pressure meter, HVAC application
<b>Legacy Brand</b>	Intersema

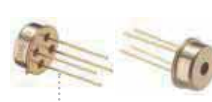
## TO Package

### Board Level with mV Output

All use piezoresistive silicon die technology and are suitable for non-corrosive gases.



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



#### 50

<b>Package</b>	TO-8
<b>Type</b>	Gage, Absolute, Differential
<b>Pressure Range</b>	0-1, 2, 5, 10, 15, 30, 50, 100, 250psi (consult factory for units in bar)
<b>Output / Span</b>	100mV typical
<b>Unique Feature</b>	- Temperature compensated - High performance UltraStable die (17, 27, 37, 47) - Can gel fill for humid conditions
<b>Accuracy</b>	$\pm 0.1\%$ Non-linearity
<b>Operating Temp</b>	-40° to 125°C
<b>Typical Apps</b>	Medical instruments, air flow measurement, HVAC, process control, factory automation, leak detection
<b>Legacy Brand</b>	MEAS

<b>Package</b>	TO-5
<b>Type</b>	Absolute
<b>Pressure Range</b>	0-5, 15, 30, 50, 100, 250*, 500*psi (consult factory for units in bar)
<b>Output / Span</b>	60mV typical
<b>Unique Feature</b>	- Low cost - Solid state reliability - Good for through hole - Can gel fill for humid conditions
<b>Accuracy</b>	$\pm 0.25\%$ Non-linearity
<b>Operating Temp</b>	-40° to 125°C
<b>Typical Apps</b>	Tire pressure sensor, consumer appliances, medical instruments, barometric pressure, altitude measurement
<b>Legacy Brand</b>	MEAS

\*Entire sensor must be in the pressure chamber.



Distributed by AMSYS  
www.amsys.de

## Dual In-Line Package

### Board Level with mV Output

All use piezoresistive silicon die technology, are temperature compensated, and are suitable for use with non-corrosive gases.



#### 1210, 1220, 1230, 1240

<b>Package</b>	8 pin 0.600 DIP
<b>Type</b>	Gage, Absolute, Differential
<b>Pressure Range</b>	0-5 & 10" H <sub>2</sub> O 0-1, 2, 5, 15, 30, 50, 100 psi (consult factory for units in mbar & bar)
<b>Output / Span</b>	50mV & 100mV typical
<b>Unique Feature</b>	- Temperature compensated - High performance UltraStable die (1230, 1240) - Current excitation(1210, 1230) - Voltage excitation(1220, 1240)
<b>Accuracy</b>	±0.1% Non-linearity
<b>Operating Temp</b>	-40° to 125°C
<b>Typical Apps</b>	Medical instruments, air flow measurement, HVAC, process control, factory automation, leak detection
<b>Legacy Brand</b>	MEAS



#### 4415, 4416, 4425, 4426

<b>Package</b>	6 pin 0.600 DIP
<b>Type</b>	Gage, Absolute, Differential
<b>Pressure Range</b>	0-5, 10" H <sub>2</sub> O 0-5, 15, 30, 50, 100 psi (consult factory for units in mbar & bar)
<b>Output / Span</b>	60mV, 90mV, & 100mV typical
<b>Unique Feature</b>	- Temperature compensated - High performance UltraStable die (4425, 4426) - Low pressure (4415, 4416) - Voltage excitation
<b>Accuracy</b>	±0.1% Non-linearity
<b>Operating Temp</b>	-25° to 85°C
<b>Typical Apps</b>	Drop-in for 6 pin industrial sensor for PCB mounted medical, HVAC
<b>Legacy Brand</b>	MEAS

## Specialty Pressure Products

### mV and Amplified Outputs

All use piezoresistive silicon technology.



#### 1620 and 1630

<b>Package</b>	Invasive blood pressure monitoring
<b>Type</b>	Gage
<b>Pressure Range</b>	-30 to 300 mmHg
<b>Output / Span</b>	5 uV/V/mmHg
<b>Unique Feature</b>	- Low cost, disposable design - Supplied in tape and reel - Compliant to AAMI spec
<b>Accuracy</b>	1.0% FSO
<b>Operating Temp</b>	10° to 40°C
<b>Typical Apps</b>	Disposable blood pressure, surgical procedures, ICU, kidney dialysis machines, medical instrumentation
<b>Legacy Brand</b>	MEAS



#### Fully assembled 1620

<b>Package</b>	Invasive blood pressure monitoring
<b>Type</b>	Gage
<b>Pressure Range</b>	-30 to 300 mmHg
<b>Output / Span</b>	5 uV/V/mmHg
<b>Unique Feature</b>	- Low cost, disposable design - Compliant to AAMI spec - ISO13485 Certified - Custom designs available
<b>Accuracy</b>	1.0% FSO
<b>Operating Temp</b>	10° to 40°C
<b>Typical Apps</b>	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.
<b>Legacy Brand</b>	MEAS



#### Ares

<b>Package</b>	Board mountable
<b>Type</b>	Differential
<b>Pressure Range</b>	0-5, 10, 15" H <sub>2</sub> O & 1psi (consult factory for units in mbar)
<b>Output / Span</b>	0.5-4.5Vdc
<b>Unique Feature</b>	Low cost pressure transducer with ASIC for amplified output
<b>Accuracy</b>	0.25% to 0.75% FSO
<b>Operating Temp</b>	-25° to 80°C
<b>Typical Apps</b>	HVAC air-duct flow, medical equipment, environmental controls, portable monitors, volume OEM applications
<b>Legacy Brand</b>	MEAS



#### M100 and M120

<b>Package</b>	Small housing with O-ring and proprietary "Snap in" feature that lowers the total installed cost and customized housings for OEM applications
<b>Type</b>	Gage
<b>Pressure Range</b>	50psi to 500psi (consult factory for units in bar)
<b>Output / Span</b>	100mV typical
<b>Unique Feature</b>	- Microfuse™ Technology - Low cost stainless steel isolated transducer - No threads needed for pressure connect - Highly customized for OEM application - Small size - Solid state reliability
<b>Accuracy</b>	0.5% FSO
<b>Operating Temp</b>	0° to 55°C
<b>Typical Apps</b>	Beverage dispensing systems, automation, HVAC controls, energy and water management, pumps, compressors, pneumatic equipment
<b>Legacy Brand</b>	MEAS



## Stainless Steel Media-Isolated Pressure Sensors

### O-Ring Mount

All use MEAS's UltraStable piezoresistive silicon die technology in a stainless steel package with oil-filled diaphragm and are suitable for use with liquids and gases. For other material like Hastelloy, Titanium etc. Please contact factory.



#### 82 or 154N UltraStable

Package	3/4" (19 mm) diameter o-ring mount
Type	Gage, Absolute
Pressure Range	0-1, 5, 15, 30, 50, 100, 300, 500psi (consult factory for units in mbar & bar)
Output / Span	100mV typical
Unique Feature	- High performance, high stability for OEM applications - Pressure as low as 1psi
Accuracy	±0.1% Non-linearity
Operating Temp	-40° to 125°C
Typical Apps	Process control, oceanography, refrigeration/ compressors, pressure transmitters, level systems
Legacy Brand	MEAS



#### 86 UltraStable

Package	5/8" (16 mm) diameter o-ring mount
Type	Gage, Absolute
Pressure Range	0-5, 15, 30, 50, 100, 300, 500psi (consult factory for units in mbar & bar)
Output / Span	100mV typical
Unique Feature	- High performance, high stability for OEM applications - Small diameter
Accuracy	±0.1% Non-linearity
Operating Temp	-40° to 125°C
Typical Apps	Hydraulic controls, process control, oceanography, refrigeration/ compressors, pressure transmitters, level systems
Legacy Brand	MEAS



#### 86A Amplified

Package	5/8" (16 mm) diameter o-ring mount
Type	Gage
Pressure Range	0-1, 2, 5, 15, 30, 50, 100, 150psi (consult factory for units in mbar & bar)
Output / Span	0.5-4.5Vdc
Unique Feature	- Small diameter, amplified output - Bar ranges available
Accuracy	±0.25% FSO
Operating Temp	-20° to 85°C
Typical Apps	Level measurement, OEM transmitter and transducers, process control
Legacy Brand	MEAS



#### DP86

Package	5/8" (16 mm) diameter o-ring mount wet/wet
Type	Differential
Pressure Range	0-1, 5, 15, 30, 50, 100, 300, 500psi (consult factory for units in mbar & bar)
Output / Span	100mV typical
Unique Feature	Wet/Wet differential pressure
Accuracy	±0.1% Non-linearity
Operating Temp	-20° to 125°C
Typical Apps	Filter blockage, pressurized tank level, flow transmitters
Legacy Brand	MEAS



#### 85 Flush Mount

Package	1/2" (13 mm) diameter o-ring flush mount
Type	Gage, Absolute
Pressure Range	0-15, 30, 50, 100, 300, 500psi (consult factory for units in mbar & bar)
Output / Span	100mV typical
Unique Feature	Minimizes trapped volume
Accuracy	±0.1% Non-linearity
Operating Temp	-20° to 125°C
Typical Apps	Dialysis machines, infusion pumps, medical systems, pressure transmitters, level systems
Legacy Brand	MEAS

### Threaded/Weldable

All use MEAS's UltraStable piezoresistive silicon die technology in a stainless steel package with oil-filled diaphragm and are suitable for use with liquids and gases. For other material like Hastelloy, Titanium etc. Please contact factory.



#### 85 UltraStable

Package	Weldable or process fitting
Type	Gage, Absolute
Pressure Range	0-5, 15, 30, 50, 100, 300, 500psi (consult factory for units in mbar & bar)
Output / Span	100mV typical
Unique Feature	Modular design
Accuracy	±0.1% Non-linearity
Operating Temp	-40° to 125°C
Typical Apps	Medical, process control, refrigeration compressor, oceanography, level systems
Legacy Brand	MEAS



#### 87N

Package	Weldable or process fitting
Type	Sealed Gage, Absolute
Pressure Range	0-1000, 3000, 5000psi (consult factory for units in mbar & bar)
Output / Span	100mV typical
Unique Feature	High pressure, modular design
Accuracy	±0.25% Non-linearity
Operating Temp	-40° to 125°C
Typical Apps	Air tank pressure, hydraulics, process control, robotics, refrigeration compressors, oceanography
Legacy Brand	MEAS



#### 89

Package	Weldable or process fitting
Type	Sealed Gage, Absolute
Pressure Range	0-1000, 3000, 5000, 10000psi (consult factory for units in mbar & bar)
Output / Span	100mV typical
Unique Feature	High pressure, small size, SS or Ti construction
Accuracy	±0.25% Non-linearity
Operating Temp	-20° to 125°C
Typical Apps	Auto racing, hydraulics, miniature pneumatics, medical, oceanography
Legacy Brand	MEAS



Distributed by AMSYS  
www.amsys.de

# Transducers & Transmitters

## Precision and General Industrial Transducers & Transmitters

Microfused™ and UltraStable™ Technologies



**MSP300, M340**

<b>Package</b>	Small housing with a large selection of threaded fittings, electrical connectors, cable options and customized housings for OEM applications
<b>Type</b>	Gage
<b>Pressure Range</b>	0-100psi thru 0 -30Kpsi (consult factory for units in bar)
<b>Output / Span</b>	0-100mV, 0.5-4.5Vdc, 1-5Vdc, 4-20mA
<b>Unique Feature</b>	<ul style="list-style-type: none"> <li>- Microfuse™ technology</li> <li>- High reliability at a low cost</li> <li>- Highly customized for OEM applications</li> <li>- Small size</li> <li>- Solid state reliability</li> <li>- Various total error band choices 1% thru 4.5% typical (all possible errors combined)</li> </ul>
<b>Accuracy</b>	<1% FSO
<b>Operating Temp</b>	-20° to 85°C
<b>Typical Apps</b>	Paint sprayers, braking systems, HVAC controls, energy and water management, pumps, compressors, pneumatic equipment, off road heavy equipment, agriculture equipment
<b>Agency Approvals</b>	UL 508
<b>Legacy Brand</b>	MEAS



**US300**

<b>Package</b>	Small housing with a large selection of threaded fittings, electrical connectors, cable options and customized housings for OEM applications
<b>Type</b>	Gage, Absolute
<b>Pressure Range</b>	0-5psi thru 0-5Kpsi (consult factory for units in mbar & bar)
<b>Output / Span</b>	0-100mV, 0.5-4.5Vdc, 1-5Vdc, 4-20mA
<b>Unique Feature</b>	<ul style="list-style-type: none"> <li>- UltraStable™ technology</li> <li>- High reliability at a low cost</li> <li>- Highly customized for OEM applications</li> <li>- Small size</li> <li>- Solid state reliability</li> <li>- Various total error band choices 0.75% thru 3% typical (all possible errors combined)</li> </ul>
<b>Accuracy</b>	0.15% FSO
<b>Operating Temp</b>	-40° to 105°C
<b>Typical Apps</b>	HVAC controls, refrigeration, energy and water management, pumps, compressors, pneumatic equipment, agriculture equipment
<b>Agency Approvals</b>	
<b>Legacy Brand</b>	MEAS



**M5100**

<b>Package</b>	Industrial stainless steel housing with a large selection of threaded fittings, electrical connectors, cable options and customized housings for OEM applications
<b>Type</b>	Gage
<b>Pressure Range</b>	0-50 psi thru 0-30Kpsi (consult factory for units in bar)
<b>Output / Span</b>	0.5-4.5Vdc, 1-5Vdc, 0-5Vdc, 0-10Vdc, 4-20mA
<b>Unique Feature</b>	<ul style="list-style-type: none"> <li>- Microfuse™ technology</li> <li>- High performance at a low cost</li> <li>- Solid state reliability</li> <li>- 1% Total error band (-20 to 85C all possible errors combined)</li> </ul>
<b>Accuracy</b>	0.25% FSO
<b>Operating Temp</b>	-40° to 125°C
<b>Typical Apps</b>	HVAC controls, energy and water management, pumps, compressors, pneumatic equipment, off road heavy equipment, trucks, agriculture equipment, braking systems
<b>Agency Approvals</b>	CE, UL 508
<b>Legacy Brand</b>	MEAS



**U5100**

<b>Package</b>	Industrial stainless steel housing with a large selection of threaded fittings, electrical connectors, cable options and customized housings for OEM applications
<b>Type</b>	Gage, Sealed Gage, Absolute
<b>Pressure Range</b>	0-5psi thru 0-10Kpsi (consult factory for units in mbar & bar)
<b>Output / Span</b>	0.5-4.5Vdc, 1-5Vdc, 0-5Vdc, 0-10Vdc, 4-20mA
<b>Unique Feature</b>	<ul style="list-style-type: none"> <li>- UltraStable™ technology</li> <li>- High Performance at a low cost</li> <li>- Solid state reliability</li> <li>- Less error than competing technologies</li> <li>- 0.75% Total error band (-20° to 85°C all possible errors combined)</li> <li>- 0.5% max 0.25% typical total error band available for instrument grade</li> </ul>
<b>Accuracy</b>	0.1% FSO
<b>Operating Temp</b>	-40° to 125°C
<b>Typical Apps</b>	Refrigeration, automotive test stands, HVAC controls, energy and water management, pumps, compressors, pneumatic equipment, trucks, agriculture equipment
<b>Agency Approvals</b>	CE, UL 508
<b>Legacy Brand</b>	MEAS



**MSP800**

<b>Package</b>	Threaded 1/4 NPT port with integral small protruding stainless steel temperature probe
<b>Type</b>	Gage
<b>Pressure Range</b>	50 and 500psi (contact factory for higher pressure, consult factory for units in bar)
<b>Output / Span</b>	0.5-4.5Vdc
<b>Unique Feature</b>	<ul style="list-style-type: none"> <li>- Microfuse™ technology</li> <li>- In-line temperature probe</li> <li>- digitally compensated for high accuracy over broad temperature range</li> </ul>
<b>Accuracy</b>	0.25% FSO
<b>Operating Temp</b>	-40° to 85°C
<b>Typical Apps</b>	Medical instruments, HVAC, process control, factory automation, offroad vehicles
<b>Agency Approvals</b>	
<b>Legacy Brand</b>	MEAS



**EPHT / EPPT**

<b>Package</b>	Small housing with threaded port and integral small protruding stainless steel temperature probe
<b>Type</b>	Absolute
<b>Pressure Range</b>	500psi thru 5000psi (consult factory for units in bar)
<b>Output / Span</b>	0.5-4.5Vdc
<b>Unique Feature</b>	<ul style="list-style-type: none"> <li>- Integrated temperature Sensor</li> <li>- High temperature</li> <li>- Miniature design</li> <li>- UltraStable™ Technology</li> <li>- IP66 splash proof rated</li> <li>- Titanium options</li> </ul>
<b>Accuracy</b>	0.25% FSO
<b>Operating Temp</b>	-20° to 150°C (175° intermittent)
<b>Typical Apps</b>	Severe environment where small size is required & high intermittent temperatures occur: aerospace, racing, engine performance, gear box pressure, oil pressure, cooling system pressure, brake pressure
<b>Agency Approvals</b>	
<b>Legacy Brand</b>	MEAS



**EPRB**

<b>Package</b>	Small housing with threaded port
<b>Type</b>	Absolute
<b>Pressure Range</b>	100psi thru 3600psi (consult factory for units in bar)
<b>Output / Span</b>	0.5-4.5Vdc
<b>Unique Feature</b>	<ul style="list-style-type: none"> <li>- High temperature</li> <li>- Miniature design</li> <li>- UltraStable™ Technology</li> <li>- IP66 splash proof rated</li> </ul>
<b>Accuracy</b>	0.25% FSO
<b>Operating Temp</b>	-20° to 150°C (175° intermittent)
<b>Typical Apps</b>	Severe environment where small size is required: aerospace, racing, engine performance, gear box pressure, oil pressure, cooling system pressure, brake pressure
<b>Agency Approvals</b>	
<b>Legacy Brand</b>	Entran



# Information about AMSYS

**AMSYS, Germany** will concentrate its energies on sensor engineering alone, offering a wide range of OEM products in the field of pressure and force sensors. It is company strategy to enable customers in all areas of the field to compile and themselves assemble suitable sensors for their particular applications. To this end the AMSYS line of products ranges from simple measurement cell to SMD-mountable transducers and compensated dual in-line transducers to ready-to-use pressure sensors which only have to be mounted in customer-specific packages.

## Types of sensor

Various pressure ranges are catered for, from ultralow pressure at  $\pm 5$  mbar to high pressure at 600 bar. Low pressure sensors in particular are a prime focus of the company, with several different types on offer. In addition to the 10, 20, 50, 100 and 200 mbar sensors there are also several versions for the  $\pm 5$  mbar pressure range (for bidirectional differential pressure).

## Distribution

**AMSYS** offers a complete product line for the pressure measurement and load sensors for force measurement. The company constrains the number of supplier which complements one another for quality reasons. By working together with the suppliers engineering the company is able to offer modifications of the standard products or customer specific solutions.

## Progress through competence

In addition to its activities in the sales sector AMSYS aims to establish itself as a manufacturer of innovative OEM pressure sensors, one able to supply inexpensive pressure sensors in response to market demand. The company can count on the years of experience of its expert personnel, who can provide competent applications support for various technical problems, and also on close collaboration with the big names in microelectronics.



# Pressure Sensors

For Industrial and Medical Applications



## AMS 4711

<b>Package</b>	Small plastic housing with tubes and M5 sensor connector
<b>Type</b>	Relative, differential, bidirectional differential, absolute and barometric
<b>Pressure Range</b>	0–10 to 0–2000 mbar, $\pm 5$ to $\pm 100$ mbar
<b>Analog Output</b>	0–5 Volt/2.5 $\pm$ 2,5 Volt
<b>Digital Output</b>	–
<b>Load resistor max.</b>	–
<b>Accuracy @ RT</b>	typ. 0.5 % FS (typ. $\pm 1$ % FS for very low pressure)
<b>Total Error @ -25–85°C</b>	typ. 0.7 % FS (typ. $\pm 2$ % FS for very low pressure)
<b>Compensated Temp. Range</b>	-25–85°C
<b>Operating Temp.</b>	-25–85°C
<b>Supply Voltage</b>	35 Volt
<b>Overpressure</b>	x3/x10
<b>Typical Applications</b>	Respiration and ventilator control, Level measurement, HVAC, Gas flow, Barometric measurement, Leak detection
<b>Legacy Brand</b>	AMSYS
<b>Description</b>	<p><b>AMS 4711</b> is a new series of miniaturized pressure sensors ready for use. AMS 4711 comes in a robust and compact plastic package (IP67) and is designed for fast screw assembly in a harsh industrial environment. An integrated CMOS-DSP and EEPROM provide state-of-the-art technology that allows for high accuracy in pressure measurement.</p> <p>One process of AMS 4711 production is calibration as well as compensation of temperature dependent drift of offset and span. No additional adjustment on the part of the customer is necessary.</p> <p><b>AMS 4711</b> pressure ranges: diff. bidirectional <math>\pm 0.5</math>; <math>\pm 1.0</math>; <math>\pm 2.0</math>; <math>\pm 5.0</math> and <math>\pm 10</math> kPa</p> <p><b>AMS 4711</b> pressure ranges: diff. or gage 1.0; 2.0; 5.0; 10; 20; 35 kPa</p> <p><b>AMS 4711</b> pressure ranges: absolute, diff. or gage 100; 200 kPa</p> <p><b>AMS 4711</b> pressure range: barometric (absolute) 70 to 120 kPa</p> <p>Pressure ranges with interim values are available on request.</p>
<b>Features</b>	<ul style="list-style-type: none"> <li>• Simplest installation, quick start of operation</li> <li>• High accuracy in measurement</li> <li>• Low total error between -25...+85°C</li> <li>• 0...5 V-Output signal</li> <li>• Dust-and-water-tight (IP67)</li> <li>• Maintenance-free</li> <li>• Wide range of supply voltage</li> <li>• Product "Made in Germany"</li> <li>• RoHS compliant</li> </ul>



## AMS 4712

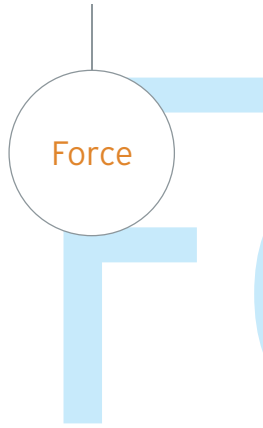
<b>Package</b>	Small plastic housing with tubes and M5 sensor connector, IP67
<b>Type</b>	Relative, differential, bidirectional differential, absolute and barometric
<b>Pressure Range</b>	0–10 to 0–2000 mbar, $\pm 5$ to $\pm 100$ mbar
<b>Analog Output</b>	4–20 mA, 2 wires version for current loop circuit
<b>Digital Output</b>	–
<b>Load resistor max.</b>	600 $\Omega$
<b>Accuracy @ RT</b>	typ. 0.5 % FS (typ. $\pm 1$ % FS for very low pressure)
<b>Total Error @ -25–85°C</b>	typ. 0.7 % FS (typ. $\pm 2$ % FS for very low pressure)
<b>Compensated Temp. Range</b>	-25–85°C
<b>Operating Temp.</b>	-25–85°C
<b>Supply Voltage</b>	35 Volt
<b>Overpressure</b>	x3/x10
<b>Typical Applications</b>	Respiration, filter and ventilator control, Level measurement, HVAC, Gas flow, Barometric measurement, Process control, Leak detection
<b>Legacy Brand</b>	AMSYS
<b>Description</b>	<p><b>AMS 4712</b> is a new series of miniaturized pressure sensors ready for use. AMS 4712 comes in a robust and compact plastic package (IP67) and is designed for fast screw assembly in a harsh industrial environment. An integrated CMOS-DSP and EEPROM provide state-of-the-art technology that allows for high accuracy in pressure measurement.</p> <p>One process of AMS 4712 production is calibration as well as compensation of temperature dependent drift of offset and span. No additional adjustment on the part of the customer is necessary.</p> <p><b>AMS 4712</b> pressure ranges: diff. bidirectional <math>\pm 0.5</math>; <math>\pm 1.0</math>; <math>\pm 2.0</math>; <math>\pm 5.0</math> and <math>\pm 10</math> kPa</p> <p><b>AMS 4712</b> pressure ranges: diff. or gage 1.0; 2.0; 5.0; 10; 20; 35 kPa</p> <p><b>AMS 4712</b> pressure ranges: absolute, diff. or gage 100; 200 kPa</p> <p><b>AMS 4712</b> pressure range: barometric (absolute) 70 to 120 kPa</p> <p>Pressure ranges with interim values are available on request.</p>
<b>Features</b>	<ul style="list-style-type: none"> <li>• Simplest installation, quick start of operation</li> <li>• High accuracy in measurement</li> <li>• Low total error between -25...+85°C</li> <li>• 2-wires current output</li> <li>• Dust-and-water-tight (IP67)</li> <li>• Maintenance-free</li> <li>• Wide range of supply voltage</li> <li>• Product "Made in Germany"</li> <li>• RoHS compliant</li> </ul>



## AMS 5812

<b>Package</b>	8 Pin DIP package
<b>Type</b>	Relative, differential, bidirectional differential, absolute and barometric
<b>Pressure Range</b>	$\pm 0.15$ to $\pm 15$ PSI , 0–0.15 to 0–100 PSI
<b>Analog Output</b>	0.5–4.5 Volt/2.5 $\pm$ 2 Volt
<b>Digital Output</b>	I <sup>2</sup> C
<b>Load resistor max.</b>	–
<b>Accuracy @ RT</b>	max. 0.5 % FS (max. $\pm 1.5$ % FS for very low pressure)
<b>Total Error @ -25–85°C</b>	max. 1.0 % FS (max. $\pm 2$ % FS for very low pressure)
<b>Compensated Temp. Range</b>	-25–85°C
<b>Operating Temp.</b>	-25–85°C
<b>Supply Voltage</b>	5 Volt $\pm 5$ %
<b>Overpressure</b>	x5
<b>Typical Applications</b>	Respiration, filter and ventilator control, Level measurement, HVAC, Gas flow, Barometric measurement, Leak detection
<b>Legacy Brand</b>	AMSYS
<b>Description</b>	<p>The <b>AMS 5812</b> series of OEM sensors are fully signal conditioned, amplified, temperature compensated sensor in a dual in-line package (DIP) configuration with an analog output and an I<sup>2</sup>C- interface.</p> <p>The AMS 5812 are calibrated and compensated in the hole operation temperature range. High precision, high stability and low drift are the result of a combination between the MEMS technology and a microelectronics signal conditioning ASIC.</p> <p>Combining the sensor and the signal conditioning circuitry in a single package simplifies the use of advanced silicon micromachined pressure sensors. The pressure sensor 0.6x0.6 inch<sup>2</sup> can be directly mounted to a standard printed circuit board and no additional components are required for obtaining an amplified high level, calibrated pressure measurement.</p> <p><b>AMS 5812</b>, for low pressure, differential or bidirectional differential: 0–0.15; 0–0.3; 0–0.8 and 0–1.5 PSI, <math>\pm 0.15</math>; <math>\pm 0.3</math>; <math>\pm 0.8</math>; <math>\pm 1.5</math> PSI</p> <p><b>AMS 5812</b>, for standard pressure, differential or bidirectional differential, gage: 0–3; 0–5; 0–15; 0–30; 0–60 and 0–100 PSI <math>\pm 3</math>; <math>\pm 5</math>; <math>\pm 15</math> PSI</p> <p><b>AMS 5812</b>, for absolute pressure 0–15 PSI and for barometric pressure: 11–17.5 PSI</p> <p>The AMS 5812 can be modified for customer specifications. Pressure ranges with interim values are available on request.</p>
<b>Features</b>	<ul style="list-style-type: none"> <li>• Simplest installation, quick start of operation</li> <li>• High accuracy in measurement</li> <li>• Low total error between -25...+85°C</li> <li>• Analog and digital output signal</li> <li>• Product "Made in Germany"</li> <li>• RoHS compliant</li> </ul>

Solutions by Sensor type:



Force

# Force

Measurement Specialties has been a pioneer in the design and manufacture of ultra-low cost OEM load cells. Initially designed for use in high-volume digital bathroom scales, MEAS has developed a line of low cost load cells that allow OEMs across a variety of industries to incorporate direct force measurement into their products. Based on our proprietary piezoresistive silicon strain gauge (Microfused™) technology, our load cells combine outstanding durability and long term stability in an extremely low cost package, perfectly suited for medium and high volume applications. Our load cells are tailored for the specific customer application, including custom packaging and electronics with analog or digital outputs, suited for both low and high force environments.



# Load Cells

## Low cost OEM load cells

				
	<b>FX 1901-0001</b>	<b>FS20</b>	<b>FC22</b>	<b>FC23</b>
<b>Package</b>	Low profile "coin cell" design	Miniature; drop in replacement for industry standard	Plastic housing, button, flange mounting	Stainless steel housing button shape for higher weight loads
<b>Operating Mode</b>	Compression	Compression	Compression	Compression
<b>Unique Feature</b>	Ultra low cost, low strain design: essentially unlimited cycle life	Load cell design operates at very low strains; not subject to lead die fatigue	Low cost button shape essentially unlimited cycle life	Industry standard low profile all stainless steel design. Resistant to off-axis loads.
<b>Ranges (Lbf)</b>	10, 25, 50, 100	1.5, 3	25, 50, 100	250, 500, 1000, 2000
<b>Max Overload</b>	2.5X	10 lbf	2.5X	1.5X and 2.5X
<b>Output / Span</b>	100mV	1.0 to 4.0V	100mV, 0.5 to 4.5Vdc	100mV
<b>Combined Linearity Hysteresis</b>	±1.0% FSO	±1.0% FSO	±1.0% FSO	±1.0% FSO
<b>Operating Temp</b>	-40° to 85°C	0° to 70°C	-40° to 85°C	-40° to 85°C
<b>Typical Apps</b>	Consumer OEM, exercise machines, physical therapy, vending machines, appliances, pumps, medical devices	Infusion pumps, contact sensing, medical devices, consumer appliances	Infusion pumps, robotics end-effectors, exercise machines, contact sensing, appliances	Batch weighing, robotics, assembly line force, printing presses, pumps, winch & hoist
<b>Legacy Brand</b>	MEAS	MEAS	MEAS	MEAS

## Test and Measurement load cells

			
	<b>ELPF, ELFF, ELWF, ELAF</b>	<b>ELHM, ELHS</b>	<b>EL20-S458</b>
<b>Package</b>	Dual Stud, Button, Through hole	High capacity dual stud or button style	Special purpose design optimized for automotive crash test environments
<b>Operating Mode</b>	Tension and Compression	Tension and Compression	Tension
<b>Unique Feature</b>	- High immunity to off axis loads - Low deflection design for fast response and high cycle life - Optional external amplifier module - NIST traceable calibration provided	- Tension and compression or compression only - High stability metal foil strain gage (ELHM) - High output semiconductor strain gage (ELHS) - NIST traceable calibration provided	- Low mass titanium design for use in high shock environments - Mass optimized to minimize acceleration induced errors during SAE J2570 ATD testing - Optional high level and linearized outputs - Smoothed edge design and optional slotted titanium axles eliminate drag errors and dummy damage - Ultra robust cable is user replaceable - NIST traceable calibrations provided
<b>Ranges (Lbf)</b>	10 to 5000	200 to 10K	1000 & 3200
<b>Max Overload</b>	2.5X	1.5X	2X
<b>Output / Span</b>	100mV (0.5-4.5V optional)	10mV (ELHM), 200mV FSO (ELHS)	10mV (0.5-4.5V optional)
<b>Non-Linearity</b>	0.25% to 1% FSO	0.3% to 0.5% FSO	1.0% to 3.0% FSO
<b>Operating Temp</b>	-40° to 120°C	-50° to 120°C (ELHM), -20° to 80°C (ELHS)	-40° to 120°C
<b>Applications</b>	Research, materials test, medical instrumentation, physical therapy, weighing, thrust, biomechanical measurements, product validation test	Robust general purpose, low deflection design: machine tool, linkage forces	Seat belt forces, safety and restraint system crash test, parachute tether/riser forces
<b>Legacy Brand</b>	Entran	Entran	Entran





**AMSYS – Die Experten für Sensorik.**  
Vom Standardsensor bis zu kundenspezifischen  
Sensorentwicklungen.

**AMSYS – The sensor experts**  
*Standard sensors and customer specific development*

**Piezoresistive Druckaufnehmer und Sensoren**  
*Piezoresistive transducer and sensors*

- Nicht abgegliche Druckaufnehmer  
■ *Non compensated/calibrated transducer*
- Abgegliche nicht verstärkte Druckaufnehmer  
■ *Compensated/calibrated non amplified transducer*
- Abgegliche und verstärkte Druckaufnehmer mit analogem Ausgang  
■ *Compensated/calibrated and amplified transducer with analog output*
- Abgegliche und verstärkte Druckaufnehmer mit digitalem Ausgang  
■ *Compensated/calibrated and amplified transducer with digital output*

**Resistive keramische Messzellen und Druckaufnehmer**  
*Resistive ceramic measurement cells and transducer*

- Kompensierte keramische Messzellen  
■ *Compensated ceramic measurement cells*
- Kompensierte, kalibrierte und verstärkte keramische Druckaufnehmer mit analogem Ausgang  
■ *Compensated, calibrated and amplified ceramic transducer with analog output*

**Messzellen und Sensoren für Kraftmessung**  
*Load cells and sensors for force measurement*

- Kompensierte Messzellen  
■ *Compensated measurement cells*
- Kompensierte, kalibrierte und verstärkte Kraftaufnehmer mit analogem Ausgang  
■ *Compensated, calibrated and amplified load cells with analog output*

**Näherungsschalter**  
*Proximity switches*

- Hybridschaltungen für miniaturisierte Näherungsschalter  
■ *Hybrid circuits for miniaturised proximity switches*

Analog - Digitale  
Mikromechanische  
Sensorsysteme

Analog Digital  
Micromechanical  
Sensor Systems

AMSYS GmbH & Co. KG  
An der Fahrt 13  
55124 Mainz  
Deutschland

T: +49 (0)6131-469875-0  
F: +49 (0)6131-469875-66  
info@amsys.de  
www.amsys.de

Bankverbindung:  
Mainzer Volksbank e.G.  
BLZ: 551 900 00  
Konto-Nr.: 373 631 019

Geschäftsführer:  
Ursula Rauch

