metallux

PRESSURE SENSORS

Precise.
Robust.
Reliable.



Sensors, Resistors and Joysticks

Metallux AG is an internationally active, medium-sized company based in Leutenbach near Stuttgart.

With over 160 employees, we have been developing and manufacturing sensors, resistors and industrial joysticks for over 35 years.
From the standard product to customer-specific solutions – that is our strength.

What sets us apart:

– Reliable and durable products for demanding applications
– Individual and personal advice
– Extensive portfolio from the standard range to tailor-made, individual solutions
– Development and production in Germany
– Small-scale to large-scale production

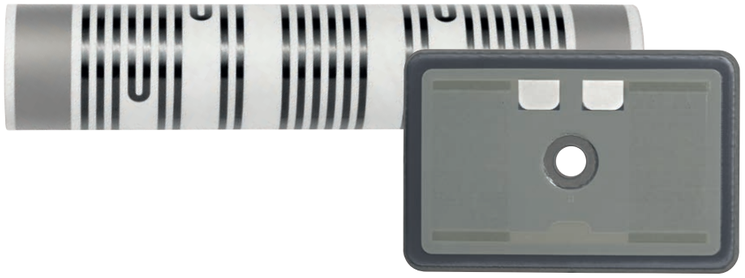
You can rely on that.



Pressure sensors



Joysticks



High-voltage resistors

Power resistors



Linear sensors



Rotary sensors

We make pressure measurable

Pressure sensors for highest demands
For over 25 years, we have been developing and manufacturing pressure measuring cells and pressure transmitters for measuring the pressure of gaseous and liquid media. They operate based on the piezoresistive principle; the Wheatstone bridge is applied using proven thick-film technology.

Versatility for every application
Our product range includes ceramic and stainless-steel pressure measuring cells, available in both monolithic and flush-mounted designs. Our products are compact, robust, and reliable, providing precise measurements even under extreme conditions such as temperature fluctuations or exposure to corrosive media.

Custom solutions
In addition, we develop tailor-made, customized solutions – precisely adapted to your requirements and installation conditions.

Sensor Variants and Application Fields at a Glance

Gauge pressure – monolithic

Applications	Nominal Pressure	Ceramic cells
– Hydraulic systems – Pneumatic systems – Level measurement – Pumps – Heating and cooling systems – Medical technology – Pressure transmitters – E-mobility – Automotive	-1 to 600 bar	CPS 1102 CPS 1184 CPS 1184 Z

Applications	Nominal Pressure	Stainless steel cells
– Hydrogen applications – Pumps – High-pressure cleaners – Hydraulic systems	10 to 1000 bar	SPS 1000 SPS 1000 Z SPS 3003 SPS 3003 Z

Gauge pressure – flush-mounted

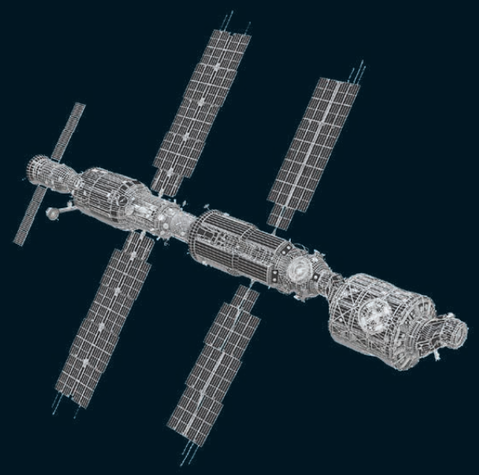
Applications	Nominal Pressure	Ceramic cells
– Viscous media – Crystalline media – Aggressive media – Abrasive media – Hygienic applications – Food industry – Pharmaceutical industry – Chemical industry – Automotive – Processes requiring frequent and residue-free cleaning	-1 to 50 bar	CPS 2184 CPS 2184 Z

Absolute pressure – flush-mounted

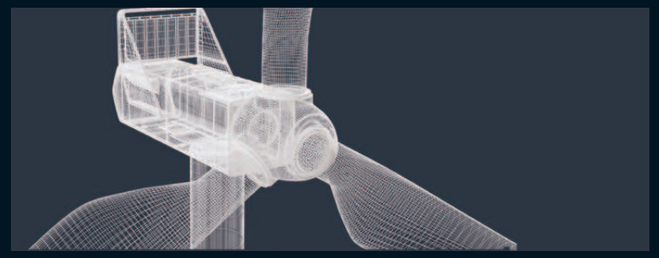
Applications	Nominal Pressure	Ceramic cells
– Hygienic applications – Food industry – Weather stations / Meteorology – Barometric altitude measurement – Aerospace – Vacuum technology – Pharmaceutical industry – Medical technology – Pumps	-1 to 50 bar	CPS 2184 CPS 2184 Z

Sealed Gauge – flush-mounted

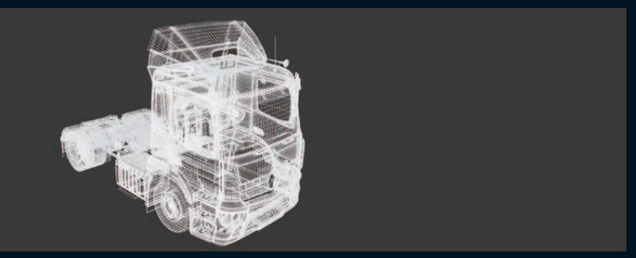
Applications	Nominal Pressure	Ceramic cells
– Hygienic applications – Hydraulic systems – Deep-sea / underwater applications – Transport vehicles / mobile machinery – Pipelines – Automotive – Altitude-independent measurements	100 to 600 bar	CPS 2184 CPS 2184 Z



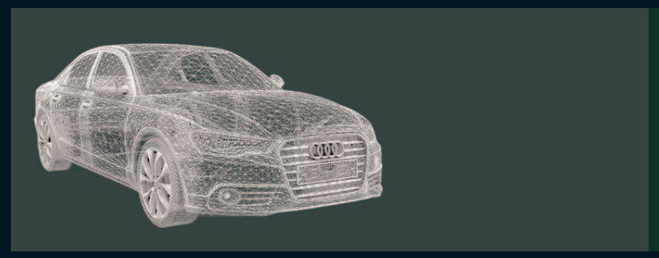
Aerospace industry



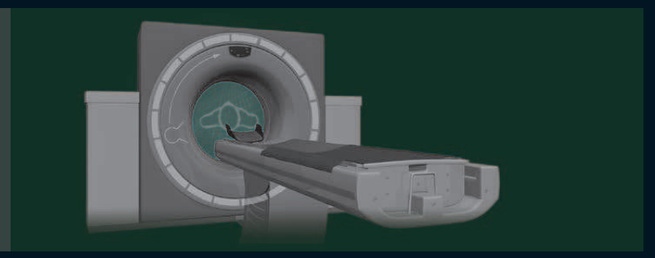
Energy and environmental technology



Forestry, agricultural, construction and special-purpose vehicles



Vehicle manufacturing and electromobility



Medical technology



Special applications

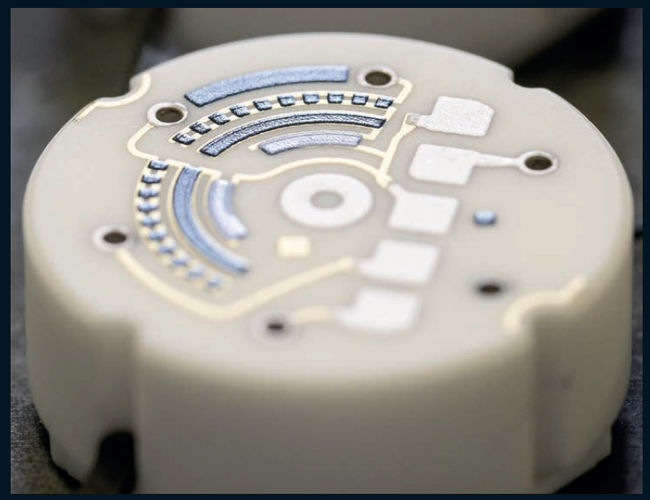
Ceramic Pressure Measuring Cells
They are suitable for precise measurement of gauge, absolute, and sealed gauge pressure. With diameters of 10 mm and 18 mm, they are compact and can be easily integrated into a wide variety of applications. Available in monolithic or flush-mounted designs.

Advantages
– High measurement accuracy
– Mechanically and chemically robust
– Suitable for drinking water applications
– High resistance to overpressure and underpressure
– High burst pressure resistance
– Good thermal stability
– Excellent long-term stability and reliability
– Compact, cost-effective, and easy to integrate
– Patented layout

Additional advantages of the flush-mounted version
– Optimal for viscous, crystalline, aggressive, and abrasive media
– Hygienic design – easy to clean
– Suitable for CIP processes

Stainless-Steel Pressure Measuring Cells
They are suitable for precise gauge pressure measurement and are used in applications exposed to aggressive media such as acids, thanks to their exceptional media resistance. They are compact, easy to integrate, and highly durable.

Advantages
– Very high media resistance
– Suitable for use with aggressive media
– High measurement accuracy
– Extremely high burst pressure resistance
– Resistant to pressure spikes
– Resistant to overpressure and vacuum
– Good thermal stability
– Excellent long-term stability
– Outstanding price-performance ratio
– Easy to integrate
– Patented layout

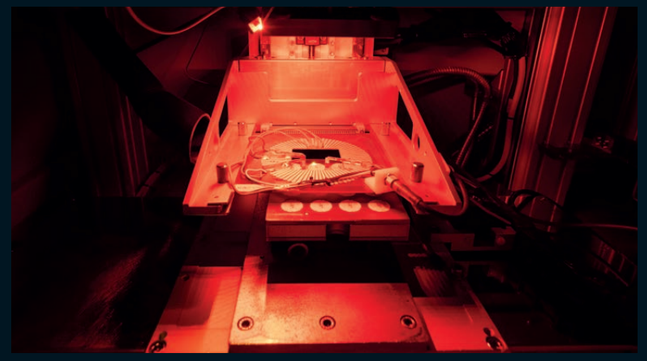


Pressure Transmitters
Precise measurements are the core function of a pressure transmitter, which converts pressure into an electrical signal.
Metallux pressure transmitters measure gauge pressure and consist of a ceramic pressure cell combined with a robust, media-resistant stainless-steel housing. They feature a compact, slim design with a low installation height.
We are happy to develop a customized, individual solution for your application.
Contact us for more information.











Portfolio
Pressure Sensors



		CPS1102	CPS 1184	CPS 1184 Z	CPS 2184	CPS 2184 Z	SPS 1000	SPS 1000 Z	SPS 3003	SPS 3003 Z	MTX-F
General data	Sensor technology	Piezoresistive, Wheatstone bridge	Piezoresistive, Wheatstone bridge	Piezoresistive, Wheatstone bridge	Piezoresistive, Wheatstone bridge	Piezoresistive, Wheatstone bridge	Piezoresistive, Wheatstone bridge	Piezoresistive, Wheatstone bridge	Piezoresistive, Wheatstone bridge	Piezoresistive, Wheatstone bridge	Piezoresistive, Wheatstone bridge
	Sensor type	Monolithic	Monolithic	Monolithic	Flush-mounted	Flush-mounted	Monolithic	Monolithic	Monolithic	Monolithic	Monolithic
	Pressure type	Gauge	Gauge	Gauge	Gauge Absolute Sealed Gauge	Gauge Absolute Sealed Gauge	Gauge	Gauge	Gauge	Gauge	Gauge
Electrical data	Pressure range	-1 to 400 bar	-1 to 600 bar	-1 to 600 bar	-1 to 600 bar	-1 to 600 bar	10 to 1,000 bar	10 to 1,000 bar	40 to 1,000 bar	40 to 1,000 bar	-1 to 150 bar
	Supply voltage	3 - 30 VDC	3 - 30 VDC	5 V ±0.5 VDC	3 - 30 VDC	5 V ±0.5 VDC	3 - 30 VDC	5 V ±0.5 VDC	3 - 30 VDC	5 V ±0.5 VDC	5 V ±0.5 VDC
	Signal amplification			•		•		•		•	•
	Output signal	Analog	Analog	Ratiometric 10 – 90 %, i^2C	Analog	Ratiometric 10 – 90 %, i^2C	Analog	Ratiometric 10 – 90 %, i^2C	Analog	Ratiometric 10 – 90 %, i^2C	Ratiometric 10 – 90 %
	Process connection								•	•	•
Mechanical data	Diameter	10 mm	18 mm	18 mm	18 mm	18 mm	18 mm	18 mm	HEX 22	HEX 22	SW 19
	Pitch	1.27 mm	2.54 mm / 1.27 mm		2.54 mm		2.54 mm		2.54 mm		
	Weight	≤ 3 g	≤ 5 g	≤ 5 g	≤ 8 g	≤ 8 g	≤ 10 g	≤ 10 g	≤ 34 g	≤ 34 g	ca. 50 g
Environmental data	Operating temperature	-40 to +125 °C	-40 to +135 °C	-40 to +125 °C	-40 to +135 °C	-40 to +125 °C	-40 to +125 °C	-40 to +125 °C	-40 to +125 °C	-40 to +125 °C	-5 to +80° C
	Storage temperature	-40 to +150 °C	-40 to +150 °C	-20 to +125 °C	-40 to +150 °C	-20 to +125 °C	-40 to +125 °C	-40 to +125 °C	-40 to +125 °C	-40 to +125 °C	-20 to +80° C
Material	Sensor body	Ceramic Al_2O_3 96 %	Ceramic Al_2O_3 96 %	Ceramic Al_2O_3 96 %	Ceramic Al_2O_3 96 %	Ceramic Al_2O_3 96 %	Stainless steel 1.4404	Stainless steel 1.4404	Stainless steel 1.4404	Stainless steel 1.4404	Stainless steel and Ceramic Al_2O_3 96 %
Electrical connection	Solder pad tinned	•	•	•	•	•	•	•	•	•	
	Solder pin		•	•	•	•	•	•	•	•	
	Cable	•	•	•	•	•	•	•	•	•	•
	Connector			•		•		•		•	•

For more information about the products, please refer to the respective product data sheet.
Further configurations available on request.

Technical Data

	Nominal Pressure	bar	0.5	1	2	5	10	20	25	40	50	100	150	200	300	400	600	1000
CPS 1102	Gauge pressure						•	•			•	•	•	•		•		
	Overpressure*	bar				≤ 7.5	≤ 15	≤ 30			≤ 75	≤ 150	≤ 200	≤ 300		≤ 550		
	Burst pressure	bar				≥ 10	≥ 25	≥ 50			≥ 150	≥ 250	≥ 375	≥ 450		≥ 700		
	Vacuum strength	bar				-0.8	-1	-1			-1	-1	-1	-1		-1		
	Accuracy typ/max**	% FS				0.25 / 0.5	0.25 / 0.5	0.25 / 0.5			0.25 / 0.5	0.25 / 0.5	0.25 / 0.5	0.25 / 0.5		0.25 / 0.5		
CPS 1184 and CPS 1184 Z	Gauge pressure				•	•	•	•			•	•		•		•	•	
	Overpressure*	bar			≤ 3	≤ 7.5	≤ 15	≤ 30			≤ 75	≤ 150		≤ 300		≤ 550	≤ 720	
	Burst pressure	bar			≥ 5	≥ 15	≥ 30	≥ 60			≥ 150	≥ 250		≥ 450		≥ 700	≥ 900	
	Vacuum strength	bar			-0.6	-0.8	-1	-1			-1	-1		-1		-1	-1	
	Accuracy typ/max**	% FS			0.3 / 0.5	0.3 / 0.5	0.3 / 0.5	0.3 / 0.5			0.3 / 0.5	0.5 / 0.6		0.5 / 0.6		0.6 / 0.7	0.6 / 0.7	
CPS 2184 and CPS 2184 Z	Gauge pressure		•	•	•	•	•	•			•							
	Absolute pressure			•	•	•	•	•			•							
	Sealed gauge pressure											•		•		•	•	
	Overpressure*	bar	≤ 1	≤ 1.5	≤ 3	≤ 7.5	≤ 15	≤ 30			≤ 75	≤ 150		≤ 300		≤ 500	≤ 700	
	Burst pressure	bar	≥ 1.5	≥ 2.5	≥ 5	≥ 12	≥ 25	≥ 40			≥ 100	≥ 250		≥ 400		≥ 600	≥ 900	
	Vacuum strength	bar	-0.1	-0.4	-0.6	-1	-1	-1			-1	-1		-1		-1	-1	
	Accuracy typ/max**	% FS	0.5 / 0.9	0.5 / 0.9	0.4 / 0.8	0.4 / 0.8	0.4 / 0.6	0.4 / 0.6			0.4 / 0.6	0.5 / 0.8		0.5 / 0.9		0.5 / 0.9	0.5 / 0.9	
SPS 1000 and SPS 1000 Z	Gauge pressure						•		•	•		•		•	•	•	•	•
	Overpressure*	bar					≤ 15		≤ 35	≤ 60		≤ 150		≤ 300	≤ 450	≤ 600	≤ 900	≤ 1,350
	Burst pressure	bar					≥ 10 x P_{nom}		≥ 10 x P_{nom}	≥ 10 x P_{nom}		≥ 10 x P_{nom}		≥ 10 x P_{nom}	≥ 10 x P_{nom}	≥ 10 x P_{nom}	≥ 10 x P_{nom}	≥ 10 x P_{nom}
	Vacuum strength	bar					-1		-1	-1		-1		-1	-1	-1	-1	-1
	Accuracy typ/max** SPS 1000	% FS					0.5 / 0.9		0.5 / 0.9	0.5 / 0.9		0.4 / 0.8		0.4 / 0.8	0.4 / 0.8	0.4 / 0.8	0.5 / 0.8	0.5 / 0.8
	Accuracy typ/max** SPS 1000 Z	% FS					0.7 / 1.0		0.6 / 1.0	0.6 / 1.0		0.6 / 0.9		0.6 / 0.9	0.5 / 0.8	0.5 / 0.8	0.6 / 0.8	0.6 / 0.8
SPS 3003 and SPS 3003 Z	Gauge pressure									•		•		•	•	•	•	•
	Overpressure*	bar								≤ 60		≤ 150		≤ 300	≤ 450	≤ 600	≤ 900	≤ 1,350
	Burst pressure	bar								≥ 10 x P_{nom}		≥ 10 x P_{nom}		≥ 10 x P_{nom}	≥ 10 x P_{nom}	≥ 10 x P_{nom}	≥ 10 x P_{nom}	≥ 10 x P_{nom}
	Vacuum strength	bar								-1		-1		-1	-1	-1	-1	-1
	Accuracy typ/max** SPS 3003	% FS								0.5 / 0.9		0.4 / 0.8		0.4 / 0.8	0.4 / 0.8	0.4 / 0.8	0.4 / 0.8	0.4 / 0.8
	Accuracy typ/max** SPS 3003 Z	% FS								0.6 / 1.0		0.6 / 0.9		0.6 / 0.9	0.5 / 0.8	0.5 / 0.8	0.6 / 0.8	0.6 / 0.8
Transmitter MTX-F	Gauge pressure						•	•			•	•	•					
	Overpressure*	bar					≤ 13	≤ 26			≤ 65	≤ 130	≤ 195					
	Burst pressure	bar					≥ 20	≥ 40			≥ 100	≥ 200	≥ 300					
	Vacuum strength	bar					-1	-1			-1	-1	-1					
	Accuracy typ/max**	% FS					0.5 / 0.9	0.5 / 0.9			0.5 / 0.9	0.4 / 0.8	0.4 / 0.8					

* The specified overpressure ensures proper operation of the cell under overload conditions.
Duration of overpressure < 1 s

** Basis of calculation::
Accuracy = $\sqrt{\text{Non-linearity}^2 + \text{Hysteresis}^2 + \text{Non-repeatability}^2}$

metallux

The great feeling of being understood and perfectly looked after from a technical perspective – that's a constituent part of our corporate philosophy. Customers and business partners appreciate this attitude and reward us with many years of loyalty.

Our versatile creativity brings many advantages, especially for our business partners. We create optimal solutions in the fields of sensor systems, resistor technology and joysticks.

Our customers can be sure:
whatever challenge has to be solved
with whatever product – we'll find a way!



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