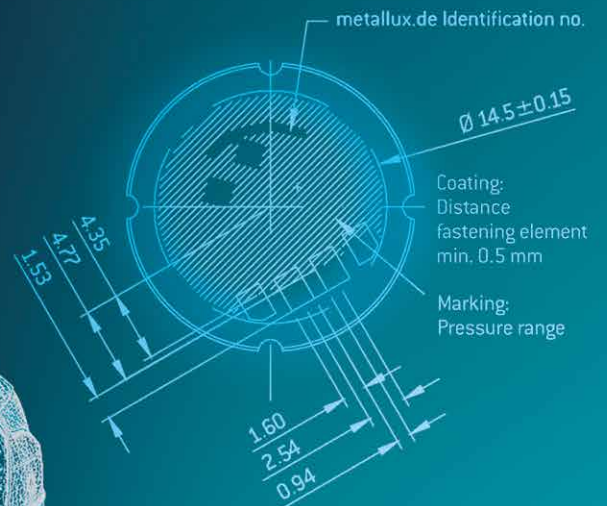
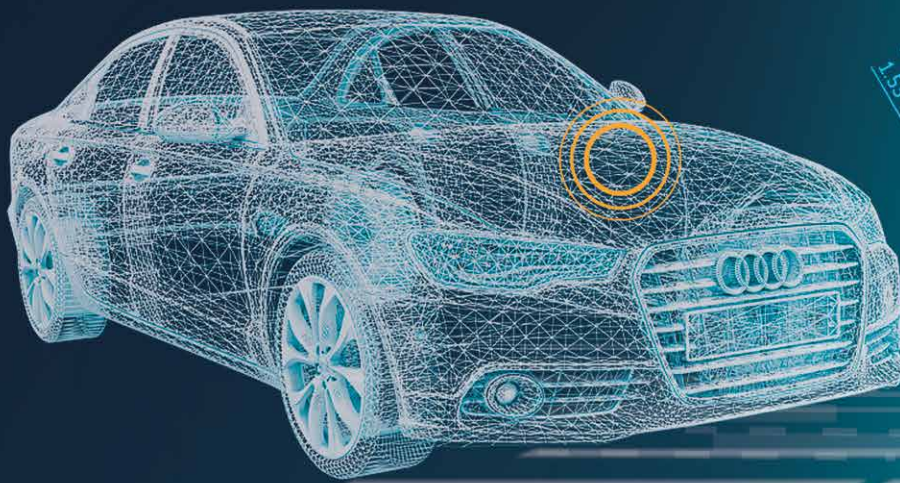
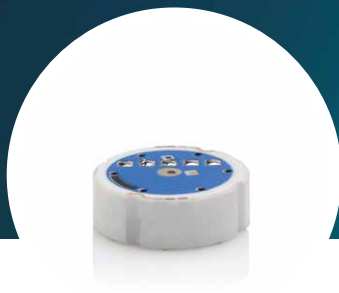


PRESSURE SENSORS



▶ CPS 1184



▶ CPS 2184



▶ SPS 1000 Z



▶ SPS 3003

LEADING IN SENSORS

metallux.de


TRUST THE X!




Fair partnership and customer-specific solutions.


Every single one of our premium products offers excellent quality, extreme precision, state-of-the-art technology, innovative design and maximum reliability. Our company's highly-qualified service team ensures that our customers receive the best possible added value. We serve as both an innovator and a consultant. By integrating quality management according to ISO 9001:2015 in all areas, we ensure that each Metallux product offers maximum safety. We are committed to providing personalised, individual consultation and building trust-based, long-term relationships with our customers.

Metallux pressure sensors feature high chemical resistance, high long-term stability, and high burst pressure ratings. We offer various sensor models for different applications. Select from a wide range of materials (ceramic, stainless steel) and geometries (monolithic, front-flush, or with integrated pressure connection). Our experts will be happy to assist you.

 ANDREAS OBERASCHER
Chairman of the board / CEO

 METALLUX AG – founded in 1986 and for years now, a leading manufacturer of sensors, membrane sensors, resistors, pressure sensors and industrial joysticks in thick-film technology.



 Whether standard or customised solutions, we offer a broad range of pressure sensor versions.

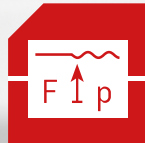
PRESSURE SENSORS CPS/SPS

The CPS and SPS pressure sensors are used to measure the pressure of gaseous or liquid media. They are available in ceramic and stainless steel. A wide range of standard models ensure that you will find the perfect sensor for your application.



CPS 1184 (Z)

CPS 1184 / CPS 1184 Z
Drawings
Connection diagrams



CPS 2184 (Z)

CPS 2184 / CPS 2184 Z
Drawings
Connection diagrams



SPS 1000 (Z)

SPS 1000 / SPS 1000 Z
Drawings
Connection diagrams



SPS 3003 (Z)

SPS 3003 / SPS 3003 Z
Drawings
Connection diagrams



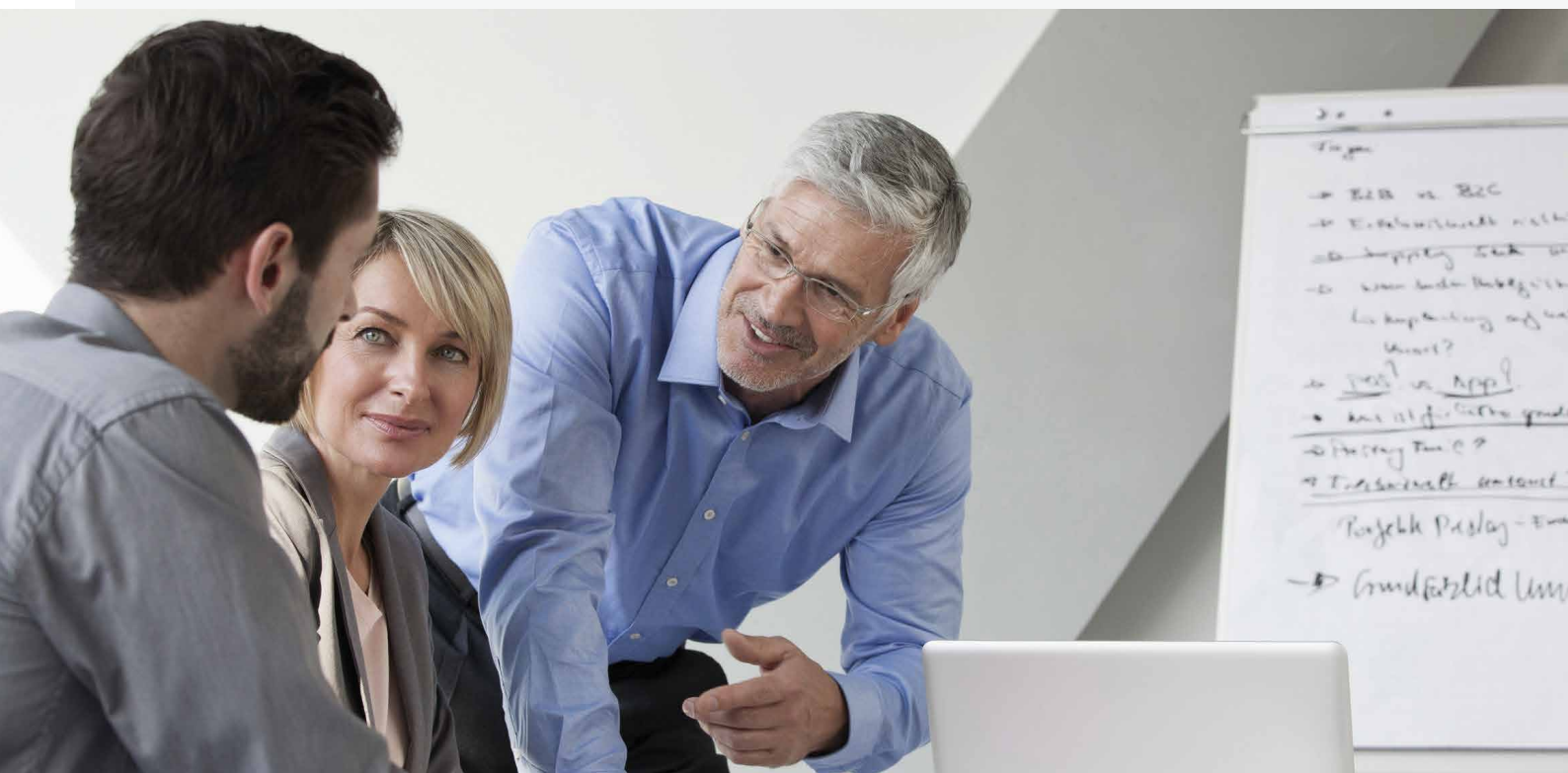
PRESSURE SENSORS FROM METALLUX

- Safe, long-term operation in your device. The ceramic and steel materials have been selected to ensure a long service life in most media.
- Choose from a comprehensive range of sensors. Our wide selection of sensors ensures that you will find the right sensor for your application.
- You can rely on chemical resistant sensors. The materials have been selected for highly safe, reliable operation.
- Easy assembly so that your production process is seamless.

APPLICATIONS

- Hydraulics
- Pneumatics
- Pressure transmitters
- Pressure switches
- Pumps
- Force transmitters
- Filters
- High-pressure cleaners

OVERVIEW		
VERSION	CPS	SPS
Page	Pages 6 – 15	Pages 16 – 23
MATERIALS		
Al203	x	
Stainless steel		x
SPECIAL FEATURES		
Stability <0.1% / <0.25% (150° 1,000 h)	x	
Standard temperature range -40 – 85° C	x	x
Very high burst pressure rating		x
Integrated pressure connection		x
Output 0.5 – 4.5 V	x	x
APPLICATIONS		
Hydraulics		x
Pneumatics	x	
Pressure transmitters	x	x
Pressure switches	x	x
Pumps	x	x
Filters	x	
High-pressure cleaners	x	x



PRESSURE MEASURING CELLS WITH THICK-FILM TECHNOLOGY ON A CERAMIC OR STAINLESS STEEL BASE

Perfect measuring cells for your applications



PRESSURE TRANSMITTERS / PRESSURE SWITCHES

Ceramic pressure sensors in thick-film technology reliably record pressures in pressure transmitters and pressure switches. These highly precise and affordable sensors monitor process parameters in production processes ensuring the quality of the manufactured products.



AUTOMOTIVE APPLICATIONS

Ceramic monolithic pressure sensors perform various tasks in automotive applications. They are used to monitor filter pressure, oil and fuel pressure and monitor the pneumatic and hydraulic brake fluid circuits in commercial and private vehicles. High reliability, precision and highly resistant against aggressive media, make this technology suitable for an ever growing range of applications.



HYDRAULICS/REFRIGERATION EQUIPMENT

An extremely high burst pressure rating and high reliability make this SPS stainless steel sensor an attractive alternative. The monolith with screw connection eliminates the need for a seal between the sensor and the pressure connection. This also eliminates the risk of mechanical weak points, such as welding joints. With this model, it is possible to achieve even higher resistance to aggressive media.



MEDICAL TECHNOLOGY

Some patients depend on dialysis equipment for their survival. There is zero room for error when it comes to the precision pressure sensors that monitor the system pressure. The manufacturers of dialysis systems put their trust in Metallux pressure sensors. For self-cleaning dialysis equipment, the high chemical compatibility and front-flush diaphragm on the sensors are particularly attractive features.

CERAMIC STANDARD PRESSURE SENSOR CPS 1184 RM 2.54



Metallux monolithic pressure sensors are manufactured in large series and are in use in a range of applications in machinery production, the automotive industry, and ventilation and climate control equipment. The easy installation and calibration of the sensors simplifies the customer's production processes. The CPS 1184 features a compact design, high media compatibility and excellent long-term stability.



TECHNICAL SPECIFICATIONS

Supply voltage	3 – 30 VDC
Impedance	10 kOhm \pm 20 %
FS output (Span)	Min. 1.5 / typ. 2.8 / max. 5.3 mV/V
Offset	0 \pm 0.2 mV/V
Therm. offset shift	Typ. 0 \pm 0.015 / max. 0 \pm 0.02 % FS/K (25 – 85° C)
Therm. span shift	0 – -0.013 % FS/K (0 – 70° C) 0 – -0.015 % FS/K (-20 – 0° C / 70 – 85° C) 0 – -0.018 % FS/K (-40 – 0° C / 85 – 135° C)
Insulating resistor	>1Gohm at 500 VDC, RT, 70 % rH (clamping 16.00mm)

Insulating voltage	> 0.5 kVDC with minimal membrane thickness, from medium to printed circuit
Body material	Al ₂ O ₃ 96 %
Operating temperature	-40 – +150° C
Storage temperature	-40 – +150° C

Mechanical and electrical characteristics are customisable. Specifications are subject to change without notice. We recommend that customers perform their own tests for new or untested applications.

PRESSURE RANGE [BAR]	LONG THERM STABILITY [% FS] *	LINEARITY / HYSTERESIS [TYP./MAX.] [% FS] **	BURST PRESSURE [BAR]	OVER-PRESSURE [BAR] ***	VACUUM CAPABILITY [BAR]
2 (1.6 – 2.5)	\pm 0.15	\pm 0.15 / 0.4	\geq 5	\leq 3	-0.6
5 (4 – 6)	\pm 0.15	\pm 0.15 / 0.4	\geq 15	\leq 7.5	-0.8
10	\pm 0.1	\pm 0.15 / 0.4	\geq 30	\leq 15	-1
20 (16 – 25)	\pm 0.1	\pm 0.15 / 0.4	\geq 60	\leq 30	-1
50 (40 – 60)	\pm 0.1	\pm 0.15 / 0.4	\geq 150	\leq 75	-1
100	\pm 0.1	\pm 0.2 / 0.5	\geq 250	\leq 150	-1
200 (160 – 250)	\pm 0.1	\pm 0.2 / 0.5	\geq 450	\leq 300	-1
400	\pm 0.15	\pm 0.3 / 0.6	\geq 700	\leq 550	-1
600	\pm 0.15	\pm 0.3 / 0.6	\geq 900	\leq 720	-1

* 1,000 hours at 150° C | 50 million pressure cycles at 125° C, 10 – 90 % FS at 2.5 Hz | 3 thermal shocks +130° C / -20° C 3 K/sec. | 50 thermal cycles +150° C / -40° C, 2 K/min.

** For independent linearity 10 points are measured and compared to an ideal straight line. | For all measurements, DUT's are mounted in Metallux standard Housing according to "mounting proposal CPS 1184".

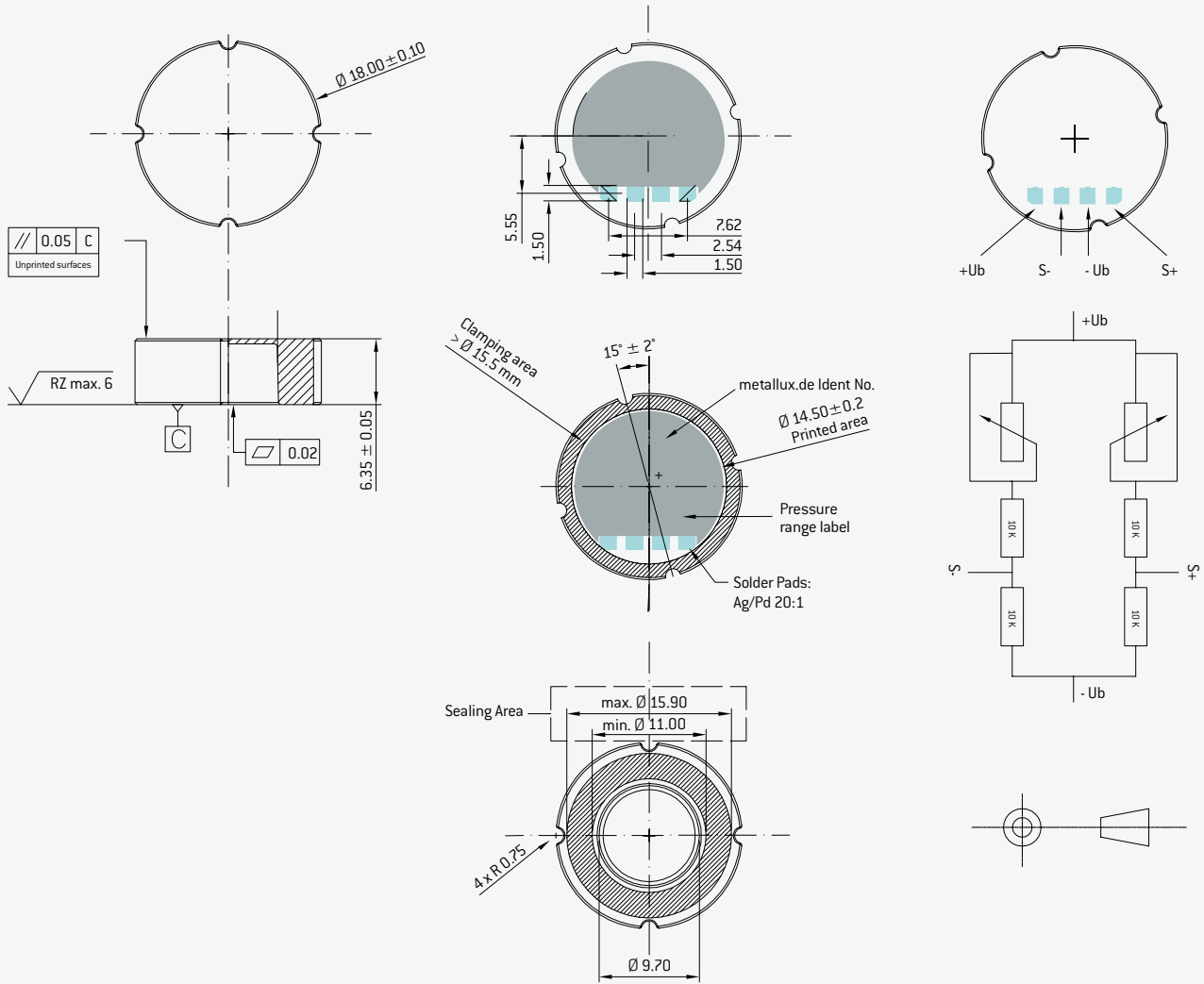
*** Over-Pressure indicates the maximum (short time < 1 sec.) operating pressure within no irreversible damage to the printed circuit are expected.

SAMPLE ORDER

Type	Pressure range [bar]	Electrical connection (acc. to drawing)
CPS 1184	100 bar	Solder pads

Other dimensions and electrical specifications on request.

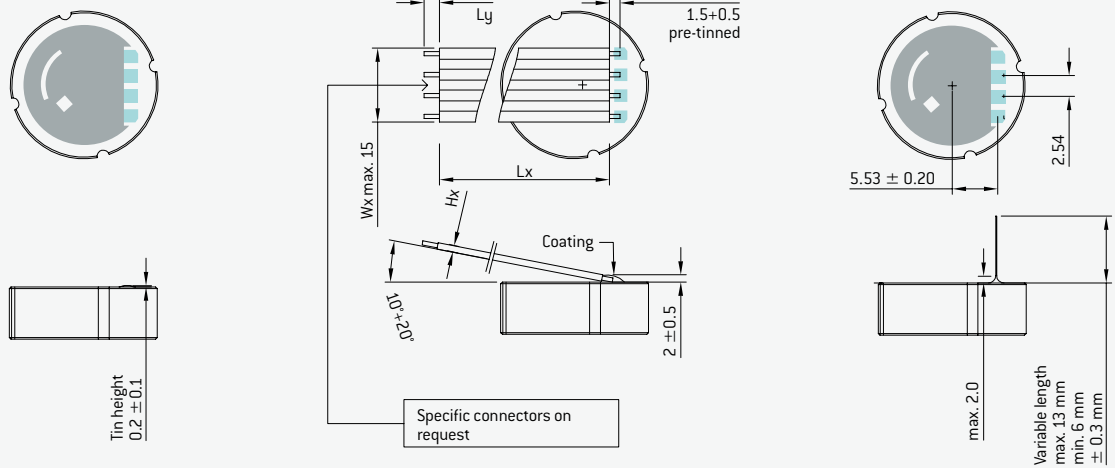
DIMENSIONAL DRAWINGS / CONNECTOR SCHEMATIC / ELECTRICAL CONNECTORS



Standard:
Tin plated: Sn95.6; Ag3.8; Cu0.6

Type of connection:
flat cable

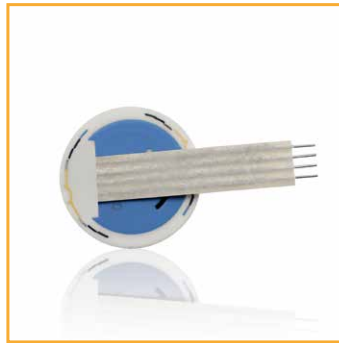
Type of connection:
Pins 0.5 x 0.27 mm



CERAMIC STANDARD PRESSURE SENSOR CPS 1184 RM 1.27



Metallux monolithic pressure sensors are manufactured in large series and are in use in a range of applications in machinery production, the automotive industry, and ventilation and climate control equipment. The easy installation and calibration of the sensors simplifies the customer's production processes. The CPS 1184 features a compact design, high media compatibility and excellent long-term stability.



TECHNICAL SPECIFICATIONS

Supply voltage	3 – 30 VDC
Impedance	10 kOhm ± 20 %
FS output (Span)	Min. 1.5 / typ. 2.8 / max. 5.3 mV/V
Offset	0 ± 0.2 mV/V
Therm. offset shift	Typ. 0 ± 0.015 / max. 0 ± 0.02 % FS/K (25 – 85° C)
Therm. span shift	0 – -0.013 % FS/K (0 – 70° C) 0 – -0.015 % FS/K (-20 – 0° C / 70 – 85° C) 0 – -0.018 % FS/K (-40 – 0° C / 85 – 135° C)
Insulating resistor	>1Gohm at 500 VDC, RT, 70 % rH (clamping 16.00mm)

Insulating voltage	> 0.5 kVDC with minimal membrane thickness, from medium to printed circuit
Body material	Al ₂ O ₃ 96 %
Operating temperature	-40 – +150° C
Storage temperature	-40 – +150° C

Mechanical and electrical characteristics are customisable. Specifications are subject to change without notice. We recommend that customers perform their own tests for new or untested applications.

PRESSURE RANGE [BAR]	LONG THERM STABILITY *	LINEARITY / HYSTERESIS (TYP./MAX.) [% FS] **	BURST PRESSURE [BAR]	OVER-PRESSURE [BAR] ***	VACUUM CAPABILITY [BAR]
2 (1.6–2.5)	± 0.15	± 0.15 / 0.4	≥ 5	≤ 3	-0.6
5 (4–6)	± 0.15	± 0.15 / 0.4	≥ 15	≤ 7.5	-0.8
10	± 0.1	± 0.15 / 0.4	≥ 30	≤ 15	-1
20 (16–25)	± 0.1	± 0.15 / 0.4	≥ 60	≤ 30	-1
50 (40–60)	± 0.1	± 0.15 / 0.4	≥ 150	≤ 75	-1
100	± 0.1	± 0.2 / 0.5	≥ 250	≤ 150	-1
200 (160–250)	± 0.1	± 0.2 / 0.5	≥ 450	≤ 300	-1
400	± 0.15	± 0.3 / 0.6	≥ 700	≤ 550	-1
600	± 0.15	± 0.3 / 0.6	≥ 900	≤ 720	-1

* 1,000 hours at 150° C | 50 million pressure cycles at 125° C, 10 – 90 % FS at 2.5 Hz | 3 thermal shocks +130° C/-20° C 3 K/sec. | 50 thermal cycles +150° C/-40° C, 2 K/min.

** For independent linearity 10 points are measured and compared to an ideal straight line. | For all measurements, DUT's are mounted in Metallux standard Housing according to "mounting proposal CPS 1184".

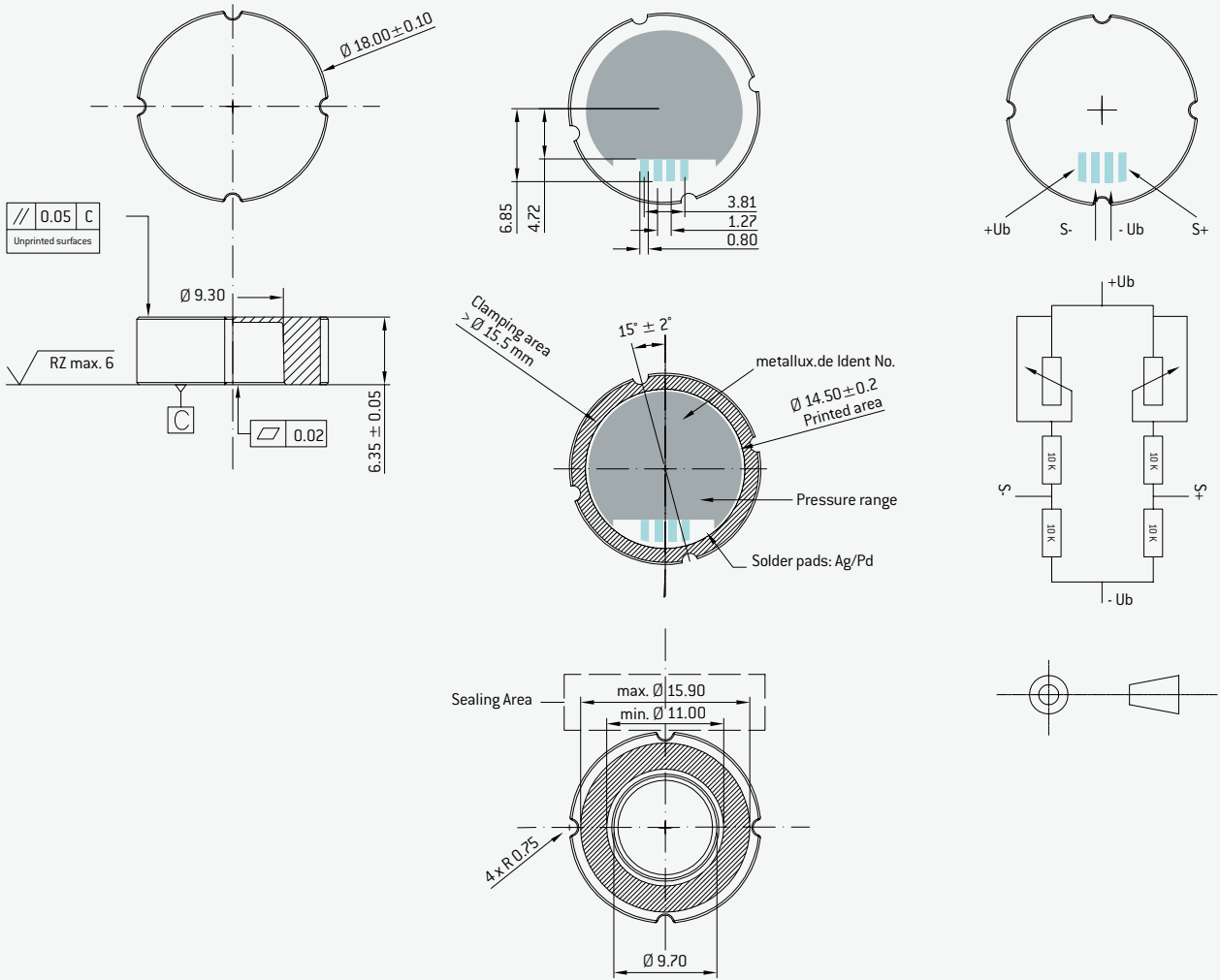
*** Over-Pressure indicates the maximum (short time < 1 sec.) operating pressure within no irreversible damage to the printed circuit are expected.

SAMPLE ORDER

Type	Pressure range [bar]	Electrical connection (acc. to drawing)
CPS 1184	100 bar	Solder pads

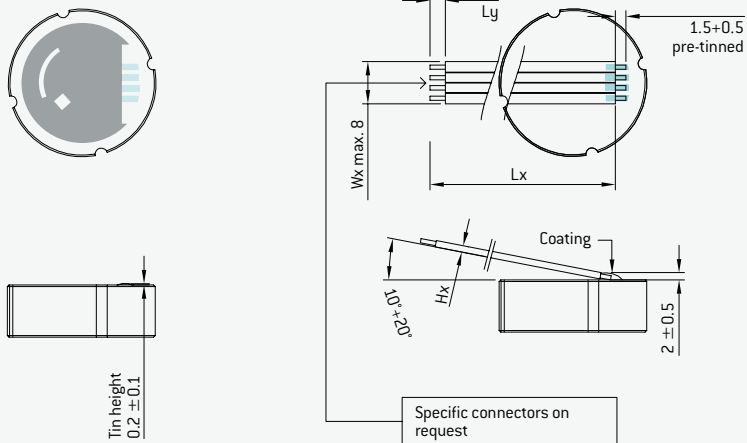
Other dimensions and electrical specifications on request.

DIMENSIONAL DRAWINGS / CONNECTOR SCHEMATIC / ELECTRICAL CONNECTORS



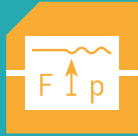
Standard:
Tin plated: Sn95.6; Ag3.8; Cu0.6

Type of connection:
flat cable



CERAMIC STANDARD PRESSURE SENSOR CPS 1184 Z

with output amplifier



The ceramic pressure sensors in the CPS 1184 Z series are integrated with an amplifier and are supplied calibrated to an output signal of 0.5 V to 4.5 V.

The excellent long-term stability and high resistance against a wide range of media are additional features of this sensor series.



TECHNICAL SPECIFICATIONS

Supply voltage	5 V ± 0.5 VDC
Power consumption	[< 10 mA typ. Rload > 2 k] < 50 mA max.
Output signal	0.5 – 4.5 V ratiometric
Calibration error	± 1 % / FS
Therm. offset shift	0 ± 0.05 % FS/K (0 – 80° C not compensated)
Therm. span shift	0 – -0.012 % FS/K (20 – 80° C) 0 – -0.018 % FS/K (-40 – 125° C)
Sample rate	1 kHz typ. / 0.5 kHz min.

Insulating resistor	>1Gohm at 500 VDC, RT, 70 % rH (clamping 16.00mm)
Insulating voltage	> 0.5 kVDC with minimal membrane thickness, from medium to printed circuit
Body material	Ceramic AL203 96 %
Operating temperature	-40 – +125° C
Storage temperature	-20 – +125° C

Mechanical and electrical characteristics are customisable. Specifications are subject to change without notice. We recommend that customers perform their own tests for new or untested applications.

PRESSURE RANGE [BAR]	LONG THERM STABILITY *	LINEARITY / HYSTERESIS (TYP./MAX.) [% FS] **	BURST PRESSURE [BAR]	OVER-PRESSURE [BAR] ***	VACUUM CAPABILITY [BAR]
2 (1.6–2.5)	± 0.25	± 0.15 / 0.4	≥ 5	≤ 3	-0.6
5 (4–6)	± 0.25	± 0.15 / 0.4	≥ 15	≤ 7.5	-0.8
10	± 0.15	± 0.15 / 0.4	≥ 30	≤ 15	-1
20 (16–25)	± 0.15	± 0.15 / 0.4	≥ 60	≤ 30	-1
50 (40–60)	± 0.15	± 0.15 / 0.4	≥ 150	≤ 75	-1
100	± 0.2	± 0.2 / 0.5	≥ 250	≤ 150	-1
200 (160–250)	± 0.2	± 0.2 / 0.5	≥ 450	≤ 300	-1
400	± 0.25	± 0.3 / 0.6	≥ 700	≤ 550	-1
600	± 0.25	± 0.3 / 0.6	≥ 900	≤ 720	-1

* 1,000 hours at 125° C | 50 million pressure cycles at 25° C, 10 – 90 % FS at 2.5 Hz | 50 thermal cycles +125° C/-40° C, 2 K/min.

** For independent linearity 10 points are measured and compared to an ideal straight line. | For all measurements, DUT's are mounted in Metallux standard Housing according to "mounting proposal CPS 1184".

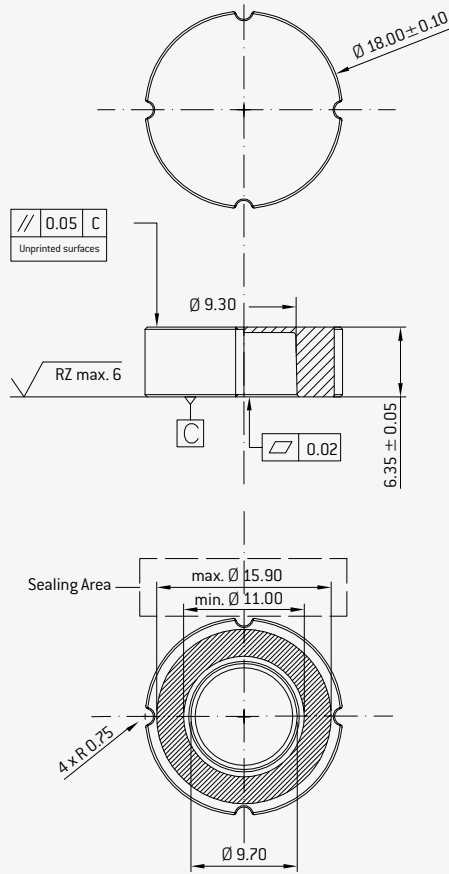
*** Over-Pressure indicates the maximum (short time < 1 sec.) operating pressure within no irreversible damage to the printed circuit are expected.

SAMPLE ORDER

Type	Pressure range [bar]	Electrical connection (acc. to drawing)
CPS 1184 Z	100 bar	Solder pads

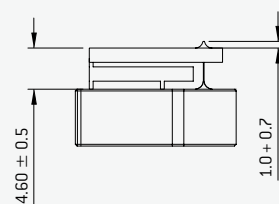
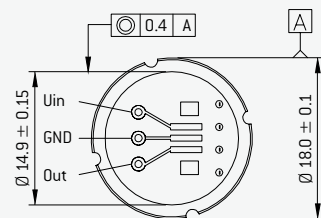
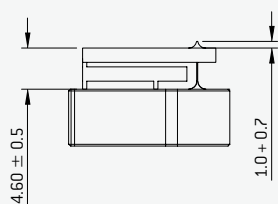
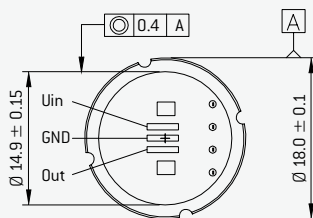
Other dimensions and electrical specifications on request.

DIMENSIONAL DRAWINGS / CONNECTOR SCHEMATIC / ELECTRICAL CONNECTORS



Aplified Output:
RV1015 [ZSC31015]

Aplified Output:
RV1015 [ZSC31150]



CERAMIC STANDARD PRESSURE SENSOR CPS 2184



The CPS 2184 sensors with front-flush diaphragm seal are suitable for measurement of relative as well as absolute pressures. The flush-front diaphragm makes for easy cleaning, an important requirement for sensors used in the medical and food industry.

The sensors are also available with diaphragms with 99.6 % aluminium oxide, for applications with extremely aggressive media.



TECHNICAL SPECIFICATIONS

Supply voltage	3 – 30 VDC
Impedance	10 kOhm \pm 20 %
FS output (Span)	Min. 1.5 / typ. 3.2 / max. 6 mV/V
Offset	0 \pm 0.2 mV/V
Therm. offset shift	Typ. 0 \pm 0.015 / max. 0 \pm 0.03 % FS/K (25 – 85° C)
Therm. span shift	0 – -0.013 % FS/K (0 – 70° C) 0 – -0.015 % FS/K (-20 – 0° C / 70 – 85° C) 0 – -0.018 % FS/K (-40 – 0° C / 85 – 135° C)

Insulating resistor	>1 Gohm at 500 VDC, RT, 70 % rH (mounting 16.00mm)
Insulating voltage	> 0.5 kVDC with minimal membrane thickness, from medium to printed circuit
Body material	Al ₂ O ₃ 96 %
Operating temperature	-40 – +135° C
Storage temperature	-40 – +150° C

Mechanical and electrical characteristics are customisable. Specifications are subject to change without notice. We recommend that customers perform their own tests for new or untested applications.

PRESSURE RANGE (BAR)	LONG THERM STABILITY *	LINEARITY / HYSTERESIS (TYP./MAX.) (% FS) **	BURST PRESSURE (BAR)	OVER-PRESSURE (BAR) ***	VACUUM CAPABILITY (BAR)	TYPE
0.5	\pm 0.25	\pm 0.3 / 0.6	\geq 1.5	\leq 1	-0.1	Rel.
1	\pm 0.25	\pm 0.25 / 0.6	\geq 2.5	\leq 1.5	-0.4	Rel. / Abs.
2	\pm 0.2	\pm 0.2 / 0.5	\geq 5	\leq 3	-0.6	Rel. / Abs.
5	\pm 0.2	\pm 0.2 / 0.5	\geq 12	\leq 7.5	-1	Rel. / Abs.
10	\pm 0.2	\pm 0.2 / 0.4	\geq 25	\leq 15	-1	Rel. / Abs.
20	\pm 0.15	\pm 0.2 / 0.4	\geq 40	\leq 30	-1	Rel. / Abs.
50	\pm 0.2	\pm 0.2 / 0.4	\geq 100	\leq 75	-1	Rel. / Abs.
100	\pm 0.25	\pm 0.25 / 0.5	\geq 250	\leq 150	-1	Sealed gauge
200	\pm 0.25	\pm 0.25 / 0.6	\geq 400	\leq 300	-1	Sealed gauge
400	\pm 0.25	\pm 0.25 / 0.6	\geq 600	\leq 500	-1	Sealed gauge
600	\pm 0.25	\pm 0.3 / 0.6	\geq 700	\leq 700	-1	Sealed gauge

* 1,000 hours at 150° C | 50 million pressure cycles at 80° C, 10 – 90 % FS at 2.5 Hz | 3 thermal shocks +125° C / -20° C, 3 K/sec. | 50 thermal cycles +135° C / -40° C, 2 K/min.

** For independent linearity 10 points are measured and compared to an ideal straight line. | For all measurements, DUT's are mounted in Metallux standard Housing according to "mounting proposa CPS 2184-ND-HD".

*** Over-Pressure indicates the maximum (short time < 1 sec.) operating pressure within no irreversible damage to the printed circuit are expected.

SAMPLE ORDER

Type	Pressure range (bar)	Pressure type	Electrical connection (acc. to drawing)
CPS 2184	100 bar	A/R/SG	Solder pads
Other dimensions and electrical specifications on request.			

DIMENSIONAL DRAWINGS / CONNECTOR SCHEMATIC / ELECTRICAL CONNECTORS

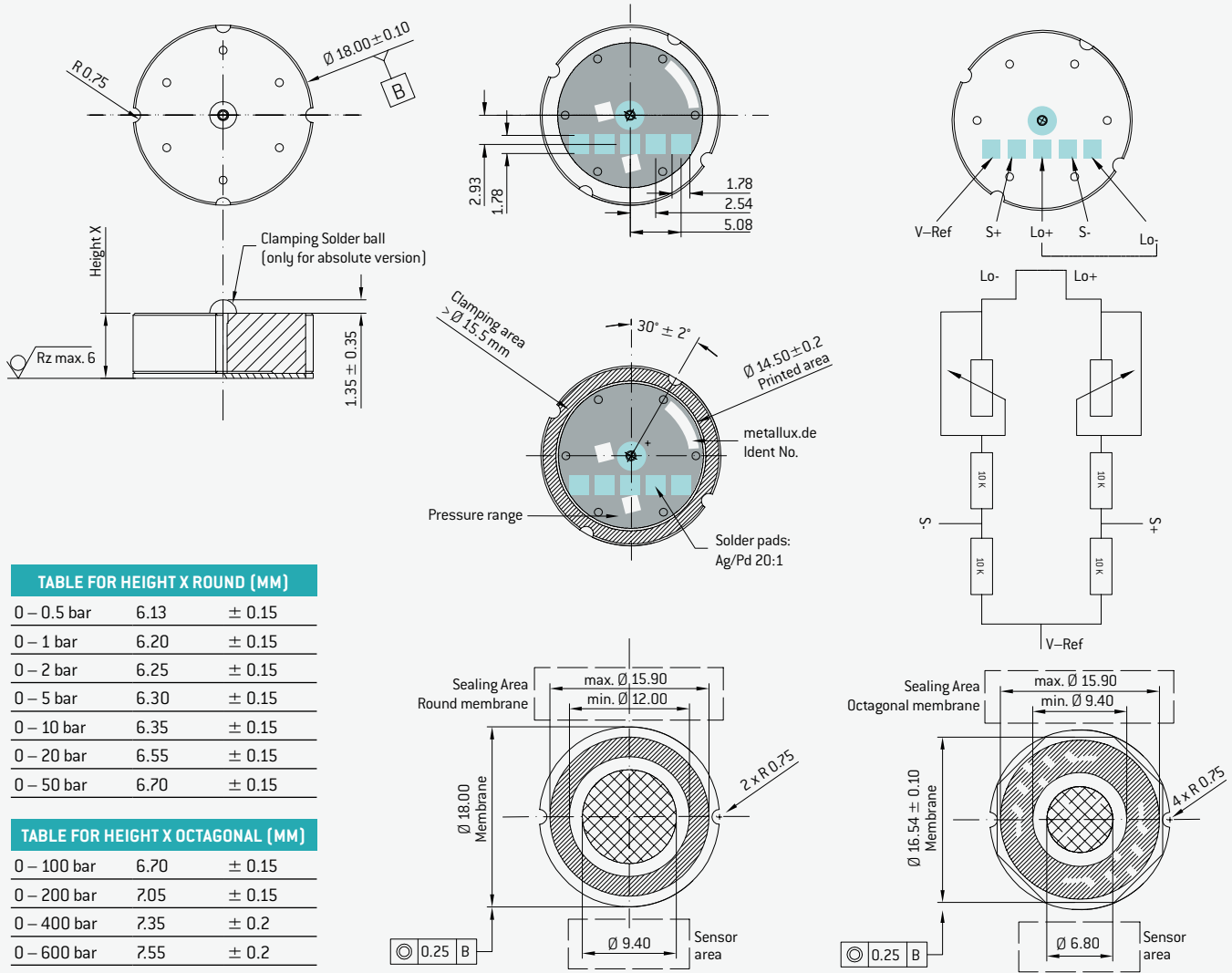


TABLE FOR HEIGHT X ROUND (MM)

0 – 0.5 bar	6.13	± 0.15
0 – 1 bar	6.20	± 0.15
0 – 2 bar	6.25	± 0.15
0 – 5 bar	6.30	± 0.15
0 – 10 bar	6.35	± 0.15
0 – 20 bar	6.55	± 0.15
0 – 50 bar	6.70	± 0.15

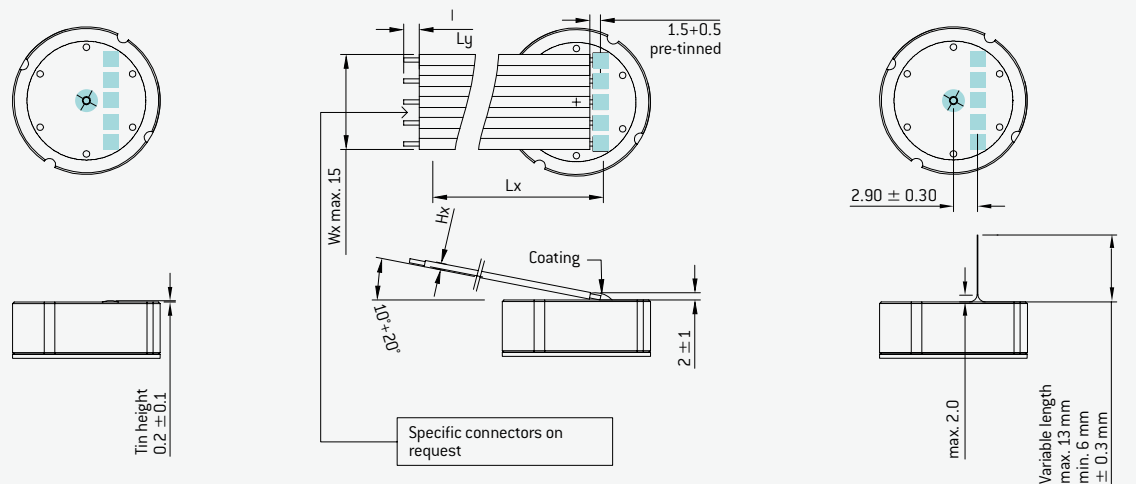
TABLE FOR HEIGHT X OCTAGONAL (MM)

0 – 100 bar	6.70	± 0.15
0 – 200 bar	7.05	± 0.15
0 – 400 bar	7.35	± 0.2
0 – 600 bar	7.55	± 0.2

Standard:
Tin plated: Sn95.6; Ag3.8; Cu0.6

Type of connection:
flat cable

Type of connection:
Pins 0.5 x 0.27 mm



CERAMIC STANDARD PRESSURE SENSOR CPS 2184 Z

with output amplifier



Customers in the food, pharmaceutical and chemical industry rely on the flush mounted sensors of the series CPS 2184Z with integrated amplifier. The sensors are calibrated to an output signal of 0.5V to 4.5V.

Characteristic for this series is an excellent long term stability and its suitability to operate in a harsh environment.



TECHNICAL SPECIFICATIONS

Supply voltage	5 V ± 0.5 VDC
Power consumption	< 10 mA typ. Rload > 2 k (< 50 mA max.)
Output signal	0.5 – 4.5 V ratiometric
Calibration error	± 1 %/FS
Therm. offset shift	0 ± 0.05 % FS/K (0 – 80° C not compensated)
Therm. span shift	0 – -0.012 % FS/K (20 – 80° C) 0 – -0.018 % FS/K (-40 – 125° C)
Sample rate	1 kHz typ. / 0.5 kHz min.

Insulating resistor	1 Gohm Ω (with clamping \varnothing 16 mm)
Insulating voltage	> 0.5 kVDC with minimal membrane thickness, from medium to printed circuit
Body material	Ceramic AL203 96 %
Operating temperature	-40 – +125° C
Storage temperature	-20 – +125° C

Mechanical and electrical characteristics are customisable. Specifications are subject to change without notice. We recommend that customers perform their own tests for new or untested applications.

PRESSURE RANGE [BAR]	LONG THERM STABILITY *	LINEARITY / HYSTERESIS [TYP./MAX.] (% FS) **	BURST PRESSURE [BAR]	OVER-PRESSURE [BAR] ***	VACUUM CAPABILITY [BAR]	TYPE
0.5	± 0.3	± 0.3/0.6	≥ 1.5	≤ 1	-0.1	Rel.
1	± 0.3	± 0.25/0.6	≥ 2.5	≤ 1.5	-0.4	Rel./ Abs.
2	± 0.25	± 0.2/0.5	≥ 5	≤ 3	-0.6	Rel./ Abs.
5	± 0.25	± 0.2/0.5	≥ 12	≤ 7.5	-1	Rel./ Abs.
10	± 0.25	± 0.2/0.4	≥ 25	≤ 15	-1	Rel./ Abs.
20	± 0.2	± 0.2/0.4	≥ 40	≤ 30	-1	Rel./ Abs.
50	± 0.2	± 0.2/0.4	≥ 100	≤ 75	-1	Rel./ Abs.
100	± 0.3	± 0.25/0.5	≥ 250	≤ 150	-1	Sealed gauge
200	± 0.3	± 0.25/0.6	≥ 400	≤ 300	-1	Sealed gauge
400	± 0.3	± 0.25/0.6	≥ 600	≤ 500	-1	Sealed gauge
600	± 0.3	± 0.3/0.6	≥ 700	≤ 700	-1	Sealed gauge

* 1,000 hours at 125° C | 50 million pressure cycles at 25° C, 10 – 90 % FS at 2.5 Hz | 50 thermal cycles +125° C/-40° C, 2K/min.

** For independent linearity 10 points are measured and compared to an ideal straight line. | For all measurements, DUT's are mounted in Metallux standard Housing according to "mounting proposal CPS 2184-ND-HD".

*** Over-Pressure indicates the maximum (short time < 1 sec.) operating pressure within no irreversible damage to the printed circuit as expected.

SAMPLE ORDER

Type	Pressure range [bar]	Pressure type	Electrical connection (acc. to drawing)
CPS 2184 Z	100 bar	A/R/SG	Solder pads
Other dimensions and electrical specifications on request.			

DIMENSIONAL DRAWINGS / CONNECTOR SCHEMATIC / ELECTRICAL CONNECTORS

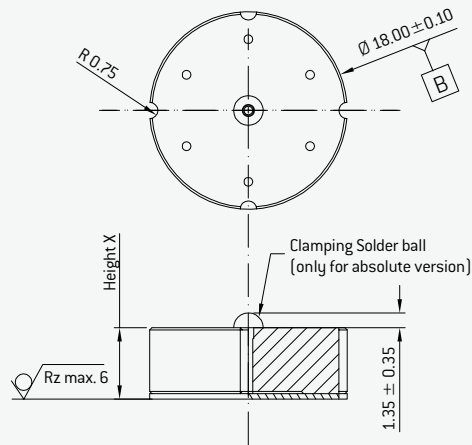
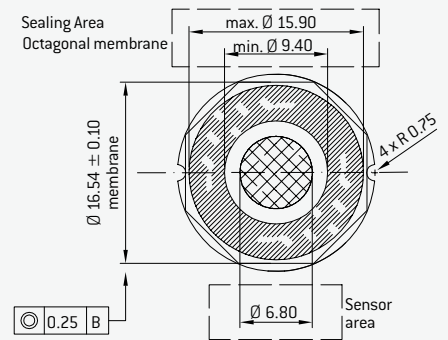
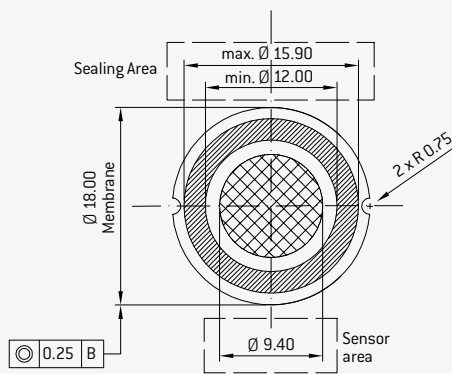


TABLE FOR HEIGHT X ROUND (MM)

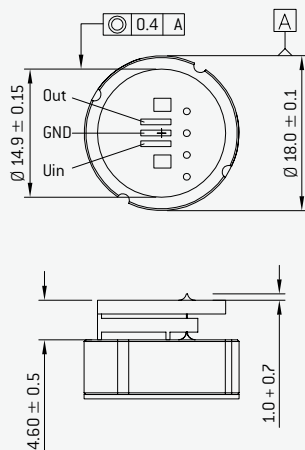
0 – 0.5 bar	6.13	± 0.15
0 – 1 bar	6.20	± 0.15
0 – 2 bar	6.25	± 0.15
0 – 5 bar	6.30	± 0.15
0 – 10 bar	6.35	± 0.15
0 – 20 bar	6.55	± 0.15
0 – 50 bar	6.70	± 0.15

TABLE FOR HEIGHT X OCTAGONAL (MM)

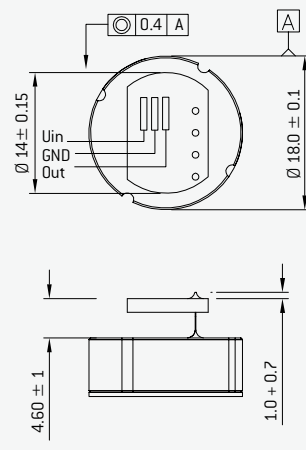
0 – 100 bar	6.70	± 0.15
0 – 200 bar	7.05	± 0.15
0 – 400 bar	7.35	± 0.2
0 – 600 bar	7.55	± 0.2



Applified Output:
RV2015 [ZSC31015]



Applified Output:
RV2150 [ZSC31150]



STAINLESS STEEL STANDARD PRESSURE SENSOR SPS 1000



The stainless steel pressure sensors of the SPS 1000 series excel particularly through good overload and burst pressure characteristics. Even in cases of pressure peaks, the monolithic pressure sensors offer outstanding safety features.

Operating in an aggressive media does not influence their superb performance.



TECHNICAL SPECIFICATIONS

Supply voltage	3 – 30 VDC
Impedance	10 kOhm \pm 30 %
FS output (Span)	Min. 1.8 / typ. 2.5 / max. 3.5 mV/V
Offset	0 \pm 0.5 mV/V
Therm. offset shift	Typ. 0 \pm 0.03 / max. 0 \pm 0.05 % FS/K (25 – 85° C)
Therm. span shift	Typ. 0 – -0.02 % FS/K (0 – 70° C) max. 0 – -0.05 % FS/K (0 – 70° C)

Insulating resistor	>100 MOhm at 500 VDC, RT, 70 % rH
Body material	Stainless steel
Operating temperature	-40 – +125° C
Storage temperature	-40 – +125° C

Mechanical and electrical characteristics are customisable. Specifications are subject to change without notice.

PRESSURE RANGE [BAR]	LONG THERM STABILITY *	LINEARITY / HYSTERESIS (TYP./MAX.) [% FS] **	BURST PRESSURE [BAR]	OVER-PRESSURE [BAR] ***	VACUUM CAPABILITY [BAR]
10	\pm 0.4	\pm 0.25 / 0.6	\geq 10 x P _{nom}	\leq 15	-1
25	\pm 0.35	\pm 0.25 / 0.6	\geq 10 x P _{nom}	\leq 35	-1
40	\pm 0.35	\pm 0.25 / 0.6	\geq 10 x P _{nom}	\leq 60	-1
100	\pm 0.3	\pm 0.2 / 0.5	\geq 10 x P _{nom}	\leq 150	-1
200	\pm 0.3	\pm 0.2 / 0.5	\geq 10 x P _{nom}	\leq 300	-1
300	\pm 0.25	\pm 0.2 / 0.5	\geq 10 x P _{nom}	\leq 450	-1
400	\pm 0.25	\pm 0.2 / 0.5	\geq 10 x P _{nom}	\leq 600	-1
600	\pm 0.25	\pm 0.3 / 0.5	\geq 10 x P _{nom}	\leq 900	-1
1,000	\pm 0.25	\pm 0.3 / 0.5	\geq 10 x P _{nom}	\leq 1,350	-1

* 1,000 hours at 125° C | 50 million pressure cycles at 125° C, 10 – 90 % FS at 2.5 Hz | 50 thermal cycles +125° C / -20° C, 2 K/min.

** For independent linearity 10 points are measured and compared to an ideal straight line. | For all measurements, DUT's are mounted in Metallux standard Housing according to "mounting proposal SPS 1000".

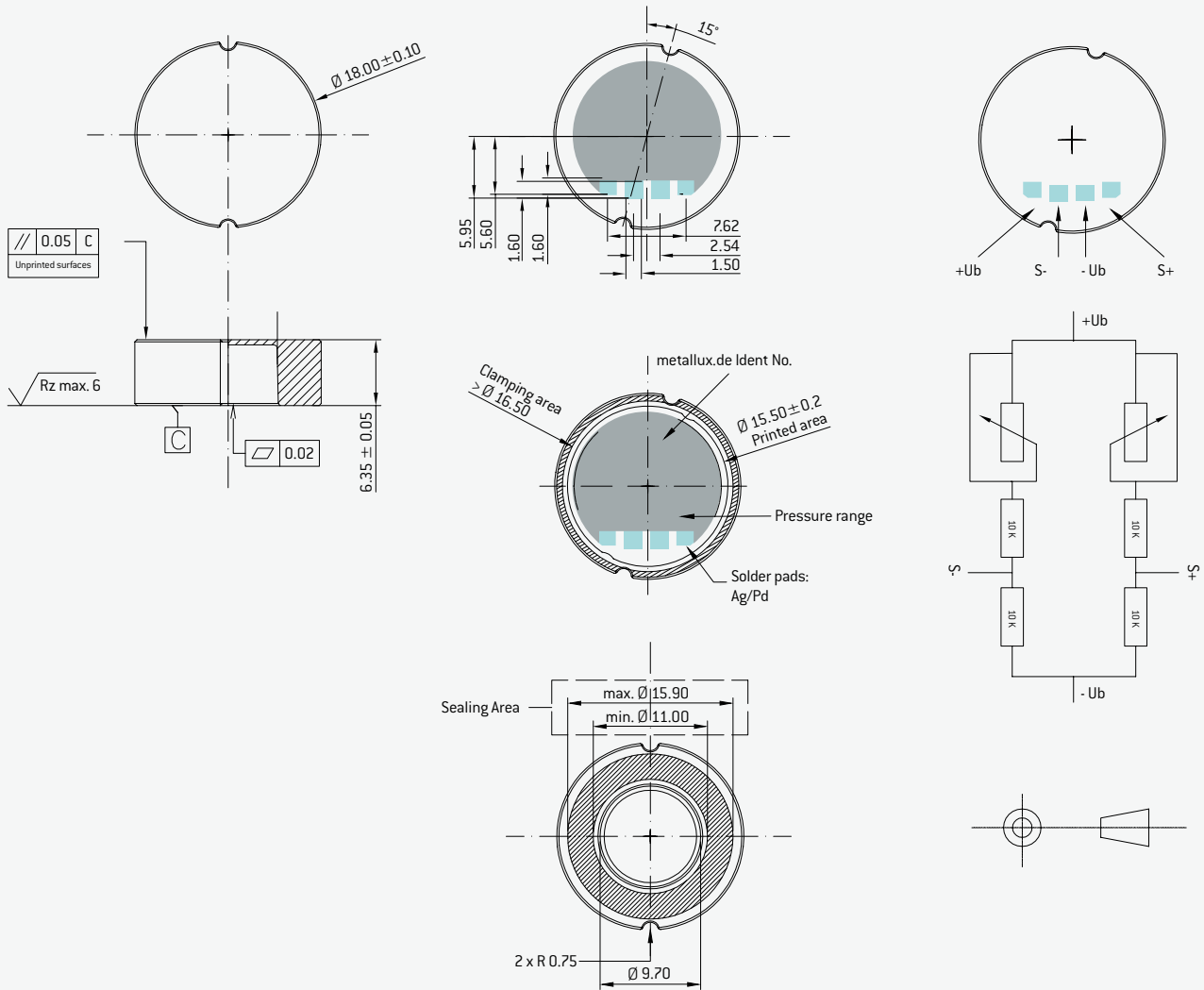
*** Over-Pressure indicates the maximum (short time < 1 sec.) operating pressure within no irreversible damage to the printed circuit are expected.

SAMPLE ORDER

Type	Pressure range [bar]	Electrical connection (acc. to drawing)
SPS 1000	100 bar	Solder pads

Other dimensions and electrical specifications on request.

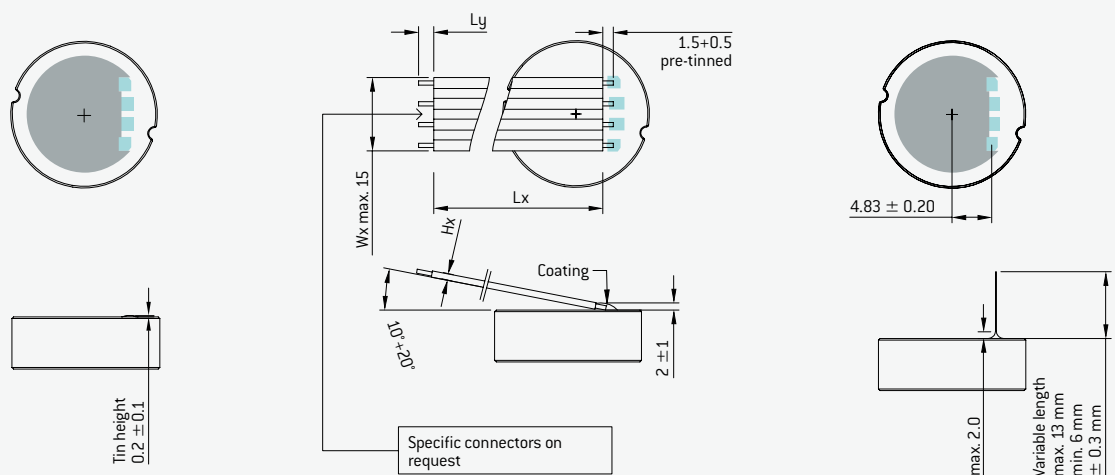
DIMENSIONAL DRAWINGS / CONNECTOR SCHEMATIC / ELECTRICAL CONNECTORS



Standard:
Tin plated: Sn95.6; Ag3.8; Cu0.6

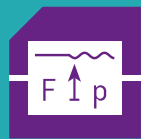
Customer specific,
Flex: Lx/Ly/Wx/Hx, coating: blue

Type of connection:
flat cable



STAINLESS STEEL STANDARD PRESSURE SENSOR SPS 1000 Z

with output amplifier



Monolithic sensors in stainless steel provide high overload capacity and provide an output signal of 0.5V to 4.5V. The SPS 1000 Z amplifier makes it easy to further process the sensor signal.

As with the SPS 1000, an important feature of this sensor is its above average chemical resistance and an excellent long term stability.



TECHNICAL SPECIFICATIONS

Supply voltage	5 V ± 0.5 VDC
Power consumption	< 10 mA typ. Rload > 2 k (< 50 mA max.)
Output signal	0.5 – 4.5 V ratiometric
Calibration error	± 1 % / FS
Therm. offset shift	0 ± 0.08 % FS/K (0 – 80° C not compensated)
Therm. span shift	0 – -0.05 % FS/K (20 – 80° C)
Sample rate	1 kHz typ. / 0.5 kHz min.

Insulating resistor	>100 MΩm at 500 VDC, RT, 70 % rH
Sample rate	1 kHz typ. / 0.5 kHz min.
Body material	Stainless steel
Operating temperature	-40 – +125° C
Storage temperature	-40 – +125° C

Mechanical and electrical characteristics are customisable.
Specifications are subject to change without notice.

PRESSURE RANGE (BAR)	LONG THERM STABILITY *	LINEARITY / HYSTERESIS (TYP./MAX.) (% FS) **	BURST PRESSURE (BAR)	OVER-PRESSURE (BAR) ***	VACUUM CAPABILITY (BAR)
10	± 0.6	± 0.25/0.6	≥ 10 x P _{nom}	≤ 15	-1
25	± 0.5	± 0.25/0.6	≥ 10 x P _{nom}	≤ 35	-1
40	± 0.5	± 0.25/0.6	≥ 10 x P _{nom}	≤ 60	-1
100	± 0.5	± 0.2/0.5	≥ 10 x P _{nom}	≤ 150	-1
200	± 0.5	± 0.2/0.5	≥ 10 x P _{nom}	≤ 300	-1
300	± 0.4	± 0.2/0.5	≥ 10 x P _{nom}	≤ 450	-1
400	± 0.4	± 0.2/0.5	≥ 10 x P _{nom}	≤ 600	-1
600	± 0.4	± 0.3/0.5	≥ 10 x P _{nom}	≤ 900	-1
1,000	± 0.4	± 0.3/0.5	≥ 10 x P _{nom}	≤ 1,350	-1

* 1,000 hours at 125° C | 50 million pressure cycles at 25° C, 10 – 90 % FS at 2.5 Hz | 50 thermal cycles +125° C / -40° C, 2 K/min.

** For independent linearity 10 points are measured and compared to an ideal straight line. | For all measurements, DUT's are mounted in Metallux standard Housing according to "mounting proposal SPS 1000".

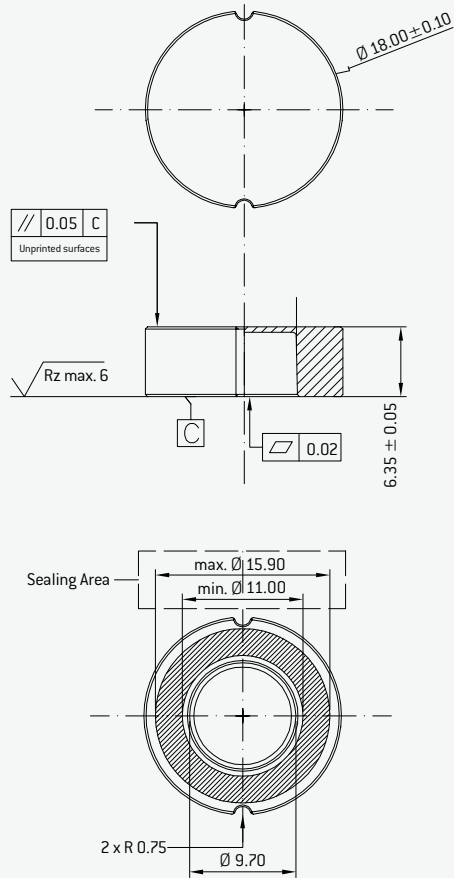
*** Over-Pressure indicates the maximum (short time < 1 sec.) operating pressure within no irreversible damage to the printed circuit are expected.

SAMPLE ORDER

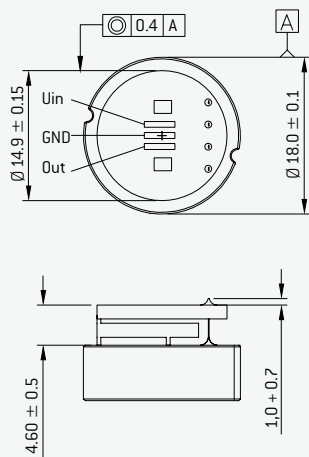
Type	Pressure range [bar]	Electrical connection (acc. to drawing)
SPS 1000Z	100 bar	Solder pads

Other dimensions and electrical specifications on request.

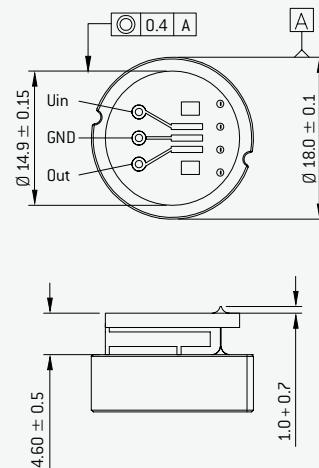
DIMENSIONAL DRAWINGS / CONNECTOR SCHEMATIC / ELECTRICAL CONNECTORS



Aplified Output:
RV1015 [ZSC31015]



Aplified Output:
RV1150 [ZSC31150]



STAINLESS STEEL STANDARD PRESSURE SENSOR SPS 3003



The SPS 3003 series of stainless steel pressure sensors with integrated pressure connector provides reliable operation in applications with aggressive media. There is no need for a seal between the sensor measuring cell and pressure connection. The high overload capacity and very high burst pressure rating are additional advantages of this sensor. In the case of an error or undefined peaks in pressure, the medium remains in the system.



TECHNICAL SPECIFICATIONS

Supply voltage	3 – 30 VDC
Impedance	10 kOhm \pm 30 %
FS output (Span)	Min. 1.8 / typ. 2.5 / max. 3.5 mV/V
Offset	0 \pm 0.5 mV/V
Therm. offset shift	Typ. 0 \pm 0.03 / max. 0 \pm 0.05 % FS/K (25 – 85 °C)
Therm. span shift	Typ. 0 – -0.02 % FS/K (0 – 70 °C) max. 0 – -0.05 % FS/K (0 – 70 °C)

Insulating resistor	>100 MOhm at 500 VDC, RT, 70 % rH
Body material	Stainless steel
Operating temperature	-40 – +125 °C
Storage temperature	-40 – +125 °C

Mechanical and electrical characteristics are customisable. Specifications are subject to change without notice.

PRESSURE RANGE [BAR]	LONG THERM STABILITY *	LINEARITY / HYSTERESIS (TYP./MAX.) [% FS] **	BURST PRESSURE [BAR]	OVER-PRESSURE [BAR] ***	VACUUM CAPABILITY [BAR]
40	\pm 0.35	\pm 0.25 / 0.6	\geq 10 x P _{nom}	\leq 60	-1
100	\pm 0.3	\pm 0.2 / 0.5	\geq 10 x P _{nom}	\leq 150	-1
200	\pm 0.3	\pm 0.2 / 0.5	\geq 10 x P _{nom}	\leq 300	-1
300	\pm 0.25	\pm 0.2 / 0.5	\geq 10 x P _{nom}	\leq 450	-1
400	\pm 0.25	\pm 0.2 / 0.5	\geq 10 x P _{nom}	\leq 600	-1
600	\pm 0.25	\pm 0.3 / 0.5	\geq 10 x P _{nom}	\leq 900	-1
1,000	\pm 0.25	\pm 0.3 / 0.5	\geq 10 x P _{nom}	\leq 1,350	-1

* 1,000 hours at 125 °C | 50 million pressure cycles at 125 °C, 10 – 90 % FS at 2.5 Hz | 50 thermal cycles +125 °C / -20 °C, 2 K/min.

** For independent linearity 10 points are measured and compared to an ideal straight line. | For all measurements, DUT's are mounted in Metallux standard Housing according to "mounting proposal SPS 1000".

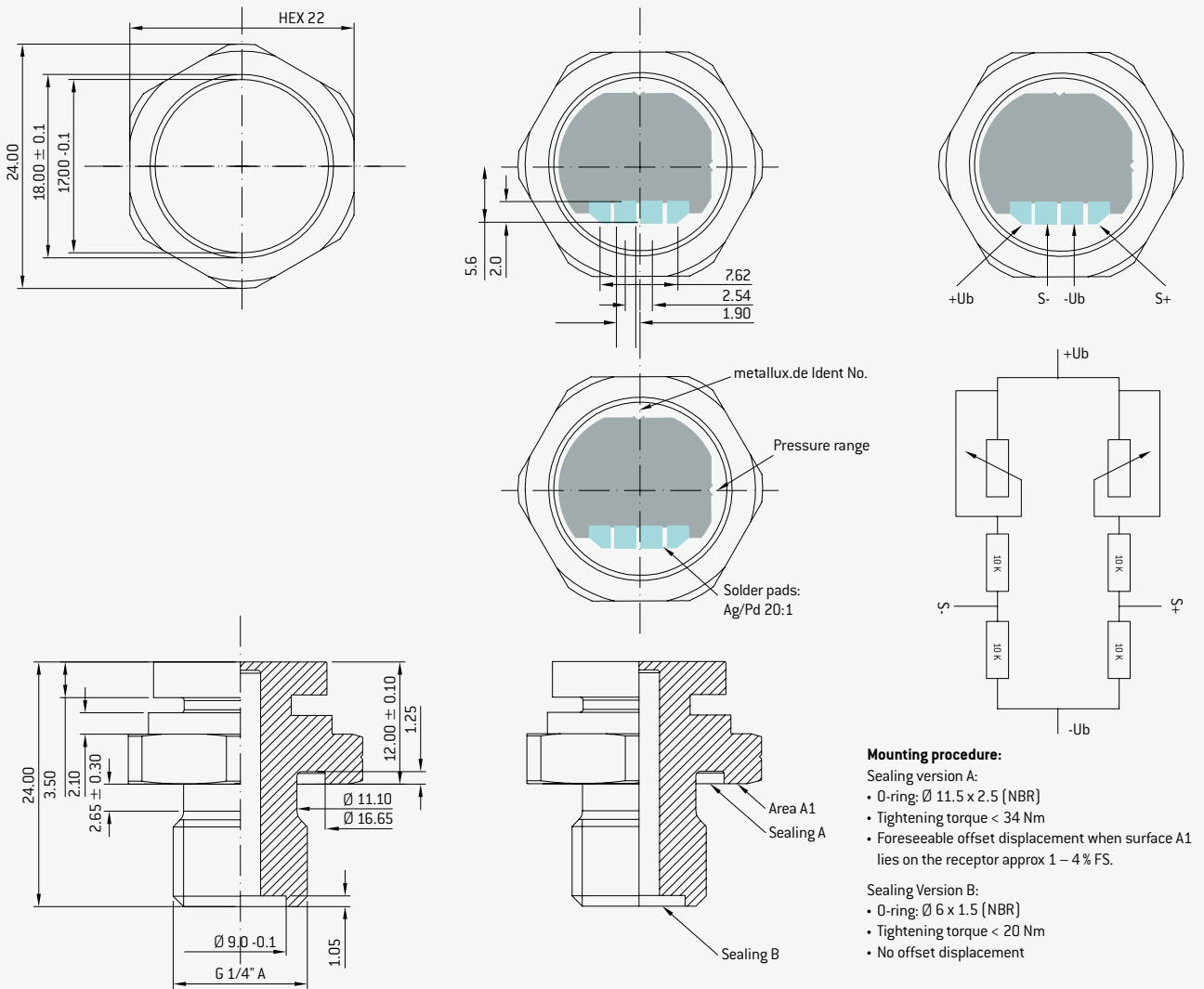
*** Over-Pressure indicates the maximum (short time < 1 sec.) operating pressure within no irreversible damage to the printed circuit are expected.

SAMPLE ORDER

Type	Pressure range [bar]	Electrical connection (acc. to drawing)
SPS 3003	100 bar	Solder pads

Other dimensions and electrical specifications on request.

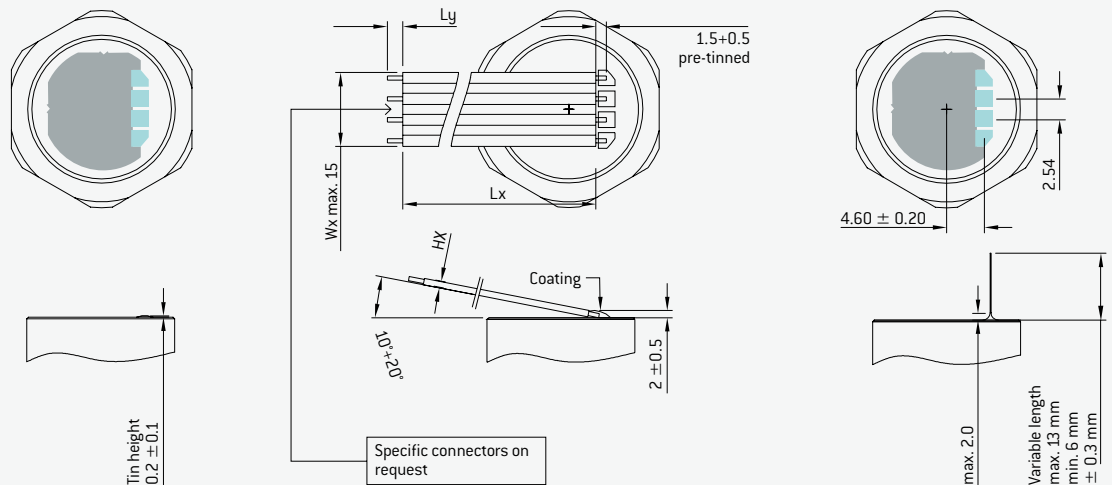
DIMENSIONAL DRAWINGS / CONNECTOR SCHEMATIC / ELECTRICAL CONNECTORS



Standard:
Tin plated: Sn95.6; Ag3.8; Cu0.6

Type of connection:
flat cable

Type of connection:
Pins 0.5 x 0.27mm



STAINLESS STEEL STANDARD PRESSURE SENSOR SPS 3003 Z

with output amplifier



The SPS 3003 Z series unites a stainless steel pressure sensor with an integrated pressure connection and an amplifier circuit. The 0.5 V – 4.5 V output is proportional to the applied pressure. No seal is required between the sensor and pressure connection, which makes the sensor particularly resistant to aggressive media. Its high burst pressure rating also makes it ideal for hydraulic applications.



TECHNICAL SPECIFICATIONS

Supply voltage	5 V ± 0.5 VDC
Power consumption	< 10 mA typ. Rload > 2 k (< 50 mA max.)
Output signal	0.5 – 4.5 V ratiometric
Calibration error	± 1 % / FS
Therm. offset shift	0 ± 0.08 % FS/K (0 – 80° C not compensated)
Therm. span shift	0 – -0.05 % FS/K (20 – 80° C)

Sample rate	1 kHz typ. / 0.5 kHz min.
Insulating resistor	>100 MΩ at 500 VDC, RT, 70 % rH
Body material	Stainless steel
Operating temperature	-40 – +125° C
Storage temperature	-40 – +125° C

Mechanical and electrical characteristics are customisable. Specifications are subject to change without notice.

PRESSURE RANGE (BAR)	LONG THERM STABILITY *	LINEARITY / HYSTERESIS (TYP./MAX.) (% FS) **	BURST PRESSURE (BAR)	OVER-PRESSURE (BAR) ***	VACUUM CAPABILITY (BAR)
40	± 0.5	± 0.25 / 0.6	≥ 10 x P _{nom}	≤ 60	-1
100	± 0.5	± 0.2 / 0.5	≥ 10 x P _{nom}	≤ 150	-1
200	± 0.5	± 0.2 / 0.5	≥ 10 x P _{nom}	≤ 300	-1
300	± 0.4	± 0.2 / 0.5	≥ 10 x P _{nom}	≤ 450	-1
400	± 0.4	± 0.2 / 0.5	≥ 10 x P _{nom}	≤ 600	-1
600	± 0.4	± 0.3 / 0.5	≥ 10 x P _{nom}	≤ 900	-1
1,000	± 0.4	± 0.3 / 0.5	≥ 10 x P _{nom}	≤ 1,350	-1

* 1,000 hours at 125° C | 50 million pressure cycles at 25° C, 10 – 90 % FS at 2.5 Hz | 50 thermal cycles +125° C / -40° C, 2 K/min.

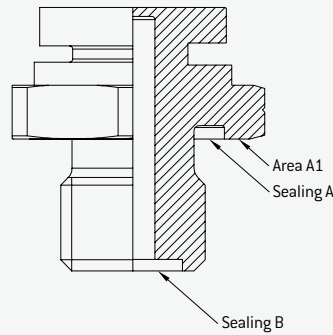
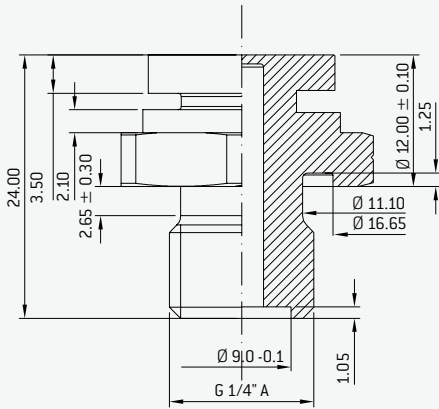
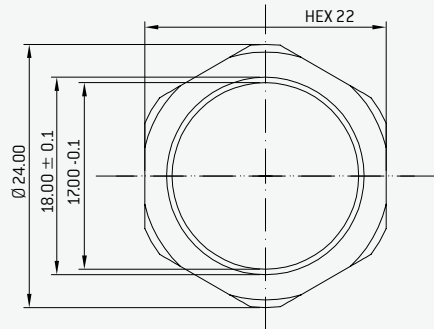
** For independent linearity 10 points are measured and compared to an ideal straight line. | For all measurements, DUT's are mounted in Metallux standard Housing according to "mounting proposal SPS 1000".

*** Over-Pressure indicates the maximum (short time < 1 sec.) operating pressure within no irreversible damage to the printed circuit are expected.

SAMPLE ORDER

Type	Pressure range [bar]	Electrical connection (acc. to drawing)
SPS 3003 Z	100 bar	Solder pads
Other dimensions and electrical specifications on request.		

DIMENSIONAL DRAWINGS / CONNECTOR SCHEMATIC / ELECTRICAL CONNECTORS



Mounting procedure:

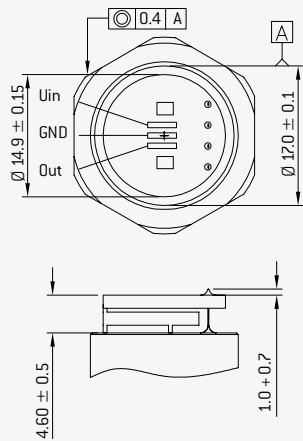
Sealing version A:

- O-ring: $\varnothing 11.5 \times 2.5$ (NBR)
- Tightening torque < 34 Nm
- Foreseeable offset displacement when surface A1 lies on the receptor approx 1 – 4 % FS.

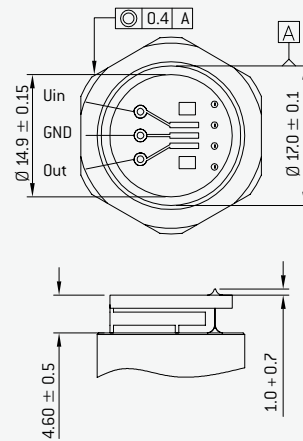
Sealing Version B:

- O-ring: $\varnothing 6 \times 1.5$ (NBR)
- Tightening torque < 20 Nm
- No offset displacement

Applified Output:
RV1015 [ZSC31015]



Applified Output:
RV1150 [ZSC31150]



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System Certification
to ISO 9001:2015