

- → Relative and absolute pressure
- → Differencial pressure
- → Level measurement
- $\rightarrow$  Vacuum and pressure switches



## 



# **High-precision pressure measurement**

Our pressure transmitters are high-precision, thermally stable instruments that are designed for the measurement of pressure in liquids and gases. The functionality and sensor style are determined by the specific operating conditions. Thanks to the ease at which these reliable transmitters can be installed, commissioned and operated, they are suitable for use in a wide variety of applications.

The in-depth knowledge and extensive expertise of our product specialists in both the field-sales and internal-sales teams translates to top-quality sensor solutions that are perfectly tailored to your measurement task. Furthermore, we also have a global network of hand-picked representatives.

### Areas of application

- Mechanical engineering
- Machine tools
- Measuring / control engineering
- Hydraulics / pneumatics
- Refrigeration technology
- Food industry
- Medical technology
- Filter control
- Automation





By constantly examining technologies that can be applied to pressure measurement, we are committed to the continued refinement and development of our products.

Over the following pages you can get an insight into our extensive sensor portfolio, ranging from vacuum and pressure switches for liquids and gases, OEM pressure transmitters for relative pressure measurement, transmitters with a ceramic element for gauge pressure and differential pressure measurement, or piezoresistive solutions for absolute pressure, differential pressure or level measurement. Added to this, a wide range of bespoke special versions are also in use the world over.

# **Relative and absolute pressure**

### DSW for pressure ranges 0...600 bar (relative)

With this new pressure sensor, SIKA is ushering in a new generation of pressure measuring instruments for general industrial applications.

The DSW not only impresses users with its compact design, it also offers excellent quality at a very low price.

And with a range of international approvals, the DSW can be used worldwide. The various pressure ranges and process connections that are needed for the individual operating conditions are readily available.

### **Technical features**

- Easy installation and commissioning
- Good price/performance ratio
- Short delivery times
- Linearity < 0.5 % of full scale value
- 2-fold overpressure-safe

### Pressure range

0..600 bar (relative)

Temperature range

0...80 °C

Media

Liquids and gases

### **Electrical connection**

Angle plug DIN EN 175301-803 A (Delivery without cable socket)





Technical data	
General	
Accuracy, linearity, hysteresis	< ±0.5 % full scale
Temperature influence	< 1.0 % typ., < 2.5 % max.
Response time	< 4 ms
Medium temperature	080 °C (others on request)
Ambient temperature	080 °C (others on request)
Overpressure safety	2-fold full scale value
Fitting position	Any
Connection	G1/4 A, 1/4 NPT
Degree of protection	IP65
Electrical data	
Output / supply	420 mA, 830 VDC; 2-wire
Connection	Angle plug DIN EN 175301-803 A
Burden	2-wire: ≤ (U <sub>b</sub> -8 V) / 0.02 A
Material	
Housing	Stainless steel 1.4404
Sealing	NBR (nitrile butadiene)
Connection	Stainless steel 1.4404



Order example	DSW	43	1	Н	1H	025
Sealing material						
NBR (nitrile butadiene)		43				
Output						
420 mA			1			
Others			Х			
Sealing						
Back sealed				Н		
Process connection					-	
G1/4 A					1H	
1/4 NPT					2H	
Measuring range [bar]						
01						025
01.6						035
02.5						045
04						055
06						065
010						075
016						085
025						095
040						105
060						115
0100						125
0160						135
0250						145
0400						155
0600						165
Accessories						

Cable socket DIN EN 175301-803 A incl. seal

SME8175301-803A0

Other specifications on request



### DSI for pressure ranges 0...16 bar (absolute) / -1...60 bar (relative)

The 2/3-wire measuring transmitter is intended for conversion of widely varied electrical values, e.g. from a temperature sensor into an analogue standard current or voltage signal. This measuring transmitter can be used in the most varied industrial applications.

### **Technical features**

- Compact and rugged design
- Slight temperature influence on the accuracy
- Outstanding EMC properties
- Safe and compact electrical connection through M12, DIN or Mini DIN plug

#### Pressure range

- 0...16 bar (absolute)
- -1...60 bar (relative)

#### **Temperature range**

-40...125 °C (depending on sealing material)

#### Media

Liquids and gases

#### **Electrical connection**

- Plug M12 x 1 (Delivery without cable socket)
- Angle plug DIN EN 175301-803 A (Delivery without cable socket)
- Angle plug DIN EN 175301-803 C (Mini DIN) (Delivery without cable socket)



Technical data	
General	
Accuracy, linearity, hysteresis	< ±0.3 % full scale
Temperature influence	< ±0.2 % full scale / K
Response time	< 2 ms, type 1 ms
Medium temperature	-15125 °C (FKM)
	-40125 °C (EPDM)
	-20100 °C (NBR)
	-40125 °C (MVQ)
Ambient temperature	-3085 °C
Overpressure safety	2.5 -fold full scale value
Fitting position	Any
Connection	G1/2 A, G1/4 A, 1/4-18 NPT
Degree of protection	IP67 (with DIN EN 175301-803, IP65)
Electrical data	
Output / supply	420 mA, 733 VDC; 2-wire
	05 V, 733 VDC; 3-wire
	010 V, 1233 VDC; 3-wire
Connection	Plug M12 x 1
	Angle plug DIN EN 175301-803 A
	Angle plug DIN EN 175301-803 C (Mini DIN)
Burden	2-wire: < (U <sub>b</sub> -7 V) / 0.02 A
	3-wire: > 10 kΩ / < 100 nF
Material	
Housing	Stainless steel 1.4404
Sealing	FKM, EPDM, MVQ and NBR
Connection	Stainless steel 1.4404









Order example		DSI	1	1	1	н	1	1	315
Pressure type		, in the second s							
Relative			1						
Absolute		1	2						
Sealing material									
FKM (fluorine elastomer)				1					
EPDM (ethylene butadiene)				2					
NBR (nitrile butadiene)				3					
MVQ (silicone rubber)				4					
Output									
420 mA					1				
05 V					2				
010 V					3				
Sealing									
Back sealed						Н			
Front sealed						V			
Process connection									
G1/4 A							1		
G1⁄2 A							2		
1/4 - 18 NPT							3		
Electrical connection									
Plug M12 x 1								1	
Angle plug DIN EN 175301-803	Α							2	
Angle plug DIN EN 175301-803	C (Mini DIN)							3	
Measuring range [bar]									
-10	(relative pressure only)								315
01									025
01.6									035
02.5									045
04									055
06									065
010									075
016									085
025	(relative pressure only)								095
040	(relative pressure only)								105
060	(relative pressure only)								115
Accessories									

Cable socket DIN EN 175301-803 A incl. seal

SME8175301-803A0

### DSH for pressure ranges -1...600 bar (relative)

The compact pressure measuring transmitter is based on a specially developed thick-film technology in which the pressure measurement cells are welded gasket-free to the pressure transducer. Along with the high bursting resistance required in various applications, this pressure measuring transmitter is also ideal for use with all refrigerants including ammonia.

### **Technical features**

- Compact and rugged design
- Welded gasket-free
- Safe and compact electrical connection with M12, DIN or Mini DIN plug

### Pressure range

-1...600 bar (relative)

### Temperature range

-40...135 °C

### Media

Liquids and gases

### **Electrical connection**

- Plug M12 x 1 (Delivery without cable socket)
- Angle plug DIN EN 175301-803 A (Delivery without cable socket)
- Angle plug DIN EN 175301-803 C (Mini DIN) (Delivery without cable socket)





Technical data	
General	
Accuracy, linearity, hysteresis	< ±0.3 % full scale
Temperature influence	< ±0.2 % full scale / K
Response time	< 2 ms, type 1 ms
Medium temperature	-40135 °C
Ambient temperature	-3085 °C
Overpressure safety	3 -fold full scale value
Fitting position	Any
Connection	G1/2 A, G1/4 A, 1/4-18 NPT
Degree of protection	IP67 (with DIN EN 175301-803, IP65)
Electrical data	
Output / supply	420 mA, 733 VDC; 2-wire
	05 V, 733 VDC; 3-wire
	010 V, 1233 VDC; 3-wire
Connection	Plug M12 x 1
	Angle plug DIN EN 175301-803 A
	Angle plug DIN EN 175301-803 C (Mini DIN)
Burden	2-wire: < (U <sub>b</sub> -7 V) / 0.02 A
	3-wire: > 10 kΩ / < 100 nF
Material	
Housing	Stainless steel 1.4404
Sealing	FKM (metric thread only)
Connection	Stainless steel 1.4404







Order example	DSH 1	1	1	Н	1	1	545
Pressure type							
Relative	1	1					
Sealing material							
Without		0					
FKM special profile gasket (fluorine elastomer)		1					
Output							
420 mA			1				
05 V			2				
010 V			3				
Sealing							
Back sealed				Н			
Front sealed (only G1/4 A)				V			
Process connection							
G1/4 A					1		
G1⁄2 A					2		
1/4 - 18 NPT					3		
Electrical connection							
Plug M12 x 1						1	
Angle plug DIN EN 175301-803 A						2	
Angle plug DIN EN 175301-803 C (Mini DIN)						3	
Measuring range [bar]							
-19							545
02.5							045
04							055
06							065
010							075
016							085
025							095
040							105
060							115
0100							125
0160							135
0250							145
0400							155
0600							165
Accessories							
Cable socket DIN EN 175301-803 A incl. seal		SME81	75301-80	3A0			



## DSA / DSP for pressure ranges 0...16 bar (absolute) / 0...600 bar (relative)

Series DSA / DSP pressure transmitters are used to measure relative pressure, overpressure or absolute pressure.

High-quality stainless steel and front-flush diaphragm also allow these transmitters to be used in viscous or contaminated media.

### **Technical features**

- High linearity 0.25 % of full scale value
- Good reproducibility
- Inside, front or front-flush diaphragm
- 3-fold overpressure-safe (max. bursting pressure)
- Robust design

### Pressure range

- 0...16 bar (absolute)
- 0...600 bar (relative)

### Temperature range

- 0...70 °C
- -25...100 °C (optional)

### Media

Liquids and gases

### **Electrial connection**

Angle plug DIN EN 175301-803 A (Delivery without cable socket)



Technical data	
General	
Accuracy, linearity, hysteresis	≤ ±0.25 % full scale
Temperature influence	
<pre>070 °C (typical / max.)</pre>	<pre>&lt; 1.0 % / 1.5 % full scale &lt; 0.7 % / 1.0 % full scale &lt; 0.7 % / 1.0 % full scale &lt; 0.7 % / 1.0 % full scale &lt; 2.0 % / 2.5 % full scale &lt; 1.0 % / 1.5 % full scale </pre>
Response time	< 1 ms / 1090 % full scale
Medium temperature	070 °C -25100 °C
Ambient temperature	-40100 °C
Overpressure safety	3-fold (min. 3 bar, max. burst pressure)
Connection	G¼ A, G½ A, DIN and flange
Degree of protection	IP65
Electrical data	
Output / supply	420 mA, 933 VDC; 2-wire 05 V, 1233 VDC; 3-wire 010 V, 1233 VDC; 3-wire
Connection	Angle plug, DIN EN 175301-803 A
Burden	2-wire: (U <sub>b</sub> -9 V) / 0.02 A 3-wire: > 10 kΩ
Material	
Housing	Stainless steel 1.4435
Sealing	FKM (Fluro-elastomer)
Connection	Stainless steel 1.4435





Order example	[	DS	A2	4	1	Α	1H	126	
Pressure type									
Absolute			A2						
Relative			P3						
Accuracy									
0.25 % FS				4					
Output	Power supply								
420 mA; 2-wire	1133 VDC				1				
010 V; 3-wire	1230 VDC				2				
05 V; 3-wire	1230 VDC				3				
Diaphragm									
Inside						А			
Front (G½ A only)						V			
Process connection									
G¼ A (Stainless steel 1.4435	)						1H		
G1⁄2 A (Stainless steel 1.4435	)						ЗH		
Measuring range [bar]									
00.1								126	
00.16								136	
00.25								146	
00.4								156	
00.6								015	
01								025	
01.6								035	
02.5								045	
04								055	
06								065	
010								075	
016								085	
025	(relative pressure only)							095	
040	(relative pressure only)							105	
060	(relative pressure only)							115	
0100	(relative pressure only)							125	
0160	(relative pressure only)							135	
0250	(relative pressure only)							145	
0400	(relative pressure only)							155	
0600	(relative pressure only)							165	
Medium temperature									
070 °C									0
-25100 °C									Н
Accessories									

Cable socket DIN EN 175301-803 A incl. seal

SME8175301-803A0

# **Differencial pressure**

### DDS for prassure ranges 0...25 bar

The structure of the difference pressure transmitter type DDS is based upon a new ceramic technology and is remarkable of a high temperature resistance and a special longterm stability.

The output signal is the measured pressure difference between the two pressure connections.

### **Technical features**

- High temperature resistance
- No mechanical ageing
- Very low temperature sensitivity
- Protected against polarity change and short-circuit strength
- Very good price / performance ratio

### Pressure range

0...25 bar

### Temperature range

-15...85 °C

### Media

Liquids and gases

### **Electrical connection**

- Angle plug DIN EN 175301-803 A (Delivery without cable socket)
- Cable 1.5 m





Technical data	
General	
Accuracy, linearity, hysteresis	< 0.5 % full scale
Temperature influence	< 0.06 % full scale
Response time	< 5 ms
Medium temperature	-1580 °C
Overpressure safety	Max. 2-folded pressure range
Connection	Nozzle
	Screwed pipe joint
Degree of protection	IP65, with cable socket IP67
Static pressure	Max. 25 bar
Electrical data	
Output / supply	420 mA, 1133 VDC; 2-wire
	010 V, 1833 VDC; 3-wire
	05 V, 1133 VDC; 3-wire
Connection	Angle plug, DIN EN 175301-803 A
	1.5 m cable with PG screwing
Burden	2-wire: (U <sub>b</sub> -11 V) / 0.02 A
	3-wire: >10 kΩ
Material	
Housing	Stainless steel 1.4305
Sealing	FKM, EPDM, NBR, MVQ
Connection	Stainless steel 1.4305



Order example		DDS	33	1	H1	1	110
Sealing material							
FKM (fluro-elastomer)			33	]			
EPDM (ethylene butadiene)			53				
MVQ (silicone polymer)			63				
NBR (nitrile butadiene)			43				
CR (chloropren-butadiene)			73				
Output							
420 mA	2-wire			1			
010 V	3-wire			2			
05 V	3-wire			3			
Process connection							
Tube connection	CuZn, 6 mm				H1		
Screwed pipe joint	1.4305, 6 mm				H3		
	1.4305, 8 mm				H4		
Electrical connection							
Angle plug, DIN EN 175301-8	03 A					1	
Cable 1.5 m with PG screwing	]					2	
Measuring range [bar]							
00.1							110
00.2							120
00.25							125
00.3							130
00.4							140
00.5							150
00.6							160
01							200
01.6							216
02.5							225
04							240
06							260
010							300
016							316
025							325
Accessories							
Bracket					SME8DI	DSWINKEL	000
Cable socket DIN EN 175301-	803 A incl. seal				SME817	75301-803A	0
Screwed pipe joint 1.4305 - 6	mm				SME8R	OHRVER6M	M00
Screwed pipe joint 1.4305 - 8	mm				SME8R0	OHRVER8M	M00



# Level measurement

### DSN/DSL for pressure ranges 0..16 bar (relative)

The series DSN / DSL pressure measuring transmitters are mainly used to measure liquid levels.

In the level detector design the rear side of the diaphragm is connected to the surrounding air pressure via a compensating line.

In the long design (series DSL) the level sensors can also be used in troubled media or in media of high viscosity.

### **Technical features**

- High measurement accuracy
- 3-fold overpressure-safe
- Mechanically protected diaphragm
- 100 % leak-proof, fully welded
- Very good price / performance ratio

### Pressure range

0...16 bar (relative)

### Temperature range

- -5...50 °C
- -5...80 °C (optional)

### Media

Liquids

### **Electrical connection**

Cable



Technical data	
General	
Accuracy, linearity	≤ ±0.25 % full scale
Temperature influence	
-550 °C (typical / max.) → 15 bar → 520 bar	< 1 % / 1.5 % full scale < 0.7 % / 1 % full scale
-580 °C (typical / max.) → 15 bar → 520 bar	≤ 2 % / 2.5 % full scale ≤ 1 % / 1.5 % full scale
Response time	< 1 ms / 1090 % full scale
Medium temperature	-550 °C (-580 °C on request)
Overpressure safety	3-fold full scale value (min. 3 bar, max bursting pressure)
Degree of protection	IP68
Electrical data	
Output / supply	420 mA, 933 VDC; 2-wire 05 V, 1230 VDC; 3-wire 010 V, 1230 VDC; 3-wire
Connection	Cable with air pressure compensating tube
Burden	2-wire: < (U <sub>b</sub> -9 V) / 0.02 A 3-wire: < 10 kΩ
Material	
Housing	Stainless steel 1.4404
Sealing	FKM (fluro-elastomer), EPDM
Cabel	PUR, FEP* or PE*

\* On request





Order example	DS	Ν	24	100K	126	010
Construction						
Short		Ν				
Long		L				
Accuracy						
0.25 %			24			
Output						
420 mA				100K		
010 V				200K		
05 V				300K		
Measuring range [bar]						
00.1					126	
00.16					136	
00.25					146	
00.4					156	
00.6					015	
01					025	
01.6					035	
02.5					045	
04					055	
06					065	
010					075	
016					085	
Cable length						

P. e. 10 m cable PUR

XXX

### DSU / DSV for pressure ranges 2...6000 mbar / -900...-4 mbar

Series DSU / DSV vacuum and pressure switches are used for surveillance of liquids and gas in industrial applications.

The robust mechanics guarantees a highly operation safety, even in case of vibrations.

The units posses a highly long-term stability of the adjusted switch points.

They are especially remarkable of a standard program with many different versions and an ideal cost effectiveness.

### **Technical features**

- High operation safety because of robust mechanics
- Switching difference adjustable
- Changeable as contact
- Maximum overpressure 1.5-fold operating pressure

#### **Pressure range**

- 2...6000 mbar (DSU 625)
- -900...-4 mbar (DSV 625)

### Temperature range

-40...80 °C

**Media** Liquids and gases

**Electrial connection** 

AMP plug pins

### Type DSU / DSV 625





Technical data				
General				
Smallest cutting-in pressure	2 mbar			
Smallest switching difference	1 mbar			
Reproducibility				
→ Sealing NBR or silicon	5 %			
$\rightarrow$ Sealing FPM and EPDM	10 %			
Medium temperature				
→ Sealing NBR	080 °C			
$\rightarrow$ Sealing FPM and EPDM	-1080 °C			
→ Sealing silicon	-4080 °C			
Connection	Thread: G¼ A, G¼ A, M12 x 1			
Degree of protection	IP54 with covering hood, IP00 without covering hood			
Electrical data				
Connections	AMP plug 6.3 mm			
Contact system	Switch 250 DAC 1 A or 6 A			
Cable screw	Screwing PG 9			

Type DSU / DSV







Х	L
G1⁄4	16
G1⁄/8	16
M12 x 1	14

Order example		DSU 625	1 1H	008
Sealing material				
NBR	nitrile butadiene		1	
FPM	fluro-elastomer		2	
EPDM	ethylene butadiene		3	
MVQ	silicone polymer		4	
Connection				
G1/8 A	Aluminium		1H	
M12 x 1	Aluminium		2H	
G1⁄4 A	Aluminium		ЗH	
G1/4 A	Brass		4H	
Measuring range pressure	Max. operation pressure	Contact rating 250 V		
28 mbar	50 mbar	1 A		008
675 mbar	500 mbar	1 A		075
1280 mbar	500 mbar	6 A		080
12200 mbar	500 mbar	1 A		200
25220 mbar	500 mbar	6 A		220
802000 mbar	10000 mbar	1 A		020
1202200 mbar	10000 mbar	6 A		022
10006000 mbar	10000 mbar	6 A		060
Accessories				
Covering hood made of plastic		DSU 620625000		

Order example		DSV 625	1	1H	030
Sealing material					
NBR	nitrile butadiene		1	]	
FPM	fluro-elastomer		2		
EPDM	ethylene butadiene		3		
MVQ	silicone polymer		4		
Connection					
G1/8 A	Aluminium			1H	
M12 x 1	Aluminium			2H	
G1⁄4 A	Aluminium			ЗH	
G1⁄4 A	Brass			4H	
Measuring range vacuum	Max. operation pressure	Contact rating 250 V			
-304 mbar	100 mbar	1 A			030
-8015 mbar	500 mbar	6 A			080
-15030 mbar	500 mbar	6 A			150
-60050 mbar	10000 mbar	6 A			600
-900100 mbar	10000 mbar	6 A			900
Accessories					
Covering hood made of plastic		DSU 620625000			

