

Compact pressure sensor

with dry capacitive measurement membrane,
polysilicon measurement membrane or with special pressure mediator

Precont S10/S20/S40/S60/S70 

Precont D40

BA0803

Installation and operating instructions

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- + Accuracy relative / absolute pressure measurement
- + Up to 80 times overload resistance
- + Pressure measurement up to 400 bar
- + Medium temperatures from -40°C up to $+370^{\circ}\text{C}$
- + insensitive at high air humidity and sweat water formation
- + Connection housing in steel or plastic with plug M12x1 or mounted cable
- + Electronic rotatable by 330 degree
- + Integrated digital 4...20mA 2-wire-electronic or 0...10V 3-wire-electronic
- + Four-digit, very high brightness LED display
- + Two free programmable PNP-switching outputs, e.g. for use as two-position-controller
- + Fast sensor adjustment by key combinations or menu controlled adjustment by LED display
- + Password protection
- + Adjustment by customer specification



Application:

The devices **Precont S / D40** with integrated digital evaluation electronic are compact sensors for measuring and monitoring of pressures in liquids, gases and steams. The use of an optional capacitive ceramic or a polysilicon measurement sensor or the optional choice of different pressure mediators allow the use in all fields of the industrial environment.

Because of the special construction of the device **Precont D40**, this sensor is especially suitable for the use in areas with high air humidity and sweat water formation, where conventional devices can not be used or can only be used by applying an expensive leaded pressure compensation capillary.

Function:

The pressure measurement system **Precont S / D40** is built in the wall of the medium container or in the pipe wall.

Measurement principle of the dry capacitive ceramic membrane – Precont S10 / S40 / D40

The system pressure is applied directly the ceramic membrane of the sensor without using a pressure mediator liquid and causes there a deflection of the membrane. At the maximum deflection the membrane contacts a robust ceramic carrier and because of this, the membrane come through over pressure of up to 40-times of nominal load without damage.

The capacitive ceramic measurement system offers excellent characteristics like highest strength against pressure and pressure blows, high resistance against chemicals and corrosion, very good insensitiveness against temperature shocks and EM interference, highest accuracy and long term stability and also low influence of temperature.

Measurement principle of the polysilicon membrane – Precont S20

The system pressure is applied to the metal membrane of the sensor and is transferred to the polysilicon sensor behind by using silicon oil as pressure mediator.

The polysilicon measurement system offers highest pressure ranges, good reproducibility and hysteresis, an over load resistance of up to 4-times of the nominal pressure, an adjustable mechanical damping and a good long term stability.

Measurement principle of the special pressure mediator – Precont S60 and Precont S70

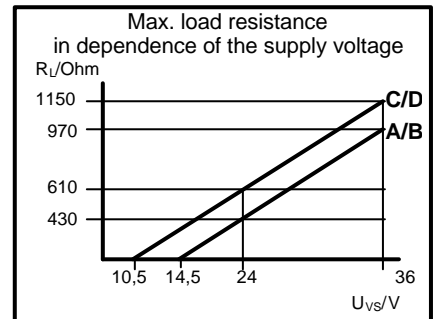
The system pressure is applied to the metal membrane of the pressure mediator and is transferred to the ceramic or metal membrane of the respective measurement membrane behind by using vegetable, silicon or high temperature oil. This leads to an fundamentally expansion of the permitted medium temperature range up to $-40...+370^{\circ}\text{C}$.

The pressure proportional signal of the respective measurement membrane is recorded from a processor with high resolution adjusted according to the settings and converted in high resolution output signal of 4...20mA or 0...10V. By using 3 keys and a LED display the sensor measurement range, the display, the PNP-switching outputs and the damping can be adjusted or the behaviour in the case of failure and the release of the fast adjustment can be set. The switching state of the two PNP-switching output is signalled by one LED for every output.

Compact pressure sensor Precont S10/S20/S40/S60/S70 with dry capacitive measurement membrane, Precont D40 polysilicon measurement membrane or with special pressure mediator

Electrical data:

Output variants A/B/C/D:	4...20mA → linear from 3,9...21 mA or in case of transgression step to 3,8 mA or 22 mA permitted load	$R_{L \max} = (V_{S \text{ actual}} - V_{S \text{ min}}) / 22\text{mA}$ → see scheme
Output variants E/F/G/H:	0...10 V → linear from 0 V...10,5 V or in case of transgression step to 0 V or 11,25 V permitted load	≥ 2000 Ω at 10 V, equals 5 mA, current limited
Permitted supply voltage:	variants C/D:	10,5 V (12,5V for Precont D40) to 45 V DC
	variants A/B/E/F/G/H:	14,5 V (16,5V for Precont D40) to 45 V DC
Ripple voltage:	≤ 2 V _{ss} (condition: within the permitted supply voltage range)	
Temperature deviation:	≤ 0,1% / 10 K	of nominal measurement range → ceramic membrane
	≤ 0,2% / 10 K	of nominal measurement range → Precont D40
	If the adapter housing is kept at constant environmental air temperature, the max. temperature deviation is reduced to: ≤ 0,1% / 10 K of nominal measurement range	
Characteristic deviation:	≤ 0,5% / 10 K	of nominal measurement range → polysilicon membrane
	≤ 0,1% / 0,2%	of nominal measurement range → ceramic membrane (see order code)
	≤ 0,5%	of nominal measurement range → polysilicon membrane
Calibration deviation:	≤ 0,05%	of nominal measurement range or
	≤ +0,5%	of nominal measurement range zero deviation at output 0...10 V
Long term deviation:	≤ 0,1% / year	of nominal measurement range
Influence of supply voltage:	≤ 0,02% / 10V	of nominal measurement range
Resolution:	better than 1 μA or 0,5 mV (16 bit = 65536 steps)	
Adjustment measurement range:	free adjustable within the nominal range	
Delay time analogue output:	at damping 1 T90 typ. 260 ms, max. 310ms	
Adjustment range damping:	0,3...30 seconds / 100 steps	
EMC specifications:	EN 61326 industrial environment, class A	

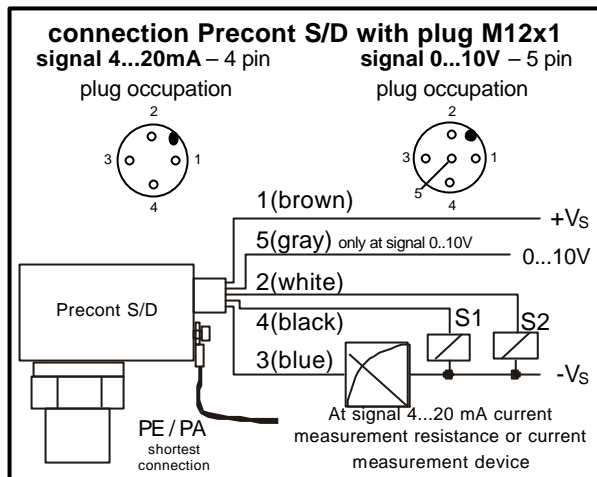


Switching outputs (S1 / S2):

Output current: ≥ 200 mA, current limited, short circuit protected
 Rising time < 700 μs with R_L < 3 kΩ or I_L > 4,5 mA
 Delay time: at damping 1 typ. 280 ms, max. 330ms

Mechanical data:

Protection:	IP67	
Material S10 / S40 / D40	membrane → AL ₂ O ₃ 96% or 99,9%	process connection → steel 1.4404
Material S20	membrane → steel 1.4435	screw tread → steel 1.4301
Material S60 / S70	membrane → steel 1.4404	process connection → steel 1.4301
Material adapter housing:	polybutylenterephthalat PBT / steel 1. 4301	
Seals S10 / S40 / D40:	viton / EPDM / neoprene / perfluorelastomere	
Permitted filling temperature:	standard (excepted S20) → -20°C...+90°C	S20 → -25°C...+70°C
	S10/S40/D40 with partition piece → -40°C...+125°C	
	S60 with decoupling → 0°C...+140°C	
	S70 with decoupling B → -40°C...+140°C	
	S70 with decoupling C → -20°C...+250°C	
	S70 with capillary tube → -40°C...+370°C	
mediator filling medium	S20 silicon oil	
	S60 vegetable oil	
	S70 silicon oil or high temperature oil	
Operation / storage temperature:	-20°C...+85°C	





Assembly, electrical installation and inauguration, maintenance:

Assembly, electrical installation, inauguration, operation and maintenance of the device must be carried out by an qualified employee. The electrical installation of the device must be carried out according to the respective country specific standards. An incorrect assembly or adjustment could cause applicationally conditioned risks.

The device is maintenance free.

The voltage applied to the clamps may not exceed 50 V to avoid damage of the electronic.

All connections are polarity protected.

Use only shielded signal and measurement wires and install these wires separated from power leading wires.

Connect the shield only at one side to earth, ideally at the installation place of the device

The earth connection of the cable shield is carried out by the socket of the plug.

The metallic parts of the device are electrically connected with the earth connection clamping screw. This includes also the socket of the plug M12x1. The earth connection clamping screw has to be earthen by regulation.

The materials for housing, process connection, seals and cables must be selected corresponding to the respective operating conditions (medium, temperature). An unsuitable material can cause damage, abnormal behaviour or destruction of the device and from that it can lead to resulting danger.

If inductive loads, e.g. relays or contractors are connected to the PNP output, an RC protection circuit must be used to avoid high voltage peaks, because they could influence the properly function of the device. Overhigh switch-on current peaks e.g. at high capacitacs or at electric light bulbs can lead to a failure behaviour of the switching outputs of that kind, that they didn't switch on and the over current protection permanently switches off the output. This over current must be limited at the maximal allowed current of 200mA by using a suitable resistor.

The adapter housing of the device Precont D40 should ideally be kept at constant temperature to minimise the temperature influence.

The device meets the legal requirements of the EC-guidelines 0032



Safety notes:

If a device is installed and operated in a hazardous area, the general Ex construction standards (EN60079-14, VDE0165), this safety notes and the enclosed EC conformity certificate must be observed.

The assembly of an Ex system must be carried out principally by specialist staff.

The devices meets **II 1/2 G EEx ia IIC T4 or II 2 G EEx ib IIC T4 with Ta ≤ +85°C**

The devices are conceived for measurement of filling levels in hazardous areas.

The measured medium may also be combustible liquids, gases, fogs or steams.

The permitted operating temperatures and pressures are type and variant dependent and can be found in this technical documentation.

The permitted highest values for U_i , I_i and P_i are equal for all variants. It must be paid especially attention on it in the case of combination of more intrinsically safe circuits at variants with voltage output 0...10V (variants E/F/G/H) and at variants with PNP-switching outputs (variants A/E).

The rules for combination of intrinsically safe circuits are valid.

At versions of the devices with chargeable plastic parts (e.g. adapter housing, cable), a warning marking points out to the safety measures, that must be applied because of the electrostatic charging in operation mode and especially in the case of maintenance activities.

avoid friction

no dry cleaning

no assembling in pneumatic conveying stream

Fast adjustment by key combination

Zero adjustment with existing pressure signal:

Press the keys **OK** and **▶** in succession and keep it for 3 sec. → 4mA / 0V are supplied. This value can be adjusted by using the keys **±** or **▶** and **±**.

Pressing the key **OK** will take over the existing pressure signal as lower pressure value, assign it with the before adjusted output signal and store it protected against loss (duration approx. 3 s). After that the device will automatically return to measurement mode.

Span adjustment with existing pressure signal:

Press the keys **OK** and **±** in succession and keep it for 3 sec. → 20mA /10V are supplied. This value can be adjusted by using the keys **±** or **▶** and **±**.

Pressing the key **OK** will take over the existing pressure signal as upper pressure value, assign it with the before adjusted output signal and store it protected against loss (duration approx. 3 s). After that the device will automatically return to measurement mode.

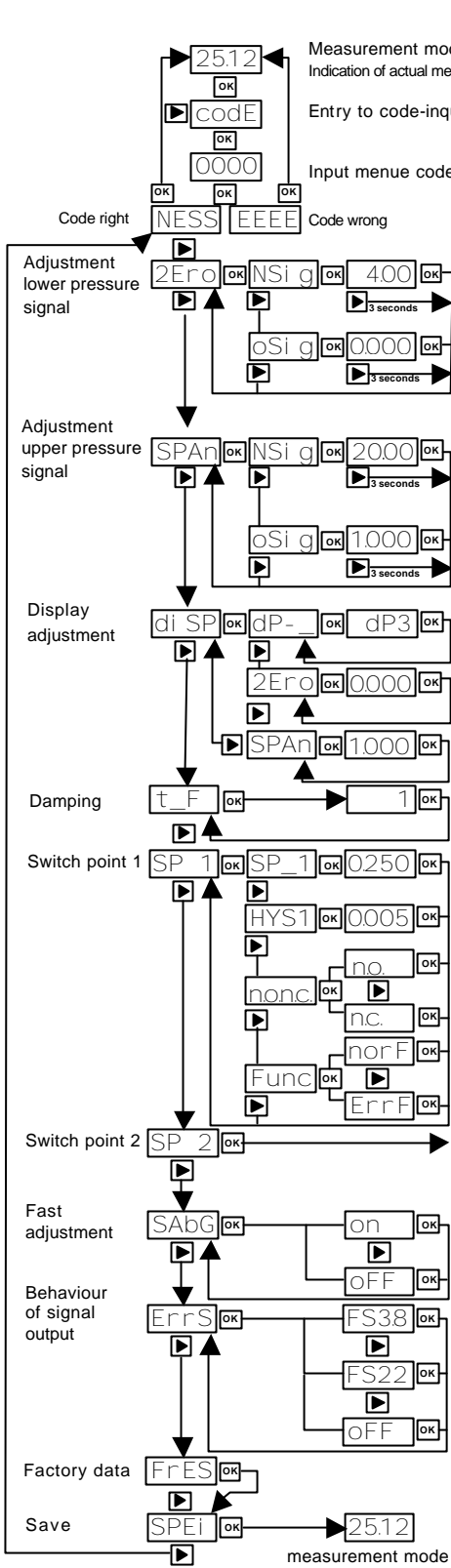
Adjustment damping:

Press the keys **▶** and **±** in succession and keep it for 3 sec. → damping value can now be adjusted. The actual value can be adjusted by using the keys **±** or **▶** and **±** arbitrary in the range of 0,3 to 30 seconds in 3 seconds steps. Pressing the key **OK** will take over the value and store it protected against loss (duration approx. 3 s). After that the device will automatically return to measurement mode.

Reset to factory values:

In a device of the variant C / G a reset to the factory values will be carried out by pressing the key **OK** for 5 seconds while the device is forced to a restart after removing the supply voltage. All customer specific adjustment values will be lost.

Attention: If the lower pressure value (Zero) is adjusted higher than the upper pressure value (span), the signal output falls **below** 3,8 mA or 0V and at the display the value **EEEE** appears until the key **OK** is pressed → A new correct adjustment (zero < span) must be carried out again.



- OK Enter the respective Menu and taking over the adjusted values
- Jump from menu to menu / changing the direction of the „+/-“ key / changing between the different possibilities in selection menu
- Change the indicated values. The longer the key will be pressed, the faster the value will increase or decrease. Function direction (greater or smaller) can be changed by the key **▶**. Pressing this key in the measurement mode will display the software version

Adjustment of lower pressure signal with applied signal (liquid adjustment)

Apply lower pressure signal and adjust the displayed value (= supplied current mA or voltage V) with + or - to the value that should be assigned to this pressure value. Take over with **OK** / interrupt by pressing **▶** for 3 seconds. At the signal 0...10V the value of 4.00 equals a voltage of 0V and a value of 20.00 equals a voltage of 10V

Adjustment of zero signal without applied signal (dry adjustment)

adjust lower pressure signal, referring to the nominal sensor pressure, with + or - to the value that should be assigned to the output current of 4,00 mA or voltage 0V. Take over with **OK** / interrupt by pressing **▶** for 3 seconds.

Adjustment of upper pressure signal with applied signal (liquid adjustment)

Apply upper pressure signal and adjust the displayed value (= supplied current mA or voltage V) with + or - to the value that should be assigned to this pressure value. Take over with **OK** / interrupt by pressing **▶** for 3 seconds. At the signal 0...10V the value of 4.00 equals a voltage of 0V and a value of 20.00 equals a voltage of 10V

Adjustment of span signal without applied signal (dry adjustment)

adjust upper pressure signal, referring to the nominal sensor pressure, with + or - to the value that should be assigned to the output current of 20,00 mA or voltage 10V. Take over with **OK** / interrupt by pressing **▶** for 3 seconds.

Decimal places

setting dP0 display 8888 / setting dP1 display 8888
setting dP2 display 8888 / setting dP3 display 8888

Zero scaling

indication value at 4 mA / 0 V output signal.
If the displayed value falls below -999, -EEE is displayed flashing.

Endpoint-scaling

indication value at 20 mA / 10 V output signal.
If the displayed value rises above ,9999, EEEE is displayed flashing.

damping

damping value from 1 to 100 / every 3 steps → approx. 1 seconds delay

Limit value switch point 1

indication value, where the PNP-switching output S1 will be activated.

Hysteresis switch point 1

switch point hysteresis of switch point S1 referring to the display value

Operating mode switch point 1

no = working principle → S1 is activated when rising above the limit value
nc = quiescent principle → S1 is activated when falling below the limit value

Function switch point 1

norF = limit value function
ErrF = error detection → S1 is activated when the output signal rises above 20mA/10V or falls below 4mA/0V

Switch point 2

This menu is identical to the menu switch point 1 with the exception that the submenu **Func** is not available.

Fast adjustment by key combination

enabling or limiting of zero and span adjust for adjustment with existing pressure signal and adjustment of damping by key combinations (see page 3)

Behaviour of the output signal when transgressing 4..20mA/0..10V range

FS38 = if the output signal falls below 4mA / 0V or rises above 20mA / 10V than the output signal will be set to 3,8mA or 0V.
FS22 = if the output signal falls below 4mA / 0V or rises above 20mA / 10V than the output signal will be set to 22mA or 11,25V.
oFF = the output works linear from 3,9mA / 0V to 21mA / 10,5V. These endpoints will be kept when the signal tries to rise above or fall below.

Factory-reset – read the factory values

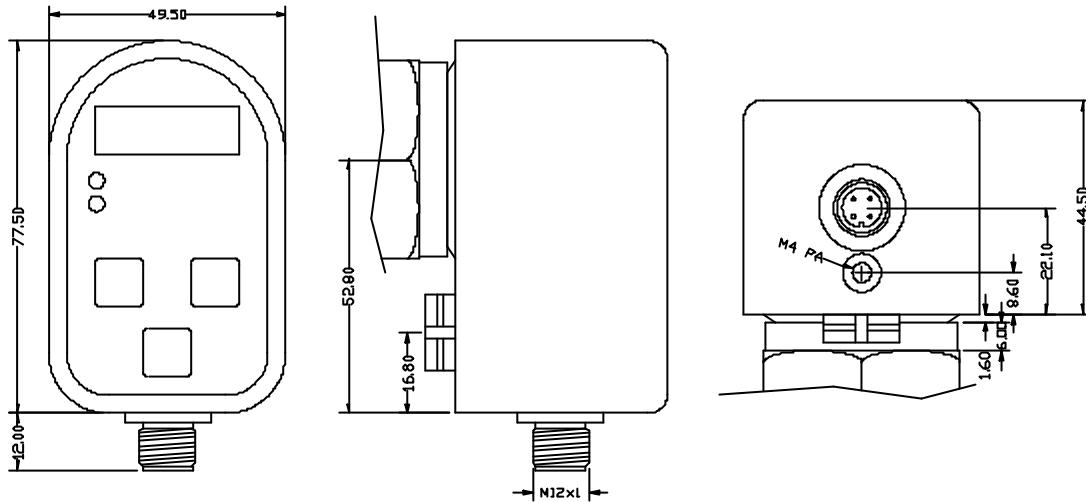
The device type over the actual values by the stored factory values, deleting the customer specific settings.

Save

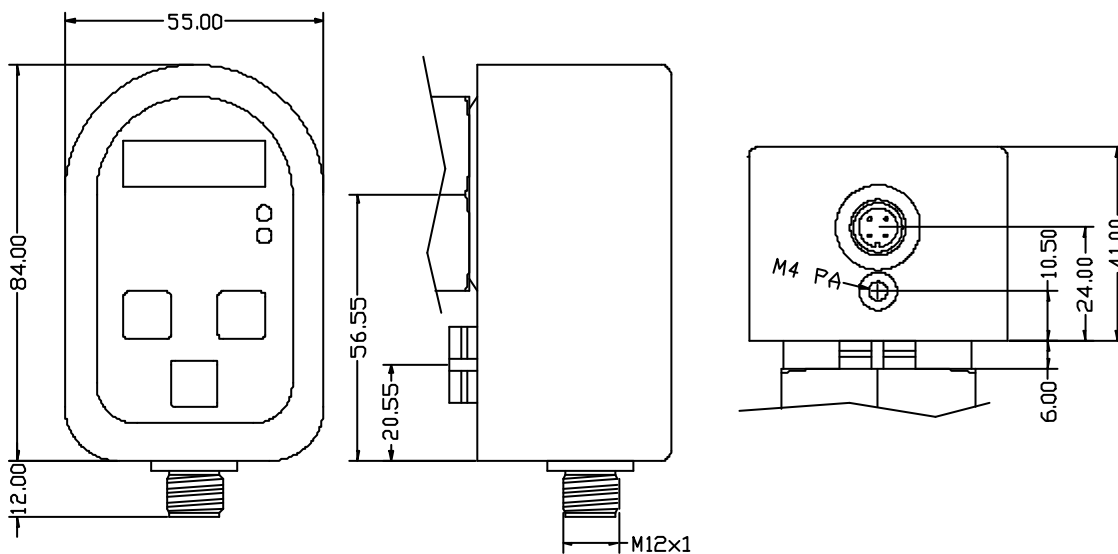
All data will be stored loss-free (duration 7 s).




adapter housing PBT with plug M12x1



adapter housing steel with plug M12x1



Compact pressure sensor
with dry capacitive measurement membrane,
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Precont S10/S20/S40/S60/S70 
Precont D40

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Installation and operating instructions

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Precont S10 Pressure sensor with inside lying, dry capacitive ceramic measurement membrane up to 60 bar
four digit LED display, 2 switching outputs, analogue output

certificate:

S10 without certificate
Ex S10 II 1/2 G EEx ia IIC T4 for Ex-Zone 0 appropriate ATEX100a

process connection:

0 G 1/2" A DIN 16288 form B
6 G 1/2" A with inside drilling 11,4mm
1 G 1/4" A

transmitter electronic:

A 4...20 mA 2-wire-electronic with display, 2 PNP switching outputs
B 4...20 mA 2-wire-electronic with display
C 4...20 mA 2-wire-electronic without display, adjustment by keys
D 4...20 mA 2-wire-electronic fix adjusted, without display
E 0...10 V 3-wire-electronic with display, 2 PNP switching outputs
F 0...10 V 3-wire-electronic with display
G 0...10 V 3-wire-electronic without display, adjustment by keys
H 0...10 V 3-wire-electronic fix adjusted, without display

material process connection:

V steel 1.4404

material adapter housing:

A PBT (polybutylenterephthalat)
C steel 1.4301

pressure measurement range:

01 0...100 mbar (max. -0,3/+4 bar)	10 0...10 bar (max. 40 bar)
02 0...200 mbar (max. 5 bar)	11 0...16 bar (max. 40 bar)
03 0...400 mbar (max. 5 bar)	12 0...20 bar (max. 40 bar)
04 0...600 mbar (max. 10 bar)	13 0...40 bar (max. 60 bar)
05 0...1 bar (max. 10 bar)	14 0...60 bar (max. 90 bar)
06 0...1,6 bar (max. 15 bar)	15 -100 ... 0 mbar (max. 4 bar)
07 0...2,5 bar (max. 25 bar)	16 -1...0 bar (max. 10 bar)
08 0...4 bar (max. 25 bar)	17 -1...1 bar (max. 15 bar)
09 0...6 bar (max. 40 bar)	18 -100...+100 mbar (max. 5 bar)
	YY special measurement range

seals:

1 viton
2 neoprene
3 EPDM (for food)
4 perfluorelastomere (kalrez)

process temperature:

0 standard -20°C to +90°C
1 with temperature partition piece -40°C to +125°C

pressure type:

R relative pressure
A absolute pressure

type measurement membrane:


2 ceramic AL₂O₃ 96%, accuracy 0,2%
1 ceramic AL₂O₃ 99,9% high clean, accuracy 0,2%
0 ceramic AL₂O₃ 96%, accuracy 0,1% with linearization certificate
3 ceramic AL₂O₃ 99,9% high clean, accuracy 0,1% with linearization certificate

sensor connection:

S plug M 12x1
K cable 2 m

Precont V

Compact pressure sensor
with dry capacitive measurement membrane,
polysilicon measurement membrane or with special pressure mediator

Precont S10/S20/S40/S60/S70 
Precont D40

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Installation and operating instructions

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Precont S20 Pressure sensor with polysilicon measurement membrane up to 400 bar
four digit LED display, 2 switching outputs, analogue output

certificate:

S20 without certificate
Ex S20 II 1/2 G EEx ia IIC T4 for Ex-Zone 0 appropriate ATEX100a

process connection:

0 G 1/2" A DIN 16288 form B
2 G 1/2" A front flush DIN 3852 with metal seal
6 G 1/4" A DIN 16288 form B

transmitter electronic:

A 4...20 mA 2-wire-electronic with display, 2 PNP switching outputs
B 4...20 mA 2-wire-electronic with display
C 4...20 mA 2-wire-electronic without display, adjustment by keys
D 4...20 mA 2-wire-electronic fix adjusted, without display
E 0...10 V 3-wire-electronic with display, 2 PNP switching outputs
F 0...10 V 3-wire-electronic with display
G 0...10 V 3-wire-electronic without display, adjustment by keys
H 0...10 V 3-wire-electronic fix adjusted, without display

material process connection:

V steel 1.4435 or 1.4301

damping:

0 without damping
D implemented damping from 20 bar an higher

pressure measurement range:

08 0...4 bar (max. 16 bar)	14 0...60 bar (max. 240 bar)
09 0...6 bar (max. 24 bar)	19 0...100 bar (max. 400 bar)
10 0...10 bar (max. 40 bar)	20 0...160 bar (max. 600 bar)
11 0...16 bar (max. 64 bar)	21 0...250 bar (max. 600 bar)
12 0...25 bar (max. 100 bar)	22 0...320 bar (max. 600 bar)
13 0...40 bar (max. 160 bar)	23 0...400 bar (max. 600 bar)
	YY special measurement range

material adapter housing:

A PBT (polybutylenterephthalat)
C steel 1.4301

0

pressure type:

R relative pressure
A absolute pressure

type measurement membrane:

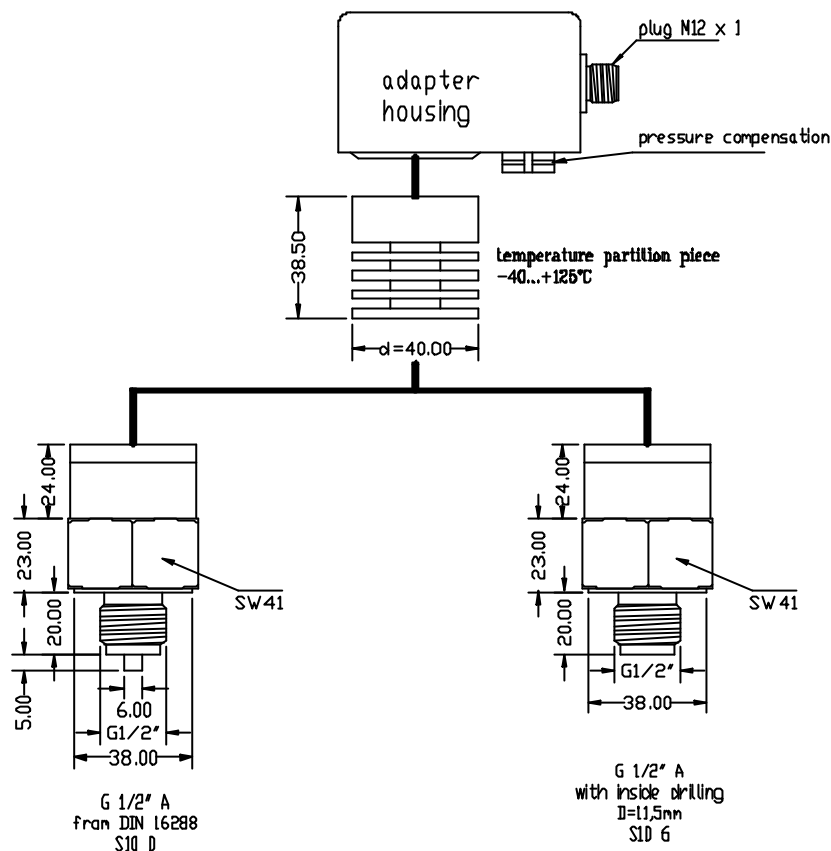
4 polysilicon membrane 0,5%

sensor connection:

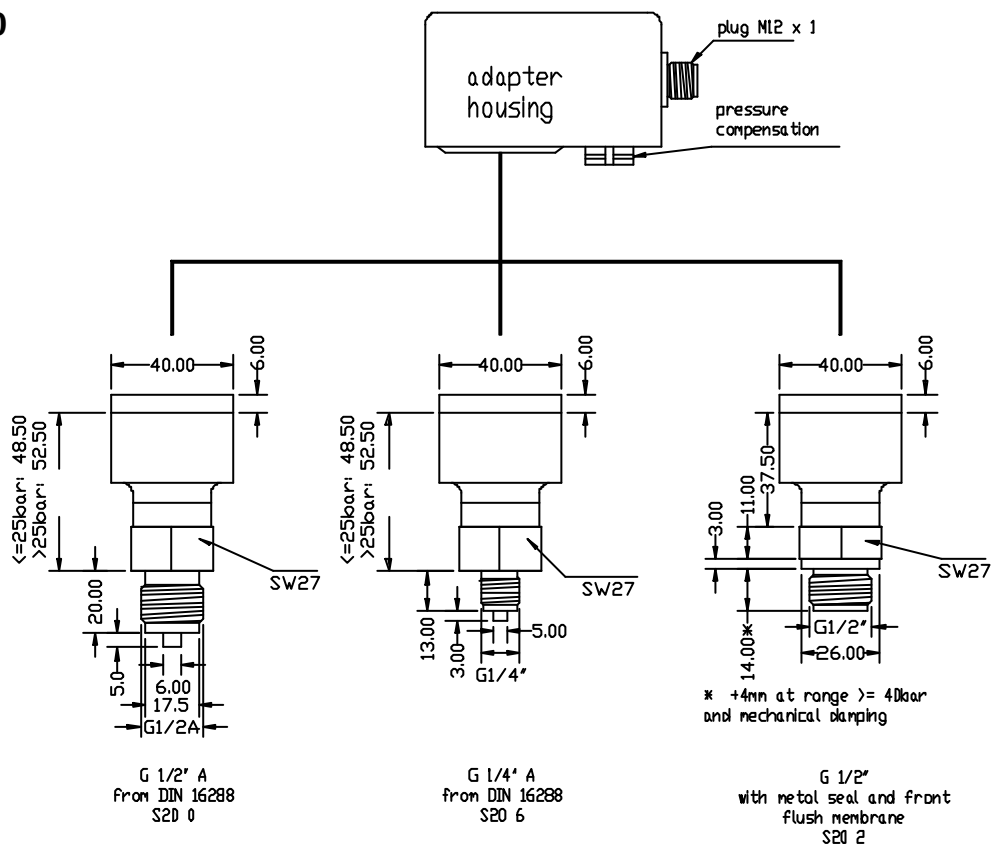
S plug M 12x1
K cable 2 m

Precont | _ | _ | V | _ | _ | 0 | _ | 4 | _

Precont S10



Precont S20



Compact pressure sensor
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Precont S10/S20/S40/S60/S70 

Precont D40

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Installation and operating instructions

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Precont S40 Pressure sensor with front flush, dry capacitive ceramic measurement membrane up to 60 bar
four digit LED display, 2 switching outputs, analogue output

certificate:

S40 without certificate
Ex S40 II 1/2 G EEx ia IIC T4 for Ex-Zone 0 appropriate ATEX100a

process connection:

7	G 1½"	front flush membrane	DIN16288	
8	G ¾"	front flush membrane	DIN16288	(up to 20 bar) for installation sleeve BEFV-34
R	milk tube	DN 25	DIN 11851	
N	milk tube	DN 40	DIN 11851	
M	milk tube	DN 50	DIN 11851	
P	varivent	diameter 68mm		
L	DRD flange	DN65		
T	tri-clamp 2"	ISO 2852		

transmitter electronic:

A	4...20 mA	2-wire-electronic	with display, 2 PNP switching outputs
B	4...20 mA	2-wire-electronic	with display
C	4...20 mA	2-wire-electronic	without display, adjustment by keys
D	4...20 mA	2-wire-electronic	fix adjusted, without display
E	0...10 V	3-wire-electronic	with display, 2 PNP switching outputs
F	0...10 V	3-wire-electronic	with display
G	0...10 V	3-wire-electronic	without display, adjustment by keys
H	0...10 V	3-wire-electronic	fix adjusted, without display

material process connection:

V steel 1.4404

material adapter housing:

A PBT (polybutylenterephthalat)
C steel 1.4301

pressure measurement range:

01	0...100 mbar	(max. -0,3/+4 bar)	10	0...10 bar	(max. 40 bar)
02	0...200 mbar	(max. 5 bar)	11	0...16 bar	(max. 40 bar)
03	0...400 mbar	(max. 5 bar)	12	0...20 bar	(max. 40 bar)
04	0...600 mbar	(max. 10 bar)	13	0...40 bar	(max. 60 bar)
05	0...1 bar	(max. 10 bar)	14	0...60 bar	(max. 90 bar)
06	0...1,6 bar	(max. 15 bar)	15	-100 ... 0 mbar	(max. 4 bar)
07	0...2,5 bar	(max. 25 bar)	16	-1...0 bar	(max. 10 bar)
08	0...4 bar	(max. 25 bar)	17	-1...1 bar	(max. 15 bar)
09	0...6 bar	(max. 40 bar)	18	-100...+100 mbar	(max. 5 bar)
			YY	special measurement range	

seals:

1 viton
2 neoprene
3 EPDM (for food)
4 perfluorelastomere (kalrez)

process temperature:

0 standard -20°C to +90°C
1 with temperature partition piece -40°C to +125°C

pressure type:

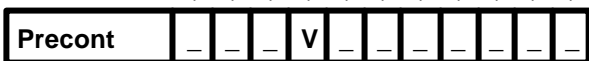
R relative pressure
A absolute pressure

type measurement membrane:


2 ceramic AL₂O₃ 96%, accuracy 0,2%
1 ceramic AL₂O₃ 99,9% high clean, accuracy 0,2%
0 ceramic AL₂O₃ 96%, accuracy 0,1% with linearization certificate
3 ceramic AL₂O₃ 99,9% high clean, accuracy 0,1% with linearization certificate

sensor connection:

S plug M 12x1
K cable 2 m



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Precont D40 Pressure sensor with front flush, dry capacitive ceramic measurement membrane up to 16 bar for the use in areas with high air humidity and sweat water formation
four digit LED display, 2 switching outputs, analogue output

certificate:

D40 without certificate

process connection:

7	G 1½"	front flush membrane	DIN16288
9	G ¾"	front flush membrane	DIN16288 (up to 20 bar)
R	milk tube	DN 25	DIN 11851
N	milk tube	DN 40	DIN 11851
M	milk tube	DN 50	DIN 11851
P	varivent	diameter 68mm	
L	DRD flange	DN65	

transmitter electronic:

A	4...20 mA	2-wire-electronic	with display, 2 PNP switching outputs
B	4...20 mA	2-wire-electronic	with display
C	4...20 mA	2-wire-electronic	without display, adjustment by keys
D	4...20 mA	2-wire-electronic	fix adjusted, without display
E	0...10 V	3-wire-electronic	with display, 2 PNP switching outputs
F	0...10 V	3-wire-electronic	with display
G	0...10 V	3-wire-electronic	without display, adjustment by keys
H	0...10 V	3-wire-electronic	fix adjusted, without display

material process connection:

V steel 1.4404

material adapter housing:

C steel 1.4301

pressure measurement range:

02	0...200 mbar	(max. 15 bar)	08	0...4 bar	(max. 40 bar)
03	0...400 mbar	(max. 15 bar)	09	0...6 bar	(max. 40 bar)
04	0...600 mbar	(max. 15 bar)	10	0...10 bar	(max. 40 bar)
05	0...1 bar	(max. 15 bar)	11	0...16 bar	(max. 40 bar)
06	0...1,6 bar	(max. 25 bar)	16	-1...0 bar	(max. 15 bar)
07	0...2,5 bar	(max. 25 bar)	YY	special measurement range	

seals:

1	viton
2	neoprene
3	EPDM (for food)
4	perfluorelastomere (kalrez)

process temperature:

1 with temperature partition piece -40°C to +125°C

pressure type:

R relative pressure

type measurement membrane:

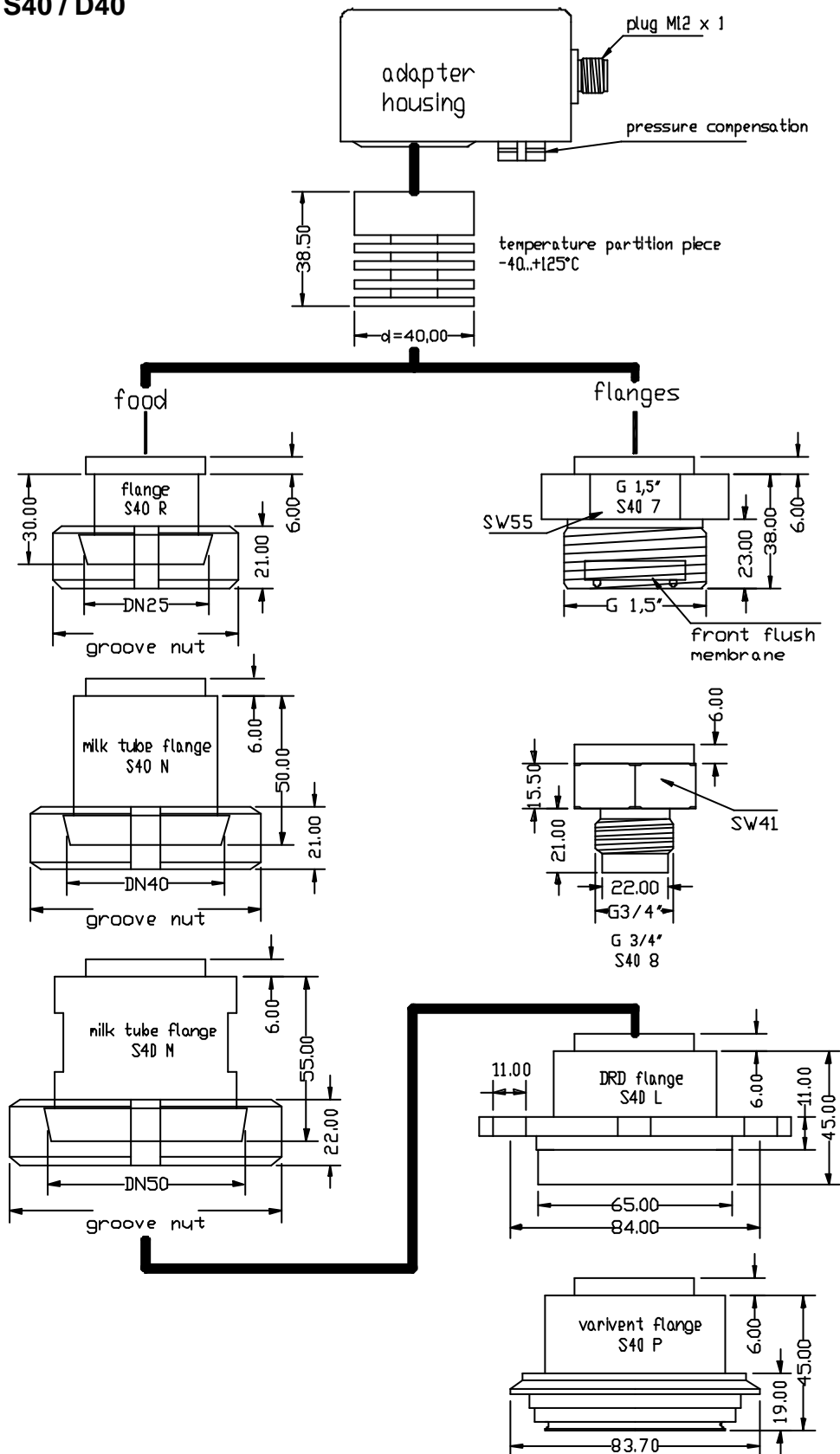
2	ceramic AL ₂ O ₃ 96%, accuracy 0,2%
1	ceramic AL ₂ O ₃ 99,9% high clean, accuracy 0,2%
0	ceramic AL ₂ O ₃ 96%, accuracy 0,1% with linearization certificate
3	ceramic AL ₂ O ₃ 99,9% high clean, accuracy 0,1% with linearization certificate

sensor connection:


S	plug M 12x1
K	cable 2 m

Precont D40 _ _ V C _ _ 1 R _ _

Precont S40 / D40



Compact pressure sensor
with dry capacitive measurement membrane,
polysilicon measurement membrane or with special pressure mediator

Precont S10/S20/S40/S60/S70 
Precont D40

BA0803

Installation and operating instructions

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Precont S60 Pressure sensor with special pressure mediator for hygienic applications up to temperatures of 140° e.g. for brewery, dairy, pharmaceutical industry etc. four digit LED display, 2 switching outputs, analogue output

certificate:

S60 without certificate
Ex S60 II 1/2 G EEx ia IIC T4 for Ex-Zone 0 appropriate ATEX100a (on inquiry)

Process connection:

M2 food tube screwing	DN25 PN40	DIN 11851
M4 food tube screwing	DN40 PN40	DIN 11851
M5 food tube screwing	DN50 PN40	DIN 11851
V1 varivent connection	diameter 68mm	
D1 DRD flange	DN65	
T1 tri-clamp 1"		ISO 2852
T2 tri-clamp 1½"		ISO 2852
T3 tri-clamp 2"		ISO 2852
S1 SMS screwing 1½"	PN40	
S2 SMS screwing 2"	PN40	

Temperature range:

D standard	-20°C to +90°C	vegetable oil filling
E with temperature decoupler	0°C to +140°C	vegetable oil filling

Transmitterelektronik:

A 4...20 mA	2-wire-electronic	with display, 2 PNP switching outputs
B 4...20 mA	2-wire-electronic	with display
C 4...20 mA	2-wire-electronic	without display, adjustment by keys
D 4...20 mA	2-wire-electronic	fix adjusted, without display
E 0...10 V	3-wire-electronic	with display, 2 PNP switching outputs
F 0...10 V	3-wire-electronic	with display
G 0...10 V	3-wire-electronic	without display, adjustment by keys
H 0...10 V	3-wire-electronic	fix adjusted, without display

Material process connection:

V steel 1.4404 material membrane

Material adapter housing:

A PBT (polybutylenterephthalat)
C steel 1.4301

Pressure measurement range:

01 0...100 mbar (max. -0,3/+4 bar)	13 0...40 bar (max. 60 bar)
02 0...200 mbar (max. 5 bar)	14 0...60 bar (max. 90 bar)
03 0...400 mbar (max. 5 bar)	15 -100 ... 0 mbar (max. 4 bar)
04 0...600 mbar (max. 10 bar)	16 -1...0 bar (max. 10 bar)
05 0...1 bar (max. 10 bar)	17 -1...1 bar (max. 15 bar)
06 0...1,6 bar (max. 15 bar)	18 -100...+100 mbar (max. 5 bar)
07 0...2,5 bar (max. 25 bar)	19 0...+100 bar (max. 400 bar)
08 0...4 bar (max. 25 bar)	20 0...+160 mbar (max. 600 bar)
09 0...6 bar (max. 40 bar)	21 0...+250 mbar (max. 600 bar)
10 0...10 bar (max. 40 bar)	22 0...+320 mbar (max. 600 bar)
11 0...16 bar (max. 40 bar)	23 0...+400 mbar (max. 600 bar)
12 0...20 bar (max. 40 bar)	YY special measurement range

pressure type:

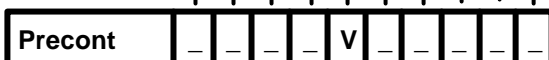
R relative pressure
A absolute pressure

type measurement membrane:

2 ceramic AL₂O₃ 96%, accuracy 0,2%
1 ceramic AL₂O₃ 99,9% high clean, accuracy 0,2%
4 polysilicon membrane 0,5% (from 60 bar)

sensor connection:

S plug M 12x1
K cable 2 m



Compact pressure sensor

with dry capacitive measurement membrane,

polysilicon measurement membrane or with special pressure mediator

Precont S10/S20/S40/S60/S70 

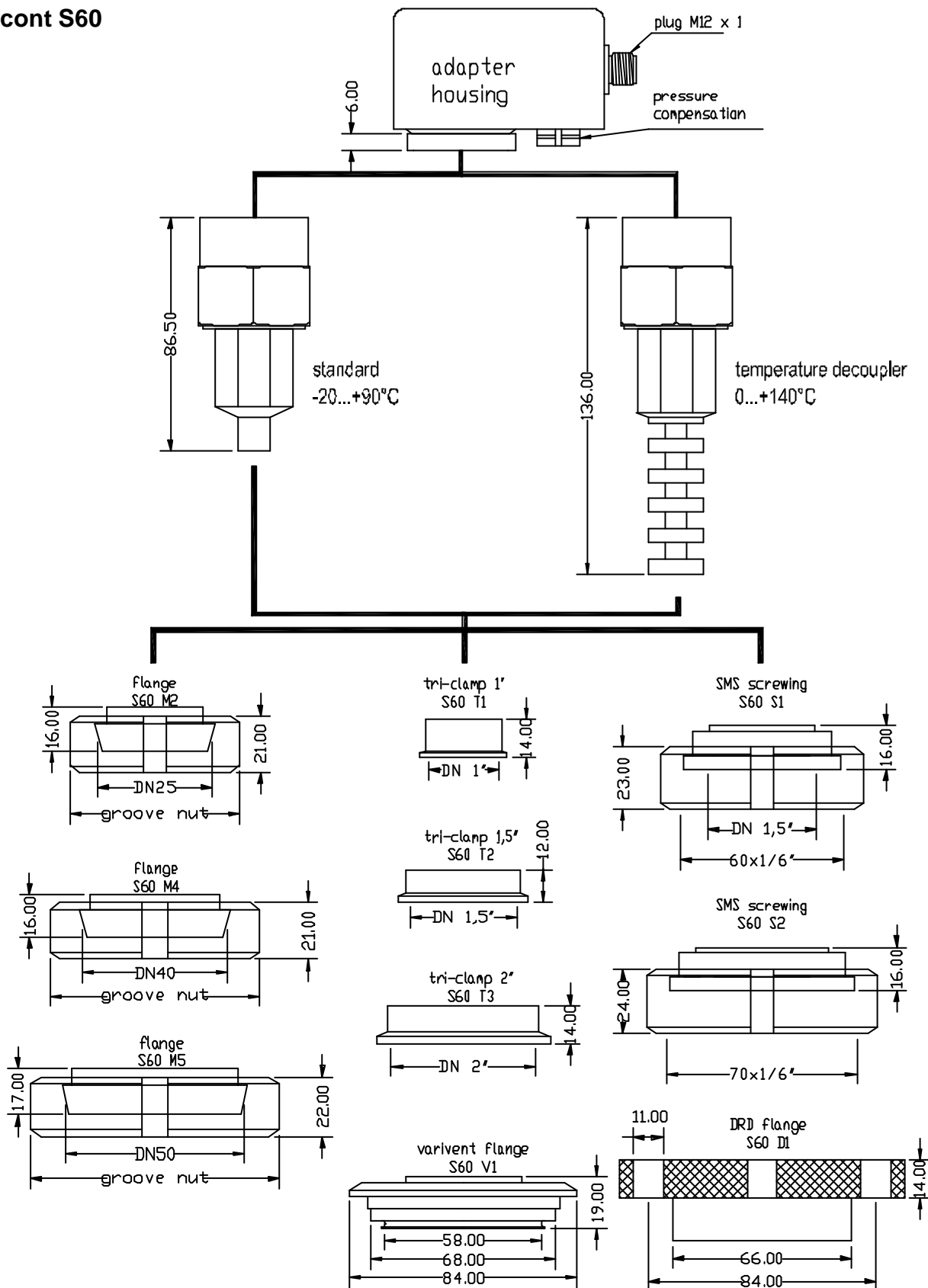
Precont D40

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Installation and operating instructions

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Precont S60



Precont S70 Pressure sensor with special pressure mediator for all ranges of process engineering with temperature applications from -40°C to +370°C

certificate:

S70 without certificate
Ex S70 II 1/2 G EEx ia IIC T4 for Ex-Zone 0 appropriate ATEX100a

Process connection:

G1 thread 1/2"		DIN 3852	
G2 thread 3/4" A		DIN 3852	
G3 thread 1"		DIN 3852	
G4 thread 1 1/2" A		DIN 3852	
G5 thread 2"		DIN 3852	
F1 DIN flange	DN25 PN64/100		
F3 DIN flange	DN50 PN64		
F5 DIN flange	DN80 PN10/40		
F6 DIN flange	DN100 PN10/16		
R1 tube pressure mediator	DN25 milk tube connection	DIN 11851	(Ex version on inquiry)
R3 tube pressure mediator	DN40 milk tube connection	DIN 11851	(Ex version on inquiry)
R4 tube pressure mediator	DN50 milk tube connection	DIN 11851	(Ex version on inquiry)
R5 tube pressure mediator	DN65 milk tube connection	DIN 11851	(Ex version on inquiry)
R6 tube pressure mediator	DN80 milk tube connection	DIN 11851	(Ex version on inquiry)
R7 tube pressure mediator	DN100 milk tube connection	DIN 11851	(Ex version on inquiry)

Temperature range:

A standard connection	-20°C to +90°C	Silicon oil FS20
B temperature decoupler	-40°C to +140°C	Silicon oil FS20
C temperature decoupler	-20°C to +250°C	Silicon oil FS100
D capillary tube 1m	-40°C to +370°C	high temp. oil FH (at Ex-Zone 0: with spiral protection tube)

Transmitter electronic:

A 4...20 mA	2-wire-electronic	with display, 2 PNP switching outputs
B 4...20 mA	2-wire-electronic	with display
C 4...20 mA	2-wire-electronic	without display, adjustment by keys
D 4...20 mA	2-wire-electronic	fix adjusted, without display
E 0...10 V	3-wire-electronic	with display, 2 PNP switching outputs
F 0...10 V	3-wire-electronic	with display
G 0...10 V	3-wire-electronic	without display, adjustment by keys
H 0...10 V	3-wire-electronic	fix adjusted, without display

Material process connection:

V steel 1.4404 material membrane

Material adapter housing:

A PBT (polybutylenterephthalat)
C steel 1.4301

Pressure measurement range:

01 0...100 mbar (max. -0,3/+4 bar)	13 0...40 bar (max. 60 bar)
02 0...200 mbar (max. 5 bar)	14 0...60 bar (max. 90 bar)
03 0...400 mbar (max. 5 bar)	15 -100 ... 0 mbar (max. 4 bar)
04 0...600 mbar (max. 10 bar)	16 -1...0 bar (max. 10 bar)
05 0...1 bar (max. 10 bar)	17 -1...1 bar (max. 15 bar)
06 0...1,6 bar (max. 15 bar)	18 -100...+100 mbar (max. 5 bar)
07 0...2,5 bar (max. 25 bar)	19 0...+100 bar (max. 400 bar)
08 0...4 bar (max. 25 bar)	20 0...+160 mbar (max. 600 bar)
09 0...6 bar (max. 40 bar)	21 0...+250 mbar (max. 600 bar)
10 0...10 bar (max. 40 bar)	22 0...+320 mbar (max. 600 bar)
11 0...16 bar (max. 40 bar)	23 0...+400 mbar (max. 600 bar)
12 0...20 bar (max. 40 bar)	YY special measurement range

Pressure type:

R relative pressure
A absolute pressure


Type measurement membrane:

2 ceramic AL₂O₃ 96%, accuracy 0,2%
0 ceramic AL₂O₃ 96%, accuracy 0,2%, with linearization certificate
4 polysilicon membrane 0,5% (from 60 bar)

sensor connection:

S plug M 12x1
K cable 2 m

Precont	-	-	-	-	V	-	-	-	-
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Compact pressure sensor **Precont S10/S20/S40/S60/S70** 
 with dry capacitive measurement membrane,
 polysilicon measurement membrane or with special pressure mediator
Precont D40

Precont S70

