



fill level



water level



pressure



temperature



flow



visualization



signal converter



sensoric



Precont KS

Transmitter

With metallic membrane from 0...400 bar,
Precision 0,15%, 2-wire 4...20mA or
3-wire 0...10V technology

Technical manual
12.11



Main features

2-wire 4...20mA or 3-wire 0...10V technology

Pressure switch with pnp switching output from 5 up to 95% adjustable

Hysteresis from 1,5% up to 20% adjustable

Polysilicone resp. thin film sensor with metallic membrane

Pressure ranges fine leveled acc. to DIN 16 128

Overload limit up to 4-times of the measurement range

Version with damping system

Housing in high-grade steel in protection class IP 65

You have purchased a high-grade and modern measuring device of ACS-CONTROL-SYSTEM GmbH.

We want to give thanks for your purchase and for your confidence to us.

The actual technical manual includes instructions for installation, electrical connection and inauguration, as well as the technical data of the device.

Modifications, that answer the purpose of the technical progress, are reserved by ACS-CONTROL-SYSTEM GmbH without prior notice.

If a question occurs, that can't be answered by the listed informations, please call on our technicians team in Eggenfelden Tel: +49 8721/ 9668-0 or info@acs-controlsystem.de

All rights reserved

Index

Instrument Safety	4
Unpacking the instrument	4
Installation	4
Electrical Connections	5
Connecting diagram	6
Operation	8
Checking the span	8
Checking the supply voltage	8
Checking span start and span end	8
Maintenance and trouble-shooting	8
Shut-down	8
Dimension Drawings	9
Order code	10

Instrument Safety

This instrument was built and tested according to DIN 57 411 part 1 / VDE 0411 part 1. Protective measures for electrical apparatus and was shipped in technically safe condition.

Protection class II is applicable.

In Order to maintain this condition and to ensure safe operation, the user must follow the hints and warnings given in these operating instructions.

The instrument must be operated only by trained persons. Maintenance and repair should be carried out only by trained, qualified personnel familiar with the relevant hazards.

The instrument may be operated within the specified environmental conditions (see data sheet) without impairing its safety.

Unpacking the instrument

Remove instrument and accessories from the packing. Enclosed standard accessories:

Operating instructions 56001400

Check, if the shipment is correct and complete and if the instrument was damaged by improper handling during transport and storage.

Warning!

If the instrument is so heavily damaged that safe operation seems impossible, the instrument must not be taken into operation. We recommend to keep the original packing for shipment in case of maintenance or repair.

Installation

When selecting the place of installation, or before installing the transmitter, the rules given below must be followed:

- The freezing point of process media and condensates must be taken into account.
- The specified temperature limits (see data sheet) under consideration of the heat radiation of adjacent equipment must not be exceeded.
- The pressure membrane must not be damaged, therefore, the plastics protective cap of the threaded coupling of the transmitter should be removed only shortly before installation.
- Before mounting, a sealing ring B to DIN 16258 must be fitted in front of the threaded coupling! The sealing ring material depends on the process medium and must be selected by the user.
- Mounting may be done using a 27 mm spanner.

Electrical Connections

All electrical wiring must conform to local standards (e.g. VDE 0100). The input and signal leads must be kept separate from mains and control leads.

The connections must be made according to the connecting diagram.

The transmitter may be energized only from power supply units with safe galvanic isolation from the mains (→ VDE 0550).

The supply voltage must be direct current.

In order to prevent stray interference, we recommend using twisted and screened input leads. The screen must be connected to the terminal for grounded measurement. This terminal is connected conductantly with the metal housing of the transmitter.

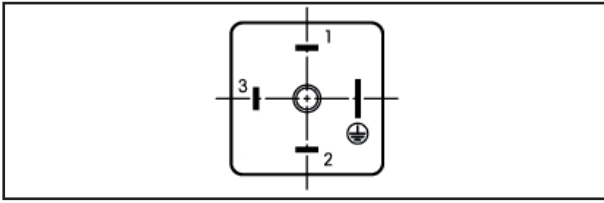
When using an instrument socket according to DIN 43 650, the cable direction is selectable by removing the socket insert and re-fitting it at an angle of 90°.

Note

The terminal for grounded measurement on the instrument connection is marked with symbol (protective earth).



Connecting diagram



Instrument socket DIN 43 650/C

Two-wire

1 Output (+)

2 Output (-)

3 not connected

⊕ Measurement earth

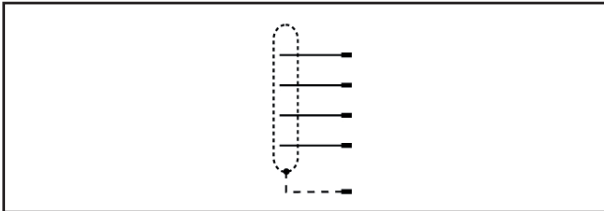
Three-wire

1 Output (+)

2 Supply and output (-)

3 Supply (+)

⊕ Measurement earth



Cable end

Two-wire

(red) output (+)

(black) not connected

(white) output (-)

(blue) not connected

(green) measurement earth

Three-wire

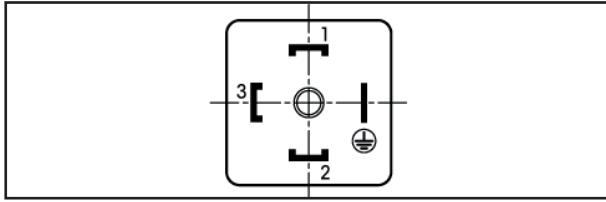
(red) output (+)

(black) supply (+)

(white) supply and output (-)

(blue) not connected

(green) measurement earth



Instrument socket DIN 43 650/A

Two-wire

1 Output (+)

2 Output (-)

3 Not connected

Measurement earth

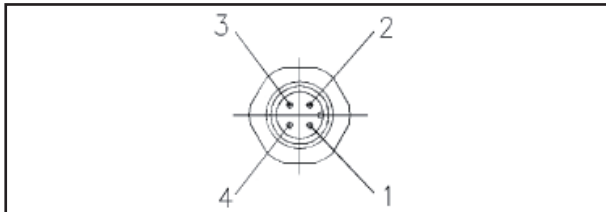
Three-wire

1 Output (+)

2 Supply and output (-)

3 Supply (+)

Measurement earth



Round connector M12x1

Two-wire

1 (red) output (+)

2 not connected

3 (white) output (-)

4 not connected

housing - shield

Three-wire

1 (red) output (+)

2 (black) supply (+)

3 (white) supply and output (-)

4 not connected

housing - shield

Operation

Warning !

If the instrument is damaged to an extent that safe operation seems impossible, take the instrument out of operation (→section shut down) and protect it against accidental operation.

Checking the span

Before commissioning, check if the span specified on the transmitter type label corresponds to the operating pressures at the measuring point. The maximum operating pressure must be lower than the span end value.

Checking the supply voltage

To avoid measurement errors, note that the supply voltage (DC) from the connected voltage source is sufficient.

The minimum voltage to at the transmitter terminals must be:

12 V DC across terminals 1+ and 2- (two-wire connection)

15 V DC across terminals 3+ and 2- (three-wire connection)

The maximum permissible DC voltage at the relevant terminals for two-wire and three-wire versions is 30 V DC.

Checking span start and span end

The instruments have a fixed range. The tolerance for span start and span end at an ambient temperature of 20 °C is $\leq \pm 0,4\%$ of the output signal span. When checking, the output value for span start and span end must be within this tolerance.

Maintenance and trouble-shooting

The transmitter needs no maintenance.

In case of trouble, the rest of the system (pressure lines, valves electrical wiring, connected units, etc.) should be checked.

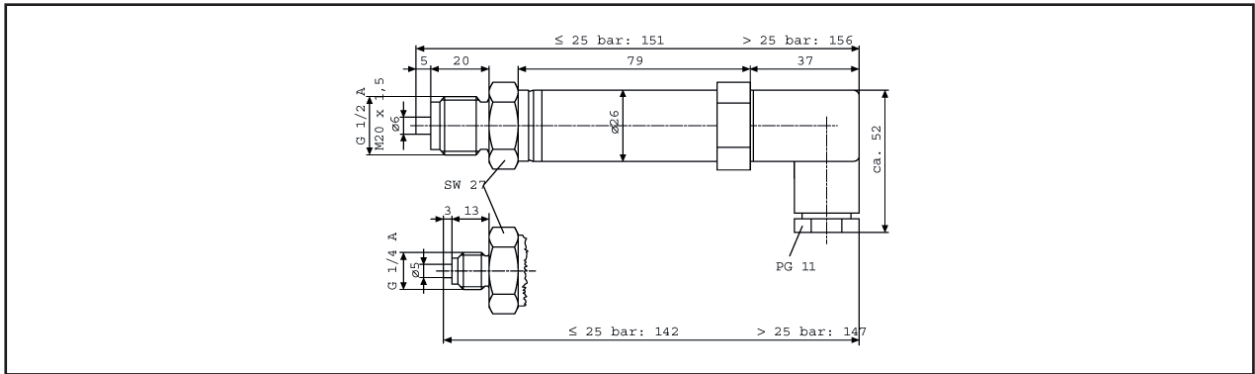
Shut-down

Before permanent shut-down, disconnect the instrument from all voltage sources and protect it against accidental operation.

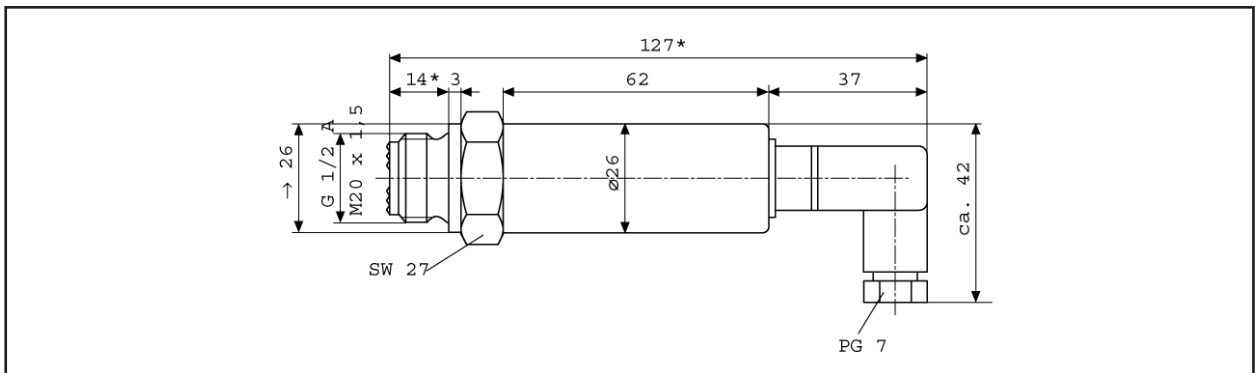
Before instrument switch-off, take care that other equipment and/or facilities is/ are not affected. If necessary, appropriate measures must be taken.

With final shut-down and scrapping of the instrument, appropriate disposal because of the silicone oil filling must be ensured.

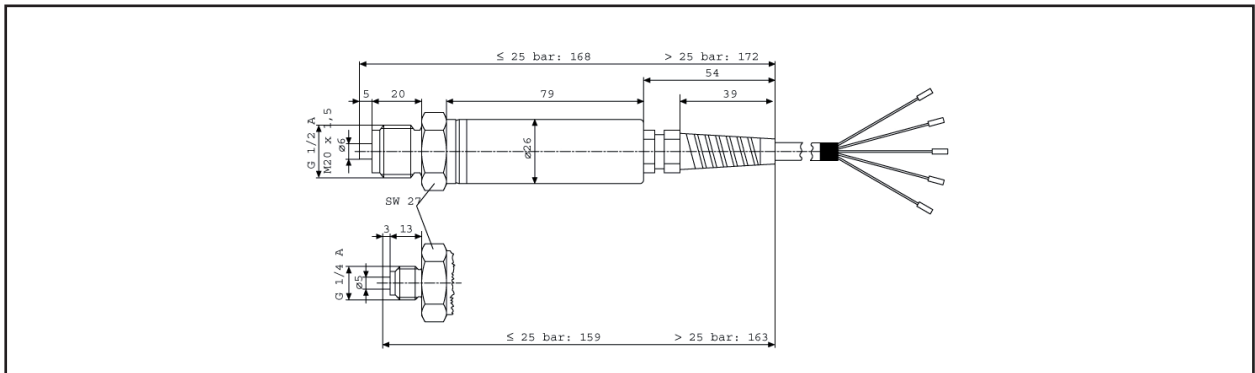
Dimension Drawings



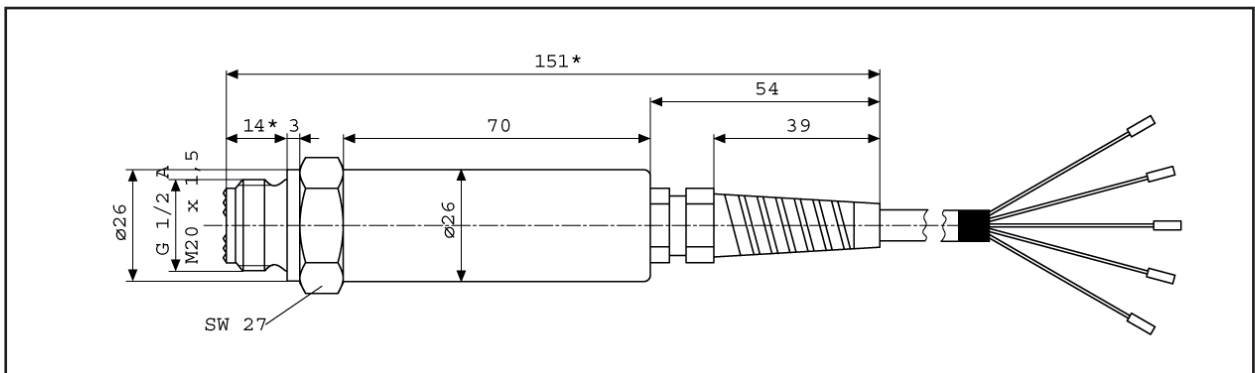
Electrical connection with Instrument socket DIN 43 650/C



Electrical connection with Instrument socket DIN 43 650/C*
 * + 4 mm on versions with mechanical damping and device \geq 40 bar.



Electrical connection with cable end



Electrical connection with cable end*
 * + 4 mm on versions with mechanical damping and device \geq 40 bar.

Order code

Type
KS Standard

Process connection

- 0 G½" A DIN 16288
- 1 M20x1,5 A DIN 16288
- 2 G½" A with metallic seal and front-flush separation membrane (at Ex 0) (from 1 bar)
- 3 M20x1,5 A with metallic seal and front-flush separation membrane (from 1 bar)
- 4 G½" A with FPM-seal and front-flush separation membrane (from 1 bar)
- 5 M20x1,5 A with FPM-seal and front-flush separation membrane (from 1 bar)
- 6 G¼" A
- 8 G¼" NPT

Electronic - output

- A Output 4...20 mA (2-wire)
- B Output 0...10V (3-wire)
- E PNP switching output
- X Output 4...20 mA (2-wire), Ex-protection
II 2 G EEx ib IIC T6, ATEX
- Y Output 4...20 mA (2-wire), Ex-protection
Zone 0 with damping (only G ½" A possible, KS2); II ½ G EEx ib IIC T6, ATEX

Material process connection (process wetted)

- V Steel 1.4435

Damping

- 0 Without damping
- D Embedded damping from 6 bar available

Measuring range

- 02 0...250 mbar (0,3% Gen.)
- 03 0...400 mbar (0,3% Gen.)
- 05 0...1 bar
- 06 0...1,6 bar
- 07 0...2,5 bar
- 08 0...4 bar
- 09 0...6 bar
- 10 0...10 bar
- 11 0...16 bar
- 12 0...25 bar
- 13 0...40 bar
- 14 0...60 bar
- 15 0...100 bar
- 16 0...160 bar
- 17 0...250 bar
- 18 0...320 bar
- 19 0...400 bar

Pressure type

- R Gauge pressure
- A Absolute pressure

Accuracy

- 0 0,5 % accuracy (not available for 250 mbar and 400 mbar) and Ex-versions
- 1 0,3 % accuracy
- 2 0,15% accuracy

Electrical connection

- S Plug DIN 43650/C
- T Plug DIN 43650/A
only pressure switch PNP-version + Ex-version
- K Cable 1,5 m IP68
additional price per meter

order code

Precont KS V 0 0

ACS-CONTROL-SYSTEM
knowledge and systems

Your partner for measuring technology and automation



ACS-CONTROL-SYSTEM GmbH
Lauterbachstr. 57
D- 84307 Eggenfelden

Tel.: +49 (0) 8721/ 9668-0
Fax: +49 (0) 8721/ 9668-30

info@acs-controlsystem.de
www.acs-controlsystem.de