Transmitter P30/P31

Pressure transmitter

Ranges from 1 bar up to 400 bar

Conformity 0,6 % (typical)

Two- and three-wire technology

Flush mounted diaphragm- as manometer coupling

High overload capacity

PROFILE

These transmitters are intended for standard applications in the area of industrial pressure.
The lowest measuring range for the P30 is 0...1bar, respectively for P31 it is 0...6 bar.

The highest measuring range for both versions is 0...400 bar.

Permissible overload is four times the nominal span (max 600 bar).

DESCRIPTION

The linear characteristic with a conformity of typical 0,6 % provides accurate measuring results.

The sensors low mass ennables fast response.

Effects of very fast respectivly very high pressure peaks caused by e.g. rapid acting shut off valves etc. can be suppressed by selecting a built-in mechanical damping device.

The sensing element consists of a silicon pressure sensor with an isolated thin-film strain gauge.

The small dimensions ensure good response to pulsating pressures and vibrating medias and is immune to local vibrations.

The P30 transmitter has a process coupling with an internal sealing diaphragm made of SS .

The version P31 features a flush-mounted sealing diaphragm.

Transmitter P31 with mechanical damping do have a mechanical baffle fitted to all ranges ≥ 40 bar as an additional protection.

The amplifier electronics are avalable in two versions:

- Two wire technique with 4...20 mA and
- three-wire technique with 0...10V output signal.

TECHNICAL DATA

INPUT

Measuring spans

Type	Gauge	
	Minimum span	Maximum span
P30	0...1bar	0...400 bar
P31	0...1bar	

Overload limit

4 x nominal span, max. 600 bar
(static overload)

Overload effect

≤ 0,1 % of span

Wetted parts

Diaphragm: SS 316L
(X2CrNiMo 1810) (1.4435)
Coupling: SS 304 (X5 CrNi 189) (1.4301)
With P31/ Elastomer-gasket: FKM

Process media

Gases, vapours and liquids

Process coupling

Type	P30	P31
G ¼ A	EN 837 (DIN 16288)	-
G ½ A		EN 837 (DIN 3852) FormD
M12x1,5		

Gaskets/ seals required

- Delivery does not include metallic gaskets.
  P30, gasket type B to DIN 16258,
  P31, Metal: gasket A21 x 26 mm ∅
  Select material to application
- Delivery comprises
  P31, Elastomere seal: FKM

Filling liquid

Transmitter P30 and P31 commonly are filled with Silicon oil.

OUTPUT

STANDARD SIGNAL

Two-wire technology: 4...20 mA
Three-wire technology: 0...10 V

Characteristic: linear

Conformity error

Typical 0,6% of span

(Fixed point adjustment)

Load

Signal	Load
4...20 mA	$R_L [\Omega] = U_S - 12[V] / 0,02 [A]$
0...10 V	$R_L [\Omega] \geq 5\,k\Omega$

Hysterisis: 0,1 % of span

Settling time

approx. 2 ms
approx. 5 ms with mechanical damping device

Zero- and span adjustment

Not possible

POWER SUPPLY

Type	Supply voltage U_S	Effect U_S
Two wire 4...20 mA	12... 30 VDC	0,1 %
Three wire 0...10 V	15....30 VDC	0,1 %

Permissible ripple

No effect up to 16 % at 24 VDC

EXPLOSION PROTECTION

No explosion protection
See Transmitter P40/P41

AMBIENT CONDITIONS

Permissible ambient temperature

-25...+70 °C

Permissible process temperature *)

-25...+70 °C

*) within specification,
Tmax process -100 °C (electronics +70°C)

Storage temperature

-40 °C...+85 °C

Temperature effect

	Span start	Span
typical	0,2 % / 10 K	0,2 % / 10 K
maximum	0,5 % / 10 K	0,4 % / 10 K
Span 6 bar	plus 0,1 %/10K	plus 0,1 %/10K

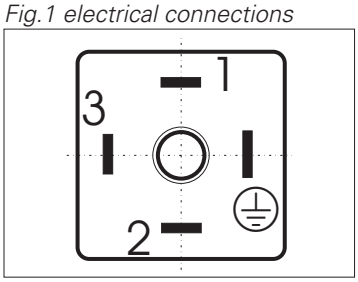
Climatic category

4Z (with Z=+70 °C)

ELEKTROMAGNETIC COMPATIBILITY

To EN 50 082
Effect < 1 %
CE labelled

Fig.1 electrical connections



		Connector to DIN 43650	
1	**Two-wire**	Output	+
2		Output	-
3		not connected	
4		----------	
⏚		Measuring ground	
1	**Three-wire**	Output	+
2		Supply & Output	-
3		Supply	+
4		----------	
⏚		Measuring ground	

Fig. 2 dimensions P30

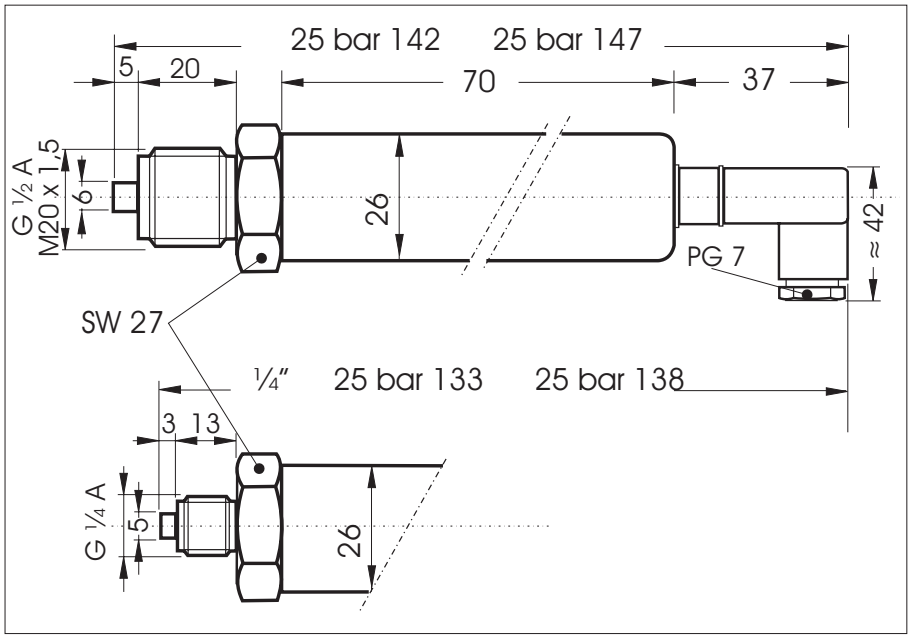
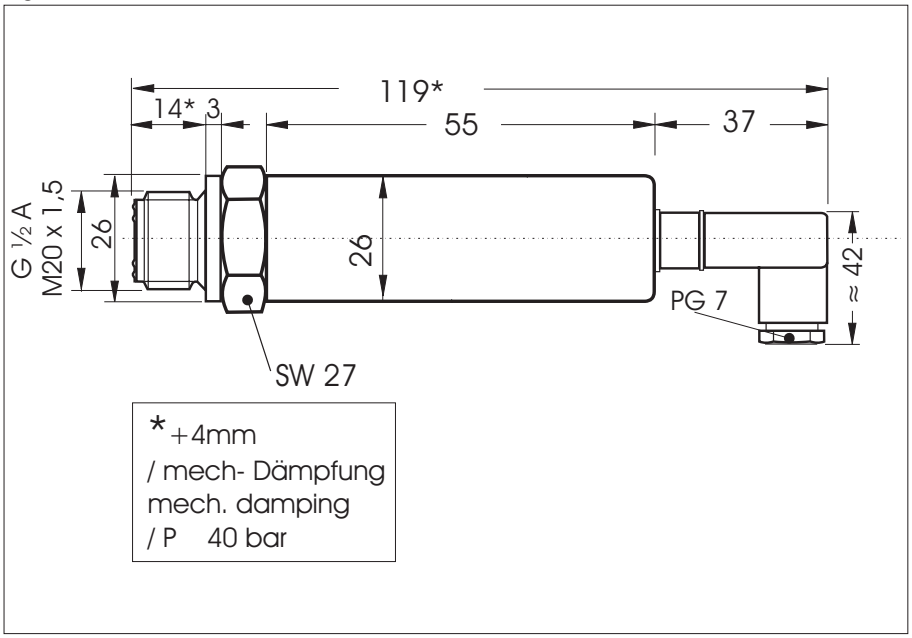


Fig. 3 dimensions P31



GENERAL

Housing

Stainless steel, SS 304 (1.403)
Plug Polyamide

Housing protection

IP 65 / Nema 4

Electrical connection

– Angled connector to DIN 43650/C screw-terminals up to 1,5 mm²

– Connector type A on request.

Mounting position: not critical

Mounting

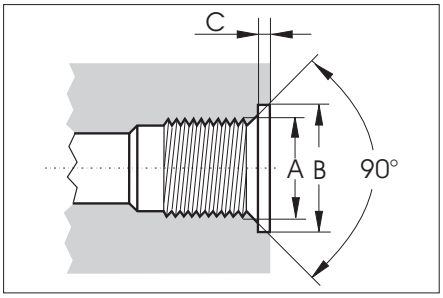
- Via process coupling according to version. It must be assured that during mounting in liquid filled pipes/containers the displaced volume freely can escape. For process temperatures above + 70 °C the use of a syphone is recommended.

Mounting torque effect

By means of recommended gaskets: ≤ 0,2 %
Nominal torque: 40 Nm

Weight: approximately 0,25 kg

Fig. 4 bore to DIN 3852 (P31)



Thread	A [mm]	B [mm]	C [mm]
M 20 x 1,5	18,5	26	2
G ½ A	¾ - in	27	2,5

Accessory

Operations P30 9499-040-41701
Operations P31 9499-040-41801

ACCESSORIES

PLUG-ON DISPLAY FOR PRESSURE TRANSMITTERS

- Loop powered.
- Free scalable via push buttons
- Polarity independent connection
- Plug type A required (version X65)

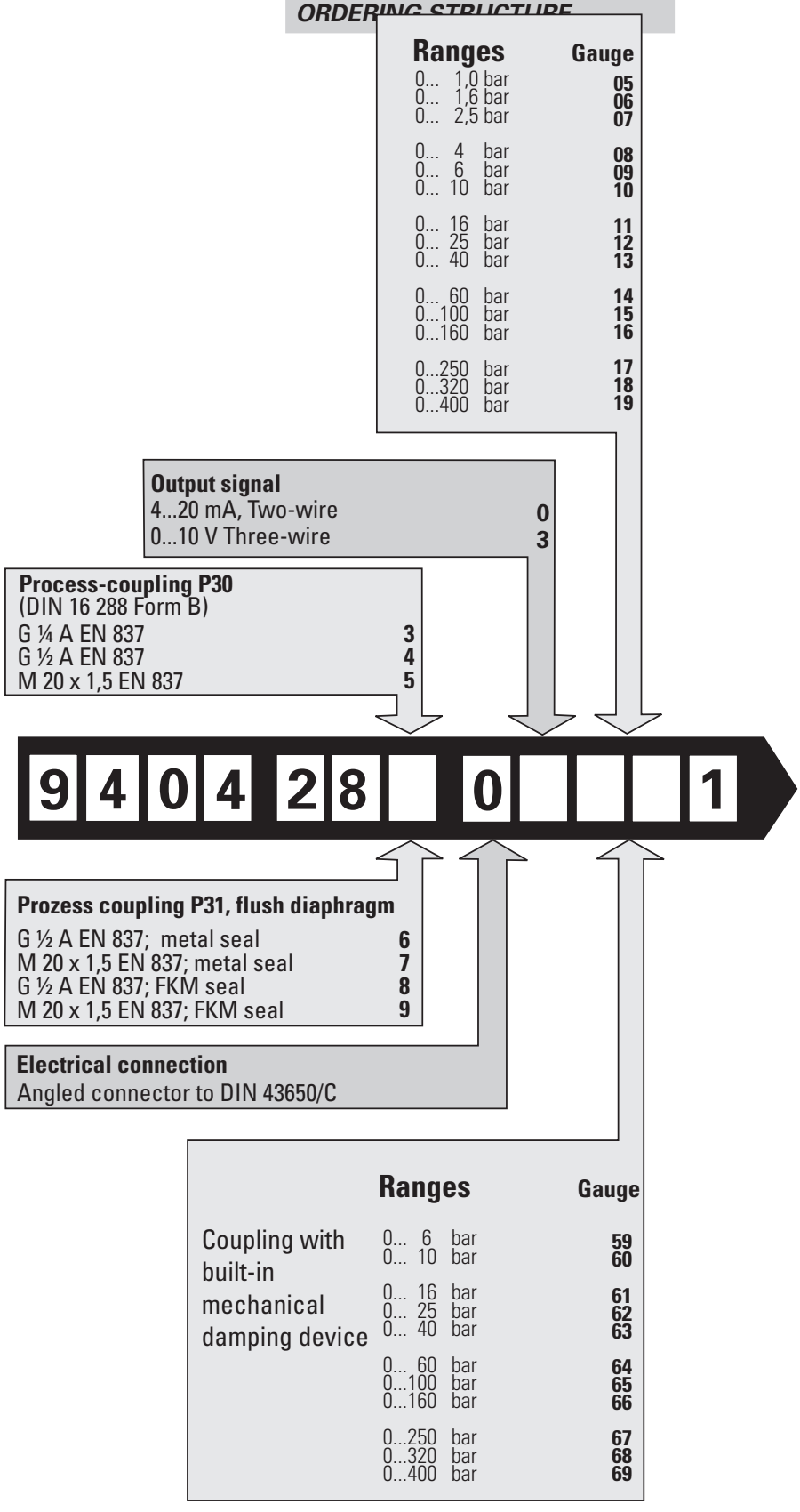
TECHNICAL DATA

Input signal: 4...20 mA
Voltage drop: approx. 3 V
Accuracy: ± 0,2 %
Measuring cycle: approx. 3 / sec
Display: LCD, 10 mm
Display span: -1999 bis + 9999
Scaling: via three internal push buttons
Decimal point: free settable
Filter in 3 steps addible
Temperature effect: approx. 100 ppm

Electrical connection: adaptor plug for connector type A, DIN 43650
Dimensions: with adapter
L x W x D 50,5 x 90 x 39,5 [mm]

Description	Order no
Plug-on display	**9404 799 81651**

ORDERING STRUCTURE



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Printed in Germany - Edition 09/2006 - Subject to alterations - 9498 737 23913