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ON DIGITAL INSTRUMENT

Data Sheet 40.4366

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Pressure Transmitter

dTRANS p30

Type 404366

General application

Pressure transmitters are used to measure the relative (gauge) and absolute pressures in liquids or gases. The measuring device for the transmitter is a piezo-resistive element or a thin-film strain gauge. The pressure is converted into an electrical signal.

Technical data

Reference conditions

as per DIN 16 086 and IEC 770/5.3

Ranges

see order details

Overload limit

ranges	
0 — 25 bar	3 x full scale
ranges	
0 — 40 to 0 — 250 bar	2 x full scale
ranges	
0 — 400 to 0 — 600 bar	1.5 full scale

Bursting pressure

ranges	
0 — 40 bar	≤ 4 x full scale
ranges	
0 — 60 to 0 — 100 bar	8 x full scale
ranges	
0 — 160 to 0 — 400 bar	5 x full scale
ranges	
0 — 600 bar	3 x full scale

Parts in contact with medium

normally:
st. steel, Mat. Ref. 1.4571 / 1.4435
for range ≥ 60 bar:
Mat. Ref. 1.4571 / 1.4542

Output

0 — 20 mA	
3-wire	burden ≤ (U _B -12 V) / 0.02A
4 — 20 mA	
2-wire	burden ≤ (U _B -10 V) / 0.02A
4 — 20 mA	
3-wire	burden ≤ (U _B -12 V) / 0.02A
0.5 — 4.5 V	burden ≥ 50 kΩ
1 — 6 V	burden ≥ 10 kΩ
0 — 10 V	burden ≥ 10 kΩ

Burden error

0.5% max.

Zero offset

≤ 0.3% of full scale

Thermal hysteresis

± 0.5% max. of full scale
(within compensated temperature range)
± 1% max. for ranges 0 — 250 mbar
0 — 400 mbar
0 — 600 mbar

Ambient temperature error

within range 0 to +100°C
(compensated temperature range)
for ranges 250 and 400 mbar
zero: ≤ 0.03%/°C typical,
≤ 0.05%/°C max.
span: ≤ 0.02%/°C typical,
≤ 0.04%/°C max.
for ranges above 600 mbar
zero: ≤ 0.02%/°C typical,
≤ 0.04%/°C max.
span: ≤ 0.02%/°C typical,
≤ 0.04%/°C max.
with basic type extension 024:
zero: ≤ 0.01%/°C

Deviation from characteristic

≤ 0.5% of full scale
(limit point adjustment)
with basic type extension 023:
≤ 0.2% of full scale
(limit point setting)

Hysteresis

≤ 0.1% of full scale

Repeatability

≤ 0.05% of full scale

Response time

with current output (output 402, 405 or 406):
≤ 3 msec max.
with voltage output (output 412, 415, 418 or 420):
≤ 10 msec max.

Stability per year

≤ 0.5% of full scale



Supply

10 — 30 V DC (output 4 — 20 mA and 1 — 6 V)
5 V DC (output 0.5 — 4.5 V)
11.5 — 30 V DC (output 0 — 10 V)
11.5 — 30 V DC (output 0(4) — 20 mA)
Ripple: the voltage spikes must not go above or below the values specified for the supply
max. current drawn: approx. 25 mA

Supply voltage error

≤ 0.02% per V
(nominal supply voltage 24 V DC)
in proportion for supply 5 V DC (±0.5 V)

Permissible ambient temperature

-20 to +100°C

Storage temperature

-40 to +125°C

Permissible temperature of medium

-30 to +120°C

Electromagnetic compatibility

EN 61 326
interference emission: Class B
noise immunity: industrial requirements

Mechanical shock

(to IEC 68-2-27)
100 g/1 msec

Mechanical vibration

(to IEC 68-2-6)
20 g max. at 15 — 2000 Hz

Protection

with terminal box
IP65 to EN 60 529
(connecting cable diameter
5 mm min., 7 mm max.)
with connecting cable
IP67 to EN 60 529
with circular connector M12 x 1
P67 to EN 60 529

Housing

stainless steel, Mat. Ref. 1.4301
polycarbonate GF

Pressure connection

see order details;
other connections on request

Electrical connection

see order details
terminal box to DIN 43 650,
Form A,
conductor cross-section up to 1.5 mm²;
or
attached 4-core PVC cable, length 2 m
other lengths on request

Nominal position

unrestricted

Weight

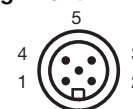
200 g

Electrical connection

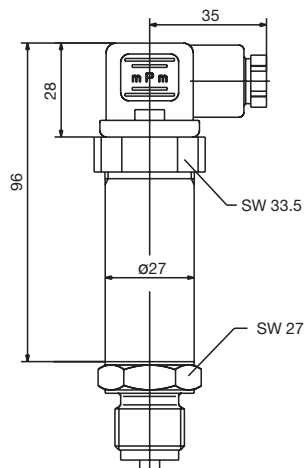
Connection		Plug	Terminals Cable	M12 x 1
Supply 10 – 30 V DC 11.5 – 30 V DC 5 V DC		1 L+ 2 L-	white grey	1+ 3-
Output 1 – 6 V 0 – 10 V 0.5 – 4.5 V		2 - 3 +	grey yellow	3- 4+
Output 4 – 20 mA, 2-wire		1 + 2 -	white grey	1+ 3-
		proportional current 4 to 20 mA in supply		
Output 0(4) – 20 mA, 3-wire		2 - 3 +	grey yellow	3- 4+
Protective earth				
Screen			black	2

Caution

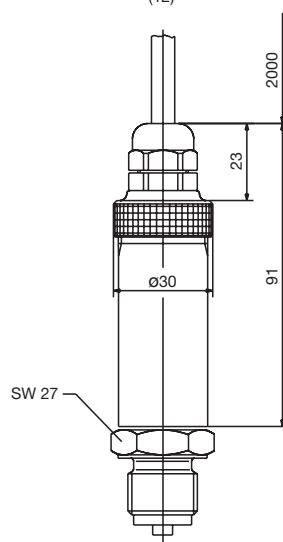
Earth instrument!
(pressure connection and / or or screen)

Pin assignment M12 x 1**Dimensions**

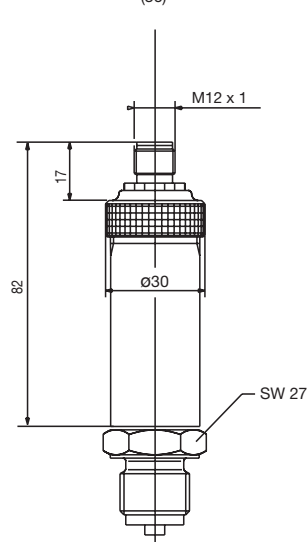
Elektrischer Anschluss
mit Leitungsdose
(61)



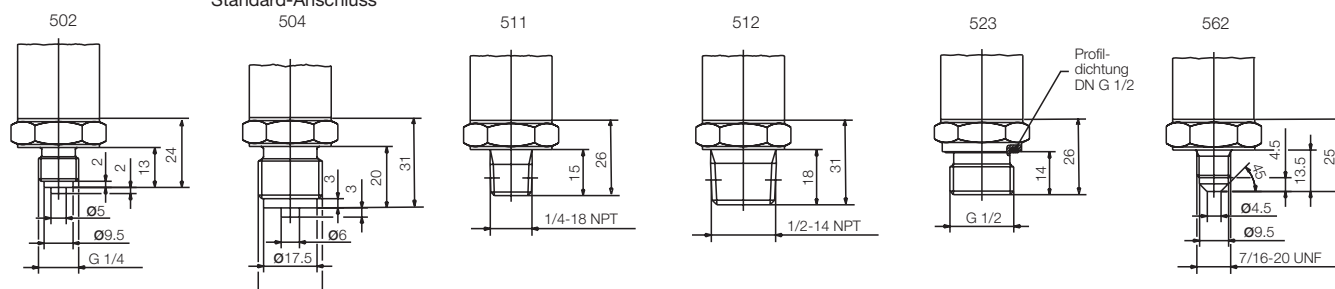
Elektrischer Anschluss
mit festem Kabel
(12)



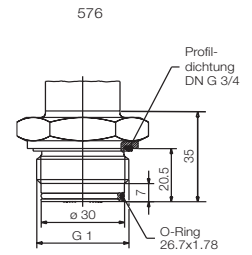
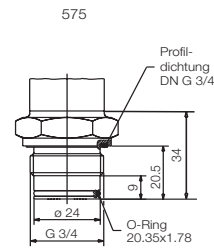
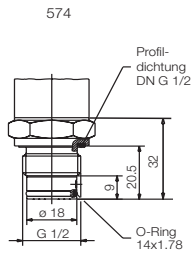
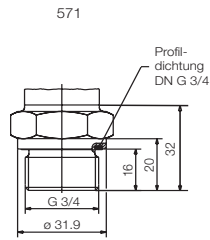
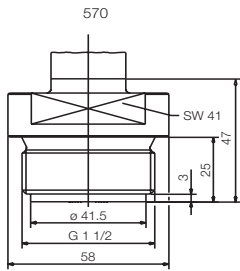
Elektrischer Anschluss
mit Rundstecker M12 x 1
(36)

**connections (not front-flush)**

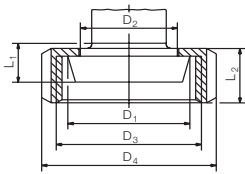
Standard-Anschluss



front-flush connections

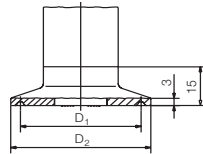


603-607

Kegelstutzen mit Nutüberwurfmutter
nach DIN 11 851

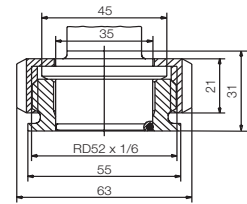
Proz.- anschl.	DN	øD ₁	øD ₂	øD ₃	øD ₄	L ₁	L ₂
603	20	36.5	30	RD 44x1/6	54	13	21
604	25	44	35	RD 52x1/6	63		
605	32	50	41	RD 58x1/6	70	15	
606	40	56	48	RD 65x1/6	78		
607	50	68.5	61	RD 78x1/6	92	16	22

612-616

Klemmverbindung Clamp
nach DIN 32 676

Proz.- anschl.	DN DIN 32676	DN (Zoll)	Nominal Size ISO 2852	øD ₁	øD ₂
612	20 15		12 12.7 17.2 21.3	27.5	34
613	25 32 40	1" 1.5"	25 33.7 38	43.5	50.5
616	50	2"	40 51	56.5	64

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Order details

Basic type

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	Basic type extensions		
	/000	none	
	/023	reduced deviation from characteristic ¹	
	/024	reduced ambient temperature error ²	
	/000	reduced ambient temperature error ²	
	/999	special version	
		Input	
		451	0 — 0.25 bar gauge pressure
		452	0 — 0.4 bar gauge pressure
		453	0 — 0.6 bar gauge pressure
		454	0 — 1.0 bar gauge pressure
		455	0 — 1.6 bar gauge pressure
		456	0 — 2.5 bar gauge pressure
		457	0 — 4 bar gauge pressure
		458	0 — 6 bar gauge pressure
		459	0 — 10 bar gauge pressure
		460	0 — 16 bar gauge pressure
		461	0 — 25 bar gauge pressure
		462	0 — 40 bar gauge pressure
		463	0 — 60 bar gauge pressure
		464	0 — 100 bar gauge pressure
		465	0 — 160 bar gauge pressure
		466	0 — 250 bar gauge pressure
		467	0 — 400 bar gauge pressure
		468	0 — 600 bar gauge pressure
		478	-1 — 0 bar gauge pressure
		479	-1 — 0.6 bar gauge pressure
		480	-1 — 1.5 bar gauge pressure
		481	-1 — 3 bar gauge pressure
		482	-1 — 5 bar gauge pressure
		483	-1 — 9 bar gauge pressure
		484	-1 — 15 bar gauge pressure
		485	-1 — 24 bar gauge pressure
		487	0 — 0.6 bar absolute pressure
		488	0 — 1.0 bar absolute pressure
		489	0 — 1.6 bar absolute pressure
		490	0 — 2.5 bar absolute pressure
		491	0 — 4 bar absolute pressure
		492	0 — 6 bar absolute pressure
		493	0 — 10 bar absolute pressure
		494	0 — 16 bar absolute pressure
		495	0 — 25 bar absolute pressure
		998	special range absolute pressure
		999	special range gage pressure
			Output
			402 0 to 20 mA 3-wire
			405 4 to 20 mA 2-wire
			406 4 to 20 mA 3-wire
			412 0.5 to 4.5 V 3-wire
			415 0 to 10 V 3-wire

			418	1 to 5 V 3-wire
			420	1 to 6 V 3-wire
				Process connection (not front-flush)
			502	1/4" pipe to EN 837
			504	1/2" pipe to EN 837 (standard connection)
			511	1/4"-18 NPT to DIN 837
			512	1/2"-14 NPT to DIN 837
			523	1/2" pipe to DIN 3852 T11
			562	7/16"-20 UNF
			998	suitable for connecting to pressure separator
				Process connection (front-flush)
			570	1 1/2" pipe ⁴
			571	3/4" pipe ⁴
			574	1/2" pipe with front seal ³
			575	3/4" pipe with front seal ⁴
			576	1" pipe with front seal ⁴
			603	taper pressure connection with slotted nut to DIN11 851, DN20 ⁴
			604	taper pressure connection with slotted nut to DIN 11 851, DN25 ⁴
			605	taper pressure connection with slotted nut to DIN 11 851, DN32 ⁴
			606	taper pressure connection with slotted nut to DIN 11 851, DN40 ⁴
			607	taper pressure connection with slotted nut to DIN 11 851, DN50 ⁴
			612	clamp pressure connection to DIN 32 676, DN20 ⁴
			613	clamp pressure connection to DIN 32 676, DN25 ⁴ , DN32 ⁴ and DN40 ⁴
			616	clamp pressure connection to DIN 32 676, DN50 ⁴
			652	tank connection with slotted union nut ⁴
				Material of process connection
			20	stainless steel
				Electrical connection
			12	with attached cable (cable length in plain text)
			36	with circular connector M12 x 1
			61	with terminal box
				Extra code
			000	none
			591	throttle in pressure duct ⁵
			630	enlarged pressure duct ⁵

404366 / - - - - 20 - / **Order code**

¹ only for 4 to 20 mA 2-wire output
only for ranges between 0.6 and 40 bar
not with process connection 574.

² only for spans between 4 and 25 bar
only for output 0 to 10 V or 4 to 20 mA 2-wire or 0(4) to 20 mA 3-wire
not with process connection 574

³ only for ranges from 1 to 400 bar

⁴ only for ranges up to 25 bar