

# dTRANS p30

## Pressure Transmitter

### 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.

The device is certified according to EHEDG in the versions with process connections (clamp) DN 25, 32, 40 and 50 as well as JUMO PEKA.

### Technical data

#### Reference conditions

as per DIN 16086 and DIN 60770

#### Ranges

see order details

#### Overload limit

ranges 0 to 25 bar  
3 x full scale

ranges "0 to 40 bar" up to  
"0 to 250 bar"  
2 x full scale

ranges "0 to 400 bar" up to  
"0 to 600 bar"  
1.5 full scale

#### Bursting pressure

ranges 0 to 40 bar  
≤ 4 x full scale

ranges "0 to 60 bar" up to  
"0 to 100 bar"  
8 x full scale

ranges "0 to 160 bar" up to  
"0 to 400 bar"  
5 x full scale

ranges 0 to 600 bar  
3 x full scale

#### Parts in contact with medium

normally:

Stainless steel 316 Ti/316 L

for range ≥ 60 bar:

Stainless steel 316 Ti/630

#### Output

0 to 20 mA, three-wire,  
burden ≤ (U<sub>B</sub>-12 V) ÷ 0.02 A

4 to 20 mA, two-wire,  
burden ≤ (U<sub>B</sub>-10 V) ÷ 0.02 A

4 to 20 mA, three-wire,  
burden ≤ (U<sub>B</sub>-12 V) ÷ 0.02 A  
0.5 to 4.5 V, burden ≥ 50 kΩ

1 to 6 V, burden ≥ 10 kΩ  
0 to 10 V, burden ≥ 10 kΩ

#### Burden error

< 0.5 % max.

#### Zero offset

≤ 0.3% MSP (measuring span)

#### Thermal hysteresis

≤ ± 0.5 % max. MSP  
(within compensated temperature range)

≤ ± 1 % max. for ranges  
0 to 0.25 bar  
0 to 0.4 bar  
0 to 0.6 bar

#### Ambient temperature error

within range 0 to 100 °C  
(compensated temperature range)

for ranges 0.25 and 0.4 bar  
zero: ≤ 0.03 %/°C typical,  
≤ 0.05 %/°C max.

measuring span: ≤ 0.02 %/°C typical,  
≤ 0.04 %/°C max.

for ranges above 0.6 bar  
zero: ≤ 0.02 %/°C typical,  
≤ 0.04 %/°C max.



Type 404366 with terminal box

span: ≤ 0.02 %/°C typical,  
≤ 0.04 %/°C max.

with basic type extension 024:  
zero: ≤ 0.01 %/°C

**Deviation from characteristic**  
≤ 0.5 % MSP (limit point adjustment)  
with basic type extension 023:  
≤ 0.2 % MSP (limit point setting)

**Hysteresis**  
≤ 0.1 % MSP

**Repeatability**  
≤ 0.05 % MSP

**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 % MSP

### Approval and approval marks (see Technical Data)



**Voltage supply**

DC 10 to 30 V (output 4 to 20 mA and 1 to 6 V)

DC 5 V (output 0.5 to 4.5 V)

DC 11.5 to 30 V (output 0 to 10 V)

DC 11.5 to 30 V (output 0(4) to 20 mA)

Ripple: the voltage spikes must not go above or below the values specified for the voltage supply

Requirements: The device must be equipped with an electrical circuit that meets the requirements of EN 61010-1 with regard to "Limited-energy circuits".

max. current drawn: approx. 25 mA

**Supply voltage error**

≤ 0.02 % per V

(nominal supply voltage DC 24 V)

in proportion for voltage supply

DC 5 V (±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 61326

interference emission: Class B<sup>1</sup>

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 to 2000 Hz

**Protection**

with terminal box

IP65 to EN 60529

(connecting cable diameter 5 mm min., 7 mm max.)

with connecting cable

IP67 to EN 60529

with circular connector M12 × 1

IP67 to EN 60529

<sup>1</sup> The product is suitable for industrial use as well as for households and small businesses.

**Housing**

Stainless steel 304

Polycarbonate GF

**Pressure connection**

see order details;

other connections on request

**Electrical connection**

see order details

terminal box to DIN 43650, Form A,

conductor cross-section up to 1.5 mm<sup>2</sup>; or

attached 4-core PVC cable, length 2 m

other lengths on request

**Nominal position**

unrestricted

**Weight**

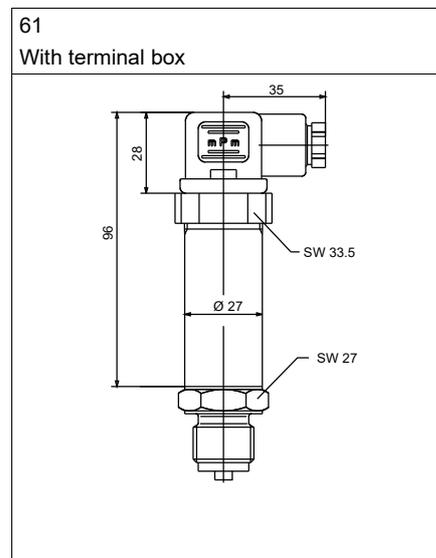
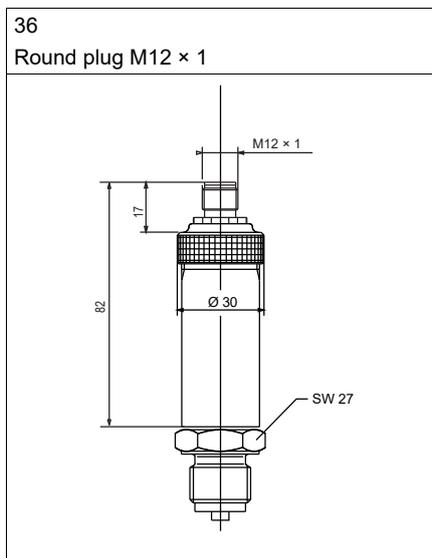
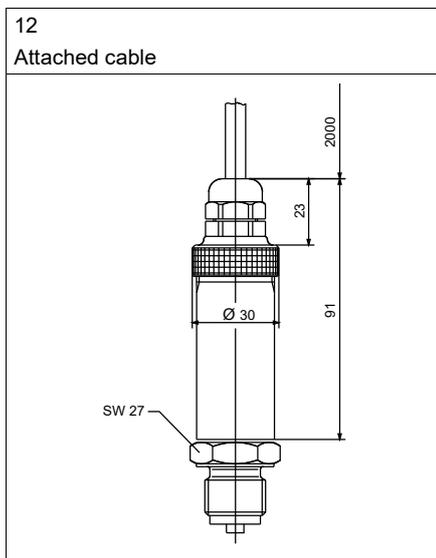
200 g

**Approval and approval marks**

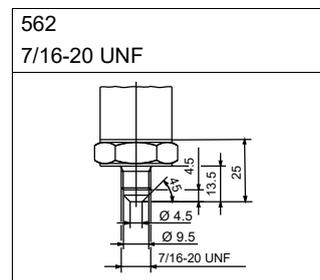
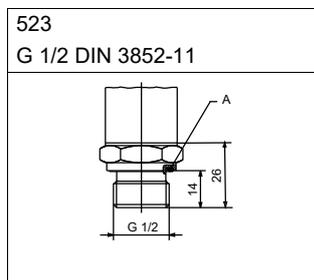
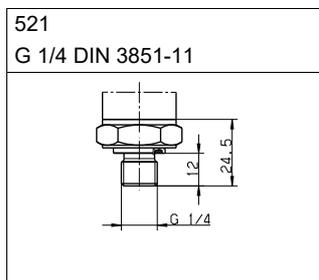
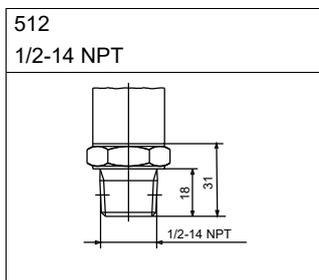
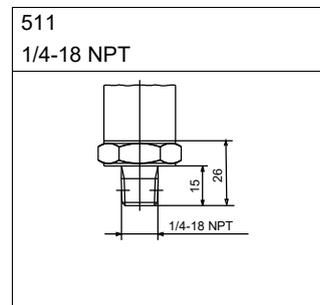
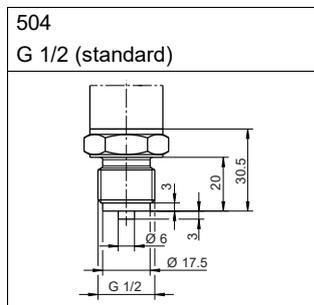
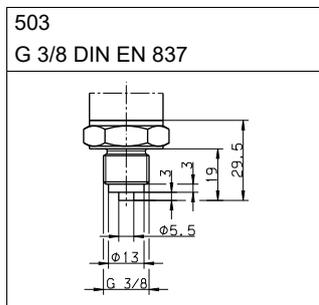
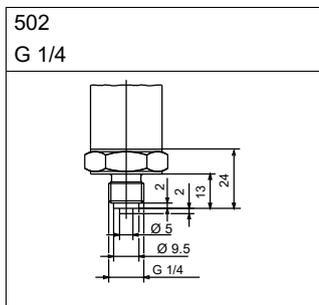
<p>EHEDG</p> <p>Test facility</p> <p>Certificate/Certification number</p> <p>Inspection basis</p> <p>Valid for</p>	<p>Research Center Weihenstephan for Brewing and Food Quality</p> <p>EL Class 1/EHEDG-C2000058</p> <p>EHEDG design specifications (Doc. 8 – Hygienic Design Principles)</p> <p>EHEDG tests for verifying ease of cleaning (Doc. 2, Third Edition, July 2004, updated June 2007)</p> <p>Process connection 613 (Clamp DN 25, 32, 40),</p> <p>Process connection 616 (Clamp DN 50),</p> <p>Process connection 997 (JUMO PEKA hygienic process connection)</p>
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## Dimensions

### Electrical connection

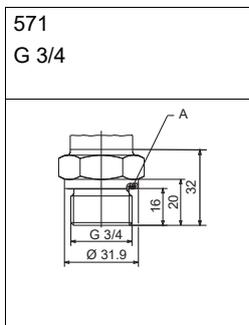
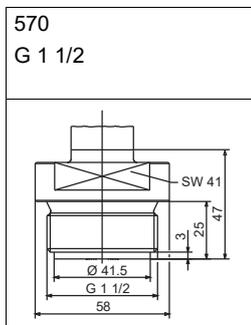


### Process connections, not front-flush

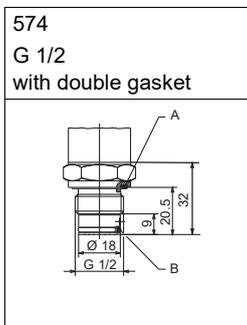


A Profile seal

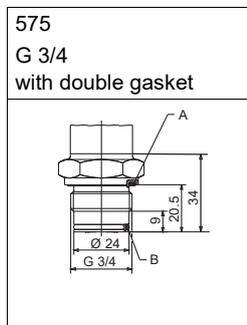
Process connections, front-flush



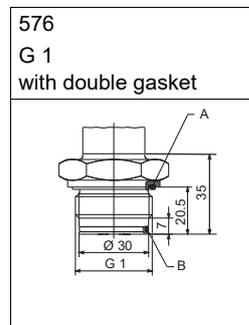
A Profile seal



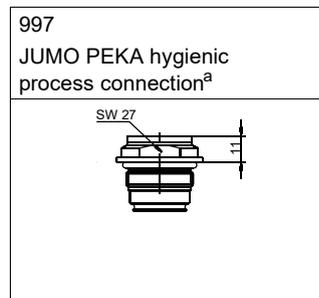
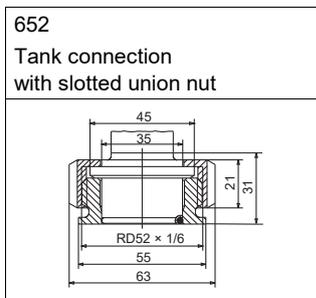
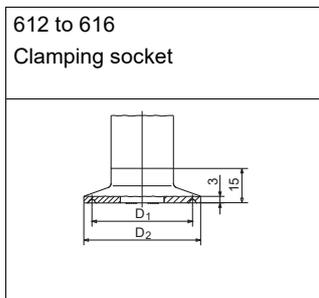
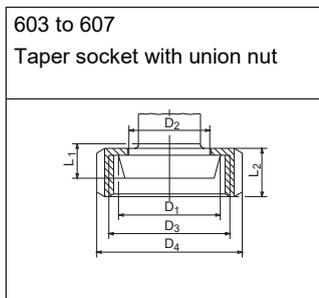
A Profile seal  
B O-ring 14 × 1.78



A Profile seal  
B O-ring 20.35 × 1.78



A Profile seal  
B O-ring 26.7 × 1.78



<sup>a</sup> certified according to EHEDG

Process connection	DN	Ø D <sub>1</sub>	Ø D <sub>2</sub>	Ø D <sub>3</sub>	Ø D <sub>4</sub>	Ø L <sub>1</sub>	Ø L <sub>2</sub>
603	20	36.5	30	RD44 × 1/6	54	13	21
604	25	44	35	RD52 × 1/6	63	15	
605	32	50	41	RD58 × 1/6	70		
606	40	56	48	RD65 × 1/6	78		
607	50	68.5	61	RD78 × 1/6	92	16	

Process connection	DN DIN 32676	DN (Zoll)	Nominal size ISO 2852	Ø D <sub>1</sub>	Ø D <sub>2</sub>
612	10		18	27.5	34
	15		10		
	20		15		
613 <sup>a</sup>	25	1	20	43.5	50.5
	32	1,5	25		
	40		32		
616 <sup>a</sup>	50	2	40	56.5	64

<sup>a</sup> certified according to EHEDG

## Electrical connection

Connection		Terminals		
		Plug	Cable	M12 × 1
Voltage supply DC 10 to 30 V DC 11.5 to 30 V DC 5 V		1 L+ 2 L-	white grey	1+ 3-
Output 1 to 6 V 0 to 10 V 0.5 to 4.5 V		2 - 3 +	grey yellow	3- 4+
Output 4 to 20 mA, two-wire		1 + 2 - Proportional current 4 to 20 mA in voltage supply	white grey	1+ 3-
Output 0(4) to 20 mA, three-wire		2 - 3 +	grey yellow	3- 4+
Protective conductor				
Screen			black	2
Caution: Earth device (pressure connection and/or  or screen)				

### Pin assignment M12 × 1



### Cable box M12 × 1



Color assignment: Cable box		
1 WH	White	
2 BN	Brown	
3 GN	Green	
4 YE	Yellow	
5	Pressure compensation	

## Order details

	<b>(1) Basic type</b>
404366/000	dTRANS p30 – Pressure Transmitter
404366/023	dTRANS p30 – Pressure Transmitter with reduced deviation of characteristic line <sup>a</sup>
404366/024	dTRANS p30 – Pressure Transmitter with reduced influence of ambient temperature <sup>b</sup>
404366/999	dTRANS p30 – Pressure Transmitter, special version
	<b>(2) Input</b>
451	0 to 0.25 bar relative pressure
452	0 to 0.4 bar relative pressure
453	0 to 0.6 bar relative pressure
454	0 to 1 bar relative pressure
455	0 to 1.6 bar relative pressure
456	0 to 2.5 bar relative pressure
457	0 to 4 bar relative pressure
458	0 to 6 bar relative pressure
459	0 to 10 bar relative pressure
460	0 to 16 bar relative pressure
461	0 to 25 bar relative pressure
462	0 to 40 bar relative pressure
463	0 to 60 bar relative pressure
464	0 to 100 bar relative pressure
465	0 to 160 bar relative pressure
466	0 to 250 bar relative pressure
467	0 to 400 bar relative pressure
468	0 to 600 bar relative pressure
478	-1 to 0 bar relative pressure
479	-1 to +0.6 bar relative pressure
480	-1 to +1.5 bar relative pressure
481	-1 to +3 bar relative pressure
482	-1 to +5 bar relative pressure
483	-1 to +9 bar relative pressure
484	-1 to +15 bar relative pressure
485	-1 to +24 bar relative pressure
487	0 to 600 mbar absolute pressure
488	0 to 1 bar absolute pressure
489	0 to 1,6 bar absolute pressure
490	0 to 2,5 bar absolute pressure
491	0 to 4 bar absolute pressure
492	0 to 6 bar absolute pressure
493	0 to 10 bar absolute pressure
494	0 to 16 bar absolute pressure
495	0 to 25 bar absolute pressure
998	Special range absolute pressure
999	Special range relative pressure
	<b>(3) Output</b>
402	0 to 20 mA, three-wire
405	4 to 20 mA, two-wire
406	4 to 20 mA, three-wire
412	0,5 to 4,5 V, three-wire
415	0 to 10 V, three-wire
418	1 to 5 V, three-wire
420	1 to 6 V, three-wire



## Stock versions

Order code	Part no.
404366/000-451-405-504-20-61/000	43006500
404366/000-451-405-571-20-61/000	43007916
404366/000-452-405-504-20-61/000	43006493
404366/000-453-405-504-20-61/000	43008131
404366/000-454-405-504-20-61/000	00392193
404366/000-454-405-571-20-61/000	43007917
404366/000-455-405-504-20-61/000	43008069
404366/000-456-405-504-20-61/000	00394352
404366/000-457-405-504-20-61/000	43006501
404366/000-458-405-504-20-61/000	43007816
404366/000-459-405-504-20-61/000	00391647
404366/000-459-405-604-20-61/000	43008066
404366/000-459-405-571-20-61/000	43008095
404366/000-459-405-574-20-61/000	43008164
404366/000-459-405-613-20-61/000	43008621
404366/000-459-415-504-20-61/000	43006543
404366/000-460-405-504-20-61/000	00391650
404366/000-461-405-504-20-61/000	43006495
404366/000-464-405-504-20-61/000	43006496
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404366/000-478-405-504-20-61/000	43006494
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404366/000-488-415-504-20-61/000	43007892
404366/000-489-405-504-20-61/000	43008058
404366/024-491-405-504-20-61/000	43008375
404366/024-491-402-504-20-61/000	43006756

## Accessories

Designation	Part no.
Line socket, 4-pole, M12 × 1, straight, 2 m	00404585
Line socket, 4-pole, M12 × 1, angled, 2 m	00409334
Line socket, 4-pole, M12 × 1, pressure compensation, 5 m	00512341