

JUMO GmbH & Co. KG
Delivery address: Mackenrodtstraße 14
36039 Fulda, Germany
Postal address: 36035 Fulda, Germany
Phone: +49 661 6003-0
Fax: +49 661 6003-607
Email: mail@jumo.net
Internet: www.jumo.net

JUMO Instrument Co. Ltd.
JUMO House
Temple Bank, Riverway
Harlow, Essex, CM20 2DY, UK
Phone: +44 1279 63 55 33
Fax: +44 1279 62 50 29
Email: sales@jumo.co.uk
Internet: www.jumo.co.uk

JUMO Process Control, Inc.
6733 Myers Road
East Syracuse, NY 13057, USA
Phone: +1 315 437 5866
Fax: +1 315 437 5860
Email: info.us@jumo.net
Internet: www.jumousa.com



JUMO 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.

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_B-12 V) ÷ 0.02 A
4 to 20 mA, two-wire,
burden ≤ (U_B-10 V) ÷ 0.02 A
4 to 20 mA, three-wire,
burden ≤ (U_B-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 250 mbar
0 to 400 mbar
0 to 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.
measuring 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 % 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



Type 404366 with terminal box

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 require-
ments 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 B¹
noise immunity: industrial requirements

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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

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 mm²; or

attached 4-core PVC cable, length 2 m

other lengths on request

Nominal position

unrestricted

Weight

200 g

1 The product is suitable for industrial use as well as for households and small businesses.

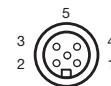
Electrical connection

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 -	white grey	1+ 3-
		Proportional current 4 to 20 mA in voltage supply		
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

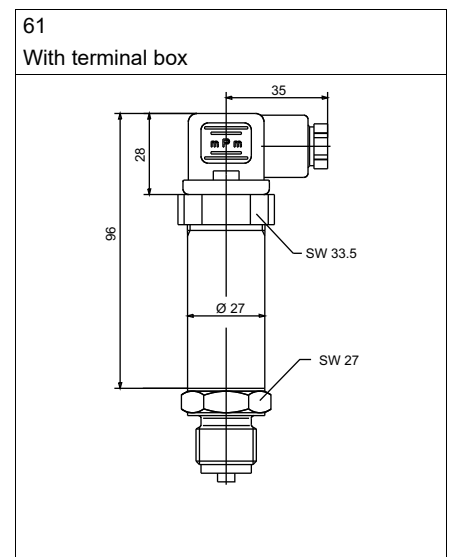
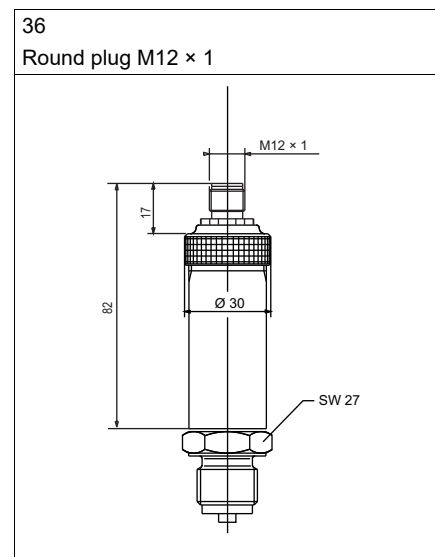
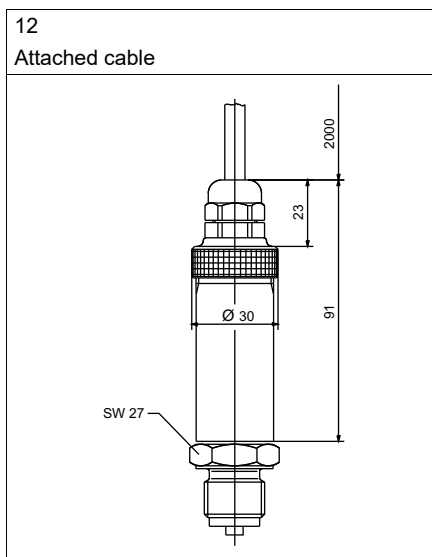


Color assignment: Cable box

1 WH	White
2 BN	Brown
3 GN	Green
4 YE	Yellow
5	Pressure compensation

Dimensions

Electrical connection



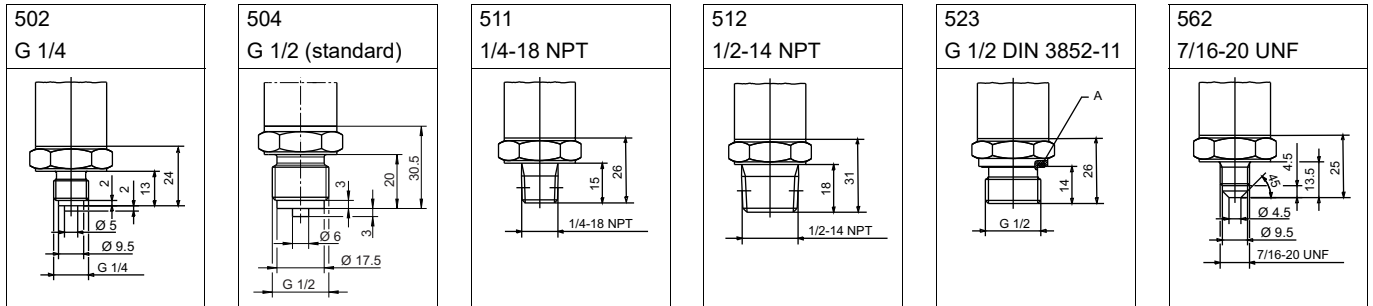
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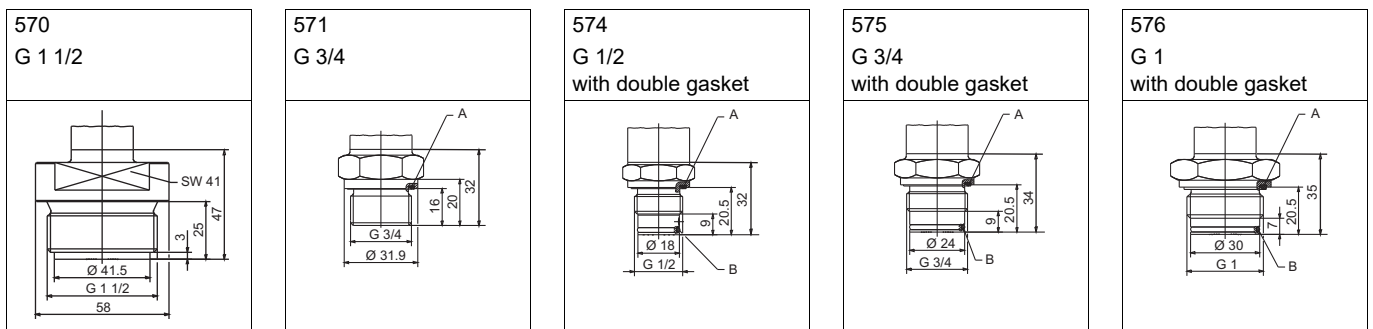


Process connections, not front-flush



A Profile seal

Process connections, front-flush



A Profile seal

A Profile seal

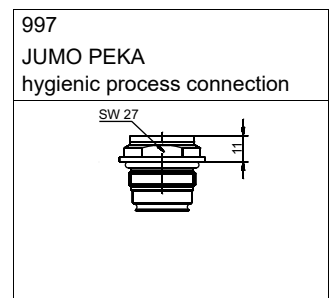
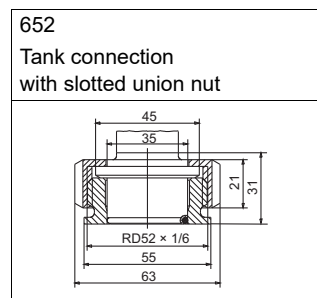
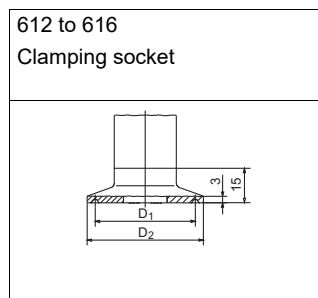
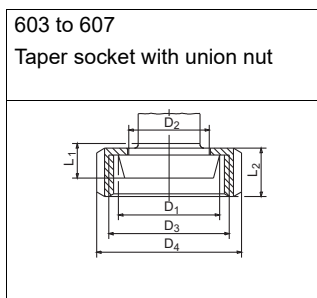
B O-ring 14 × 1.78

A Profile seal

B O-ring 20.35 × 1.78

A Profile seal

B O-ring 26.7 × 1.78



Process connection	DN	Ø D ₁	Ø D ₂	Ø D ₃	Ø D ₄	Ø L ₁	Ø L ₂
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 ₁	Ø D ₂
612	10		18	27.5	34
	15		10		
	20		15		
613	25	1	20	43.5	50.5
	32	1,5	25		
	40		32		
616	50	2	40	56.5	64

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**Order details**

	(1) Basic type
404366	JUMO dTRANS p30 – Pressure Transmitter
	(2) Basic type extension
000	None
023	reduced deviation of characteristic line ^a
024	reduced influence of ambient temperature ^b
999	Special version
	(3) Input
451	0 to 250 mbar relative pressure
452	0 to 400 mbar relative pressure
453	0 to 600 mbar 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
	(4) Output
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

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415	0 to 10 V, three-wire
418	1 to 5 V, three-wire
420	1 to 6 V, three-wire
(5) Process connection	
502	G 1/4 DIN EN 837
504	G 1/2 DIN EN 837
511	1/4-18 NPT DIN EN 837
512	1/2-14 NPT DIN EN 837
523	G 1/2 DIN 3852-11
562	7/16-20 UNF
570	G 1 1/2 front-flush DIN EN ISO 228-1 ^c
571	G 3/4 front-flush DIN EN ISO 228-1 ^c
574	G 1/2 front-flush, with double gasket ^d
575	G 3/4 front-flush, with double gasket ^c
576	G 1 front-flush, with double gasket ^c
603	Taper socket with union nut DN 20 DIN 11851 (dairy pipe fitting) ^c
604	Taper socket with union nut DN 25 DIN 11851 (dairy pipe fitting) ^c
605	Taper socket with union nut DN 32 DIN 11851 (dairy pipe fitting) ^c
606	Taper socket with union nut DN 40 DIN 11851 (dairy pipe fitting) ^c
607	Taper socket with union nut DN 50 DIN 11851 (dairy pipe fitting) ^c
612	Clamping socket DN 10/15/20 DIN 32676 ^c
613	Clamping socket DN 25/40 DIN 32676 ^c
616	Clamping socket DN 50 (2") DIN 32676 ^c
652	Tank connection with union nut DN 25
997	JUMO-PEKA hygienic process connection ^e
998	Connection for pressure separator
(6) Material of process connection	
20	CrNi (stainless steel)
(7) Electrical connection	
12	Fixed connecting cable shielded 2 m (further length on request)
36	Round plug M12 × 1
61	Cable socket DIN EN 175301-803, Form A
(8) Extra code	
000	None
452	Parts in contact with the medium electro-polished, surface roughness Ra ≤ 0.8 µm
591	Throttle in pressure duct
631	Higher humidity and vibration protection

^a Measuring devices with reduced deviation from characteristic line are not available with process connection 574, they are only available with output 405 and only for measuring spans between 0.6 to 40 bar.

^b Measuring devices with ambient temperature influence are not available with process connection 574, they are only available with outputs 402, 405, 406, 415 and only for measuring spans between 4 to 25 bar.

^c Process connections 570, 571, 575, 576, 603, 604, 605, 606, 607, 612, 613, 616 are only available for measuring spans up to 25 bar.

^d Process connection 574 is only available for measuring spans between 1 to 400 bar.

^e Suitable process connection adapters can be found on data sheet or price sheet 409711.

Order code	(1) <input type="text"/> / (2) <input type="text"/> - (3) <input type="text"/> - (4) <input type="text"/> - (5) <input type="text"/> - (6) <input type="text"/> - (7) <input type="text"/> / (8) <input type="text"/>
Order example	404366 / 000 - 461 - 405 - 504 - 20 - 61 / 000

Accessories

Article	Part no.
Cable box (straight) with control cable, shielded, 4-pole, 5 m PVC cable, pressure compensation	00512341