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JUMO Instrument Co. Ltd.
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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.

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.



Type 404366 with terminal box

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 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.
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)

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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[1]
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

1 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^2; or

attached 4-core PVC cable, length 2 m
other lengths on request

Nominal position
unrestricted

Weight
200 g

Approval and approval marks

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

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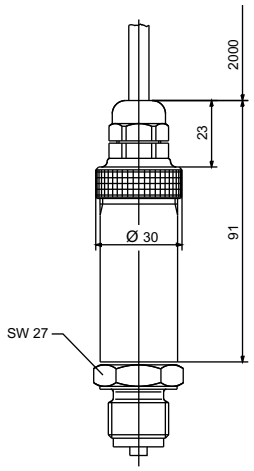
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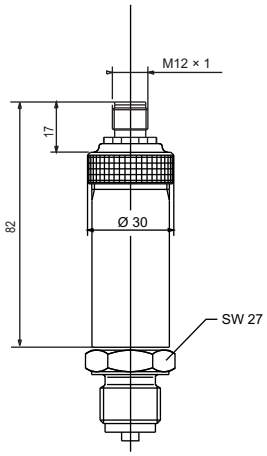
Dimensions

Electrical connection

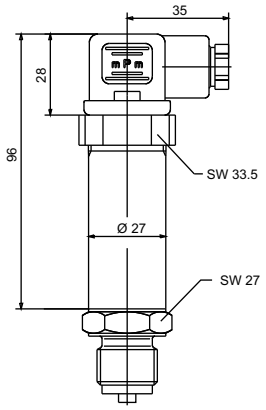
12
Attached cable



36
Round plug M12 × 1

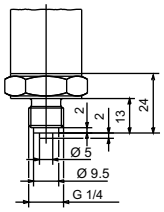


61
With terminal box

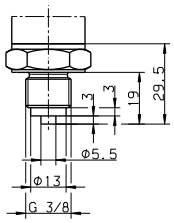


Process connections, not front-flush

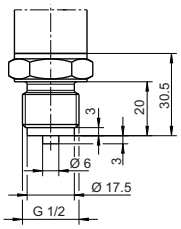
502
G 1/4



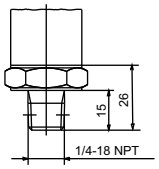
503
G 3/8 DIN EN 837



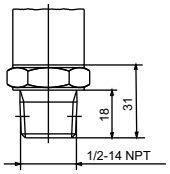
504
G 1/2 (standard)



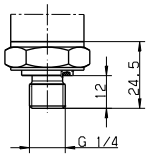
511
1/4-18 NPT



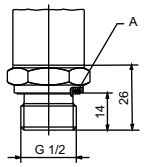
512
1/2-14 NPT



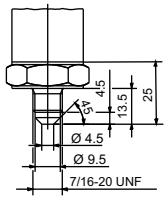
521
G 1/4 DIN 3851-11



523
G 1/2 DIN 3852-11



562
7/16-20 UNF



A Profile seal

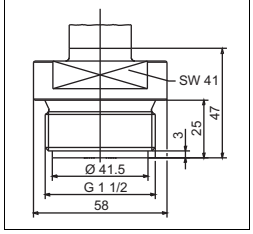
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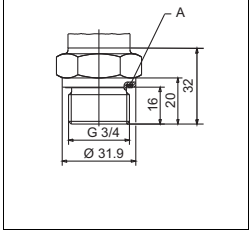
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Process connections, front-flush

570
G 1 1/2

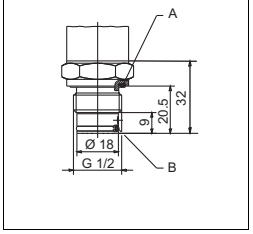


571
G 3/4



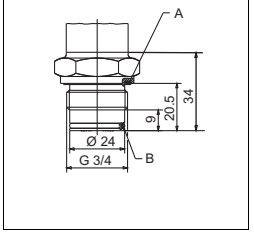
A Profile seal

574
G 1/2
with double gasket



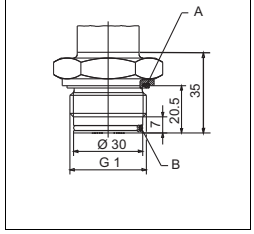
A Profile seal
B O-ring 14 × 1.78

575
G 3/4
with double gasket



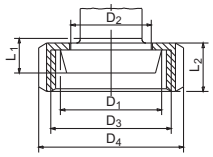
A Profile seal
B O-ring 20.35 × 1.78

576
G 1
with double gasket

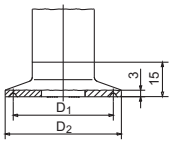


A Profile seal
B O-ring 26.7 × 1.78

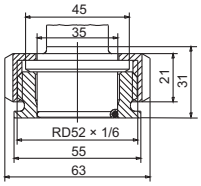
603 to 607
Taper socket with union nut



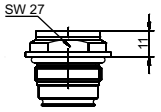
612 to 616
Clamping socket



652
Tank connection
with slotted union nut



997
JUMO PEKA hygienic process connection[a]



[a] certified according to EHEDG

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	22

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[a]	25	1	20	43.5	50.5
	32	1,5	25		
	40		32		
616[a]	50	2	40	56.5	64

[a] certified according to EHEDG

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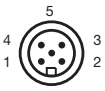
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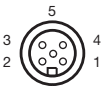
Electrical connection

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

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Order details

	(1)	Basic type
404366/000		JUMO dTRANS p30 – Pressure Transmitter
404366/023		JUMO dTRANS p30 – Pressure Transmitter with reduced deviation of characteristic line[a]
404366/024		JUMO dTRANS p30 – Pressure Transmitter with reduced influence of ambient temperature[b]
404366/999		JUMO dTRANS p30 – Pressure Transmitter, special version
	(2)	**Input**
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
	(3)	**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
415		0 to 10 V, three-wire
418		1 to 5 V, three-wire
420		1 to 6 V, three-wire

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	(4)	**Process connection**
502		G 1/4 DIN EN 837
503		G 3/8 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
521		G 1/4 DIN 3851-11
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, e]
616		Clamping socket DN 50 (2“) DIN 32676[c, e]
652		Tank connection with union nut DN 25
996		Diaphragm seal version, welded
997		JUMO-PEKA hygienic process connection[f, e]
998		Diaphragm seal version, screwed
	(5)	**Material of process connection**
20		CrNi (stainless steel)
	(6)	**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
	(7)	**Extra code**
000		None
452		Parts in contact with the medium electro-polished, surface roughness Ra ≤ 0.8 µm
591		Restrictor in pressure channel
624		Free of oil and grease
630		Enlarged pressure channel
631		Higher humidity and vibration protection
634		TAG-number

[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] certified according to EHEDG
[f] Suitable process connection adapters can be found on data sheet or price sheet 409711.

	(1)		(2)		(3)		(4)		(5)		(6)		(7)
Order code		-		-		-		-		-		/	
Order example	404366/000	-	461	-	405	-	504	-	20	-	61	/	000

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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
404366/000-466-405-504-20-61/000	43006498
404366/000-467-405-504-20-61/000	43006511
404366/000-478-405-504-20-61/000	43006494
404366/000-481-405-504-20-61/000	43006531
404366/000-488-405-504-20-61/000	43008096
404366/000-488-406-504-20-61/000	43007910
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