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JUMO Process Control, Inc.
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 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 Wtrans p

Pressure Transmitter with Wireless Data Transmission

Brief description

The pressure transmitter with wireless data transmission Wtrans p is intended for industrial applications. It is used in combination with a Wtrans receiver for stationary or mobile recording of the pressure in liquefied or gaseous media. The pressure transmitter operates according to the strain gauge measuring principle.

The measured values are transmitted wirelessly to the receiver of the Wtrans system. The measured values are displayed on the receiver and are available at the RS485 interface in digital form as well as in electrical standard signals at the analog outputs. Optionally, different alarms can be signaled at the receiver with two relay outputs.

The pressure transmitter can be installed in any installation position. Optimum alignment with the receiver must be ensured. The ambient temperature range in which the device can be used is from -30 to +85 °C.

The radio frequency of the Wtrans measuring system is 868.4 MHz (Europe). This frequency is almost impervious to external interference and allows data to be transmitted even in harsh industrial environments. When using the antenna holder for wall mounting with the 3 m antenna cable for the receiver, the open air range is up to 300 m.

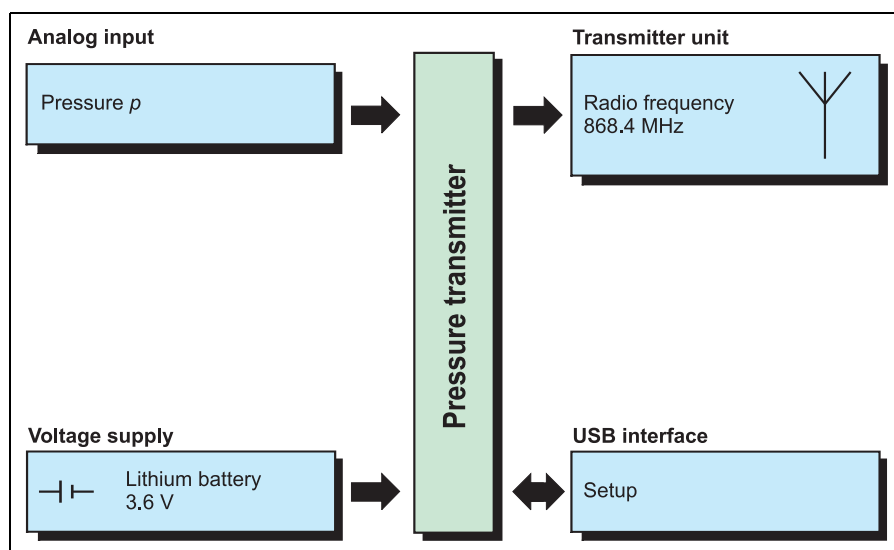
A 3.6 V lithium battery (size C) is used to supply voltage to the pressure transmitter.

A setup program is available as an accessory for easy configuration and parameterization of the pressure transmitter and the Wtrans receiver on the laptop/PC. As an optional extra, the On-lineChart function can be used to record the measured values on the laptop/PC.



Type 402060

Block diagram



Special features

- Radio frequency 868.4 MHz (Europe)
- Open air range up to 300 m
- Configurable transmitter detection
- Battery status monitoring
- High moisture and vibration resistance
- Configurable via easy-to-use setup program
- OnlineChart of the measured values

Additional Wtrans transmitters

- Data sheet 707060
- Data sheet 902928
- Data sheet 902930

Suitable Wtrans receivers

- Data sheet 902931

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Technical data

Measuring range and accuracy

Measuring range bar	Linearity ^a % MSP	Accuracy at		Long-term stability ^b % MSP per year	Overload capacity ^c bar	Burst pressure bar
		20 °C ^d % MSP	-20 to +80 °C ^e % MSP			
0 bar to 0.25 bar relative pressure	0.3	0.7	2.0	≤ 0.2	1	1.5
0 bar to 0.4 bar relative pressure	0.3	0.7	1.8		1.6	2.4
0 bar to 0.6 bar relative pressure	0.3	0.6	1.8		2.4	3.6
0 bar to 1 bar relative pressure	0.3	0.5	1.3		4	6
0 bar to 1.6 bar relative pressure	0.25	0.5	1.3		6.4	9.6
0 bar to 2.5 bar relative pressure	0.25	0.5	1.2		10	15
0 bar to 4 bar relative pressure	0.25	0.5	1.2		16	24
0 bar to 6 bar relative pressure	0.25	0.5	1.2		24	36
0 bar to 10 bar relative pressure	0.25	0.5	1.0		40	60
0 bar to 16 bar relative pressure	0.2	0.5	1.0		64	96
0 bar to 25 bar relative pressure	0.2	0.5	1.0		100	150
0 bar to 40 bar relative pressure	0.2	0.5	1.0		160	240
0 bar to 60 bar relative pressure	0.2	0.5	1.0		240	360
0 bar to 100 bar relative pressure	0.2	0.5	1.0		400	600
0 bar to 160 bar relative pressure	0.3	0.7	1.2		320	800
0 bar to 250 bar relative pressure	0.3	0.7	1.2		500	1250
0 bar to 400 bar relative pressure	0.3	0.7	1.2		600	1200
0 bar to 600 bar relative pressure	0.3	0.7	1.2		900	1800
-1 bar to 0 bar relative pressure	0.3	0.5	1.3		4	5
-1 bar to +0.6 bar relative pressure	0.3	0.5	1.3		2.4	3
-1 bar to +1.5 bar relative pressure	0.3	0.5	1.2		6	7.5
-1 bar to +3 bar relative pressure	0.3	0.5	1.2		12	15
-1 bar to +5 bar relative pressure	0.25	0.5	1.2		20	25
-1 bar to +9 bar relative pressure	0.25	0.5	1.0		36	45
-1 bar to +15 bar relative pressure	0.25	0.5	1.0		60	75
-1 bar to +24 bar relative pressure	0.2	0.5	1.0		96	120
0 bar to 0.6 bar absolute pressure	0.3	0.6	1.8		2.4	3
0 bar to 1 bar absolute pressure	0.3	0.5	1.3		4	5
0 bar to 1.6 bar absolute pressure	0.25	0.5	1.3		6.4	8
0 bar to 2.5 bar absolute pressure	0.25	0.5	1.2		10	12.5
0 bar to 4 bar absolute pressure	0.25	0.5	1.2	16	20	
0 bar to 6 bar absolute pressure	0.25	0.5	1.2	24	30	
0 bar to 10 bar absolute pressure	0.25	0.5	1.0	40	50	
0 bar to 16 bar absolute pressure	0.2	0.5	1.0	64	80	
0 bar to 25 bar absolute pressure	0.2	0.5	1.0	100	125	

^a Linearity according to limit point setting

^b Reference conditions EN 61298-1

^c All pressure transmitters are vacuum proof.

^d Includes: linearity, hysteresis, repeatability, deviation of measuring range initial value and measuring span (MSP)

^e Includes: linearity, hysteresis, repeatability, deviation of measuring range initial value and measuring span (MSP), thermal effect on measuring range start and measuring span (MSP)

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Output (radio transmission)

Transmitter detection (transmitter ID)	Max. 5-digit ID, default setting, customer-specific configuration possible
Transmission interval	Adjustable from 0.5 to 3600 s (default setting 5 s)
Radio frequency	868.4 MHz (Europe)
Transmission power	< +10 dBm
Open air range	Max. 300 m when using the antenna holder for wall mounting for the receiver and the 3-meter antenna cable. When mounting the antenna directly to the receiver, a reduction in the range of approx. 40 % must be taken into account.
Unit of the output signal	bar (configurable)
Configuration	With setup program
Configurable parameters	Transmitter detection (max. 5-digit ID), transmission interval, and offset

Electrical data

Voltage supply Lithium battery (accessory)	Rated voltage: 3.6 V, rated capacity: 3.6 Ah (size C)
Battery operating life	Approx. 1 year with default settings: Transmission interval = 5 s and room temperature (approx. 20 °C); shorter transmission interval and high or low ambient temperature reduce the battery operating life.

Environmental influences

Operating temperature range	-30 to +85 °C
Measuring material temperature range	-30 to +85 °C
Storage temperature range	-30 to +85 °C
Climate class	Class 3K8H according to DIN EN 60721-3-3 (Air temperature: -25 to +70 °C, relative humidity: 10 to 100 %)
Vibration resistance	Max. 5 g, 15 to 2000 Hz according to DIN EN 60068-2-6
Shock resistance	20 g for 11 ms according to DIN EN 60068-2-27 50 g for 1 ms according to DIN EN 60068-2-27
Electromagnetic compatibility (EMC) Interference emission Interference immunity	DIN EN 61326-1 Class B - households and small businesses - Industrial requirement
Radio frequency spectrum	ETSI EN 300 220-1 and ETSI EN 300 220-2
Protection type	IP66 or IP67

Mechanical features

Housing material	PA, transparent (UV-resistant)
Case seal material	VMQ
Pressure sensor material	Stainless steel 17-4 PH at 0 to 160 bar, 0 to 250 bar, 0 to 400 bar, and 0 to 600 bar; Stainless steel 316 L at all other pressure ranges
Process connection material	Stainless steel 316Ti; Stainless steel 316 L with surface roughness Ra < 0.8 µm for JUMO PEKA hygienic process connection
Installation position	Any (with due consideration of the application)
Weight	Approx. 250 g (with lithium battery and process connection 504: G 1/2 DIN EN 837)

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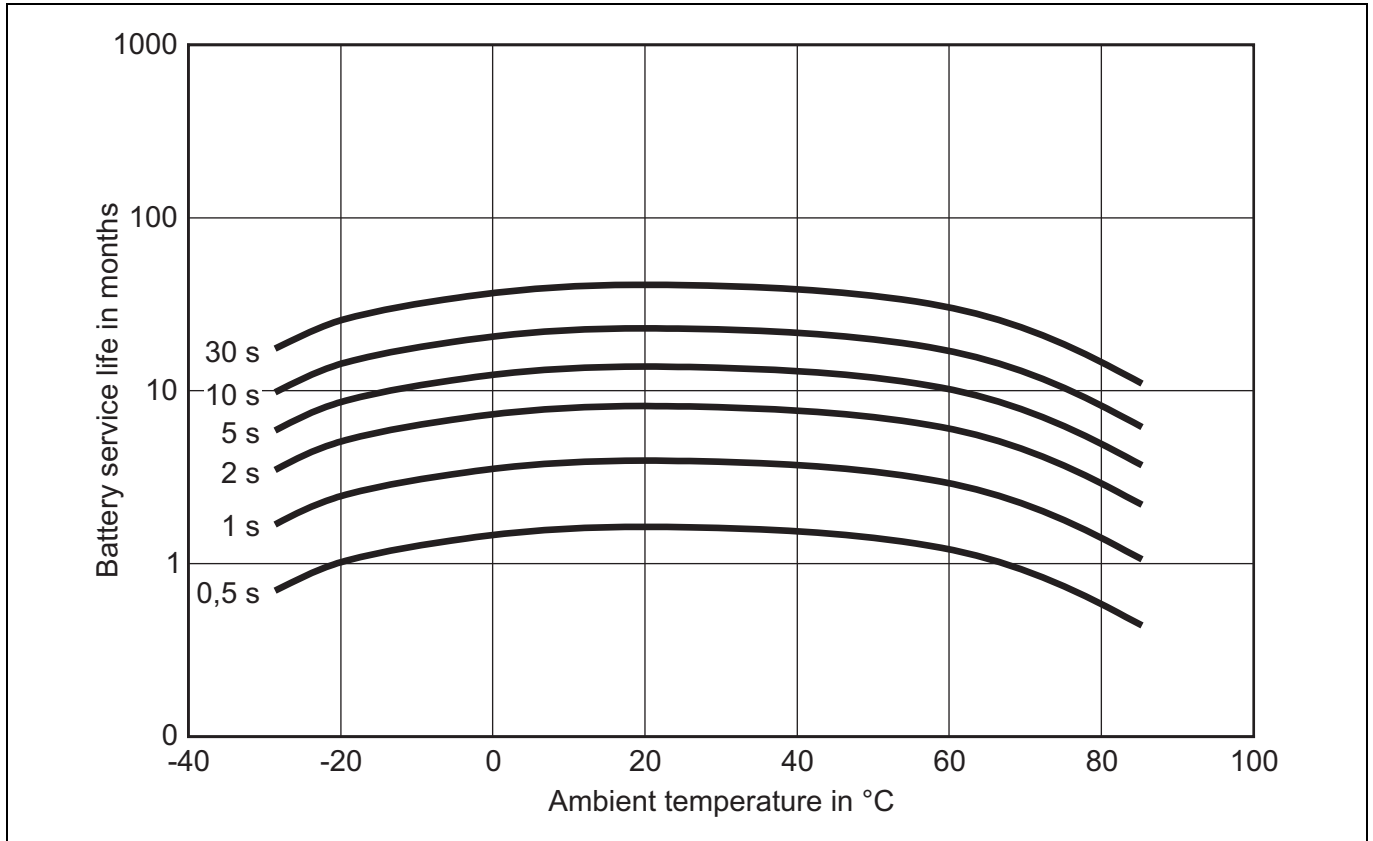
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Battery operating life

The following figure shows the battery service life for the lithium battery available in the accessories depending on the transmission interval (0.5 s, 1 s, 2 s, 5 s, 10 s, and 30 s) and the ambient temperature.



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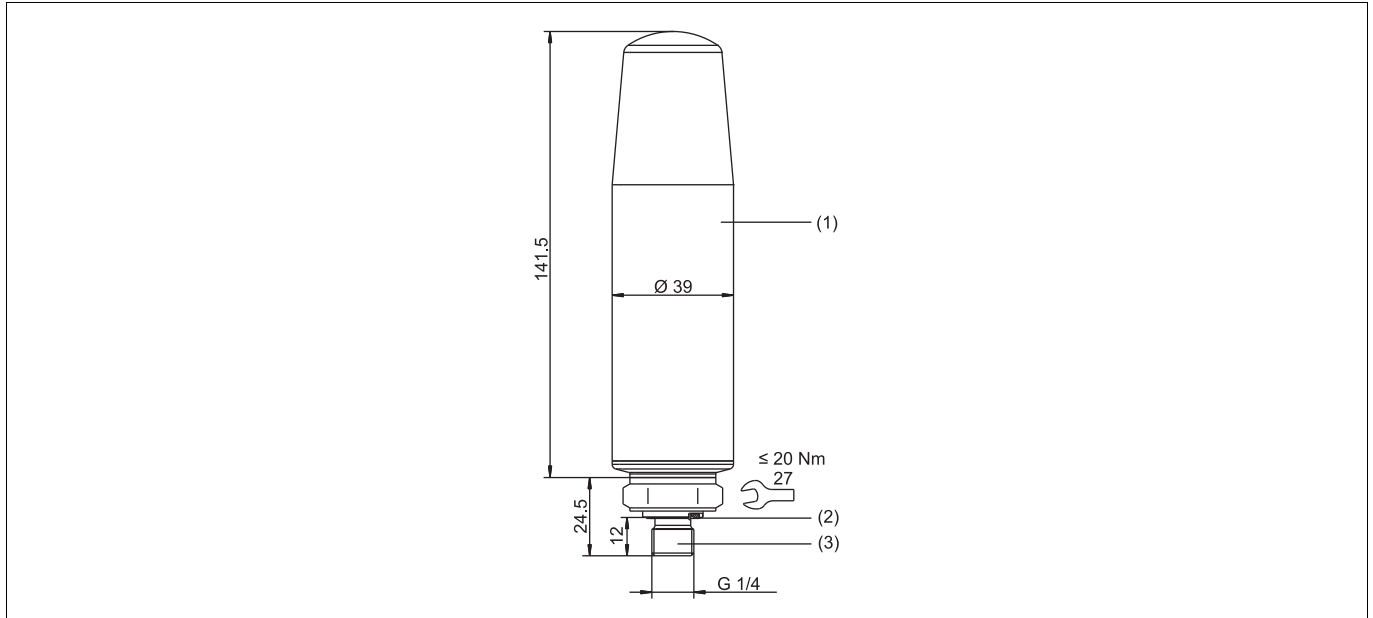
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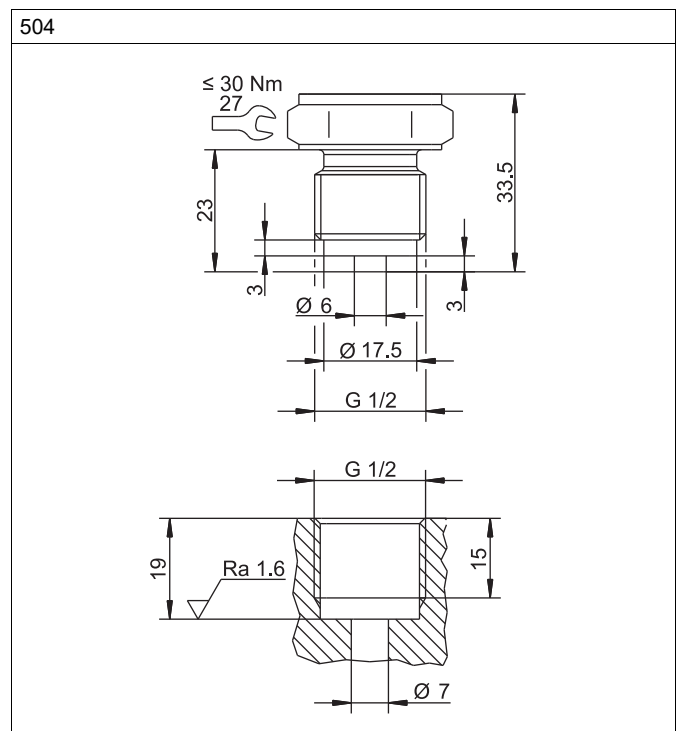
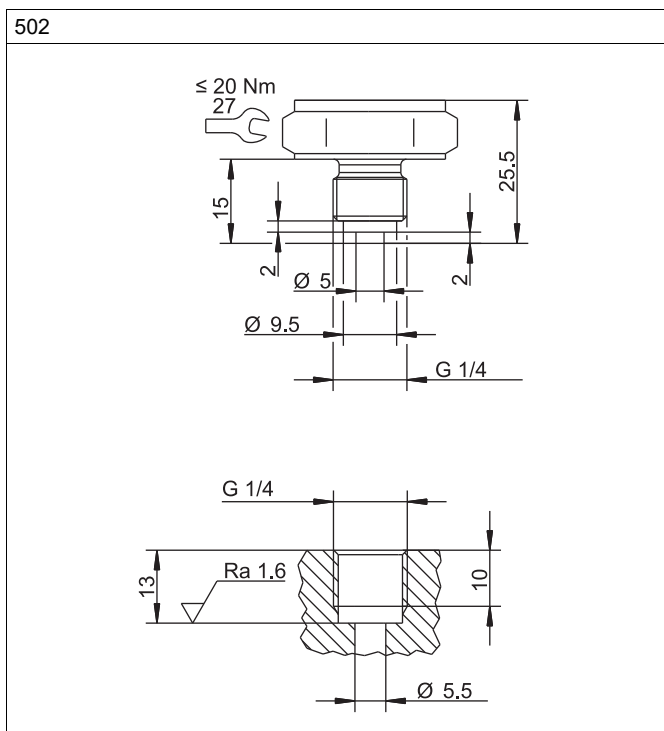
Dimensions and process connections

Pressure transmitter with wireless data transmission



- (1) Housing – tighten hand-tight (10 ± 5 Nm)
- (2) Profile seal G 1/4
- (3) Process connection

Process connections



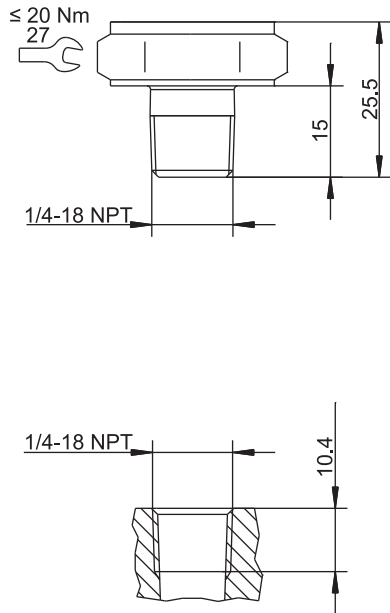
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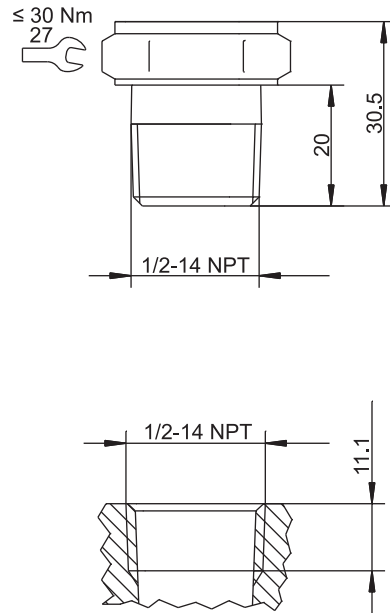
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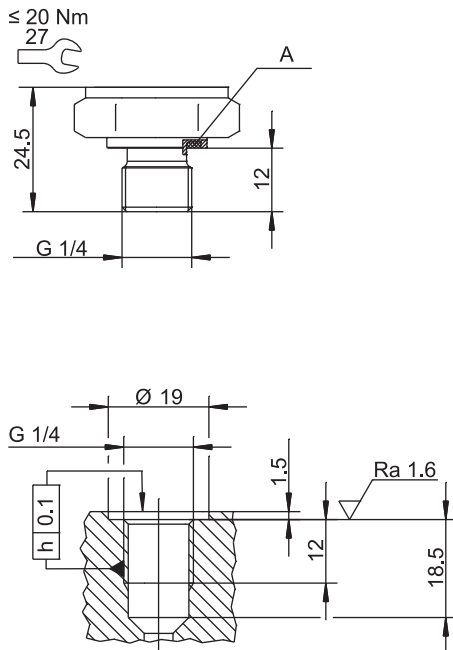
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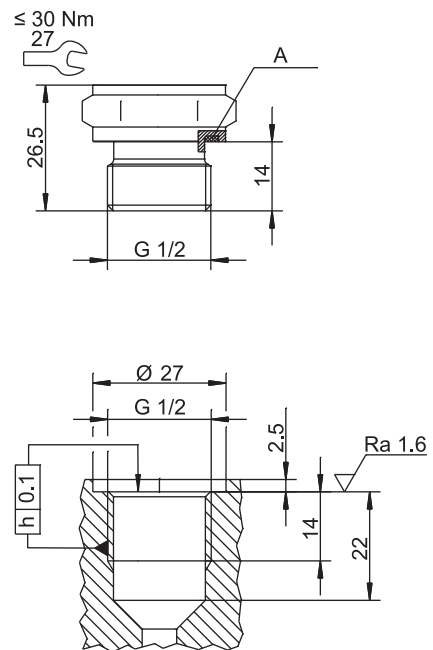


521



A Profile seal G 1/4

523



A Profile seal G 1/2

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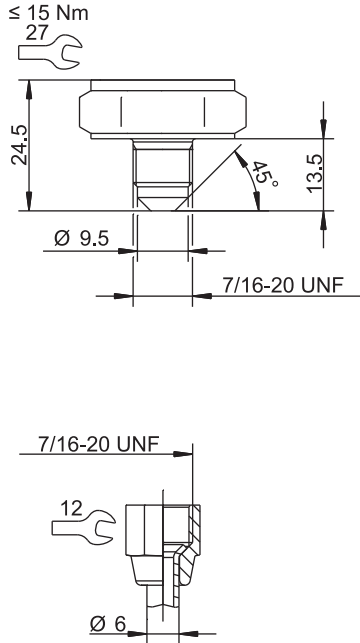
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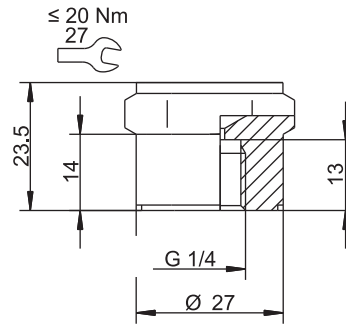
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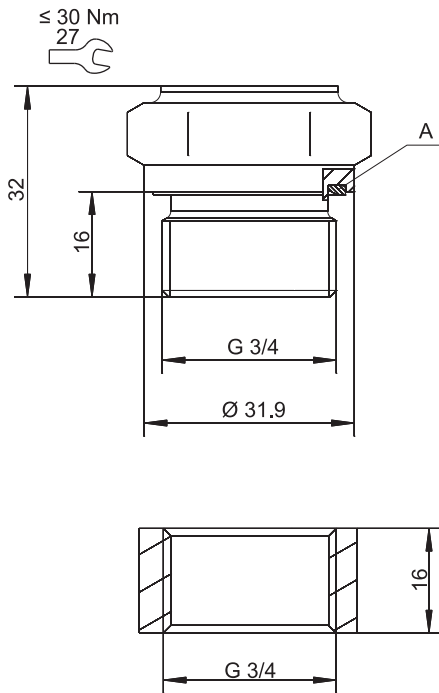
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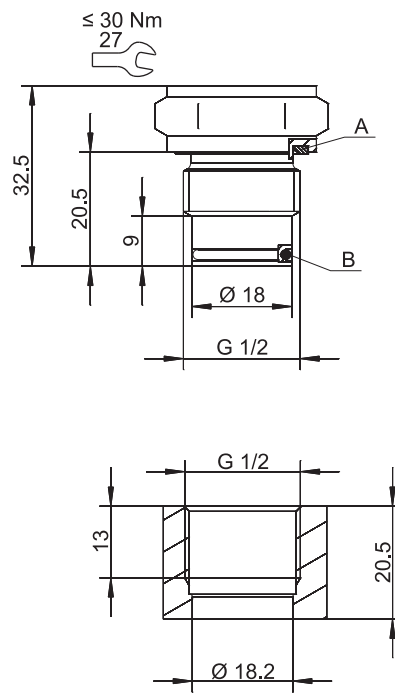


571



A Profile seal G 3/4

574



A Profile seal G 1/2

B O-ring 14 x 1.78

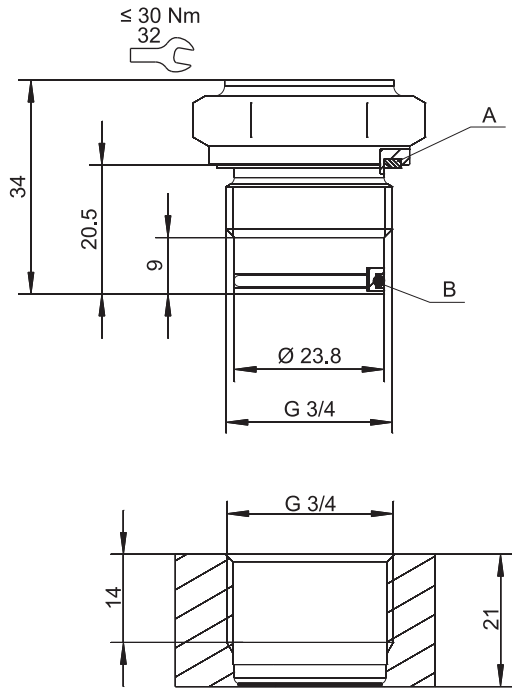
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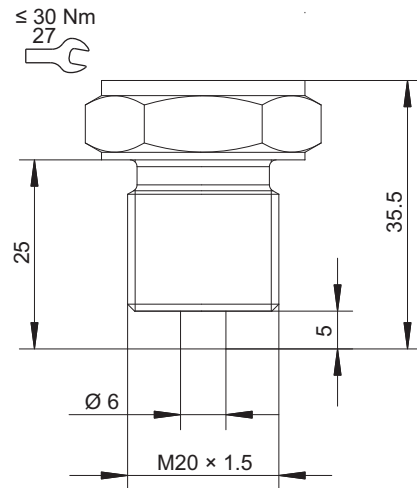


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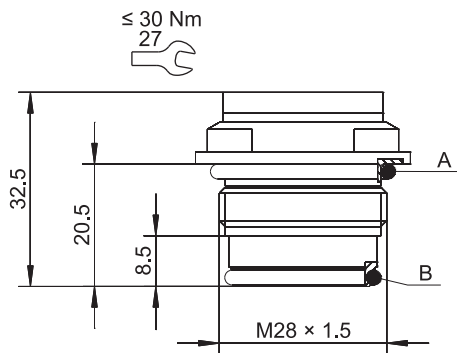


- A Profile seal G 3/4
- B O-ring 20.35 × 1.78

583



997



- A O-ring 26 × 2.5
 - B O-ring 21 × 2.2
- JUMO PEKA hygienic process connection (data sheet 409711)

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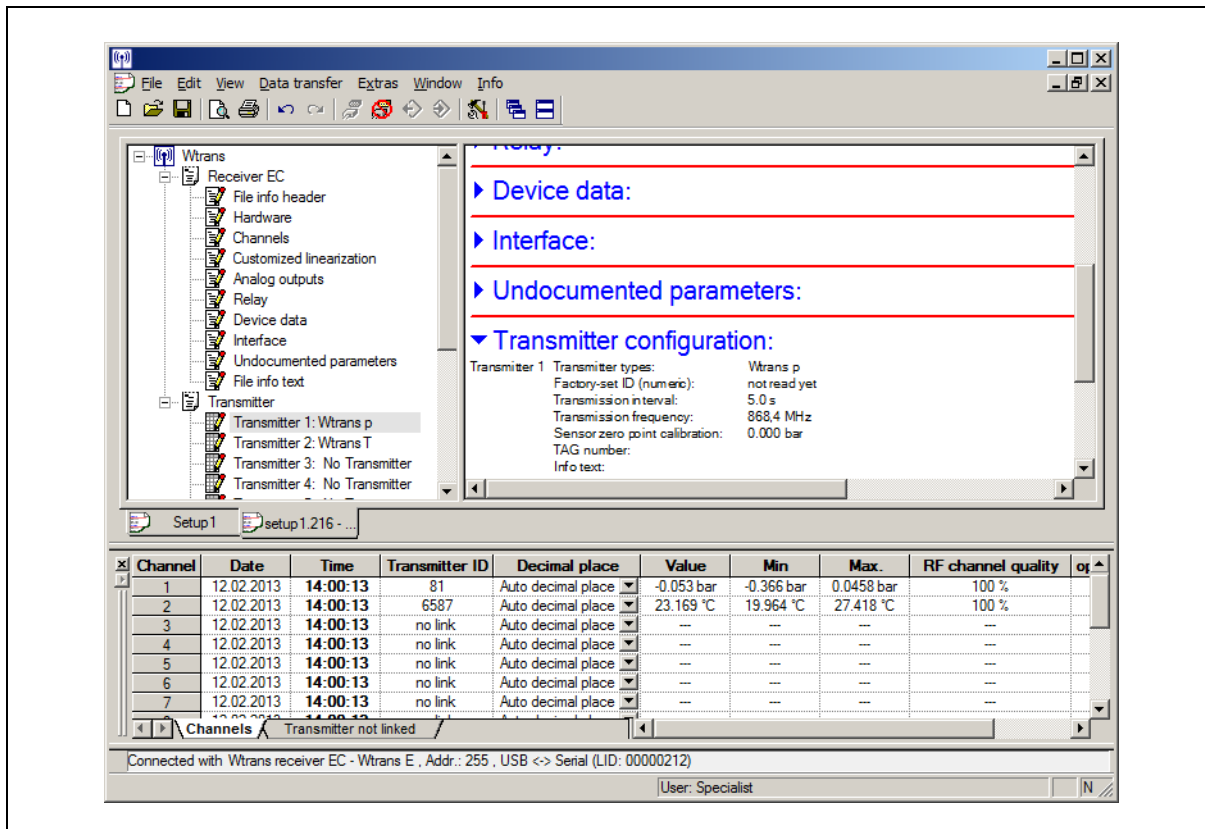
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Setup program

The setup program enables the pressure transmitter to be configured using a PC. The configuration data can be archived on data storage devices and printed.


The setup program can be used to overwrite changed parameters with the factory settings at any time. The connection between the transmitter and the PC is established via a USB interface.



Configurable parameters	Default settings
Transmitter detection (transmitter ID)	Consecutive
Transmission interval	5 s
Offset	0 bar
TAG number (20-digit)	Customer-specific specifications
Installation date	Current date

PC interface

The USB interface is designed only to configure the pressure transmitter. Continuous operation is not admissible.

Connection for	Type	Terminal assignment
USB connection to the PC	USB interface (Mini-B; "Full-Speed")	Standard (5-pin) 

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Order details

	(1) Basic type
402060	Wtrans p pressure transmitter with wireless data transmission
	(2) Basic type extension
000	None
999	Special version
	(3) Input (measuring range)
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 measuring range for absolute pressure
999	Special measuring range for relative pressure
	(4) Radio frequency
10	868.4 MHz (Europe)
	(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

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512	1/2-14 NPT DIN EN 837
521	G 1/4 DIN 3852-11
523	G 1/2 DIN 3852-11
562	7/16-20 UNF
567	G 1/4 inside
571	G 3/4 flush-mounted ^a
574	G 1/2 flush-mounted with double seal ^a
575	G 3/4 flush-mounted with double seal ^a
583	M20 × 1.5 with pin ^a
997	PEKA hygienic process connection ^a
998	Suitable for connection to pressure separator
999	For other process connections please inquire
(6)	Process connection material
20	Stainless steel
(7)	Extra codes
000	None
100	Customer-specific configuration (specification in plain text) ^b
591	Choke in the pressure channel
634	TAG number

^a The process connection can only be supplied for inputs (measuring range) up to 40 bar.

^b The customer-specific configuration only applies to the transmission interval (0.5 to 3600 s, factory setting 5 s). The transmission interval can also be set using the setup program (see accessories).

Order code (1) (2) (3) (4) (5) (6) (7) , ...^a
 / - - - - - / , ...^a
Order example 402060 / 000 - 465 - 10 - 502 - 20 / 634

^a List extra codes in sequence and separate using commas.

Scope of delivery

1 device in the ordered version
1 lithium battery 3.6 V, 3.6 Ah (size C), not rechargeable
1 operating manual

Accessories

Description	Part no.
Lithium battery Rated voltage: 3.6 V, rated capacity: 3.6 Ah (size C), not rechargeable	00574399
USB cable, type A USB connector on Mini-B USB connector, length 3 m ^a	00506252
Setup program on CD-ROM, multilingual ^a	00488887
Setup program including OnlineChart on CD-ROM, multilingual ^a	00549067
OnlineChart activation	00549188

^a Configuration using a computer is only possible with the USB cable and one of the two setup programs.