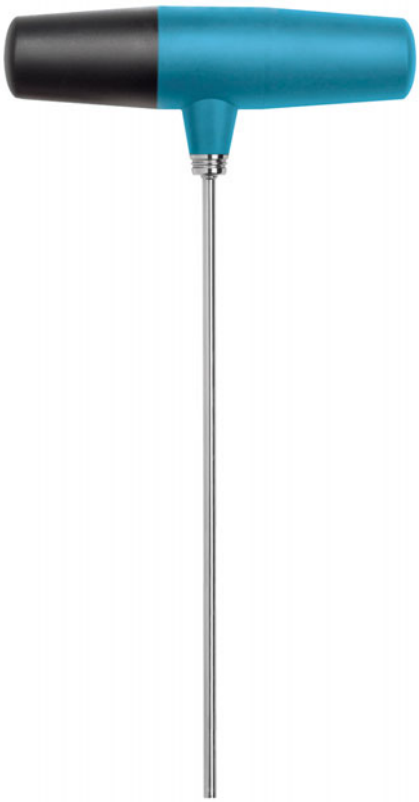
JUMO Wtrans T03

RTD Temperature Probe with Wireless Data Transmission and Ex Approval



Operating Manual

90293000T90Z001K000

V4.01/EN/00576471/2023-12-06

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1.1 Safety information

General

This manual contains information that must be observed in the interest of your own safety and to avoid material damage. This information is supported by symbols which are used in this manual as indicated.

Please read this manual before starting up the device. Store this manual in a place that is accessible to all users at all times.

If difficulties occur during startup, please do not intervene in any way that could jeopardize your warranty rights!

Warning symbols

DANGER!

This symbol in connection with the signal word indicates that **personal injury or material damage** will occur if the respective instructions are not followed.

CAUTION!

This symbol in connection with the signal word indicates that **material damage or data loss** will occur if the respective precautionary measures are not taken.

READ THE DOCUMENTATION!

This symbol, which is attached to the device, indicates that the associated **documentation for the device** must be **observed**. This is necessary to identify the nature of the potential hazard, and to take measures to prevent it.

Note symbols

NOTE!

This symbol refers to **important information** about the product, its handling, or additional benefits.

REFERENCE!

This symbol refers to **additional information** in other sections, chapters, or other manuals.

1 Introduction

1.2 Description

The JUMO Wtrans T03 RTD temperature probe (also called a transmitter) can be used under consideration of the relevant standards and regulations for portable and stationary temperature measurement in Ex-areas zone 0 (20), zone 1 (21), or zone 2 (22).

It is essential to comply with the special conditions of use chapter 1.6 "Special conditions of use "X"", Page 9!

The Wtrans T03 is intrinsically safe equipment and suitable for the device group IIB "flammable gases" (a typical gas is ethylene) and for the device group IIIB "non-conductive dust".

The measuring insert is equipped with a Pt1000 temperature sensor according to DIN EN 60751, class A in a three-wire circuit. The operating temperature range of the temperature sensor (medium temperature) is -30 to +260 °C.

An ambient temperature of -30 to +85 °C is admissible for the JUMO Wtrans T03. The plant manufacturer must take into account the heat input (to be calculated under chapter 1.10 "Heat input through protection tube / protection tube fitting", Page 12) through the protection fitting into the housing. If the device is to be used in atmospheres with combustible dust, the maximum surface temperature is T 130 °C. In a gas atmosphere, the device may be used in temperature class T4.

The measured temperature values are transmitted wirelessly to the receiver of the measuring system outside of the Ex-area. The measured values are displayed on the receiver and are available in digital format on the RS485 interface and as analog outputs. Different alarms can be optionally signaled with two relay outputs.

The radio frequency of the Wtrans measuring system is 868.4 MHz. This frequency is almost impervious to external interference and allows data to be transmitted even in harsh industrial environments. If the antenna holder for wall mounting (can only be mounted outside the Ex-area) with the 3 m antenna cable is being used for the receiver, the open air range is 300 m.

The housing of the JUMO Wtrans T03 is oil-resistant and acid-resistant and has protection type IP67. The protection fitting is made from stainless steel. Only the corresponding JUMO Pt1000 RTD temperature probes with connecting cable for the Ex-area may be connected to the basic type 902930/55… with an M12 × 1 plug connection.

Only the approved 3.6 V, 2.2 Ah lithium battery may be used for the voltage supply to the JUMO Wtrans T03.

1.3 Intended use

The device described in this manual is meant for the measuring of temperatures in industrial environments as specified in the technical data. The device may be used in the potentially explosive areas zone 0 (20), zone 1 (21), or zone 2 (22). If a suitable protection fitting is used, zone 0 (20) / zone 1 (21) zone separation is also possible.
Another use or one that goes beyond the specified use ─ with respect to use in potentially explosive areas ─ is considered as not being in accordance with the intended use.

Liability for resulting damages will not be assumed.

Any and all changes to the device causes the Ex approval to become null and void!

The device is built according to the relevant standards and directives as well as to the applicable safety regulations. Nevertheless, improper use may lead to personal injury or material damage.

To avoid danger, only use the device:

- for the intended use
- when in good order and condition
- under consideration of this operating manual

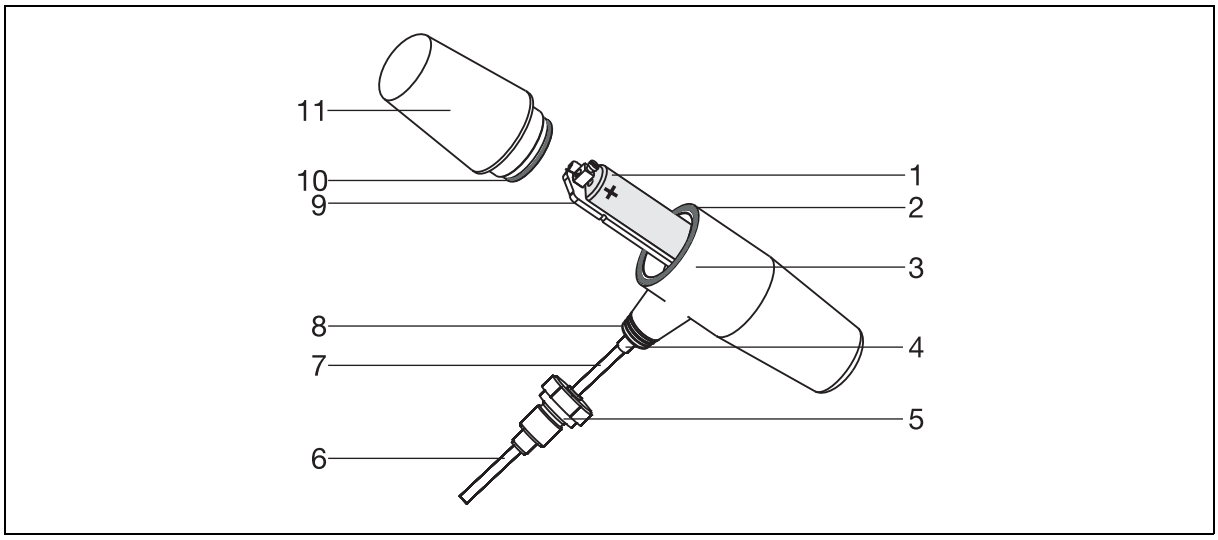
DANGER!

The Ex approval becomes null and void if the device is used contrary to its intended use or if the safety requirements in this operating manual are not complied with.

Installation regulations

If electric equipment is used in plants and ambient conditions with more stringent safety requirements, the requirements from the applicable installation regulations according to EN 60079-14 "Explosive atmospheres - Part 14: Electrical installations design, selection and erection" must be followed, among other things.

1.4 Components:



1	Lithium battery	2	Seal (white)
3	Basic housing (blue)	4	Housing connection
5	Process connection (type-specific)	6	Protection tube
7	Extension tube (only for basic types with a process connection)	8	Color rings
9	Circuit board	10	Seal (black)
11	Housing cover (black)		

NOTE!

In this manual, the combination of protection tube, process connection, and extension tube is called the protection fitting. The measuring insert with the temperature sensor is integrated into the protection tube.

1.5 Definition of "portable"

A JUMO Wtrans T03 is considered to "portable" if its protection tube does not have a grounding element and it can be used as a mobile temperature measuring device in the Ex-area.

It is essential to comply with the special conditions of use (chapter 1.6 "Special conditions of use "X"", Page 9)!

The portable JUMO Wtrans T03 units are available with the following protection tube dimensions:

- Protection tube length of 0 to 2570 mm
- Diameter of 2 to 9 mm

All protection tube variants which have different dimensions or have a process connection must be grounded by the user at the process connection or by other suitable means.

NOTE!

If the portable JUMO Wtrans T03 is being used as an insertion probe, ensure an appropriate amount of force is applied when inserting the device into the measurement medium so as to prevent damage to the protection tube.

1.6 Special conditions of use "X"

The capacity of the non-grounded metal protection tubes in portable JUMO Wtrans T03 units depends on the design type and can be found in the following table.

If the JUMO Wtrans T03 is being used for portable applications, it must be brought into a non-hazardous, potential-free condition before it is taken into the Ex zone. One way of ensuring this is through contacting with a protection conductor, for example.

Protection tube length[a]	Protection tube diameter			
	2 mm	> 2 to 4 mm	> 4 to 6 mm	> 6 to 9 mm
0 to 100 mm	18.9 pF	25.5 pF	30.4 pF	36.3 pF
> 100 to 170 mm	32.1 pF	43.3 pF	51.6 pF	61.6 pF
> 170 to 270 mm	51.0 pF	68.8 pF	82.0 pF	97.9 pF
> 270 to 370 mm	69.9 pF	94.3 pF	112.4 pF	134.2 pF
> 370 to 570 mm	107.6 pF	145.3 pF	173.1 pF	206.7 pF
> 570 to 820 mm	154.8 pF	209.0 pF	249.0 pF	297.3 pF
> 820 to 1070 mm	202.0 pF	272.7 pF	324.9 pF	388.0 pF
> 1070 to 1570 mm	296.4 pF	400.2 pF	476.8 pF	569.3 pF
> 1570 to 2070 mm	390.8 pF	527.7 pF	628.6 pF	750.6 pF
> 2070 to 2570 mm	485.2 pF	655.1 pF	780.4 pF	931.9 pF

[a] Protection tube length = insertion length (EL) + extension tube length (70 mm as standard); differing extension tube lengths must be taken into account

Only the preconfigured 3.6 V, 2.2 Ah lithium batteries available from the manufacturer as an accessory (part no. 00525539) may be used as replacement batteries.

DANGER!

There is a risk of electrostatic charges if the special conditions of use are not complied with.

1 Introduction

1.7 Arrangement in the Ex-area

1.7.1 Protection concept

As intrinsically safe equipment, the JUMO Wtrans T03 can be used with different protection fitting variants ─ portable or with a process connection – in zone 0 (20), zone 1 (21), or zone 2 (22), see chapter 1.7.2 "Zone 0 (20), zone 1 (21), or zone 2 (22)", Page 10.

Depending on the application, the JUMO Wtrans T03 with protection fitting for zone separation is designed to be attached gas-tight to containers or pipelines using the process connection, see chapter 1.7.3 "Zone 0 (20) / zone 1 (21) with zone separation by protection fitting", Page 11.

In both cases, a maximum medium temperature of 260 °C is admissible at the protection fitting. The maximum ambient temperature at the plastic housing of the JUMO Wtrans T03 is 85 °C; the heat input through the protection fitting into the housing must be taken into consideration.

Zone separation is implemented through:

- Protection fitting with process connection (screw connection or flange)
- Protection fitting made of chrome steel with wall thickness > 1 mm

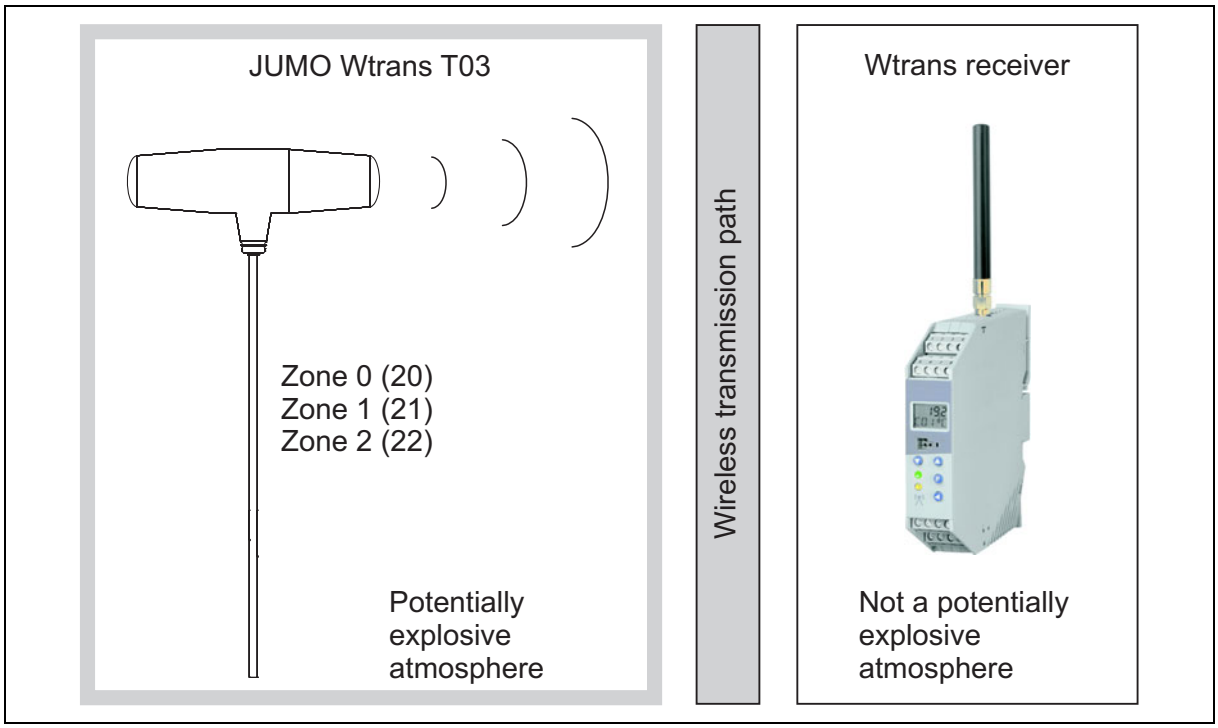
When ordering systems for zone separation, the process connections are configured as follows:

- Thread pitch ≥ 0.7
- Engaged threads ≥ 5
- Screw-in depth ≥ 8 mm

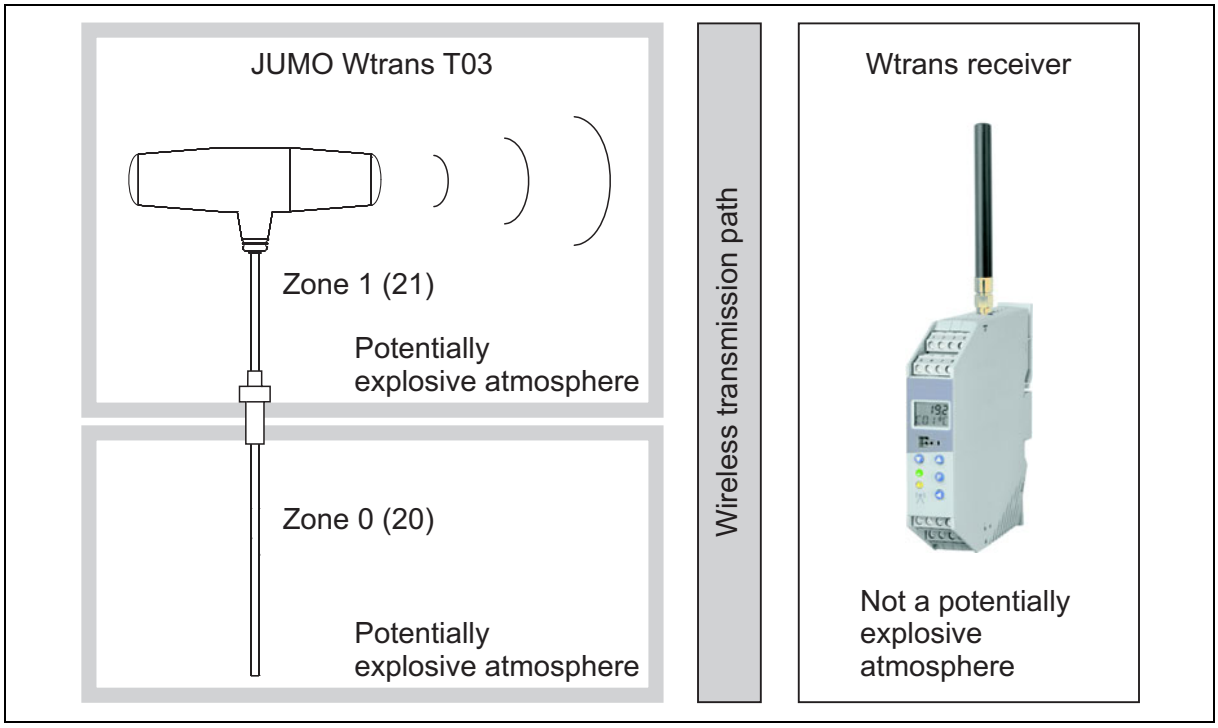
The sealing in the process connection is the responsibility of the plant manufacturer.

The device must be identified using the identification markings in this operating manual, see chapter 2.2 "Ex identification marking", Page 16.

1.7.2 Zone 0 (20), zone 1 (21), or zone 2 (22)



1.7.3 Zone 0 (20) / zone 1 (21) with zone separation by protection fitting



1.8 Block diagram

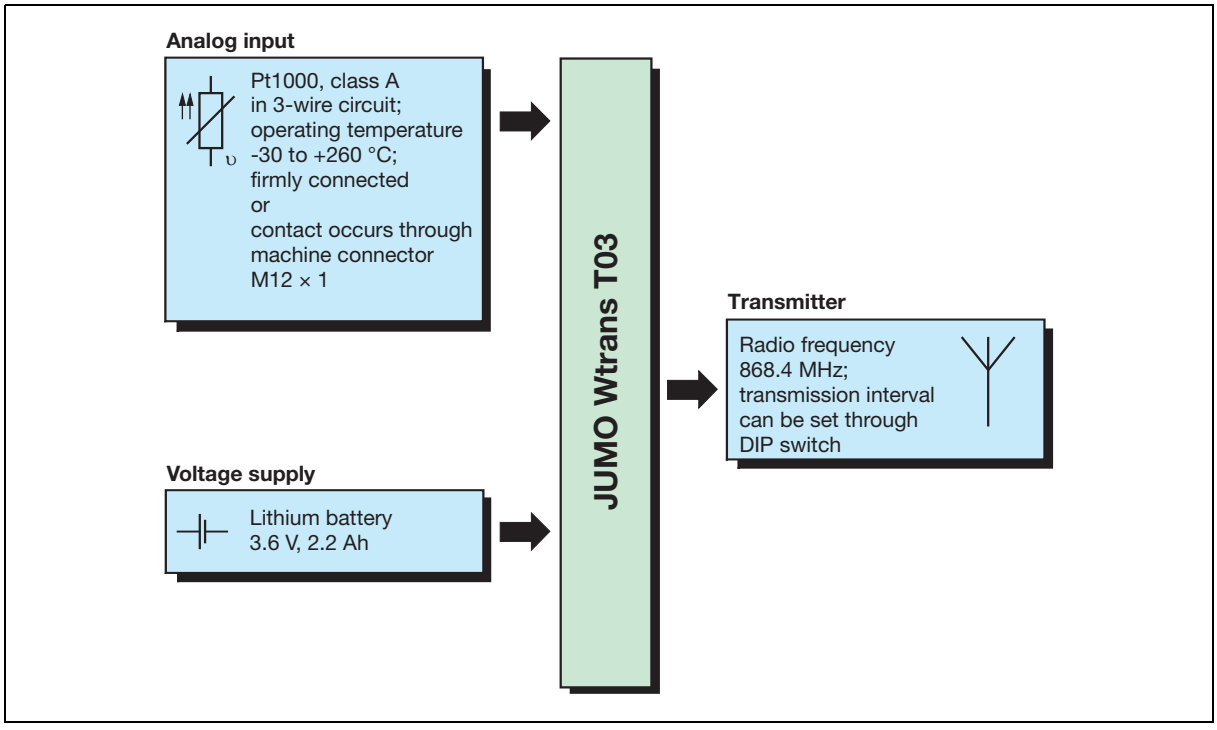


Fig. 1-1 Block diagram of the JUMO Wtrans T03

1.9 Dimensions

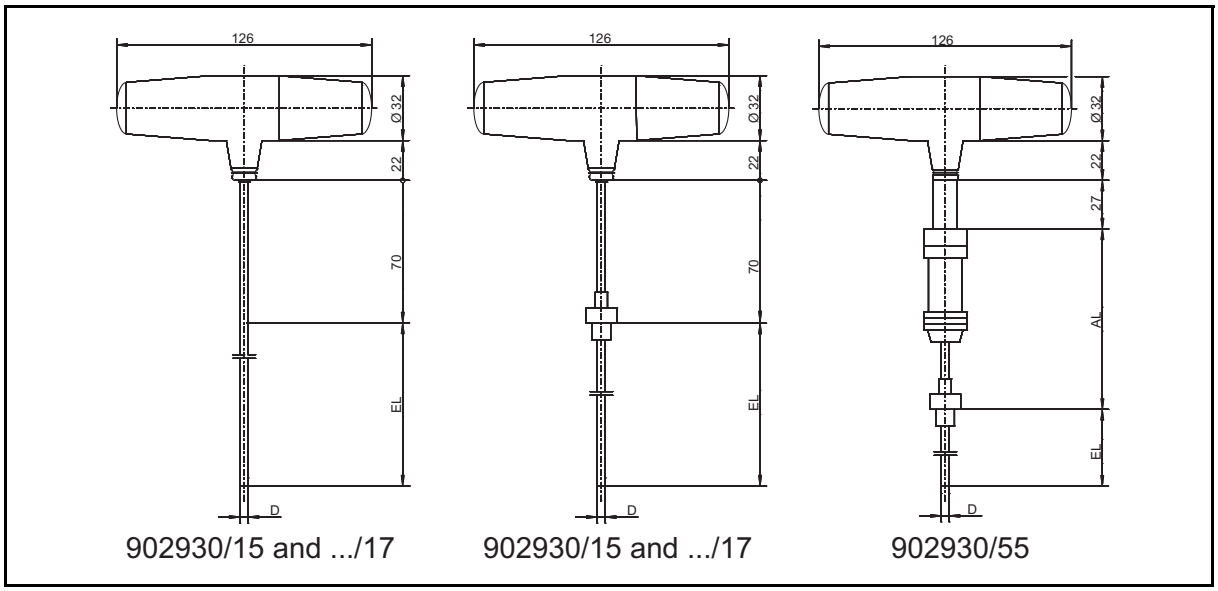


Fig. 1-2 Dimensions of the JUMO Wtrans T03

1.10 Heat input through protection tube / protection tube fitting

With basic types 902930/15 and 902930/17, the medium temperature causes heat input through the protection tube into the housing of the JUMO Wtrans T03.

A minimum distance of 70 mm must be maintained between the measurement medium and housing connection. This minimum distance must be complied with for JUMO Wtrans T03 units with and without a process connection. The following table shows the heat input for a distance of 70 mm and 120 mm.

Extension tube length / distance between measurement medium and housing	Maximum heat input at a medium temperature of 260 °C	Heat input per 10 K medium temperature above the max. ambient temperature
70 mm	15 K	0.86 K
120 mm	10 K	0.57 K

The admissible ambient temperature is calculated from the difference between the maximum ambient temperature specified in the technical data and the calculated heat input.

Example calculation for medium temperatures differing from 260 °C:
A medium temperature of 180 °C corresponds to 95 K above the maximum ambient temperature of 85 °C for an extension tube length of 70 mm.

95 K × (0.86 K ÷ 10 K) = 8.17 K

Result: The maximum ambient temperature for this example calculation is
85 °C - 8.17 K = 76.83 °C.

DANGER!

Users must take into account the calculated heat input for the maximum admissible ambient temperature.
If a protection tube without a process connection is being used and the required distance between the measurement medium and housing is not to be complied with, the medium temperature must be restricted to the maximum ambient temperature.
Users must take into account the effect of radiant heat and convection.

1.11 Heating of the protection tube in the event of malfunctions

The heating of the protection tube caused by a drop in performance at the Pt1000 temperature sensor in the event of a malfunction is max. 5 K.

DANGER!

Users must make sure that the temperature increase of 5 K does not cause the limits of the defined temperature classes to be exceeded.

1.12 Standards used for Ex-protection

- EN IEC 60079-0:2018/AC:2020-02
  Explosive atmospheres - Part 0: Equipment - General requirements
- EN 60079-11:2012
  Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
- EN 60079-26:2015
  Explosive atmospheres - Part 26: Equipment with Equipment Protection Level (EPL) Ga

1 Introduction

2.1 Identification markings of the device data

Identification markings on the basic housing

Description	Example
Manufacturer	JUMO GmbH & Co. KG Moritz-Juchheim-Strasse 1 36039 Fulda, Germany
Type designation	902930/15-596-1006-2-6-130-1-10-000/362
TN (Part no.)	12345678
Fabrication number (F-no.)	0012345601015420011
Battery	Part no. 00525539
EU conformity label	CE
UK conformity label	UKCA
EU type examination certificate	TÜV 16 ATEX 177609 X
UK type examination certificate	EPS 22 UKEX 1 111 X
⟨Ex⟩-Identification marking	II 1 G Ex ia IIB T4 Ga II 1 D Ex ia IIIB T_{200}130 °C Da
Admissible ambient temperature	-30 °C ≤ Ta ≤ +85 °C
Voltage supply (DC)	⎓ DC 3.6 V
Transmitter ID no.	12345
Transmission frequency	868.4 MHz

Identification markings on the housing cover

Description	Example
Note	Housing lid to be screwed on flush

Identification markings on the protection tube

Description	Example
Marking	70 mm extension tube length (only for protection tubes without a screw connection)

F-no.

The fabrication number (F-no.) allows the manufacturer to identify the device.

The fabrication number (F-no.) indicates the production date (year/week).
The relevant digits are in positions 12, 13, 14, and 15.
Example: F-no. = 0012345601015420011
The device was produced in the 42nd calendar week of 2015.

Transmitter detection (transmitter ID)

The transmitter ID is set per default. It must be entered or activated on the receiver to establish a connection between the transmitter and receiver.

Radio frequency

The JUMO Wtrans T03 sends data at 868.4 MHz.

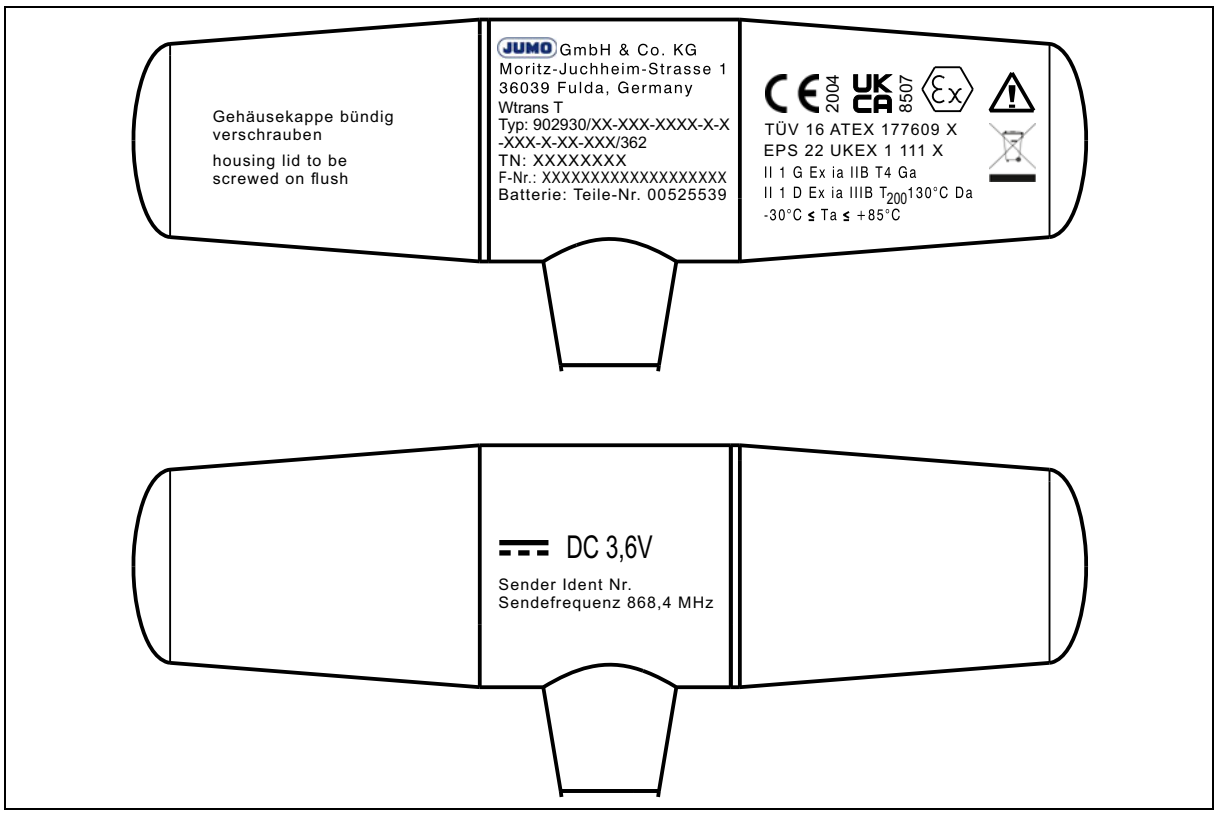
2 Identifying the device version

2.2 Ex identification marking

The device has the following identification markings on the housing:

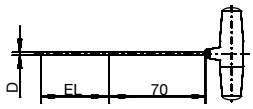
	For use in zone 0 (20): TÜV 16 ATEX 177609 X II 1 G Ex ia IIB T4 Ga II 1 D Ex ia IIIB T_{200}130 °C Da -30 °C ≤ Ta ≤ +85 °C
	For use in zone 0 (20) / zone 1 (21) zone separation by protection fitting: TÜV 16 ATEX 177609 X II 1/2 G Ex ia IIB T4 Ga/Gb II 1/2 D Ex ia IIIB T_{200}130 °C Da/Db -30 °C ≤ Ta ≤ +85 °C

2.3 Labeling example



2.4 Order details

		(1)	**Basic type**
	902930/15		JUMO Wtrans T03.G1 Ex Insertion RTD temperature probe with ATEX approval Intrinsically safe device according to the ATEX directive (Ambient temperature of housing: -30 to +85 °C) Specify requirements for zone separation in plain text!
		(2)	**Operating temperature in °C (protection fitting)**
x	596		-30 to +260 °C
		(3)	**Measuring insert**
x	1006		1× Pt1000 in three-wire circuit
		(4)	**Tolerance class according to DIN EN 60751**
x	2		Class A
		(5)	**Protection tube diameter D in mm**
x	4		Dia. 4 mm
x	6		Dia. 6 mm (zone separation possible)
x	9		Dia. 9 mm (zone separation possible)
x	...		Other protection tube diameters upon request
		(6)	**Insertion length EL in mm (EL 30 to 1000 mm)**
x	30		30 mm (take account of 70 mm extension tube length)
x	80		80 mm (take account of 70 mm extension tube length)
x	130		130 mm (take account of 70 mm extension tube length)
x	...		For orders, specify in plain text (50 mm increments)
		(7)	**Insertion tip**
x	1		Flat
		(8)	**Radio frequency**
x	10		868.4 MHz (Europe)
		(9)	**Process connection**
x	000		None
x	103		Screw connection G 3/8 (zone separation possible)
x	104		Screw connection G 1/2 (zone separation possible)
	...		Other process connections upon request
		(10)	**Extra code**
x	085		UKEX
x	**362**		**Ex-protection Ex i according to ATEX directive**
x	778		Customer-specific transmission interval of 5 s, 10 s, or 45 s; for orders, specify in plain text (20 s per default)



	(1)		(2)		(3)		(4)		(5)		(6)		(7)		(8)		(9)		(10)	
Order code		-		-		-		-		-		-		-		-		/	**362**	, ...[a]
Order example	902930/15	-	596	-	1006	-	2	-	6	-	80	-	1	-	10	-	000	/	**362**	

[a] List extra codes in sequence, separated by commas.

2 Identifying the device version

NOTE!

The extension tube length (position 6) has a standard length of 70 mm.
120 mm are available upon request (for orders, please specify in plain text).
The extension tube length is added to the chosen insertion length.
To calculate the heat input, a temperature-dependent calculation basis is available for extension tube lengths of 70 mm and 120 mm, see chapter 1.10 "Heat input through protection tube / protection tube fitting", Page 12.

NOTE!

There are restrictions on the design type of portable JUMO Wtrans T03 units due to the special conditions of use "X"
⇨ chapter 1.5 "Definition of "portable"", Page 9
⇨ chapter 1.6 "Special conditions of use "X"", Page 9

		(1)	**Basic type**
	902930/17		JUMO Wtrans T03.G1 Ex Mineral-insulated RTD temperature probe with flexible protection tube and ATEX approval Intrinsically safe device according to the ATEX directive (Ambient temperature of housing: -30 to +85 °C) Zone separation is not possible with this basic type!
		(2)	**Operating temperature in °C (protection fitting)**
x	596		-30 to +260 °C
		(3)	**Measuring insert**
x	1006		1× Pt1000 in three-wire circuit
		(4)	**Tolerance class according to DIN EN 60751**
x	2		Class A
		(5)	**Protection tube diameter D in mm**
x	2		Dia. 2 mm
x	3		Dia. 3 mm
x	6		Dia. 6 mm
		(6)	**Insertion length EL in mm (EL 30 to 10000 mm)**
x	30		30 mm (take account of 70 mm extension tube length)
x	80		80 mm (take account of 70 mm extension tube length)
x	130		130 mm (take account of 70 mm extension tube length)
x	...		For orders, specify in plain text (50 mm increments)
		(7)	**Insertion tip**
x	1		Flat
		(8)	**Radio frequency**
x	10		868.4 MHz (Europe)
		(9)	**Process connection**
x	000		None
	...		Other process connections upon request
		(10)	**Extra code**
x	085		UKEX
x	**362**		**Ex-protection Ex i according to ATEX directive**
x	778		Customer-specific transmission interval of 5 s, 10 s, or 45 s; for orders, specify in plain text (20 s per default)

	(1)		(2)		(3)		(4)		(5)		(6)		(7)		(8)		(9)		(10)	
Order code		-		-		-		-		-		-		-		-		/	**362**	, ...[a]
Order example	902930/17	-	596	-	1006	-	2	-	6	-	80	-	1	-	10	-	000	/	**362**	

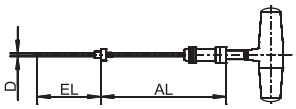
[a] List extra codes in sequence, separated by commas.

NOTE!

The extension tube length (position 6) has a standard length of 70 mm.
120 mm are available upon request (for orders, please specify in plain text).
The extension tube length is added to the chosen insertion length.
To calculate the heat input, a temperature-dependent calculation basis is available for extension tube lengths of 70 mm and 120 mm, see chapter 1.10 "Heat input through protection tube / protection tube fitting", Page 12.

2 Identifying the device version

		(1)	**Basic type**
	902930/55		JUMO Wtrans T03.G2 Ex with M12 × 1 plug connection and RTD temperature probe with PTFE connecting cable and ATEX approval Intrinsically safe device according to the ATEX directive (Ambient temperature of housing: -30 to +85 °C) Specify requirements for zone separation in plain text!
		(2)	**Operating temperature in °C (protection fitting)**
x	596		-30 to +260 °C
		(3)	**Measurement input**
x	1006		1× Pt1000 in three-wire circuit
		(4)	**Tolerance class according to DIN EN 60751**
x	2		Class A
		(5)	**Protection tube diameter D in mm**
x	4		Dia. 4 mm
x	6		Dia. 6 mm (zone separation possible)
x	9		Dia. 9 mm (zone separation possible)
		(6)	**Insertion length EL in mm (EL 100 to 1000 mm)**
x	100		100 mm
x	150		150 mm
x	200		200 mm
x	...		For orders, specify in plain text (50 mm increments)
		(7)	**Insertion tip**
x	1		Flat
		(8)	**Radio frequency**
x	10		868.4 MHz (Europe)
		(9)	**Process connection**
x	000		None
x	103		Screw connection G 3/8 (zone separation possible)
x	104		Screw connection G 1/2 (zone separation possible)
		(10)	**Extra code**
x	085		UKEX
x	**362**		**Ex-protection Ex i according to ATEX directive**
x	778		Customer-specific transmission interval of 5 s, 10 s, or 45 s; for orders, specify in plain text (20 s per default)



	(1)		(2)		(3)		(4)		(5)		(6)		(7)		(8)		(9)		(10)	
Order code		-		-		-		-		-		-		-		-		/	**362**	, ...[a]
Order example	902930/55	-	596	-	1006	-	2	-	6	-	150	-	1	-	10	-	000	/	**362**	

[a] List extra codes in sequence, separated by commas.

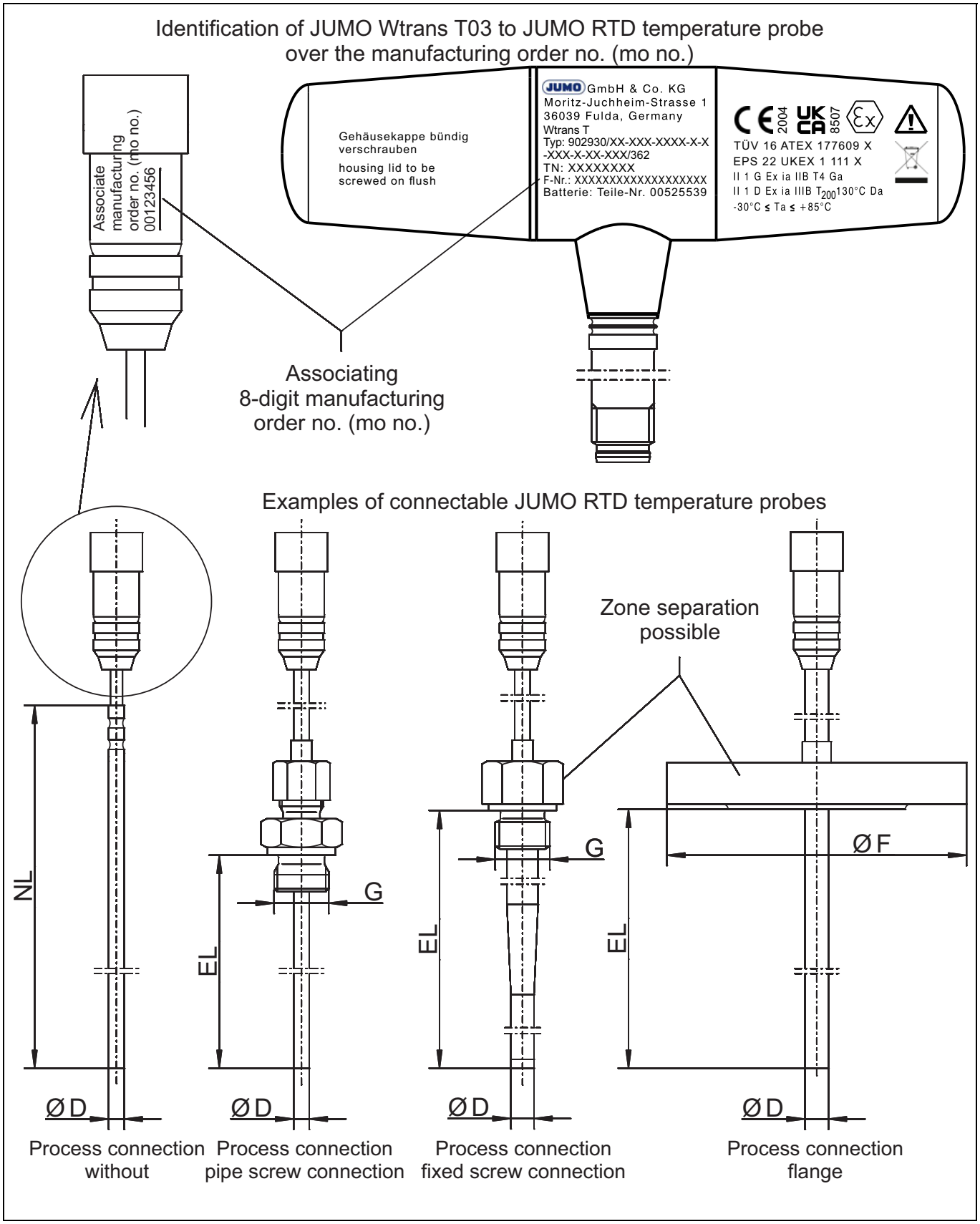
DANGER!

Basic type 902930/55 must only be used with the corresponding JUMO RTD temperature probes with PTFE connecting cable!

NOTE!

When ordering, specify the PTFE connecting cable length (AL) in plain text.
The design type of the JUMO RTD temperature probes must be agreed when placing the order.

2 Identifying the device version



2.5 Scope of delivery

1 device in the ordered version
1 preconfigured 3.6 V, 2.2 Ah lithium battery (ambient temperature of housing: -30 to +85 °C)
4 color rings made of silicone (white, green, red, blue) for visual transmitter identification
1 operating manual

If you have any questions, please contact your supplier.

2.6 Accessories

Description	**Part no.**
Preconfigured 3.6 V, 2.2 Ah lithium battery (Ambient temperature of housing: -30 to +85 °C)	00525539
Housing seal set with axial gaskets made of EPDM (ethylene propylene diene rubber) (contains 3 pieces in white) and radial O-ring seals made of FPM (fluororubber) (contains 3 pieces in black)	00532794
Color rings made of silicone (white, green, red, blue) for visual transmitter identification	00489047

2 Identifying the device version

3.1 Inserting/changing the battery

DANGER!

Non-approved batteries constitute a safety risk.
Non-approved batteries may ignite potentially explosive atmospheres.
Only use the preconfigured 3.6 V, 2.2 Ah lithium battery that is available as an accessory, part no. 00525539.
The Ex approval becomes null and void if non-approved batteries are used.
Do not charge the lithium battery!

NOTE!

Changing batteries in the Ex-area is admissible. However, the packaging must remain outside the Ex-area!

CAUTION!

Make sure that pollutants, moisture, and steam cannot enter the device.

The device could be destroyed.

▶ When inserting/changing the preconfigured lithium battery, make sure that the device is not exposed to pollutants, moisture, or steam.

CAUTION!

Incorrect battery polarity.

If the polarity is incorrect the transmitter will be irreparably damaged.

▶ Make sure that the battery poles are correctly connected.

As standard, the voltage supply to the transmitter is provided by a 3.6 V, 2.2 Ah lithium battery (part no. 00525539) which must be inserted prior to start-up.

The battery operating life depends on the configured transmission interval and the ambient temperature. The life span lasts approx. one year with the default settings (transmission interval of 20 s) and a room temperature of 25 °C.

3 Preparing the transmitter

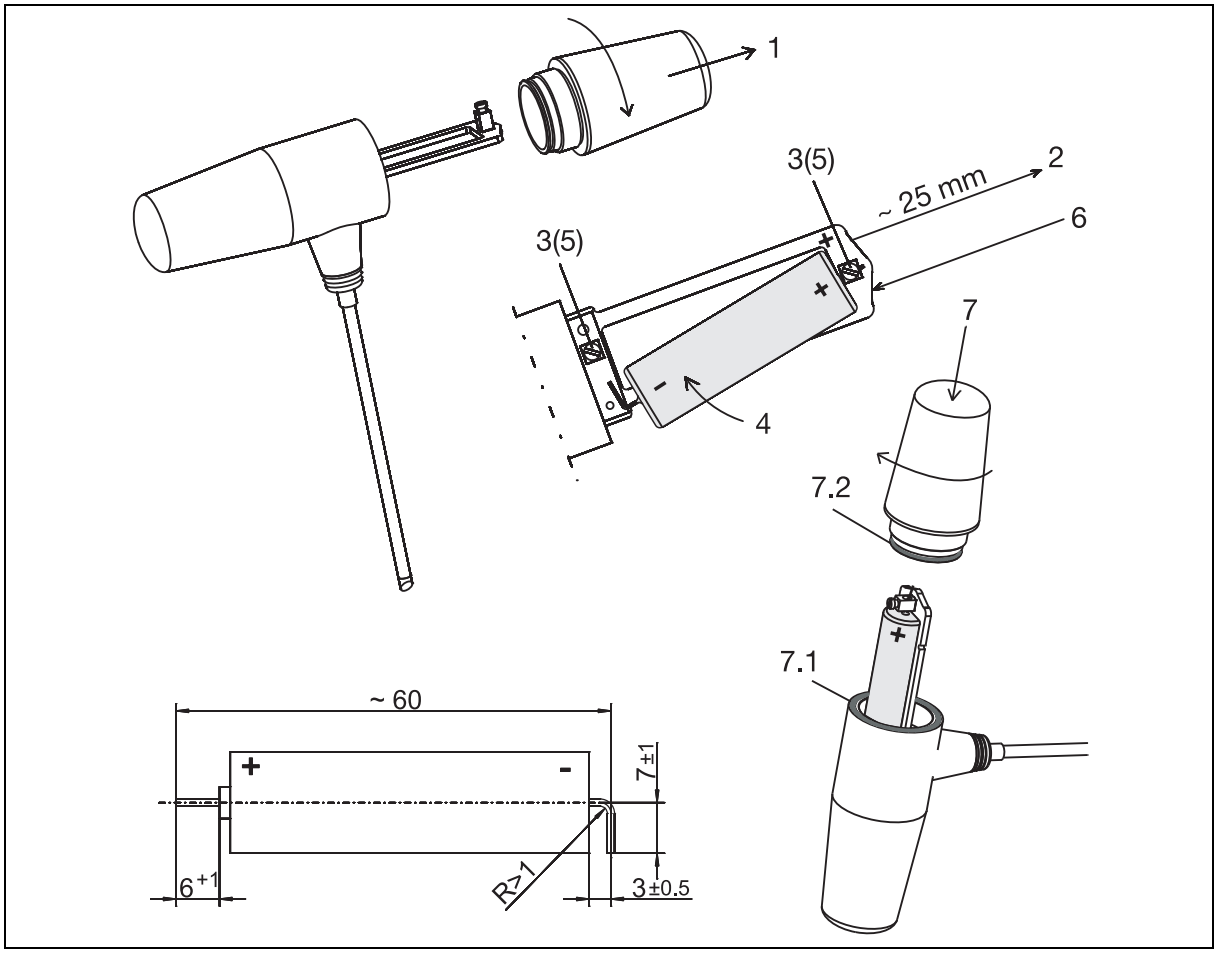


Fig. 3-1 Inserting/changing the battery

To insert/change the battery proceed as follows:

1. Unscrew the housing counter-clockwise and pull off the housing cover.
2. Pull the circuit board out of the basic housing by approx. 25 mm.
   Never damage or remove the blue safety cable.
3. Undo the screw terminals of the minus and plus pole using a screwdriver. Remove the battery if empty.
4. Insert the plus pole of the new battery into the (+) screw terminal.
   Swivel the battery and insert the minus pole into the (-) screw terminal.
5. Tighten the screw terminals of the minus and plus pole using a screwdriver.
6. Slide the circuit board back into the basic housing up to the limit stop.
7. Hold the housing vertically (as shown in the figure) and, going clockwise, **tightly screw together** the basic housing with the housing cover.
   When doing so, ensure that the two seals 7.1 and 7.2 are correctly fitted on the basic housing and housing cover. Replace seal 7.1 with a new seal (included in the scope of delivery for the battery) each time the battery is changed. The basic housing is correctly screwed to the housing cover once no gap is visible.

3.2 Safety information concerning lithium batteries

⇨ http://battery.jumo.info

3.3 Battery operating life

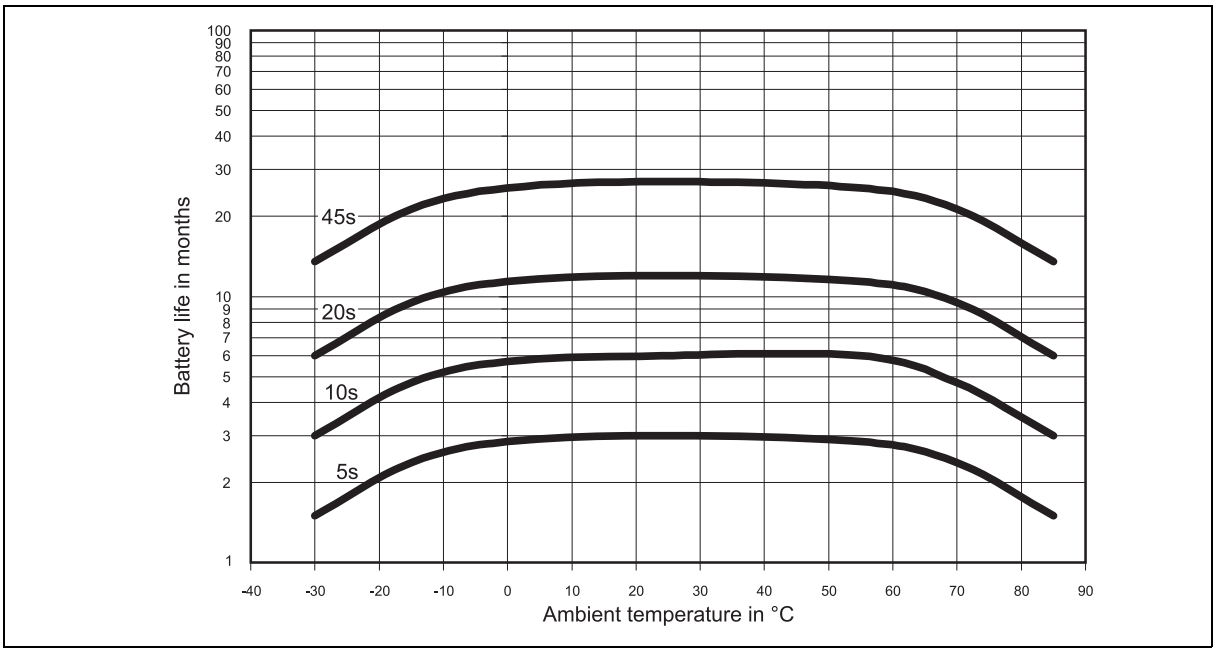


Fig. 3-2 Battery operating life depending on the transmission interval (5 s, 10 s, 20 s, or 45 s) and ambient temperature

3.4 Disposal of lithium batteries

Please dispose of all batteries as specified by the legislator according to the German Closed Substance Cycle and Waste Management Act or country regulations.

The contacts of lithium batteries that are not fully discharged electrically need to be insulated. Disposal of batteries together with domestic waste is expressly prohibited. Batteries can be taken to municipal waste collection points or local retailers at no extra charge.

3 Preparing the transmitter

3.5 Attaching the color coding of a transmitter

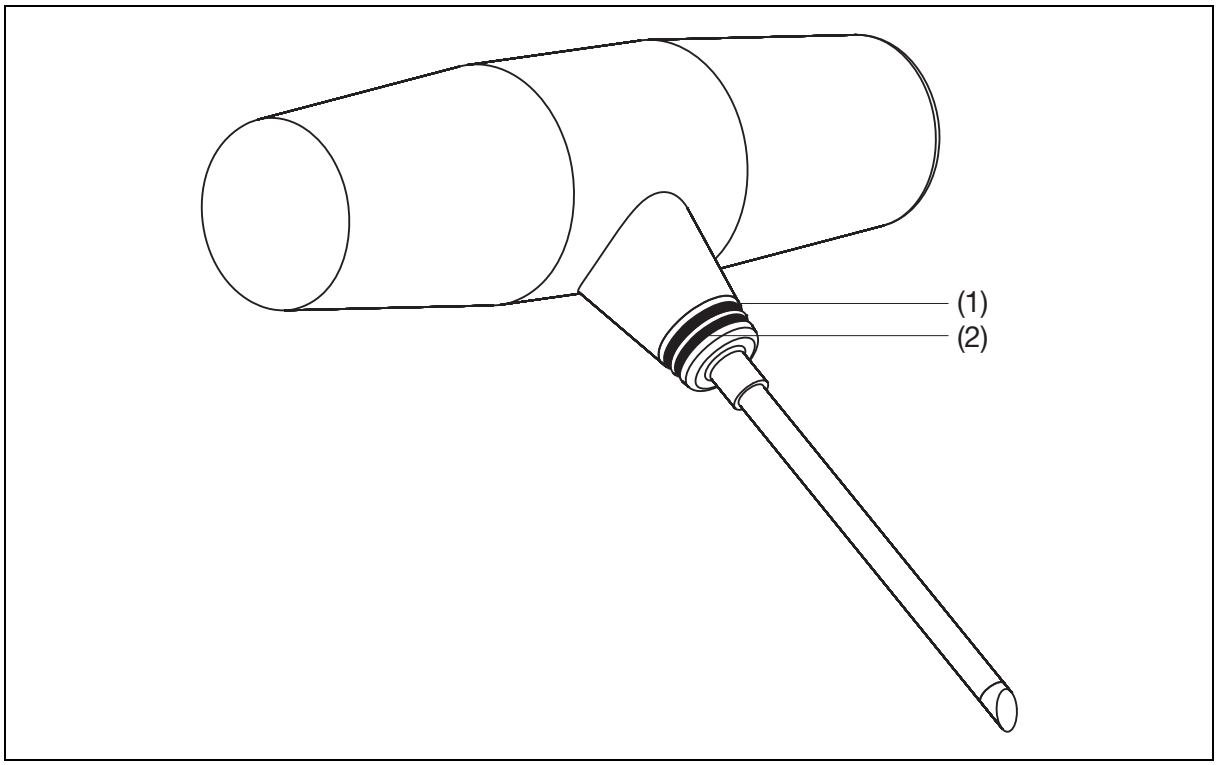


Fig. 3-3 Attaching the color coding of a transmitter

1 Top color coding

2 Bottom color coding

Per default, the transmitter comes with four color rings made of silicone (white, green, red, and blue), with which the transmitters can be clearly identified visually.

Proceed as follows to clearly mark the transmitters visually:

1. To add a clear combination of silicone rings on the transmitter, push the rings onto the transmitter shaft.
2. Write down the color combinations of the transmitter.

3.6 Setting the transmission interval

The transmission interval can be set using DIP switch S1 (switch 1 and 2) on the circuit board of the transmitter. The default setting for the transmission interval is 20 s.

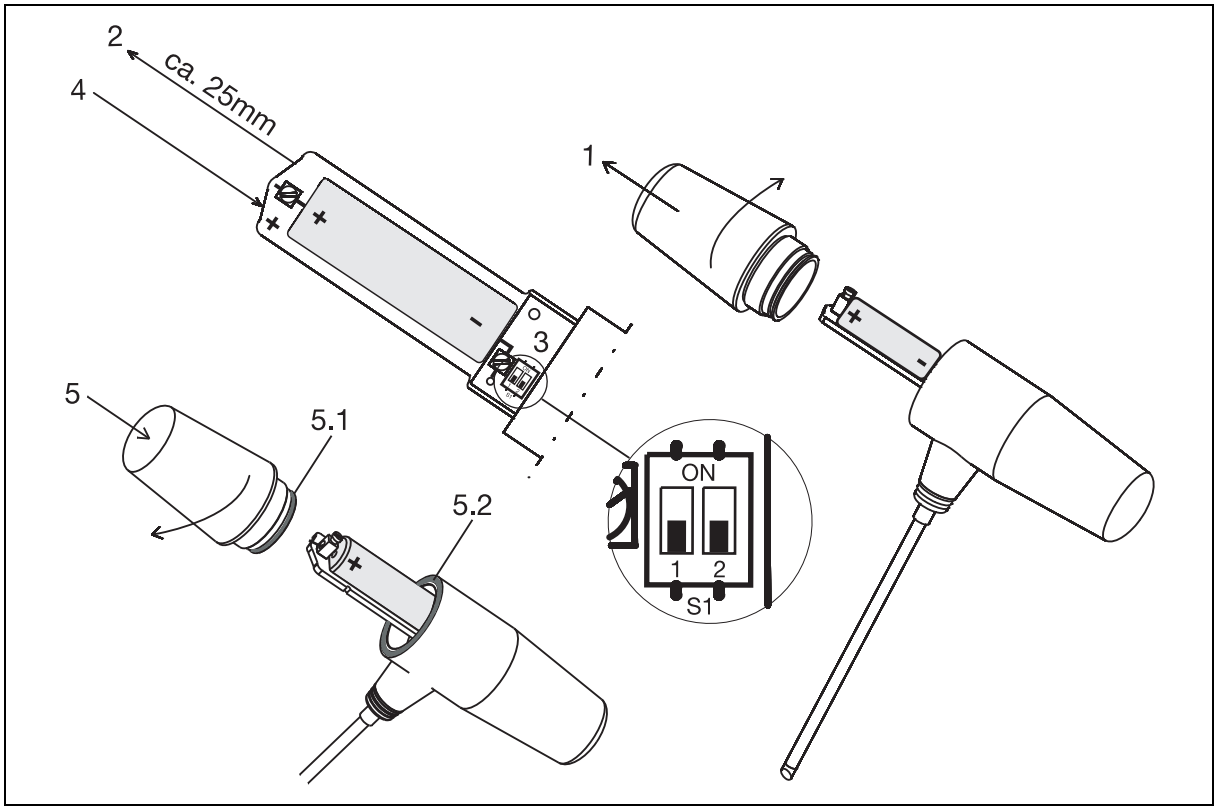


Fig. 3-4 Setting the transmission interval

Transmission interval	Switch 1	Switch 2
5 s	ON	OFF
10 s	OFF	ON
20 s	OFF (per default)	OFF (per default)
45 s	ON	ON

To be able to set the transmission interval, proceed as follows:

1. Unscrew the housing counter-clockwise and pull off the housing cover.
2. Pull the circuit board out of the basic housing by approx. 25 mm.
   Never damage or remove the blue safety cable.
3. Set the desired transmission interval: 5 s, 10 s, or 45 s (the default setting is 20 s).
4. Slide the circuit board back into the basic housing up to the limit stop.
5. Hold the housing vertically (as shown in the figure) and, going clockwise, **tightly screw together** the basic housing with the housing cover.
   When doing so, ensure that the two seals 5.1 and 5.2 are correctly fitted on the basic housing and housing cover. The basic housing is correctly screwed to the housing cover once no gap is visible.

3 Preparing the transmitter

4.1 General information about wireless transmission

Wireless signals are electromagnetic waves, the signal of which weakens during travel from the transmitter to the receiver (this is referred to as path attenuation). The field strength reduces inversely proportional to the square of the distance between the transmitter and receiver.

In addition to this natural range restriction, a reduced range may also be caused by the following:

- Ferroconcrete walls, metallic objects and surfaces, heat insulation, or heat-absorbing windows with a vapor-deposited metal layer reflect and absorb electromagnetic waves, meaning a dead spot is formed behind them.
- Metal tubes, chains, etc. on the transmitter housing; therefore, do not fasten any metallic objects to the transmitter housing.
- Insufficient spacing between several transmitters; therefore, ensure a minimum spacing of 20 cm.
- The antenna is installed at an insufficient height; therefore, install as high as possible above the ground and ensure there is a line of sight between the transmitter and receiver.

The following values are reference values concerning the permeability of wireless signals:

Material	**Permeability**
Wood, plaster, glass (uncoated)	90 to 100 %
Brickwork, press boards	65 to 95 %
Armored concrete	10 to 90 %
Metal, aluminum lamination	0 to 10 %

When using the antenna holder for wall mounting for the receiver, the open air range between the transmitter and the receiver is 300 m. Optimum reception is achieved when a line of sight can be established between the transmitter and the receiver.

If the receiver is mounted in a control cabinet, behind concrete walls, or behind concrete ceilings, the antenna must always be installed with the receiver holder for wall mounting and antenna cable pointing in the direction of the transmitters.

4 Transmitter range

4.2 Impairment of wireless transmission

Collisions when using too many transmitters

When using a large number of transmitters, do not select a transmission interval which is too low as otherwise the radio frequency will be unnecessarily occupied. A transmission interval that is too low leads to a very high data volume on the selected frequency, which can lead to collisions with other transmitters. The collisions can cause telegrams to be destroyed during wireless transmission.

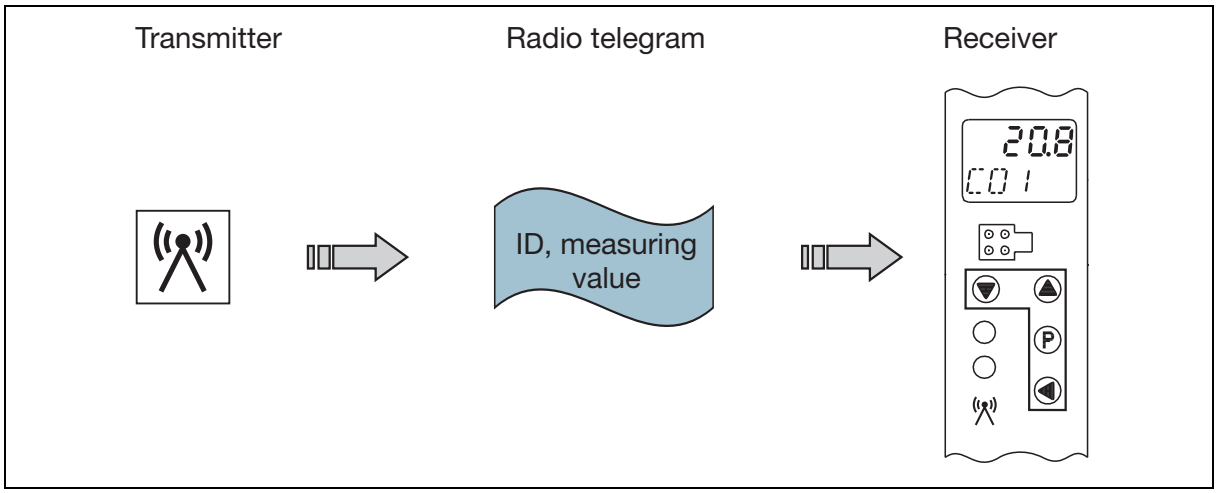


Fig. 4-1 The telegrams of a transmitter reach the receiver without collisions

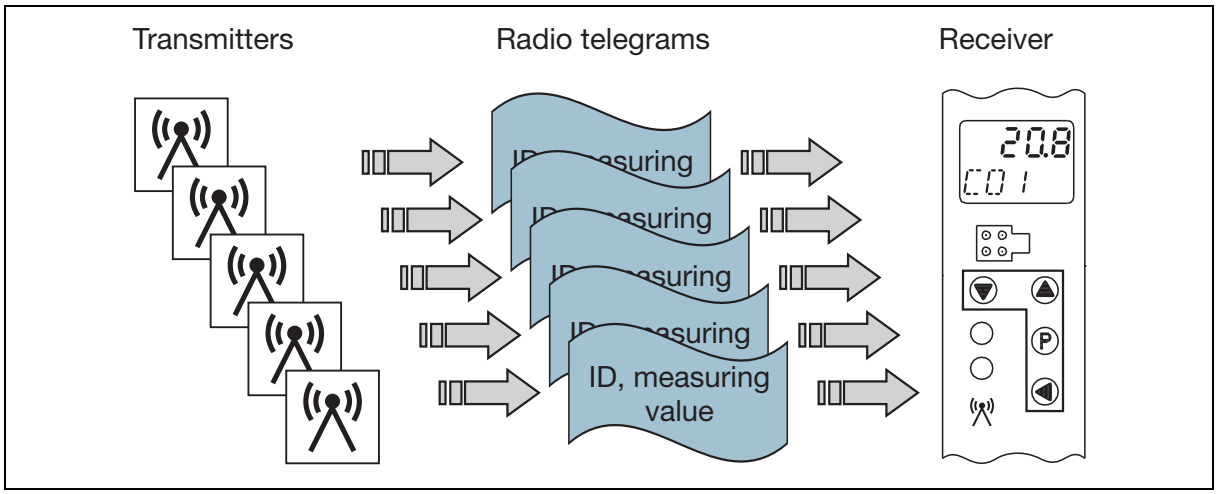


Fig. 4-2 The telegrams of several transmitters can collide

External transmitters

The radio frequency is also available to other users. External transmitters can transmit on the same frequency. If, for example, the transmitter and an external transmitter transmit their radio telegrams at the same time, the telegram will be destroyed. No error is detected because the transmitters cannot check their own transmission while transmitting.

Electrical devices

In a harsh industrial environment, wireless telegrams can be destroyed by such things as frequency converters, electrical welding equipment, poorly shielded PCs, audio/video devices, electronic transformers, electronic ballasts, etc.

Error fade-out

Lost telegrams (caused either by external interference sources or by collisions when using a large number of transmitters) can be faded out at the receiver by the wireless timeout parameter and do not cause error messages. As a result, the value that is received last is retained over 2 to 10 transmission intervals and only then is the wireless timeout alarm activated (indicated by "----" in the LCD display of the receiver).

NOTE!

In the event of collisions caused by an excessive number of transmitters, observe and, if necessary, correct the factors "number of transmitters", "transmission intervals", and, on the receiver, "wireless timeout".

NOTE!

When fastening or securing a transmitter to prevent it from falling, ensure that the plastic housing is not wrapped with metallic objects (e.g. chains or circlips). Otherwise, the transmitter range will be impaired.

NOTE!

For optimum transmitter function, ensure minimum spacing of 200 mm between the transmitters.

4 Transmitter range

Analog input

Measurement input	Pt1000 according to DIN EN 60751, in three-wire circuit
Operating temperature range	-30 to +260 °C
Accuracy of the temperature sensor	Class A ±(0.15 K + 0.002 × ItI) ItI = measured temperature in °C without prefix sign
Sensor line resistance	≤ 11 ohm per line for three-wire circuit
Sensor current	≤ 500 µA
Measuring circuit monitoring	Detection of probe break and probe short circuit

Output (wireless transmission)

Transmitter detection (transmitter ID)	Max. 5-digit ID, factory-set, not configurable
Transmission interval	Adjustable via DIP switch: 5 s, 10 s, 20 s, or 45 s (default setting = 20 s)
Radio frequency	868.4 MHz
Transmission power	< +10 dBm
Open air range	300 m and use of receiver antenna holder for wall mounting and 3 m antenna cable. When mounting the antenna directly to the receiver, a reduction in the range of approx. 40 % must be taken into account.
Output signal	882.2 to 1977.1 ohm = -30 to +260 °C
Response time of the complete probe	0.4 m/s in water; 3.0 m/s in air Dia. 4.0 mm: Water $t_{0.5}$ approx. 3 s, $t_{0.9}$ approx. 7 s; air $t_{0.5}$ approx. 25 s, $t_{0.9}$ approx. 80 s Dia. 6.0 mm: Water $t_{0.5}$ approx. 4 s, $t_{0.9}$ approx. 10 s; air $t_{0.5}$ approx. 32 s, $t_{0.9}$ approx. 98 s
Calibration accuracy of electronics	≤ ±0.05 %[a]

Voltage supply

Lithium battery	Voltage: 3.6 V, rated capacity: 2.2 Ah (⎓ Symbol for direct voltage)
Operating life	Approx. 1 year with the factory-set values and at room temperature (a fast transmission interval and a high or low ambient temperature reduce the battery operating life)
Battery change	Only use the preconfigured lithium battery that is available as an accessory (part no. 00525539)

[a] All accuracy specifications in % with regard to the measuring range of 290 K.

5 Technical data

Environmental influences

Ambient temperature range of the housing	-30 to +85 °C (housing incl. electronics) If the operating temperature exceeds the max. ambient temperature, take into account the heat input from the protection fitting into the housing, see chapter 1.10 "Heat input through protection tube / protection tube fitting", Page 12.
Storage temperature range	-40 to +85 °C (housing incl. electronics)
Temperature influence	≤ ±0.0025 %[a]/K; per K deviation from the reference temperature 22 °C (±3 K) (housing)
Site altitude	Max. 2000 m above sea level
Resistance to climatic conditions	Rel. humidity ≤ 95 % without condensation according to IEC 68-2-30
Vibration resistance	Max. 2 g at 10 to 2000 Hz (relating to the housing including electronics) according to DIN IEC 60068-2-6
Admissible mechanical shock resistance	25 g for 6 ms (relating to the housing including electronics) DIN IEC 68-2.29 per 1000 cycles
EMC - Interference emission - Interference immunity - Radio frequency spectrum	DIN EN IEC 61326-2-3:2022 Class B - household and small businesses - Industrial requirements ETSI EN 300 220-1 V3.1.1, ETSI EN 300 220-2 V3.1.1

[a] All accuracy specifications in % with regard to the measuring range of 290 K.

Housing

Material	Basic housing: PA 6, blue Housingcover: PA 6.6 ESD, black
Flammability class	UL 94 HB
Dimensions	Diameter approx. 32 mm, length approx. 126 mm; for insertion lengths refer to order details
Mounting	Can be used inside and outside of buildings
Protection type	IP67 according to DIN EN 60529; for basic type 902930/15 and 902930/17; for basic type 902930/55 only with machine connector M12 × 1 connected
Cleaning	The device can be cleaned with conventional washing, rinsing, and cleaning agents
Installation position	Any
Weight	Approx. 120 g (without protection fitting)

Ex identification marking

Zone	**Identification marking**
Use in zone 0 (20)	TÜV 16 ATEX 177609 X II 1 G Ex ia IIB T4 Ga II 1 D Ex ia IIIB T_{200}130 °C Da -30 °C ≤ Ta ≤ +85 °C
Use in zone 0 (20) / 1 (21) with zone separation by protection fitting	TÜV 16 ATEX 177609 X II 1/2 G Ex ia IIB T4 Ga/Gb II 1/2 D Ex ia IIIB T_{200}130 °C Da/Db -30 °C ≤ Ta ≤ +85 °C

5.1 Approvals and approval marks

	Designation	ATEX
	Test facility	TÜV NORD CERT GmbH
	Certification number	TÜV 16 ATEX 177609 X dated 20.10.2023
	Inspection basis	EN IEC 60079-0:2018/AC 2020-02 EN 60079-11:2012 EN 60079-26:2015
	Valid for	868,4 MHz; Basic types 902930/15, 902930/17 and 902930/55
	Designation	UKEX
	Test facility	BUREAU VERITAS
	Certification number	EPS 22 UKEX 1 111 X dated 09.06.2023
	Inspection basis	EN IEC 60079-0:2018/AC 2020-02 EN 60079-11:2012 EN 60079-26:2015
	Valid for	868,4 MHz; Basic types 902930/15, 902930/17 and 902930/55

For the special conditions for use, observe the examination certificate.

5 Technical data

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36039 Fulda, Germany

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Fax: +49 661 6003-500

E-Mail: mail@jumo.net
Internet: www.jumo.net

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EU-Konformitätserklärung

EU declaration of conformity / Déclaration UE de conformité

Dokument-Nr.
Document No. / Document n°.
CE 766

Hersteller
Manufacturer / Etabli par
JUMO GmbH & Co. KG

Anschrift
Address / Adresse
Moritz-Juchheim-Straße 1, 36039 Fulda, Germany

Produkt
Product / Produit

Name *Name / Nom*	**Typ** *Type / Type*	**Typenblatt-Nr.** *Data sheet no. / N° Document d'identification*
JUMO Wtrans T	902930	902930

Produktbeschreibung
Product description / Description du produit
Widerstandsthermometer mit Funk-Messwertübertragung.

Wir erklären in alleiniger Verantwortung, dass das bezeichnete Produkt die Anforderungen der Europäischen Richtlinien erfüllt.

We hereby declare in sole responsibility that the designated product fulfills the requirements of the European Directives.

Nous déclare sous notre seule responsabilité que le produit remplit les Directives Européennes.

6 Certificates

JUMO GmbH & Co. KG

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1. Richtlinie
Directive / Directive

Name *Name / Nom*	RED 2014/53/EU
Konformitätsbewertungsverfahren *Conformity assessment procedure / Procédure d'évaluation de la conformité*	Mod. A
Datum der Erstanbringung des CE-Zeichens auf dem Produkt *Date of first application of the CE mark to the product / Date de 1ère application du sigle sur le produit*	2011

Angewendete Normen/Spezifikationen
Standards/Specifications applied / Normes/Spécifications appliquées

Referenz *Reference / Référence*	**Ausgabe** *Edition / Édition*	**Bemerkung** *Comment / Remarque*
EN 300 220-1	V3.1.1	
EN 300 220-2	V3.1.1	
EN 61326-1	2013	
EN 61326-1	2021	
EN 61326-2-3	2013	
EN 61326-2-3	2021	
EN 61010-1	2010+A1:2019/AC:2019	
EN 62479	2010	

Gültig für Typ
Valid for Type / Valable pour le type
902930/...

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2. Richtlinie
Directive / Directive

Name *Name / Nom*	ATEX 2014/34/EU
Konformitätsbewertungsverfahren *Conformity assessment procedure / Procédure d'évaluation de la conformité*	Mod. B+D
Datum der Erstanbringung des CE-Zeichens auf dem Produkt *Date of first application of the CE mark to the product / Date de 1ère application du sigle sur le produit*	2011

Gültig für Typ
Valid for Type / Valable pour le type

902930/15-*-*-*-*-*-*-*-362
902930/17-*-*-*-*-*-*-*-362
902930/55-*-*-*-*-*-*-*-362

2.1 EU-Baumusterprüfbescheinigung
EU type examination certificate / Certificat d'examen de type UE

Zertifikatsnummer *Certificate number / Numéro de certificat*	TÜV 16 ATEX 177609 X
Notifizierte Stelle *Notified Body / Organisme notifié*	TÜV NORD CERT GmbH, Langemarckstraße 20, 45141 Essen, Germany

Angewendete Normen/Spezifikationen
Standards/Specifications applied / Normes/Spécifications appliquées

Referenz *Reference / Référence*	**Ausgabe** *Edition / Édition*	**Bemerkung** *Comment / Remarque*
EN IEC 60079-0	2018/AC:2020-02	
EN 60079-11	2012	
EN 60079-26	2015	

6 Certificates

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Qualitätssicherung bezogen auf den Produktionsprozess
Quality assurance of the production process / L'assurance de la qualité de la production

Zertifikatsnummer *Certificate number / Numéro de certificat*	Available on request
Notifizierte Stelle *Notified Body / Organisme notifié*	BUREAU VERITAS Consumer Products Services Germany GmbH, Wilhelm-Hennemann-Straße 8, 19061 Schwerin, Germany
Kennnummer *Identification no. / N° d'identification*	2004

3. Richtlinie
Directive / Directive

Name *Name / Nom*	RoHS 2011/65/EU
Konformitätsbewertungsverfahren *Conformity assessment procedure / Procédure d'évaluation de la conformité*	Mod. A
Datum der Erstanbringung des CE-Zeichens auf dem Produkt *Date of first application of the CE mark to the product / Date de 1ère application du sigle sur le produit*	2017

Angewendete Normen/Spezifikationen
Standards/Specifications applied / Normes/Spécifications appliquées

Referenz *Reference / Référence*	**Ausgabe** *Edition / Édition*	**Bemerkung** *Comment / Remarque*
VDK Umweltrelevante Aspekte bei der Produktentwicklung und -gestaltung	V1	

Gültig für Typ
Valid for Type / Valable pour le type
902930/...

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Aussteller
Issued by / Etabli par

JUMO GmbH & Co. KG

Ort, Datum
Place, date / Lieu, date

Fulda, 2023-11-17

Rechtsverbindliche Unterschriften
Legally binding signatures /
Signatures juridiquement valable

Bereichsleitung Globaler Vertrieb
i. V. Markus Belmer

Qualitätsbeauftragter und Leiter Qualitätswesen
i. V. Matthias Raab

Translation

(1) **EU-Type Examination Certificate**

(2) Equipment and protective systems intended for use in potentially explosive atmospheres, **Directive 2014/34/EU**

(3) **Certificate Number** **TÜV 16 ATEX 177609 X** **Issue:** 00

(4) for the product: JUMO Wtrans T03.G1/G2 Ex Typ 902930...

(5) of the manufacturer: **JUMO GmbH & Co KG**

(6) Address: Moritz-Juchheim-Str. 1
36039 Fulda
Germany

Order number: 8003046631

Date of issue: See signature

(7) The design of this product and any acceptable variation thereto are specified in the schedule to this EU-Type Examination Certificate and the documents therein referred to.

(8) The TÜV NORD CERT GmbH, Notified Body No. 0044, in accordance with Article 17 of the Directive 2014/34/EU of the European Parliament and the Council of 26 February 2014, certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II to the Directive.
The examination and test results are recorded in the confidential ATEX Assessment Report No. 22 203 324739.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN IEC 60079-0:2018/AC:2020-02 **EN 60079-11:2012** **EN 60079-26:2015**

except in respect of those requirements listed at item 18 of the schedule.

(10) If the sign ”X” is placed after the certificate number, it indicates that the product is subject to the Specific Conditions for Use specified in the schedule to this certificate.

(11) This EU-Type Examination Certificate relates only to the design, and construction of the specified product. Further requirements of the Directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate.

(12) The marking of the product shall include the following:

II 1 G Ex ia IIB T4 Ga	resp.	II 1 D Ex ia IIIB T_{200}130°C Da	resp.
II 1/2 G Ex ia IIB T4 Ga/Gb	resp.	II 1/2 D Ex ia IIIB T_{200}130°C Da/Db	

TÜV NORD CERT GmbH, Am TÜV 1, 45307 Essen, notified by the central office of the countries for safety engineering (ZLS), Ident. Nr. 0044, legal successor of the TÜV NORD CERT GmbH & Co. KG Ident. Nr. 0032

The deputy head of the notified body

TÜVNORD Digital unterschrieben von Drews Anke Datum: 2023.10.20 12:46:04 +02'00'

Hanover office, Am TÜV 1, 30519 Hannover, Tel. +49 511 998-61455, Fax +49 511 998-61590

(13) **S C H E D U L E**

(14) **EU-Type Examination Certificate TÜV 16 ATEX 177609 X Issue 00**

(15) Description of product
The device is an intrinsically safe, battery-powered resistor-type thermometer for the use inside of explosive gas or dust atmospheres. The measured data are transmitted to a radio receiver located outside the explosive gas or dust atmosphere. The device can be used in non-stationary, screw-in and wall-mounted applications.

Technical data:

Permissible range of the ambient temperature: -30 °C to +85 °C

The maximum permissible medium temperature is +260 °C.

The permissible range of the ambient temperature at maximum medium temperature has to be taken from the following table, according to the length of the neck tube.

Length of the neck tube	Permissible range of the ambient temperature
70 mm	-30 °C to +70 °C
120 mm	-30 °C to +75 °C

If the medium temperature of the medium to be measured exceeds the maximum permissible value of the ambient temperature, the maximum ambient temperature has to be reduced according to the length of the neck tube. For interim values of the medium temperature between maximum permissible ambient temperature and maximum permissible medium temperature, the calculation instructions of the manufacturer have to be considered.

RF-Power	≤ 10 mW
Frequency	868.4 MHz
Power supply (battery)	Lithium battery part number of the manufacturer 00525539

(16) Drawings and documents are listed in the ATEX Assessment Report No. 22 203 324739

Schedule to EU-Type Examination Certificate TÜV 16 ATEX 177609 X Issue 00

(17) Specific Conditions for Use

1. The capacity of the non-earthed metal conduits of portable JUMO Wtrans T03 dependent on the type and are given in the following table. If the JUMO Wtrans T03 is used as a portable equipment, the Wtrans T03 has be taken into a potential free state. This can be done as example by contacting with a protective conductor.

Length of the neck tube	Diameter of the neck tube			
	D1	D2	D3	D4
	2 mm	> 2 up to 4 mm	> 4 up to 6 mm	> 6 up to 9 mm
0 up to 100 mm	18.9 pF	25.5 pF	30.4 pF	36.3 pF
> 100 up to 170 mm	32.1 pF	43.3 pF	51.6 pF	61.6 pF
> 170 up to 270 mm	51.0 pF	68.8 pF	82.0 pF	97.9 pF
> 270 up to 370 mm	69.9 pF	94.3 pF	112.4 pF	134.2 pF
> 370 up to 570 mm	107.6 pF	145.3 pF	173.1 pF	206.7 pF
> 570 up to 820 mm	154.8 pF	209.0 pF	249.0 pF	297.3 pF
> 820 up to 1070 mm	202.0 pF	272.7 pF	324.9 pF	388.0 pF
> 1070 up to 1570 mm	296.4 pF	400.2 pF	476.8 pF	569.3 pF
> 1570 up to 2070 mm	390.8 pF	527.7 pF	628.6 pF	750.6 pF
> 2070 up to 2570 mm	485.2 pF	655.1 pF	780.4 pF	931.9 pF

2. The battery has to be replaced only with the battery from the manufacturer with the part number 00525539.

(18) Essential Health and Safety Requirements

no additional ones

- End of EU-Type Examination Certificate -

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UK Declaration of Conformity

Document No.	UK 200
Manufacturer	JUMO GmbH & Co. KG
Address	Moritz-Juchheim-Straße 1, 36039 Fulda, Germany

Product

Name	**Type**	**Data sheet no.**
JUMO Wtrans T	902930	902930

Product description

RTD temperature probe with wireless data transmission.

We hereby declare in sole responsibility that the designated product fulfills the requirements of the statutory instruments.

1. Statutory instrument

Name	Radio Equipment Regulations 2017 No. 1206
Conformity assessment procedure	Mod. A
Date of first application of the UKCA mark to the product	2023

Standards/Specifications applied

Reference	**Edition**	**Comment**
EN 300 220-1	V3.1.1	
EN 300 220-2	V3.1.1	
EN 61326-1	2013	
EN 61326-1	2021	
EN 61326-2-3	2013	
EN 61326-2-3	2021	
EN 61010-1	2010+A1:2019/AC:2019	
EN 62479	2010	

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Internet: www.jumo.net

Valid for Type

902930/*-*-*-*-*-*-10-...

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2. Statutory instrument

Name	The Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations 2016 No. 1107
Conformity assessment procedure	Mod. B+D
Date of first application of the UKCA mark to the product	2023

Valid for Type

902930/15-*-*-*-*-*-*-*/085
902930/17-*-*-*-*-*-*-*/085
902930/55-*-*-*-*-*-*-*/085

2.1 Type examination certificate

Certificate number	EPS 22 UKEX 1 111 X
Designated body	Bureau Veritas Consumer Products Services United Kingdom Limited, 31 Kingsland Grange, Woolston, Warrington, Cheshire, WA1 4RW

Standards/Specifications applied

Reference	Edition	Comment
EN 60079-0	2018	
EN 60079-11	2012	
EN 60079-26	2015	

JUMO GmbH & Co. KG

Moritz-Juchheim-Straße 1
36039 Fulda, Germany

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Fax: +49 661 6003-500

E-Mail: mail@jumo.net
Internet: www.jumo.net

More than sensors + automation

Quality assurance of the production process	
Certificate number	Available on request.
Designated body	Bureau Veritas Consumer Products Services United Kingdom Limited, 31 Kingsland Grange, Woolston, Warrington, Cheshire, WA1 4RW
Identification no.	8507

3. Statutory instrument

Name	The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012 No. 3032
Conformity assessment procedure	Mod. A
Date of first application of the UKCA mark to the product	2023

Standards/Specifications applied

Reference	Edition	Comment
[VDK] Umweltrelevante Aspekte bei der Produktentwicklung und -gestaltung	V1	

Valid for Type

902930/...

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E-Mail: mail@jumo.net
Internet: www.jumo.net

More than sensors + automation

Issued by	JUMO GmbH & Co. KG
Place, date	Fulda, 2023-11-27
Legally binding signatures	Director of Global Sales Markus Belmer
	Head of Management Systems Matthias Raab

UKAS PRODUCT CERTIFICATION 5111

BUREAU VERITAS 1828

(1) **UK - Type Examination Certificate**

(2) Equipment and protective systems intended for use in potentially explosive atmospheres – **UKSI 2016:1107 (as amended)**

(3) UK - Type Examination Certificate Number

EPS 22 UKEX 1 111 X **Revision 0**

(4) Equipment: JUMO Wtrans T03.G1/G2 Ex Typ 902930...

(5) Manufacturer: JUMO GmbH & Co. KG

(6) Address: Moritz-Juchheim-Straße 1
36039 Fulda
Germany

(7) This equipment and any acceptable variation thereto are specified in the annex to this certificate and the documentation therein referred to.

(8) Bureau Veritas Consumer Products Services United Kingdom Limited, approved body No. 8507 in accordance with UKSI 2016:1107 (as amended) Part 4, certifies that this equipment has been found to comply with the essential health and safety requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres, given in Schedule 1 of UKSI 2016:1107 (as amended). The examination and test results are recorded in the confidential documentation under the reference number 22TH0296.

(9) Compliance with the essential health and safety requirements has been assured by compliance with:

EN IEC 60079-0:2018 **EN 60079-11:2012** **EN 60079-26:2015**

(10) If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the annex to this certificate.

(11) This UK - Type Examination Certificate relates only to the design and construction of the specified equipment in accordance with UKSI 2016:1107 (as amended). Further requirements apply to the manufacture of this equipment and its placing on the market. Those requirements are not covered by this certificate.

(12) The marking of the equipment shall include the following:

II 1/2 G Ex ia IIB T4 Ga/Gb
II 1/2 D Ex ia IIIB T130°C Da/Db

CERTIFICATION BODY BUREAU VERITAS 1828 Bureau Veritas CPS United Kingdom Ltd

Certification department of explosion protection

Warrington, 09-06-2023

N. Wilkinson

Certificates without signature and seal are void. This certificate is allowed to be distributed only if not modified. Extracts or modifications must be authorized by Bureau Veritas Consumer Products Services United Kingdom Limited, EPS 22 UKEX 1 111 X, Revision 0.

Bureau Veritas Consumer Products Services United Kingdom Limited
https://www.bureauveritas.co.uk/consumer-products-testing
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Registered Office: 31 Kingsland Grange,
Woolston, Warrington, Cheshire, WA1 4RW

Registered in England & Wales
Company Number: 00852439

UKAS PRODUCT CERTIFICATION 5111

BUREAU VERITAS 1828 BUREAU VERITAS

(13) **Annex**

(14) **UK - Type Examination Certificate EPS 22 UKEX 1 111 X** **Revision 0**

(15) Description of equipment:

The device is an intrinsically safe, battery-operated resistance thermometer for use in areas with potentially explosive gas or dust atmospheres. The measurement data is transmitted wirelessly to a receiver outside the potentially explosive gas or dust atmosphere. The device can be used portably, screwed or used for wall mounting.

Technical Data:
Ambient Temperatur: -30 °C to +85 °C
Max. Medium Temperatur: +260 °C
The permissible range of the ambient temperature at the maximum medium temperature, depending on the neck tube length, can be found in the table below.

Neck tube length	Ambient temperature range
70mm	-30 °C to +70 °C
120mm	-30 °C to +75 °C

If the medium temperature of the medium to be measured exceeds the maximum permissible value of the ambient temperature, the maximum ambient temperature must be reduced depending on the length of the neck tube. The calculation specifications of the manufacturer must be taken into account for intermediate values of the medium temperature between the maximum permissible ambient temperature and the maximum permissible medium temperature.

HF-Performance: ≤10mW
Frequency: 868,4 MHz
Supply (Battery): Lithiumbattery Partsnumber of Manufacturer 00525539

(16) Reference number: 22TH0296

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UK - Type Examination Certificate EPS 22 UKEX 1 111 X **Revision 0**

(17) Special conditions for safe use:

The capacitance of the non-earthed metal protective tubes of portable JUMO Wtrans T03 depends on the type of construction and can be found in the table below. If the Jumo Wtrans T03 is used in a portable manner, it must be brought into a non-hazardous, potential-free state before it is brought into an Ex-zone. This can be done, for example, by contacting a protective conductor.

Pipe length	Pipe diameter			
	D1	D2	03	D4
	2 mm	>2 to 4 mm	>4 to 6 mm	>6 to 9mm
0 to 100 mm	18,9 pF	25,5 pF	30,4 pF	36,3 pF
> 100 to 170 mm	32,1 pF	43,3 pF	51,6 pF	61,6 pF
> 170 to 270 mm	51,0 pF	68,8 pF	82,0 pF	97,9 pF
> 270 to 370 mm	69,9 pF	94,3 pF	112,4 pF	134,2 pF
> 370 to 570 mm	107,6 pF	145,3 pF	173,1 pF	206,7 pF
> 570 to 820 mm	154,8 pF	209,0 pF	249,0 pF	297,3 pF
> 820 to 1070 mm	202,0 pF	272,7 pF	324,9 pF	388,0 pF
> 1070 to 1570 mm	296,4 pF	400,2 pF	476,8 pF	569,3 pF
> 1570 to 2070 mm	390,8 pF	527,7 pF	628,6 pF	750,6 pF
> 2070 to 2570 mm	485,2 pF	655,1 pF	780,4 pF	931,9 pF

The Battery may only be replaced by the manufacturer Battery with Part-Number 00525539

Met by compliance with standards.

Certification department of explosion protection

Warrington, 09-06-2023

N. Wilkinson

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6 Certificates

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