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

JUMO Instrument Co. Ltd.
JUMO House
Temple Bank, Riverway
Harlow, Essex CM20 2DY, UK
Phone: +44 1279 635533
Fax: +44 1279 635262
E-mail: sales@jumo.co.uk
Internet: www.jumo.co.uk

JUMO Process Control, Inc.
8 Technology Boulevard
Canastota, NY 13032, USA
Phone: 315-697-5866
1-800-554-JUMO
Fax: 315-697-5867
E-mail: info@jumo.us
Internet: www.jumo.us

JUMO Wtrans Transmitter RTD Temperature Probe with Wireless Data Transmission

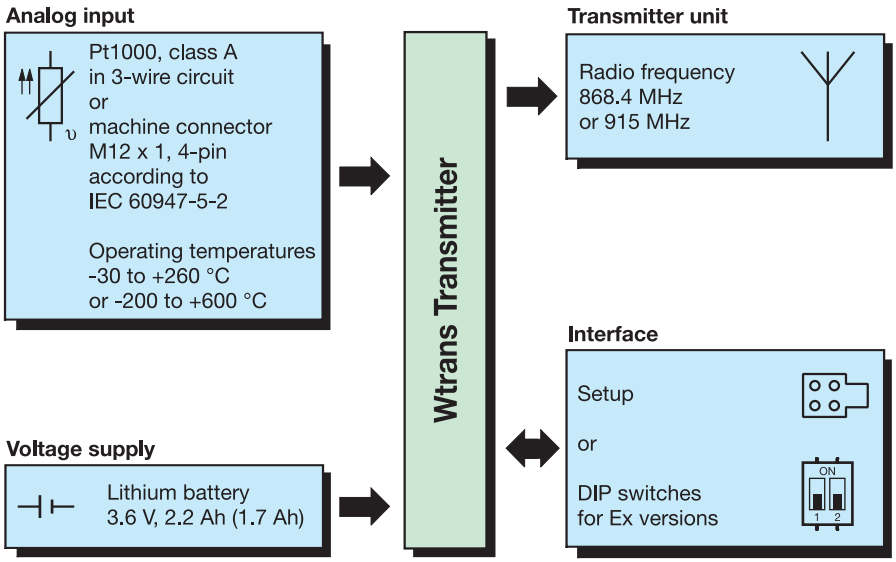


Basic type 902930/10

- **For operating temperatures between -30 to +260 °C or -200 to +600 °C**
- **For mobile or stationary temperature measurement**
- **Open air range 300 m with interference-resistant transmission**
- **No wiring work due to state-of-the-art wireless technology**
- **Approval according to EC directive 94/9/EC (ATEX)**

The Wtrans transmitter is used in connection with a Wtrans receiver for stationary or mobile detection of temperatures within the operating range of -30 to +260 °C or -200 to +600 °C. This measured temperature value is transmitted wirelessly to the receiver of the Wtrans measuring system, where it is displayed and available digitally at the RS485 interface as well as an analog output. One receiver variant can signal various alarms on two relay outputs.
The electronic transmission components of the RTD temperature probe are fitted in a vibration-proof design in the oil-resistant and acid-proof case, the ambient temperature of which may either be from -30 to +85 °C or from -25 to +125 °C. The protection type is IP67. Only a durable lithium battery 3.6 V is used for voltage supply.
The radio frequencies of the Wtrans measuring system (868.4 MHz or 915 MHz) are largely impervious to external interferences and allow transmission even in a rough industrial environment. When using the antenna wall holder with the 3 m long antenna cable for the receiver, the open air range is 300 m.
The stainless steel protection tube with the Pt1000 temperature sensing element according to DIN EN 60751, class A in a 3-wire circuit is available with a flat, oblique, or centered probe tip. The insertion length is between 30 to 10000 mm. The variants are available with an extension tube or an M12 × 1 plug connection as an option to connect Pt1000 RTD temperature probes.
The Wtrans transmitter is also available as a version with ATEX approval (basic types 902930/15, .../17, .../55). These devices can be installed directly in explosive areas up to zone 0. The receiver is installed outside the Ex zone. The radio data transmission from the Ex area avoids costly installations with cable and protection barrier or supply isolators.
The design of the JUMO RTD temperature probes is to be agreed upon in the order. The Ex variant with M12 connector is always delivered with an approved JUMO RTD temperature probe with PTFE connection cable. Devices with process connections can be ordered in versions with Ex zone separation.
A setup program is available as an accessory for easy configuration and parameterization of the Wtrans measuring system on the PC. The OnlineChart function can be used optionally to record the measured values on the PC.

Block diagram



Suitable Wtrans receivers

- Max. 16 Wtrans transmitters per Wtrans receiver
- Little wiring work required due to modern wireless technology
- Radio frequency 868.4 MHz or 915 MHz; in the 915 MHz frequency band, ten frequencies can be configured
- Interface RS485 with Modbus protocol
- Four analog outputs
  0(4) to 20 mA / 0 to 10 V
  or
  two analog outputs
  (0)4 to 20 mA / 0 to 10 V
  and two relay outputs AC 230 V
- For fitting on a DIN rail
  35 mm × 7.5 mm
  according to DIN EN 60715

For further information refer to data sheet 902931

Approvals/approval marks (see "Technical Data")

2012-03-02/00473251

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Technical data

Basic type 902930/10, 902930/12, 902930/20, 902930/22, 902930/50, and 902930/60

Analog input

Measuring input	Pt1000 according to DIN EN 60751, in 3-wire circuit
Operating temperature range	-30 to +260 °C for basic type 902930/10 and 902930/20; -50 to +600 °C for basic type 902930/12 and 902930/22; -200 to +600 °C for basic type 902930/50 and 902930/60; Observe the admissible ambient temperature range for the case.
Accuracy of the temperature sensing element	Class A ±(0.15 K + 0.002 × ItI) ItI = measured temperature in °C without prefix
Sensor lead resistance	≤ 11 ohm per lead with 3-wire circuit
Probe current	≤ 500 µA
Measuring circuit monitoring	Detection of probe break and probe short circuit.

Output (radio transmission)

Transmitter detection (transmitter ID)	Max. 5-digit ID, factory-set, can be configured customer-specific
Transmission interval	Adjustable from 1 to 3600 s: for basic type 902930/10, 902930/12, and 902930/50 (factory setting = 10 s); Adjustable from 5 to 3600 s: for basic type 902930/20, 902930/22, and 902930/60 (factory setting = 15 s)
Radio frequency	868.4 MHz (Europe); 915 MHz (America, Australia, Canada, and New Zealand); Ten frequencies can be set in the 915 MHz frequency band.
Transmission power	< +10 dBm
Open air range	300 m for 868.4 MHz, 100 m for 915 MHz and when using the antenna wall holder for the receiver and the 3 m long antenna cable. When installing the antenna directly on the receiver, a reduced range of approx. 40 % must be taken into account.
Output signal	882.2 to 1977.1 ohm ≙ -30 to +260 °C; 185.2 to 3137.1 ohm ≙ -200 to +600 °C;
Response time of the complete probe	In water 0.4 m/s / in air 3.0 m/s Ø 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 Ø 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 the electronic components	≤ ±0.05 %[1]
Configuration	With setup program
Configurable parameters	Transmitter detection (max. 5-digit ID), transmission interval, radio frequency (only at 915 MHz)

Voltage supply

Lithium battery	Voltage: 3.6 V, rated capacity: 2.2 Ah for basic type 902930/10, 902930/12, and 902930/50; Voltage: 3.6 V, rated capacity: 1.7 Ah for basic type 902930/20, 902930/22, and 902930/60
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 will reduce the operating life of the lithium battery)
Battery change	Only use the preconfigured lithium battery that is available in the accessories

Environmental influences

Ambient temperature range of the case	-30 to +85 °C (case including electronic components) for basic type 902930/10, 902930/12, and 902930/50; -25 to +125 °C (case including electronic components) for basic type 902930/20, 902930/22, and 902930/60
Storage temperature range	-40 to +85 °C (case including electronic components) for basic type 902930/10, 902930/12, and 902930/50; -40 to +125 °C (case including electronic components) for basic type 902930/20, 902930/22, and 902930/60
Temperature influence	≤ ±0.0025 %[1]/K; per K deviation from the reference temperature 22 °C (±3 K) (case)
Resistance to climatic conditions	Rel. humidity ≤ 95 % w/o condensation according to IEC 68-2-30
Vibration resistance	Max. 2 g at 10 to 2000 Hz (relating to the case including electronic components) according to DIN IEC 60068-2-6
Admissible mechanical shock resistance	25 g/6 ms (relating to the case including electronic components) according to DIN IEC 68-2.29 per 1000 cycles

[1] All accuracy specifications in % relating to the measuring range of 290 K or 800 K.

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EMC - Interference emission - Interference immunity - Radio frequency spectrum	DIN EN 61326-1 Class B Industrial requirements ETSI EN 300 220-1 and ETSI EN 300 220-2

Case

Material	PEI (polyetherimide), color: black or gray
Flammability class	UL 94 HB
Dimensions	Diameter approx. 32 mm, length approx. 126 mm; for insertion lengths refer to order details
Protection type	IP67 according to DIN EN 60529 for basic type 902930/10, 902930/12, 902930/20, and 902930/22; for basic type 902930/50 and 902930/60 only with the machine connector M12 x 1 connected
Installation position	Any
Weight	Approx. 120 g (without protection fitting)

Approvals/approval marks

Approval marks	Testing agency	Certificates/certification numbers	Inspection basis	Valid for
c UL us	Underwriters Laboratories	E201387	UL 61010-1 CAN/CSA-C22.2 No. 61010-1	3.6 V, Basic type 902930/10 Basic type 902930/12 Basic type 902930/20 Basic type 902930/22 Basic type 902930/50 Basic type 902930/60
IC	Industry Canada	7472A-WTRANST01 7472A-WTRANST0102	RSS-210 Issue 7 RSS-210 Issue 8 RSS-GEN Issue 3 RSS-102 Issue 4	915 MHz, Basic type 902930/10 915 MHz, Basic type 902930/10 Basic type 902930/12 Basic type 902930/20 Basic type 902930/22 Basic type 902930/50 Basic type 902930/60
FCC	Federal Communications Commission	VT4-WTRANST01 VT4-WTRANST01-02	FCC Rule Part 15C FCC Rule Part 15C	915 MHz, Basic type 902930/10 915 MHz, Basic type 902930/10 Basic type 902930/12 Basic type 902930/20 Basic type 902930/22 Basic type 902930/50 Basic type 902930/60

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1-800-554-JUMO
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Technical data

Basic type 902930/15, 902930/17 and 902930/55

Analog input

Measuring input	Pt1000 according to DIN EN 60751, in 3-wire circuit
Operating temperature range	-30 to +260 °C
Accuracy of the temperature sensing element	Class A ±(0.15 K + 0.002 × ItI) ItI = measured temperature in °C without prefix
Sensor lead resistance	≤ 11 ohm per lead with 3-wire circuit
Sensor current	≤ 500 µA
Measuring circuit monitoring	Detection of probe break and probe short-circuit

Output (radio transmission)

Transmitter detection (transmitter ID)	Max. 5-digit ID, factory-set, cannot be configured
Transmission interval	Adjustable via DIP switch to 5 s, 10 s, 20 s, or 45 s (factory-setting = 20 s)
Radio frequency	868.4 MHz
Transmission power	< +10 dBm
Open air range	300 m when using the antenna wall holder for the receiver and the 3 m long antenna cable. When installing the antenna directly on the receiver, a reduced 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	In water 0.4 m/s / in air 3.0 m/s Ø 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 Ø 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 the electronic components	≤ ±0.05 %[1]

Voltage supply

Lithium battery	Voltage: 3.6 V, rated capacity: 2.2 Ah
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 will reduce the operating life of the lithium battery)
Battery change	Only use the preconfigured lithium battery that is available in the accessories (Part no. 00525539)

Environmental influences

Ambient temperature range of the case	-30 to +85 °C (case including electronic components) If the operating temperature exceeds the max. ambient temperature, take into account the heat input of the protection fitting into the case. For detailed information, please refer to operating manual B902930.0.1 in the chapter "Heat input by protection tube/protection fitting“.
Storage temperature range	-40 to +85 °C (case including electronic components)
Temperature influence	≤ ±0.0025 %[1]/K; per K deviation from the reference temperature 22 °C (±3 K) (case)
Resistance to climatic conditions	Rel. humidity ≤ 95 % w/o condensation according to IEC 68-2-30
Vibration resistance	Max. 2 g at 10 to 2000 Hz (relating to the case including electronic components) according to DIN IEC 60068-2-6
Admissible mechanical shock resistance	25 g/6 ms (relating to the case including electronic components) according to DIN IEC 68-2.29 per 1000 cycles
EMC - Interference emission - Interference immunity - Radio frequency spectrum	DIN EN 61326-1 Class B Industrial requirements ETSI EN 300 220-1 and ETSI EN 300 220-2

Case

Material	PA6 (polyamide), color: blue
Flammability class	UL 94 HB
Dimensions	Diameter approx. 32 mm, length approx. 126 mm; For insertion length refer to order details
Protection type	IP67 according to DIN EN 60529 for basic type 902930/15 and 902930/17; for basic type 902930/55 only with the M12 × 1 machine connector connected
Installation position	Any
Weight	Approx. 120 g (without protection fitting)

[1] All accuracy specifications in % relating to the measuring range of 290 K.

JUMO GmbH & Co. KG
Delivery address: Mackenrodtstraße 14
36039 Fulda, Germany
Postal address: 36035 Fulda, Germany
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Ex identification

Zone	Identification
Use in zone 0 (20)	TÜV 11 ATEX 555248 II 1 G Ex ia IIB T4 Ga II 1 D Ex ia IIIB T130 °C Da -30 °C ≤ Ta ≤ +85 °C
Use in zone 0 (20) / zone 1 (21) with zone separation by protection fitting	TÜV 11 ATEX 555248 II 1/2 G Ex ia IIB T4 Ga/Gb II 1/2 D Ex ia IIIB T130 °C Da/Db -30 °C ≤ Ta ≤ +85 °C

Approvals/approval marks

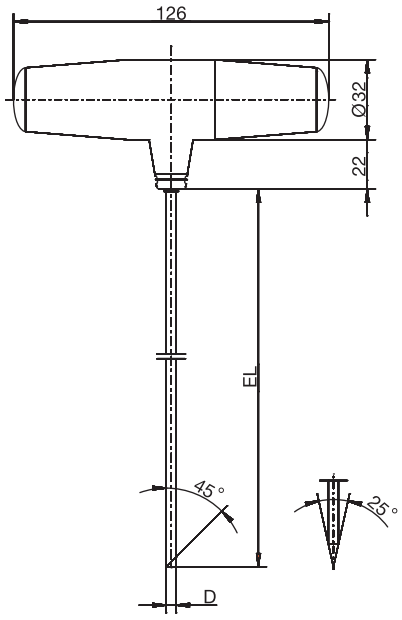
Approval marks	Testing agency	Certificates/certification numbers	Inspection basis	Valid for
Ex	TÜV-NORD CERT GmbH (German Technical Inspection Agency)	TÜV 11 ATEX 555248	EN 60079-0:2009 EN 60079-11:2007 EN 60079-26:2007 EN 61241-11:2006	868.4 MHz, Basic type 902930/15 Basic type 902930/17 Basic type 902930/55

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36039 Fulda, Germany
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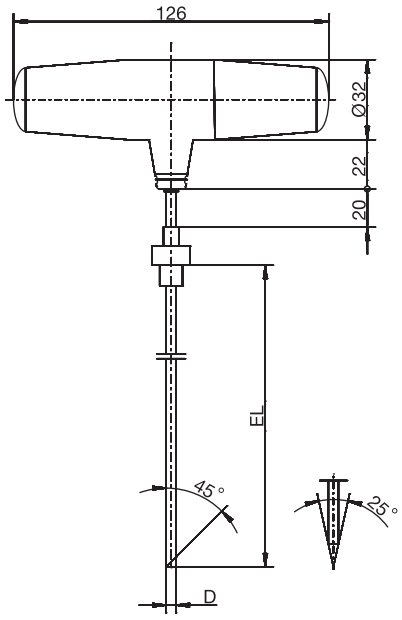
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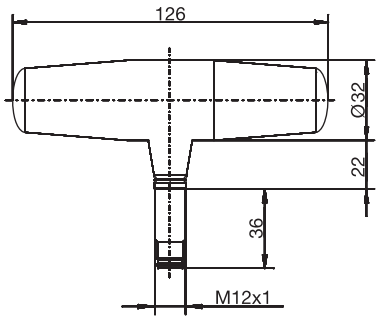
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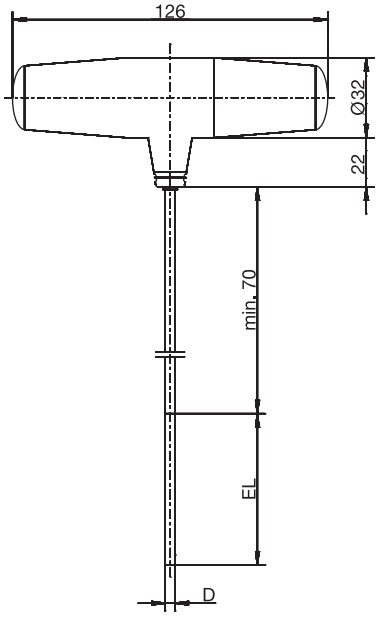
Basic type 902930/10
Basic type 902930/12
Basic type 902930/20
Basic type 902930/22



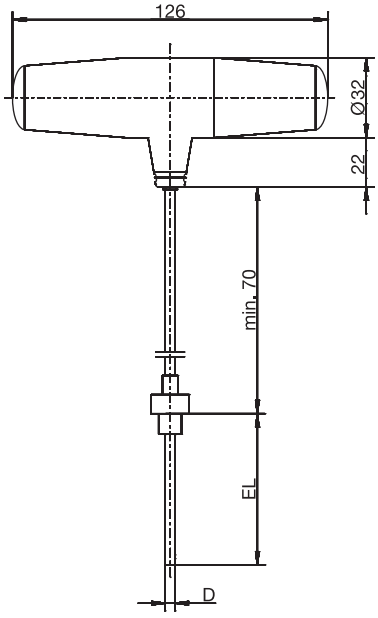
Basic type 902930/10
with process connection
Basic type 902930/12
with process connection
Basic type 902930/20
with process connection
Basic type 902930/22
with process connection



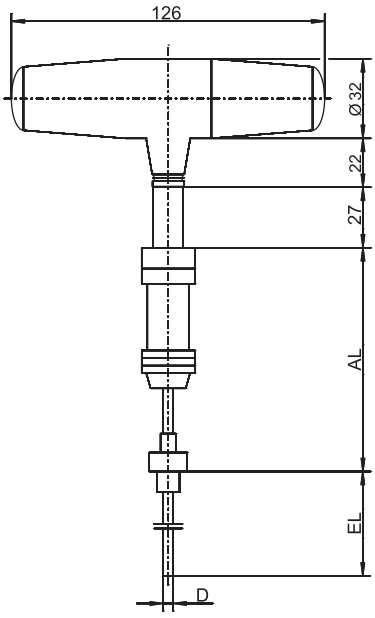
Basic type 902930/50
with M12 x 1 plug connection
Basic type 902930/60
with M12 x 1 plug connection



Basic type 902930/15
Basic type 902930/17



Basic type 902930/15
with process connection
Basic type 902930/17
with process connection



Basic type 902930/55
with M12 × 1 plug connection,
PTFE connection cable
and process connection

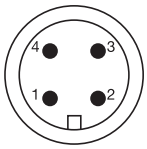
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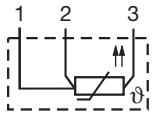
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Connection diagram

Machine connector M12 x 1, 4-pin according to IEC 60947-5-2



Electrical connection	Terminal assignment
Basic type 902930/50 and 902930/60	
RTD temperature probe in 3-wire circuit (input)	

For a safe, interference-free device operation only connect shielded measuring inserts with shielded cables and connected shielding on both sides (shielding connected to protection tube and to M12 x 1 machine connector).

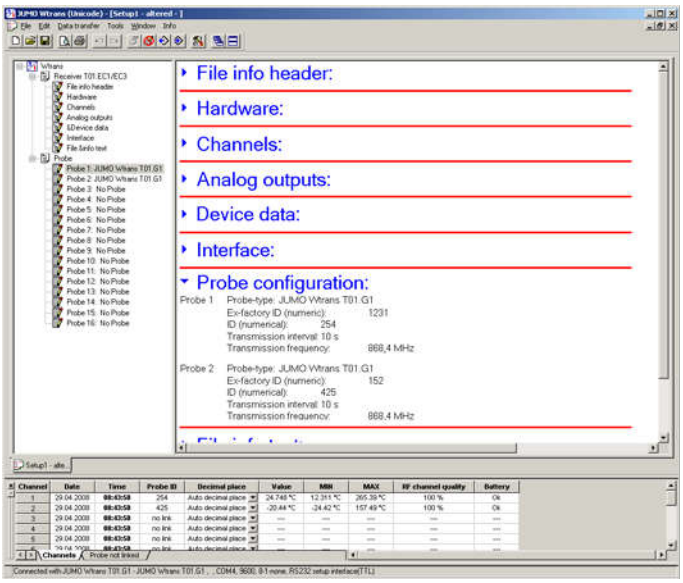
Setup program

The setup program allows the configuration of transmitters without ATEX approval and receivers through a PC. The configuration data can be archived on data carriers and printed.
Configurable parameters are:
- Transmitter detection (transmitter ID)
- Transmission interval
- Radio frequency (for 915 MHz only)

The factory settings are:
- Transmitter detection (transmitter ID) consecutively
- Transmission interval
- Radio frequency (868.4 MHz or 915.4 MHz)

The setup program can be used to overwrite changed parameters with the factory settings at any time.
The connection between transmitter and PC is es-tablished via a PC interface (USB/TTL or TTL/RS232 converter).

For transmitters with ATEX approval, the user can only set the transmission interval via the DIP switch. All other parameters are factory-set and cannot be adjusted.



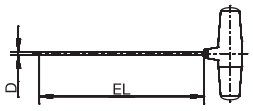
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Order details: JUMO Wtrans transmitter T01.G1 insertion RTD temperature probe

		(1)	**Basic type**
	902930/10		Wtrans transmitter T01.G1 Insertion RTD temperature probe (Ambient temperature, case: -30 to +260 °C)
		(2)	**Operating temperature in °C**
x	596		-30 to +260 °C
		(3)	**Measuring insert**
x	1006		1x Pt1000 in 3-wire circuit
		(4)	**Tolerance class according to DIN EN 60751**
x	2		Class A
		(5)	**Protection tube diameter D in mm**
x	2.5		Ø 4 mm stepped down to Ø 2.5 mm (particularly quick responding), available with flat and centered probe tip
x	4		Ø 4 mm
x	4.5		Ø 4.5 mm
x	6		Ø 6 mm
		(6)	**Insertion length EL in mm (EL 50 to 1000 mm)**
x	100		100 mm
x	150		150 mm
x	200		200 mm
x	. . .		For orders, specify in plain text (stepped down by 50 mm)
		(7)	**Insertion tip**
x	1		Flat
x	2		Centered
x	3		Oblique
		(8)	**Radio frequency**
x	10		868.4 MHz (Europe)
x	20		915 MHz (America, Australia, Canada, and New Zealand)
		(9)	**Process connection**
x	000		None
x	103		Screw connection G 3/8
x	104		Screw connection G 1/2
x	252		Pipe screw connection G 1/4 (for protection tube diameter 6 mm only)
x	253		Pipe screw connection G 3/8 (for protection tube diameter 6 mm only)
x	254		Pipe screw connection G 1/2 (for protection tube diameter 6 mm only)
x	255		Pipe screw connection G 3/4 (for protection tube diameter 6 mm only)
x	263		Pipe screw connection M10 x 1 (for protection tube diameter 6 mm only)
x	291		Pipe screw connection 1/2-14NPT (for protection tube diameter 6 mm only)
x	662		Sheet steel flange (for protection tube diameter 6 mm only)
		(10)	**Extra codes**
x	000		None
x	778		Customer-specific transmission interval 1 to 3600 s, for orders, specification in plain text (factory-set to 10 s)



	(1)		(2)		(3)		(4)		(5)		(6)		(7)		(8)		(9)		(10)
Order code		-		-		-		-		-		-		-		-		/	
Order example	902930/10	-	596	-	1006	-	2	-	4	-	100	-	2	-	10	-	000	/	000

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

JUMO Instrument Co. Ltd.
JUMO House
Temple Bank, Riverway
Harlow, Essex CM20 2DY, UK
Phone: +44 1279 635533
Fax: +44 1279 635262
E-mail: sales@jumo.co.uk
Internet: www.jumo.co.uk

JUMO Process Control, Inc.
8 Technology Boulevard
Canastota, NY 13032, USA
Phone: 315-697-5866
1-800-554-JUMO
Fax: 315-697-5867
E-mail: info@jumo.us
Internet: www.jumo.us

Scope of delivery

1 device in the version ordered
1 preconfigured lithium battery 3.6 V, 2.2 Ah (ambient temperature, case: -30 to +85 °C)
4 color rings made of silicone (white, green, red, blue) for visual transmitter identification
1 operating manual B 902930.0

Accessories

	Part no.
Setup program on CD-ROM, multilingual	00488887
Setup program including OnlineChart on CD-ROM, multilingual	00549067
OnlineChart activation	00549188
Preconfigured lithium battery 3.6 V, 2.2 Ah (ambient temperature, case: -30 to +85 °C)	00525539
Case sealing set with axial gaskets made of EPDM (ethylene propylene diene rubber) (content: 3 gaskets, white) and radial O-ring seals made of FPM (fluororubber) (content: 3 seals, black)	00532794
Color rings made of silicone (white, green, red, blue) for visual transmitter identification	00489047
Color cap set made of PEI (polyetherimide) (content 10 caps, gray) for visual transmitter identification	00525950
Color cap set made of PEI (polyetherimide) (content 10 caps, brown) for visual transmitter identification	00525951
Color cap set made of PEI (polyetherimide) (content 10 caps, green) for visual transmitter identification	00525952
Color cap set made of PEI (polyetherimide) (content 10 caps, blue) for visual transmitter identification	00525953
PC interface with USB/TTL converter, adapter (socket connector) and adapter (pins)	00456352
PC interface with TTL/RS232 converter and adapter (socket connector)	00350260
Wall holder for Wtrans transmitter with protection tube diameter 4 mm	00503317
Wall holder for Wtrans transmitter with protection tube diameter 4.5 mm	00503326
Wall holder for Wtrans transmitter with protection tube diameter 6 mm	00503328

Stock version

(1)		(2)		(3)		(4)		(5)		(6)		(7)		(8)		(9)		(10)	Part no.
902930/10	-	596	-	1006	-	2	-	4	-	100	-	2	-	10	-	000	/	000	00493668

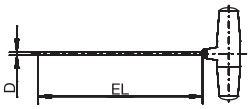
JUMO GmbH & Co. KG
Delivery address: Mackenrodtstraße 14
36039 Fulda, Germany
Postal address: 36035 Fulda, Germany
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JUMO Instrument Co. Ltd.
JUMO House
Temple Bank, Riverway
Harlow, Essex CM20 2DY, UK
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Canastota, NY 13032, USA
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1-800-554-JUMO
Fax: 315-697-5867
E-mail: info@jumo.us
Internet: www.jumo.us

Order details: JUMO Wtrans transmitter T01.G1 mineral-insulated RTD temperature probe

		(1)	**Basic type**
	902930/12		Wtrans transmitter T01.G1 Mineral-insulated RTD temperature probe with flexible protection tube (Ambient temperature, case: -30 to +85 °C)
		(2)	**Operating temperature in °C**
x	415		-50 to +600 °C
		(3)	**Measuring insert**
x	1006		1x Pt1000 in 3-wire circuit
		(4)	**Tolerance class according to DIN EN 60751**
x	2		Class A
		(5)	**Protection tube diameter D in mm**
x	1.9		Ø 1.9 mm
x	3		Ø 3 mm
x	6		Ø 6 mm
		(6)	**Insertion length EL in mm (EL 100 to 10000 mm)**
x	100		100 mm
x	150		150 mm
x	. . .		For orders, specify in plain text (stepped down by 50 mm)
		(7)	**Insertion tip**
x	1		Flat
		(8)	**Radio frequency**
x	10		868.4 MHz (Europe)
x	20		915 MHz (America, Australia, Canada, and New Zealand)
		(9)	**Process connection**
x	000		None
x	252		Pipe screw connection G 1/4 (for protection tube diameter 6 mm only)
x	253		Pipe screw connection G 3/8 (for protection tube diameter 6 mm only)
x	254		Pipe screw connection G 1/2 (for protection tube diameter 6 mm only)
x	255		Pipe screw connection G 3/4 (for protection tube diameter 6 mm only)
x	261		Pipe screw connection M8 x 1 (for protection tube diameter 3 mm only)
x	263		Pipe screw connection M10 x 1 (for protection tube diameter 6 mm only)
x	291		Pipe screw connection 1/2-14NPT (for protection tube diameter 6 mm only)
x	662		Sheet steel flange (for protection tube diameter 6 mm only)
		(10)	**Extra codes**
x	000		None
x	778		Customer-specific transmission interval 1 to 3600 s, for orders, specification in plain text (factory-set to 10 s)



	(1)		(2)		(3)		(4)		(5)		(6)		(7)		(8)		(9)		(10)
Order code		-		-		-		-		-		-		-		-		/	
Order example	902930/12	-	415	-	1006	-	2	-	3	-	100	-	1	-	10	-	000	/	000

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

JUMO Instrument Co. Ltd.
JUMO House
Temple Bank, Riverway
Harlow, Essex CM20 2DY, UK
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8 Technology Boulevard
Canastota, NY 13032, USA
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Scope of delivery

1 device in the version ordered
1 preconfigured lithium battery 3.6 V, 2.2 Ah (ambient temperature, case: -30 to +85 °C)
4 color rings made of silicone (white, green, red, blue) for visual transmitter identification
1 operating manual B 902930.0

Accessories

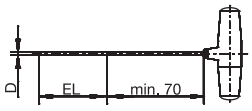
	Part no.
Setup program on CD-ROM, multilingual	00488887
Setup program including OnlineChart on CD-ROM, multilingual	00549067
OnlineChart activation	00549188
Preconfigured lithium battery 3.6 V, 2.2 Ah (ambient temperature, case: -30 to +85 °C)	00525539
Case sealing set with axial gaskets made of EPDM (ethylene propylene diene rubber) (content: 3 gaskets, white) and radial O-ring seals made of FPM (fluororubber) (content: 3 seals, black)	00532794
Color rings made of silicone (white, green, red, blue) for visual transmitter identification	00489047
Color cap set made of PEI (polyetherimide) (content 10 caps, gray) for visual transmitter identification	00525950
Color cap set made of PEI (polyetherimide) (content 10 caps, brown) for visual transmitter identification	00525951
Color cap set made of PEI (polyetherimide) (content 10 caps, green) for visual transmitter identification	00525952
Color cap set made of PEI (polyetherimide) (content 10 caps, blue) for visual transmitter identification	00525953
PC interface with USB/TTL converter, adapter (socket connector) and adapter (pins)	00456352
PC interface with TTL/RS232 converter and adapter (socket connector)	00350260
Wall holder for Wtrans transmitter with protection tube diameter 6 mm	00503328

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E-mail: info@jumo.us
Internet: www.jumo.us

Order details: JUMO Wtrans transmitter T03.G1 Ex insertion RTD temperature probe



		(1)	**Basic type**
	902930/15		Wtrans transmitter T03.G1 Ex Insertion RTD temperature probe with ATEX approval Intrinsically safe device according to EC directive 94/9/EC (ATEX) (Ambient temperature, case: -30 to +85 °C) Please specify the requirement for zone separation in plain text!
		(2)	**Operating temperature in °C (protection fitting)**
x	596		-30 to +260 °C
		(3)	**Measuring insert**
x	1006		1x Pt1000 in 3-wire circuit
		(4)	**Tolerance class according to DIN EN 60751**
x	2		Class A
		(5)	**Protection tube diameter D in mm**
x	4		Ø 4 mm
x	6		Ø 6 mm (zone separation possible)
x	9		Ø 9 mm (zone separation possible)
		(6)	**Insertion length EL in mm (EL 30 to 1000 mm)**
x	30		30 mm (observe extension tube length 70 mm)
x	80		80 mm (observe extension tube length 70 mm)
x	130		130 mm (observe extension tube length 70 mm)
x	...		For orders, specify in plain text (stepped down by 50 mm)
		(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)
x	252		Pipe screw connection G 1/4 (for protection tube diameter 6 mm only)
x	253		Pipe screw connection G 3/8 (for protection tube diameter 6 mm only)
x	254		Pipe screw connection G 1/2 (for protection tube diameter 6 mm only)
x	255		Pipe screw connection G 3/4 (for protection tube diameter 6 mm only)
x	263		Pipe screw connection M10 x 1 (for protection tube diameter 6 mm only)
x	291		Pipe screw connection 1/2-14NPT (for protection tube diameter 6 mm only)
x	662		Sheet steel flange (for protection tube diameter 6 mm only)
x	...		Different process connections upon request
		(10)	**Extra codes**
x	**362**		**Ex protection Ex i according to EC directive 94/9/EC (ATEX)**
x	778		Customer-specific transmission interval 5 s, 10 s, or 45 s, for orders, specification in plain text (factory-set to 20 s)

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

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 selected insertion length. To calculate the heat input, a temperature-dependent calculation basis is provided for an extension tube length of 70 mm and 120 mm (please refer to the operating manual).

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

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

JUMO Instrument Co. Ltd.
JUMO House
Temple Bank, Riverway
Harlow, Essex CM20 2DY, UK
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JUMO Process Control, Inc.
8 Technology Boulevard
Canastota, NY 13032, USA
Phone: 315-697-5866
1-800-554-JUMO
Fax: 315-697-5867
E-mail: info@jumo.us
Internet: www.jumo.us

Scope of delivery

1 device in the version ordered
1 preconfigured lithium battery 3.6 V, 2.2 Ah (ambient temperature, case: -30 to +85 °C)
4 color rings made of silicone (white, green, red, blue) for visual transmitter identification
1 operating manual B 902930.0.1

Accessories

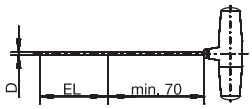
	Part no.
Preconfigured lithium battery 3.6 V, 2.2 Ah (ambient temperature, case: -30 to +85 °C)	00525539
Case sealing set with axial gaskets made of EPDM (ethylene propylene diene rubber) (content: 3 gaskets, white) and radial O-ring seals made of FPM (fluororubber) (content: 3 seals, black)	00532794
Color rings made of silicone (white, green, red, blue) for visual transmitter identification	00489047
Wall holder for Wtrans transmitter with protection tube diameter 4 mm	00503317
Wall holder for Wtrans transmitter with protection tube diameter 6 mm	00503328

JUMO GmbH & Co. KG
Delivery address: Mackenrodtstraße 14
36039 Fulda, Germany
Postal address: 36035 Fulda, Germany
Phone: +49 661 6003-0
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JUMO House
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Harlow, Essex CM20 2DY, UK
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8 Technology Boulevard
Canastota, NY 13032, USA
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1-800-554-JUMO
Fax: 315-697-5867
E-mail: info@jumo.us
Internet: www.jumo.us

Order details: JUMO Wtrans transmitter T03.G1 Ex mineral-insulated RTD temperature probe



		(1)	**Basic type**
	902930/17		Wtrans transmitter T03.G1 Ex Mineral-insulated RTD temperature probe with flexible protection tube and ATEX approval Intrinsically safe device according to EX directive 94/9/EC (ATEX) (Ambient temperature, case: -30 to +85 °C) For this basic type, no zone separation is possible!
		(2)	**Operating temperature in °C (protection fitting)**
x	596		-30 to +260 °C
		(3)	**Measuring insert**
x	1006		1x Pt1000 in 3-wire circuit
		(4)	**Tolerance class according to DIN EN 60751**
x	2		Class A
		(5)	**Protection tube diameter D in mm**
x	2		Ø 2 mm
x	3		Ø 3 mm
x	6		Ø 6 mm
		(6)	**Insertion length EL in mm (EL 30 to 10000 mm)**
x	30		30 mm (observe extension tube length 70 mm)
x	80		80 mm (observe extension tube length 70 mm)
x	130		130 mm (observe extension tube length 70 mm)
x	. . .		For orders, specify in plain text (stepped down by 50 mm)
		(7)	**Insertion tip**
x	1		Flat
		(8)	**Radio frequency**
x	10		868.4 MHz (Europe)
		(9)	**Process connection**
x	000		None
x	252		Pipe screw connection G 1/4 (for protection tube diameter 6 mm only)
x	253		Pipe screw connection G 3/8 (for protection tube diameter 6 mm only)
x	254		Pipe screw connection G 1/2 (for protection tube diameter 6 mm only)
x	255		Pipe screw connection G 3/4 (for protection tube diameter 6 mm only)
x	261		Pipe screw connection M8 x 1 (for protection tube diameter 3 mm only)
x	263		Pipe screw connection M10 x 1 (for protection tube diameter 6 mm only)
x	291		Pipe screw connection 1/2-14NPT (for protection tube diameter 6 mm only)
x	662		Sheet steel flange (for protection tube diameter 6 mm only)
x	...		Different process connections upon request
		(10)	**Extra codes**
x	**362**		**Ex protection Ex i according to EC directive 94/9/EC (ATEX)**
x	778		Customer-specific transmission interval 5 s, 10 s, or 45 s, for orders, specification in plain text (factory-set to 20 s)

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

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 selected insertion length. To calculate the heat input, a temperature-dependent calculation basis is pro-vided for an extension tube length of 70 mm and 120 mm (please refer to the operating manual).

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

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Delivery address: Mackenrodtstraße 14
36039 Fulda, Germany
Postal address: 36035 Fulda, Germany
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JUMO House
Temple Bank, Riverway
Harlow, Essex CM20 2DY, UK
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Scope of delivery

1 device in the version ordered
1 preconfigured lithium battery 3.6 V, 2.2 Ah (ambient temperature, case: -30 to +85 °C)
4 color rings made of silicone (white, green, red, blue) for visual transmitter identification
1 operating manual B 902930.0.1

Accessories

	Part no.
Preconfigured lithium battery 3.6 V, 2.2 Ah (ambient temperature, case: -30 to +85 °C)	00525539
Case sealing set with axial gaskets made of EPDM (ethylene propylene diene rubber) (content: 3 gaskets, white) and radial O-ring seals made of FPM (fluororubber) (content: 3 seals, black)	00532794
Color rings made of silicone (white, green, red, blue) for visual transmitter identification	00489047
Wall holder for Wtrans transmitter with protection tube diameter 6 mm	00503328

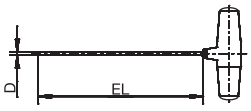
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Order details: JUMO Wtrans transmitter T02.G1 insertion RTD temperature probe

		(1)	**Basic type**
	902930/20		Wtrans transmitter T02.G1 Insertion RTD temperature probe (Ambient temperature, case: -25 to +125 °C)
		(2)	**Operating temperature in °C**
x	596		-30 to +260 °C
		(3)	**Measuring insert**
x	1006		1x Pt1000 in 3-wire circuit
		(4)	**Tolerance class according to DIN EN 60751**
x	2		Class A
		(5)	**Protection tube diameter D in mm**
x	2.5		Ø 4 mm stepped down to Ø 2.5 mm (particularly quick responding), available with flat and centered probe tip
x	4		Ø 4 mm
x	4.5		Ø 4.5 mm
x	6		Ø 6 mm
		(6)	**Insertion length EL in mm (EL 50 to 1000 mm)**
x	100		100 mm
x	150		150 mm
x	200		200 mm
x	. . .		For orders, specify in plain text (stepped down by 50 mm)
		(7)	**Insertion tip**
x	1		Flat
x	2		Centered
x	3		Oblique
		(8)	**Radio frequency**
x	10		868.4 MHz (Europe)
x	20		915 MHz (America, Australia, Canada, and New Zealand)
		(9)	**Process connection**
x	000		None
x	103		Screw connection G 3/8
x	104		Screw connection G 1/2
x	252		Pipe screw connection G 1/4 (for protection tube diameter 6 mm only)
x	253		Pipe screw connection G 3/8 (for protection tube diameter 6 mm only)
x	254		Pipe screw connection G 1/2 (for protection tube diameter 6 mm only)
x	255		Pipe screw connection G 3/4 (for protection tube diameter 6 mm only)
x	263		Pipe screw connection M10 x 1 (for protection tube diameter 6 mm only)
x	291		Pipe screw connection 1/2-14NPT (for protection tube diameter 6 mm only)
x	662		Sheet steel flange (for protection tube diameter 6 mm only)
		(10)	**Extra codes**
x	000		None
x	778		Customer-specific transmission interval 5 to 3600 s, for orders, specification in plain text (factory-set to 15 s)



	(1)		(2)		(3)		(4)		(5)		(6)		(7)		(8)		(9)		(10)
Order code		-		-		-		-		-		-		-		-		/	
Order example	902930/20	-	596	-	1006	-	2	-	4	-	100	-	2	-	10	-	000	/	000

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8 Technology Boulevard
Canastota, NY 13032, USA
Phone: 315-697-5866
1-800-554-JUMO
Fax: 315-697-5867
E-mail: info@jumo.us
Internet: www.jumo.us

Scope of delivery

1 device in the version ordered
1 preconfigured lithium battery 3.6 V, 1.7 Ah (ambient temperature, case: -25 to +125 °C)
4 color rings made of silicone (white, green, red, blue) for visual transmitter identification
1 operating manual B 902930.0

Accessories

	Part no.
Setup program on CD-ROM, multilingual	00488887
Setup program including OnlineChart on CD-ROM, multilingual	00549067
OnlineChart activation	00549188
Preconfigured lithium battery 3.6 V, 1.7 Ah (ambient temperature, case: -25 to +125 °C)	00534690
Case sealing set with axial gaskets made of EPDM (ethylene propylene diene rubber) (content: 3 gaskets, white) and radial O-ring seals made of FPM (fluororubber) (content: 3 seals, black)	00532794
Color rings made of silicone (white, green, red, blue) for visual transmitter identification	00489047
Color cap set made of PEI (polyetherimide) (content 10 caps, gray) for visual transmitter identification	00525950
Color cap set made of PEI (polyetherimide) (content 10 caps, brown) for visual transmitter identification	00525951
Color cap set made of PEI (polyetherimide) (content 10 caps, green) for visual transmitter identification	00525952
Color cap set made of PEI (polyetherimide) (content 10 caps, blue) for visual transmitter identification	00525953
PC interface with USB/TTL converter, adapter (socket connector) and adapter (pins)	00456352
PC interface with TTL/RS232 converter and adapter (socket connector)	00350260
Wall holder for Wtrans transmitter with protection tube diameter 4 mm	00503317
Wall holder for Wtrans transmitter with protection tube diameter 4.5 mm	00503326
Wall holder for Wtrans transmitter with protection tube diameter 6 mm	00503328

Stock version

(1)		(2)		(3)		(4)		(5)		(6)		(7)		(8)		(9)		(10)	Part no.
902930/20	-	596	-	1006	-	2	-	4	-	100	-	2	-	10	-	000	/	000	00537803

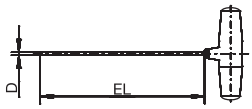
JUMO GmbH & Co. KG
Delivery address: Mackenrodtstraße 14
36039 Fulda, Germany
Postal address: 36035 Fulda, Germany
Phone: +49 661 6003-0
Fax: +49 661 6003-607
E-mail: mail@jumo.net
Internet: www.jumo.net

JUMO Instrument Co. Ltd.
JUMO House
Temple Bank, Riverway
Harlow, Essex CM20 2DY, UK
Phone: +44 1279 635533
Fax: +44 1279 635262
E-mail: sales@jumo.co.uk
Internet: www.jumo.co.uk

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8 Technology Boulevard
Canastota, NY 13032, USA
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Internet: www.jumo.us

Order details: JUMO Wtrans transmitter T02.G1 mineral-insulated RTD temperature probe

		(1)	**Basic type**
	902930/22		Wtrans transmitter T02.G1 Mineral-insulated RTD temperature probe with flexible protection tube Ambient temperature, case: -25 to +125 °C)
		(2)	**Operating temperature in °C**
x	415		-50 to +600 °C
		(3)	**Measuring insert**
x	1006		1x Pt1000 in 3-wire circuit
		(4)	**Tolerance class according to DIN EN 60751**
x	2		Class A
		(5)	**Protection tube diameter D in mm**
x	1.9		Ø 1.9 mm
x	3		Ø 3 mm
x	6		Ø 6 mm
		(6)	**Insertion length EL in mm (EL 100 to 10000 mm)**
x	100		100 mm
x	150		150 mm
x	. . .		For orders, specify in plain text (stepped down by 50 mm)
		(7)	**Insertion tip**
x	1		Flat
		(8)	**Radio frequency**
x	10		868.4 MHz (Europe)
x	20		915 MHz (America, Australia, Canada, and New Zealand)
		(9)	**Process connection**
x	000		None
x	252		Pipe screw connection G 1/4 (for protection tube diameter 6 mm only)
x	253		Pipe screw connection G 3/8 (for protection tube diameter 6 mm only)
x	254		Pipe screw connection G 1/2 (for protection tube diameter 6 mm only)
x	255		Pipe screw connection G 3/4 (for protection tube diameter 6 mm only)
x	261		Pipe screw connection M8 x 1 (for protection tube diameter 3 mm only)
x	263		Pipe screw connection M10 x 1 (for protection tube diameter 6 mm only)
x	291		Pipe screw connection 1/2-14NPT (for protection tube diameter 6 mm only)
x	662		Sheet steel flange (for protection tube diameter 6 mm only)
		(10)	**Extra codes**
x	000		None
x	778		Customer-specific transmission interval 5 to 3600 s, for orders, specification in plain text (factory-set to 15 s)



	(1)		(2)		(3)		(4)		(5)		(6)		(7)		(8)		(9)		(10)
Order code		-		-		-		-		-		-		-		-		/	
Order example	902930/22	-	415	-	1006	-	2	-	3	-	100	-	1	-	10	-	000	/	000

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

JUMO Instrument Co. Ltd.
JUMO House
Temple Bank, Riverway
Harlow, Essex CM20 2DY, UK
Phone: +44 1279 635533
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Scope of delivery

1 device in the version ordered
1 preconfigured lithium battery 3.6 V, 1.7 Ah (ambient temperature, case: -25 to +125 °C)
4 color rings made of silicone (white, green, red, blue) for visual transmitter identification
1 operating manual B 902930.0

Accessories

	Part no.
Setup program on CD-ROM, multilingual	00488887
Setup program including OnlineChart on CD-ROM, multilingual	00549067
OnlineChart activation	00549188
Preconfigured lithium battery 3.6 V, 1.7 Ah (ambient temperature, case: -25 to +125 °C)	00534690
Case sealing set with axial gaskets made of EPDM (ethylene propylene diene rubber) (content: 3 gaskets, white) and radial O-ring seals made of FPM (fluororubber) (content: 3 seals, black)	00532794
Color rings made of silicone (white, green, red, blue) for visual transmitter identification	00489047
Color cap set made of PEI (polyetherimide) (content 10 caps, gray) for visual transmitter identification	00525950
Color cap set made of PEI (polyetherimide) (content 10 caps, brown) for visual transmitter identification	00525951
Color cap set made of PEI (polyetherimide) (content 10 caps, green) for visual transmitter identification	00525952
Color cap set made of PEI (polyetherimide) (content 10 caps, blue) for visual transmitter identification	00525953
PC interface with USB/TTL converter, adapter (socket connector) and adapter (pins)	00456352
PC interface with TTL/RS232 converter and adapter (socket connector)	00350260
Wall holder for Wtrans transmitter with protection tube diameter 6 mm	00503328

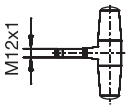
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Order details: JUMO Wtrans transmitter T01.G2 with M12 × 1 plug connection

		(1)	**Basic type**
	902930/50		Wtrans transmitter T01.G2 with M12 x 1 plug connection for RTD temperature probes (Ambient temperature, case: -30 to +85 °C)
		(2)	**Operating temperature in °C**
x	150		-200 to +600 °C
		(3)	**Measuring input**
x	1006		1x Pt1000 in 3-wire circuit
		(4)	**Tolerance class according to DIN EN 60751**
x	0		None (not relevant)
		(5)	**Protection tube diameter D in mm**
x	0		None (not relevant)
		(6)	**Insertion length EL in mm**
x	000		None (not relevant)
		(7)	**Insertion tip**
x	0		None (not relevant)
		(8)	**Radio frequency**
x	10		868.4 MHz (Europe)
x	20		915 MHz (America, Australia, Canada, and New Zealand)
		(9)	**Process connection**
x	000		None (not relevant)
		(10)	**Extra codes**
x	000		None
x	778		Customer-specific transmission interval 1 to 3600 s, for orders, specification in plain text (factory-set to 10 s)



	(1)		(2)		(3)		(4)		(5)		(6)		(7)		(8)		(9)		(10)
Order code		-		-		-		-		-		-		-		-		/	
Order example	902930/50	-	150	-	1006	-	0	-	0	-	000	-	0	-	10	-	000	/	000

JUMO GmbH & Co. KG
Delivery address: Mackenrodtstraße 14
36039 Fulda, Germany
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Scope of delivery

1 device in the version ordered
1 preconfigured lithium battery 3.6 V, 2.2 Ah (ambient temperature, case: -30 to +85 °C)
4 color rings made of silicone (white, green, red, blue) for visual transmitter identification
1 operating manual B 902930.0

Accessories

	Part no.
Setup program on CD-ROM, multilingual	00488887
Setup program including OnlineChart on CD-ROM, multilingual	00549067
OnlineChart activation	00549188
Preconfigured lithium battery 3.6 V, 2.2 Ah (ambient temperature, case: -30 to +85 °C)	00525539
Case sealing set with axial gaskets made of EPDM (ethylene propylene diene rubber) (content: 3 gaskets, white) and radial O-ring seals made of FPM (fluororubber) (content: 3 seals, black)	00532794
Color rings made of silicone (white, green, red, blue) for visual transmitter identification	00489047
Color cap set made of PEI (polyetherimide) (content 10 caps, gray) for visual transmitter identification	00525950
Color cap set made of PEI (polyetherimide) (content 10 caps, brown) for visual transmitter identification	00525951
Color cap set made of PEI (polyetherimide) (content 10 caps, green) for visual transmitter identification	00525952
Color cap set made of PEI (polyetherimide) (content 10 caps, blue) for visual transmitter identification	00525953
PC interface with USB/TTL converter, adapter (socket connector) and adapter (pins)	00456352
PC interface with TTL/RS232 converter and adapter (socket connector)	00350260
Wall holder for Wtrans transmitter with M12 x 1 plug connection	00503329
Machine connector M12 x 1, 4-pin according to IEC 60947-5-2	00506319

Push-in RTD temperature probe with Pt1000 temperature sensing element and machine connector M12 x 1

902150/30-386-1006-2-6-100-80-2500/315, 317 Protection tube diameter 6 mm, insertion length 100 mm, connection cable length 2500 mm	00514417
902150/30-386-1006-2-6-200-80-2500/315, 317 Protection tube diameter 6 mm, insertion length 200 mm, connection cable length 2500 mm	00514440

Note: For pipe screw-connections and flanges, please refer to data sheet 909750 (909725)

Stock version

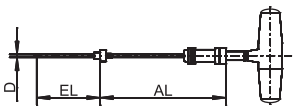
(1)		(2)		(3)		(4)		(5)		(6)		(7)		(8)		(9)		(10)	Part no.
902930/50	-	150	-	1006	-	0	-	0	-	000	-	0	-	10	-	000	/	000	00506791

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

JUMO Instrument Co. Ltd.
JUMO House
Temple Bank, Riverway
Harlow, Essex CM20 2DY, UK
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Fax: +44 1279 635262
E-mail: sales@jumo.co.uk
Internet: www.jumo.co.uk

JUMO Process Control, Inc.
8 Technology Boulevard
Canastota, NY 13032, USA
Phone: 315-697-5866
1-800-554-JUMO
Fax: 315-697-5867
E-mail: info@jumo.us
Internet: www.jumo.us

Order details: JUMO Wtrans transmitter T03.G2 Ex with M12 × 1 plug connection



		(1)	**Basic type**
	902930/55		Wtrans transmitter T03.G2 Ex with M12 x 1 plug connection and RTD temperature probe with PTFE connection cable and ATEX approval Intrinsically safe device according to EC directive 94/9/EC (ATEX) (Ambient temperature, case: -30 to +85 °C) Please specify the requirement for zone separation in plain text!
		(2)	**Operating temperature in °C (protection fitting)**
x	596		-30 to +260 °C
		(3)	**Measuring input**
x	1006		1x Pt1000 in 3-wire circuit
		(4)	**Tolerance class according to DIN EN 60751**
x	2		Class A
		(5)	**Protection tube diameter D in mm**
x	4		Ø 4 mm
x	6		Ø 6 mm (zone separation possible)
x	9		Ø 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 (stepped down by 50 mm)
		(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)
x	252		Pipe screw connection G 1/4 (for protection tube diameter 6 mm only)
x	253		Pipe screw connection G 3/8 (for protection tube diameter 6 mm only)
x	254		Pipe screw connection G 1/2 (for protection tube diameter 6 mm only)
x	255		Pipe screw connection G 3/4 (for protection tube diameter 6 mm only)
x	263		Pipe screw connection M10 x 1 (for protection tube diameter 6 mm only)
x	291		Pipe screw connection 1/2-14NPT (for protection tube diameter 6 mm only)
x	662		Sheet steel flange (for protection tube diameter 6 mm only)
		(10)	**Extra codes**
x	**362**		**Ex protection Ex i according to EC directive 94/9/EC (ATEX)**
x	778		Customer-specific transmission interval 5 s, 10 s, or 45 s, for orders, specification in plain text (factory-set to 20 s)

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

Note:
For orders, please specify the PTFE connection cable length (AL) in plain text!
Only use basic type 902930/55 with the corresponding JUMO RTD temperature probes with PTFE connection cable.
The design of the JUMO RTD temperature probes is to be agreed upon in the order!

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

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

JUMO Instrument Co. Ltd.
JUMO House
Temple Bank, Riverway
Harlow, Essex CM20 2DY, UK
Phone: +44 1279 635533
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Scope of delivery

1 device in the version ordered
1 preconfigured lithium battery 3.6 V, 2.2 Ah (ambient temperature, case: -30 to +85 °C)
4 color rings made of silicone (white, green, red, blue) for visual transmitter identification
1 operating manual B 902930.0.1

Accessories

	Part no.
Preconfigured lithium battery 3.6 V, 2.2 Ah (ambient temperature, case: -30 to +85 °C)	00525539
Case sealing set with axial gaskets made of EPDM (ethylene propylene diene rubber) (content: 3 gaskets, white) and radial O-ring seals made of FPM (fluororubber) (content: 3 seals, black)	00532794
Color rings made of silicone (white, green, red, blue) for visual transmitter identification	00489047
Wall holder for Wtrans transmitter with M12 x 1 plug connection	00503329

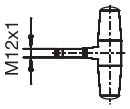
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36039 Fulda, Germany
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JUMO House
Temple Bank, Riverway
Harlow, Essex CM20 2DY, UK
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Canastota, NY 13032, USA
Phone: 315-697-5866
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E-mail: info@jumo.us
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Order details: JUMO Wtrans transmitter T02.G2 with M12 × 1 plug connection

		(1)	**Basic type**
	902930/60		Wtrans transmitter T02.G2 with M12 x 1 plug connection for RTD temperature probes (Ambient temperature, case: -25 to +125 °C)
		(2)	**Operating temperature in °C**
x	150		-200 to +600 °C
		(3)	**Measuring input**
x	1006		1x Pt1000 in 3-wire circuit
		(4)	**Tolerance class according to DIN EN 60751**
x	0		None (not relevant)
		(5)	**Protection tube diameter D in mm**
x	0		None (not relevant)
		(6)	**Insertion length EL in mm**
x	000		None (not relevant)
		(7)	**Insertion tip**
x	0		None (not relevant)
		(8)	**Radio frequency**
x	10		868.4 MHz (Europe)
x	20		915 MHz (America, Australia, Canada, and New Zealand)
		(9)	**Process connection**
x	000		None (not relevant)
		(10)	**Extra codes**
x	000		None
x	778		Customer-specific transmission interval 5 to 3600 s, for orders, specification in plain text (factory-set to 15 s)



	(1)		(2)		(3)		(4)		(5)		(6)		(7)		(8)		(9)		(10)
Order code		-		-		-		-		-		-		-		-		/	
Order example	902930/60	-	150	-	1006	-	0	-	0	-	000	-	0	-	10	-	000	/	000

JUMO GmbH & Co. KG
Delivery address: Mackenrodtstraße 14
36039 Fulda, Germany
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Scope of delivery

1 device in the version ordered
1 preconfigured lithium battery 3.6 V, 1.7 Ah (ambient temperature, case: -25 to +125 °C)
4 color rings made of silicone (white, green, red, blue) for visual transmitter identification
1 operating manual B 902930.0

Accessories

	Part no.
Setup program on CD-ROM, multilingual	00488887
Setup program including OnlineChart on CD-ROM, multilingual	00549067
OnlineChart activation	00549188
Preconfigured lithium battery 3.6 V, 1.7 Ah (ambient temperature, case: -25 to +125 °C)	00534690
Case sealing set with axial gaskets made of EPDM (ethylene propylene diene rubber) (content: 3 gaskets, white) and radial O-ring seals made of FPM (fluororubber) (content: 3 seals, black)	00532794
Color rings made of silicone (white, green, red, blue) for visual transmitter identification	00489047
Color cap set made of PEI (polyetherimide) (content 10 caps, gray) for visual transmitter identification	00525950
Color cap set made of PEI (polyetherimide) (content 10 caps, brown) for visual transmitter identification	00525951
Color cap set made of PEI (polyetherimide) (content 10 caps, green) for visual transmitter identification	00525952
Color cap set made of PEI (polyetherimide) (content 10 caps, blue) for visual transmitter identification	00525953
PC interface with USB/TTL converter, adapter (socket connector) and adapter (pins)	00456352
PC interface with TTL/RS232 converter and adapter (socket connector)	00350260
Wall holder for Wtrans transmitter with M12 x 1 plug connection	00503329
Machine connector M12 x 1, 4-pin according to IEC 60947-5-2	00506319

Push-in RTD temperature probe with Pt1000 temperature sensing element and machine connector M12 x 1

902150/30-386-1006-2-6-100-80-2500/315, 317 Protection tube diameter 6 mm, insertion length 100 mm, connection cable length 2500 mm	00514417
902150/30-386-1006-2-6-200-80-2500/315, 317 Protection tube diameter 6 mm, insertion length 200 mm, connection cable length 2500 mm	00514440

Note: For pipe screw-connections and flanges, please refer to data sheet 909750 (909725)

Stock version

(1)		(2)		(3)		(4)		(5)		(6)		(7)		(8)		(9)		(10)	Part no.
902930/60	-	150	-	1006	-	0	-	0	-	000	-	0	-	10	-	000	/	000	00537805