JUMO Wtrans series

Wireless temperature measurement with system

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Dear Reader,

The future is wireless!
It's as true in business life as it is in the private sphere: "wireless" is what everyone's talking about. At the same time, one of the most frequently measured physical variables is temperature.

It was with this measurement variable that JUMO embarked over 60 years ago on an era culminating in the production of premium-quality, precise temperature sensors with long-term stability as one of our core competences. These sensors have been used throughout this time to produce resistance temperature probes of the highest quality.

The company's modern internal production facilities allow it to take special customer requirements into consideration. They can be adapted to the wide ranging needs of different sectors of industry. Our highly motivated employees are a further guarantee of high product quality and resulting customer satisfaction in numerous countries around the world. JUMO-internal development departments consistently produce new innovations just right for the marked, paired with measurement and control systems proven over many years.

"Wireless" is the word more than any other today which stands for the milestone leading to a completely new, limitless freedom in temperature measurements. What makes better sense than working with wireless temperature sensors based on wireless technology not susceptible to interference?

An important criterion is lower energy consumption for the transmitter, which allows for a long battery service life. Another key factor is the extremely simple configuration, combined with maximum operating convenience for our customers.

The JUMO Wtrans series stands for the greatest possible diversity of applications. In this way it opens up whole new dimensions in measurement value recording. Wireless technology delivers enormous benefits to the customer: The instruments provide users with optimum freedom of movement while at the same time ensuring reliable temperature measurements – unencumbered by everything that interfered with flexible use in the past.

JUMO has fleshed out the dream of every measurement engineer and brought it to market maturity. We hope you will be inspired by the numerous possibilities the JUMO Wtrans series opens up for you in this brochure

PS: For detailed information about our products, please visit www.jumo.net.

Contents

Wireless temperature measurement technology

The JUMO Wtrans series is a system for wireless recording of measurement data using the very latest wireless technology. The sensors are designed for universal application for mobile and stationary measurements on movable or fixed measurement locations, opening up completely new possibilities for recording measurement values. The measurement value is transmitted wirelessly to the receiver of the Wtrans system and from there to the evaluation unit.

The wireless frequency is 868,4 MHz for Europe and 915 MHz for USA, Canada, Australia, New Zealand and other countries. These frequencies are largely insensitive to external interference effects.

The JUMO Wtrans wireless transmission system features multifunctional use

A summary of your advantages

- Reduced installation overhead
- No costly cable connections that are prone to problems
- Lower system costs for initial installation, maintenance and repair
- Flexible use regardless of location
- Failsafe data transmission suitable for industrial applications
- Long-lasting, high-performance battery
- Other instruments can be connected for data evaluation
- High process safety
- Up to 16 transmitters per receiver
- Setup program with online chart function featuring intuitive operation

Areas of application

- Wireless acquisition of process values for temperature in movable or hard to reach systems
- System extensions or short-term ad-hoc measurements
- Pharmaceutical and food industries
- Chemical industry
- Temperature monitoring in storage depots
- General freight monitoring

JUMO Wtrans receiver

The Wtrans receiver T01 is used in connection with corresponding Wtrans probes for mobile and stationary temperature measurement. A significant reduction of the installation work is achieved due to the application of the trendsetting radio technology in the ISM band (Industrial, Scientific and Medical Band) 868.4 MHz or 915 MHz. Cable connections are not required.

The supplied lambda/4-antenna with an impedance of 50 Ω can be directly screwed on or fitted externally. If the antenna wall holder with a 3 m long antenna cable is used, the max. open air range is 300 m.

Type 902931

JUMO Wtrans receiver for RTD temperature probes with wireless transmission of the measured values

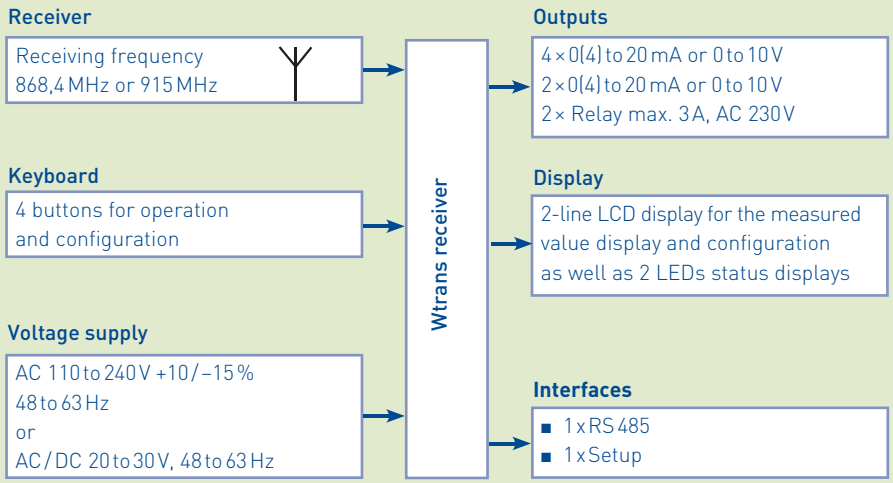
Operation and configuration is possible via the keyboard in connection with a 2-line LCD display or, more comfortable, using a setup program. Thus, parameters such as filter constants, offset, alarms and fly back (minimum and maximum value memory) can be separately set for each channel. For this purpose, a plug is provided on the front for a PC interface with TTL/RS 232 or USB/TTL converter to connect the receiver and the PC.

Features

Wtrans T01
DIN rail case, IP 20

- For RTD temperature probes, thermocouples, potentiometers and voltage
- Interface RS 485 with Modbus protocol
- Wireless measured value receipt
- No wiring work due to modern radio technology
- For max. 16 probes per receiver

Block diagram



Approval/approval marks

- IC (Industry Canada) for 915 MHz, 902931/10, 230 V
- FCC (Federal Communications Commissions) for 915 MHz, 902931/10, 230 V
- c UL us (Underwriters Laboratories) 902931/10, 230 V

JUMO Wtrans probes

Wtrans probes are used together with matching Wtrans receivers for mobile or stationary temperature measurements. The temperature measurement is transmitted digitally and wirelessly to the Wtrans systems receiver.

Wtrans probes are also available with ATEX approval. These instruments can be placed directly in areas with an explosion hazard. The receiver is installed outside the Ex zone. This eliminates cost-intensive installations with protective barriers and supply isolators. JUMO's wireless technology opens up a totally new approach, making it possible to transmit temperature measurements across boundaries and out of the Ex zone. The Wtrans probes must also be located in zone 0.

JUMO Wtrans probe RTD temperature probe with wireless transmission of the measured values

General	**Description**	**JUMO Wtrans probe T01 RTD temperature probe with electronics to 85 °C**	**JUMO Wtrans probe T02 RTD temperature probe with electronics to 125 °C**	**JUMO Wtrans probe T03 RTD temperature probe with ATEX approval and electronics to 85 °C**
	Data sheet	902930/10/12/50	902930/20/22/60	902930/15/17/55
	Features	– For operating temperatures between –30 °C to +260 °C or –200 °C to +600 °C * – For mobile or stationary temperature measurement – No wiring work due to state-of-the-art wireless technology – Fail-safe transmission through telegram frame coding		
Technical data	**Transmission frequency**	868.4 MHz (Europe); 915 MHz (America, Australia, Canada, New Zealand and other countries), 10 frequencies can be set in the 915 MHz frequency band		
	Transmission interval	adjustable from 1 to 3600 s; factory setting for basic type 902930/10, 902930/12 and 902930/50 = 10 s; factory setting for basic type 902930/20, 902930/22 and 902930/60 = 15 s; factory setting for basic type 902930/15, 902930/17 and 902930/55 = 20 s; adjusted via DIP switch 5 s, 10 s, 20 s oder 45 s		
	Open air range	up to 300 m using the antenna wall holder for the receiver and the 3 m long antenna cable		
	Probe ID	5-digit ID, factory-set, can be configured customer-specific		
	Measuring input	Pt 1000 as per DIN EN 60751, in 3-wire-circuit		
	Protection class	IP 67 as per DIN EN 60529; for basic type 902930/10, 902930/12, 902930/15, 902930/17, 902930/20 and 902930/22; for basic type 902930/50, 902930/55 and 902930/60 **		
	Lithium battery	Voltage: 3.6 V; Rated capacity: 2.2 Ah/1.7 Ah		
	available approvals and approval marks	– IC (Industry Canada) for 915 MHz – FCC (Federal Communications Commissions) for 915 MHz – c UL us (Underwriters Laboratories) – ATEX approval for 868.4 MHz		

* not in Wtrans T03

** only with the machine connector M 12 ×1 connected

*** only for Wtrans T03

JUMO Wtrans B

The Wtrans B head transmitter with wireless transmission of measurement values is used together with a Wtrans receiver for stationary or mobile recording of temperatures with resistance thermometers or thermocouples. It is also possible to measure resistances up to 10 kΩ, voltages to 50 mV and currents up to 20 mA with an external shunt.

Measurement values are transmitted wirelessly to the receiver of the Wtrans measuring system. The measurement values are displayed on the receiver They are also available in digital format on the RS 485 interface and as analog outputs. Various alarms can also be indicated with the two relay outputs.

Type 707060

JUMO Wtrans B
Programmable head transmitter with wireless transmission

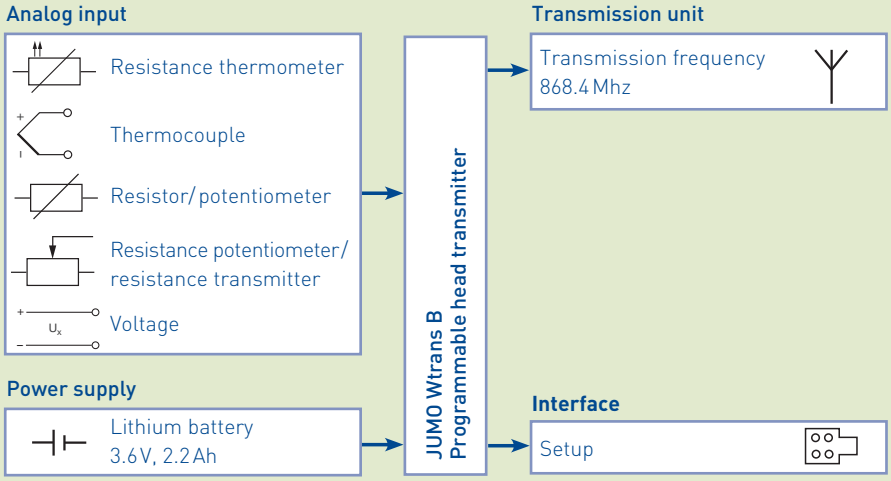
The head transmitter intended for industrial use consists of the transmitter with integrated transmission unit and an antenna/battery enclosure. The transmitter is designed for installation in terminal heads with form B (for example type 902020, etc.) and works in the ambient temperature range from –30 to 85 °C. Installation in customized terminal heads is possible. The antenna/battery enclosure is connected with the terminal head via a screw connection (M 20×1.5).

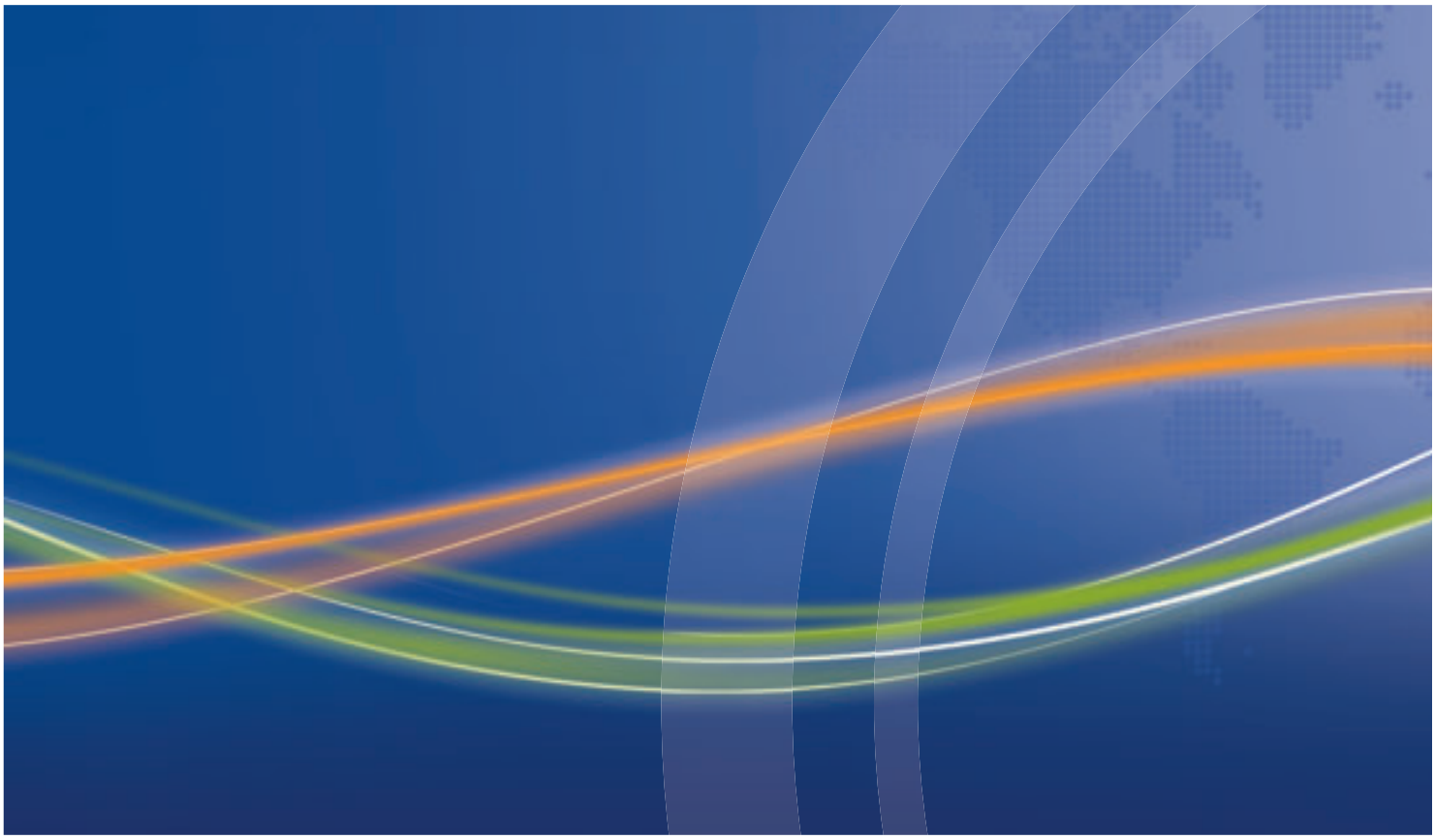
Features

Wtrans B

- Radio frequency 868.4 MHz
- Free-field transmission range up to 300 m
- Universal measurement input
- Customized linearization (40 value pairs or a 4th order polynomial)
- Li battery 3.6 V/2.1 Ah in AA size
- Convenient setup program
- Simple short-time acquisition of measurement data with the optional setup online chart, no additional equipment is required

Block diagram





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