

WIRELESS IN HEAD TEMPERATURE TRANSMITTER

WTX700 SERIES

- ISM BAND 868.4 MHZ FOR EUROPEAN USE
- RTD, THERMOCOUPLE, SLIDEWIRE, mV INPUTS
- BATTERY POWERED
- 300 m LINE OF SIGHT RANGE
- SUPPLIED FITTED TO THE STATUS SCH4 OR SCH11 CONNECTION HEADS



INTRODUCTION

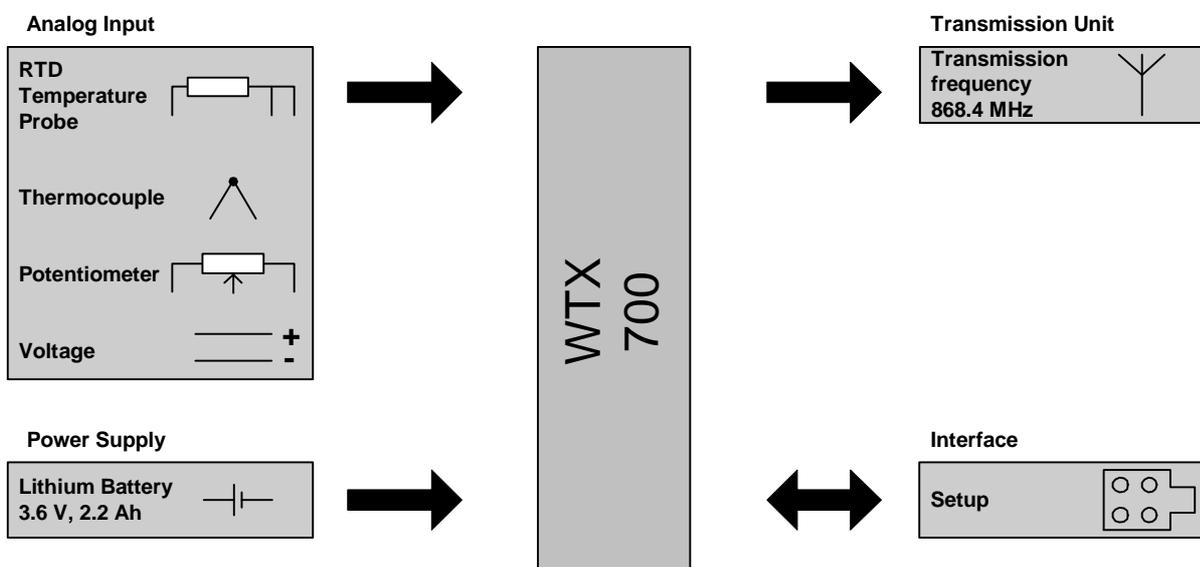
The WTX700 series in head temperature transmitter is a new generation of wireless temperature measurement solutions from Status Instruments. It has been designed to accept most common temperature sensors including those from RTD and thermocouple sensors as well as slidewire and mV signals. The measured value is transmitted to the DIN Rail mounted base station (WRX900), this can accept signals from up to 16 WTX700 transmitters.

A 3.6 V Lithium battery is provided for the transmitter power supply and is fitted in a specially designed antenna housing which screws into the cable entry of the connecting head. The connecting head is supplied with the product and there is a choice between the ABS plastic SCH4 or alloy SCH11. Both can be sensor mounted, while the SCH4 can also be surface mounted. This is particularly useful when used with a flying lead sensor such as our style 4 sensor type and allows for a wider range of applications.

The measured signal is transmitted on the ISM band (Industrial Scientific and Medical Band) of 868.4 MHz. This frequency is virtually insensitive to external interferences and allows transmission even in a harsh industrial environment. Used together with the antenna mounting bracket and 10 m extension cable on the receiver, to get the best possible signal, the maximum open air range is 300 m.

Configuration is carried out by using the Wireless Configuration kit. This allows configuration of all parameters including transmitter address, transmission interval, sensor type etc.

BLOCK DIAGRAM



WIRELESS IN HEAD TEMPERATURE TRANSMITTER

SPECIFICATION @ 20 °C

TEMPERATURE INPUTS

THERMOCOUPLES

Designation	Standard	Measuring range	Measuring accuracy
Fe-CuNi L	DIN 43710	(-200 to +900) °C	± 0.1 %
Fe-CuNi J	DIN EN 60584	(-210 to +1200) °C	± 0.1 % from -100 °C
Cu-CuNi U	DIN 43710	(-200 to +600) °C	± 0.1 % from -100 °C
Cu-CuNi T	DIN EN 60584	(-270 to +400) °C	± 0.1 % from -150 °C
NiCr-Ni K	DIN EN 60584	(-270 to +1372) °C	± 0.1 % from -80 °C
NiCr-CuNi E	DIN EN 60584	(-270 to +1000) °C	± 0.1 % from -80 °C
NiCrSi-NiSi N	DIN EN 60584	(-270 to +1300) °C	± 0.1 % from -80 °C
Pt10Rh-Pt S	DIN EN 60584	(-50 to +1768) °C	± 0.15 % from 20 °C
Pt13Rh-Pt R	DIN EN 60584	(-50 to +1768) °C	± 0.15 % from 50 °C
Pt30Rh-Pt6Rh B	DIN EN 60584	(0 to 1820) °C	± 0.15 % from 400 °C
W5Re-W26Re C		(0 to 2320) °C	± 0.15 %
W3Re-W25Re D		(0 to 2495) °C	± 0.25 %
W3Re-W26Re		(0 to 2400) °C	± 0.15 %
Chromel-Copel		(-200 to +800) °C	± 0.1 % from -80 °C
Chromel-Alumel		(-200 to +1372) °C	± 0.1 % from -80 °C
PLII (Platinel II)		(0 to 1395) °C	± 0.15 %
MoRe5-MoRe41		(0 to 2000) °C	± 0.2 %
Cold junction		Pt1000 internal	
Cold junction accuracy		±1 °C	

RTD INPUTS

Designation	Standard	Measuring range	Measuring accuracy
Pt100	DIN EN 60751	(-100 to +200) °C (-200 to +600) °C	± 0.1 °C □±0.2 °C
Pt500	DIN EN 60751	(-100 to +200) °C (-200 to +600) °C	± 0.1 °C ± 0.2 °C
Pt1000	DIN EN 60751	(-100 to +200) °C (-200 to +600) °C	± 0.1 °C ± 0.2 °C
Ni 100	DIN 43760	(-60 to +250) °C	± 0.2 °C
Ni 500	DIN 43760	(-60 to +150) °C	± 0.2 °C
Ni 1000	DIN 43760	(-60 to +150) °C	± 0.2 °C
Pt100	JIS 1604	(-100 to +200) °C (-200 to +600) °C	± 0.1 °C ± 0.2 °C
Pt50	ST RGW 1057 1985	(-200 to +600) °C	± 0.2 °C
Pt100	GOST 6651-94 A.1	(-100 to +200) °C (-200 to +600) °C	± 0.1 °C ± 0.2 °C
Cu50	GOST 6651-94 A.4	(-50 to +200) °C	± 0.2 °C
Cu100	GOST 6651-94 A.4	(-50 to +200) °C	± 0.2 °C
Connection type		2-wire or 3-wire circuit	
Sensor lead resistance 2-wire circuit 3-wire circuit		Measuring resistance + ≤ 22 Ω Total lead resistance 11 Ω per line	
Probe current		< 0.5 mA	
Lead compensation		Not required for three wire circuit (max. admissible 11 Ω per line). Can be configured on the probe with 2-wire circuit (≤ 22 Ω).	

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POTENTIOMETER INPUTS

Designation	Measuring range	Measuring accuracy
Potentiometer	< 400 Ω $\geq 400 \Omega$ □ to $\leq 4000 \Omega$ > 4000 Ω to $\leq 10000 \Omega$	$\pm 400 \text{ m } \Omega$ $\pm 4 \Omega$ $\pm 10 \Omega$
Connection type	2-wire or 3-wire circuit	
Sensor lead resistance 2-wire circuit 3-wire circuit	$\leq 22 \Omega$ $\leq 11 \Omega$ per line	

VOLTAGE INPUTS

Designation	Measuring range	Measuring accuracy
Voltage input	(0 to 50) mV	$\pm 0.1 \%$

OUTPUT (RADIO TRANSMISSION)

Probe ID	Max. 5-digit ID, factory-set, can be configured customer-specific
Transmission interval	Adjustable from 1 to 3600 s (ex-factory 15 s)
Transmission frequency	ISM band 868.4 MHz (Europe)
Transmission capacity	+10 dBm
Open air range	Max. 300 m when using the antenna wall holder and 10 m extension cable. (When installing the antenna directly onto the receiver, a reduced range of approx. 40 % must be taken into account.)

ELECTRICAL DATA

Voltage supply Lithium battery Size	Rated voltage: 3.6 V, rated capacity: 2.2 Ah AA
Operating life	Approx. 1 year with the factory-set values (transmission interval = 15s) and at room temperature (fast transmission interval and high or low ambient temperature reduce the battery operating life)
Configuration	With setup program
Configurable parameters	Probe ID (max. 5-digit ID) and transmission interval

ENVIRONMENTAL INFLUENCES

TRANSMITTER IN THE SCH HEAD WITH ANTENNA-BATTERY CASE

Ambient temperature range (electronics)	(-30 to +85) °C in SCH11 and (-30 to +70) °C in SCH4
Storage temperature range / storage humidity	(-40 to +85) °C / rel. humidity $\leq 95 \%$
Temperature coefficient ¹ Thermocouple RTD temperature probe Potentiometer Voltage	$\leq \pm 0.005 \%$ / °C deviation from 22 °C plus accuracy of the cold junction $\leq \pm 0.005 \%$ / °C deviation from 22 °C $\leq \pm 0.01 \%$ / °C deviation from 22 °C $\leq \pm 0.005 \%$ / °C deviation from 22 °C
Climate class	10 cycles with 10 °C / 80 °C, as per IEC 68-2-30, RH 95 % non condensing, during operation
Vibration resistance	As per GL characteristic line 2
Admissible mechanical shock resistance	10 g / 6 ms, as per DIN IEC 68-2-29

¹All accuracy values in % refer to the maximum measuring range.

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TRANSMITTER HOUSING

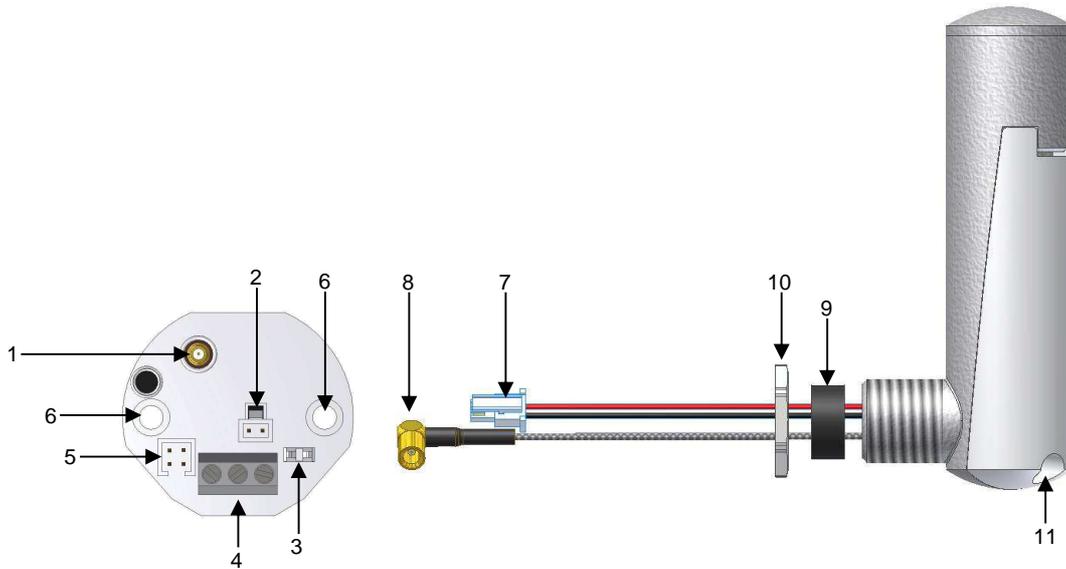
Type	Plastic case to be installed in connection head SCH4 or SCH11
Material	Polycarbonate
Flammability class	UL 94 V2
Dimensions Diameter Height with/without connector	44 mm 31 mm / 27 mm
Protection type	IP65, when installed with SCH head
Connections Probe Antenna Voltage supply Setup	3-pole connection terminal RM 5 mm, conductor cross-section 1.5 mm ² SMB connector 2-pole multi-pin connector RM 2.54 mm 4-pin connector
Weight	approx. 35 g

ANTENNA-BATTERY CASE

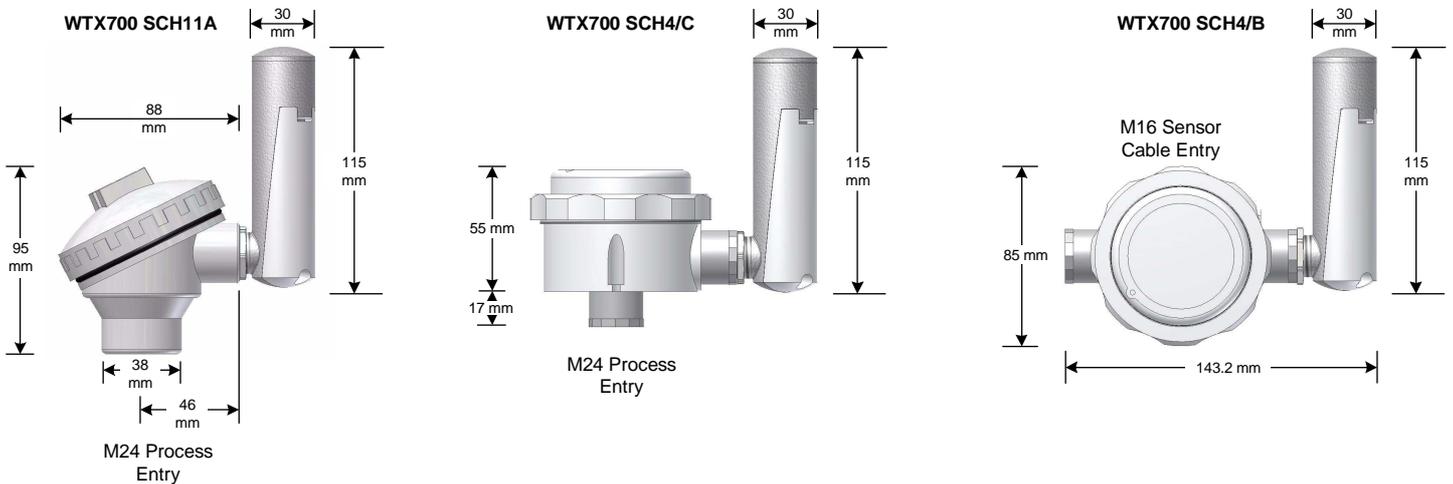
Type	Plastic case with M20x1.5 thread for connection head
Material	Polyetherimide
Flammability class	UL 94 HB or UL 94 V-0
Dimensions Diameter Height	30 mm 115 mm
Protection type	IP65, as per DIN EN 60529
Connection Antennae Battery connection	SMB inlet, 50 Ω 2-pole connector RM 2.54 mm
Operating position	preferably vertical (optimum alignment to the receiver antenna)
Weight (including battery)	approx. 80 g

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MECHANICAL



- | | | | |
|---|---|----|--|
| 1 | SMB antenna connector (antenna connection) | 7 | Voltage supply socket (battery connection) |
| 2 | Voltage supply connector (battery connection) | 8 | SMB antenna socket (antenna connection) |
| 3 | Cable guide for antenna cable and voltage supply | 9 | Seal |
| 4 | Probe connection | 10 | Locknut |
| 5 | Setup connector | 11 | Battery lid screw |
| 6 | Fastening holes for installation in the connection head | | |



ORDER CODE:

WTX700/SCH11	RADIO TX C/W SCH11 HEAD	M24 Process Entry
WTX700/SCH4/B	RADIO TX C/W SCH4 B HEAD	M16 Sensor Cable Entry
WTX700/SCH4/C	RADIO TX C/W SCH4 C HEAD	M24 Process Entry

Accessories

Lithium battery 3.6 V, 2.2 Ah (size AA)
PC interface with USB/TTL converter

Part No

28-302-0036-01
WLESS/CNFG/KIT