

Temperature & Humidity Sensor

TS60x

Milesight

◆ Introduction

TS60x is a compact temperature and humidity sensor with a visualized data display. It features extendable connecting lines, a diverse range of detecting probes, and an IP67 waterproof design, making it applicable for accurate temperature and humidity data detection in various harsh environments. The enclosure, made of food-grade materials, allows safe contact with food or medicines. It not only supports multiple application modes that are compatible with IoT platforms, but is also equipped with base station positioning for tracking and security purposes.

TS60x is widely used for temperature and humidity monitoring applications such as cold chain transportation of food or medicine.



TS601



TS602

◆ Features

Shared Values

- IP67 waterproof with a specialized battery compartment design, making it suitable for harsh environment
- Locally stores historical records and supports retransmission to prevent data loss
- Built-in 3-axis accelerometer for monitoring device status
- Equipped with a light sensor for cargo box opening detection and alarm
- Support flight mode to comply with aviation safety requirements
- Support management and OTA upgrades via the Milesight Development Platform and AWS
- Flexible design supports various mounting options
- Equipped with NFC for quick and easy configuration
- Equipped with base station positioning for tracking
- Support one-click reporting functionality
- Support cumulative reporting to reduce power consumption
- Support multiple network protocols to compatibility with IoT platforms

TS601 Only

- Equipped with an indicator to indicate device status and threshold alarms

TS602 Only

- Provides optional high accuracy PT100 temperature probes, DS18B20 temperature probe and TH temperature - humidity probe
- Features a high resolution 0.96-inch OLED display, enabling intuitive data reading

◆ Specifications

Model Name	TS601	TS602
Connector Type	-	5-pin M12 A-Coded Male Connector
Connector Number	-	1 × Connector for TH/DS18B20/PT100 Sensor
Wireless Transmission		
Technology	LTE Cat.1	
Frequency	LTE - FDD: B1/B3/B5/B7/B8/B20/B28 for EMEA+Australia/New Zealand	
SIM Slot	1 x Micro SIM (3FF) Slot, 1.8V/3V	
Application Mode	TCP/UDP/MQTT/AWS/Milesight Development Platform	

Sensor**Temperature**

Operating Principle	Digital CMOSens® technology (MEMS)	Refer to Optional Sensors
Range	-35°C to + 70°C	
Accuracy	Typ. ^[1] : +/- 0.3°C (-35°C to 0°C) +/- 0.2°C (0°C to 65°C) +/- 0.5°C (65°C to 70°C)	
Resolution	+/- 0.1°C	

Humidity

Operating Principle	Digital CMOSens® technology (MEMS)	Refer to Optional Sensors
Range	0% to 100% RH	
Accuracy	Typ. ^{[2][3]} : +/- 2% RH	
Resolution	+/- 0.1% RH	

Light

Range	0 to 600 Lux
Status	Light/Dark

Device Position

Status	Normal/Tilt
Threshold Range	-90° to +90° (on all X, Y, Z axes)

Base Station Positioning

Parameters	Longitude/Latitude
Resolution (On Urban Main Roads)	Typ. Deviation: 1 km Max Deviation: 5 km

Others

Screen	-	0.96-inch OLED
LED	1 × Status Indicator	-
Button	1 × Reset/Power Button	
USB	1 × Type-C Port for Power Supply (Internal)	

Software

Power On/Off	NFC, USB, Power Button
Configuration	Mobile App via NFC
Advanced Features	Threshold Alarm, Data Storage (5,000 entries), Data Retransmission

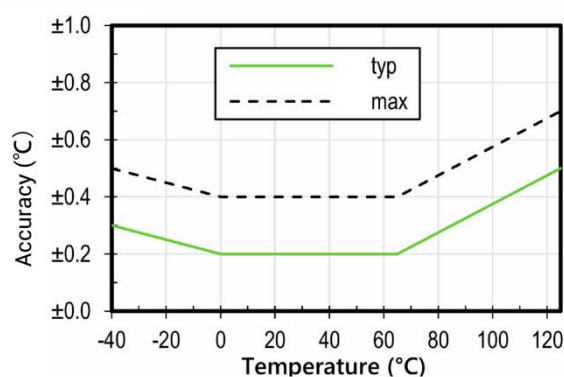
Physical Characteristics

Battery Life ^[6]	MQTT - Around 4.8 Years
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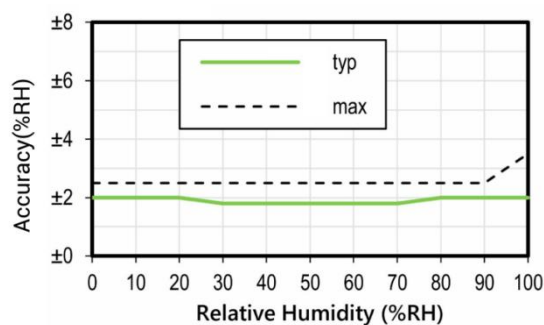
	(6 Times Report per Day, per Report includes 8 Packages with 30-min Collection Interval, Positioning Disabled, -20°C)	
Operating Temperature	-35°C to 70°C	
Relative Humidity	0% - 95% (non-condensing)	
Ingress Protection	IP67	
Housing&Color	ABS+PC (Food-grade), White	
Weight (Batteries included)	192g	200g
Dimension	112 × 72 × 29mm	
Installation	Cable-tie Mounting, 3M Tape Mounting, Wall Screw Mounting, Magnetic Mounting (Opt.)	

Note:

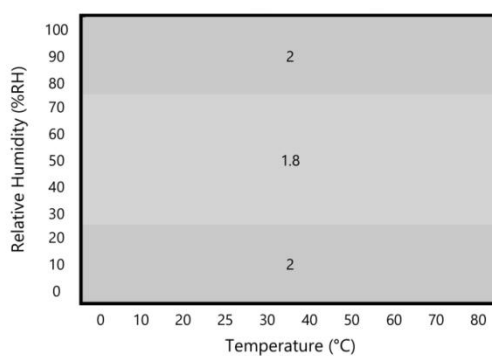
1. Accuracy corresponding to the temperature.



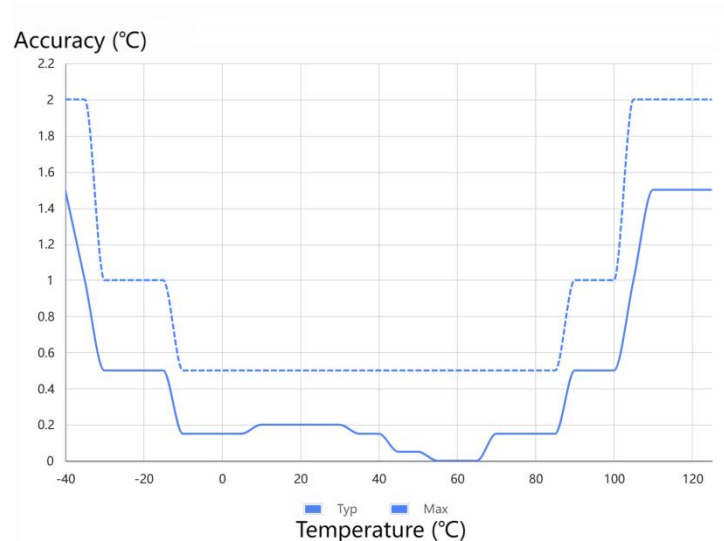
2. Accuracy corresponding to the relative humidity (25°C).



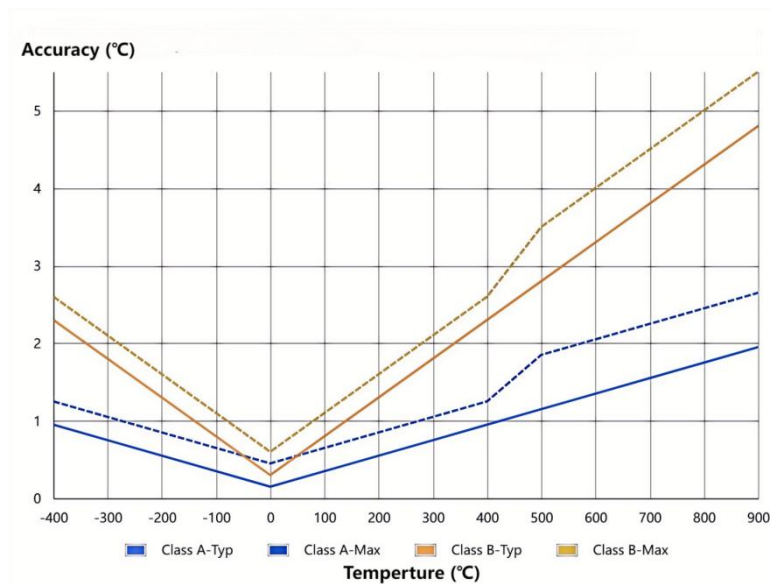
3. Typical RH accuracy corresponding to the temperature.



4. Accuracy corresponding to the temperature.



5. Accuracy corresponding to the temperature.



6. The battery life is based on test results under laboratory conditions using the standard battery provided by Milesight. Actual performance may vary depending on battery brand and environmental factors.

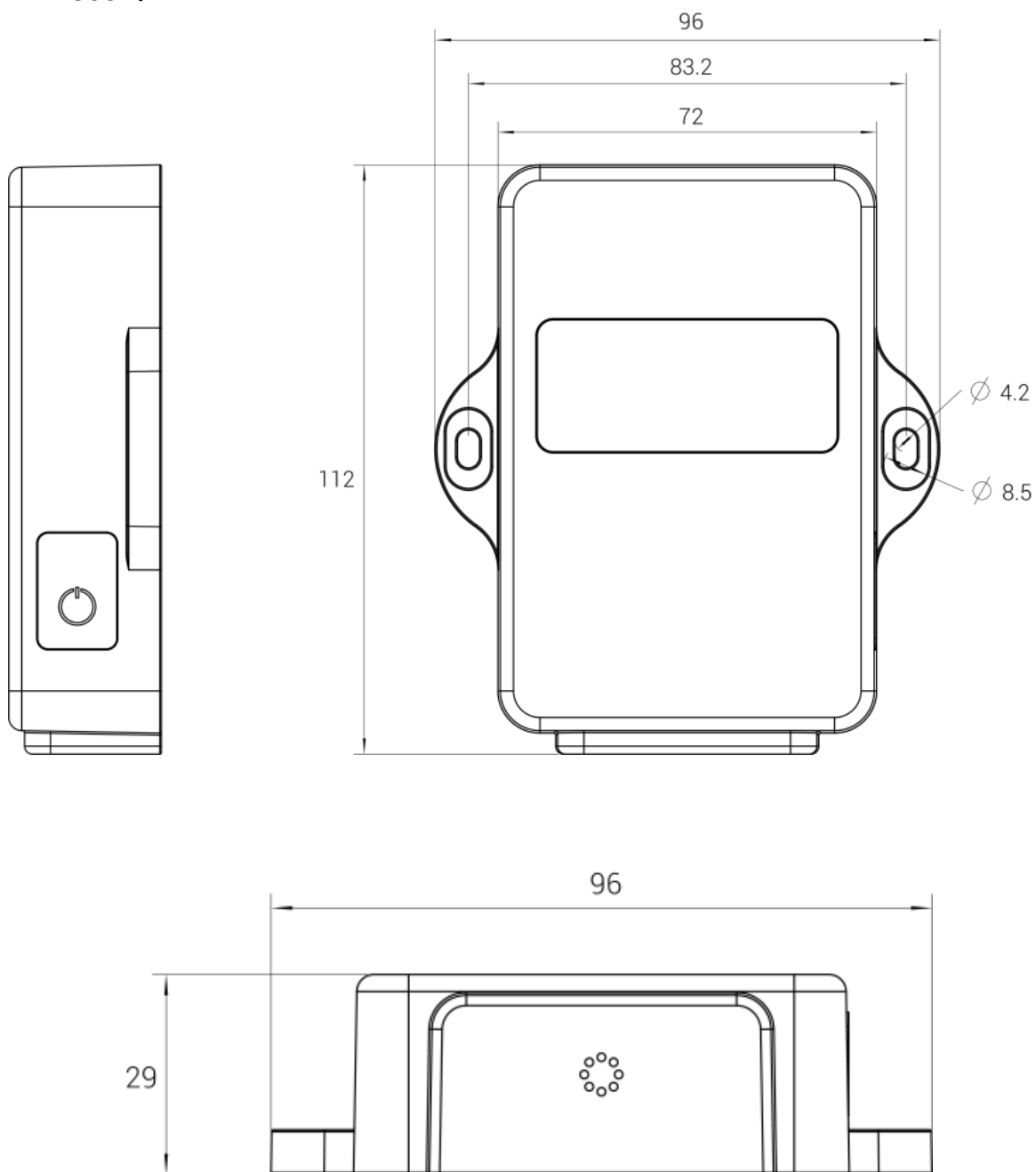
◆ Optional Sensors

Model	Measuring Range	Accuracy Class	Accuracy	Resolution	Sensor Probe	Cable	Installation
PT100 Sensor							
Regular Version (SP11-B05-125-200)	-40 °C ~ 125 °C	B	Typ. ^[5] : ± 0.5°C (-40°C~40°C), ± 1°C (40°C~125°C)	0.1°C	Straight tube, 304 Stainless Steel, Φ4*50 mm, IP67	2 m, PVC, -30 °C~105 °C	Contact, Thermal Buffer Bottle Installation(Opt.)
Food Applications (SP11-AF10-125-150)	-40 °C ~ 125 °C	A	Typ. ^[5] : ± 0.4°C	0.1°C	Needle, 316 Stainless Steel (Food Grade), Φ4*100 mm, IP67	1.5 m, Silicone (Food Grade), -60 °C~250 °C	Insert Installation
Low Temperature Applications (SP11-A03-050-150)	-200 °C ~ 50 °C	A	Typ. ^[5] : ± 0.5°C (-175°C~50°C), ± 0.55°C (-200°C~-175°C)	0.1°C	Straight tube, 304 Stainless Steel, Φ4*30 mm, IP67	1.5 m, Teflon, -200 °C~290 °C	Contact
Industrial Applications (SP11-A05-500-150)	-50 °C ~ 500 °C	A	Typ. ^[5] : ± 0.4°C (-50°C~125°C), ± 1.15°C	0.1°C	Straight tube, 304 Stainless Steel, Φ4*30 mm, IP30	1.5 m, Fiberglass, -50 °C~500 °C	Contact

			(125°C~500°C)				
DS18B20 Sensor							
Independent Calibration Applications (SP12-125-150)	-40 °C ~ 125 °C	-	Typ. ^[4] : ± 0.5°C (-10°C~85°C), ± 2°C (-40°C~-10°C, 85°C~125°C)	0.1 °C	Straight tube, 316 Stainless Steel, Φ6*50 mm, IP67	1.5 m, PVC, -40 °C ~ 125 °C	Contact
TH Sensor							
Temperature and Humidity Measurement (SP13-125-150)	Temperature: -40 °C ~ 125 °C Humidity: 0% RH ~ 100% RH	-	Temperature Typ. ^[1] : ± 0.3°C (-40°C~0°C), ± 0.2°C (0°C~65°C) ± 0.5°C (65°C~125°C) Humidity Typ. ^{[2][3]} : ± 2% RH	Temperature: 0.1 °C Humidity: 0.1% RH	Straight tube, 304 Stainless Steel, Φ6*50 mm, IP67	1.5 m, PVC, -40 °C ~ 125 °C	Contact

◆ Dimensions

TS601:



TS602: