

CE Z SN 30168 MADE IN SPA

> kintech engineering

K308TH



# DATASHEET

# K308TH TEMPERATURE & HUMIDITY SENSOR

Temperature & Humidity sensor developed and manufactured by Kintech Engineering specifically for wind & solar resource assessment applications.

## K308TH | TEMPERATURE & HUMIDITY

#### DESCRIPTION

The K308TH Temperature and Humidity sensor is developed and manufactured by Kintech Engineering specifically for wind & solar resource assessment applications. It's a solid and highly reliable PT1000 (Class A) temperature sensor offering a measurement accuracy of  $\pm 0.3^{\circ}$ C at 20°C combined with a highly stable humidity sensor with direct transducer output.

#### Benefits

- High accuracy PT1000 (class A) temperature sensor
- Stable humidity sensor with direct transducer output
- Very low power consumption
- Signal integrity guaranteed at hub height measurements thanks to its highly buffered output adequate for long cables
- Strong aluminum sensor housing
- Double louvred high impact U.V stable polycarbonate radiation plates with matt black undersides that reduce solar radiation influxes
- Durable white polyester powder coating

#### **APPLICATIONS**

Wind resource assessment, solar resource assessment, solar PV monitoring. The sensor output is used for energy density calculations; monitoring air temperature; calculating atmospheric stability conditions; identifying icing conditions in cold climates.

#### Temperature

Sensor	Pt1000 RTD element (DIN A)
Analogue output	05 V
Accuracy	±0.3°C at 20°C / ±0.5°C at -3070°C
Measurement range	-30+70 °C
Transfer function	Slope = 20, Offset = -30
Humidity	
Analogue output	01 V
Operation measurement range	0100%
Specification humidity range	1189%
Accuracy	±3%
Transfer function	Slope = 100, Offset = 0
General	
Supply voltage	630VDC
Current consumption	0.85mA
Housing & IP	Aluminum, IP65
Dimension	120 mm x 12 mm
Sensor protection	Sintered porous metal filter
Cable recommendation	Signal cable 6x0.25 mm2 + shield ( <b>up to 150 meters</b> )
Cable lenght	4 m
Compatibility	All Kintech Engineering data loggers
Manufacturer	Kintech Engineering
Radiation shield	
Material	Highly resistant thermoplast
Dimension	120 mm x 140 mm
Mounting	Attaches to mast with included support brackets

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#### **CABLE RECOMMENDATION**

Signal cable up to 150m: 6x0.25 mm<sup>2</sup> + shield. For longer cable, please consult sensor manufacturer.

#### **SENSOR WIRING TABLE**

Sensor	Kintech Cable Colors		Orbit 360			EOL Zenith		
Model			Section	Terminal	Туре	Section	Terminal	
÷		Green	Temp (-)	Analog Channels	47 51 55 59 64 68 72 76 80 87	(-)	Analog Inputs	-
	•	Yellow	Temp (+)	Analog Channels	48 52 56 60 65 69 73 77 81 84 85 86 99 91 92	Signal	Analog Inputs Extra Analog	1 2 3 4 5 1 2 3 4 5 6 7 8
		Pink	Supply (+)	Analog Channels	49 53 57 61 66 70 74 78 82 88	*(+)	BAT	B
		Brown	Supply (-)	Analog Channels	47 51 55 59 64 68 72 76 80 87	(-)	BAT	-
	0	White	RH (-)	Analog Channels	47 51 55 59 64 68 72 76 80 87	(-)	Analog Inputs	-
		Grey	RH (+)	Analog Channels	48 52 56 60 65 69 73 77 81 84 85 86 99 91 92	Signal	Analog Inputs Extra Analog	1 2 3 4 5 1 2 3 4 5 6 7 8
		Yellow Green	Shield	Power Input	BAT	Ŧ	BAT	Ŧ

#### Note:

Data logger hardware version < 3, (+) = Bat+ with current limited (12mA). Only 1 sensor must be powered on each output terminal. Data logger hardware version  $\geq$  3, (+) = Bat+ with current limited (50mA). Only 1 sensor must be powered on each output terminal.

#### **REQUIRED DATA LOGGER VERSION**

#### Minimum data logger required: ORBIT 360 BASIC PLUS.

Minimum **firmware** required: **2.40**. If your data logger has an older firmware version (<2.40), please configure the sensor as a generic sensor (voltage) in both Atlas software and the data logger. Remember to fill in both the slope and the offset for both the temperature and the humidity sensor (see table above on page 2 for slopes and offsets).

#### HOW TO CONFIGURE IN ATLAS

Start Atlas and open the data logger you are working on. Now go to *Site settings* and scroll down to the *Channels* section and select the following type and model:

- Group: Analog channels
- Sensor Type: Temperature
- Sensor Model: K308TH

- Group: Analog channels
- Sensor Type: Relative Humidity
- Sensor Model: K308TH

**Important!** Please make sure you are working with the latest version of Atlas. To check for new updates click the *Check for updates* button in the left-hand menu located in the main dashboard.



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#### HOW TO CONFIGURE THIS SENSOR ON SITE

We recommend performing the entire sensor configuration using Atlas at the office before installing sensors onsite. Once the sensor is correctly setup in Atlas, use the *Upload settings* tool, to upload the sensor configuration to the data logger. In case you are already on site and need to configure the sensor directly on the data logger, follow these steps:

1. Turn on the data logger.

2. Using the keypad on the data logger, navigate the menu until you see *Sensor model*, then click the "right arrow" on the keypad.

3. Now scroll down to the channel you are going to connect the sensor to, and click the "right arrow" on the keypad.

4. Now click "Set" on the keypad and scroll up in the menu to set the sensor model type according to the table here below. Once you have found the correct sensor model, click the "right arrow" key twice to select it and save.

5. Click the "left arrow" several times to go back to the main menu.

Data logger model		Sensor model type on data logger			
Data logger model	Firmware version	Magnitude	Number	Name	
ORBIT 360	< 2.40	Temperature	01	milliVolts	
	< 2.40	Relative humidity	01	milliVolts	
	≥2.40	Temperature	10	TEMP K308-TH	
		Relative humidity	40	HUM K308-TH	
		Temperature	01	miliVolts	
EOLZENITH	any	Relative humidity	01	miliVolts	

*Keep in mind:* if the sensor channel has been configured as milliVolts, the output values on data logger display will always be shown in milliVolts. Remember to fill in both the slope and the offset for both the temperature and the humidity sensor to see real sensor values in °C and % in your datasets during a real-time connection with the data logger (from either Atlas or Atlas Mobile).

#### HOW TO CONFIGURE IN EOL MANAGER

Open EOL Manager and go to *Settings* of the data logger you are working on. Open the *Inputs* tab and select the following type and model:

TEMPERATURE

- Group: Analog Inputs
- Sensor Type: Voltmeter
- Sensor Model: Generic Voltimeter
- Slope: 20
- Offset: -30

RELATIVE HUMIDITY

- Group: Analog Inputs
- Sensor Type: Voltmeter
- Sensor Model: Generic Voltimeter
- Slope: 100
- Offset: 0

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