

# TEMPERATURE - HUMIDITY

*GALLTEC KPC 1/5 & KPC 1.S/5*





SENSOR MEASURE	ELECTRICAL SUPPLY	SIGNAL OUTPUT	GAUZE FILTER	MODEL IN EOL MANAGER
Temperature	6...30 V	0...1 V	ZE16, ZE20, ZE21	<b>GALLTEC KPC 1/5</b>
Humidity	6...30 V	0...1 V	ZE16, ZE20, ZE21	<b>GALLTEC KPC 1/5</b>

### APPLICATION

Temperature - Humidity sensors in the PC, PK and RC series are compact versatile sensors in a rod-type design. They are available with a 1.5 m connecting cable (PC series), without cable (PK series) or with a robust aluminum connecting head and terminal screws (RC series). Sensors in the PC.S and PC.S-ME series are compact sensors in a rod-type design with plug-in connection. All these sensors measure relative humidity and temperature (individually or together) with high precision in air and other non-aggressive gases. They can be used for a wide range of applications.

Install these Temperature - Humidity sensors at a place in the room, plant or equipment where characteristic levels of humidity occur. Avoid installing them close to heaters, windows or against outside walls. The specified minimum air speeds and the operating voltage-adapted current at current-output should be complied with.

### CONSTRUCTION AND MODE OF OPERATION

Deviations may lead to additional corrupted measurement readings because the sensor self-heats. The sensor can be installed in any position. However, do avoid positions where water can enter. Dew formation and splashes do not damage the sensor, although corrupted measurement readings are recorded until all the moisture on the filter has dried up. In order to maintain interference immunity in accordance with EN 61326 when it is in use, it is recommend to use a screened cable for connecting the RC series sensors, and have this fitted into the sensor's EMC.

The protective filters should only be screwed off carefully to check functioning with the humidity standard. It is important not to touch the highly sensitive sensor element in the process. If necessary, soiled filters can be screwed off and rinsed. When you screw them back on, bear in mind that sensors will not measure accurately again until they are completely dry.

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## TECHNICAL DATA

HUMIDITY	
CHARACTERISTIC	DESCRIPTION / VALUE
Measure range	0...100% rh
Accuracy	(5...95% rh at +10...+40 °C) ±2% rh
Influence of temperature	<+10 °C, >+40 °C; <+0.1%/°C additional

TEMPERATURE	
CHARACTERISTIC	DESCRIPTION / VALUE
Measuring element (ref. DIN EN 60751)	Pt100 class B (class 1/3 DIN on request)
Measuring range	-30...+70 °C
Accuracy	0...1 V (-27...+70 °C) → ±0.2 °C
Influence of temperature	<+10 °C, >+40 °C; ± 0.007 °C/°C additional

OTHER DATA	
CHARACTERISTIC	DESCRIPTION / VALUE
Ambient temperature	-40...+80 °C
Degree of protection sensor/electronic	IP 30/IP 65
Operating voltage	6...30 V
Load resistance	≥2 kΩ
Power consumption	<1 mA
Minimum air speed always across the sensor	≥0.5 m/s
Self-heating Pt100	(v=2 m/s in the air); +0.2 °C/mW
Directive about electromagnetic compatibility 2004/108/EG	DIN EN 61326-1...issue10/06 DIN EN 61326-2-3...issue05/07
Weight	145 g PC series 81 g PC.S-ME series

## TYPE VERSIONS

MEASURES VARIABLE	ANALOGUE OUTPUT	PC SERIES ROD SHAPE	PC.S-ME SERIES WITH CONNECTOR
<b>K</b> RH + Temp	2 x 0...1 V	K PC 1/x	-
<b>K</b> RH + Temp	2 x 0...1 V	-	K PC 1.S/x

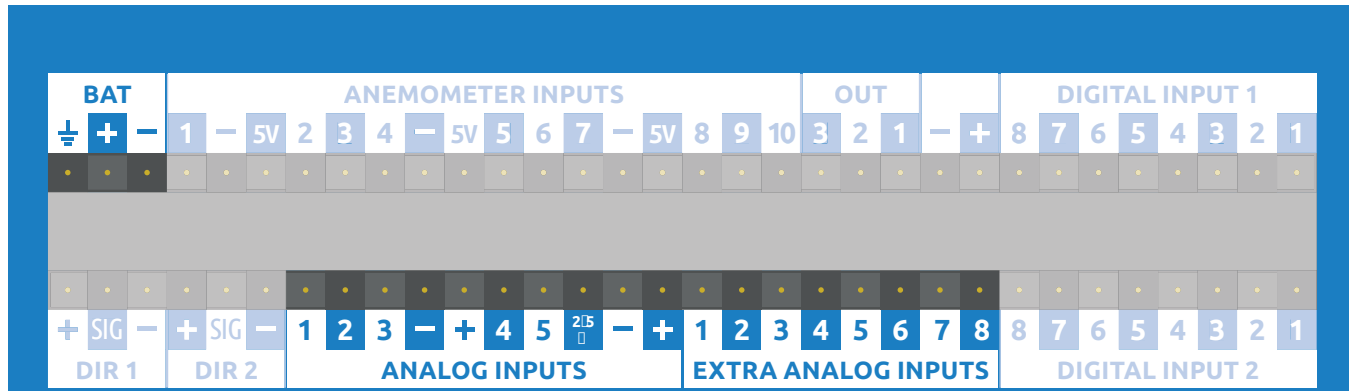
x=5: gauze filter ZE20

x=6: stainless steel sinter filter ZE21

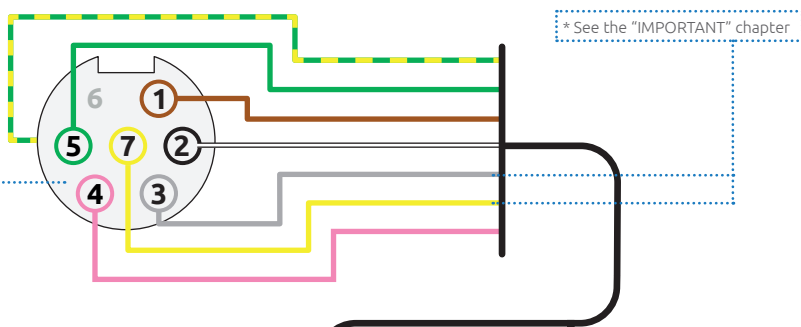
x=9: integrated element filter of PTFE and protect plastic basket ZE16

**INSTRUCTIONS**

Use the following input channels on the logger to connect this sensor. See highlighted input channels marked here below. The wire colors used in the connection diagram below only applies in case the cable is supplied by Kintech Engineering.  
**For additional wiring & shielding information see the chapter "IMPORTANT" at the end of this dataheet.**

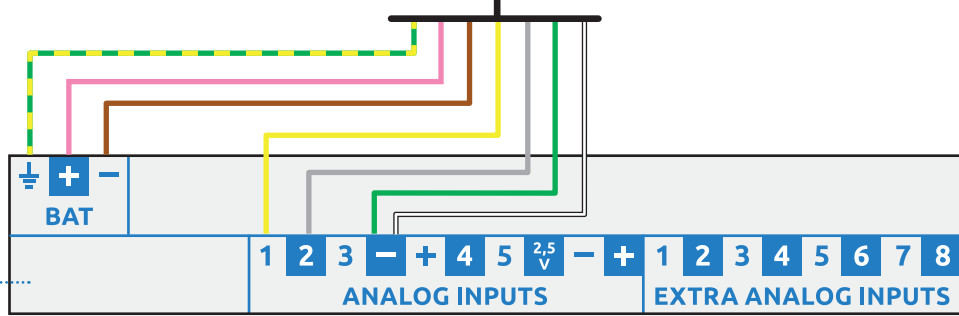


**TEMPERATURE - HUMIDITY**  
 Galltec KPC 1/5 & KPC 1.S/5  
 Base sensor view /  
 Soldering connector view



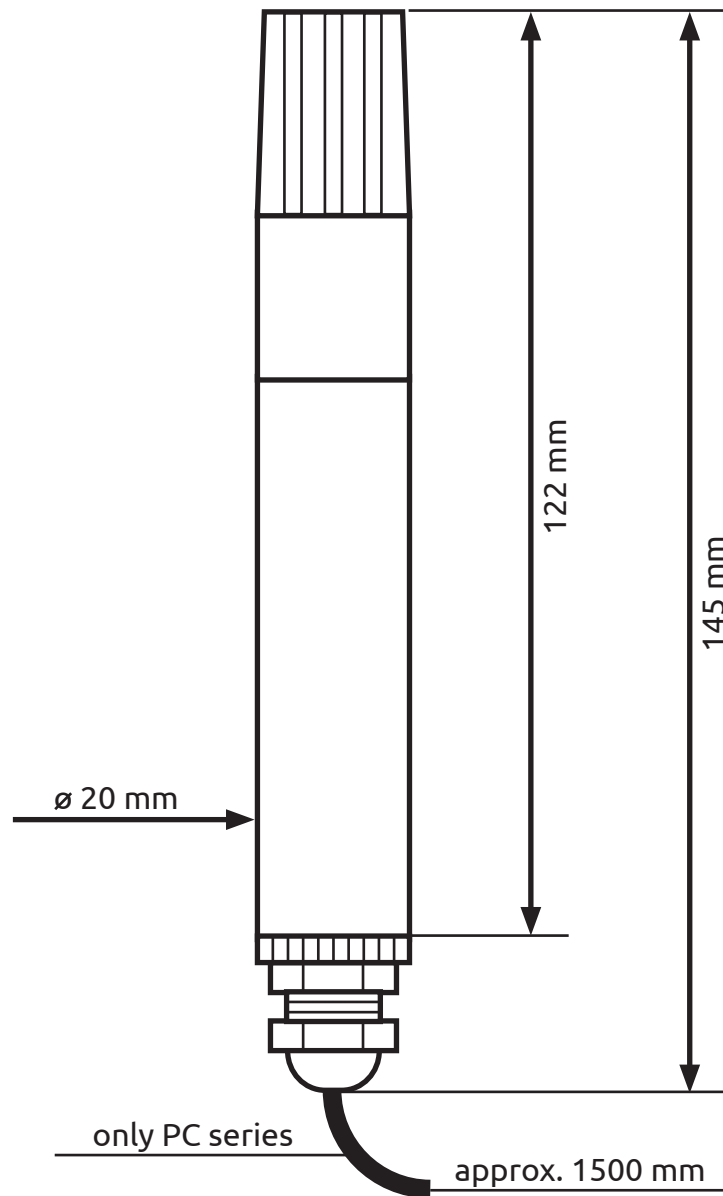
\* See the "IMPORTANT" chapter

**DATA LOGGER**  
 EOL Zenith



SENSOR PIN DESCRIPTION		DATA LOGGER INPUT CHANNEL		KINTECH COLOR CODES		MANUFACTURER COLOR CODES		
	4	Supply (+)	BAT	(+)		Pink		Red
	1	Supply (-)	BAT	(-)		Brown		Brown
	7	Temperature (+)	Analog Inputs	1		Yellow		Yellow
	3	Rel. Humidity (+)	Analog Inputs	2		Grey		Black
	5	Temperature (-)	Analog Inputs	(-)		Green		Green
	2	Rel. Humidity (-)	Analog Inputs	(-)		White		Orange
	6	<b>Do not connect!</b>						
	-	Shield	BAT	GND		Yellow - Green		Yellow - Green

SENSOR DIMENSIONS



## HOW TO CONFIGURE THIS SENSOR IN EOL MANAGER

Open EOL Manager and go to the data logger you are working on. Open the “inputs” tab and select the following type and model:

- **Section:** Analog Inputs
- **Type1:** Temperature
- **Type2:** Rel.Humidity
- **Model:** GALLTEC KPC 1/5

**Calibration values:** Tick the “Std Cal” to use this sensors standard slope and offset. If you have an independent calibration certificate for this sensor insert the slope and offset values from this certificate.

Ignore	Channel	Type	Model	Units	Serial Number	Height	Username	Std Cal	Slope	Offset	Std Dev	Max	Min
<input type="checkbox"/>	ANL1	Temperature	GALLTEC KPC 1/5	°C		0	Analog1	<input checked="" type="checkbox"/>	100.000000	-30.000000	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	ANL2	Rel. Humidity	GALLTEC KPC 1/5	%		0	Analog2	<input checked="" type="checkbox"/>	100.000000	0.000000	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	ANL3	---	---	---		0	Analog3	<input type="checkbox"/>	0.000000	0.000000	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## IMPORTANT

- After configuring the sensor in EOL Manager make sure to upload the configuration file to your EOL Zenith data logger. See the “Quick User Guide” how to upload configuration files to the data logger.
- All sensor wire shields must be connected to the data logger GND terminal.
- The data logger should always be connected to a separated ground rod. **Not** to the lightning rod of the tower.
- To store data such as Std Dev, Max and Min you should tick the corresponding boxes next to each anemometer channel when setting up your site file. Otherwise these parameters will not be stored.

- The “Temp (+)” wire and the “RH (+)” wire from the sensor should be connected to two separate “ANALOG” channels.
- Description example diagram shown before:

TEMPERATURE-HUMIDITY GALLTEC KPC 1/5	DATA LOGGER EOL ZENITH
Temp (+)	ANL 1
RH (+)	ANL 2

They can however be distributed on all “ANALOG” and “EXTRA ANALOG” channels according to needs.

- Sensor accuracy is ±2% in the measuring range +10...+40 °C and 5...95% rh. Recorded data outside of this mentioned measuring range might be invalid.
- Cable recommendation:

Sensor	Signal cable 6x0.5 mm <sup>2</sup>
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