

## HITY 4000

### Relative Humidity and Temperature Measurement System



## Application and functionality

Moisture in gases is an important parameter that strongly influences the quality of a process or product. The HITY 4000 is successfully used in many processes, including air conditioning systems, cooling towers, drying plants, composting plants, storage and production rooms in the food and tobacco industry, gas sterilization plants, air conditioning systems and much more.

The HITY 4000 is intended for installation in machines, ventilation ducts, etc. The sensor is available in lengths of 60 mm (standard), 160 mm and 300 mm.

The HITY 4000w version is designed for wall mounting.

## Examples

The high resistance to difficult sensor-side measurement influences, combined with the high long-term stability, predestine the device for demanding measurement tasks in process and air conditioning technology. Typical areas of application are:

### Cooling tower construction

Monitoring of condensation in cooling towers. (An important prerequisite is that the feeler can be defrosted).

### Air conditioning

Monitoring and regulation of room humidity in buildings and rooms.

**Air conditioning** of industrial plants A maintenance-free RH sensor is important here, as precise compliance with process humidity is elementary for many products. (The long-term consistency of the sensor is important).

### Grain drying plants

The grain is stored in warehouses, too much moisture promotes the digestion process of the product. (Dusty air leads to rapid soiling of the probe, which must be protected against it).

During the measurement, the impedance of the sensor, which changes due to the humidity, is recorded. The measurement method does not require process-specific calibration.

The measuring probe is absolutely insensitive to condensation.

For automatic compensation of the temperature, the device has a PT100 temperature sensor installed.

The humidity reading is measured over a 4-20 mA —power interface. Optionally, the HITY 4000 and 4000w have the option of transmitting the temperature via a second power interface.

Alternatively, a remote sensor can be used.

### Gas sterilization in medical technology

Medical instruments must be sterilized after packaging. For this purpose, they are gassed in chambers with e.g. ethylene oxide. Maintaining the relative humidity is particularly important for proper sterilization. Since the gas is very aggressive, only a few probes, such as the HITY4000, can be used for this purpose.

### Air conditioning in the textile industry

In the production of textile fibres, constant humidity is particularly important, otherwise the spray heads for the textile threads would stick together.

### Tobacco industry

Tobacco warehouses and production facilities. (Tannic acids and aromatics evaporating from the tobacco can affect the probe).

### Food industry

Use in cheese dairies in rooms where the cheese is stored and matured. (Air containing ammonia destroys most of the antennae).

### Bakery Equipment Manufacturer

Today, the bread dough is made in special ovens (so-called ovens). fermentation ovens) in a fast-track process. To do this, the humidity must be precisely controlled. (It must be possible to defrost the sensor).

## Specifications

### Relative humidity

Measuring range:	20 to 95%
Measurement accuracy:	+/- 2%
Output:	4 to 20 mA
Burden:	max. 600 Ohm

### Temperature

Ranges:	T1 = +0°C to +50°C
	T2 = -30°C to +50°C
	T3 = -30°C to +70°C
	T4 = +0°C to +100°C
	T5 = -20°C to +100°C

Measurement accuracy:	+/- 1%
Output:	4 to 20 mA
Burden:	max. 600 Ohm

## Specifications

### general

HITY 4000 housing:	Polycarbonate
Case HITY 4000W:	Polycarbonate (PC)

Weight HITY	400 g
Weight HITY	300 g

Protection:	IP65
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Operating Temperature:	+0°C to +60°C
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Process Temperature:	+5°C to +60°C (short-term)
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Bearing temperature:	+10 to 60 °C
Process Pressure:	0 to 1 bar

Current Consumption:	max. 70 mA
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Supply voltage:	24
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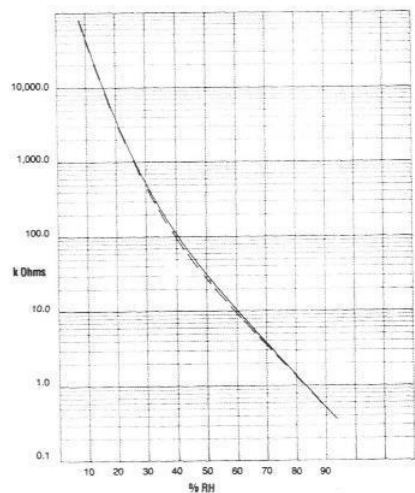
## Test measurements for gases and vapours

The influence on the calibration curve is minor to non-existent.

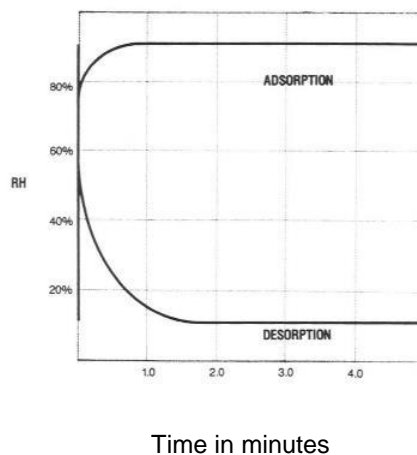
Measuring points at 30% and 70% RH concentration at 200 ppm and 1000 ppm.

Acetone	+1%
Toluene	- 1%
Isopropyl alcohol	- 1%
Hexane	+ 1%
Methanol	+ 1%
Trichloromethane	0%
Ethyl glycol	+ 1%
Vinegar amyl ester	- 3%
Tetrachloride carbon	+ 1%
Formaldehyde	- 2%

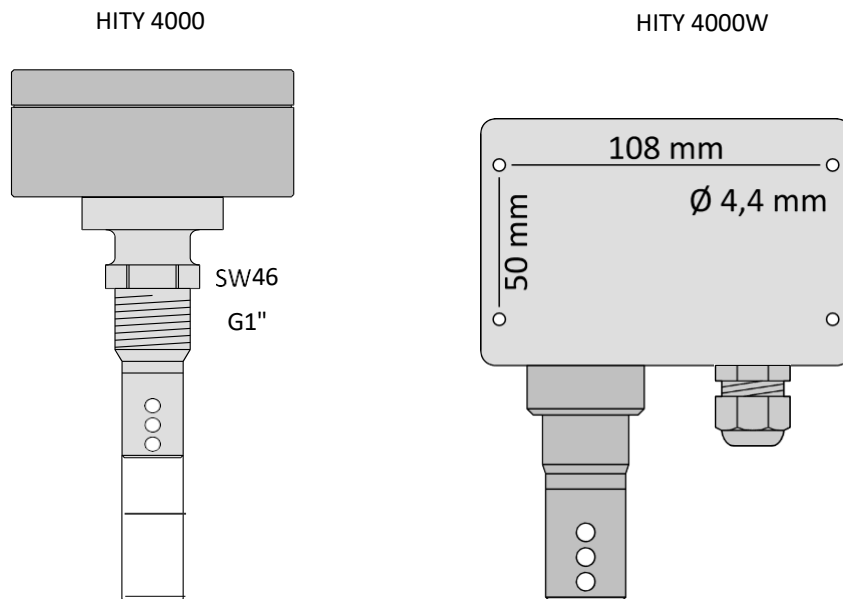
## Hysteresis when sweeping over the entire measuring range



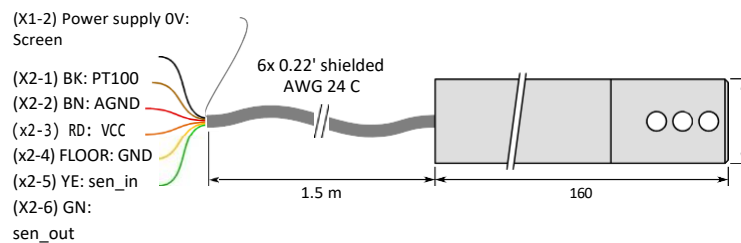
## Response speed 11-93% RH with gradual change



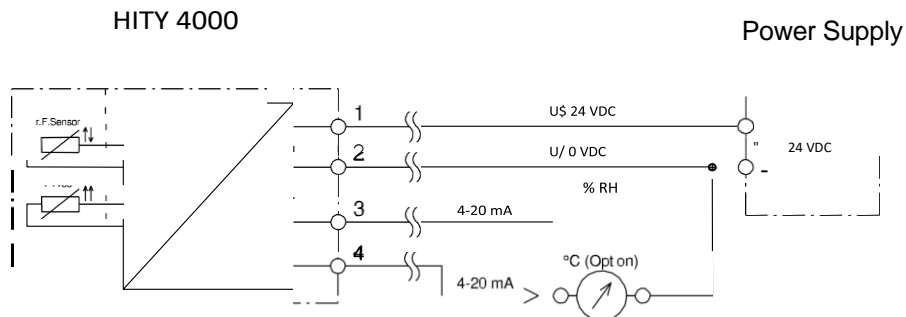
## Designs:



## Remote sensor



## Connection diagram



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