

# Thermo - hygrometer for indoor or outdoor applications

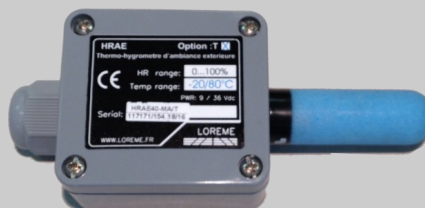
4..20mA or 0..10V output

type: HRA40



- **HRAE40:** Outdoor hygrometer
- **HRAE40/T:** Outdoor thermo-hygrometer

Surface mounted device  
Protection rating IP65



**HRAE40-mA(T)**  
4...20 mA output

- **HRAi40:** Indoor hygrometer
- **HRAi40/T:** Indoor thermo-hygrometer

Surface mounted device  
Protection rating IP20



**HRAE40-V(T)**  
0...10V output



**HRAi40**

- **Available in 4-20mA loop powered or with 0-10V output**

**Heavy-duty indoor or outdoor hygrometer and thermo-hygrometer series for hard use (dirty medium). The fully digital measure concept allows very high repeatability as well as excellent long term characteristics stability.**

### Description:

The humidity transmitter allows to measure relative humidity rate and provides an output signal of 0-10 V or 4-20mA 2 wires technique. In option, a second output signal is available for temperature measurement: output signal of 0-10 V or 4-20mA or direct output of Pt100 / Pt1000 sensor (2 or 3 wires).

### Models:

#### HRA40(T) : indoor

- Indoor version with perforated plastic enclosure (IP20),
- wall mounting,
- wiring on spring terminals blocks, max section: 1.5mm<sup>2</sup>,
- 13 to 35V power supply,
- reverse polarity protection,
- conformal coating,
- DIN rail mounting with specific adapter.

#### HRA40(T) : outdoor

- Outdoor version with polycarbonate waterproof enclosure (IP65),
- wall mounting,
- wiring on screwed terminal blocks, max section: 2.5 mm<sup>2</sup>,
- 13 to 35V power supply,
- sensitive element protected by filter screen,
- cable gland PG13.5,
- DIN rail mounting with specific adapter,
- conformal coating.

### Test - qualification:

- High operating life, about 1000 hours in extreme environment (60°C temperature, 93% humidity).
- Resistant to water immersion at 80°C, for about 160 hours,
- Resistant to acid vapours at 75000ppm for nitric, sulphuric and hydrochloric acids.
- Salt atmosphere resistant.
- 10 seconds of recovery time after 150 hours of condensation (measure element response without filter).
- Humidity hysteresis +/-1.5%. Long term stability, 0.5 % / years.
- Linearity better than 2% on 10% to 90% RH scale.

### Version and order code :

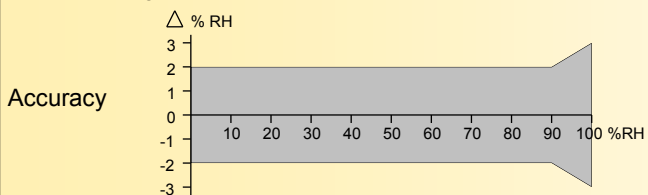
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- HRAE40-V** Outdoor hygrometer. Output 0...10V (0..100% HR)
- HRAE40-V/T** with temperature option. Output 0...10V (-20°C...+80°C)
- HRAE40-mA** Outdoor hygrometer. Output 4..20mA (0..100% HR)
- 2 wires technique (powered by current loop)
- HRAE40-mA/T** with temperature option. Output 4..20mA (-20°C...+80°C)
- HRAi40-V** Indoor hygrometer. Output 0...10V (0..100% HR)
- HRAi40-V/T** with temperature option. Output 0...10V (-20°C...+80°C)
- HRAi40-mA** Indoor hygrometer. Output 4..20mA (0..100% HR)
- 2 wires technique (powered by current loop)
- HRAi40-mA/T** with temperature option. Output 4..20mA (-20°C...+80°C)
- option - **PT100** direct output of Pt100 sensor for temperature
- **PT1K** direct output of Pt1000 sensor for temperature

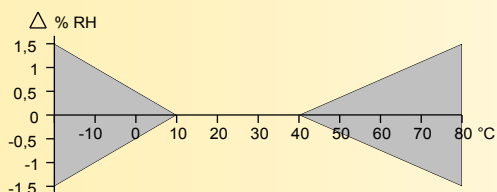
### MEASURE

#### Relative Humidity:

Measure range 0 ... 100 % HR



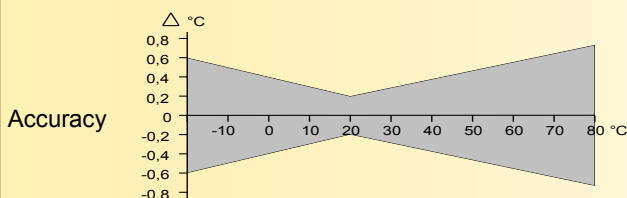
#### Temperature influence



Response time (90 %) at 20 °C in still air 15 s without filter

#### Temperature (option):

Measure range: - 20 to +80 °C



Linearity < 0.2 %

### POWER SUPPLY

Voltage 13 to 30 Vdc  
(voltage output and loop powered versions)

### OUTPUT

	RANGE	ACCURACY
Voltage output :		
Humidity	0 to 10 V	+/- 0.05 V
Temperature	0 to 10 V	+/- 0.05 V
Current output (current loop powered) :		
Humidity	4...20 mA	+/- 0.1 mA
Temperature	4...20 mA	+/- 0.1 mA

### ENVIRONMENT

Operating temperature	-20 to +80 °C
Storage temperature	-25 to +85 °C
Influence	0.05 % / °C (T° measurement)
Humidity	100 %
Weight	~ 85 g
Protection rating	IP65 (outdoor version)
Protection rating	IP20 (indoor version)

Electromagnetic compatibility 2004/108/CE / Low Voltage Directive 2006/95/EC

Immunity standard for industrial environments EN 61000-6-2		Emission standard for industrial environments EN 61000-6-4
EN 61000-4-2 ESD	EN 61000-4-8 AC MF	EN 55011 group 1 class A
EN 61000-4-3 RF	EN 61000-4-9 pulse MF	
EN 61000-4-4 EFT	EN 61000-4-11 AC dips	
EN 61000-4-5 CWG	EN 61000-4-12 ring wave	
EN 61000-4-6 RF	EN 61000-4-29 DC dips	



### WIRING AND OUTLINE DIMENSIONS:

