

Thermo - hygrometer for indoor or outdoor applications 4..20mA or 0..10V output

type: HRA40

LOREME

- **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: 1.5mm²,
- 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 mm²,
- 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 :

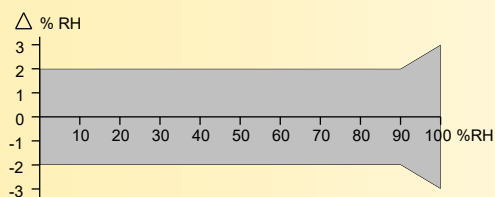
HRAE40-V	Outdoor hygrometer. Output 0...10V (0..100% HR)
HRAE40-V/T	with temperature option. Output 0...10V (-20°C...+80°C)
HRAE40-mA	Outdoor hygrometer. Output 4..20mA (0..100% HR)
HRAE40-mA/T	2 wires technique (powered by current loop) with temperature option. Output 4..20mA (-20°C...+80°C)
HRAi40-V	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)
HRAi40-mA/T	2 wires technique (powered by current loop) 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

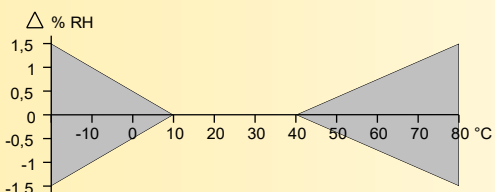
Relative Humidity:

Measure range 0 ... 100 % HR

Accuracy

Temperature
fluence

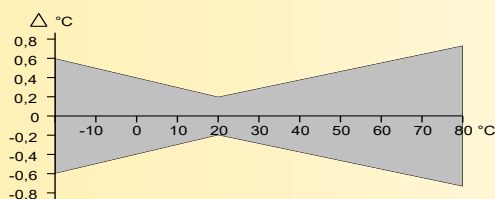
in-

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

Temperature (option):

Measure range: - 20 to +80 °C

Accuracy



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
EN 61000-4-3 RF	EN 61000-4-9 pulse MF	group 1 class A
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:

