AR252 Humidity and temperature transducer

APAR

AR252
standard

AR252/LCD
with a display

AR252/L150
probe on
a stainless steel
pipe

PROGRAMMING

AR956

COPYING

- a high class digital relative humidity and temperature sensor with a protective filter (ABS material as a standard, slot width 1 mm, and steel wire mesh with mesh size of 0.15 mm);
- a probe integrated with the enclosure, external or on a stainless steel pipe
- a current output, 4÷20 mA (2-wire, with power supply from the current loop); a voltage output 0÷10 V (3-wire), or an RS485 interface
- calculation of the dew/frost point [°C], relative humidity [g/m³] (calculations for atmospheric pressure of 1,013 hPa) with possibility to link the calculated values to an analog output;
- temperature compensation of humidity measurement, high measurement stability
- programmable processing ranges for humidity and temperature
- an LCD display with a keypad (option) that enables configuration of parameters
- configuration of parameters with the keypad, through the RS485 or PRG port (programmer AR956 or AR955) and free ARsoft-CFG software that enables quick setting and copying of all configuration parameters
- protection rating IP65 provided by the enclosure which improves reliability of operation thanks to high resistance to penetration of water and dust and surface condensation of steam inside of the device; an IP40 probe
- available accessory filter with a metal wire mesh to protect the sensor against dust

Contents of the package:
- a transducer
- a user instruction
- a warranty card

Available accessories:
- a metal wire mesh filter (mesh size approx. 25 µm)
- an AR956 (or AR955) programmer
- a RS485/USB converter

Ordering method

AR252 / ☐ / ☐ / ☐ / ☐

Probe intsalation method	Code
radial (standard)	-
back (to pipe, channel)	T

Display	Code
LCD *	LCD
without a display	-

Output	Code
output 4÷20 mA	I
output 0÷10 V	U
interface RS485	RS485

Measurement probe type	Code
integrated with the enclosure (standard)	-
external with a 1,5m wire*	2
external in an enclosure with a 1,5m wire*	3
on a stainless steel pipe, 140 mm long*	L150
on a stainless steel pipe, 240 mm long*	L250

* options charged separately

Order example:
Note: for the standard design, only the output type must be stated e.g.:
AR252 / I
AR252 w/o display, outputs 4÷20mA, radially mounted probe and integrated with the enclosure
AR252 / LCD / U / L150 / T
AR252 with a display, analog output 0÷10V, probe on a stainless steel pipe, 140mm long, installed in the back of the enclosure (for channel installations)
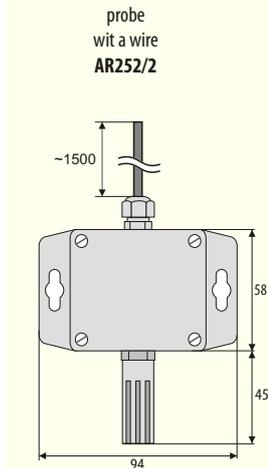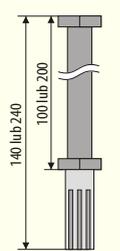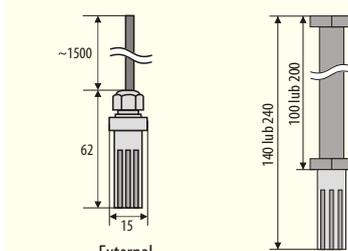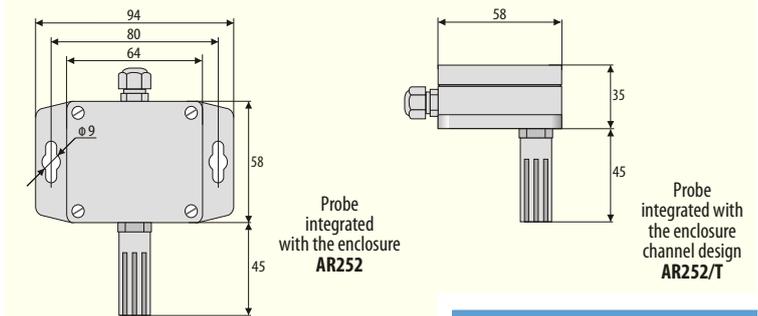
TECHNICAL DATA (the detailed data can be found in the user's instruction)

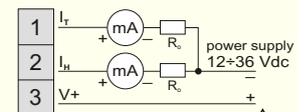|		
Sensor		SHT31 made by Sensirion, an ABS cover (slot width 1mm) and a stainless steel wire mesh (slot width 0.15mm)
Measurement range		0÷100 %RH, -30÷80 °C
Measurement acurancy	humidity	±2 %RH in the entire measurement range
	temperature	±0,3 °C in the entire measurement range
Hysteresis and stability		±0,8 %RH, long-term stability < 0,25 %RH / year
Okres pomiarowy		1s
Response time (63%)		8s (for air flow > 3,6km/h)
Display (optional)		LCD, 4 digits 10 mm
Outputs	current (I_H, I_T)	2 x 4÷20 mA (2P), load R_0< (U_{zas}-12) / 22 mA
	voltage (U_H, U_T)	2 x 0÷10 V (3P), load I_0<4,5 mA (R_w > 2,5 kΩ)
	digital (not separated)	RS485, MODBUS-RTU (slave)
Power supply	for the 4÷20 mA	12÷36 Vdc (2-wire, 2P) supply from the current loop
	for the 0÷10 V	18÷30 Vdc, current consumption: ~7mA (with and without an LCD)
	version with RS485	9÷28 Vac or 9÷36 Vdc, current cons.: ~5mA (with and without an LCD)
Operating conditions		air and neutral gases (do not pour water on the measurement probe)
	standard	-30÷80 °C, <100 %RH (no condensation)
	with an LCD display	-20÷70 °C, <100 %RH (no condensation)

INSTALLATION DATA

Dimensions	58x94x35 mm
Material	polycarbonate

Probe integrated with the enclosure
AR252

Probe integrated with the enclosure channel design
AR252/T

External probe wit a wire
AR252/2

Probe on a stainless steel pipe
AR252/L150
AR252/L250

External probe in an enclosure with a wire
AR252/3

TERMINAL

AR252/I

1	I_T	mA	R_0	power supply 12÷36 Vdc
2	I_H	mA	R_0	
3	V+			

NOTE:
The current loop I_H must ALWAYS be closed even when it is not in use

AR252/U

1	U_T	R_w	V
2	GND		
3	U_H	R_w	V
4	GND		
5	GND		power supply 18÷30 Vdc
6	V+		

AR252/R485

1		power supply 9÷36 Vdc
2		9÷28 Vac
3	+ RS	
4	- RS	

JP1
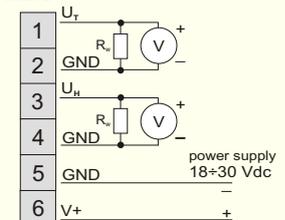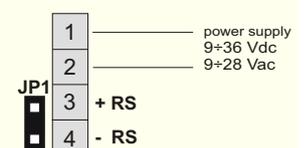
Version 3.0.0 2016-09-30

Calibration Certification – **Digital Humidity- and Temperature Sensors**

SENSIRION
THE SENSOR COMPANY

Calibration Certification

Name and address of the manufacturer: **Sensirion AG**
Laubisruetistrasse 50
CH-8712 Switzerland

Description: Digital Humidity- and Temperature Sensors

- SHT1x
- SHT3x
- SHTC1
- STS21

- SHT2x
- SHT7x
- SHTW1
- STSC1

The above mentioned products are calibrated to meet the specifications according to the corresponding Sensirion data sheet. Each device is individually tested after its calibration.

Sensirion uses transfer standards for the calibration. These transfer standards are themselves subject to a scheduled calibration procedure. The calibration of the reference itself used for the calibration of the transfer standards is performed by an ISO/IEC 17025 accredited laboratory.

The accreditation body is full member of the International Laboratory Accreditation Cooperation (www.ilac.org). Calibration certificates issued by facilities accredited by a signatory to the ILAC Mutual Recognition Arrangement (MRA) are accepted by all signatories to the ILAC MRA.

This provides traceability of measurement to recognized national standards and to units of measurement realized at the "National Physical Laboratory" (NPL) or other recognized national standards laboratories like "Physikalisch-Technische Bundesanstalt" (PTB) or "National Institute of Standards and Technology" (NIST).

Staefa, November 2015

Stephan Weber,
Director,
Head of Quality Management, Sensirion AG

Volker Born
Manager,
Head of Quality Engineering, SensirionAG

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