AR247 Temperature and humidity controller





high class digital relative humidity and temperature sensor with a protective filter (ABS material as a standard, mesh: 1 mm)

- probe integrated with the enclosur, external on a wire or a stainless steel pipe
- temperature compensation of relative humidity measurement
- programmable digital filter smoothing and stabilizing measurements
- 3 independent outputs of on/off type (ON-OFF, control 2- and 3-position):
 output 1 (main): ON-OFF with hysteresis, PID, AUTOTUNING PID
 - output 2, 3 (auxiliary/alarm): ON-OFF with hysteresis
- performance characteristics: heating/humidification, cooling/drying, relative alarms
- analogue output 0/4÷20mA (standard) or 0/2÷10V (optional), constant-control, retransmission
- calculation of dew/frost point (° C) and absolute humidity (g/m³)
- possibility to choose control signal for outputs (humidity or temperature)
 manual mode (open control loop) available for binary and analogue outputs,
- setting the value of the output signal in the range of $0 \div 100\%$
- programmable BIN digital input and function button "F" for changing the operational mode of the controller: control start/stop mode, manual mode for outputs, two-position switching of the set value (day/night), keypad lock etc.
- two-line digital LED readout with adjustable brightness
- access to configuration parameters protected by a user password or no password required
- configuration of parameters from keyboard, through the RS485 or AR956 (AR955) programmer and ARSOFT-WZ1 software for quick copy all configuration parameters
- available accessory filter with metal mesh to increase sensor protection
- optional RS485 interface, galvanically insulated, MODBUS-RTU protocol
- universal power supply 15-350 Vdc, 20-250 Vac / 50-60Hz
- IP65 degree of protection provided by the industrial housing which improves its reliability due to high resistance to water, dust and condensation inside the unit

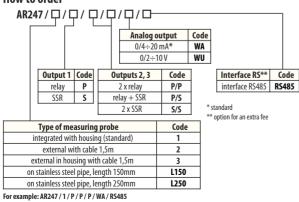
Available accessories:

Contents of set: - controller - user manual

- filter with metal mesh (mesh~25 μm) - programmer AR956 (or AR955)

- RS485 to USB converter
- measuring probes AR281/282/283/284





probe integrated with housing, 3 relay outputs, output 0/4+20mA, interface RS485

TECHNICAL DATA

$0\div100$ %RH, -30÷80 °C, do not pour water on the measuring probe same as for the SHT31 sensor made by Sension*
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,
typically \pm 2% RH over the measuring range transmitter *
typically $\pm 0.3~^\circ C$ over the measuring range transmitter*
$\pm 0,8$ %RH, long-term stability <0,25 %RH/year *
1s, delay of programmable digital filter: 0÷5s
8s (for air flow $>$ 3,6km/h, and switched off program filtration)*
programmable: 0.1 or 1 %RH, °C , g/m ³
2x3 digits 14 mm, indication of status of outputs and measuring units
1 x SPDT (8A/250 Vac dla obciążeń rezystancyjnych), 2 x SPST-NO (5A)
transistor type NPN OC, 11 V, internal resistance 440 Ω
0/4÷20 mA, output load capacity Ro $R_{\!$
0/2÷10 V, output load capacity Ro $~l_{\rm s}\!\!<\!4$ mA (R $_{\rm s}$ 2,5 k\Omega), resolution 12bit
protocol MODBUS-RTU slave, bitrate 2,4÷57,6 kb/s, format 8N1
contact or voltage $<$ 24V, active when: short circuit or $<$ 0,8 V
15-350 Vdc / 3VA
20-250 Vac / 3VA / 50-60Hz
-20 $\div60$ °C, <100 %RH (non-condesing), air and neutral gases
immunity: acc. to PN-EN 61000-6-2
emission: acc. to PN-EN 61000-6-4

*for controllers with software version below "u11", measurement accuracy is in accordance with documentation attached with purchase ($\pm 3 + 5\%$ RH, $\pm 0.5 \div 1.8^{\circ}$ C, hysteresis $\pm 1\%$ RH, long-term stability <0.5% RH / year)

DIMENSIONS, INSTALLATION DATA

120

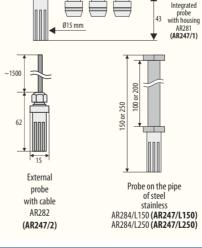
Dimensions , weight, material

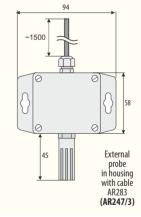
Fixing methods

4 holes 04.3mm, distance 108x50 mm when the front cover is removed

120 x 80 x 55 mm, ~340g (AR247/1 version), polycarbonate

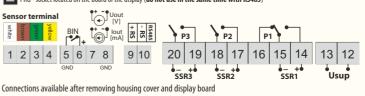
WARNING: For older AR247 regulators exchangeable AR28x measuring probes should be ordered with SHT11 sensor. Using a standard probe with sensor SHT31 needs updating regulator's firmware (up to version> "u10")





TERMINAL STRIPS, ELECTRICAL CONNECTIONS

PRG - socket located on the board of the display (do not use in the same time with RS485)



Version 3.0.5 2023-09-05

CERTIFICATE CALIBRATION - DIGITAL TEMPERATURE AND HUMIDITY SENSOR SHT11 / 15 MADE BY SENSIRION

Calibration Certification - SHT1x / SHT2x / SHT7x Series



Calibration Certification

Product: SHT1x / SHT2x / SHT7x Series

Description: Digital Humidity and Temperature Sensors

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 (<u>www.ilac.org</u>). 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, August 2010

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