APLISENS® AR247

TEMPERATURE AND HUMIDITY CONTROLLER

AR247/1

PROGRAMMING

COPY

AR247/2

AR247/3

- high class digital relative humidity and temperature sensor with a protective filer (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 filer smoothing and stabilizing measurements
- 3 independent outputs of on/o fftype (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/humidifiction, 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/m^3)
- 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 ÷ 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 configuation parameters protected by a user password or no password required
- configuation of parameters from keyboard, through the RS485 or AR956 (AR955) programmer and ARSOFT-WZ1 software for quick copy all configuation parameters
- available accessory filer 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

Contents of set:
- controller
- user manual

Available accessories:
- filer with metal mesh (mesh~25 µm)
- programmer AR956 (or AR955)
- RS485 to USB converter
- measuring probes AR281/282/283/284

Ordering procedure

AR247 / □ / □ / □ / □ / □ / □

Output 1	Code
relay	P
SSR	S

Outputs 2, 3	Code
2 x relay	P/P
relay + SSR	P/S
2 x SSR	S/S

Analog output	Code
0/4÷20 mA*	WA
0/2÷10 V	WU

Interface RS**	Code
interface RS485	RS485

* standard
** option for an extra fee

Type of measuring probe	Code
integrated with housing (standard)	1
external with cable 1,5m	2
external in housing with cable 1,5m	3
on stainless steel pipe, length 150mm	L150
on stainless steel pipe, length 250mm	L250

For example: AR247 / 1 / P / P / P / WA / RS485
probe integrated with housing, 3 relay outputs, output 0/4÷20mA, interface RS485

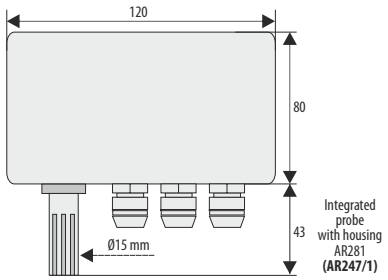
TECHNICAL DATA

Measurement range for the probe	0÷100 %RH, -30÷80 °C, **do not pour water on the measuring probe**
Measurement accuracy	same as for the SHT31 sensor
humidity	typically ± 2% RH over the measuring range transmitter *
temperature	typically ±0,3 °C over the measuring range transmitter*
Hysteresis and stability	±0,8 %RH, long-term stability <0,25 %RH/year *
Measurement period and filtrtion	1s, delay of programmable digital filer: 0÷5s
Response time (63%) for a step change	8s (for air flw >3,6km/h, and switched o ffprprogram filtion)*
Readout measurement resolution	programmable: 0.1 or 1 %RH, °C , g/m^3
LED display and indicators	2 x 3 digits 14 mm, indication of status of outputs and measuring units
Outputs relay (P)	1 x SPDT (8A/250 Vac for resistive loads), 2 x SPST-NO (5A)
f or SSR (option)	transistor type NPN OC, 11 V, internal resistance 440 Ω
a nalog current	0/4÷20 mA, output load capacity Ro R_0<500 Ω, resolution 12bit
analog voltage	0/2÷10 V, output load capacity Ro I_0<4 mA ($R_{\geq}$ 2,5 kΩ), resolution 12bit
RS485 galvanically separated (option), PRG	protocol MODBUS-RTU slave, bitrate 2,4÷57,6 kb/s, format 8N1
Binary input BIN (bistable)	contact or voltage < 24V, active when: short circuit or < 0,8 V
Supply (Usup) universal, compatible to standard 24Vdc and 230Vac	15-350 Vdc / 3VA
	20-250 Vac / 3VA / 50-60Hz
Rated operating conditions	-20÷60 °C, <100 %RH (non-condesing), air and neutral gases
Electromagnetic compatibility (EMC)	immunity: acc. to PN-EN 61000-6-2
	emission: acc. to PN-EN 61000-6-4

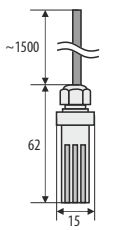
*for controllers with software version below "u11", measurement accuracy is in accordance with documentation attached with purchase (± 3 ÷ 5% RH, ± 0.5 ÷ 1.8° C, hysteresis ± 1% RH, long-term stability <0.5% RH / year)

DIMENSIONS, INSTALLATION DATA

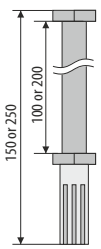
Dimensions , weight, material	**120 x 80 x 55 mm, ~340g (AR247/1 version), polycarbonate**
Fixing methods	**4 holes Φ4,3mm, distance108x50 mm when the front cover is removed**



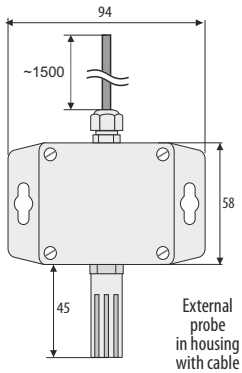
WARNING:
For older AR247 regulators exchangeable AR28x measuring probes should be ordered with SHT11 sensor. Using a standard probe with sensor SHT31 needs updating regulator's fir ware (up to version> "u10")



External probe with cable AR282
(AR247/2)



Probe on the pipe of steel stainless
AR284/L150 **(AR247/L150)**
AR284/L250 **(AR247/L250)**

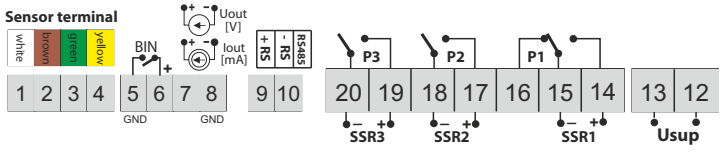


External probe in housing with cable AR283
(AR247/3)

TERMINAL STRIPS, ELECTRICAL CONNECTIONS

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

Sensor terminal



Connections available after removing housing cover and display board

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