



Reachtec's latest S11 series Temperature and Humidity transmitter meets the harsh environmental requirements for temperature and humidity measurement. Via temperature and relative humidity values, the output can be calculated dew point temperature, absolute humidity, wet bulb temperature, the specific enthalpy and other parameters of humidity.

S11 series Temperature and Humidity transmitter supported wall mount type, duct type and remote probe type. Metal probe provides a high temperature, mechanical stress, pressure and withstand harsh environments generated by the fine waterproof housing can avoid environmental contamination and prevent condensation generated.

Parameter values measured through the two analog output channels, the output may be a current or voltage output. You can simply establish a network by RS485 connection to achieve remote monitoring and data logging, measurement data through the storage device for analysis and processing.

Features

- Metal probe reduce electromagnetic interference
- 0 ... 100%RH measurement, temperature range up to +120°C (248 °F)
- Probe pressure up to 10 bar
- Excellent quality and stable measurement
- IP-65 housing
- 1-point user adjustment
- Analog output and RS485
- MODBUS RTU protocol with integer and floating type
- Unit support metric or imperial
- Configure adapter support

OUTPUT

Current 3-wire 4 ... 20mA

Voltage 3-wire 0 ... 1V / 5V / 10V

RS485 MODBUS RTU

CONFIGURE ADAPTOR

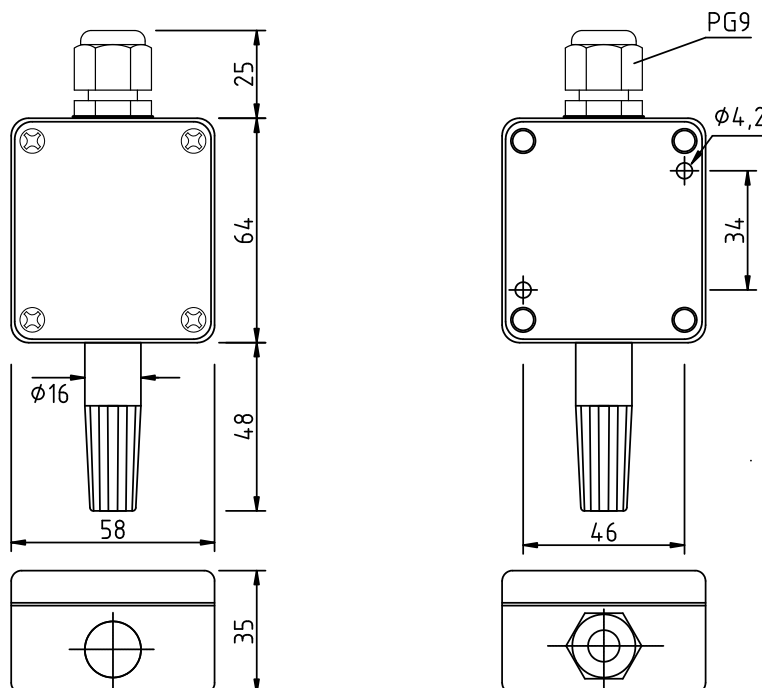
Configure adaptor can set measuring type, measuring scale, output type, alarm point, RS485 parameters, as well as a one point temperature and humidity adjustment in the measuring field without having to use a computer.

Applications

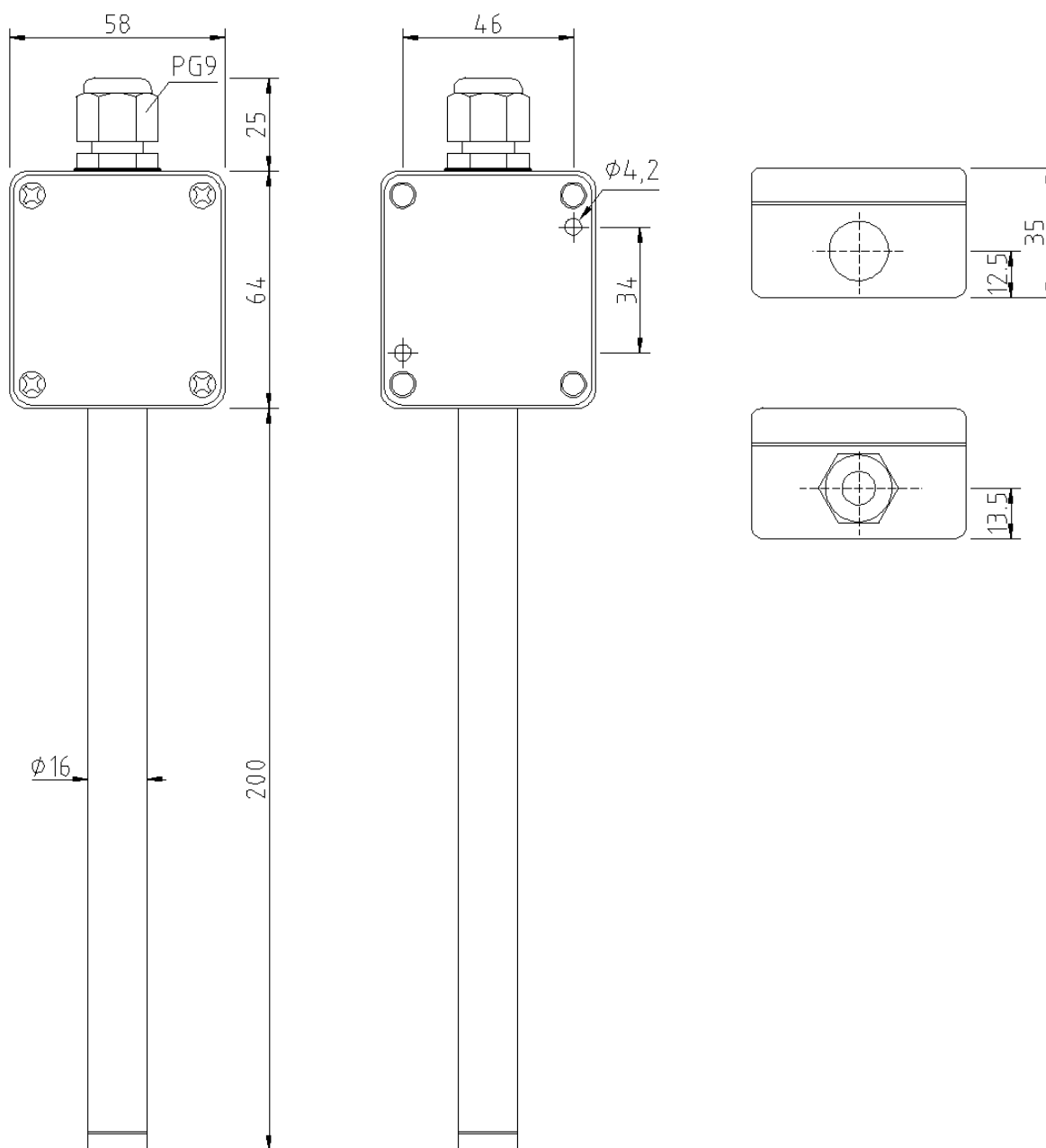
- Semiconductor and microelectronics industry
- Pharmaceutical industry, paper industry
- Environmental chambers, drying equipment, spraying equipment
- Agriculture, farms
- Greenhouse, storage room, cooling chamber
- Building Automation
- Environment and ventilation control

DIMENSIONS (mm)

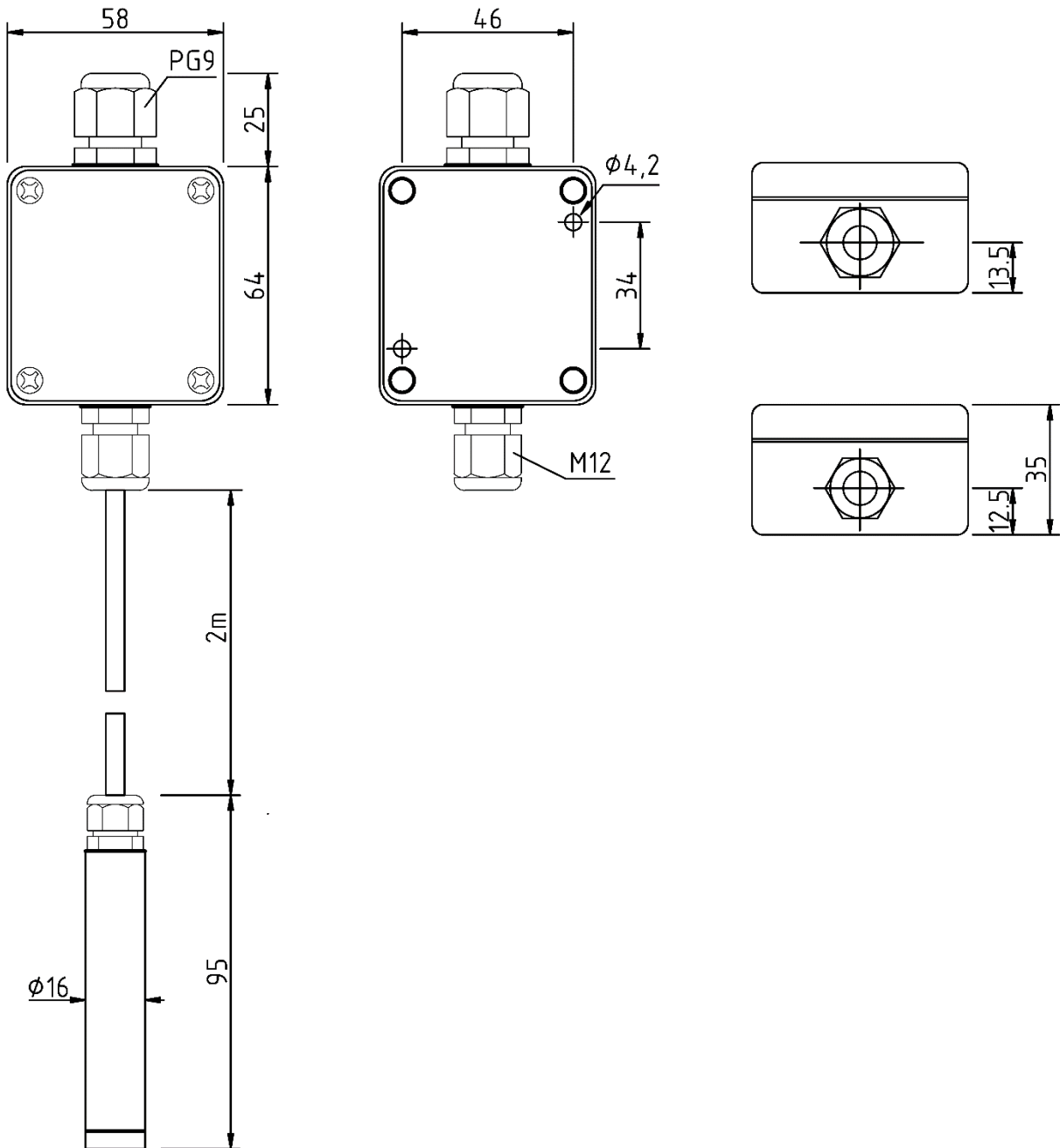
Wall mount version



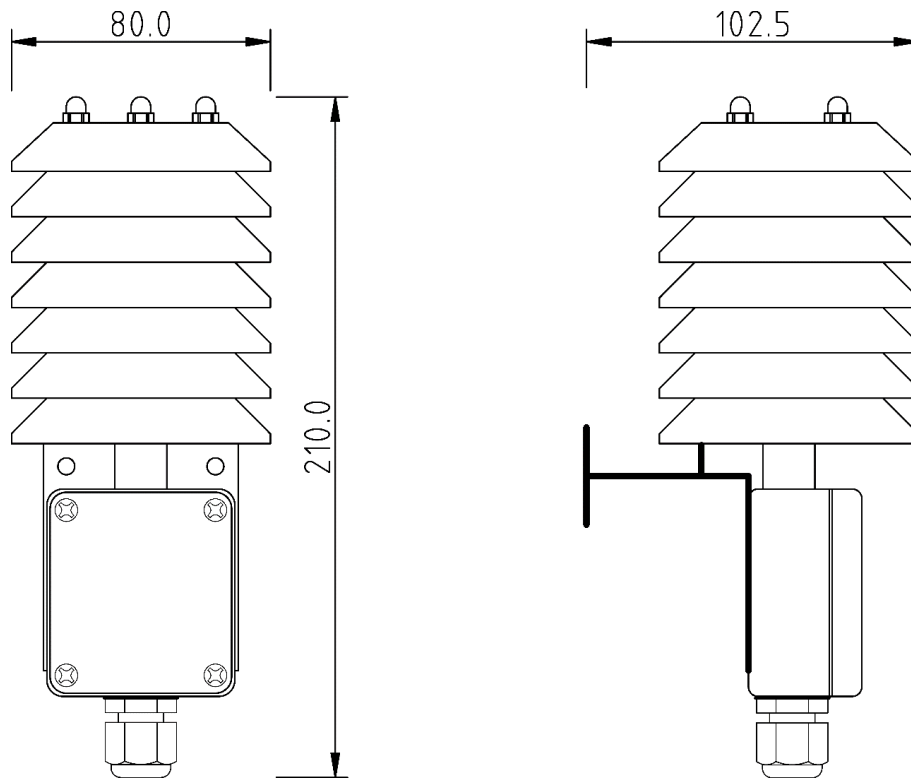
Duct version



Remote probe version



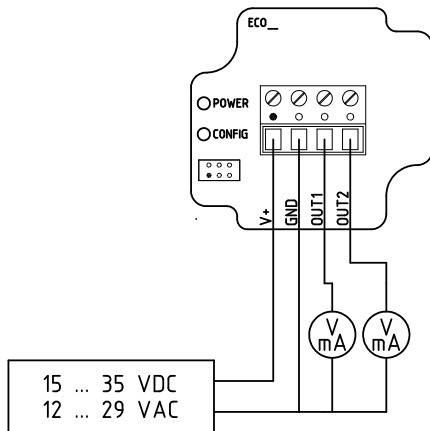
140 Outdoor version



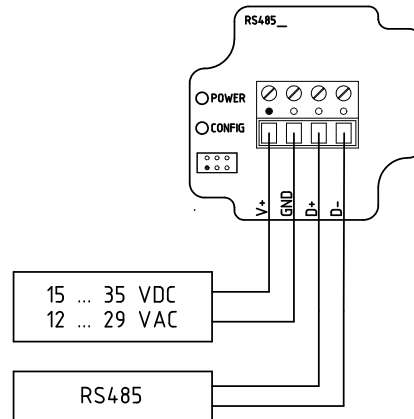
CONNECTION DIAGRAMS

Cable gland with terminal block

Analog output

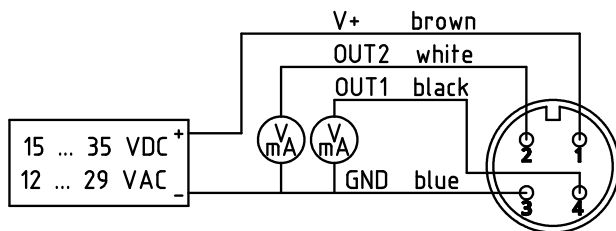


RS485 output

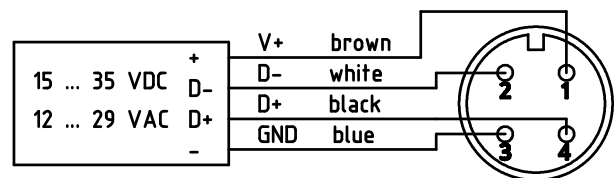


M12 – 4 pin

Analog output

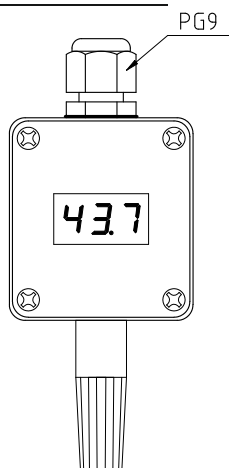


RS485 output

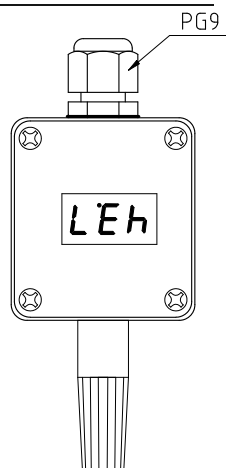


LED DISPLAY

Forward view : D1



Reverse view : D2



PHYSICAL QUANTITY OUTPUT RANGE

	<u>Metric</u>	<u>Imperial</u>
- Temperature <u>T</u>	-40 ... 120 °C	-40... 248 °F
- Relative Humidity <u>RH</u>	0 ... 100 %	0 ... 100 %
- Dew point <u>Td</u>	-20 ... 100 °C	-4 ... 212 °F
- Frost/dew point <u>Tf</u>	-20 ... 100 °C	-4 ... 212 °F
- Wet bulb temperature <u>Tw</u>	-40 ... 100 °C	-40 ... 212 °F
- water vapor pressure <u>E</u>	0 ... 1013 mbar	0 ... 14.7 psi
- Mixing ratio <u>R</u>	0 ... 30000 g/kg	0 ... 210000 gr/lb
- Absolute humidity <u>A</u>	0 ... 550 g/m ³	0 ... 240 gr/ft ³
- Enthalpy <u>S</u>	-40 ... 40000 kJ/kg	-10 ... 20000 BTU/lb

TECHNICAL DATA

Humidity

Measurement range	0 ... 100 %RH
Accuracy (including non-linearity, hysteresis, and repeatability)	
RT-S11-AA	±1.5%RH@25°C (20 ... 80%RH) ±2%RH@25°C (0 ... 20/80 ... 100%RH)

RT-S11-A	±2%RH@25°C (20 ... 80%RH) ±3%RH@25°C (0 ... 20/80 ... 100%RH)
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RT-S11	±3%RH@25°C (20 ... 80%RH)
Temperature coefficient (from 0°C to 80°C)	typ. ±0.05%RH/°C
Humidity Hysteresis	±1%RH
Recovery time after 150 hours of condensation	10 second
Long term drift	< 0.25%RH/year
Response Time (at 63% of signal) from 33 to 75%RH	10 second (at 1m/s air flow)

Temperature

Measurement range	-40 ... 120 °C
Accuracy (including non-linearity, hysteresis, repeatability)	
	±0.2°C (20...40°C)
	±0.3°C (5 ... 60°C)
	±0.7°C (-40 ... 5°C)
	±0.9°C (60 ... 120°C)
Long term drift	< 0.02°C/year

Analog output (two channels)

Current version	3-wire, 4 ... 20 mA
Voltage version	0 ... 1 V / 5 V / 10 V
Accuracy of analog outputs at +25 °C	±0.1% full scale
Temperature dependence	±0.005%/°C full scale
External loads	current output RL < 500 ohm voltage output 0 ... 1 V output RL > 2k ohm 0 ... 5 V and 0 ... 10 V outputs RL > 10k ohm

RS485 Modbus RTU

ID	1...247
Baud rate	9600/19200/38400/57600/115200
Data format	N81/N82/E81/E82/O81/O82

Psychometric calculations (option)

(Td) dew point temperature,
(Tf) frost/dew point temperature, (R) mixing ratio,
(A) absolute humidity, (S) enthalpy,
(Tw) wet bulb temperature, (E) water vapor pressure

LED Display (option)

Digits, Type	3-digits, 0.4" 7 segment
LED	
Display	OUT1 stable, OUT2 flash 3 time, alternate
View direction	Forward or Reverse

Power supply

DC	15 ... 35 VDC
AC	12 ... 29 VAC

Power consume (25 °C, V+ 24 VDC)

Current version	max. 35mA
Voltage version	typ. 8mA
RS485 version	typ. 10mA

Mechanics

Cable gland	PG9 with strain relief
Cable bushing	4.5 ... 8.2 mm/0.18" ... 0.32"
Housing material	PC, POLYCARBONATE
Housing classification	IP65
Probe pressure	10bar
Connection	AWG 12...24
Cable of remote probe version	2m, shield PVC, 80°C

Probe material

Wall mount version	brass nickel-plated
Duct version	aluminum
Remote probe version	brass nickel-plated

Temperature range

without display	-40 ... 80 °C (-40 ... 176 °F)
with display	-25 ... 80 °C (-13 ... 176 °F)

Probe temperature range

Duct and remote probe version	-40 ... 120 °C (-40 ... 248 °F)
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Electromagnetic compatibility

Complies with EMC standard	EN61326-1, Industrial Environment
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Ordering Guide

Model	Installation		Output		Temperature Scale	
RT-S11-AA	Wall mount	(110)	4 ... 20mA	(2)	0 ... 50°C	(1)
RT-S11-A	Duct	(120)	0 ... 10V	(3)	0 ... 100°C	(2)
RT-S11	Remote probe	(130)	0 ... 5V	(5)	By order	(S)
	Outdoor	(140)	0 ... 1V	(6)	No	(X)
				RS485	(4)	

	Connection		Psychometric calculations (Option)		LED Display (Option)	
	Cable gland	(A)	Yes	(M)	Forward view	(D1)
	M12-4 pin (with 2m cable)	(B)			Reverse view	(D2)

Ordering example

RT-S11-120-21AMD1

Humidity accuracy: $\pm 3\%RH$ (20...80%RH)

Installation: **Duct version**

Output: 4 ... 20 mA

Temperature Scale: 0 ... 50°C

Connection: **Cable gland with terminal block**

Option - Psychometric calculations: **Yes**

Option – LED Display: **Yes, Forward view**

Accessories

SA020002 Stainless steel sintered, pores size: 30µm		SA020401 NPT 1/2" stainless steel sample block with NPT1/4" inlet & outlet ports	
SA020004 Stainless steel mesh, pores size: 75µm		SA020201 NPT 1/2" Stainless steel fitting	
SA021001 Wall mounting clip		SA010201 Configure adapter	