

ROOM CLIMATE SENSOR



- TEMPERATURE AND HUMIDITY
- 0...100 % RH, ±2 %
- 7-SEGMENT DISPLAY
- ALU HOUSING 160x90x60
- IP 65 · IP 63



KEY DATA

Property	Value	Property	Value
Temperature	1x or 2x Pt100, 2-, 3-, 4-wire	Measuring range	-40 ... +80 °C
Humidity	0 ... 100 % rH, ±2 % rH (1)	Humidity range	-40 ... +80 °C
Output	4...20 mA · 0...10 V · 2...10 V	Display	7-segment, 8 mm, red, 4-digit
Display range	-999 ... 9999, programmable	Housing	aluCase AC092, 160 x 90 x 60 mm
Product code	RK		

A room sensor combining temperature and relative humidity in an aluminium housing — with a transmitter and a display, both selectable. For cooling plants on ships, cold rooms and building services. The degree of protection drops from IP 65 to IP 63 with the humidity sensor.



TECHNICAL DATA

INPUT AND OUTPUT

Temperature sensor	1x or 2x Pt100, 2-, 3-, 4-wire
Classes	B · A · B 1/2 DIN · B 1/3 DIN
Humidity sensor	relative humidity 0 ... 100 %
Humidity output	4 ... 20 mA · 0 ... 10 V · 2 ... 10 V
Humidity accuracy	±2 % rH from 5 ... 95 % at 10 ... 40 °C (1)
Additional error	< 0.1 %/K below 10 °C and above 40 °C
Response time humidity	< 20 s in still air
Minimum air velocity	1 m/s at the current output · 0.5 m/s at the voltage output (2)
Transmitter	TAP2L or TMRO — data sheets of their own
Display	7-segment, 8 mm, red, 4-digit, ±0.2 % ±1 digit

PERFORMANCE

Display resolution	-999 ... 9999 digits
Display error	±0.2 % of span, ±1 digit
Display drift	100 ppm/K
Display housing	Ø 43 / 48.5 / 62.5 mm × 37 mm
Humidity sensor guard	PTFE filter
Protection without humidity	IP 65
Protection with humidity	IP 63 (3)
Load resistance humidity	10 kohm at the voltage output
Own current draw	< 5 mA at the 0 ... 10 V output
Weight	maximum 1.1 kg

SUPPLY AND ENVIRONMENT

Supply humidity current	12 ... 30 VDC
Supply humidity voltage	15 ... 30 VDC
Supply transmitter	7.5 ... 30 VDC depending on the type
Temperature range	-40 ... +80 °C
Working temperature probe	-50 ... +100 °C
Working temperature display	0 ... +80 °C
Humidity sensor range	-40 ... +80 °C

MECHANICS

Housing	aluCase AC092, 160 × 90 × 60 mm
Material	die-cast aluminium, RAL 9006 white aluminium
Trims	clip-on design trims
Mounting	covered screw channels
Probe	stainless steel 1.4571
Connection	screw terminals up to 2.5 mm ²
Cable entry	3 glands M16x1.5
Protection	IP 65 · with humidity sensor IP 63 (3)

(1) The ±2 % apply from 5 to 95 % rH and from 10 to 40 °C only. Outside that, < 0.1 % per kelvin is added.

(2) The humidity sensor needs moving air: at least 1 m/s across the sensor at the current output, 0.5 m/s at the voltage output.

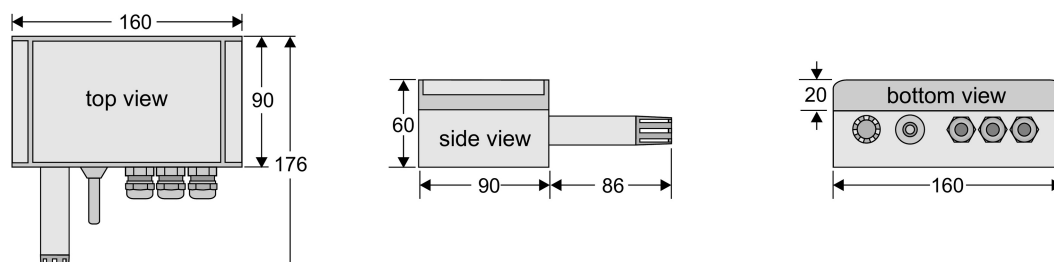
(3) With the humidity sensor the protection drops to IP 63.

ELECTRICAL CONNECTION

No connector but terminals: screw terminals up to 2.5 mm², three M16x1.5 cable glands on the housing. The load of the humidity current output depends on the supply voltage: about 400 ohm at 12 V, about 800 ohm at 20 V, about 1200 ohm at 30 V.



DIMENSIONS



Dimensions in mm.



CONFORMITY

Protection	IP 65 · with the humidity sensor IP 63 (3)
Material to the medium	stainless steel 1.4571
Housing	die-cast aluminium, RAL 9006

ORDER INFORMATION

Accessories

- No separate accessories. The transmitter and the display are not accessories but positions of the order key; their complete data are in the data sheets TMRO, TAP2L and CULO-L.

ORDER KEY

Field	Value	Meaning
Product code	RK	stands at the beginning of every order code
Input	0 ... 7	1x Pt100 · 2x Pt100 · Pt100 with rH 4...20 mA · with rH 0...10 V · rH only 4...20 mA · rH only 0...10 V · Pt100 with rH 2...10 V · rH only 2...10 V
Pt100 version	0 · 1 · 2	2-wire · 3-wire · 4-wire
Pt100 accuracy	0 ... 3	class B · class A · B 1/2 DIN · B 1/3 DIN
Transmitter	0 ... 5	none · TAP2L 4...20 mA · TAP2L 2...10 V · TAP2L 0...10 V · TMRO 4...20 mA · TMRO 2...10 V
Display	0 ... 4	none · 1x Pt100 · 2x Pt100 · Pt100 and rH · rH only
Setting	0 · 1	factory setting 0...50 °C / 0...100 % rH · as stated
Supply	0	24 ... 30 VDC
Housing	0	aluCase AC092, 160 × 90 × 60 mm
Other	0	special version

The order code is formed from the product code and the fields of the key.

