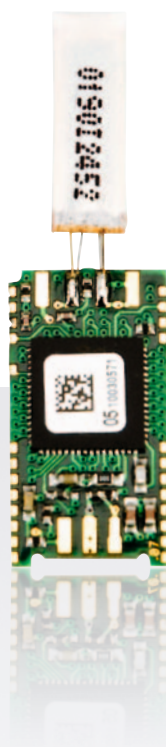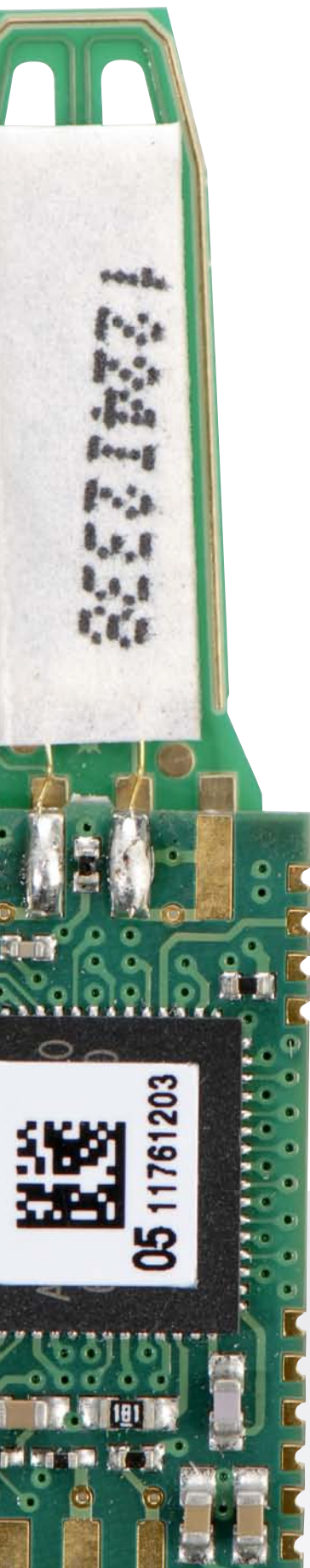# OEM MODULES

AIR CHIP
TECHNOLOGY

OEM MODULES FOR CUSTOMER-SPECIFIC SOLUTIONS

WITH THE LATEST AIRCHIP TECHNOLOGY

INNOVATION IN HUMIDITY AND TEMPERATURE MEASUREMENT

- Adjusted OEM module for humidity and temperature
- Highest possible measuring accuracy
- Range of application: -50...100 °C / 0...100 %RH
- Calculates dew/frost point
- Two freely scalable analog outputs
- Digital UART interface
- Available with or without sensor frame
- Customized versions on request

rotronic
MEASUREMENT SOLUTIONS

TECHNICAL INFORMATION

Types
The standard OEM humidity and temperature module comes in two types: one with sensor frame (HC2-ROPCB-F) and one without sensor frame (HC2-ROPCB). Other types are available upon request.

Adjustment
Every ROPCB OEM module is adjusted at 10, 35 and 80 %RH and a temperature of 23 °C.

## Programming / PC connection
The modules are supplied without connectors. To connect the modules to a PC, the USB cable AC3001-X with open ends must be soldered to the printed circuit boards.
As soon as the module has been connected to a PC and the HW4 software via a USB cable, many functions are available (e.g. adjustment, re-scaling, firmware update, etc.).

Output signal
The standard configuration outputs a humidity and a temperature signal with a value of 0... 1 VDC at the two analog outputs. The default scale for the humidity signal is 0... 100 %RH and -40... 60 °C for the temperature signal. The scales can be changed with the HW4 Software. It is also possible to assign the humidity, temperature or dew/frost point to either of the analog outputs depending on the needs of the application.
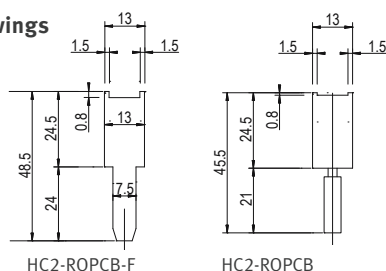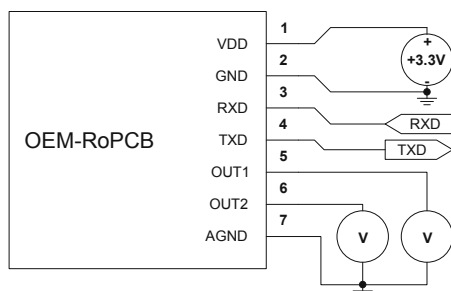
Key features	HC2-ROPCB-(F)
Range of application	-50...100 °C / 0...100 %RH, non-condensing
Humidity sensor	ROTRONIC HYGROMER® IN-1
Temperature sensor	Pt100 1/3 Class B
Accuracy at 23 ±5 °C	±0.8 %RH / 0.1 K
Adjustment	At 10, 35 and 80 %RH @ 23 °C
Long-term stability, humidity sensor	Better than 1 %RH / year
Response time τ63	‹15 s
Initialization time	‹3 s
Supported software protocols	RO-ASCII, MODBUS*****, I2C*****
Functions	
Evaluation software / Compatibility	ROTRONIC HW4**
Logging function	2000 data records. In loop or start-stop mode (function can be switched on with HW4 ** software)
Temperature adjustment	2 points with HW4**
Humidity adjustment	Up to 100 points with HW4**
Psychrometric calculations	Dew and frost point
Output signals	2x 0...1 VDC analog / 1x digital UART
Firmware update	Via HW4 software
Electrical specifications	
Power supply	+3.2...5.5 VDC / Recommended power supply 3.3 VDC If a different power supply is used, the module must be readjusted
Current consumption	4.5 mA at 3.3 VDC
Output signals / Types	Analog / Digital
Circuit type	3/4 wire
Analog output 1	0...1 VDC / 0...100 %RH
Analog output 2	0...1 VDC / -40...60 °C
Resolution analog output	16 bits
Load per analog output	V-signal: ≥1 kΩ/V
Digital interface options	UART / (Ethernet, RS-485, USB optionally via accessories)
Polarity protection	No
Mechanical specifications	
Housing material	No housing
Cable connections	Solder flats
Weight	Approx. 2 g
Standards	EN 61000-6-4 & EN61000-6-2
FDA/GAMP compatibility	FDA CFR21 Part 11 and GAMP 5

*Only in read mode
** The USB connection cable AC3001-x with open end must be soldered to the ROPCB.

Dimensional drawings

HC2-ROPCB-F   HC2-ROPCB

Diagram

OEM-RoPCB

VDD 1
GND 2   + +3.3V
RXD 3
TXD 4   RXD
OUT1 5   TXD
OUT2 6
AGND 7   V   V

Connection diagram

Pin	Description	Front view	Rear view
1	VDD (power supply)		
2	GND (GND)		
3	RxD		
4	TxD		
5	OUT1 *****(humidity 0...100 % rh)		
6	OUT2 *****(temperature -40...60 °C)		
7	AGND		

1 2 3   7 6 5 4

* Default setting