VAISALA

QUICK REFERENCE GUIDE

Vaisala INTERCAP® Humidity and Temperature Transmitter HMD42

- **Temperature compensated RH and T transmitter for ducts in building automation applications**
- **0 … 100 %RH range**
- **±3 %RH accuracy**
- **4 … 20 mA output signal**
- **Uses the Vaisala INTERCAP® sensor, no recalibration needed when sensor is replaced**

M211385EN

MOUNTING

The HMD42 humidity and temperature transmitter is a two-wire transmitter. HMD42 is duct mounted, and the electronics can be disconnected without dismantling the installation.

Mount the transmitter with two screws. Place the drilling template on the duct surface and drill the holes as indicated.

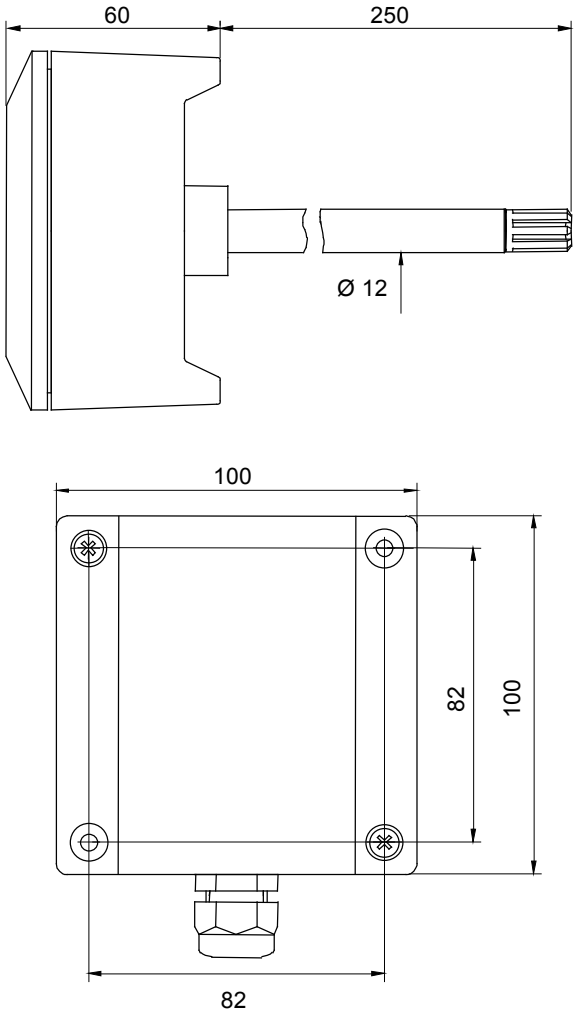

Figure 1 HMD42 Dimensions

GROUNDING

Open the lid and mount the cable bushing set. If your transmitter has a cable gland bushing (part no. 18941HM), do the grounding according to Figure 2. When connecting the signal cable to the transmitter housing, fold the cable braid between the brass disk in order to achieve the best EMC performance.

CAUTION	Do not leave the bare shield of the connected wires so that it can short circuit the electronics!

Note the following requirements for the signal cable:

- Use a cable with flexible wires, size 0.5 mm^2 (AWG20)
- Stranded wires recommended
- Use a cable with diameter 7 … 10 mm. If the cable diameter is less than 7 mm, use a shrinking tube or adhesive tape.

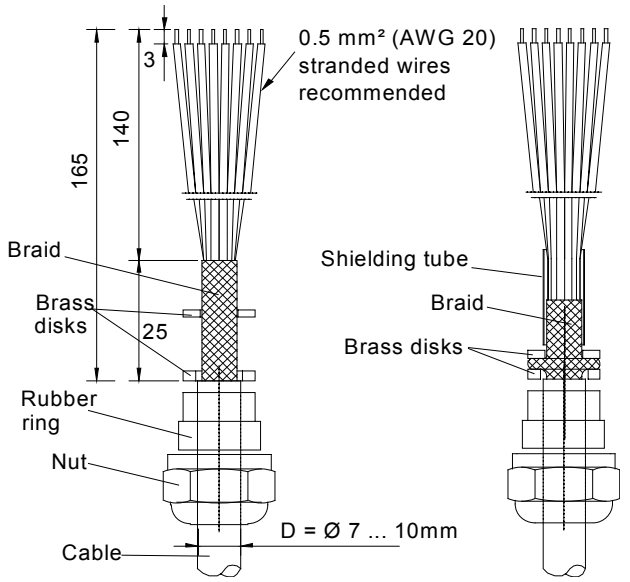

Figure 2 Signal Cable Grounding with Bushing 18941HM

ELECTRICAL CONNECTIONS

Signal cables are connected to a removable 5-pole screw connector. Make the connections according to Figure 3 or Figure 4 below.

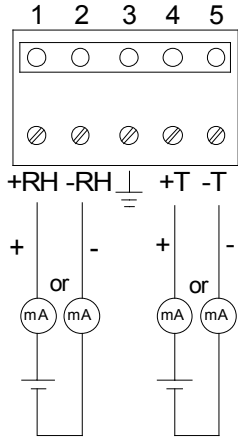

Figure 3 Electrical Connections

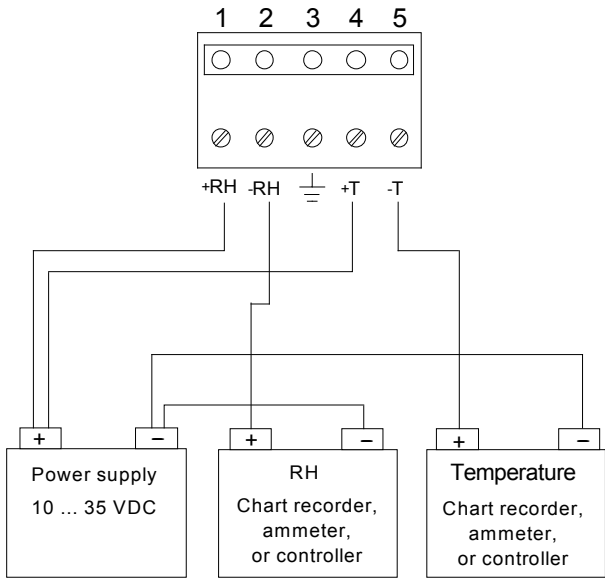

Figure 4 Electrical Connections, Alternative

NOTE	The trimmers on the component board are reserved for factory use. Do not touch them.

ELECTRONICS

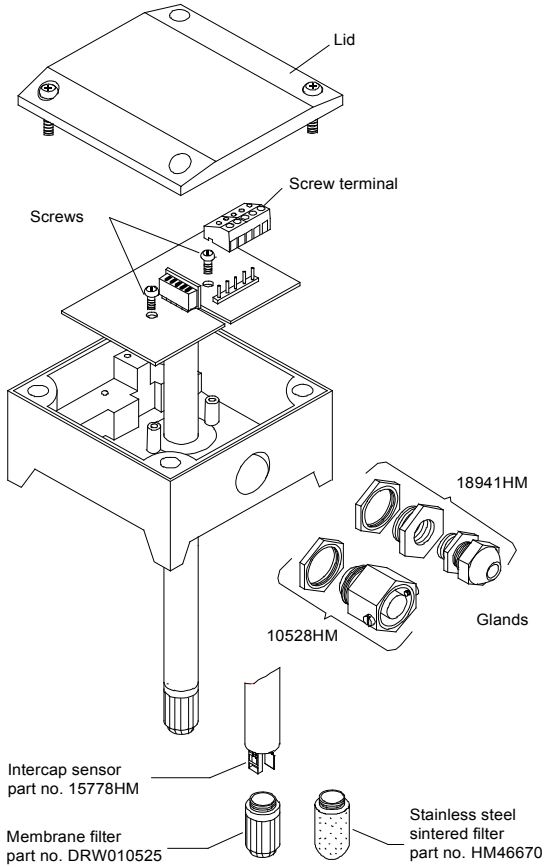

Figure 5 Electronics, Accessories, Spare Parts

Removing and Reinstalling the Sensor Head

1. Open the lid.
2. Disconnect the screw terminal.
3. Open the screws (2 pcs).
4. Pull the sensor head out carefully.
5. To reinstall, push in the sensor head.
6. Reassemble in reverse order.

Replacement of the Intercap Sensor

If the INTERCAP® sensor is damaged, remove it and insert a new one. Recalibration is not needed.

If the filter is dirty, replace it to ensure a maximum lifetime and fast response for the sensor. Do not attempt to clean the filter.

TECHNICAL DATA

Relative Humidity	
Measurement range	0 ... 100 %RH
Typical accuracy	
Temperature range	0 ... +40 °C (+32 ... +104 °F)
0 ... 90 %RH	±3 %RH
90 ... 100 %RH	±5 %RH
Temperature range	-20 ... 0 °C, +40 ... +60 °C (-4 ... +32 °F, +104 ... +140 °F)
0 ... 90 %RH	±5 %RH
90 ... 100 %RH	±7 %RH
Humidity sensor	Vaisala INTERCAP®
Stability	±2 %RH / 2 years
Response time at 20°C (+68 °F), 90% response	15 s

Temperature	
Measurement range	-20 ... +60 °C (-4 ... +140 °F)
Output scale	-40 ... +60 °C (-40 ... +140 °F)
Accuracy	
0 ... 40 °C (+32 ... +104 °F)	±0.4 °C (±0.72 °F)
-20 ... 0 °C, +40 ... +60 °C (-4 ... +32 °F, +104 ... +140 °F)	±0.6 °C (±1.08 °F)
Sensor	Pt1000 IEC 751 Class B

General	
Supply voltage	10 ... 35 VDC (R_L = 0 Ω) 20 ... 35 VDC (R_L = 500 Ω)
Output signal	4 ... 20mA
Operating temperature range	
Electronics	-5 ... +55 °C (+23 ... +131 °F)
Probe	-20 ... +60 °C (-4 ... +140 °F)
Storage temperature range	-40 ... +60 °C (-40 ... +140 °F)
Maximum flow speed	50 m/s
Housing material	Cast aluminium
Probe material	Stainless steel
Housing classification	IP65 (NEMA 4)
Connections	Screw terminals 0.5 ... 1.5 mm2
Included cable bushing for 7 ... 10 mm (PG9)	18941HM

Complies with EMC standards EN61326-1 and EN55022

CE N17728