

# OMNIPOINT 20

## Multifunctional Hand-Held

To measure various climate and processes values with a hand-held, user-friendly instrument requires extraordinary measurement technology. The hand-held meters of the OMNIPOINT 20 series meet these multiple demands.

The selection of the appropriate sensing probe and accordingly the configuration of the hand-held meter allow for displaying the following values with the highest accuracy:

- relative humidity RH
- temperature T
- dew point temperature Td
- absolute humidity dv
- mixing ratio r
- air velocity v
- water activity aw
- water content in oil x

The robust housing of the OMNIPOINT 20 allows usage in harsh industrial environments. The readability of the large illuminated display is excellent. The easy to understand menu and the practical thumbwheel navigation offer outstanding comfort.

Optional carrying cases can accommodate the basic device with up to 5 sensing probes as well as accessories (calibration device with 5 ampoules calibration fluid (80% RH), factory certificate).

The accuracies of the humidity / temperature probes are traceable to international standards, administrated by NIST, PTB, BEV...



### Typical Applications

- HVAC control
- industry and process control
- clean room control
- water activity and moisture content in oil
- humidity measurement in walls and floors

### Features

- measurands: RH, T, Td, dv, r, v, aw, x
- large, illuminated display
- HOLD / MIN / MAX / AVG readout
- real time clock
- SI/US units selectable
- recalibration by user

### Technical Data

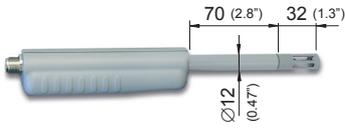
#### General

Resolution	- humidity / temperature probe (HA040201, HA040202, HA040203): humidity measurement: 0.1% RH; g/m <sup>3</sup> ; Td [°C, °F]; g/Kg; gr/lb temperature measurement: 0.1°C; 0.1°F
	- passive temperature probe (HA040101, HA040102, HA040104, HA040105): 0.1°C; 0.1°F
	- air velocity probe (HA040401, HA040402, HA040403): air velocity measurement: 0.01m/s; 1ft/min temperature measurement: 0.01°C; 0.01°F
	- moisture in oil measurement (HA040204, HA040206): moisture measurement: aw: 0.001 [ ] or 0.01...1ppm (depending on measuring range) temperature measurement: 0.1°C; 0.1°F
Supply voltage	4x 1.5V AA alkali-manganese battery
Battery lifetime	with PT100 probe: 300h with RH/T or aw/x probe: 200h with v probe: 40h
Working temperature range	handheld and grip of sensing probe: 0...50°C (32...122°F)
CE compatibility according	EN50081-2 EN50082-2 EN55011 EN61000-4-2 EN61000-4-3
Housing / protection class	ABS / IP40
Dimensions (HxWxD)	145 x 85 x 37 mm (5.7 x 3.3 x 1.5")
Weight	ca. 400g (1lbs)
Display	LC display, 90 x 50 mm (3.5 x 2"), illuminated



## Humidity / Temperature Probes:

### RH/T HVAC probe



**Application:** humidity and temperature measurement in HVAC applications

**Working range:** 0...100% RH / -20...70°C (-4...158°F)

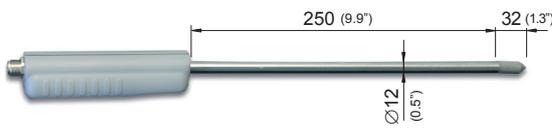
**Accuracy:** ±2% RH (0...90% RH), ±3% RH (90...100% RH)  
 ±0.2°C / ±0.36°F (20°C / 68°F),  
 ±0.5°C / ±0.9°F (-20 resp. 70°C / -4 resp. 158°F)

**Response time  $\tau_{90}$ :** ≤ 7 sec.

**Measurand:** channel 1: T [°C/°F]  
 channel 2: RH [%], dv [g/m<sup>3</sup>], Td [°C/°F], r [g/kg, gr/lb]

**Order code:** **HA040201**

### RH/T high temperature probe



**Application:** humidity and temperature measurement in industrial process applications

**Working range:** 0...100% RH / -40...180°C (-40...356°F)  
 (grip of sensing probe up to 80°C)

**Accuracy:** ±2% RH (0...90% RH), ±3% RH (90...100% RH)  
 ±0.2°C / ±0.36°F (20°C / 68°F),  
 ±0.5°C / ±0.9°F (-40°C / -40°F), ±0.6°C / ±1.1°F (180°C / 356°F)

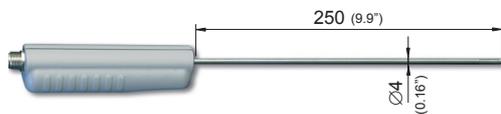
**Response time  $\tau_{90}$ :** ≤ 30 sec.

**Measurand:** channel 1: T [°C/°F]  
 channel 2: rF [%], dv [g/m<sup>3</sup>], Td [°C/°F], r [g/kg, gr/lb]

**Temperature dependence:** RH: ±0.03% RH/°C (% RH/°F)

**Order code:** **HA040202**

### RH/T miniature probe



**Application:** humidity and temperature measurement in small places, humidity measurement in boreholes

**Working range:** 0...100% RH / -40...100°C (-40...212°F)

**Accuracy:** ±2% RH (0...90% RH), ±3% RH (90...100% RH)  
 ±0.2°C / ±0.36°F (20°C / 68°F),  
 ±0.7°C / ±1.26°F (-40 resp. 100°C / -40 resp. 212°F)

**Response time  $\tau_{90}$ :** ≤ 15 sec.

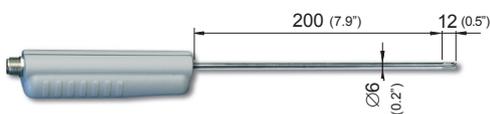
**Measurand:** channel 1: T [°C/°F]  
 channel 2: RH [%], dv [g/m<sup>3</sup>], Td [°C/°F], r [g/kg, gr/lb]

**Temperature dependence:** RH: ±0.03% RH/°C (% RH/°F)

**Order code:** **HA040203**

## Air Velocity Probes:

### Air velocity probe Ø6mm (0.24")



**Application:** air velocity measurement in small places and for high accuracy requirements

**Working range:** 0...20m/s (0...400ft/min)      0...20m/s (0...4000ft/min)  
 -20...70°C (-4...158°F)      -20...70°C (-4...158°F)

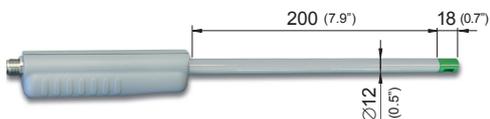
**Accuracy:** (0...50°C / 32...122°F) 0.08...2m/s (15...400ft/min): ±(0.04m/s / 8ft/min + 1% of m. v.)      0.2...20m/s (40...4000ft/min): ±(0.2m/s / 39ft/min + 2% of m. v.)  
 ± 0.7°C (±1.26°F)      ± 0.7°C (±1.26°F)

**Response time  $\tau_{90}$ :** ≤ 1.5 sec.      ≤ 1.5 sec.

**Measurand:** channel 1: v [m/s, ft/min]      channel 1: v [m/s, ft/min]  
 channel 2: T [°C/°F]      channel 2: T [°C/°F]

**Order code:** **HA040401**      **HA040402**

### Air velocity probe Ø12mm (0.47")



**Application:** air velocity measurement in HVAC applications

**Working range:** 0...20m/s (0...4000ft/min) / 0...50°C (32...122°F)

**Accuracy:** 0.2...20m/s (40...4000ft/min): ±(0.2m/s / 39ft/min + 3% of m. v.) / ± 1°C (±1.8°F)

**Response time  $\tau_{90}$ :** ≤ 1.5 sec.

**Measurand:** channel 1: v [m/s, ft/min]  
 channel 2: T [°C/°F]

**Order code:** **HA040403**

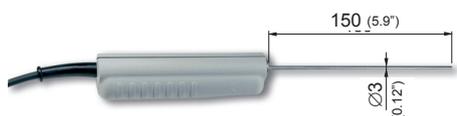
## Temperature Probes:

### PT100 cut-in probe



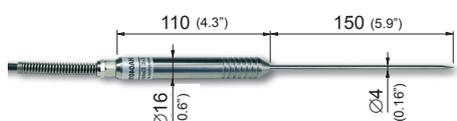
Application: temperature measurement in solid, liquid and powdery media  
 Working range: -40...400°C (-40...752°F)<sup>1)</sup>  
 Accuracy: PT100 class B, basic device: ±0.5°C (±0.9°F)  
 Response time  $\tau_{90}$ : 10 sec.  
 Cable length: 1m (3.28ft)  
 Order code: **HA040101**

### PT100 immersion probe



Application: temperature measurement in gaseous, liquid and powdery media  
 Working range: -40...400°C (-40...752°F)<sup>1)</sup>  
 Accuracy: PT100 class A, basic device: ±0.5°C (±0.9°F)  
 Response time  $\tau_{90}$ : 10 sec.  
 Cable length: 1m (3.28ft)  
 Order code: **HA040102**

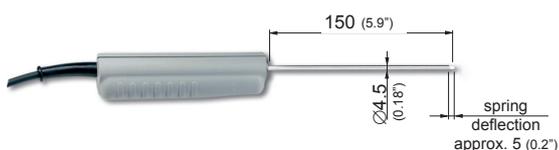
### PT100 cut-in food probe



Application: temperature measurement in solid, liquid and powdery food  
 Working range: -40...400°C (-40...752°F)<sup>1)</sup>  
 Accuracy: PT100 class A, basic device: ±0.5°C (±0.9°F)  
 Response time  $\tau_{90}$ : 10 sec.  
 Cable length: 1m (3.28ft)  
 Order code: **HA040104**

1) Attend to working temperature range of grip of sensing probe!

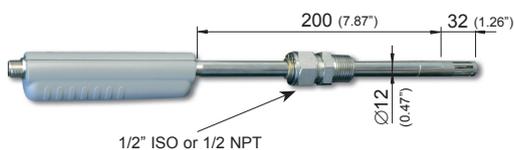
### PT100 surface probe



Application: measurement probe with a spring flexure, which undergoes a defined deflection when pressed against the surface.  
 Working range: -50...400°C (-58...752°F) (grip of sensing probe up to approx. 80°C 176°F)  
 Accuracy: PT100 class B, basic device: ±0.5°C (±0.9°F)  
 Response time  $\tau_{90}$ : 10 sec. (at even, smooth or metallic surfaces)  
 Cable length: 1m (3.28ft)  
 Order code: **HA040105**

## Oil Probe:

### Oil probe Ø12mm (0.47")



Application: measurement of moisture in mineral und synthetic oil  
 Working range: 0...1 a<sub>w</sub> / 0...20000ppm / -40...120°C (-40...248°F)  
 Accuracy: ±0.02a<sub>w</sub> (0...0.9a<sub>w</sub>), ± 0.03a<sub>w</sub> (0.9...1a<sub>w</sub>)  
 ±0.2°C / ±0.36°F (20°C / 68°F),  
 ±0.5°C / ±0.9°F (-40 resp. 120°C / -40 resp. 248°F)  
 Response time  $\tau_{90}$ : ≤ 10 min (in still oil)  
 Pressure range: 0.01...20bar (0.15...300psi)  
 Measurand: channel 1: T [°C/°F]  
 channel 2: a<sub>w</sub> [ ] oder x [ppm] oil specific parameters are adjustable at the basic device  
 Temperature dependence: a<sub>w</sub>: ±0.0003a<sub>w</sub>/°C (a<sub>w</sub>/°F)  
 Order code: 1/2 ISO: **HA040204** 1/2 NPT: **HA040206**

## Ordering Guide

MODEL	PROBES	ACCESSORIES
basic device <b>(OMNIPOINT 20)</b> (incl. 2m (6.6ft) probe cable)	RH/T HVAC probe <b>(HA040201)</b> RH/T high temperature probe <b>(HA040202)</b> RH/T miniature probe <b>(HA040203)</b>	stainless steel sintered filter (for Ø12mm RH/T probe) <b>(HA010103)</b> PTFE - filter (for Ø12mm RH/T probe) <b>(HA010105)</b> metal grid filter (for Ø12mm RH/T probe) <b>(HA010106)</b>
	PT100 cut-in probe <b>(HA040101)</b> PT100 immersion probe <b>(HA040102)</b> PT100 cut-in food probe <b>(HA040104)</b> PT100 surface probe <b>(HA040105)</b>	carrying case big (basic device + 5 probes) <b>(HA040902)</b> carrying case small (basic device + 1 probe) <b>(HA040904)</b>
	air velocity probe Ø6mm (0.24") - 0...2m/s (0...400ft/min) <b>(HA040401)</b> air velocity probe Ø6mm (0.47") - 0...20m/s (0...4000ft/min) <b>(HA040402)</b> air velocity probe Ø12mm (0.47") <b>(HA040403)</b>	ball valve set 1/2" ISO for oil probe <b>(HA050101)</b> ball valve set 1/2" NPT for oil probe <b>(HA050104)</b>
	oil probe - 1/2" ISO <b>(HA040204)</b> oil probe - 1/2" NPT <b>(HA040206)</b>	probe cable 2m <b>(HA010813)</b> probe cable 5m <b>(HA010814)</b> probe cable 10m <b>(HA010815)</b>
		humidity standards / calibration device (refer to data sheet "humidity calibration set")
		ISO standard calibration package (refer to data sheet "OEKD Calibration Laboratory")

## Order Example

**OMNIPOINT 20, HA040201, HA040202, HA040401, HA010401, HA040902**

model: basic device OMNIPOINT 20  
 probes: RH/T HVAC probe, RH/T high temperature probe, air velocity probe Ø6mm (0.24") - 0...2m/s (0...400ft/min)  
 accessories: calibration device for sensor probes 12mm (0.47") - horizontal mounting, carrying case big

**OMNIPOINT 20**