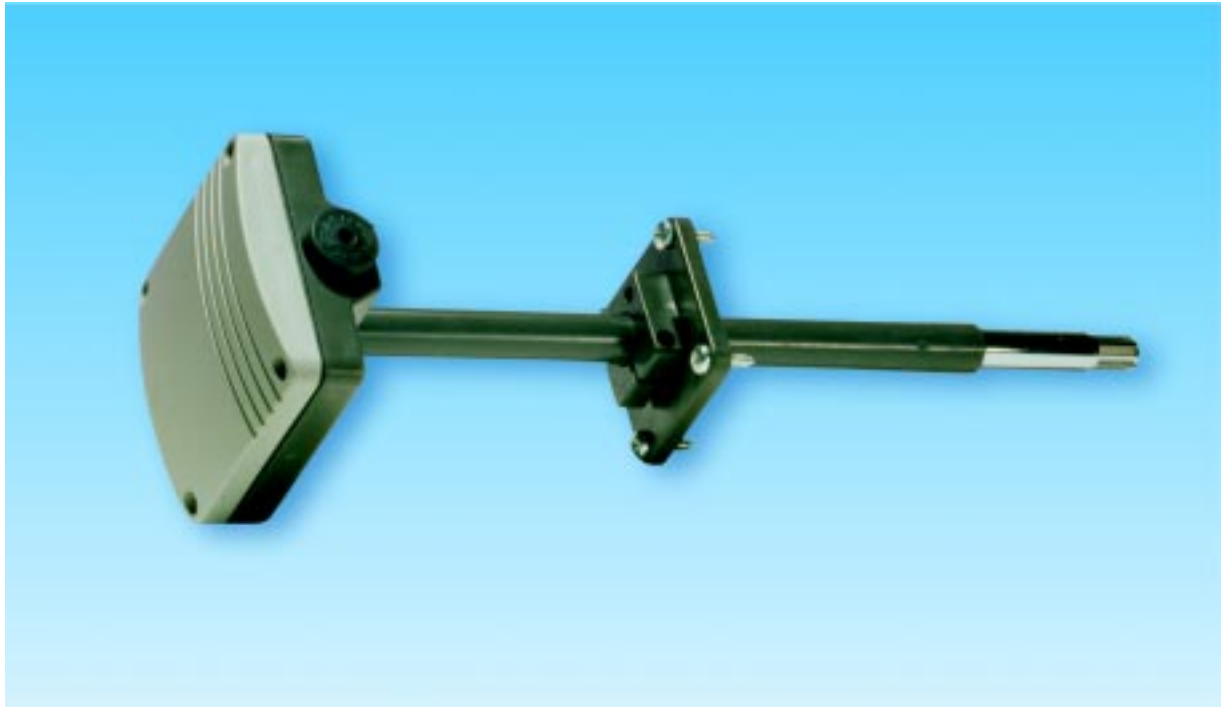


# HMD40 & HMD50 Humidity and Temperature Transmitters



## ENERGY SAVINGS

Correcting the relative humidity of the air we breathe is important for our health. In HVAC energy management systems the accurate measurement of relative humidity and temperature is essential for optimum control of the environment. Dry air feels colder than humid air, and so when humidity is maintained at a correct level, it saves heating energy. Accurate control of the relative humidity is also very important in many storage and manufacturing applications.

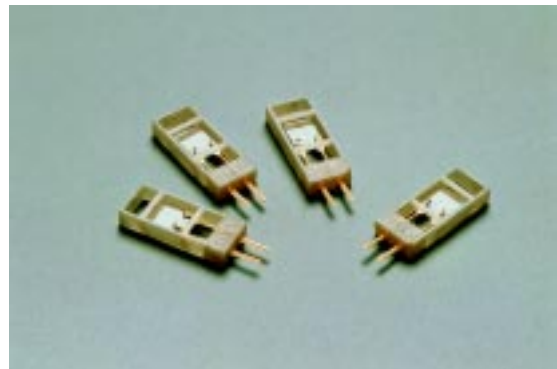
## LOWER MAINTENANCE COSTS

Vaisala's HMD40/50 two and three-wire duct mounted humidity and temperature transmitters have been designed for use in energy management systems in buildings. They combine excellent stability with easy installation and reliable operation. No recalibration is needed if the sensor is changed. This means great savings in overall maintenance costs. These features make the HMD40/50 transmitters the ideal choice for most air-conditioning applications.

The HMD40/50 transmitters can operate in the full humidity range of 0 to 100 %RH. The Y-models also measure temperature from -10 to +60 °C.

## THE WORLD'S FIRST TRULY INTERCHANGEABLE CAPACITIVE HUMIDITY SENSOR

The HMD40/50 humidity transmitters use Vaisala's INTERCAP® sensor - the world's first interchangeable capacitive humidity sensor. Transmitters that incorporate this new sensor require no recalibration when the sensor is changed. The transmitters measure humidity with a  $\pm 3$  %RH accuracy and a  $\pm 1$  %RH/year stability. The sensor has excellent long-term stability, negligible hysteresis and is insensitive to dust as well as to most chemicals.



*An easy and flexible way to measure humidity - the INTERCAP® interchangeable humidity sensor*

## TECHNICAL DATA

## HMD40U/40Y HMD50U/50Y

### RELATIVE HUMIDITY

Measuring range (for which accuracy is specified)	10...90 %RH
Operating range	-10...+60 °C
Accuracy at +20°C	0...100 %RH better than $\pm 3$ %RH (see figure 1)
Temperature dependence	$< \pm 1.5$ %RH (see figure 2)
Sensor	INTERCAP® humidity sensor, part no. 15778HM

Fig. 1 Accuracy of humidity measurement

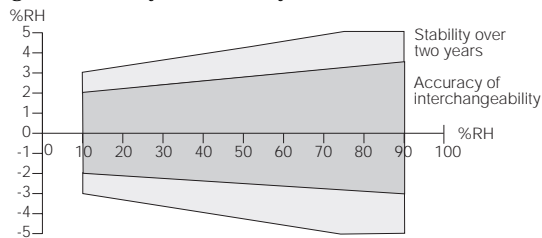
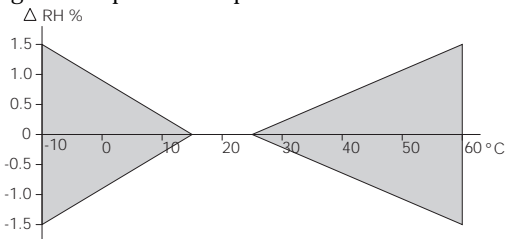


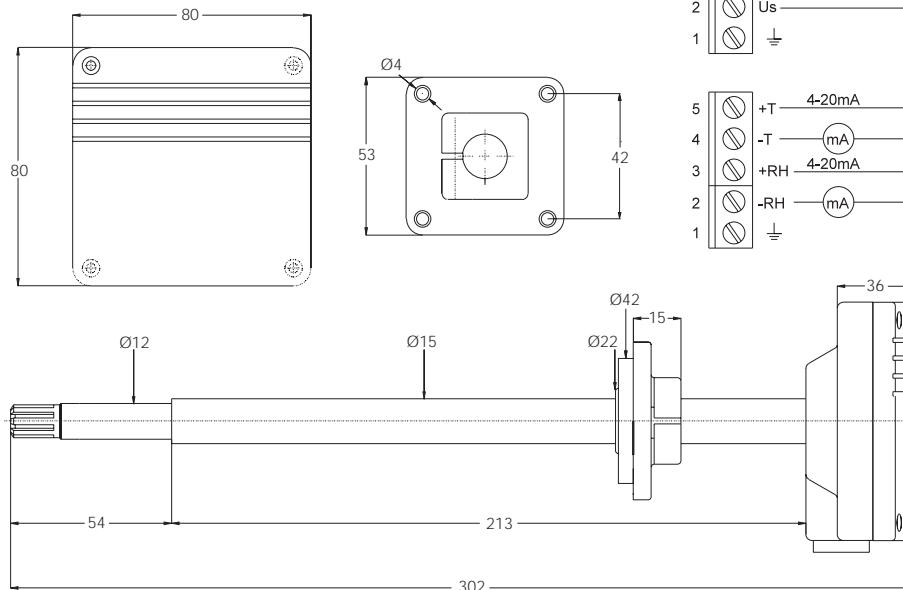
Fig. 2 Temperature dependence



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Specifications subject to change without further notice.  
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Dimensions in mm



### TEMPERATURE (Y-models only)

Measuring range	-10...+60 °C
Total accuracy at +25 °C	$\pm 0.3$ °C
Temperature dependence	0.01 °C/°C
Sensor	Pt 1000 IEC 751 class B

### GENERAL

Output signal equals 0...100 %RH and -40...+60 °C	
HMD40U/40Y	4...20 mA
HMD50U/50Y	load resistance > 20 kohm
RH	0...1 V & 0...10 V
T	0...10 V

### Power supply

HMD40U/40Y	10...28 VDC
HMD50U/50Y	0...1 V
	12...35 VDC
	12...24 VAC
	0...10 V
	15...35 VDC
	15...24 VAC

### Current consumption

HMD40U/40Y	4 mA minimum
HMD50U/50Y	6 mA typical

### Operating range for electronics

-10...+60 °C
0...100 %RH

### Storage temperature range

-40...+60 °C
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### Sensor protection

standard

membrane filter,  
part no. 17039

option

plastic grid,  
part no. 17038

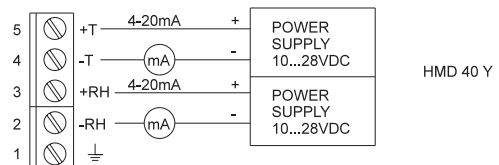
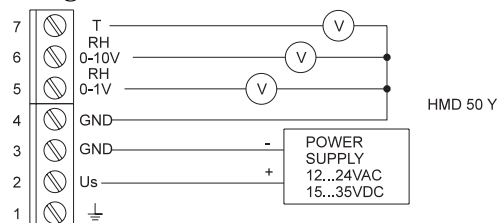
### Housing material

ABS plastic

### Housing classification

IP 65

### Wiring



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