

## Vaisala HMT140 Wi-Fi Data Logger for Multiple Environmental Parameters



The HMT140 with and without a display.

### Features/Benefits

- Wi-Fi connectivity to Vaisala's environmental monitoring system software viewLinc
- Connectivity provided through existing Wi-Fi Access Points
- Autonomous operation and local alarms ensure alerting capability regardless of network connectivity
- Local data storage provides continuous fail-safe operation
- 18-month battery operation
- Vaisala HUMICAP® technology with humidity sensor HUMICAP® 180R
- Interchangeable temperature/RH probe for easy field calibration
- Two inputs available: voltage, current, contact, RTDs or temperature & RH
- Accurate and reliable multi-signal measurements
- Resistant to dust and most chemicals
- Optional LCD display
- Wall-mounted or with remote probes
- Traceable to SI units through national metrology institutes.\*
- Ideal for cleanrooms and other life science applications

The Vaisala HMT140 wireless data logger is designed for humidity, temperature and analog signal monitoring in warehouses, freezer and cryogenic farms, laboratories, blood banks and many other applications.

### Performance

The HMT140 incorporates Vaisala HUMICAP® technology to measure relative humidity and temperature accurately and reliably. The Vaisala HUMICAP® sensor is resistant to dust and most chemicals. Alternatively, the HMT140 can connect to Resistance Temperature Detectors (RTDs), Voltage, Current and Contact sensors, making the HMT140 an extremely versatile Wi-Fi data logger. Combining RTD and contact inputs, the HMT140 is ideal for monitoring chamber/door excursions.

Using Wi-Fi connectivity, the HMT140 can connect through any wireless access point. The battery-powered logger can operate for 18 months continuously, or longer if using the batteries only as backup to an optional external power source.

Optional local display allows the HMT140 to indicate process parameter values and any limit warnings. The LCD display is operated using a power-saving

infrared sensor that is motion-activated. When activated, the display indicates the current measurements. All data is logged locally and uploaded to the Vaisala viewLinc monitoring system software at preset intervals and during any parameter excursions.

Autonomous operation with audible and visual alarming (beep and flashing LED) ensures that local alerts are indicated independent of active network or server connection.

The data logger's enclosure is optimized for use in cleanrooms with a surface that is easy to clean and tolerates purifying agents.

### Interchangeable Probe

The HMT140 data logger uses an easily replaceable relative humidity and temperature probe. This allows for quick recalibration of the data logger. The probe can be adjusted using one of Vaisala's portable meters as a reference.

### Available Options

The HMT140 data logger is available as wall mounted or with remote probes. For extreme temperature applications or where space is limited, the remote probe is ideal.

## Technical Data

### Probe Performance HUMICAP® Humidity and Temperature Probe HMP110

RELATIVE HUMIDITY	
Measurement range	0 ... 100 %RH
Accuracy including non-linearity, hysteresis, and repeatability	
Temperature range 0 °C ... +40 °C	
at 0 ... 90 %RH	±1.5 %RH
at 90 ... 100 %RH	±2.5 %RH
Temperature range -40 ... 0 °C, +40 ... +80 °C	
at 0 ... 90 %RH	±3.0 %RH
at 90 ... 100 %RH	±4.0 %RH

\*Measurement results are traceable to the international system of units (SI) through national metrology institutes (NIST USA, MIKES Finland, or equivalent) or ISO/IEC 17025 accredited calibration laboratories.

Factory calibration uncertainty at +20 °C	±1.5 %RH
Humidity sensor	Vaisala HUMICAP® 180R
Stability	±2 %RH over 2 years
<b>TEMPERATURE</b>	
Measurement range	-40 °C ...+80 °C
Accuracy over temperature range	
at +15 °C ...+25 °C	±0.2 °C
at 0 ...+15 °C and at +25 °C ...+40 °C	±0.25 °C
at -40 °C ...+0 °C and at +40 °C ...+80 °C	±0.4 °C
Temperature sensor	Pt1000 RTD 1/3 Class B IEC 751
HMP110 probe	-40 °C ...+80 °C
Storage temperature range	-50 °C ...+70 °C
Electromagnetic compatibility	EN 61326-1 and EN 55022, Class B

### Analog Inputs

2 Channel Current input signals	0 ...22 mA
Resolution	0.67 µA
Accuracy	±0.15 % FS. at +25 °C
Input Impedance	62 Ohms
Overload Protection	40 mA
2 Channel Voltage input signals	0 ...5 V, 0 ... 10 V
Resolution	0.0034% FS.
Accuracy	±0.15 % FS. at +25 °C
Input Impedance	37K Ohms
Overload protection	50 Volts max
Isolation	one common per logger
2 Resistive Temperature input signals	Pt 100 RTD / 4 wire Class A IEC 751 Input Impedance 5.1K Ohms
Measurement range	-196 °C to +90 °C
Accuracy over temperature range	
at -196 ...-90 °C	±2.5 °C
at -90 ...-30 °C	±0.75 °C
at -30...0	±0.5 °C
at 0 ...+50 °C	±0.25 °C
at +50 ...+90 °C	±0.75 °C
Open/Closed with magnetic reed switch cable connections (Dry Contact)	

### General

Operating Temperature Range	
Data logger body, no display	-40°C...+60°C
Data logger body, with display	-20°C...+60°C
Memory	3,060 samples
Sample rate	User selectable, 2 to 60-minute intervals
<b>MATERIAL</b>	
Data logger housing	PBT plastic
Display window	PC plastic
HMP110 probe body	Stainless steel (AISI 316)
HMP110 probe grid filter	Chrome coated ABS plastic
Housing classification	IP65 (NEMA 4)

<b>Connections</b>	
Screw terminals	26 AWG ...20 AWG
HMP110 probe interface	4-pin M8 female panel connector
HMP110 probe cable lengths	3 m, 5 m and 10 m
<b>RTD Temperature Sensor</b>	
Sensor tip material	Stainless steel (AISI 316)
Sensor tip length	50.8 mm
Sensor tip diameter	4.76 mm
Cable length	5 m
<b>Hermetic Door Switch Sensor</b>	
Cable length	7.6 m
Display (optional)	128 x 64 resolution full graphics B&W display without backlight
Weight (with battery/without probe)	300g

### Accessories

<b>HMP110</b>	
Humidity and temperature probe	HMP110*
Humidity and temperature replacement probe	HMP110R*
Humidity sensor	HUMICAP® 180R
Probe mounting flange	226061
Probe mounting clamps, 10 pcs	226067
<b>Sensor protection</b>	
Plastic grid filter	DRW010522SP
Plastic grid with membrane filter	DRW010525SP
Stainless steel sintered filter	HM46670SP
Probe cable 3 m	HMT120Z300
Probe cable 5 m	HMT120Z500
Probe cable 10 m	HMT120Z1000
Duct installation kit	215619
<b>OTHER ACCESSORIES</b>	
Optional External Voltage Supply (15 VDC)	245865SP
RTD Temperature Probe 5 m	ASM210644SP
Hermetic Door Switch Sensor Kit	236319SP
Thermal Dampener Blocks	236310SP
Four Dual Lock™ Strips (3"/76mm)	237217SP

\* See separate order form

### Wireless

Networking Standards	IEEE 802.11 b/g
Data Rates	802.11 b: 1, 2, 5.5, 11 Mbps : 802.11 g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps
Frequency Band	2402 ~ 2480MHz
Modulation	802.11 b: DSSS(CCK-11, CCK-5.5, DQPSK-2, DBPSK-1): 802.11g : OFDM
Wi-Fi Security	WEP (128-bit), WPA, WPA2 (Personal)
Output Power	+18dBm (63mW)
Receiver Sensitivity	-85dBm typical
Antenna	Onboard whip
Certifications	FCC, IC, CE, Wi-Fi Alliance, EN61326-1:2006, EN61326-2-3:2006, EN61000-3-2:2006+A1:2009+A2:2009, EN61000-3-3:2008, EN61326-1:2006, MIC R 201-125765, CMIIT ID: 2013DJ7129

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