

Vaisala Wi-Fi Data Logger HMT140 for Multiple Environmental Parameters



The HMT140 with and without a display.

Features/Benefits

- Wi-Fi connectivity to Vaisala's Continuous Monitoring system
- 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
- NIST-traceable (certificate included)
- 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 life science 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 the most versatile Vaisala data logger for life science applications. 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. All data is logged locally and uploaded to the

Vaisala Continuous Monitoring System (CMS) software at preset intervals and during 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 a fully interchangeable relative humidity 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 high temperature applications or where space is limited, the remote probe is ideal. The optional LCD display is operated using a power-saving infrared sensor that is motion-activated. When activated, the display indicates the results of selected parameters simultaneously on two rows.

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	±1.7 %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

Factory calibration uncertainty at +20 °C	±1.5 %RH
Humidity sensor	Vaisala HUMICAP® 180R
Stability	±2 %RH over 2 years
TEMPERATURE	
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

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

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% ES.
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)	

Mechanics

Operating Temperature Range	
Data logger body, no display	-40°C...+60°C
Data logger body, with display	-20°C...+60°C
Material	
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)
Connections	
Screw terminals	26 AWG ...20 AWG

Accessories

HMP110	
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
Sensor protection	
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
OTHER ACCESSORIES	
Optional External Voltage Supply (15 VDC)	236081SP
Batteries (Packs of 3)	236318SP
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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