VAISALA

HMT140 Wi-Fi Data Logger
For multiple environmental parameters

Vaisala Wi-Fi Data Logger HMT140 is designed for humidity, temperature, and analog signal monitoring in warehouses, freezer and cryogenic farms, laboratories, blood banks, and many other applications.

Features

- Wi-Fi connectivity to Vaisala viewLinc environmental monitoring system software
- 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 relative humidity and temperature probe for easy field calibration
- Accurate and reliable multi-signal measurements
- Resistant to dust and most chemicals
- Traceable to SI units through national metrology institutes [1]
- Ideal for cleanrooms and other life science applications

[1] 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.

Performance

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

Using Wi-Fi connectivity, HMT140 can connect through any wireless access point. The battery-powered logger can operate for 18 months continuously.

Optional local display allows 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

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 portable meters as a reference.

Available options

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.

Options

- Two inputs available: voltage, current, door contact, RTDs, or relative humidity and temperature
- Optional LCD display
- Wall-mounted or with remote probes

Technical data

HUMICAP® Humidity and Temperature Probe HMP110

Relative humidity

Measurement range	0 … 100 %RH
Accuracy (incl. non-linearity, hysteresis, and repeatability):	
At temperature range 0 … +40 °C (+32 … +104 °F):	
0 … 90 %RH	±1.5 %RH
90 … 100 %RH	±2.5 %RH
At temperature range −40 … 0 °C, +40 … +80 °C (−40 … +32 °F, +104 … +176 °F):	
0 … 90 %RH	±3.0 %RH
90 … 100 %RH	±4.0 %RH
Factory calibration uncertainty at +20 °C (+68 °F)	±1.5 %RH
Humidity sensor	Vaisala HUMICAP® 180R
Stability	±2 %RH over 2 years

Temperature

Measurement range	−40 … +80 °C (−40 … +176 °F)
Accuracy over temperature range:	
+15 … +25 °C (+59 … 77 °F)	±0.2 °C (±0.36 °F)
0 … +15 °C, +25 … +40 °C (+32 … 59 °F, +77 … +104 °F)	±0.25 °C (±0.45 °F)
−40 … 0 °C, +40 … +80 °C (−40 … +32 °F, +104 … +176 °F)	±0.4 °C (±0.72 °F)
Temperature sensor	Pt1000 RTD 1/3 Class B IEC 751
HMP110 probe	−40 … +80 °C (−40 … +176 °F)
Storage temperature	−50 … +70 °C (−58 … +158 °F)

Temperature probes

Resistive temperature input signals

Temperature sensor	Pt100 RTD / 4 wire, Class A IEC 751
Input impedance	5.1K Ω
Measurement range	−196 … +90 °C (−320.8 … +194 °F)
Accuracy over temperature range:	
−196 … −90 °C (−320.8 … −130 °F)	±2.5 °C (±4.5 °F)
−90 … −30 °C (−130 … −22 °F)	±0.75 °C (±1.35 °F)
−30 … 0 °C (−22 … +32 °F)	±0.5 °C (±0.9 °F)
0 … +50 °C (+32 … +122 °F)	±0.25 °C (±0.45 °F)
+50 … +90 °C (+122 … +194 °F)	±0.75 °C (±1.35 °F)

Analog inputs

Current input signals — 0 … 22 mA

Resolution	0.67 µA
Accuracy	±0.15 % F.S. at +25 °C (+77 °F)
Input impedance	62 Ω
Overload protection	40 mA

Voltage input signals — 0 … 5 V, 0 … 10 V

Resolution	0.0034 % F.S.
Accuracy	±0.15 % F.S. at +25 °C (+77 °F)
Input impedance	37K Ω
Overload protection	50 V max.
Isolation	One common per logger
Contact inputs	Open/Closed with magnetic reed switch cable connections (dry contact)

Measurement variants

HMT141	1 temperature and 1 humidity channel
HMT143	2 RTD temperature channels
HMT144	2 voltage inputs (0 … 5 VDC)
HMT145	2 voltage inputs (0 … 10 VDC)
HMT146	2 current inputs (0 … 20 mA)
HMT147	2 door contacts
HMT148	1 RTD temperature and 1 door contact
HMT14D	1 RTD temperature and 1 current input (0 … 20 mA)
HMT14E	1 RTD temperature and 1 voltage input (0 … 5 VDC)
HMT14F	1 RTD temperature and 1 voltage input (0 … 10 VDC)

Operating environment

Operating temperature

Data logger body, no display	−40 … +60 °C (−40 … +140 °F)
Data logger body, with display	−20 … +60 °C (−4 … +140 °F)
IP rating	IP65
Maximum operating altitude	2000 m (6 500 ft)

General specifications

Memory	3,060 samples
Sample rate	User selectable (interval: 2 … 60 minutes)
Display (optional)	128 × 64 resolution full graphics B&W display without backlight

Mechanical specifications

|	
Weight (with battery/without probe)	300 g (10.6 oz)
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 (9.8 ft, 16.4 ft, and 32.8 ft)
Hermetic door switch sensor cable length	7.6 m (24.9 ft)

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

RTD temperature sensor

Sensor tip material	Stainless steel (AISI 316)
Sensor tip length	50.8 mm (2 in)
Sensor tip diameter	4.76 mm (0.19 in)
Cable length	5 m (16.4 ft)

Wireless

Networking standards	IEEE 802.11b/g
Data rates	802.11b: up to 11 Mbps 802.11g: up to 54 Mbps
Frequency band	2402 - 2480 MHz
Wi-Fi security	WEP (128-bit), WPA, WPA2 (Personal)
Output power	+18 dBm (63 mW)
Receiver sensitivity	−85 dBm typical
Antenna	Onboard whip
Contains	FCC ID: U3O-G2M5477 IC ID: 8169A-G2M5477 NCC ID: CCAF11LP0240T6

℞ 201-125765
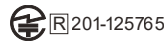
当該機器には電波法に基づく、技術基
準適合証明等を受けた特定無線設備を
装着している。

Standards and approvals

Electromagnetic compatibility	EN 61326-1, EN 301 489-1, EN 300 328 V2.1.1
Safety	EN 61010-1
Radio transmission equipment type approval	CMIIT ID: 2019DJ5109

Spare parts and accessories

HMP110	
Humidity and temperature probe	HMP110 [1]
Humidity and temperature replacement probe	HMP110R [1]
Humidity sensor	Vaisala HUMICAP® 180R
Probe mounting flange	226061
Probe mounting clamps, 10 pcs	226067
Probe cable 3 m (9.8 ft)	HMT120Z300
Probe cable 5 m (16.4 ft)	HMT120Z500
Probe cable 10 m (32.8 ft)	HMT120Z1000
Duct installation kit	215619
Sensor protection	
Plastic grid filter	DRW010522SP
Plastic grid with membrane filter	DRW010525SP
Stainless steel sintered filter	HM46670SP
Other accessories	
RTD temperature probe 5 m (16.4 ft)	ASM210644SP
Hermetic door switch sensor kit	236319SP
Thermal dampener blocks	236310SP
Four Dual Lock™ strips (76 mm/3 in)	237217SP

1) *See separate order form.*

CE

△ Álava Ingenieros
GRUPO ÁLAVA

tel: +34 915 679 700
www.alavaingenieros.com | alava@grupoalava.com

VAISALA

www.vaisala.com