Vaisala HMT140 Driver for Tridium Niagara

User Guide

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niagara4

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1 Introduction

The Vaisala[1] HMT140 driver for Tridium Niagara enables wireless environmental monitoring by integrating Finnish-engineered Vaisala sensors with modern building automation systems. The sensors use standard Wi-Fi infrastructure with battery-powered operation, enabling years of maintenance-free service and reducing installation costs by up to 80% compared to wired alternatives.

The driver communicates via standard Wi-Fi using the Vaisala proprietary wireless protocol. Sensors periodically transmit temperature, humidity, and up to four analog inputs with error correction and data validation for reliable communication in electrically noisy environments.

Vaisala, founded in 1936 in Finland, is a global leader in environmental measurement. The HMT140 series combines measurement excellence with practical deployment, making it ideal for data centers, laboratories, pharmaceutical facilities, and cold storage.

2 Requirements

- Niagara-powered device with software v4.8 or later, such as JACE, Supervisor, or any OEM version
- Vaisala HMT140 driver module and license
- Vaisala HMT140 series wireless sensors
- Wi-Fi network accessible by both the Niagara host and the sensors

3 Quick Start

1. Copy vaisala-rt.jar module to Niagara /modules folder and restart the software.
    a. If the driver is hosted on PC: restart Supervisor station.
    b. If the driver is hosted on JACE: restart JACE from the platform.
2. Open the station in Workbench.
3. Open the **Palette** and locate the **vaisala** palette.
4. Drag and drop **VaisalaNetwork** from the palette onto the **Drivers** container in the station.
5. Enter license code in **License** property under **VaisalaNetwork**.
6. Configure the network properties.
7. Right-click on the network and select **Discover** to find all connected sensors.
8. Select the desired sensors and press **Add** to import them into the station.

[1] All trademarks or registered trademarks are the property of their respective owners

4 Vaisala Network

The Vaisala Network manages the Wi-Fi connection to HMT140 sensors. The Niagara host listens for UDP packets sent by the sensors.

Network properties:

- **License** – the code that allows the driver to run on your host.
- **Udp Config / Port** – UDP port number on which the network listens for sensor data. Must match the port configured in the sensor settings.
- **Poll Frequency** – interval between point read cycles.

In most cases only **License** and **Udp Config / Port** values need to be changed.

5 Vaisala Devices

Devices represent individual HMT140 series sensors. The driver auto-discovers all wireless sensors on the network.

Device properties:

- **Serial Number** – unique sensor serial number, set during discovery.
- **Poll Frequency** – polling rate for this device.

Supported models:

HMT141	HMT143	HMT144	HMT145
HMT146	HMT147	HMT148	

Each model variant supports different combinations of internal and external probes, analog inputs, and operating temperature ranges (from -40 to +70 degrees Celsius for harsh environment applications).

6 Vaisala Points

All points are read-only. Points include the following measurement parameters:

- **Temperature** – measured with ±0.2°C accuracy.
- **Humidity** – measured with ±1.5% RH accuracy.
- **Analog Inputs** – up to four configurable analog input channels for external sensors.

- **Battery Level** – remaining battery capacity for proactive replacement planning.
- **Signal Strength** – Wi-Fi signal quality for monitoring communication reliability.

Transmission intervals are configurable from 1 minute to 24 hours. Battery optimization adjusts transmission intervals based on measurement stability, extending operational life to 5 years in typical HVAC applications.

7 FAQ

7.1 I cannot discover any sensors

- Verify the sensors are powered and connected to the same Wi-Fi network as the Niagara host.
- Check that the UDP port in the network properties matches the sensor configuration.
- Ensure the sensors are transmitting data (check the sensor LED indicator).
- Verify that no firewall is blocking UDP traffic on the configured port.
- Check that the license is valid.

7.2 Do I need a special wireless gateway?

No. The HMT140 sensors use standard Wi-Fi (802.11 b/g). They connect to any existing Wi-Fi access point, eliminating the need for dedicated wireless infrastructure.

7.3 How long do the batteries last?

Battery life depends on the transmission interval. With a 10-minute interval, typical battery life is 3–5 years. Shorter intervals reduce battery life; longer intervals extend it.

7.4 Can sensors operate in cold environments?

Yes. The HMT140 series supports operating temperatures from -40 to +70 degrees Celsius, making it suitable for cold storage, freezers, and outdoor applications.