# Rotronic HygroFlex Driver for Tridium Niagara

User Guide

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niagara4

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# 1 Introduction

The Rotronic[1] HygroFlex driver for Tridium Niagara provides precision environmental monitoring by integrating Swiss-engineered Rotronic sensors with modern building automation systems. It communicates via the proprietary Rotronic digital protocol over RS-485 or Ethernet TCP/IP, supporting up to 64 devices per RS-485 network at configurable baud rates (9600 or 19200).

Rather than using analog conversion with potential accuracy loss, the driver communicates digitally, preserving Rotronic's industry-leading measurement accuracy (±0.8% RH, ±0.1°C). This eliminates calibration drift of analog transmitters and provides advanced sensor diagnostics for predictive maintenance.

Rotronic AG, founded in 1965 in Switzerland, is a global leader in humidity and temperature measurement. The HygroFlex series uses proprietary HygroClip2 technology with digital signal processing and sensor-specific calibration data stored in each probe.

# 2 Requirements

- Niagara-powered device with software v4.8 or later, such as JACE, Supervisor, or any OEM version
- Rotronic HygroFlex driver module and license
- Rotronic HygroFlex or HP series transmitters
- RS-485 serial port or TCP/IP connectivity

# 3 Quick Start

1. Copy rotronic-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 **rotronic** palette.
4. Drag and drop **RotronicNetwork** from the palette onto the **Drivers** container in the station.
5. Enter license code in **License** property under **RotronicNetwork**.
6. Configure the communication settings (serial port or TCP/IP address).
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 Rotronic Network

The Rotronic Network manages the connection to Rotronic sensors. Communication can be over RS-485 (up to 64 devices) or TCP/IP. Add one network per communication type.

For RS-485 communication, add a **Rotronic Serial Network**. For TCP/IP, add a **Rotronic Tcp Network**.

Network properties:

- **License** – the code that allows the driver to run on your host.
- **Serial Config / Port Name** – COM port name for RS-485 communication (e.g., "COM1").
- **Serial Config / Baud Rate** – communication speed: 9600 or 19200 bps. Must match the sensor configuration.
- **Tcp Config / Ip Address** – IP address of the Rotronic sensor (for TCP/IP networks).
- **Tcp Config / Port** – TCP port number for communication.
- **Poll Frequency** – interval between point read cycles.

In most cases only **License** and the communication settings (**Serial Config** or **Tcp Config**) need to be changed.

# 5 Rotronic Devices

Devices represent individual HygroFlex or HP series transmitters. The driver auto-discovers sensors on the network.

Device properties:

- **Address** – sensor address on the RS-485 bus (1–64). Set during discovery.
- **Poll Frequency** – polling rate for this device.

Supported models:

**Wall-mount (HF5x series):**

| | | | | |
|---|---|---|---|---|
| HF53 | HF54 | HF556 | HF56 | HF566 |
| HF557 | | | | |

**Duct-mount (HF8x series):**

| HF83 | HF84 | HF86 | HF85 |
|---|---|---|---|

**Probe-style (HP2x series):**

| HP22 | HP23-A |
|---|---|

# 6 Rotronic Points

Points are automatically discovered as read-only and include the following measurements:

- **Temperature** – measured with ±0.1°C accuracy.
- **Humidity** – measured with ±0.8% RH accuracy.
- **Dew Point** – calculated from temperature and humidity.
- **Wet Bulb** – calculated psychrometric value.
- **Enthalpy** – calculated air energy content.
- **Absolute Humidity** – calculated moisture content in $g/m^3$.

Additionally, sensor calibration data and diagnostic information are accessible for predictive maintenance. Configurable alarm thresholds with high/low limit monitoring provide event notification for environmental excursions.

# 7 FAQ

## 7.1 What is the recommended calibration interval?

Rotronic recommends 1–2 year calibration intervals, depending on the application. The HygroClip2 probes maintain specified accuracy throughout the operational life between calibrations.

## 7.2 Can I mix RS-485 and TCP/IP sensors on the same network?

No. Each Rotronic Network is configured for either RS-485 or TCP/IP. To use both communication types, add two separate networks.

### 7.3 What is the maximum RS-485 cable length?

The maximum cable length is 1200 meters using standard RS-485 wiring with proper termination.

### 7.4 I cannot discover any sensors

- Check RS-485 wiring and termination resistors at both ends of the bus.
- Verify the COM port name is correct and the port is not in use by another application.
- Ensure the baud rate in Niagara matches the sensor configuration (9600 or 19200).
- Verify sensors are powered and addressed with unique bus addresses.
- Check that the license is valid.

### 7.5 Readings are inaccurate

- Verify the HygroClip2 probe is properly connected to the transmitter.
- Check if the probe calibration is due (recommended interval: 1–2 years).
- Ensure the probe is not exposed to condensation or extreme contaminants.