



Rheonics Training Deck

Type-SR sensor UDT Configuration in Ignition

Rheonics

 Winterthur, Switzerland

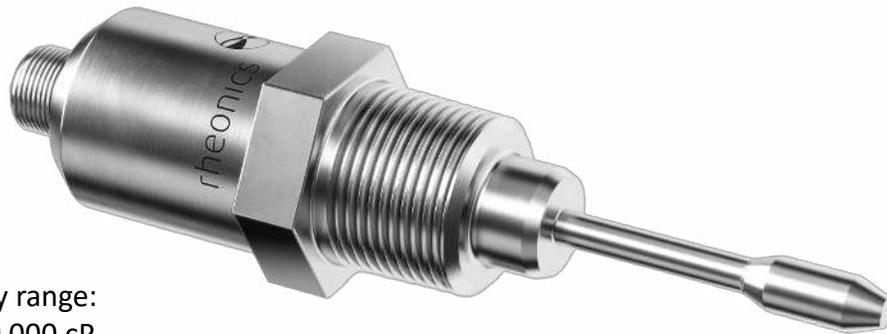
 Sugar Land, Texas, U.S.A.

Agenda

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1. Rheonics Type-SR Features overview

SRV: Symmetric torsional resonator
Rheonics inline viscometer



Viscosity range:
0.5 – 50 000 cP



Viscosity accuracy:
5% of reading (standard)
1% or higher available

Reproducibility:
better than 0.1% of reading

Density range:
0.0 – 4.0 g/cc
0.0 – 33.4 lb/gal



Density accuracy:
0.001 g/cc
0.008 lb/gal

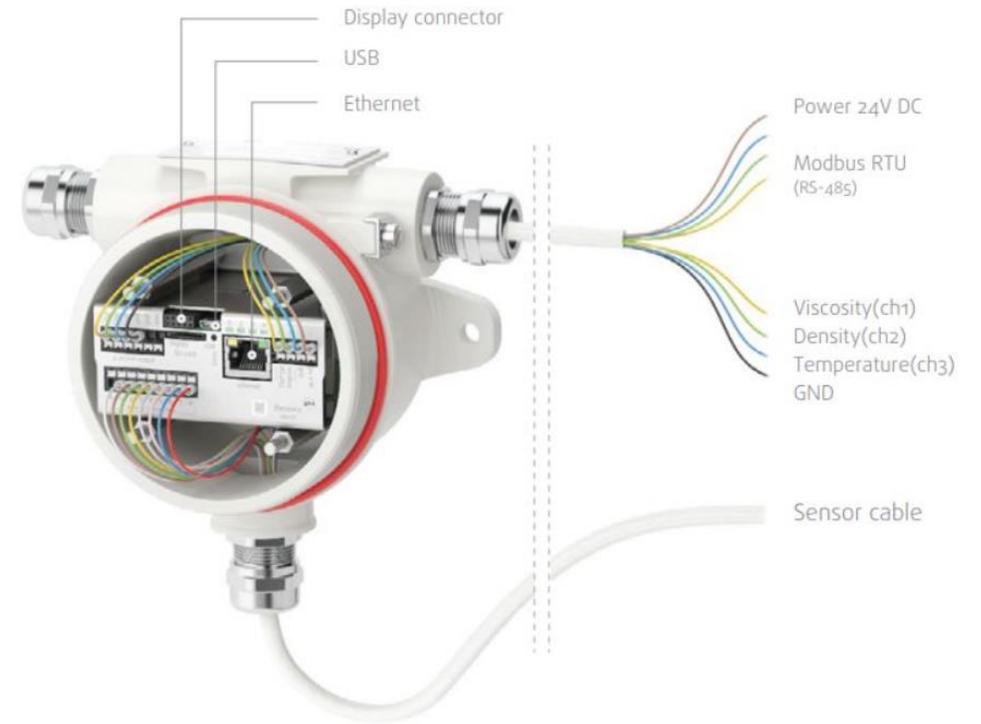


Reproducibility:
better than 0.1% of reading

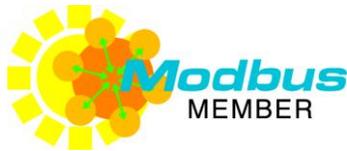
SRD: Symmetric torsional resonator
Rheonics inline density and viscosity meter

2. Communication options

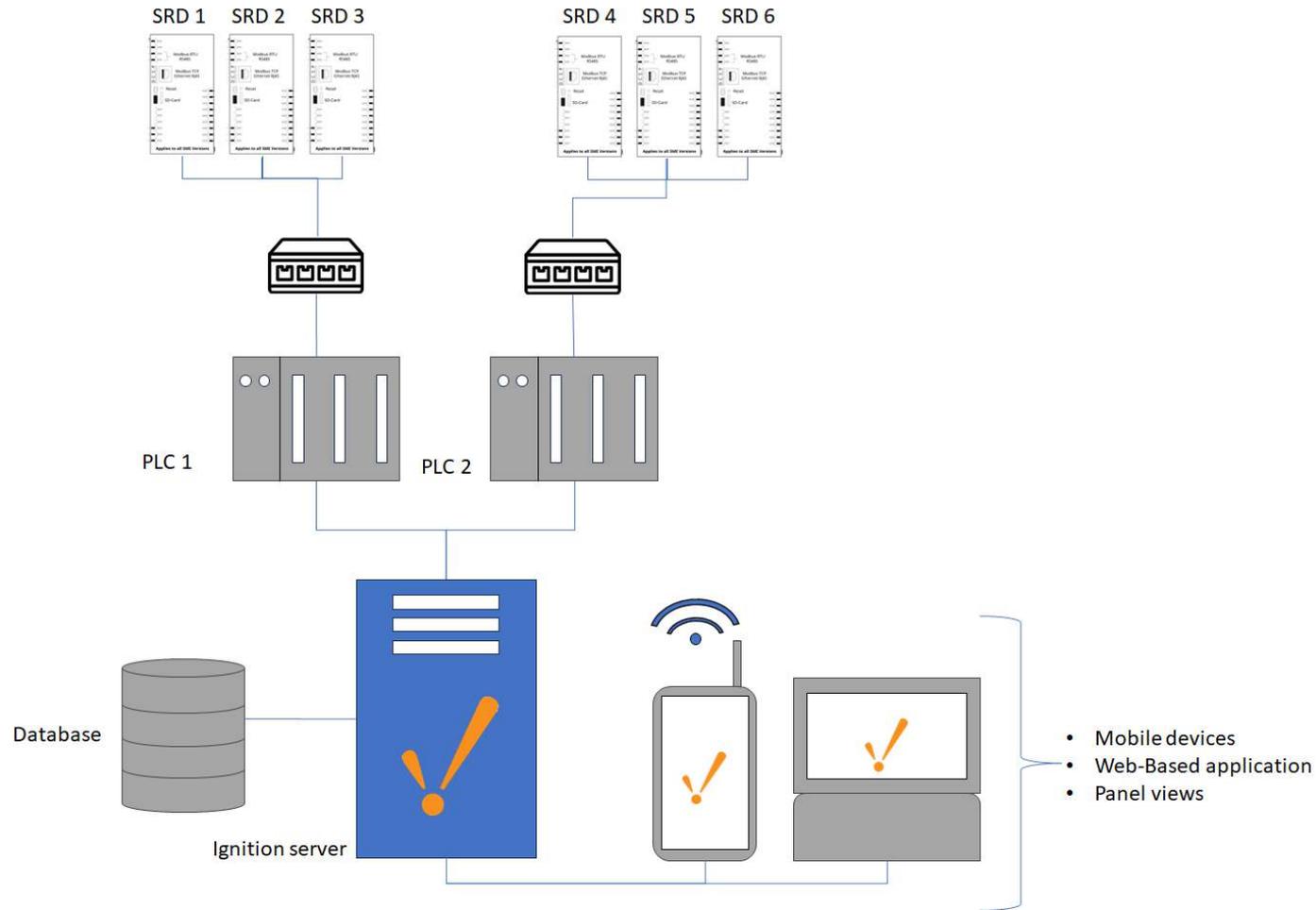
- Easy integration: Programming API & Wireless options
- Stable in harshest environments: Operational to 65 °C ambient and in high EMI process environments



ETHERNET
TCP/IP



3. What is Ignition?

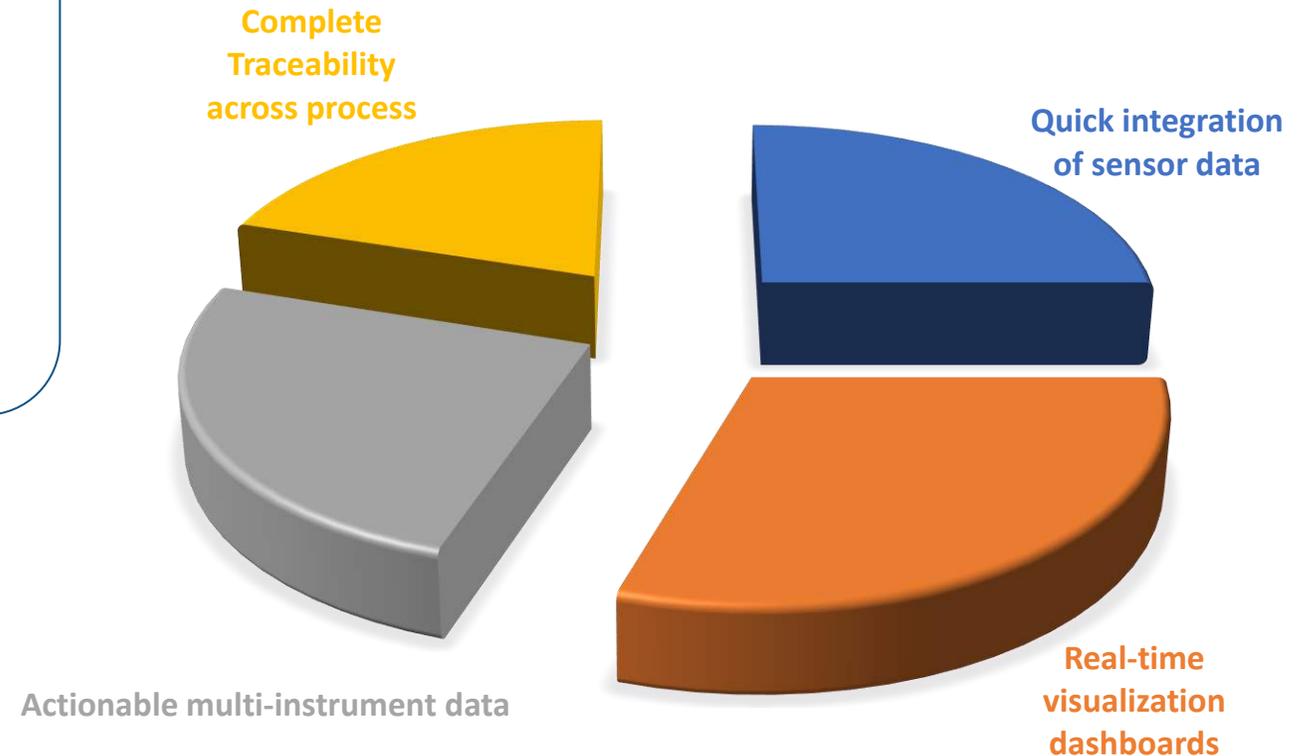


4. What can you achieve by integrating Rheonics sensors with Ignition?

Key benefits:

- Quick integration of sensor data
- Real-time visualization dashboards
- Actionable multi-instrument data
- Complete Traceability across process

DOWNTIME MANAGEMENT



5. Where to Find Rheonics in Ignition Exchange?

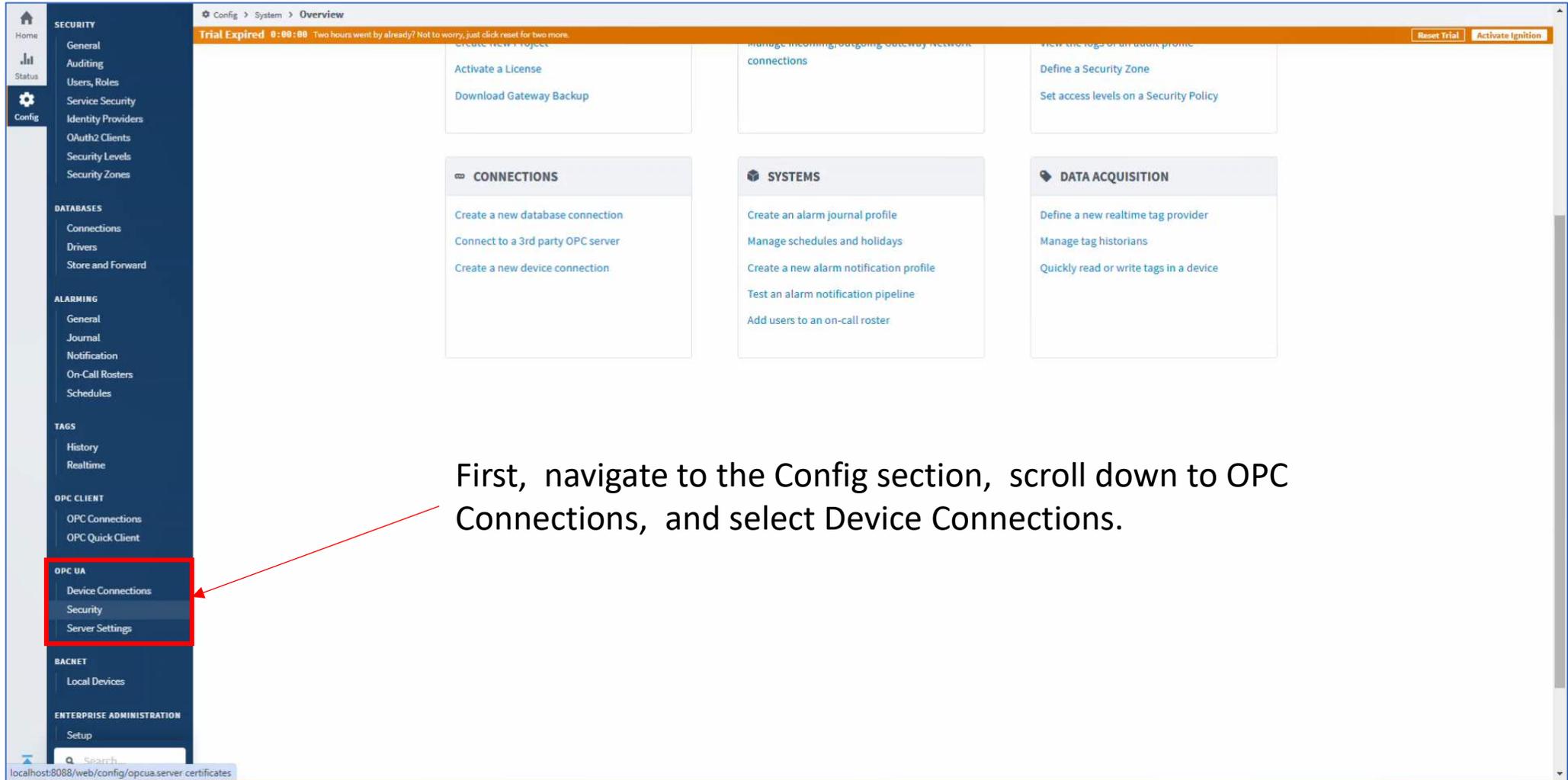
The screenshot shows the Ignition Exchange website interface. At the top, the browser address bar contains the URL `inductiveautomation.com/exchange?search=rheonics`, highlighted with a red box and labeled "1. Ignition Exchange website". Below the navigation bar, the main heading "Ignition Exchange" is visible. A search bar in the center of the page contains the text "rheonics", also highlighted with a red box and labeled "2. Search bar, type 'Rheonics'". On the left side, there are filter options for Categories, Types, and Ignition Version, all set to "All". A "1 Results" section is displayed, containing a card for "Rheonics Viscosity and Density meter". This card is highlighted with a red box and labeled "3. Rheonics Template package". The card includes an icon representing an instrument interface and the text "INSTRUMENT INTERFACE Beginner", "Rheonics Viscosity and Density meter", and "Viscosity meter SRV and Density meter SRD". A QR code is located in the bottom right corner of the screenshot.

6. What is included?

Name	Date modified	Type	Size
Images	12/18/2024 4:17 PM	File folder	
Other	12/18/2024 4:17 PM	File folder	
Projects	12/18/2024 4:17 PM	File folder	
Tags	12/18/2024 4:17 PM	File folder	
MANIFEST	10/29/2024 8:45 PM	File	1 KB
README	10/29/2024 8:45 PM	MD File	4 KB

1. Images Folder: This contains graphical assets including icons and Logos from the sensor.
2. Others Folder: Here you'll find a PDF with instructions and some additional resources.
3. Projects Folder: This includes three project files that users can use to integrate Rheonics sensors into their processes.
4. Tags Folder: This contains UDT (User-Defined Tag) definitions to simplify sensor configuration in Ignition.

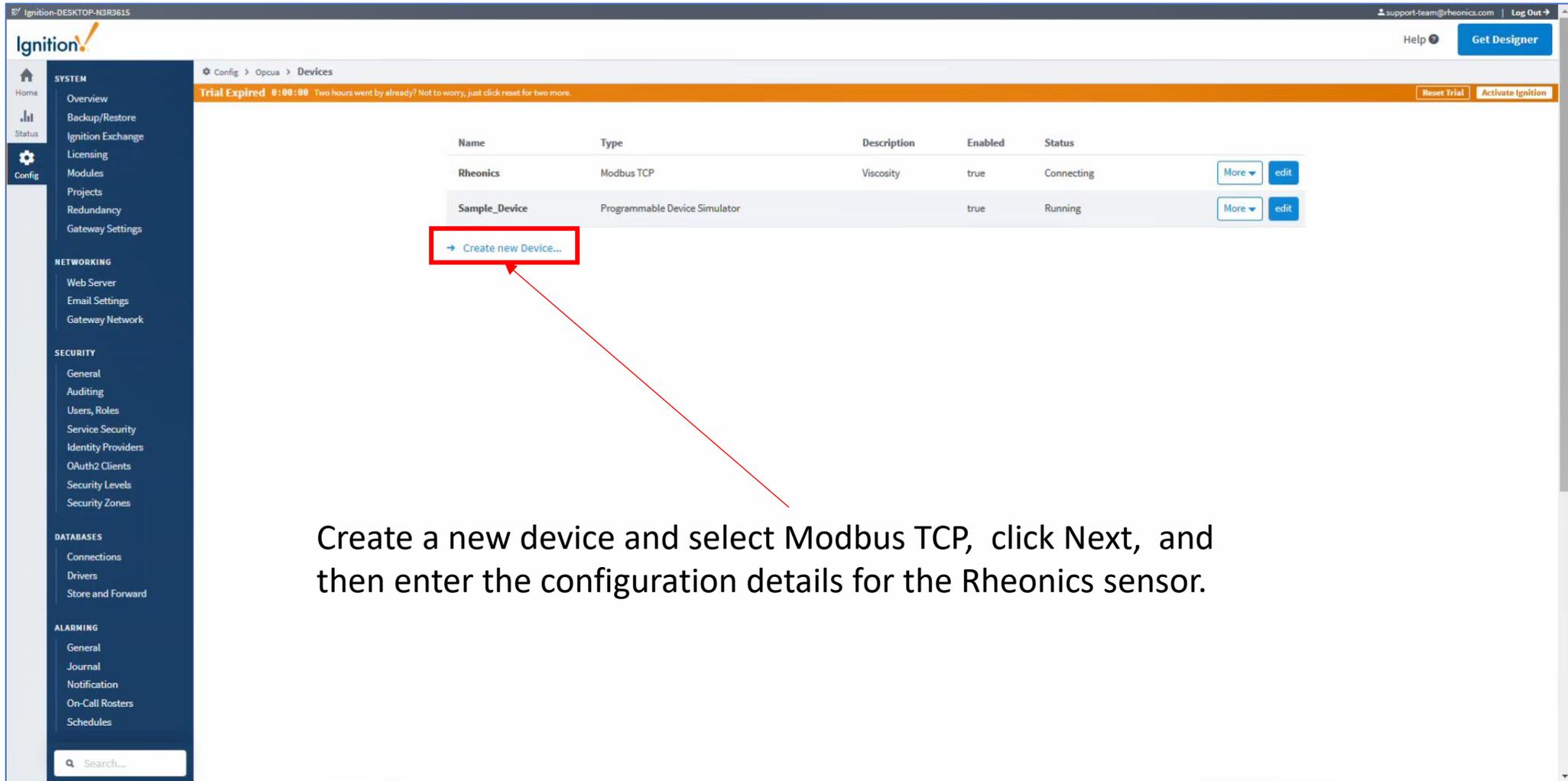
7.1. Ignition Gateway-OPC UA Device connection



The screenshot displays the Ignition Gateway configuration interface. The left sidebar contains a navigation menu with categories: SECURITY, DATABASES, ALARMING, TAGS, OPC CLIENT, OPC UA, BACNET, and ENTERPRISE ADMINISTRATION. The OPC UA section is highlighted with a red box, and a red arrow points to the 'Device Connections' option. The main content area shows a 'Trial Expired' banner and several configuration cards for CONNECTIONS, SYSTEMS, and DATA ACQUISITION. The URL at the bottom of the browser window is localhost:8088/web/config/opcua.server.certificates.

First, navigate to the Config section, scroll down to OPC Connections, and select Device Connections.

7.2. Ignition Gateway-Create new device



The screenshot shows the Ignition Gateway web interface. The left sidebar contains navigation menus for SYSTEM, NETWORKING, SECURITY, DATABASES, and ALARMING. The main content area displays a table of devices and a 'Create new Device...' link. A red box highlights the 'Create new Device...' link, and a red arrow points from the text below to it.

Name	Type	Description	Enabled	Status	More	edit
Rheonics	Modbus TCP	Viscosity	true	Connecting	More	edit
Sample_Device	Programmable Device Simulator		true	Running	More	edit

→ Create new Device...

Create a new device and select Modbus TCP, click Next, and then enter the configuration details for the Rheonics sensor.

7.3. Ignition Gateway-Configuring Rheonics Device

General

Name: Rheonics1

Description: Viscosity meter

Enabled: (default: true)

Connectivity

Hostname: 192.168.3.6
Hostname/IP address of the Modbus device.

Port: 502
Port to connect to.
(default: 502)

Local Address: 192.168.3.2
Address of network adapter to connect from.
(default:)

Communication Timeout: 2000
Maximum amount of time to wait for a response.
(default: 2,000)

Show advanced properties

Create New Device

Rheonics Modbus TCP parameters configuration, after saving the changes the device should take a few seconds to connect

Address Configuration for 'Rheonics'

Choose File | No file chosen

Import Configuration

Export Configuration

Prefix	Start	End	Step	Unit ID	Modbus Type	Modbus Address	
DIG	1	2	<input type="checkbox"/>	0	Input Register (Kruul)	143	[delete]
TR	1	2	<input type="checkbox"/>	0	Input Register (Float)	95	[delete]
VLG	1	2	<input type="checkbox"/>	0	Input Register (Float)	135	[delete]
SST	1	2	<input type="checkbox"/>	0	Input Register (Int16)	39	[delete]
SSM	1	8	<input type="checkbox"/>	0	Holding Register (Double)	1000	[delete]
RVS	1	2	<input type="checkbox"/>	0	Input Register (Float)	65	[delete]

Radius: 10

Add Row

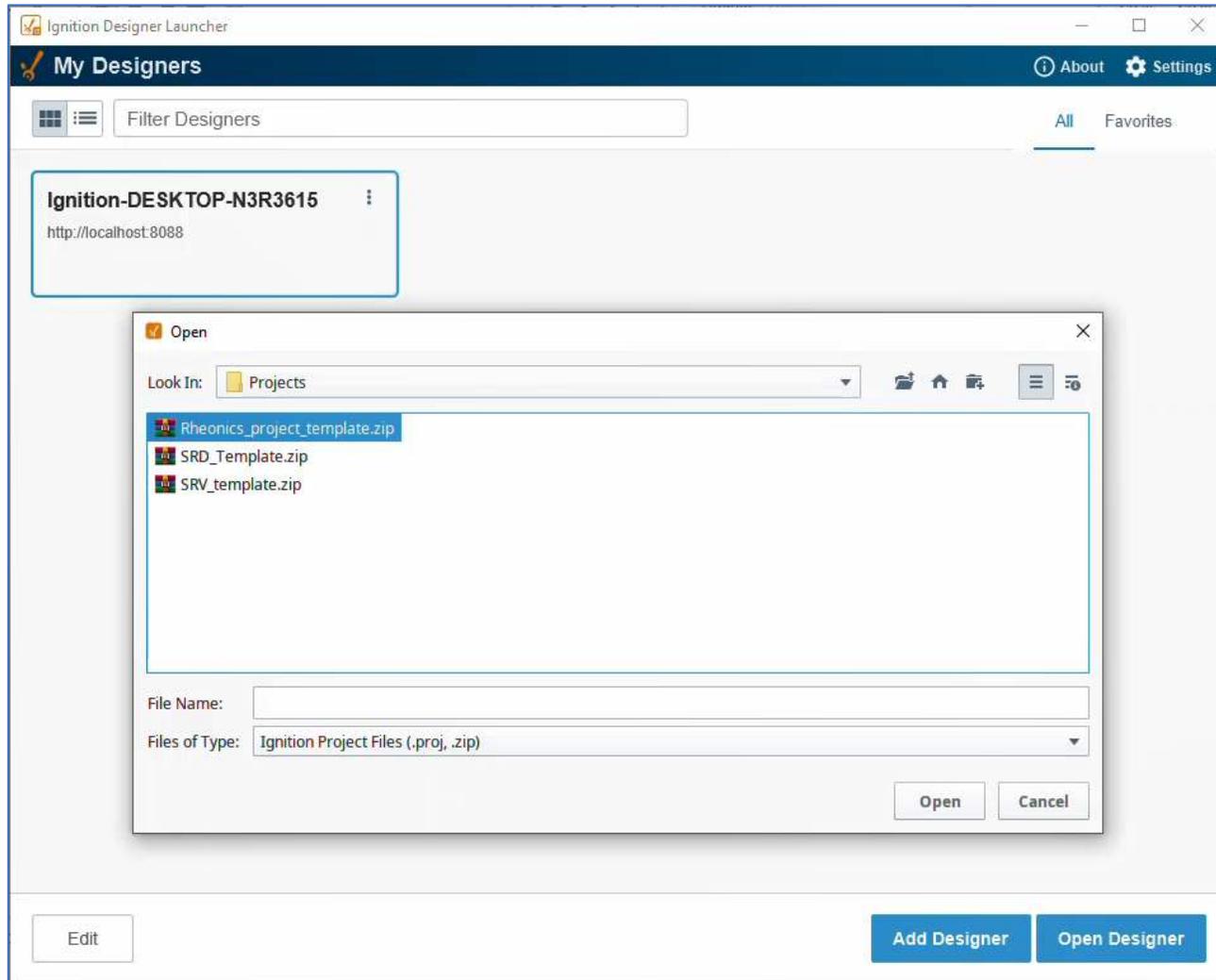
Save

Successfully updated Device "Rheonics"

Name	Type	Description	Enabled	Status	
Rheonics	Modbus TCP	Viscosity	true	Disconnected	More edit
Rheonics1	Modbus TCP	Viscosity meter	true	Connected	More edit
Sample_Device	Programmable Device Simulator		true	Running	More edit

→ Create new Device...

8.1. Ignition Designer Launcher



Add a new project using the material available on Rheonics Package downloaded from Ignition exchange website

- Start by clicking on the Import Project button.
- Select the Rheonics project template, then enter a new project name, such as Rheonics Project Template Webinar.
- Click on the Import Project button at the bottom to proceed.
- Once the project is imported, click Open to access all the templates associated with the Rheonics sensor.

Finally enter username and password to launch the Ignition designer.

8.2. Integrating Rheonics sensor in Ignition Designer

On the Vision section, we can observe the SRV and SRD templates. These templates are fully prepared to handle the Rheonics data.

8.3. Mapping variables in Ignition Designer

The next step is to map the variables based on the registers assigned during the OPC client setup

The screenshot displays the Ignition Designer interface for a project named 'Rheonics_project_template_webinar'. The main workspace shows a 'Viscometer SRV' component with a 'rheonics' logo and a 'Viscosity' label. The 'Tag Browser' on the left shows a tree view of tags, including 'Kinematic Viscosity', 'Sensor serial number', 'Sensor Status', 'Temperature', and 'Viscosity'. The 'Vision Property Editor' at the bottom left shows the 'Data' section with a 'Value' property set to '2.0'. The 'Component Palette' on the right lists various input components like 'Text Field', 'Numeric Text Field', 'Spinner', etc. A large oval highlights the 'OPC UA Server' configuration window, showing a tree view of the server structure with nodes like 'Devices', 'Rheonics1', 'Rheonics2', 'UnitId 0', 'DLG1-DLG2', 'KVS1-KVS2', 'SSN1-SSN8', 'SST1-SST2', 'TR1-TR2', 'VLG1-VLG2', 'VLG1', 'VLG2', and 'Diagnostics'. A red arrow points from the 'Value' property in the Vision Property Editor to the 'Value' field in the OPC UA Server configuration window.

9. Where can I learn more?



Visit the Rheonics Support Portal to learn more about Rheonics and its integration with Ignition.

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