



Rheonics Training Deck

Type-SR sensor UDT Configuration in Ignition

Rheonics

 Winterthur, Switzerland

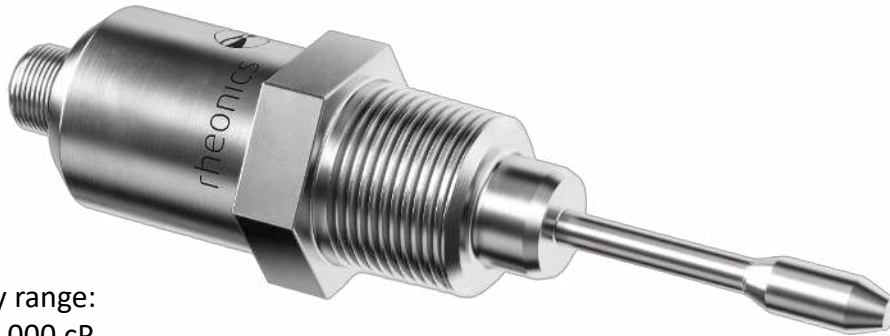
 Sugar Land, Texas, U.S.A.

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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

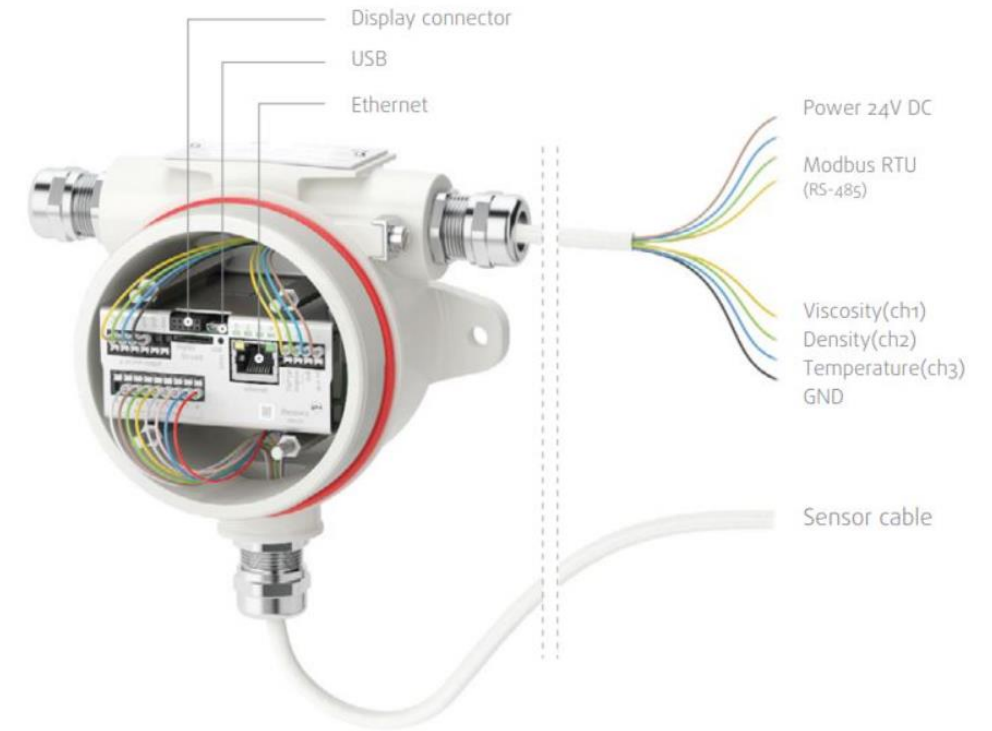
Reproducibility:
better than 0.1% of reading



SRD: Symmetric torsional resonator
Rheonics inline density and viscosity meter

2. Communication options

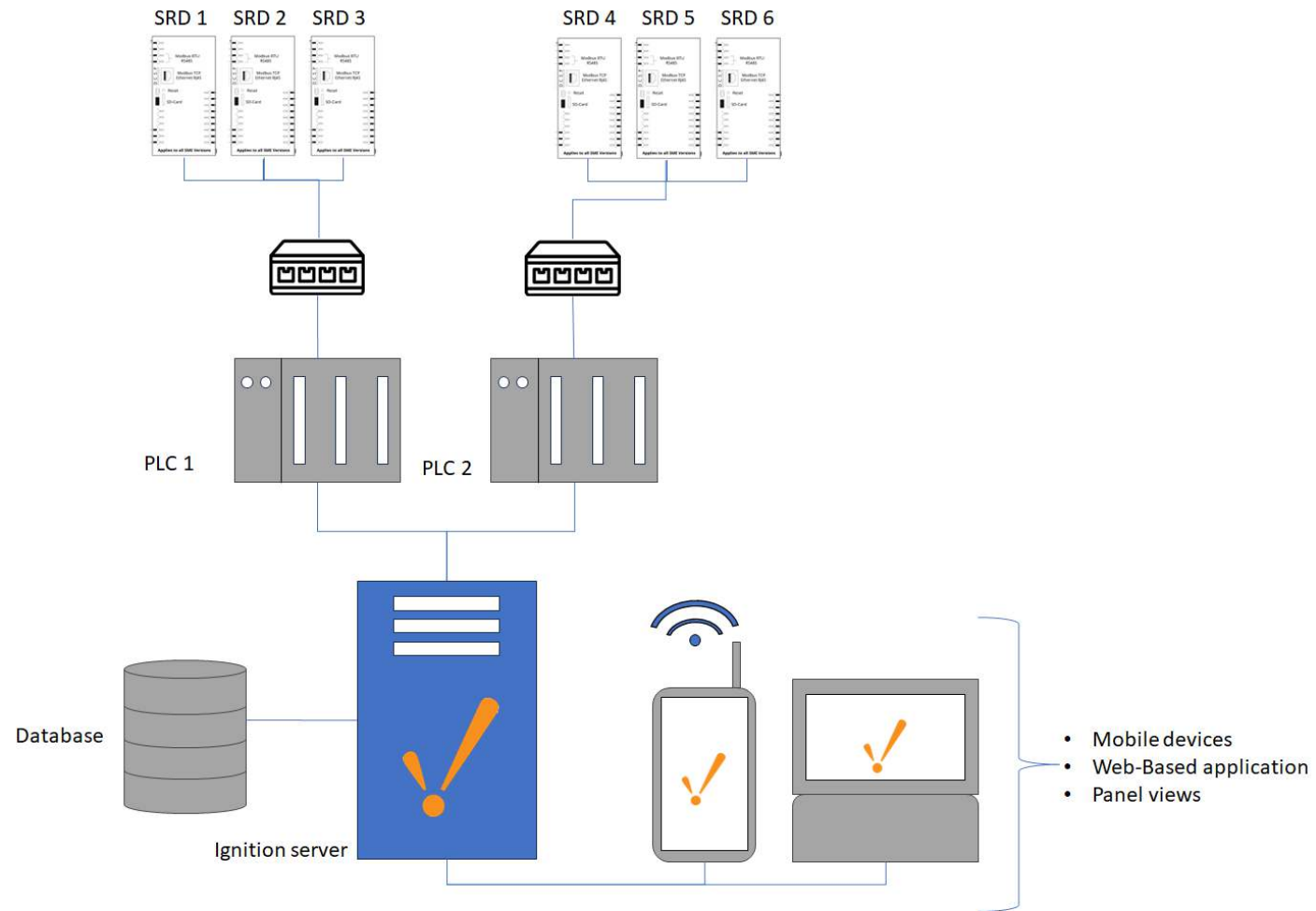
- Easy integration: Programming API & Wireless options
- Stable in harshest environments: Operational to 65 °C ambient and in high EMI process environments



ETHERNET
TCP/IP



3. What is Ignition?

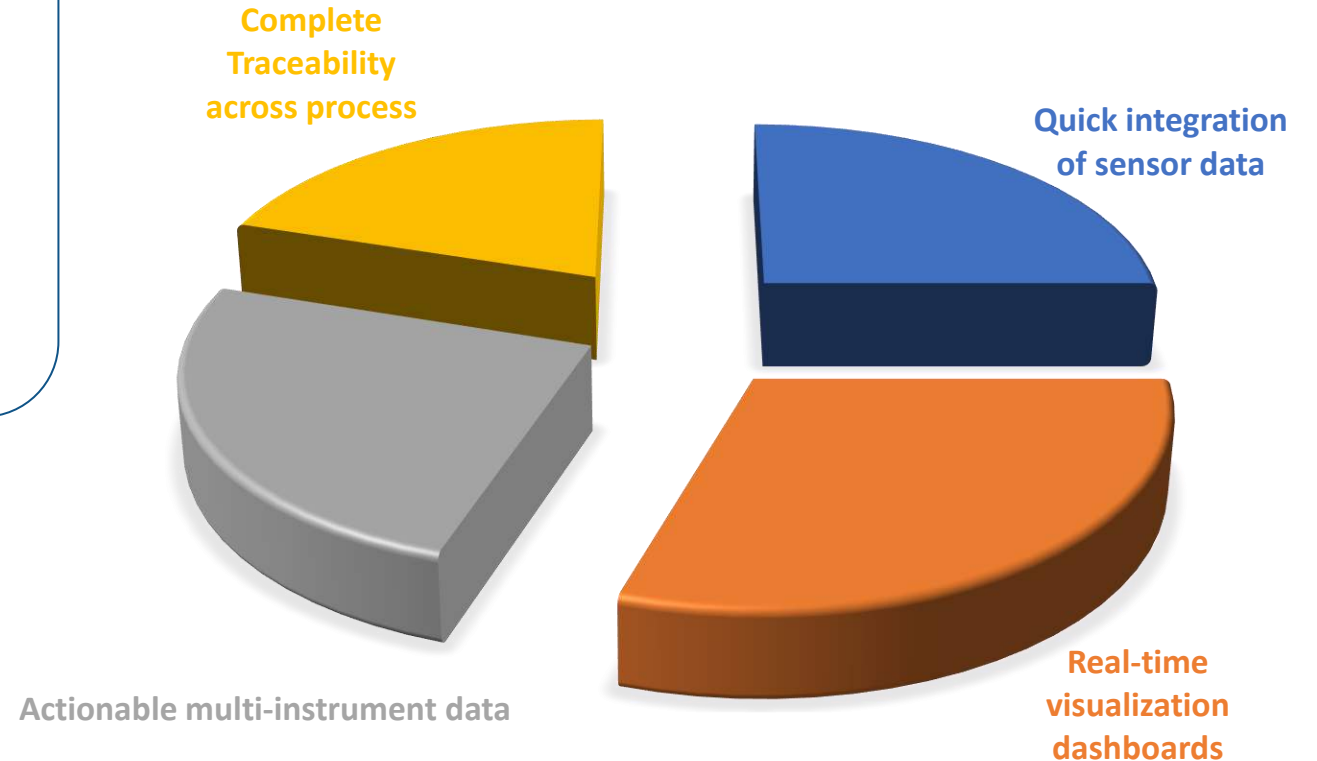


4. What can you achieve by integrating Rheonics sensors with Ignition?

Key benefits:

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

DOWNTIME MANAGEMENT



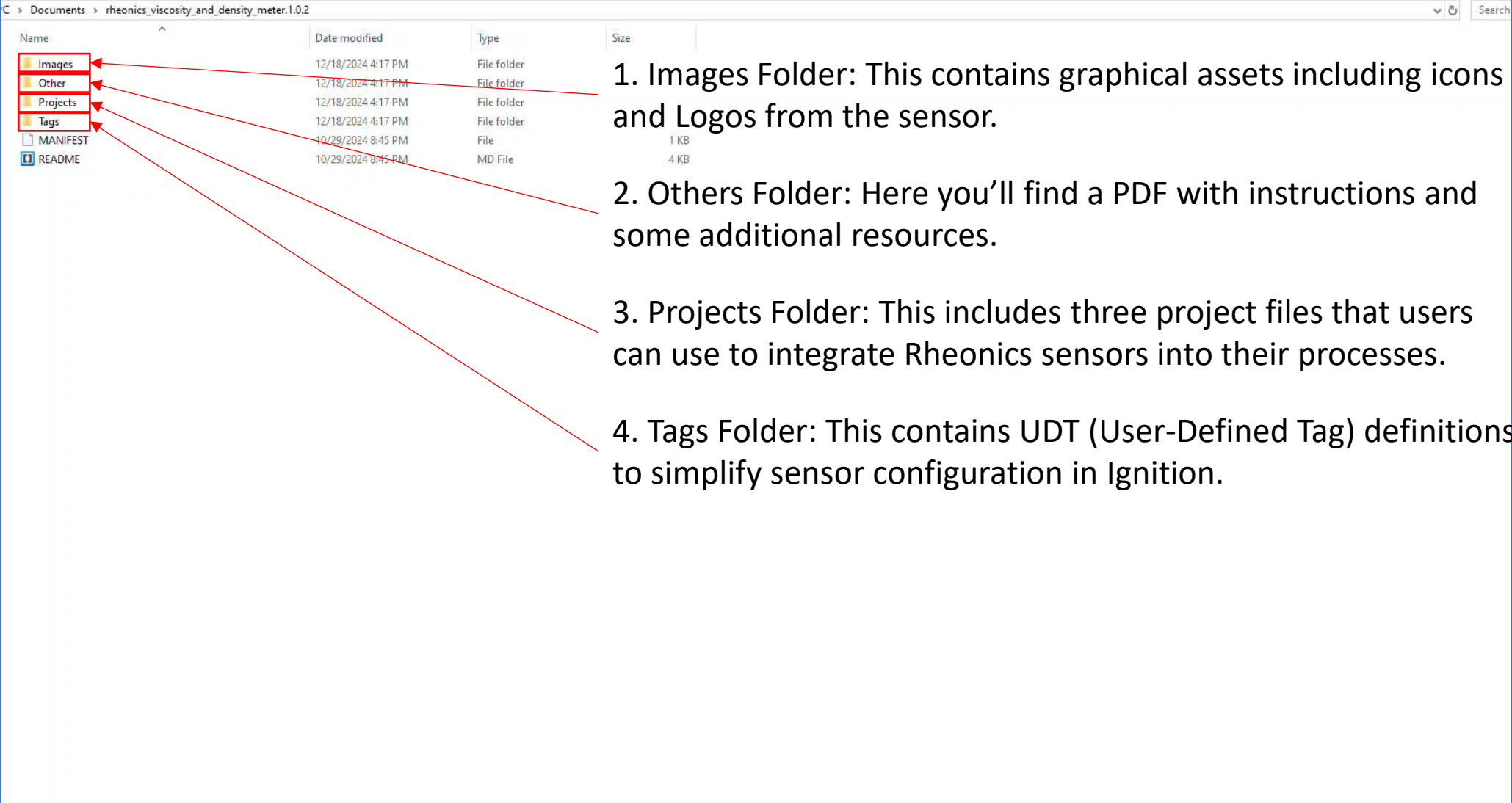
5. Where to Find Rheonics in Ignition Exchange?

The screenshot shows the Ignition Exchange website with the following elements:

- 1. Ignition Exchange website:** The browser address bar shows `inductiveautomation.com/exchange?search=rheonics`.
- 2. Search bar, type "Rheonics":** The search bar on the page contains the text "rheonics".
- 3. Rheonics Template package:** The search results show one result: "Rheonics Viscosity and Density meter". The result card includes an icon of a document and a grid, 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.

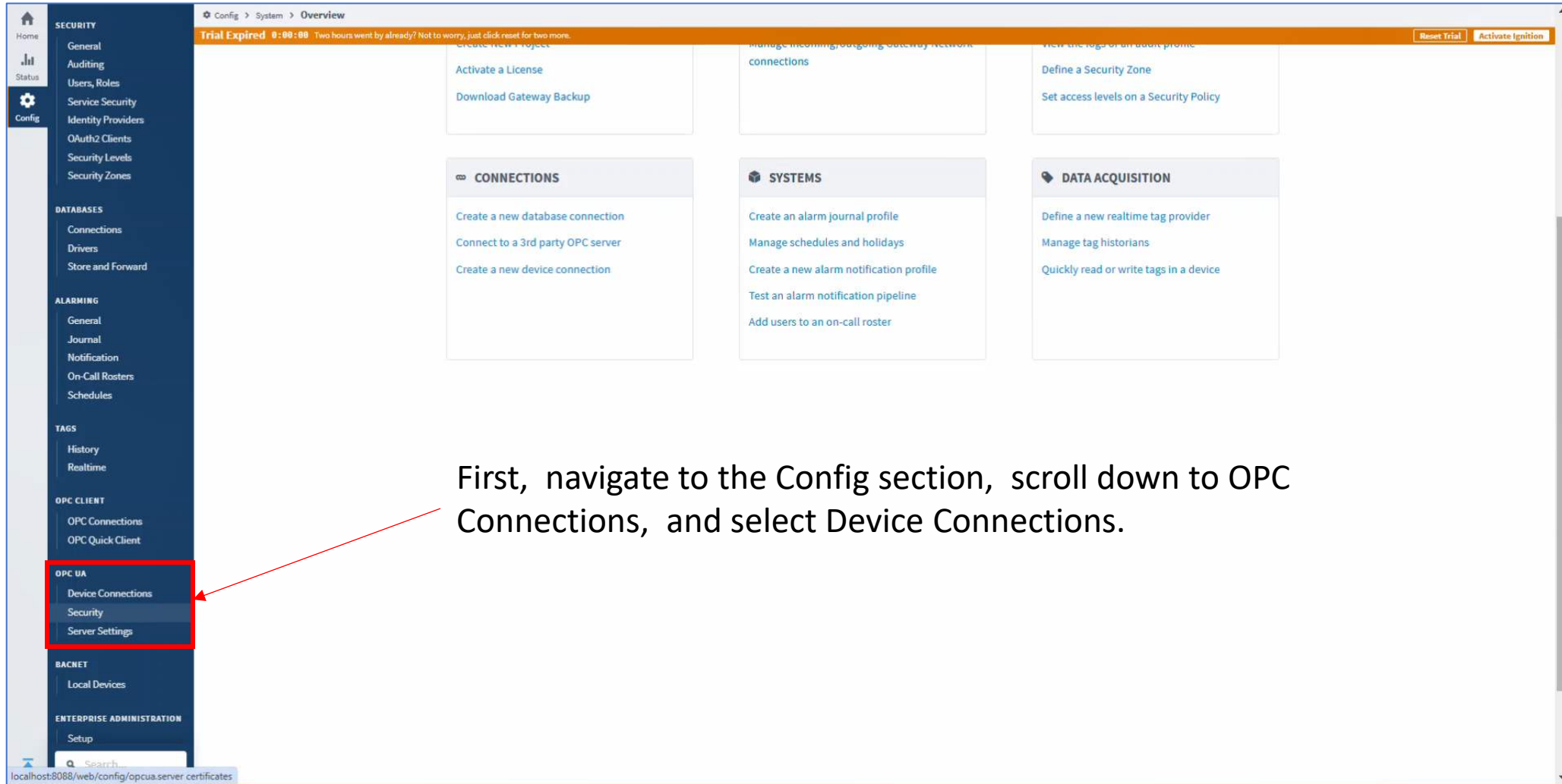
6. What is included?



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.

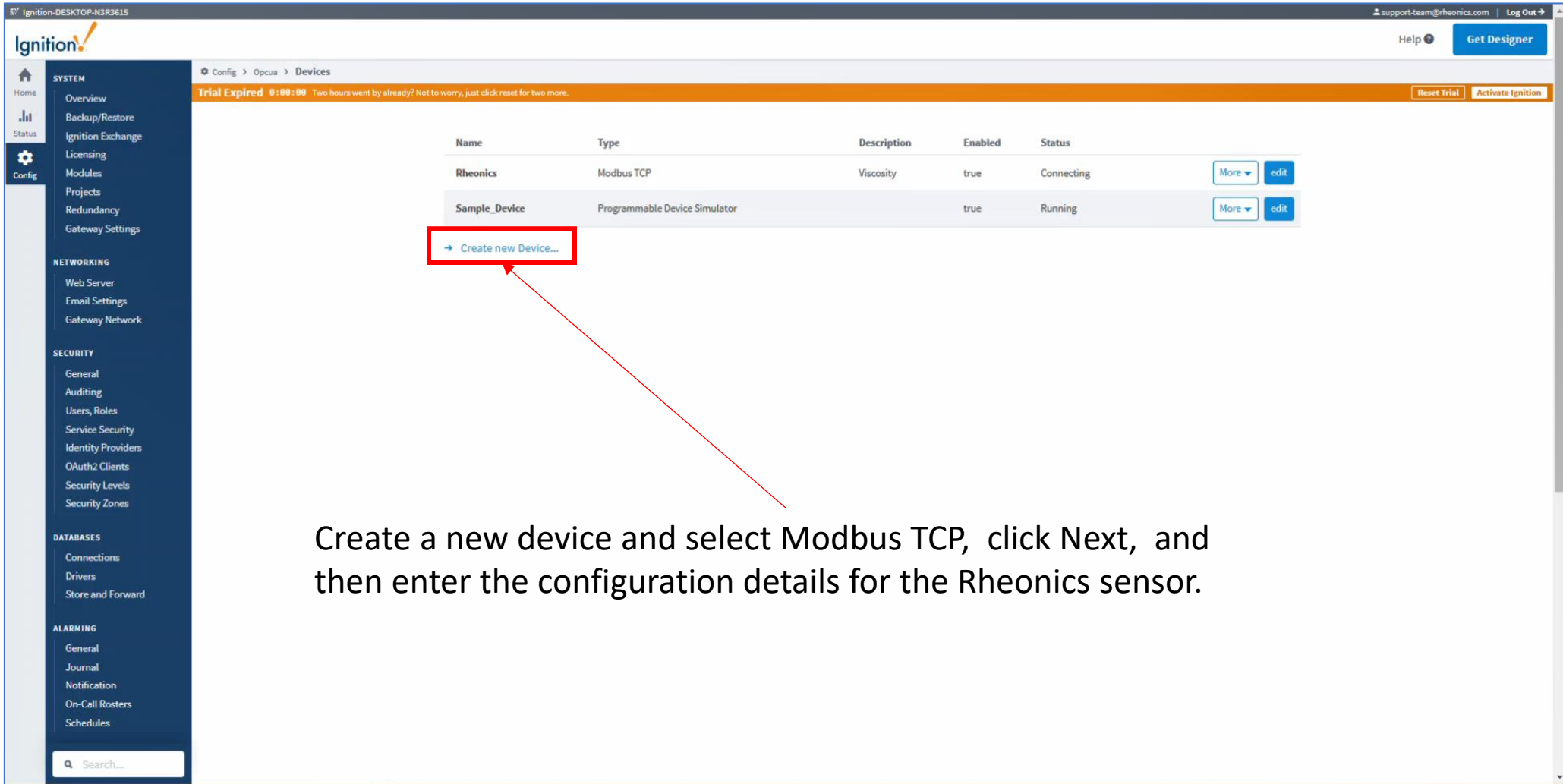
7.1. Ignition Gateway-OPC UA Device connection



The screenshot displays the Ignition Gateway configuration interface. On the left is a dark blue navigation sidebar with a 'Config' icon highlighted. The sidebar menu includes sections for SECURITY, DATABASES, ALARMING, TAGS, OPC CLIENT, OPC UA, BACNET, and ENTERPRISE ADMINISTRATION. The 'OPC UA' section is expanded, showing 'Device Connections', 'Security', and 'Server Settings'. A red box highlights the 'Device Connections' option, with a red arrow pointing to it from the accompanying text. The main content area is titled 'Config > System > Overview' and features a trial expiration banner. It contains three columns of configuration options: 'CONNECTIONS' (including 'Create a new device connection'), '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 the 'Config > Opcua > Devices' path. A trial expiration banner is visible at the top. Below the banner is a table of devices:

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

Below the table, a link '→ Create new Device...' is highlighted with a red box. A red arrow points from this link to the text below.

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
DLG	1	2	☐	0	Input Register (Hval)	143 [delete]
TR	1	2	☐	0	Input Register (Float)	95 [delete]
VLG	1	2	☐	0	Input Register (Float)	135 [delete]
SST	1	2	☐	0	Input Register (Int16)	39 [delete]
SSM	1	8	☐	0	Holding Register (Double)	1000 [delete]
KVS	1	2	☐	0	Input Register (Float)	65 [delete]

Radius: 10

Add Row

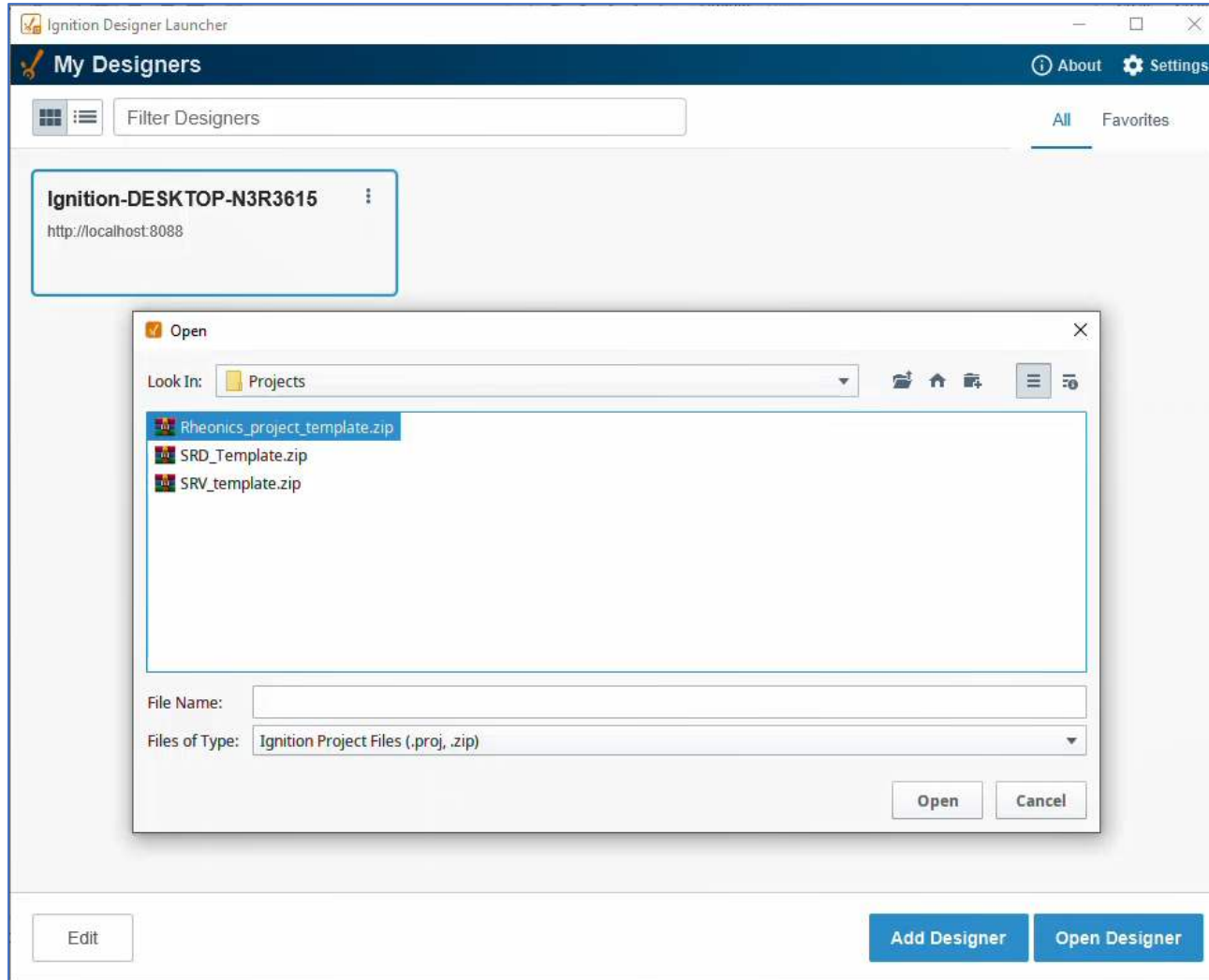
Save

✓ 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

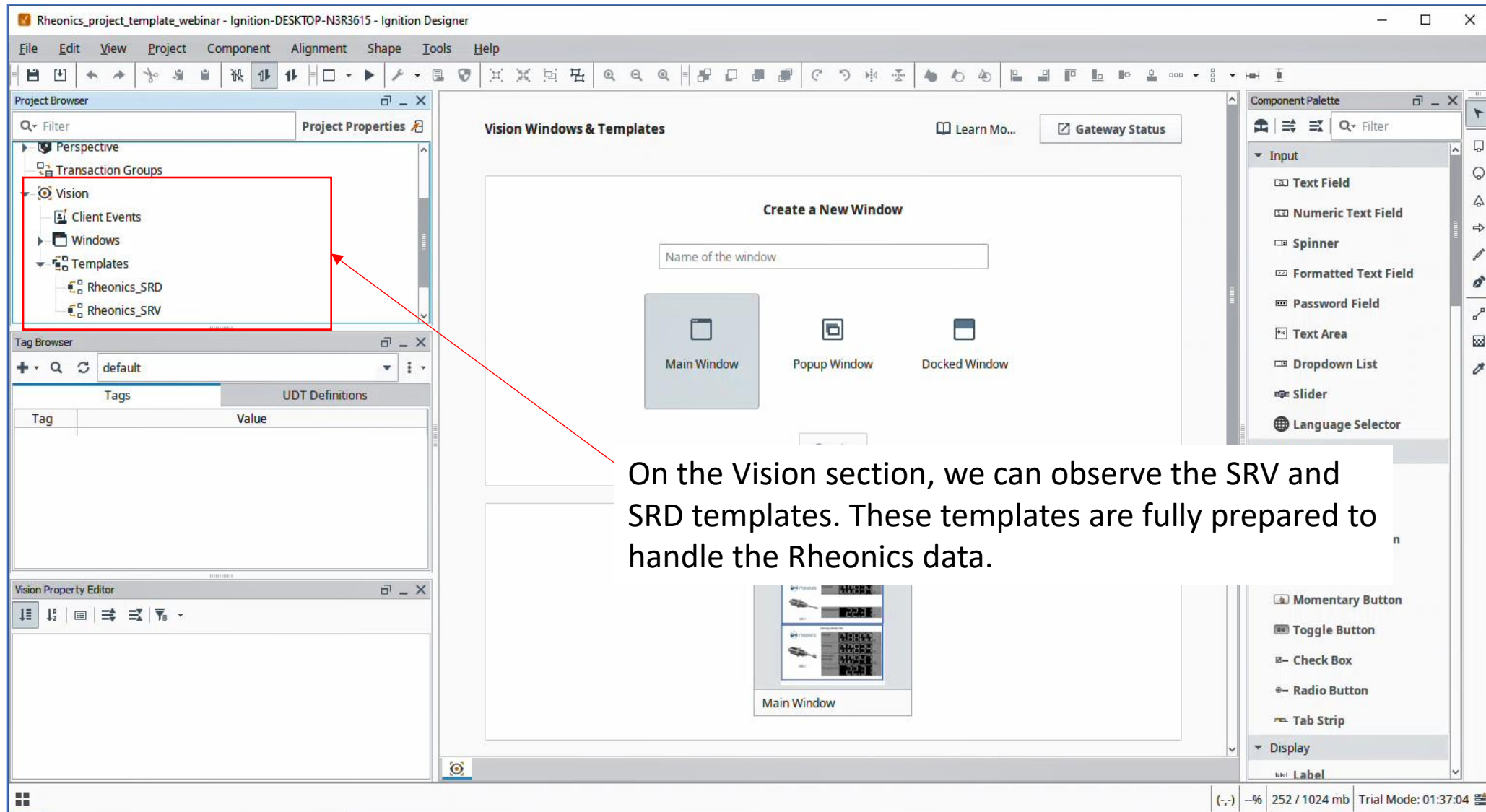


Add a new project using the material available on Rheonics Package downloaded from Ignition exchange website

- 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

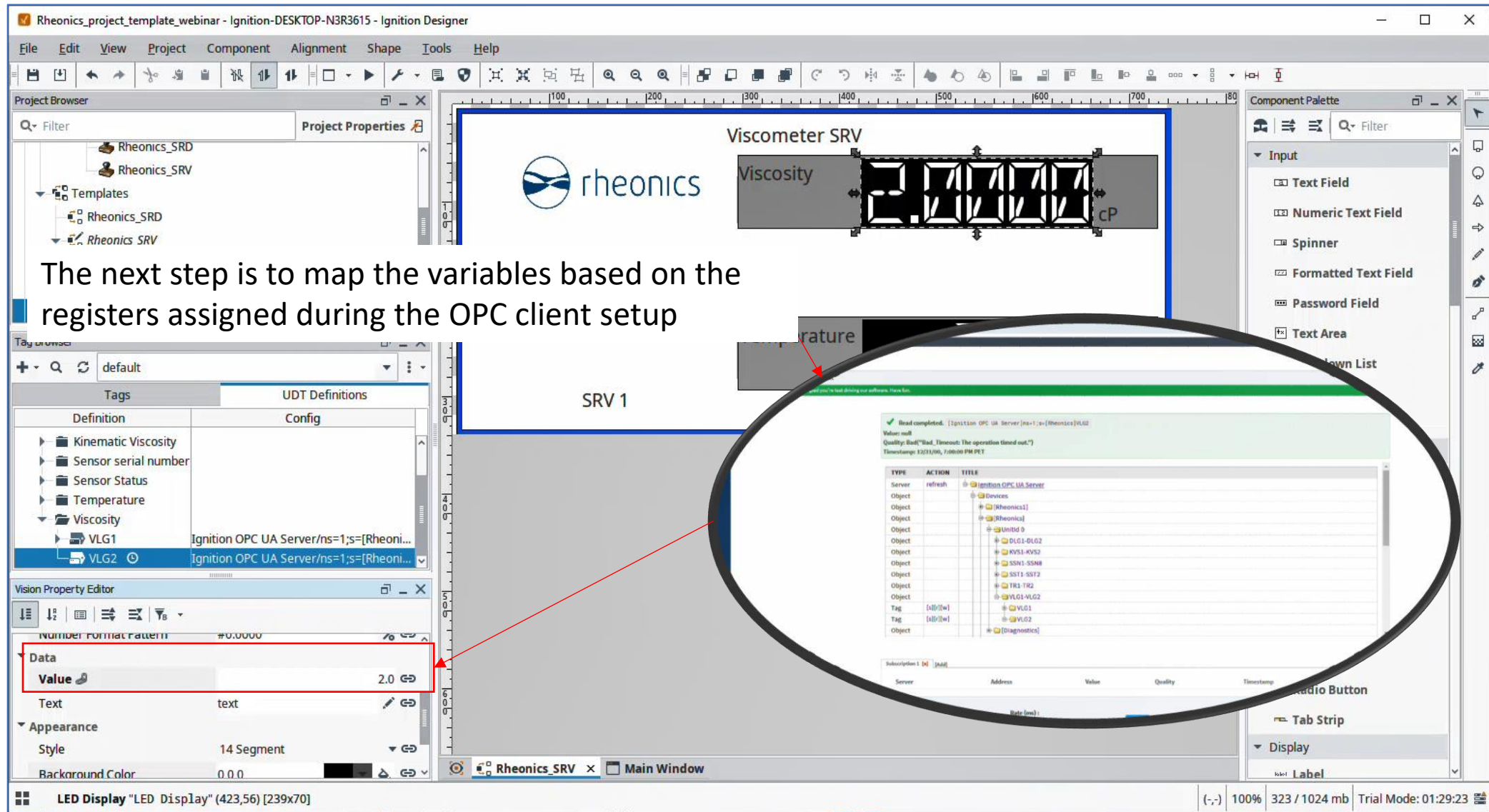


The screenshot displays the Ignition Designer software interface. The title bar indicates the project is 'Rheonics_project_template_webinar - Ignition-DESKTOP-N3R3615 - Ignition Designer'. The menu bar includes File, Edit, View, Project, Component, Alignment, Shape, Tools, and Help. The toolbar contains various icons for file operations, navigation, and design tools. The Project Browser on the left shows a tree structure with 'Perspective' selected, followed by 'Transaction Groups', 'Vision', 'Client Events', 'Windows', and 'Templates'. Under 'Templates', 'Rheonics_SRD' and 'Rheonics_SRV' are listed. A red box highlights this 'Templates' section, with a red arrow pointing from it to a text box. The main workspace is titled 'Vision Windows & Templates' and features a 'Create a New Window' dialog with a text field for 'Name of the window'. Below the dialog are three window type icons: 'Main Window', 'Popup Window', and 'Docked Window'. At the bottom of the workspace, a preview of a 'Main Window' is shown, displaying a Rheonics sensor interface with multiple data readouts. The Component Palette on the right lists various UI components under the 'Input' category, including Text Field, Numeric Text Field, Spinner, Formatted Text Field, Password Field, Text Area, Dropdown List, Slider, and Language Selector. The bottom status bar shows '(,-) -%' zoom, '252 / 1024 mb' memory usage, and 'Trial Mode: 01:37:04'.

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 shows the Ignition Designer interface with the following components:

- Project Browser:** Shows the project structure with folders for Rheonics_SRD, Rheonics_SRV, and Templates.
- Tag Browser:** Shows the tags for the SRV, including Viscosity, Temperature, and VLG1 and VLG2.
- Vision Property Editor:** Shows the properties for the LED Display, with the Value property highlighted.
- Component Palette:** Shows the input components, including Text Field, Numeric Text Field, Spinner, Formatted Text Field, Password Field, and Text Area.
- OPC UA Server Configuration:** A large oval highlights the configuration window, showing the server details and the tags mapped to the SRV.

TYPE	ACTION	TITLE
Server	refresh	Ignition OPC UA Server
Object		Devices
Object		[Rheonics1]
Object		[Rheonics]
Object		Unit01
Object		DL01-DL02
Object		KVS1-KVS2
Object		SSN1-SSN8
Object		SS11-SS12
Object		TR1-TR2
Object		VLG1-VLG2
Tag	[A]([w]	VLG1
Tag	[A]([w]	VLG2
Object		[Diagnostics]

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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