



DraMS Diagram Viewer

DraMS Ops Training

robert.g.barbour@nasa.gov

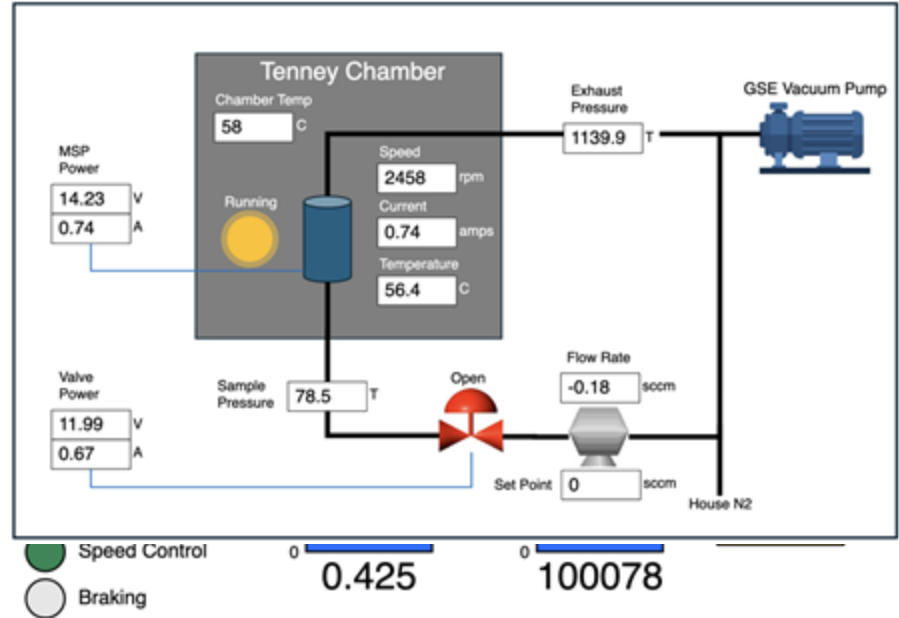
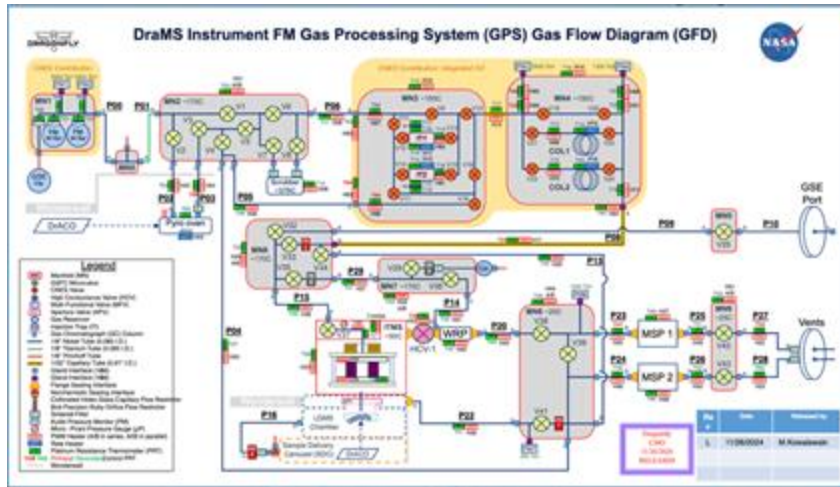
eric.i.lyness@nasa.gov



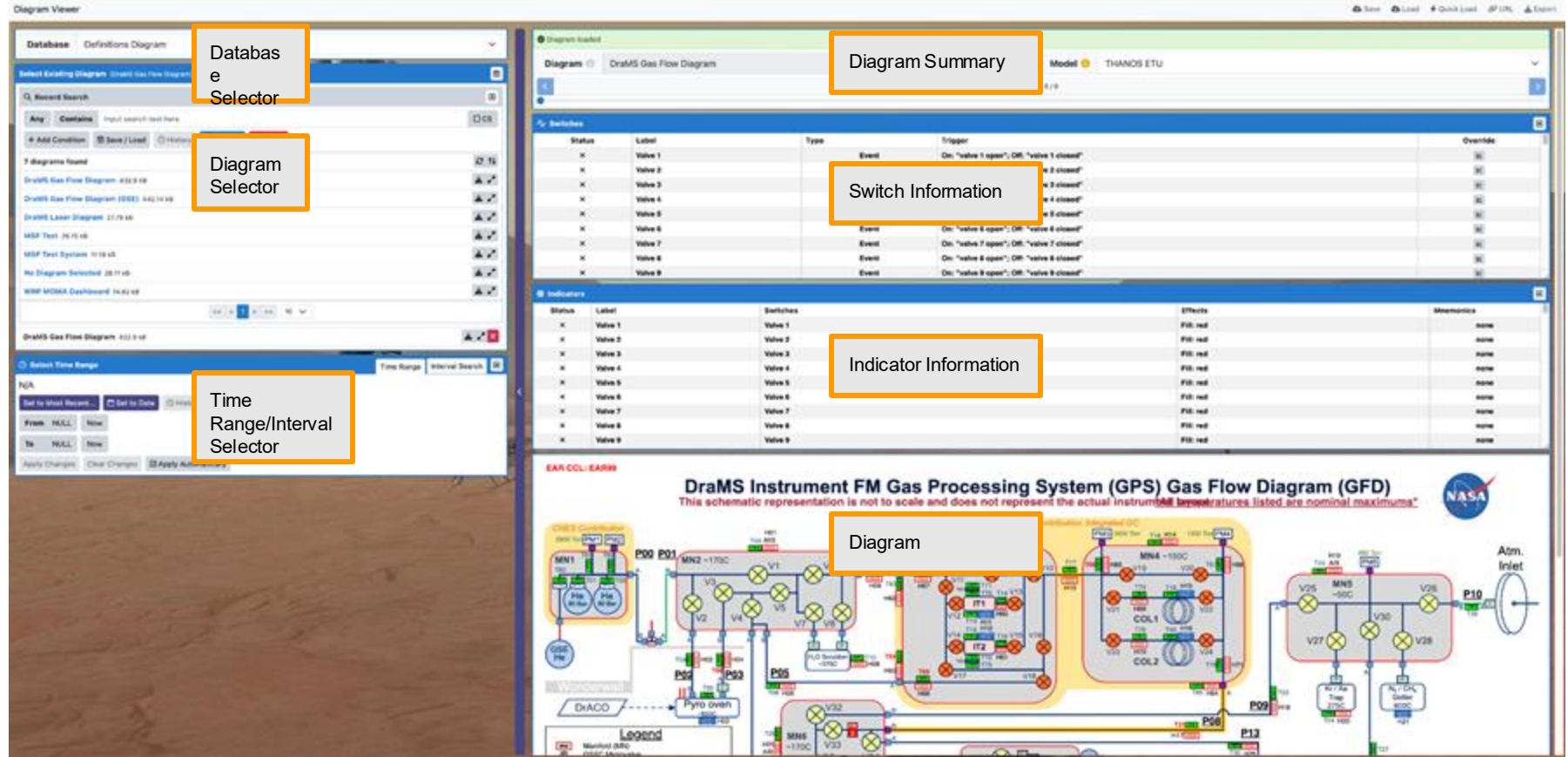
- **Mnemonics:** A named data channel or field
Example: A temperature sensor or a boolean state
- **Model:** A separate system with independent data
Example: Engineering model or flight model
- **Events:** A text label with for an instance in time.
Example: 01-17-2025 12:32:21 “Started the pump”
- **Diagrams:** A Diagram is an SVG image with an accompanying set of rules about how it should change in response to data. Those rules are divided into Switches and Indicators
- **Switches:** A Switch is an on/off logical value. These can be defined as Event Switches, which turn on or off by matching text in Events, Mnemonic Switches, which turn on when a mnemonic is within a specific range, or Logical Switches, which allow you to combine multiple other switches
- **Indicators:** An Indicator associates Switches with visual effects and particular elements in the Diagram image. Indicators can change colors, update text, or apply highlighting

DraMS Diagram Viewer

The Diagram Viewer tool brings diagrams and schematics alive by changing diagram attributes, such as color or text, based on telemetry data.



DraMS Diagram Viewer Overview



The screenshot shows the DraMS Diagram Viewer interface. On the left, there is a sidebar with a 'Database' section containing a 'Select Existing Diagram' dropdown and a 'Recent Search' section. Below this is a 'Diagram Selector' section showing a list of diagrams. At the bottom of the sidebar is a 'Time Range/Interval Selector' with fields for 'From' and 'To' and a 'Time Range' dropdown. The main area on the right is divided into several sections. At the top is a 'Diagram Summary' section showing the 'DraMS Gas Flow Diagram' and the model 'THANOS ETU'. Below this is a 'Switches' table with columns for Status, Label, Type, Event, Trigger, and Override. The table lists 9 valves. Below the switches is an 'Indicators' table with columns for Status, Label, Switches, Effects, and Measurement. The table lists 9 valves. At the bottom is a large 'Diagram' section showing a detailed schematic of the 'DraMS Instrument FM Gas Processing System (GPS) Gas Flow Diagram (GFD)'. The schematic includes various components like valves, sensors, and flow paths, with a legend at the bottom left.

Database Selector

Diagram Selector

Time Range/Interval Selector

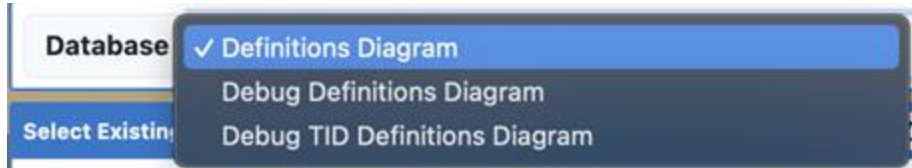
Diagram Summary

Switch Information

Indicator Information

Diagram

Selecting a Diagram (Database Selection)



Database Selector: Select which database to view diagrams from here.

Selecting a Diagram (Diagram Listing/Selection)



Select Existing Diagram (Minature Scroll Pump GSE)

Record Search

Any Contains Input search text here CS

+ Add Condition Save / Load History Search Clear

5 diagrams found

DraMS Gas Flow Diagram	432.9 kB	Download Share
DraMS Gas Flow Diagram (GSE)	237.53 kB	Download Share
DraMS Laser Diagram	27.79 kB	Download Share
Minature Scroll Pump GSE	63.98 kB	Download Share
WRP MOMA Dashboard	14.82 kB	Download Share

« « 1 » » 10 ▾

Minature Scroll Pump GSE 63.98 kB Download Share Close

Diagram List Collapser: Clicking this will open/collapse the list of existing diagrams. Note: the diagram list will automatically collapse after selecting a diagram, click this to reopen the diagram list.

Existing Diagrams List: The existing diagrams for the selected database are listed here.

Selected Diagram: The selected diagram is listed here.

Time Range Selection



Select Time Range

Time Range

Interval Search

Mon, Dec 9 2024 11:08:48 to Wed, Jan 8 2025 11:08:48 EST (UTC-05:00) (30d)

Set to Most Recent...

Set to Date

History

From	ISO	Now	2024-12-09	T	11:08:48.146
To	ISO	Now	2025-01-08	T	11:08:48.146

Apply Changes

Clear Changes

☒ Apply Automatically

Time Range: Select time period for the data you want to view. There are a multitude of ways to accomplish this. From absolute dates, to most recent data, to data from test names.

Time Range Selection



Select Time Range

Time Range

Live

Interval Search

Tue, Sept 5th, 2023 10:12:21 to Tue, Sept 5th, 2023 11:12:21
UTC-04:00 (1h)

Set to Most Recent...

Set to Date

History

Hour

ow

2023-09-05

T

10:12:21.345

Day

ow

2023-09-05

T

11:12:21.345

Week

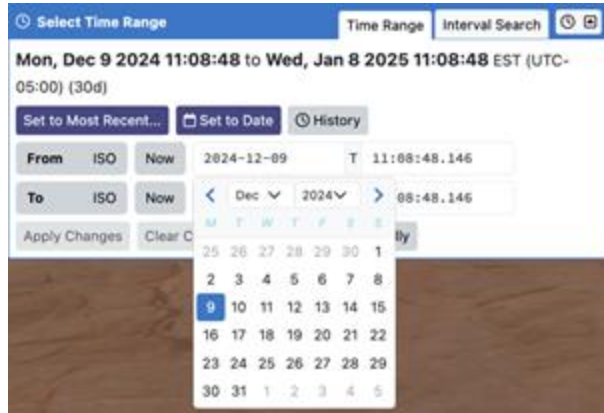
30 Days

Clear Changes

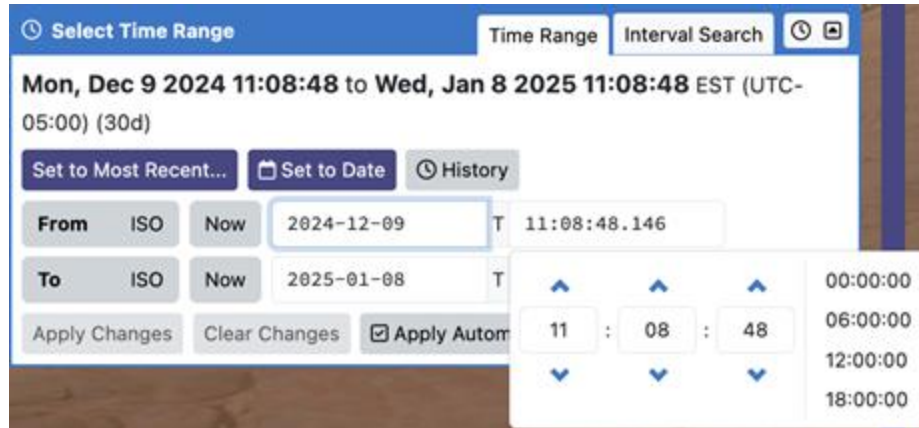
☒ Apply Automatically

Set to Most Recent...: Allows you to quickly find the latest hour, day, week, or month of data for the selected model.

Time Range Selection



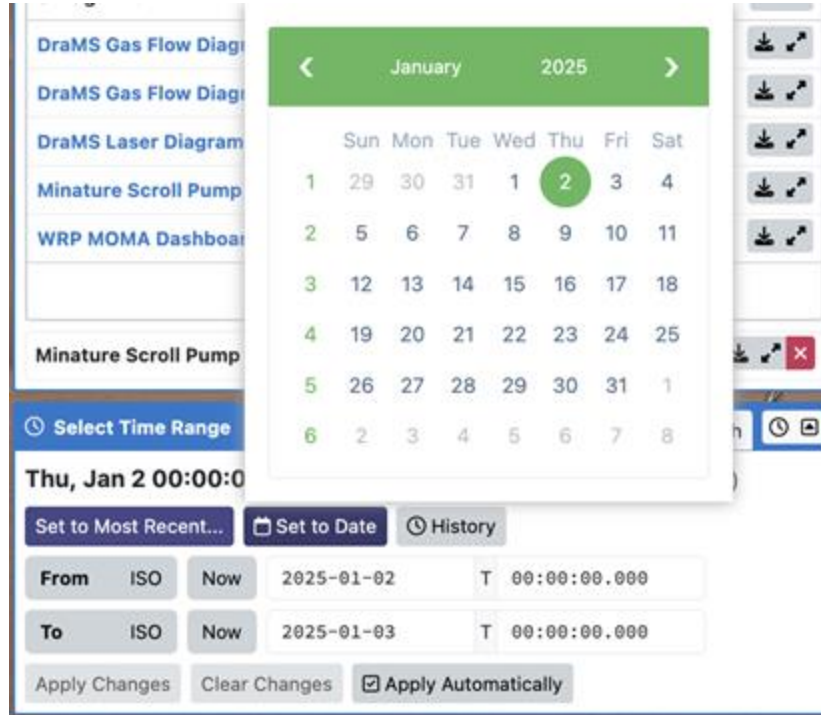
Setting the Date: Calendars will pop up when setting the start and end dates.



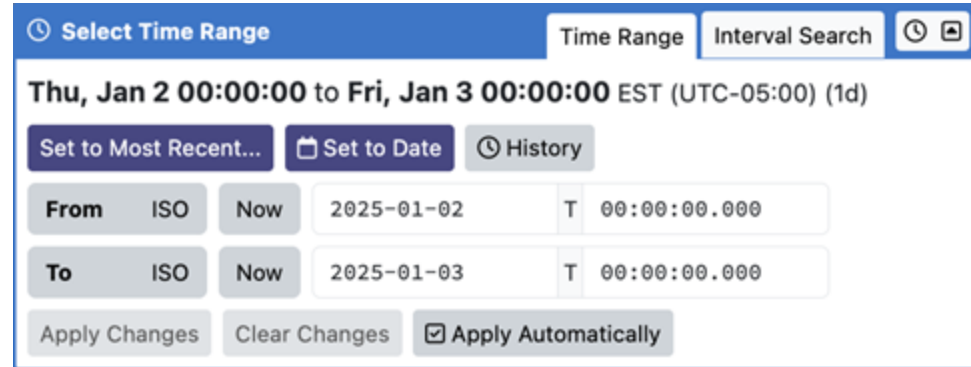
Setting the Time: A 24 hour clock will pop up when setting the start and end times.

Time Range Selection

Clicking the “Set to Date” button will pull up a calendar.



Selecting a date will set the start and end times to contain the 24 hours of the chosen date.



Time Range Selection (Interval)



Select Time Range Time Range Interval Search

Thu, Jan 2 16:55:37 to 17:55:44 EST (UTC-05:00) (1h 7s)

Selected Interval

2025-01-02T16:55:37.575 100 Pump Start

Event Databases ☒ Event ☐ Event File ☐ Test Stand Filter Events

Any Contains Input search text here ☐ CS

+ Add Condition Save / Load History Search Clear

☒ Intervals ☐ Instants

1190 events found

2025-01-02T16:55:37.575 100 Pump Start	Interval Marker	
2025-01-02T14:34:40.946 100 Pump Start	Interval Marker	
2024-12-31T10:30:06.719 100 Pump Start	Interval Marker	
2024-12-31T07:41:54.789 100 Pump Start	Interval Marker	
2024-12-30T15:45:55.593 100 Pump Start	Interval Marker	
2024-12-30T12:47:43.237 100 Pump Start	Interval Marker	
2024-12-30T11:05:31.431 100 Pump Start	Interval Marker	
2024-12-23T16:27:12.610 100 Pump Start	Interval Marker	
2024-12-23T13:23:00.619 100 Pump Start	Interval Marker	
2024-12-23T11:29:48.267 100 Pump Start	Interval Marker	

« « 1 2 3 4 ... 119 » » 10 ▾

Interval Search: An interval represents an event with a time range. If you are looking at a model that has saved intervals, you can select one and use its start/end time.

Selected Interval: The interval you selected will be displayed here. You can go to the “Time Range” tab, see the new start/end time, and adjust them if need be.

Available Events: List of available intervals saved as named events.

The event file naming convention is:

(Date)T(Time) (Event ID) (Event Name)

The software that runs the tests automatically records key events.

Viewing the Selected Diagram



Diagram loaded

Diagram: Minature Scroll Pump GSE Model: Scroll Pump Life Test

2025-01-02 17:55:44.750 (UTC-05:00) State 28 / 28

Switches

Status	Label	Type ↑	Trigger	Override
✓	Pump Running	Mnemonic	MSP.Speed: [10, =]	☐
✓	valve state	Mnemonic	MSP.InletValve.Current: [0.1, =]	☐

Indicators

Status	Label	Switches	Effects	Mnemonics
✓	Chamber Control Temperautre	Always On	Text, MN: MSP.Chamber_Control_Temp	MSP.Chamber_Control_Temp
✓	Pump Running	Pump Running	Fill: yellow, Stroke: none, Highlight: yellow	MSP.Speed
✓	Pump Speed	Always On	Text, MN: MSP.Speed	MSP.Speed
✓	Pump Current	Always On	Text, MN: MSP.PS.Current	MSP.PS.Current
✓	Pump Temperature	Always On	Text, MN: 07_MSP_Outlet_End_Plate	07_MSP_Outlet_End_Plate
✓	sample pressure	Always On	Text, MN: Sample_Pressure	Sample_Pressure

The Diagram Summary provides some basic information and controls.

Displays all switches for the current Diagram, including their current status and override controls.

Displays all indicators for the current Diagram, including their current status.

Displays the Diagram here. Scroll to zoom and click/drag to pan. If the diagram has interactable elements, they can be clicked.

Diagram Summary



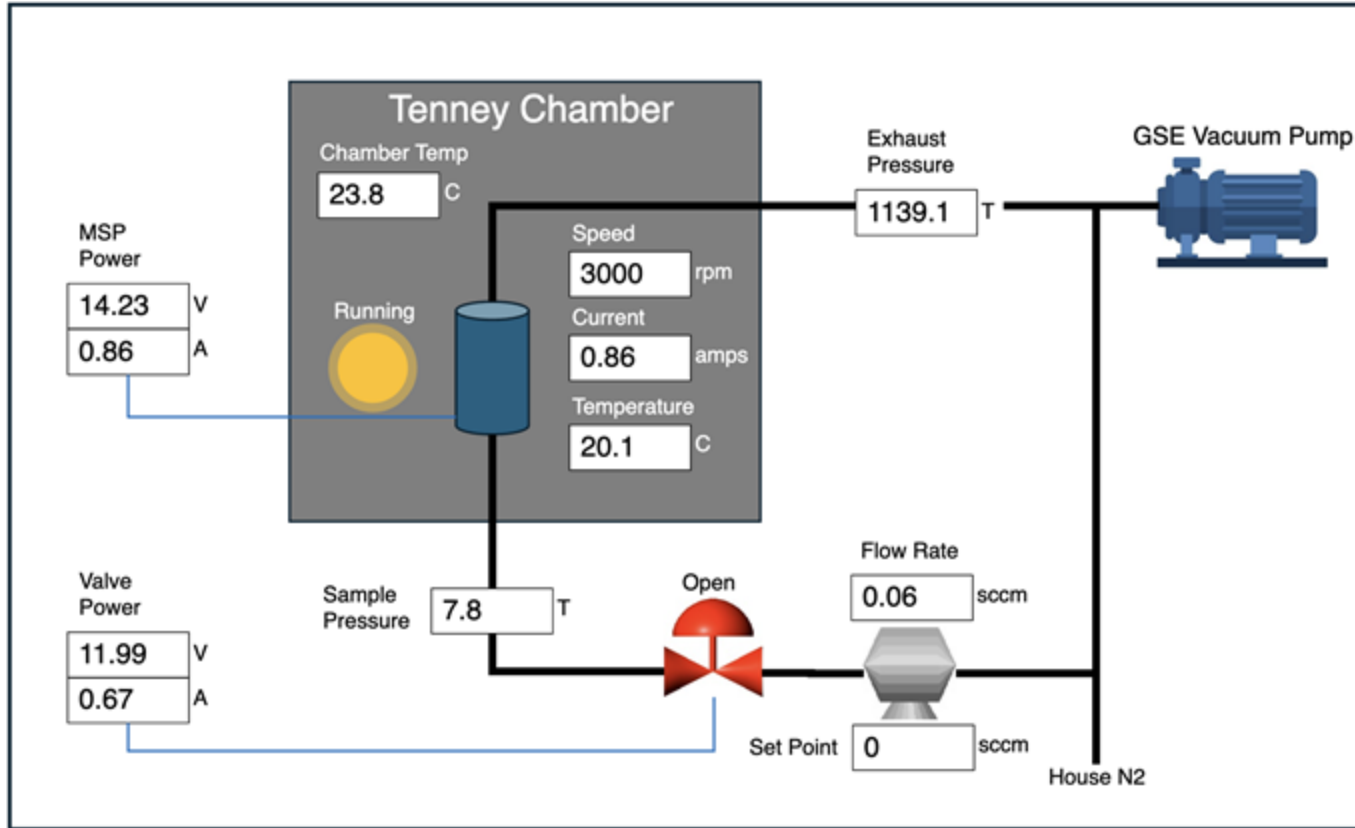
The selected Diagram's name, which is used for all exported files.

Select the hardware model here. The model determines the data source and mnemonic definitions.

The image shows a software interface with a green status bar at the top that says "Diagram loaded". Below this is a selection area with two dropdown menus. The first menu is labeled "Diagram" and has an information icon (i); it currently shows "Minature Scroll Pump GSE". The second menu is labeled "Model" and also has an information icon (i); it currently shows "Scroll Pump Life Test" with a downward arrow indicating it is a dropdown. Below these menus is a timeline bar with a left arrow, a right arrow, and a blue dot. The text in the center of the timeline bar reads "2025-01-02 17:55:44.750 (UTC-05:00) State 28 / 28".

Select an instant within the loaded data. Can be used to step forward and backward through data states. This changes the data displayed in the switches and indicators.

Viewing the Data

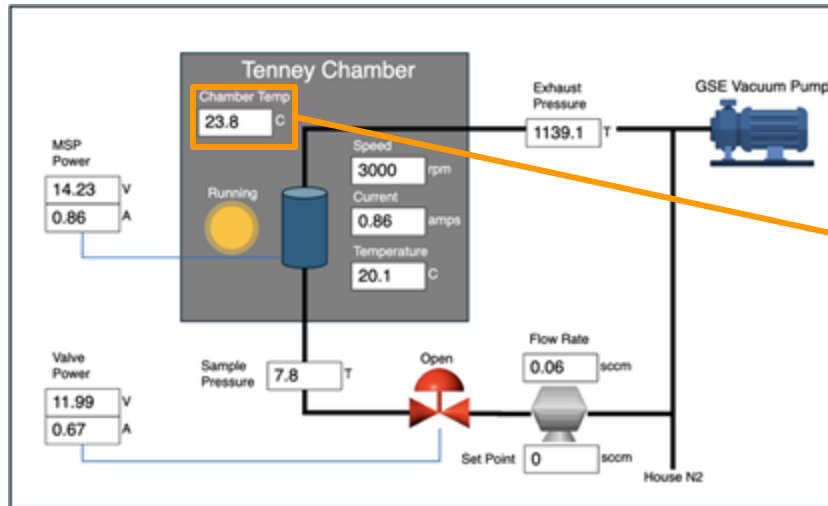


You can view the values of each indicator in the current data state on the diagram. These values will update as you step through the available states on the diagram summary.

Viewing the Data



Clicking on an indicator on the diagram will open a window containing the mnemonic data plotted across the selected time range.



Sharing, Saving, and Loading Configurations



 Plot Configurations  Save  Load  Quick Load  URL  Export

It is possible to share and save the current state of the tool, as well as load a previously saved configuration. Please click [here](#) to view the sharing, saving, and loading tutorial.