

Motor Inventory User Manual

Created By: Oak Ridge National Laboratory

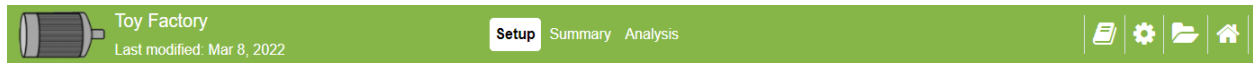
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Module Navigation

Use the top banner to navigate around the module. A footer bar with “Next” and “Back” button can also be used to move through the Setup.



Main Tabs

Setup – Create your motor inventory.

Summary – Reports and visuals of your inventory.

Analysis – Quick bulk Replace/Rewind analysis.

Additional Buttons

Book – The book will open a new window with the Motor Inventory User Manual you are reading.

Gear – The gear wheel will navigate you to MEASUR’s global settings page.

Folder – The folder will navigate you to the assessment dashboard folder this assessment is in.

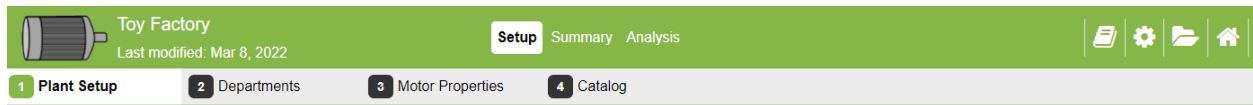
Home – The house will bring you to MEASUR’s home page.

Setup

The system setup is where you enter the baseline data for your wastewater treatment system. The system setup is broken up into four tabs, each with a related set of input fields to be filled out. Field by field help text is provided for each input field, it will appear in the help panel when an input field is clicked on.

Navigation

Use the second bar to navigate to different sections of the Setup. The tabs will be color coded to indicate the state of the corresponding tab data. Tabs will be disabled if the previous steps have errors in their data.



Plant Setup – Select the units of measure to be used for the inventory.

Departments – Setup departments that each motor will belong to.

Motor Properties – Chose which motor fields to include in your inventory catalog

Catalog – Data entry area in which you add the motors and their properties for each department.

Tab colors:

Green - Valid data entered for tab.

Red – Invalid or missing data entered for tab.

Yellow – Data entered outside of expected range.

Gray – Disabled tab, previous tabs are incomplete.

Motor Properties

Select the motor properties you want to track in your inventory catalog. An exhaustive list of properties is provided and turned on by default. Only a few are required for the catalog, and a few others are required for the Batch Analysis. Those required properties are indicated in the application.

Help text in the panel on the right will give a description of any property that is clicked on.

The properties are broken up into like sections, toggle entire sections on/off with the slider on the right side of the section label.

SELECT MOTOR PROPERTIES

Select motor properties you want to track in your inventory catalog.

NAMEPLATE DATA

☒ Manufacturer

☒ Model

☒ Motor Type

☒ Enclosure Type

☒ Voltage Rating

☒ Service Factor

☒ Insulation Class

☒ Weight

☒ Number of Phases

☒ Full Load Speed

☒ Full Load Amps

LOAD CHARACTERISTICS

☒ Efficiency at 75% Load

☒ Efficiency at 50% Load

☒ Efficiency at 25% Load

☒ Idle Amps

HELP

Motor Properties Help

Select motor properties you want to track in this motor inventory.

Nameplate Data

Enter general information that can be found on the motor's nameplate.

Manufacturer

The company that made the original motor.

Catalog

The “Catalog” is where you add and manage your motors. There will be a tab representing each department that is added in the “Departments” tab.

EDIT MOTOR Delete

Motor Name: Small Paint Mixer
Description: This motor mixes the paint for smaller batches
[Set Data From Existing Motor](#)

NAMEPLATE DATA

Efficiency Class: Energy Efficient
Est. Nominal Efficiency: 94.5 %
[Estimate Efficiency](#)

★ Rated Motor Power: 100 hp
Line Frequency: 60 Hz
Manufacturer: Baldor-Reliance
Model: AUTOMOTIVE APPROVED, 7EH
Motor Type: NEMA B
Enclosure Type: TEFC
Rated Voltage: 460 V
Service Factor: 115 %
Insulation Class: H
Weight: 68 lb
Number of Phases: 3
Full-Load Speed: 1780 rpm
Full-Load Amps: 113.84 A
[Estimate Full-Load Amps](#)

“Set Data From Existing Motor” will open a modal with a list of generic motors for you to choose from to fill out many of the input fields.

Other links will be provided underneath input labels that can be used to calculate field values.

The right hand panel has the “Department Catalog”, all the motors added to that department. Here you can add new motors, delete existing motors or select them to make changes.

DEPARTMENT CATALOG						HELP	
Name	Op. Hours (hrs/yr)	Eff. Class	Est. Efficiency (%)	Rated Power (hp)	Energy Usage (kWh/yr)	Energy Cost (\$)	Emissions Output (tonne CO ₂)
> Small Paint Mixer	8760	Energy Efficient	94.5	100	656,467	43,327	282,793.02
Paint Pump	8760	Energy Efficient	94	125	201,973	13,330	87,006.08
Large Blower	8760	Energy Efficient	94.5	150	980,244	64,696	422,269.51
Large Paint Mixer	8760	Premium Efficient	96.2	200	1,018,330	67,210	438,675.99
Adhesive Agitator	8760	Energy Efficient	94.5	150	319,541	21,090	137,651.69

[+Add New Motor](#)

Field by field help text is also found in the right hand panel under the “Help” tab. As input fields are clicked the panel will update with corresponding help text.

DEPARTMENT CATALOG **HELP**

Motor Catalog Help
Add motors and fill out the property information for departments.

Nameplate Data
Enter general information that can be found on the motor's nameplate.

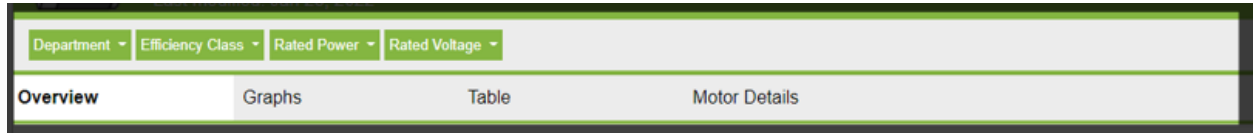
Enclosure Type
The type or style of the motor enclosure. Most commonly found enclosure types are ODP and TEFC

Enclosure Options	
ODP	Open Drip Proof
TEFC	Totally Enclosed Fan-Cooled
EXPL	Explosion Proof
TENV	Non-Ventilated
WP	Weather Protected
TEBC	Totally Enclosed Blower-Cooled
TEAO	Totally Enclosed Air-Over

Summary

The summary provides a space to view all of your motors together. It provides table and graphical representations of the individual motors and department summaries.

Use the dropdown filters to adjust which motors are included in the summary.



The screenshot shows the top section of the Summary interface. It features four dropdown filters: Department, Efficiency Class, Rated Power, and Rated Voltage. Below these filters is a row of four tabs: Overview, Graphs, Table, and Motor Details. The Overview tab is currently selected and highlighted.

- Overview: Cost, energy use and emissions breakdowns of motors and departments.
- Graphs: Bar or pie charts representing the number of motors having each motor property.
- Table: A table that can be copied to clipboard with all the motors selected and their properties.
- Motor Details: A printable report with the details of each motor and their departments.


Analysis

The analysis provides a simple batch analysis to help estimate the benefits of replacing or rewinding your motors. Use the same filters as the summary section to select which motors to include.

Toggle between table or graphical representations of the analysis on the left.

Choose the “Payback Threshold”, the number of years to determine replacing vs rewinding.

Incomplete motors cannot be determined, use the toggle on the right to hide them in the analysis.



The screenshot shows the top section of the Analysis interface. It includes the same four dropdown filters as the Summary section. Below the filters is a row of two tabs: Table and Graphs. To the right of the tabs is a label 'Payback Threshold' followed by a text input field containing the number '5' and a unit selector 'yrs'. On the far right is a toggle switch labeled 'Display Incomplete Motors', which is currently turned on.