

Manual: 5.5. Creating or Customizing the Models

We recommend following the IHM setup wizard in order to initially work with a new dataset. It is recommended to have a look at each model to check if it is good or not. Instructions for goodness of fit can be found in the section on mathematical background.

When you enter the edit page for a particular model, you will find that you can modify the training times and add exclusion criteria. We recommend that you do not do this but rather edit this information globally for the entire dataset using the IHM wizard. Changing this information for an individual model should be done only in exceptional circumstances.

The screenshot displays the 'Independent Variables' configuration window. At the top, there is a 'Model with' dropdown and a 'Set Delay Type' button. Below this, a green button reads 'Automatically select independent variables'. The main area is divided into two columns. The left column, titled 'Currently selected independent variables', lists 15 items with checkboxes and sensitivity values. The right column shows a scrollable list of 10 additional variables, each with a checkbox. At the bottom of the right column is an 'Add Selected' button. A 'Filter' button is located at the top right of the variable lists. A 'Delete Selected' button is at the bottom left of the main area.

Currently selected independent variables	Sensitivity
1. <input type="checkbox"/> STARTS: Starts	0.984
2. <input type="checkbox"/> TI0201602A: T4 Level (BK2) Channel A	0.248
3. <input type="checkbox"/> COUNTER: Cycle Counter	0.725
4. <input type="checkbox"/> LI0203301: Oil Tank	0.287
5. <input type="checkbox"/> OP_Hours: Operating Hours	0.263
6. <input type="checkbox"/> UI0201301: Starting Motor Frequency	0.794
7. <input type="checkbox"/> UI8002522: GEN. Idle Output	0.222
8. <input type="checkbox"/> Q11601031: Boiler Conductivity	0.549
9. <input type="checkbox"/> UI8001105: GEN. Generating Current	0.263
10. <input type="checkbox"/> PDI0202461: Combustion Chamber 6	1.939
11. <input type="checkbox"/> PDI0202451: Combustion Chamber 5	0.294
12. <input type="checkbox"/> UI8001104: GEN. Generating Voltage	0.233
13. <input type="checkbox"/> PDI0202411: Combustion Chamber 1	0.268
14. <input type="checkbox"/> TI1401002: Turbine Exhaust Temperature	0.242
15. <input type="checkbox"/> PDI0203321: Main Oil Filter	0.225

Additional variables (from scrollable list):

- SCH0201001: GG Rotation Rate max Setpoint
- SCL0201001: GG Rotation Rate min Setpoint
- SI0201001: GG Rotation Rate
- SI0201001A: GG Rotation Rate A
- SI0201001B: GG Rotation Rate B
- SI0201001C: GG Rotation Rate C
- ZI0201051A: GG Axial Displacement A
- ZI0201051B: GG Axial Displacement B
- VI0201061X: GG Axial Vibration Forward Bearing X
- VI0201061Y: GG Axial Vibration Forward Bearing Y
- VI0201071X: GG Axial Vibration Backward Bearing X
- VI0201071Y: GG Axial Vibration Backward Bearing Y

You may alter the selection of variables by either deleting or adding variables to the list of independent variables. You may also change more advanced settings such as the confidence level desired or the number of neurons in the neural network. The confidence level defaults to 0.9 and the number of neurons defaults to twice the number of independent variables. Please see the section on mathematical background for more details on these concepts.

Having made these changes, you will find three buttons at the bottom of the page. They will model, apply or do both (model and apply). Model means that the model will be retrained using the current settings and stored in the database. Apply means that the model will be executed on the historical data thus recomputing historical results and alarms. Generally, you will want to both model and apply.

If you only model, the historical results and alarms will be kept. This is interesting only if you have already been working with the system in an online capacity and need to retain the historical alarms for reporting purposes. If you only apply, then the model will be executed as it is. If the model has not changed, this will just reproduce the same results but will first delete the alarm history alongside and any manual alarm editing that you may have done.

