About Variable Mapping

Cycle, point-by-point, and group data acquisition activities require you to map variables to the signals you want to acquire. Perform this mapping in the Map Variables window.

Signal to Variable Mapping

The **Signal to Variable Mapping** part of the window allows you to map signals to variables.

Four types of data can be calculated for each signal that is selected for data acquisition. The data types are:

- Mean
- Minimum
- Maximum
- Array

The application only calculates data for a signal if it is mapped to a variable.

To see the variables that are available to map, click the drop-down button. If the **Filter variables by dimension and calculation type** check box is checked, the variable list includes only the variables with the same dimension and calculation type as the signal. If the check box is clear, all variables appear in the list.

If a variable is mapped to signal data, the data is calculated during the test run for those cycles that are selected or defined in the properties for the data acquisition activity. The data values for each acquired cycle are available for use in the runtime display and are saved for post-test analysis.

Default mapping

To automatically create new variables (if the defaults do not already exist) for selected signals and map them to the correct signal data calculations, click the **Use Default Variables** button. The name of each variable is the combination of the signal name and calculation name. The application also copies the new variable definitions to the Variables tab.

Alternative user variable mapping

Alternatively, you can map a user-defined variable to any signal data calculation. The variable you map must have a dimension that matches the signal data.

You cannot map a variable to a signal data calculation if the variable already contains a calculation. However, variables that contain a calculation may optionally be used in the Additional Variables to Calculate panel.

Additional Variables to Calculate

The Available Calculations panel lists variables that have a calculation. The calculations in the Selected Calculated Variables panel are performed on those variables when the data acquisition activity is performed in the test procedure. The data from the calculation is available for runtime display and for post-test analysis.

Data for a calculated variable must exist when the calculation occurs. If a calculation is based on one or more other variables, data must exist for those variables. If the data does not exist, the calculation cannot be performed.

A calculation can be based on a variable that is mapped to signal data. As a result, you can perform an additional calculation on the data at the time the data is acquired for the cycle.

To view the list of variables that contain calculations, select:

- **Signal Dependant Variables**—Shows the variables that have a calculation if part of the calculation is based on a variable that is mapped to a signal data calculation. If another variable is referenced in the calculation, the data for that variable must exist for the calculation to succeed.
- **Calculated Variables**—Shows the variables that have a calculation. This option enlarges the variable selection scope. As a result, you must be careful to make sure that all calculation references are resolved.
- **All Variables**—Shows all variables, including variables that do not have a calculation. You can change the variable to include a calculation or change an existing calculation by selecting the variable and clicking on the **Create or Edit Calculation** button. You must be careful to make sure that all calculation references are resolved.

Save Variables

Select one or more variables to store the value in the raw data file for each group. Cyclic data is stored at the end of each cycle. Group data is stored at each boundary, such as a step or segment. Noncyclic data is stored at the end of the data acquisition. The stored data lets you reset the value at each capture point of the acquisition.

To specify a variable, click **Edit List** and select one or more variables.