

Templating with Control Editor

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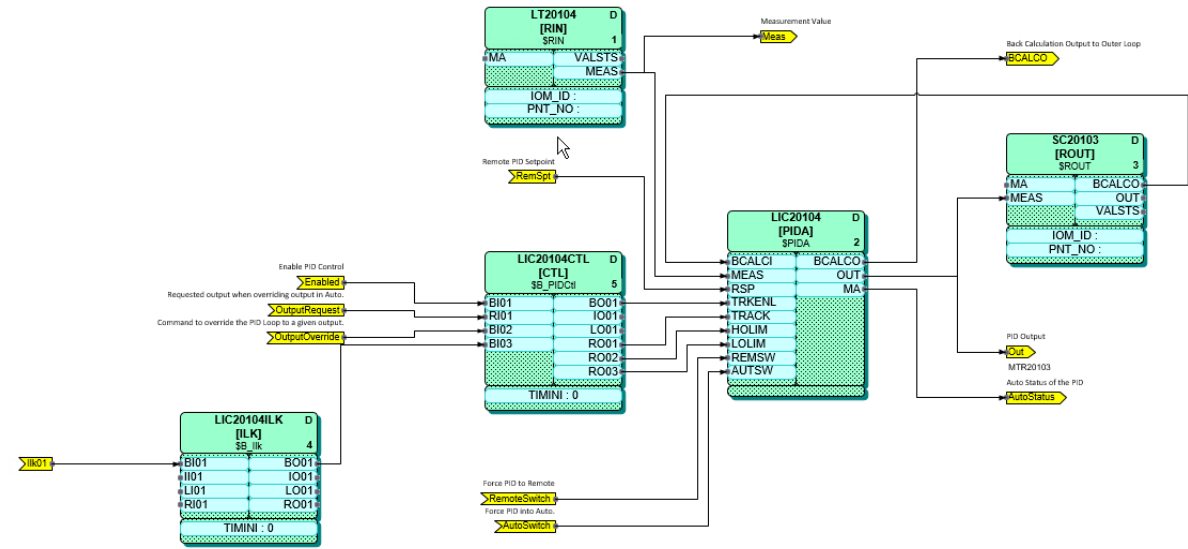
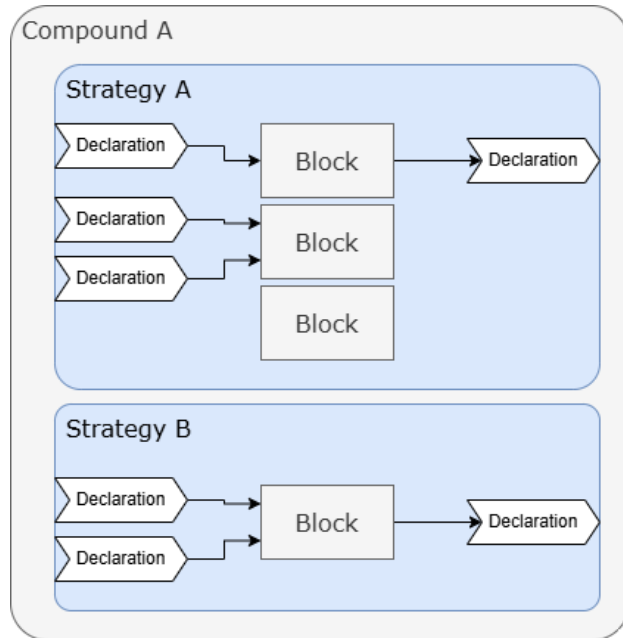
AGENDA

- Intro to strategies in Control Editor
- Types of Templating
- Picking the right type of Template

Control Editor Basics



What is a Strategy?



Advantages of Templating

- Reduced configuration mistakes.
- Automatic setting of common parameters.
- Developing corresponding HMI templates allows consistent functionality.
- Allows changes to be propagated to all instances (for better or worse).

Types of Templates

Choosing the Right type of Template

Strategy Template

An entire strategy with blocks, input declarations, and connections.

A strategy created from a template is called a strategy instance.

When an instance is created, connections between blocks and parameter values have initial values. If the parameter is unlocked, it can be changed in the instance but not if it is locked.

Additional blocks or input/output declarations cannot be added to instances of the template.

Block Templates

A single block and its parameters. No connections to other blocks are included.

Parameters have initial values, and they can be locked or unlocked in the block template.

Strategy Snippets

A partial or full strategy that can be dragged onto a strategy template as a starting point.

Connections and parameter values have initial values, but then everything is freely editable.

Strategy Templates: Tips & Tricks

- Typical Strategy Templates would be a PID Loop, Motor, or Discrete Valve
- The main challenge when developing strategy templates is how to handle “optional” parameter connections.
- Block Inputs always have to be connected, so they cannot be settable if they are connected to an input declaration.
 - To use a strategy template, all possible input declarations have to be created.

Solution 1: Unlocked Connection

- One method to avoid invalid connections when using input declarations is to leave the connection unlocked.
- In the instance, you can delete the connection if you want it to be settable or configure a literal value.

Solution 2: Connecting to Constants

- Another method to avoid invalid connections is to connect to a constants block.
- Rather than normal connection syntax, use ICC syntax to avoid having to update the strategy name for each connection.
 - Strategy Syntax: MYCMPND.**MyStrategy**.DeclarationName
 - ICC Syntax: MYCMPND:MYBLOCK.PARAM
- It's best to have a constants strategy in each compound so that the compound can be omitted.
 - For example, :TRUE.CIN, :FALSE.CIN, :ZERO.PNT
- A Constants strategy template can make creating constants in each compound easier.

Modifying Strategy Templates

- Making changes to blocks in a strategy template and then checking in the template will update all instances of that template.
- Any block parameters that are locked in the template will be changed in each instance but can be deployed to the CP one at a time.
- Before a block can be deleted, that block must be undeployed from the CP in each instance of the strategy.
- When a block is added to the template, the block will get a default name, so each instance will have to be opened to rename the block.

Block Templates: Tips & Tricks

- Typical Block Templates would be a CALC block for a commonly used formula.
- This solution is best when multiple blocks aren't interconnected.
- Foxboro's manual says best practice is to create a block template for each block type. This can allow you to change block default values, and even lock certain parameters that should always be set a certain way.

Strategy Snippets: Tips & Tricks

- Strategy snippets are similar to code snippets, in that you can drag and drop them onto another strategy.
- Snippets can be a partial strategy and can be modified freely after being dropped in.
- Changes to snippets do not update everywhere they are used.

Combining Template Types

- Different types of templates can be combined as well.
 - A strategy template can contain block templates.
 - Strategy or block templates can be part of a strategy snippet.

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SURVEY



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