Triggers: Using Relay Outputs

Introduction

The RIO 08 and RIO 44 feature either 4 or 8 relay outputs. These relay outputs are effectively controllable switches, and don't output a voltage of their own.

Configuring Outputs

When you add a RIO with outputs, in the Network view, it is possible to set the default output state (at Startup) to be On or Off.
When the RIO connects to the controller that owns it, its output will go to these determined states.
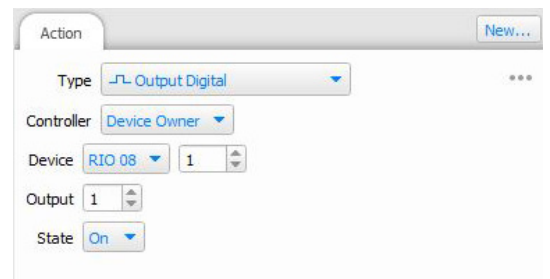Maintain state on device loss can be used to hold the current state (on or off) if the RIO becomes disconnected from the controller.

Triggering Outputs

Outputs can be triggered using the Digital Output Action, from any trigger.
The Action is configured with the device the output is part of (RIO 08 or RIO 44), and the device ID. The output number is selected and whether it should be turned on (closed circuit) or off (open circuit).

This action can be linked to any trigger, and a common way to control the outputs is using Timeline Flags to turn on outputs at specific times during a timeline.

Triggering Outputs with Script

Currently, there is no way to use the Output Digital action with variables or a direct script call.
The best way to use them is to add two Soft triggers for each output and enqueue the triggers from the script when they are required:

```
-- Define the triggers for turning each output on or off
output_triggers_on = {10,11,12,13,14,15,16,17} -- Triggers 10-17 turn outputs 1-8 on
output_triggers_off = {20,21,22,23,24,25,26,27} -- Triggers 20-27 turn outputs 1-8 off

function set_output(num,state) -- Function to set output num to state('on' or 'off')
    if state == 'on' then -- choose the correct table for the state (on or off)
        enqueue_trigger(output_triggers_on[num]) -- fire the correct On trigger
    elseif state == 'off' then
        enqueue_trigger(output_triggers_off[num]) -- fire the correct On trigger
    end
end
set_output(1,'on')
```

Further Information

For further information on the Digital Output Action, please see the Software Help > Reference > Trigger > Actions
For further information on the RIO Outputs, please see the Installation Guide.

If you require further assistance, please contact Pharos Support.

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