# Finite Labs **Essentials**

## Overview

> DISCLAIMER: This software is neither affiliated with nor endorsed by Control4.

Switch between named groups of sensor inputs, passing the selected group's values to output bindings. Unlike the Sensor Aggregator which combines N inputs into 1 via math, the Sensor Multiplexer selects 1-of-N named groups to pass through.

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# System Requirements

- Control4 OS 3.3+

# Features

- Switch between named groups of sensor inputs
- Support for temperature, humidity, and contact sensor types
- Dynamic input and output bindings based on configured names
- Programming command to select the active input
- Event fires when the active selection changes
- Per-name conditionals for programming logic
- Persistent state survives driver restarts

# Installer Setup

## DriverCentral Cloud Setup

> If you already have the DriverCentral Cloud driver installed in your project you can continue to Adding the Driver.

This driver relies on the DriverCentral Cloud driver to manage licensing and automatic updates. If you are new to using DriverCentral you can refer to their Cloud Driver documentation for setting it up.

## Adding the Driver

1. Download the latest `control4-finite-labs-essentials.zip` from DriverCentral.
2. Extract and install the `sensor_multiplexer.c4z` driver.
3. Use the "Search" tab to find "Sensor Multiplexer" and add it to your project.

# Driver Properties

## Cloud Settings

### Cloud Status (read-only)

Displays the DriverCentral cloud license status.

### Automatic Updates [ Off | *On* ]

Enables or disables automatic driver updates via DriverCentral. Changing it on any item of this driver changes it on all of them.

## Driver Settings

### Driver Status (read-only)

Displays the current status of the driver.

### Driver Version (read-only)

Displays the current version of the driver.

### Log Level [ 0 - Fatal | 1 - Error | 2 - Warning | *3 - Info* | 4 - Debug ]

Sets the logging level. Default is `3 - Info`. While a Support Code has Composer's Lua tab open, it also offers `5 - Trace` and `6 - Ultra`.

### Log Mode [ *Off* | Print | Log | Print and Log ]

Sets the logging mode. Default is `Off`.

### Support Code

Leave it blank unless Finite Labs support gives you a code: for an hour, it opens Composer's Lua tab to this driver and adds `5 - Trace` and `6 - Ultra` to Log Level.

### Cloud Monitoring [ Disabled | *Enabled* ]

When Enabled, the driver sends Finite Labs a short report once an hour, and a report of each error it hits, at most 10 a minute. We use them to find and fix problems in the driver. Set it to Disabled to send nothing.

A report holds the controller's MAC address and OS version, the driver's name, version, device ID and DriverCentral license status, how much memory the driver uses, and the sizes of its largest internal tables. An error report also holds the error message and where in the driver it happened. Before a message is sent, anything in it that looks like a password, token, key, network address or email address is removed.

## Input Configuration

### Input Names

Comma-delimited list of input group names (e.g., `Away,Home,Sleep`). Each name creates a set of input bindings for the enabled sensor types. Names are trimmed of whitespace, deduplicated (case-insensitive, first wins), and colons are stripped (reserved for internal use).

### Enable Temperature [ *Yes* | No ]

When enabled, creates a temperature input binding for each named group and a temperature output binding.

### Enable Humidity [ *Yes* | No ]

When enabled, creates a humidity input binding for each named group and a humidity output binding.

### Enable Contact [ Yes | *No* ]

When enabled, creates a contact input binding for each named group and a contact output binding.

## Multiplexer Output

### Active Input Name (read-only)

Displays the name of the currently selected input group.

### Output Temperature C (read-only)

The output temperature value in Celsius from the active input group. Only visible when Enable Temperature is set to `Yes`.

#### Output Temperature F (read-only)

The output temperature value in Fahrenheit from the active input group. Only visible when Enable Temperature is set to `Yes`.

#### Output Humidity (read-only)

The output humidity value from the active input group. Only visible when Enable Humidity is set to `Yes`.

#### Output Contact (read-only)

The output contact state from the active input group: "Closed", "Open", or empty if no value available. Only visible when Enable Contact is set to `Yes`.

# Driver Actions

## Cycle Input

Cycles to the next input in the names list, wrapping from the last name back to the first. Useful for testing or manual cycling through input groups.

## Reset Driver

Resets the driver state, clearing all cached input values, bindings, events, and conditionals.

It also turns Cloud Monitoring back on, as a fresh install has it.

**Parameters:**

- **Are You Sure?** [ ***No*** | Yes ] - Confirmation to reset the driver.

## Diagnostics Snapshot

Prints a report in the Lua output, and sends it to Finite Labs only while Cloud Monitoring is Enabled.

# Programming

## Connections

### Input Bindings (consumer)

Input bindings are dynamically created for each name in the "Input Names" property, one per enabled sensor type. For example, with names "Away,Home,Sleep" and temperature enabled, the driver creates:

| Binding | Class | Description |
|---|---|---|
| Away Temperature | TEMPERATURE_VALUE | Temperature input for Away mode |
| Home Temperature | TEMPERATURE_VALUE | Temperature input for Home mode |
| Sleep Temperature | TEMPERATURE_VALUE | Temperature input for Sleep mode |

Connect these to TEMPERATURE_VALUE, HUMIDITY_VALUE, or CONTACT_SENSOR provider bindings from other drivers (such as Sensor Aggregator outputs).

### Output Bindings (provider)

| Binding | Class | Description |
|---|---|---|
| Output Temperature | TEMPERATURE_VALUE | Temperature from the active input group |
| Output Humidity | HUMIDITY_VALUE | Humidity from the active input group |
| Output Contact | CONTACT_SENSOR | Contact state from the active input group |

Output bindings are created based on the Enable Temperature/Humidity/Contact properties. Connect these to devices that consume sensor values (e.g., a thermostat).

## Commands

### Select Input

Selects the active input group by name. Use this command in programming to switch which group of sensor values is passed to the output.

**Parameters:**

- **Input** (Dynamic List) - The name of the input group to select. The dropdown is populated from the "Input Names" property.

## Events

### Selection Changed

Fires whenever the active input selection changes. Use this event to trigger programming actions when switching between input groups.

## Conditionals

A conditional is created for each name in the "Input Names" property:

- **<Name>** - Tests whether the named input group is the currently active selection. Shows as "Active" or "Inactive".

For example, with names "Away,Home,Sleep", three conditionals are created: "Away", "Home", and "Sleep".

# Use Case: Thermostat Temperature Source

This walkthrough demonstrates how to use the Sensor Multiplexer with Sensor Aggregators to feed different temperature readings to a thermostat based on Away/Home/Sleep modes.

**Signal flow:** `Individual Sensors → Sensor Aggregators (per-mode) → Sensor Multiplexer → Thermostat`

## Step 1: Create Sensor Aggregators

Create three Sensor Aggregator driver instances:

1. **Away Sensors** - Add temperature sensors relevant to away mode (e.g., hallway sensors)
2. **Home Sensors** - Add temperature sensors relevant to home mode (e.g., living room, kitchen sensors)
3. **Sleep Sensors** - Add temperature sensors relevant to sleep mode (e.g., bedroom sensors)

Connect the appropriate temperature sensors to each aggregator's input bindings.

## Step 2: Add the Sensor Multiplexer

1. Add the Sensor Multiplexer driver to your project.
2. Set **Input Names** to `Away,Home,Sleep`.
3. Ensure **Enable Temperature** is set to `Yes`.

## Step 3: Connect Aggregator Outputs to Multiplexer Inputs

In the Connections tab:

- Connect **Away Sensors** → Aggregated Temperature output to **Sensor Multiplexer** → Away Temperature input
- Connect **Home Sensors** → Aggregated Temperature output to **Sensor Multiplexer** → Home Temperature input
- Connect **Sleep Sensors** → Aggregated Temperature output to **Sensor Multiplexer** → Sleep Temperature input

## Step 4: Connect Multiplexer Output to Thermostat

Connect the **Sensor Multiplexer** → Output Temperature to the thermostat's remote temperature input.

## Step 5: Program Mode Switching

Use the **Scheduler agent** or custom programming to switch modes:

- **Morning (6 AM)**: Execute "Select Input" command with Input = "Home"
- **Evening (10 PM)**: Execute "Select Input" command with Input = "Sleep"

- **Away mode**: Execute "Select Input" command with Input = "Away" (triggered by occupancy or manual toggle)

You can also use the **conditionals** in programming to check which mode is active and branch logic accordingly.

# Developer Information




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# Support

If you have any questions or issues integrating this driver with Control4, you can contact us at driver-support@finitelabs.com or call/text us at +1 (949) 371-5805.

# Changelog

## v20261112 - 2026-11-12

### Added

- Added the Device Programmer, Light Relay, Network Requests, Sensor Aggregator, Sensor Multiplexer and Variable Expressions drivers to DriverCentral.