BMS Monitor for Control4

Janus Technology Ltd

Release Notes

Manufacturer: Janus Technology Ltd

Current Version: 331

Compatible Interfaces

- T3/T4 Touch Panel
- Control4 iOS/Android apps
- Web browser (see FAQ)

Introduction

BMS Monitor is a unique driver by Janus Technology Ltd that allows you to monitor the history of many common drivers used for building management. Compatible with all thermostats, this driver allows you to use any Control4 UI to view variables such as temperature, setpoint and HVAC mode, seeing how they change over time.

In addition to thermostats, BMS Monitor supports other data visualisations, such as water consumption, energy usage and more! See the FAQ for a full list of supported drivers.

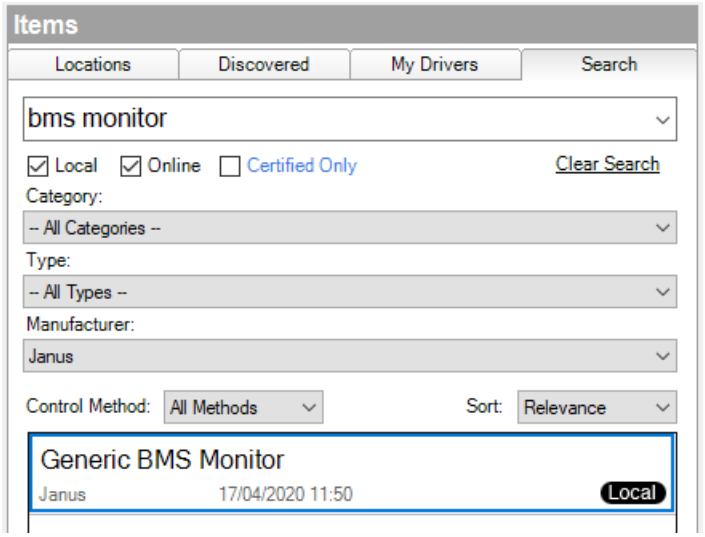
It is recommended that this driver is used on systems running OS3.2 or later.

Installation

One driver file is included in the release package.

`hvac_generic_bms_monitor_dc.c4z`

Copy this file from the zip package to your Control4 driver location (by default this is Documents4). Open Composer and choose the Search tab from the Items pane.



Driver Search

Add one instance of the driver entitled “BMS Monitor” into your project.

Configuration

Properties

In the System Design view, select the BMS Monitor driver to view the properties available for configuration.

OpenWeatherMap

BMS Monitor utilises OpenWeatherMap to provide current and future outdoor temperature and humidity.

To use the service it is necessary to have an API key from OpenWeatherMap. We used to bundle this with purchase of BMS Monitor, but the growth of BMS Monitor usage has increased so cumulative usage would exceed our allowance without moving to a more expensive tier. Consequently it was decided to expose the API key to allow installers to obtain a key for each site - usage from this would easily fit within the free tier. We can then pass on this saving as a reduction in the licence fee for BMS Monitor.

To obtain an API key, please visit the following URL and sign up for an account (free tier) https://home.openweathermap.org/users/sign_up Having signed up, an API key is automatically created for you, which needs you to subscribe to the One Call API: https://openweathermap.org/api Your usage will be well within the free tier of this service, but to be ensure you don’t get charged, it is recommend to set the field *Calls per Day* to **1000** (the free tier limit).

When you are logged in this can be retrieved from the API keys menu option under your username in the top right-hand menu bar (“My API Keys”).

Copy the key value and paste into the API key property in the lua driver. The driver immediately checks the validity of this and reports status in the property field *OpenWeatherMap API Status*.

Note that it can take a couple of hours after account creation before the API key becomes active.

Licensing

Ensure that the driver is activated via DriverCentral. You can check this status with the *Cloud Status* property. If you want to trial the driver before purchasing, you can use BMS Monitor for 14 days with full functionality, after which you must purchase a license to continue operation.

Webview Configuration

- **Start Week On** - Choose which day the week should start on. Defaults to *Monday*. Choose *Dynamic* to always view the maximum number of days in the weekly view.
- **Language** - Reports the language used for webview localisation. Supported locales are English (*en*), Czech (*cs*), French (*fr*), German (*de*), Italian (*it*), Romanian (*ro*). If the locale your processor is set to is not supported, the webview will default to English.

- **Allow Screen Configuration** - Choose whether modifying the screen configuration is allowed.
- **Webview Link** - Click here to open the BMS Monitor interface in your browser.

Monitored Devices

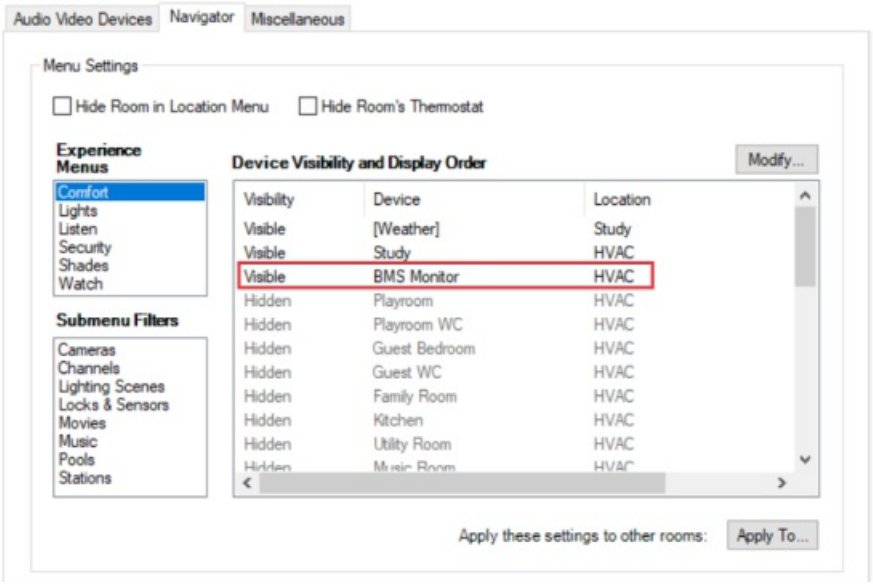
For each of the configurable properties (e.g. *Monitored Thermostats*), press the **select** button to bring up the device selector. You will be able to select whichever compatible devices are present in your project to be monitored. Press the **OK** button to confirm your selection, and then set the property.

Interpolation Type Configuration

These properties will only appear if you have a YATUN Number Variable driver in your project. They allow you to set the interpolation type (how data points are connected) for variables belonging to any YATUN Number Variable driver.

Setting up the webview

To set where you can access BMS Monitor, in the **System Design** view, click on a room and then on the **Navigator** tab.



Navigator Display

Press the experience menu you wish to place the webview in, and press **Modify** (note that custom UI buttons such as this cannot be added to all experience menus due to limitations set by Control4). Highlight *BMS Monitor* and press **Show** then **OK**.

Ensure that you refresh the navigators in your project in order for the UI button to appear in the Control4 GUI.

Actions

Refresh Monitored Devices

Refresh the stats (e.g. update variable names) for the devices that are monitored.

Purge Orphaned Database Entries

Delete any data associated with devices that are no longer monitored in the project.

For redundancy purposes, if you remove a device from any of the *Monitored Devices* properties, the associated data cannot be deleted via this action until the Control4 processor has been rebooted.

This means that if you change your mind after removing a device from the *Monitored Devices*, the data will not be lost.

Save Backup to the Cloud

This will save the entire cache of monitored data for all devices to the cloud (see *Cloud Storage Status* from the properties tab).

Show Cloud Storage UUID

Reports the UUID of your project used in cloud storage in the Lua output. For more detail, please see the section *Cloud Storage* below.

Clear Touchscreen Cache

Clear the cached version of the BMS Monitor webview for specified touchscreens in your project. Use this action if a touchscreen is not showing the correct webview interface following a driver update. This does **NOT** delete any data.

Report Database Size

Reports statistics related to the database size in the Lua output.

Operation

From the Control4 GUI home page, navigate to the experience menu you placed BMS Monitor under, and then press **BMS Monitor**. Note that by pressing and holding the BMS Monitor icon, you can add it as a favourite to the room you are in.

Thermostat Interface

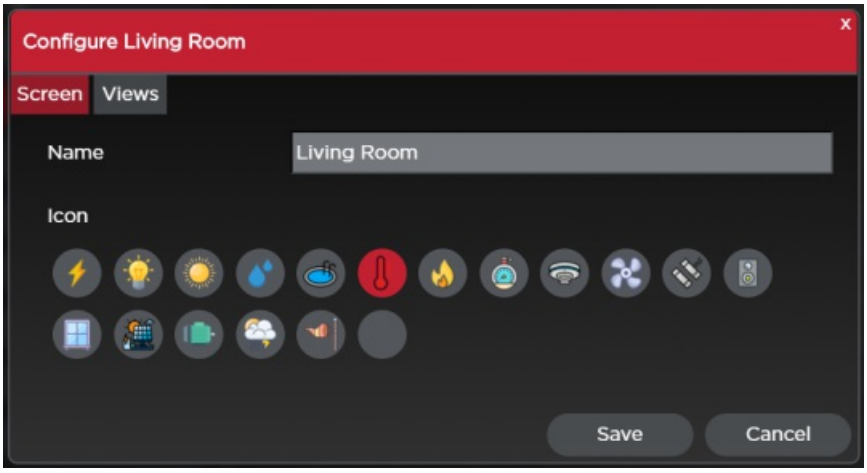
The BMS Monitor interface is split into 3 sections; the device selector (left side), main display, and controls (bottom)

Device Selector

This side bar can be used to choose which of the monitored devices you wish to view. Simply press on a device to select it.

Access the Energy Dashboard view by pressing the *Dashboard* button at the top of the side bar.

By press and holding a device in the device selector (or pressing the edit button to the bottom-left), you can bring up the Screen Configuration popup - this provides a way for you to customise various elements of the screen, such as device icon, Y-axis scale limits, graph title and more!



Configuration Interface

You can add a custom screen to the BMS Monitor webview by pressing the 'Add Screen' button (+) at the bottom of the device selector. For custom screens, you can add up to 4 separate views containing whichever variables you want from all the monitored devices in your project.

Main Display

Depending on the device type you are monitoring, the main display can look slightly different.

Most thermostats, for example, will show a line chart of setpoint and temperature, with timelines below to indicate HVAC mode and state.

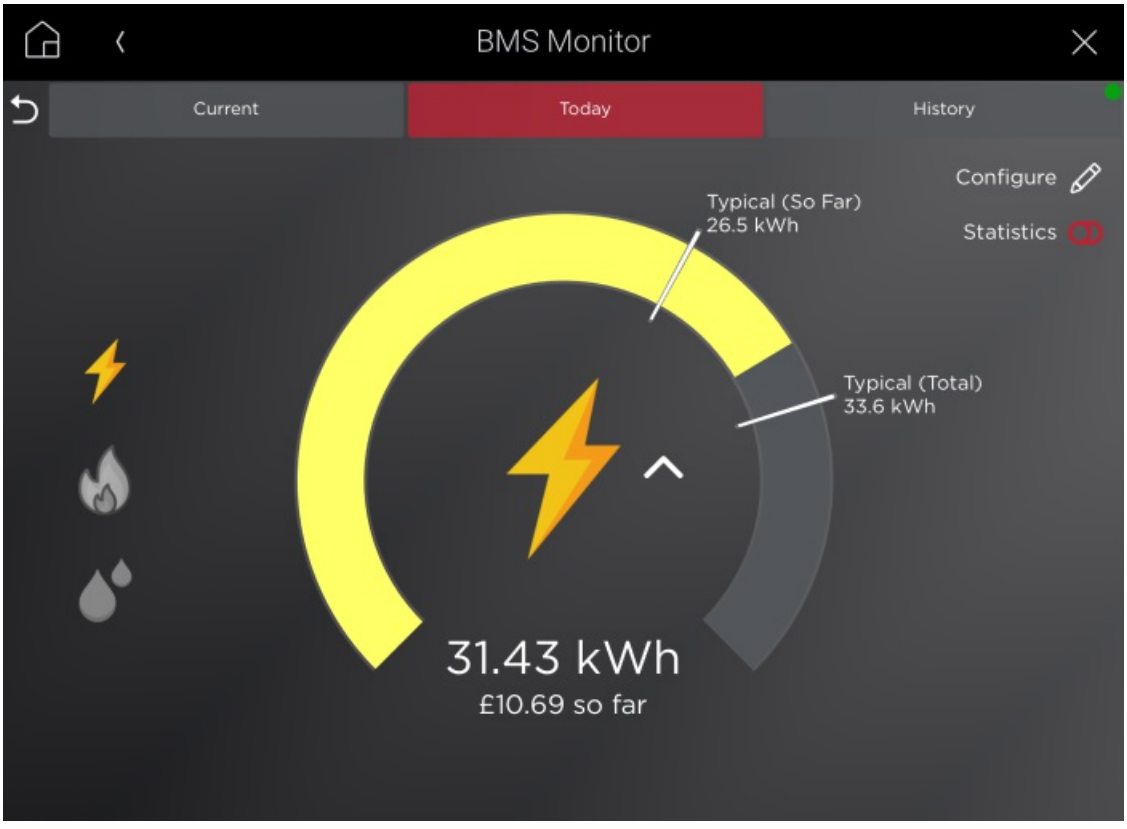
Consumption drivers (e.g. water monitoring in HeroLabs Sonic) shows a bar graph, indicating the resolution of each bar in the top-right.

Energy Dashboard

The Energy Dashboard can be configured with utility drivers in your project to give a quick and intuitive interface for viewing usage and cost estimates for gas, water and electricity in your property.

For each view, you must configure some attributes, such as the units to be displayed, tariff information, and variables (including the units that the variables are stored in).

If you have multiple sources (e.g. separate electricity meters for different buildings on the property), you can add more than 1 sub-meter - allowing you to see usage from each meter on the same interface.



Dashboard Interface

Please note that the costs displayed are estimates based on the tariff information provided and usage, and do not include any standing charges that may be included by your project. Currently only flat-rate tariffs are supported.

Controls

Use the time selection controls to specify the timescale of the graph (day, week, month), with the left and right arrows allowing you to scroll forwards and backwards in the driver history.

If multiple views are available for that device type, you will also see additional buttons allowing you to switch between those different views.

Cloud Storage

BMS Monitor utilises cloud storage functionality! Any data that is older than a few days will be offloaded to the cloud, reducing the amount of data stored locally on the controller. With this feature, BMS Monitor can store 3x *more* than if the data were all stored locally, while preventing slowdown of the processor.

This process is automatic, and you can view the latest feedback in the *Cloud Storage Status* property.

FAQ

What driver types are compatible with BMS Monitor?

- Aten EcoPDU (switched PDU)
- Brainboxes Remote IO (digital and analog I/O lines)
- Control4 Zigbee to IO / Contact Sensor (temperature and humidity)
- Centralized Lighting (via Lighting Power Monitor)
- Eaton xComfort energy sensor (energy, power, current, voltage)
- Enphase (house energy usage)
- eGauge Monitor (energy usage)
- Flo by Moen (water consumption)
- GivEnergy (house energy usage)
- HeroLabs Sonic (water consumption)
- KNX Generic Monitor (any KNX data type)
- KNX Smart Meter
- Pools (any driver using the C4 pool proxy)
- Shelly IoT energy meter
- Thermostats (V1 and V2 proxy)
- UI Key - Status Button
- Wattbox (switched PDU)
- Modbus generic monitor (any NUMBER_VARIABLE connection)
- Variable Number driver

Which variables are monitored for thermostats?

Currently, drivers selected via the *Monitored Thermostats* property can have the following variables monitored, and available to view on the webview component (depending on individual driver capabilities)

- Temperature
- Setpoint C/F (single setpoint, or separate Heat/Cool setpoints according to capability of thermostat)
- HVAC Mode
- HVAC State
- Humidity

- Outdoor temperature (monitored by BMS Monitor based on project location, and displayed on each thermostat alongside temperature)
- Outdoor humidity (monitored by BMS Monitor based on project location, and displayed on each thermostat alongside humidity)

What interfaces does it work on?

BMS Monitor is available on any T3/T4 screens in your project. For systems running OS v3.2 or later, you will also be able to access BMS Monitor from the iOS and Android apps.

Can I use BMS Monitor from my a web browser?

You can! Ensuring that your device is on the same local network as your Control4 processor, in your device's native browser navigate to `http://<controller_ip>/driver/hvac_generic_bms_monitor_dc/dist/` to access the BMS Monitor interface.

I would like a new driver type / variable to be monitored

If you want to monitor a type of driver that is not currently supported, or a variable that is not listed above, please contact us at http://www.janustechnology.co.uk/support, and we will be happy to look into adding support for the new functionality.

What languages is the BMS Monitor interface available in?

BMS Monitor is currently available in the following languages:

- English (*en*)
- Czech (*cs*)
- French (*fr*)
- German (*de*)
- Italian (*it*)
- Romanian (*ro*)

If you would like translations in your language added, please get in touch at http://www.janustechnology.co.uk/support to discuss how we can achieve this for you.

Troubleshooting

I cannot see any data for one of my devices

Firstly, ensure that the monitored driver is operational (e.g. for a thermostat, confirm it is showing valid temperature, setpoint...).

After configuring BMS Monitor, it can take up to 10 minutes for some initial data to be displayed on the webview interface. This is done to avoid invalid data from being logged following a processor reboot.

Wait 10 minutes and refresh the webview - if you still cannot see any data, please contact us (see below), quoting the device file name of the driver which is seeing no data.

I accidentally set a screen to Hidden

If you accidentally set a screen to Hidden within the screen configuration options, you can press the *Show Hidden* button in the bottom-left of the BMS Monitor webview. Alternatively, you could also use the driver action from Composer, to un-hide all screens.

Contact Us

If you encounter any issues with the driver, please contact us at http://www.janustechnology.co.uk/support, and we will be happy to

assist however needed.