

# **KNX Weather Station Driver**

#### 1. Intro

This Control4 driver is designed to seamlessly integrate KNX weather station functionality into Control4 smart home system. This innovative driver offers an enhanced level of automation and control, allowing you to effortlessly incorporate weather data from KNX weather station into Control4 ecosystem.

With the integration of KNX weather station capabilities, you can now harness real-time weather information to optimize various aspects of smart home environment. Whether you're looking to automate variables monitoring, trigger actions based on weather conditions, or simply stay informed about local weather patterns, this driver empowers you to do so with ease.

#### Features:

- **Autoconfiguration:** Select your device brand and model from the driver database, and the driver adapts to it, making setup very simple. A "Generic" option is also available to select only the functions you want to use.
- **Events Triggering:** Program actions based on variable changes, enhancing automation possibilities.
- **Conditional Evaluation:** Analyze Weather Station variable values and define actions based on conditions a "must" for tailored programming.
- Variables in Composer Pro: Access driver variables for versatile programming or display the information in the UI using the Custom Info Display driver
   (https://drivercentral.io/platforms/control4-drivers/utility/custom-info-display/). The driver generates a Template for fast configuration of the Custom Info Display driver.
- **Dynamic Setup:** To avoid exposing a lot of properties and functions, the driver was designed to dynamically show (and hide) properties and functions relevant to the desired needs.

# 2. Properties

- *Cloud Status*: Current status of the driver's license.
- Automatic Updates: Enable automatic driver updates (Recommended!)

- *Driver*: Driver's name.
- Driver Version: Current driver version.
- Driver Information: Last debug information.
- *Current Status:* Important information about the current status of the driver.
- *Debug Mode:* If on, driver will print debug information on Lua output.
- *Brand Selector:* The driver has a database of brands (and models) that can be selected to autoconfigure the driver, showing the right weather station properties for the specific device. Also, a 'Generic' option is available to manually choose the features to configure.
- *Model Selector:* To select the model of the device when a brand is selected.
- *Brightness Function:* (Visible in 'Generic') Manually enable the amount of features in the driver.
- *Twilight Function:* (Visible in 'Generic') Manually enable Twilight (or Dusk) features in the driver.
- *Precipitation Function:* (Visible in 'Generic') Manually enable Precipitation features in the driver.
- *Temperature Function:* (Visible in 'Generic') Manually enable Temperature features in the driver.
- *Wind Speed Function:* (Visible in 'Generic') Manually enable Wind Speed features in the driver.
- *KNX Group Addresses Configuration Properties:* Depending on the Brand and Model selected (or the manual functions enabled), a list of properties will be visible to set the proper group addresses (GA). They are self-explanatory, so they are not detailed here one by one. Some key points:
  - To keep the driver simple, the Threshold 2 option is populated when Threshold 1 is configured first.
  - Please note that Threshold 1 and Threshold 2 don't need to match exactly the Threshold (also could be called 'limit' in some KNX devices) 1 and 2 on the ETS configuration. For example, if you want to populate only the 'threshold 2' of the ETS in this driver, you can just use the Threshold 1 property.
  - The properties will accept only KNX group addresses (1, 2, or 3 level type). If an invalid group address is entered, the driver will clean the property.
- *Current Values Properties:* When a valid group address is entered in a property, the driver will populate the corresponding "value property" where you can see the current value of the parameter.

• *Console:* For maintenance purposes only.

# 3. Connections

• *KNX Control:* Must be connected to the proper KNX gateway where all the data will be pulled. The driver auto-connects to the first gateway found in the project.

#### 4. Actions

 Generate Template for Custom Info Driver: To display weather station information effectively, Barbini.dev recommends using this driver in conjunction with the Custom Info Display driver. Please refer to the Generate Template for Custom Info Driver section for more information about this function.

# 5. Commands

• N/A

# 6. Events

This driver dynamically generates all the variables changed events to allow the Dealer to easily trigger programming within Composer Pro. Some important notes:

- As the driver creates (and deletes) the events when the brand and models are being changed, please note that if you make some programming triggering them will be lost if you change the brand/model configuration. This doesn't have any implications when the system is rebooted.
- When a unique parameter is presented in the driver with some variants (for example, Wind Speed data is received in 'm/s' but the driver also populates it in 'Km/h'), one events is generated by each variant.
- A 'KNX Data Received' event is available, and it will be triggered every time the KNX gateway reports a new data for the driver.
- Any value "changed" event will be triggered when a value has been changed from a previously saved value. The driver won't trigger the event when it receives the variable data for the first time (for example, when the controller reboots and the driver receives the data from the KNX gateway for the first time).



# 7. Driver Variables

The driver serves all the parameters as variables within C4 for using them for other purposes. Please note that because these variables can't be generated dynamically, all the variables are going to be present. This variable list could grow in the future when driver's upgrades are made, and new

functions added.

- • • •	KNX Weather Station
-	G Brightness 1 Measured LUX
	G Brightness 1 Threshold 1
1	G Brightness 1 Threshold 2
	G Brightness 2 Measured LUX
	G Brightness 2 Threshold 1
	G Brightness 2 Threshold 2
	G Brightness 3 Measured LUX
-	G Brightness 3 Threshold 1
H H	G Brightness 3 Threshold 2
-	G Brightness 4 Measured LUX
	G Brightness 4 Threshold 1
	🖌 Brightness 4 Threshold 2
	G Brightness Average Measured LUX
H H	🖌 Last KNX Report
H H	Precipitation
	🖌 Temperature Measured C
	C Temperature Threshold 1
	Temperature Threshold 2
H	🖌 Twilight Measured LUX
	Twilight Threshold 1
H H	🖌 Twilight Threshold 2
H H	Yind Speed Measured KM/H
H	Yind Speed Measured M/S
	Wind Speed Threshold 1
	Wind Speed Threshold 2

# 8. Driver Conditionals

One of the most useful aspects of this driver is its ability to evaluate conditionals based on variable status. A dynamic generation of conditionals has been implemented to showcase the driver-configured parameters conditionals for an easy way to program. The numeric variables can have multiple comparisons (equal, not equal, less, less or equal, greater, greater or equal), and Boolean variables have true/false.

Actions		
Device Actions		
Sony BRAVIA (HIDE)     Average Song Brave Son		)ϥj
(NX Weather Station Actions		
If Service Room->KNX Weather Station	on Brightness 1 Value is >= 12000 Lu	ux
Commands	Conditionals	Loops
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Brightness 1 Threshold 1		True False
Brightness 1 Threshold 2		O True O False
Brightness 2 Value [Lux]		= 🗸 0
Brightness 2 Threshold 1		True False
Brightness 2 Threshold 2		O True O False
Brightness 3 Value [Lux]		= 🗸 0
Brightness 3 Threshold 1		O True O False
Brightness 3 Threshold 2		C True False
Twilight Value [Lux]		= 🗸 0
Twilight Threshold 1		True False
Twilight Threshold 2		True False
Precipitation		True False
Wind Speed Value [m/s]		= 🗸
Wind Speed Value [Km/h]		= ~ 0
Wind Speed Threshold 1		True False
Wind Speed Threshold 2		True False
) Temperature Value [ºC]		= 🗸 0
) Temperature Threshold 1		True False
Temperature Threshold 2		O True Ealse

# 9. Generate Template for Custom Info Driver

This driver is focused on facilitating the grabbing of all KNX weather station data from the Control4 side. As displaying this information in the UI could be desired, we decided to easily export the wished data to our *Custom Info Display* driver. Since there are different ways to display the information and we can't cover all of them, we just generate a template, and then slight modifications can be made to accommodate your preferences. Obviously, this tool is not mandatory.

When you click on the action button, a pop-up box will appear:

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Properties A	ctions Documentation Lua	
	T 1 1 1 0 1 1 1 0	
Generate	I emplate to Custom into Driver	
	Action Parameter List	×
	Info Box Title 1:	
	Info Box Title 2:	
	Info Box Title 3:	
	Info Box Title 4:	
	Info Box Title 5:	
	Info Box Title 6:	
		OK Cancel

Like the Custom Info driver has 6 title boxes, you can select the content you want to display for each title box. When you click on the three dots button, another pop-up will appear showing all the different data possible depending on the driver configuration. These options change dynamically, showing only the data that is enabled in the driver, so it is recommended to first configure entirely the Weather Station driver.

Actions       Documentation       Lua         Generate Template to Custom Info Driver         Image: Action Parameter List         Select         Info         None         Brightness 1         Brightness 2         Brightness 3         Brightness 3         Brightness 4         Precipitation         Temperature         Wind Speed [M/S]         Wind Speed [M/S]         Wind Speed [M/H]         KNX Data Income Timestamp	perties			
Action Parameter List          Select       X         Info E       None         Info E       Brightness 1         Brightness 2       Brightness 3         Brightness Average       IIII         Info E       Precipitation         Temperature       Wind Speed [M/S]         Wind Speed [KM/H]       KNX Data Income Timestamp	Genera	Actions Docu	umentation Lua Custom Info Driver	
		Action	Select None Brightness 1 Brightness 2 Brightness 3 Brightness Average Twilight Precipitation Temperature Wind Speed [M/S] Wind Speed [KM/H] KNX Data Income Timestamp	X OK Cancel

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Generate	Template to Custom Info Driver	٦
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	Info Box Title 1:	Brightness Average
	Info Box Title 2:	Twilight
	Info Box Title 3:	Wind Speed [KM/H]
	Info Box Title 4:	KNX Data Income Timestamp
	Info Box Title 5:	
	Info Box Title 6:	
		OK Cancel
		-11/

Once you select all the options you want (you don't need to fill all the titles), click "Ok". After that, in the LUA output, you will see a string (highlighted in blue) between the asterisk header and footer.

ua Output	Pause Scrolling	Ln 8 Col 1	Clear
(			
<pre>[1] = 'Brightness Average',</pre>			
[2] = 'lwilight',			
<pre>[3] = 'Wind Speed [KH/H]',</pre>			
[4] = 'KNA Data Income limestamp'			
*************** Template For Custom Info Display Driver ************************************			
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Copy this string. Go to the *Custom Info display* driver, Action tab, and click on '4 Restore Backup'. In the pop-up box, paste the string:

operties Action	Documentation	Lua	
1 Update Wall	Dapers	T	
2 Reload Titles			
3 Print Backup		1	
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	Backup		yliwiV2FsbHBhcGVyljoiMy4wLWEtZGVmYXVsdC5qcGcifQ==
			OK Cancel
			OK Cancel
			OK Cancel

When you click the Ok button, the driver will configure itself with the template generated by the Weather Station driver.

Please note that all the previous configuration of the *Custom Info Display* driver will be overwritten by this process.

operues	Propert	es Su
vanced Properties		
roperties Actions Documentation Lua	1	
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and I Batter Overstite		
	**************************************	
Box 2 Title	- Twilight Info -chrochroValue: (949-1014) Lux-chroThreshold 1: (949-1015) chroThreshold 2: (949-1016)	
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2.74		
xx 3 Inte	- wind speed into -dor>dor>dor>value: (343,1013) Km/hdor>Threshold 1: (349,1020) dor>Threshold 2: (349,1021)	
Box 3 Button Quantity	0	\$
	Box 4	
Sox 4 Title	- KNX Last Data Received -dor>dor>{949,1001}	

After that, you can make the changes you want, such as adjusting words or formatting, or even adding information about other Control4 driver variables. For more information, please refer to the Custom Info display driver documentation.

# **10.** Limitations and Comments

- It is quite difficult to cover all the market KNX weather station devices' functionality. That's why we focused primarily on the most common functions first, with the possibility of expanding functionality in the future depending on the Dealers' common requests.
- In order to keep the driver easy to handle, we tried to make it as dynamic as possible. This way, we avoid displaying a lot of properties and functions that may confuse the Dealer. The downside to this approach is that some configurations (like programming in events) could be lost if you reconfigure the driver. Therefore, it is recommended to first configure all the driver properties and then proceed with the rest of the configuration and programming.

• The Brand and Model database could be expanded in the future based on the most common devices requested by the Dealers.

#### Warranty and disclaimer

**Barbini.dev** provide drivers tested as much as possible. However, due to the highly variants of systems setups and the constant changing of the electronics systems, updates and/or modifications may be required to fixing bugs or improve the driver functionality.

Many of our drivers interact with systems APIs (like Control4 and/or any other 3<sup>rd</sup> party system). Therefore, if any API changes, the driver may stop functionating correctly. **Barbini.dev** cannot guarantee long-term functionality of any driver developed that uses APIs. **Barbini.dev** has the right to repair, provide updates, or discontinue a driver at any time. These repairments or updates could be free or required additional expenses. Despite the above, our efforts will always be to maintain the drivers as long as possible and free of charge of upgrades as much as possible.

# Trial and Showroom Licenses

All the drivers have 10 days of trial, allowing dealers to test the features of any driver in a customer project before purchasing it. The trial automatically begins when a driver is installed in a project.

We enable all the Showroom licenses to have unlimited access to the drivers.

Developed By: Barbini.dev Contact: https://highqualityautomation.com/



240411xx – Initial Release

240422xx – Improved decimal separator interpretation in float values independently of the locale