

## History

2026/02/18 Change remark: Digits (=number of decimal places) are not documented, but working in WebIQ

2026/02/05 First version

## Introduction

When switching languages in an HMI, the text is displayed in the user's language. The same applies to switching units, where variable values are converted into the user's units.

- HMI reads PLC value: HMI converts from PLC unit to HMI unit
- HMI writes PLC value: HMI converts from HMI unit to PLC unit

Using unit classes in WebIQ is not very user-friendly.

- There is no editor to define the unit classes.
- Instead, a JSON file must be manually created.
- Unit classes are assigned using numbers, which makes assignment and readability very difficult. You must read the JSON file to find out the meaning of the class number.

The screenshot shows a configuration window titled 'DATA'. It has a 'Label' dropdown set to 'None' and a 'Unit' dropdown set to 'Set'. The 'Unit' field is highlighted with a green box, showing the text 'mm'.

Without unit classes. “mm” clear unit string

The screenshot shows a configuration window titled 'DATA'. It has a 'Label' dropdown set to 'None' and a 'Unit' dropdown set to 'Set'. The 'Unit' field is highlighted with a red box, showing the text '1'.

Using unit classes. Encrypted class id

- The Add-On: Unit Class Manager is an editor for configuring unit classes.
- The Add-On: Variable Manager provides input support for assigning unit classes.

The screenshot shows a dialog box titled 'Select an option'. It has a 'please select' label and a 'Filter' input field. Below the filter, there are three buttons: '@None', '1 \${temperature}', and '2 \${length}'. A 'Cancel' button is at the bottom.

Input support for unit classes

| Filter   | Filter    | Filter              | Filter | Filter |
|----------|-----------|---------------------|--------|--------|
| Interval | Source    | Unit                | Digits | Ch     |
| 100      | @Internal | @None               |        | ne     |
| 100      | @Internal | @ 1 \${temperature} |        | ne     |
| 100      | @Internal | @ 2 \${length}      |        | ne     |
| 100      | @Internal | @None               | @None  |        |
| 100      | @Internal | @None               |        | 2      |

A tooltip is shown over the 'Unit' column header, displaying the text: '@ 1 \${temperature}' and '@ 2 \${length}'.

Tooltip in table header show id and unit class name

- A unit class must be created for each unit type (length, temperature, time, ...).
- Different unit classes can have different numbers of elements.
  - Temperature (K, °C, °F)
  - Distance (mm, inch)
  - Time (hour, minute, ...)



- There are two possibilities to set a unit class

- Set each unit class separately.

Use case: When you change the language to set all unit classes separately. This means units in table rows are independent from each other. Example configuration:

| Unit ID | Temperature unit-class=1 | Length unit-class=2 |
|---------|--------------------------|---------------------|
| 0       | K                        | mm                  |
| 1       | °C                       | inch                |
| 2       | °F                       |                     |

- Set temperature = K : Set virtual:unitclass-1-adapter = 0

- Set length = mm: Set virtual:unitclass-2-adapter = 0

Advantage: Class definitions are independent

Disadvantage: Multiple commands are necessary to set all units

- Set all unit classes to the same number.

Use case: All units of a language are listed in the same row. This means that the same unit may appear multiple times in the table because it is used in several languages.

| Unit ID | Temperature unit-class=1 | Length unit-class=2 |
|---------|--------------------------|---------------------|
| 0       | K                        | mm                  |
| 1       | °C                       | inch                |
| 2       | °F                       | inch                |

- UI-Action: UNITCLASS-ADAPTER: User specified Adapter Index = 1  
(Temperature = °C, Length = inch)

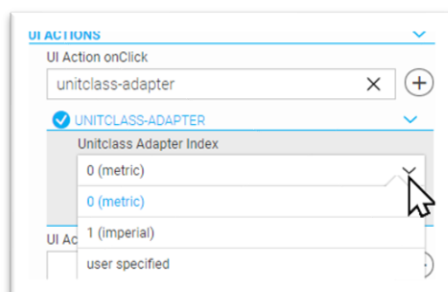
Advantage: Only a single UI-action is necessary to set all units.

Disadvantage: Units in table must be aligned

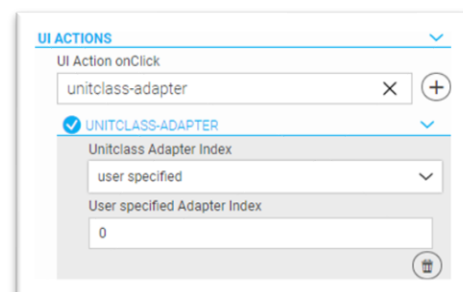
- HINT:

WebIQ has already predefined the unit names in the UI-Action xxx: 0=(metric), 1=(imperial). This pre-assignment is confusing because, although the names are predefined, there is no predefined definition for it. Furthermore, the user is completely free what he enters at index 0 and 1.

Therefore, my recommendation is: Always select "User specified" to avoid confusion if the predefined names do not match the users configuration.

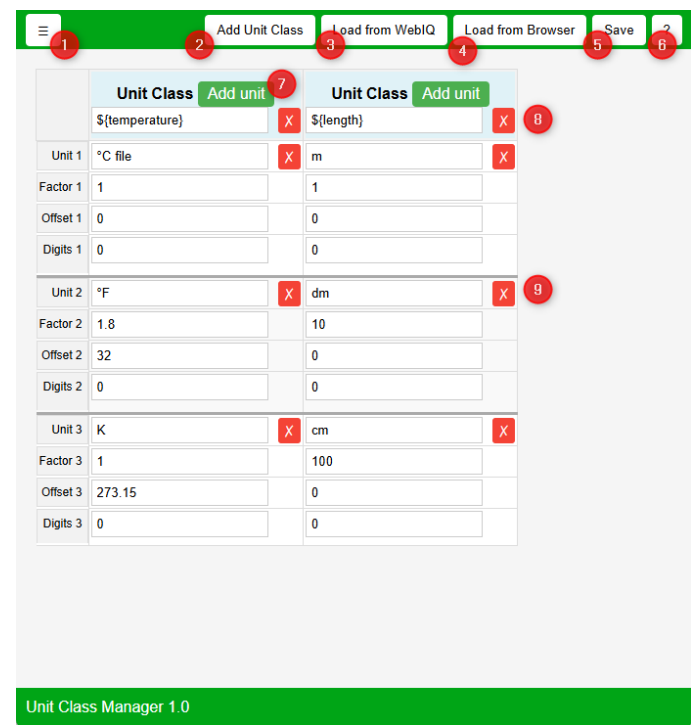


Predefined indices 0 and 1



User specified index

# Usage



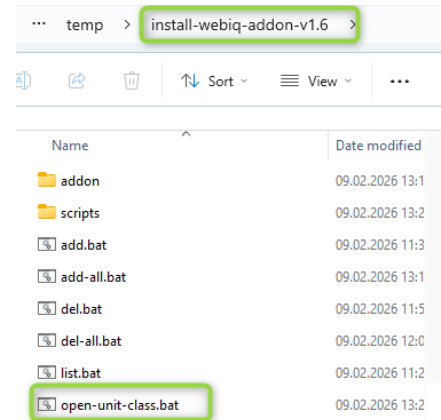
Screen shoot of GUI

|     |   |
|-----|---|
| (1) | Return to Add-On main menu  |
| (2) | Adds a new extra column with a unit class                           |
| (3) | Load unit classes from WebIQ json file                              |
| (4) | Load unit classes form browser local storage                        |
| (5) | Save the unit class configuration (to browsers storage & clipboard) |
| (6) | Shows this help documentation                                       |
| (7) | Adds a new unit with Unit, Factor, Offset and Digits rows           |
| (8) | Deletes unit class with all units                                   |
| (9) | Deletes the clicked unit<br>(all other units are not affected)      |

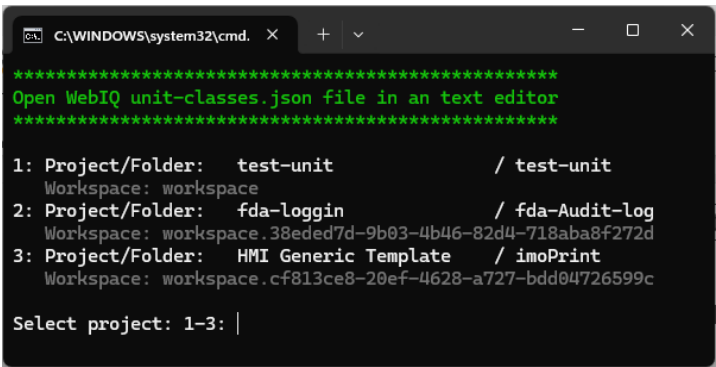
Description of buttons

The field digits is not documented, but used by WebIQ (v2.17.0).

HINT: To open the file **unit-classes.json** in notepad editor,  
run **open-unit-class.bat** from folder **install-webiq-addon-v\***



Run open-unit-class.bat



Screen shoot of open-unit-class.bat