



Rev: v1.02

# Scope Light for EWAT-CZ & EWYT-CZ

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## **SCOPE MANUAL REVISION**

Version	Date	Notes
v1.00	10/2022	First Release
v1.01	12/2022	Chapter 6.1.1. added,
V1.02	09/2023	Chapter 6.1.1 deleted, other minor corrections

## **Trendconfig files**

PEGASO Software (Packaged EWAT-CZ and EWYT-CZ)

Revision	Date	Notes
0	09/2021	First release
1	12/2021	More Datapoints added
2	02/2022	All Datapoints are now selected by default
3	10/2022	Default Y-Scale values corrected
4	10/2022	Setpoint Datapoints added and stored values deleted

#### **HODOR Software (Split EWYT-CZ)**

Revision	Date	Notes
0	10/2022	First release



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#### 1. SCOPE

Scope is the monitoring tool for EWA(Y)T-CZ that can do the following:

- Monitoring Software
- Read-and-write
- Configuration and visualization of data trends, logs...
- Upload/download parameter sets
- Upload software

#### Possible outputs with Scope Light are:

- Parameter file creation
- Parameters and values of current status on PDF
- Event Log in excel displaying the actions performed by pcb
- Alarm Log with Alarm history in Excel file

#### Supported from my.daikin.eu portal:

- Link: CLIMATIX Scope (light) (daikin.eu)
- Official Trendconfig files available
- Installer files package are available for non-Daikin computers

#### There are two versions of SCOPE:

- Scope full: It shows extra menus for designers. During installation it asks for a code to be able to have the full scope version.
  - o It adds extra menus with no benefit for service
- Scope light: limited functions but enough to monitor, upload/download software and others.
  - This document only indicates the menus of the Scope Light v11.48
  - At the time of writing this, the scope light version is v11.48; if newer version is available in the future the screenshots might look different.

Scope is a 32-bit application requiring the following minimum system requirements on the PC.

• PC with Microsoft® Windows® 7 (x86 and x64) or higher.

#### Required cable for EWA(Y)T-CZ:

- Available as Spare Part Number: 5020073
  - Spare part is considered as critical with high stock availability
- Connectable via USB –LAN cable without any settings requirements
- TCP/IP possible but not supported

#### Scope supported languages:

English

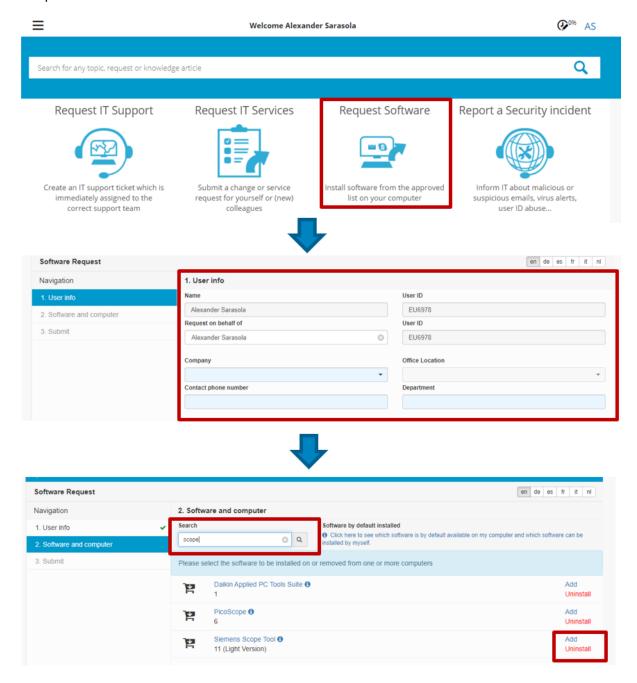
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## 2. Scope installation

The process might differ if you are using a Daikin computer or a non-Daikin computer

#### 2.1. For Daikin Computer

Go to the IT self service desk and request an installation, an IT will personally install it in your computer



Finally, Submit the request; It will ask for you management approval before it gets installed

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#### 2.2. For non-Daikin computers

Software installation pack is currently available in the portal.

- 1. Download and unzip
- 2. Read the Readme file inside
- 3. Install the dependencies
  - a. Basically, scope uses a windows framework for the program to run and is required to have this installation packages installed beforehand
- 4. Installs the Scope light by running the installer
- 5. It is recommended to installs the lates adobe acrobat reader from Adobe. Mostly you need to have a PDF reader from ADOBE, or it might crash when opening PDF output

#### 2. Scope USB LAN cable

To connect the Scope to the computer a USB-LAN cable is required.

- Available as a spare part: 5020073
  - SERVICE CABLE USB-RJ45 150MM SIEMENS POLOC2.40/STD
- Extendable with a Male-Female USB extension cable
- Avoid other cables or adaptors:





Note: if you connect a non compatible cable the computer might make a sound (something like "Clink Clonk") as if it recognizes a USB cable but scope might not show it as an option since cannot read the communication with POL 468.

- How to connect the USB cable there's only one way possible:
  - o USB male on the PC USB port
  - o LAN side on the T-HMI of the POL 468
  - o Other options not functional



- PC: USB port
- Main PCB: T-HMI LAN port





## **Scope Light**

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There's a RN related to this cable, see RNT 17-09:



#### DAIKIN APPLIED EUROPE S.P.A.

To: DAE affiliates/Distributors

From: DAE Service Department

Date: 27/07/17

RNT 17-09 / Service Bulletin n° 05/17

#### USB Service Cable Siemens Scope<sup>™</sup>

Subject: All the units equipped with Siemens Climatix Pol687.xx controller

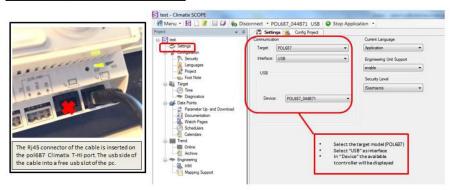
Application: Service operation with laptop and Siemens Scope™.

Availability of USB service cable for connecting service laptop to Siemens PL687 Climatix controller, also known as MT3 controller. This cable will have the advantage that no LAN (Ethernet) connection or TCP/IP settings on the service laptop are required anymore. This also solves issue with the automatic disabling of the WIFI functionality on Daikin EMEA managed service laptops.



Daikin Spareparts ordering reference: 5020073

#### How to connect in Siemens Scope:



In case further information will be necessary, please contact your DAE Service Country responsible or write to Service Support (servicesupport@daikinapplied.eu).

DAE Service Dpt.

#### Daikin Applied Europe S.p.A.

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Sede Legale: Via Piani di S. Maria, 72 00040 Ariccia (Roma), Italia Sede Amm.va: S.S. Nettunense Km 12+300 00040 Cecchina (Roma), Italia

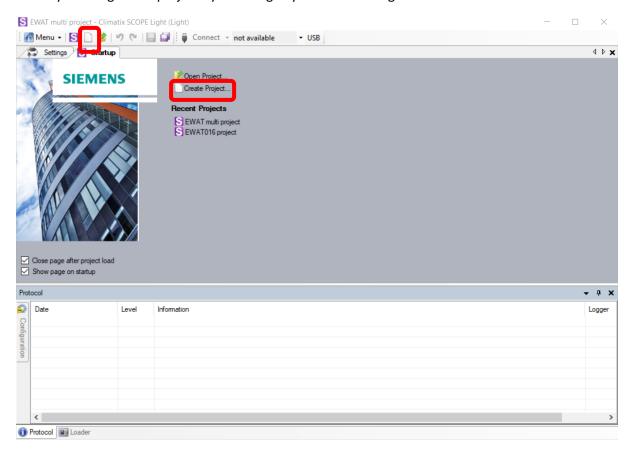
T +39 06 93 73 11 F +39 06 93 74 0 14 Cap.soc. €1.047.620,60 i.v. R. I. RM / C.F. 04878860586 R.E.A. 467651 - P.I. 01318801006



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## 3. New Project

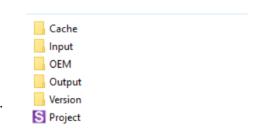
Start by creating a new project by selecting any of the following:



Each project has a unified folder structure for each new project with a number of subfolders.

## Folder Contents

- \Cache Temporary cache.
- \Input Files required to create a project.
- \OEM
- \Output Files created for further processing.
- \Version Saved project version.

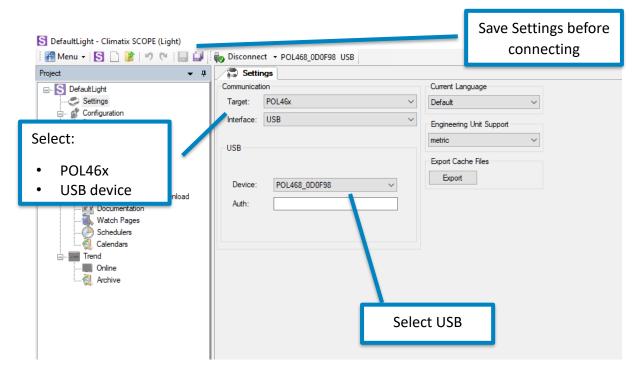


The file executable "Project" file is a structured configuration file that contains all settings from Scope, it launches the Scope project together with the other folders. Opening "Project" file with other programs like Excel, Adobe Reader... is not possible and not supported.

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#### 3.1. Project settings:

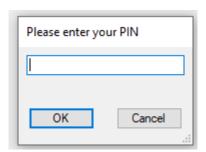
After creating a project, the project settings menu will appear. Select the following to connect to EWA(Y)T-CZ:



Computer will recognize USB automatically if correct cable has been used

Follow these steps to start:

- 1. Click Save
- 2. Click on connect.
- 3. Password will be required so same passwords as in the HMI are used
  - User password: 2526Service password: 2201

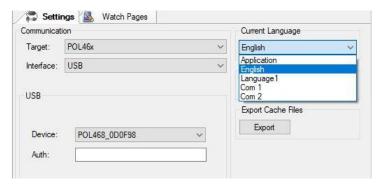


4. Wait for the loading process to finish:



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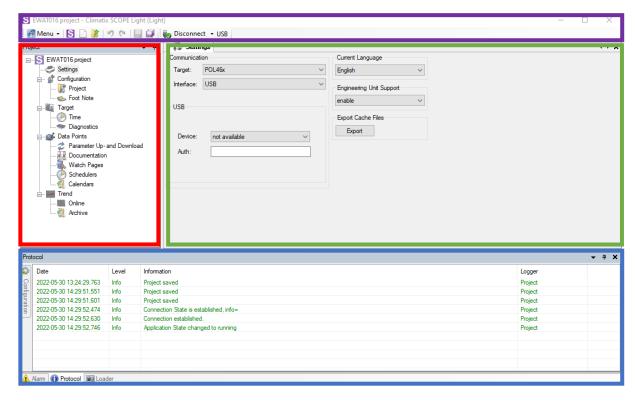
5. Select English in the Language dropdown and Click on the "Save" icon



6. Loading process will start again to upload the English translations into the Watch Pages

#### 3.2. User Interface:

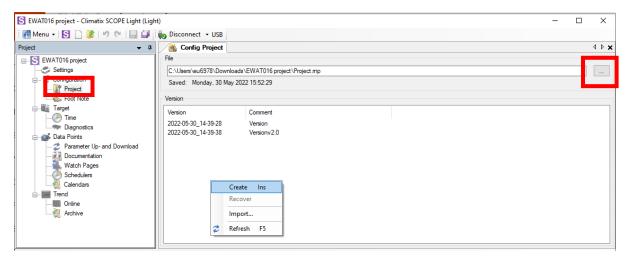
- Project Tree in red
- Editor area in green
- Bottom window in blue
- Top menu for connection and scope settings in purple



## 4. Configuration

#### 4.1. Project:

- Find where the project files are saved within your PC
- Click on the three dots to open the folder
- Left click and then Create to save a copy of current settings in a Zip file



#### 4.2. Foot note:

This is only used for whenever a PDF output is created to have the desired page footer

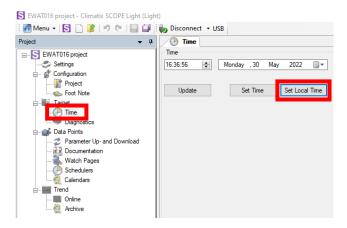




## 5. Target

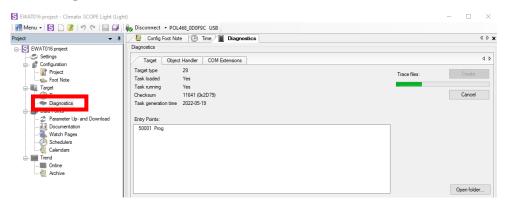
#### 5.1. Time

With this command we can update the controller (target) time and date, which is particularly important before making any trends on the concerned controller. This will ensure correct time stamping.



Click on "Set Local Time" to copy your PC time into the PCB

#### 5.2. Diagnostics



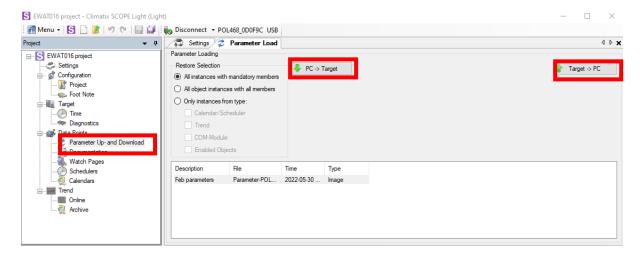
Not of a big use for the EWA(Y)T-CZ. But within the ZIP file you can find the UPGRADE.LOG file that contains all the updates the PCB has encountered:



#### 6. Data Points

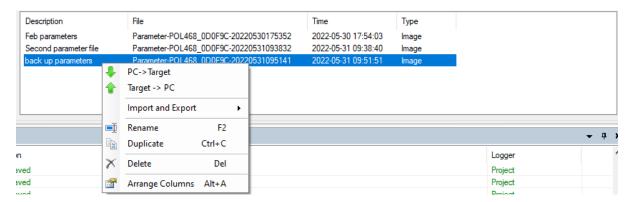
#### 6.1. Parameter Up- and Download

This is a very use full feature to save local Pc the user settings of the chiller. It's similar to the procedure to save the parameters on an USB drive with [14.07] on EvCo HMI. But it gives more flexibility like storing parameter sets from different time stamps, they are all stored in the project folders.



- Target -> PC = It will save current parameters within the project folder in the Pc
- PC -> Target = Upload parameter to target: Select the desired parameter set to be uploaded and be sure the option "All instances with mandatory members" is selected. Before uploading the file, stop the chiller operation as it may affect compressor or other delicate controls of the running chiller.

The parameters files are saved within the Cache folder and keep the same name as in the "File" column.

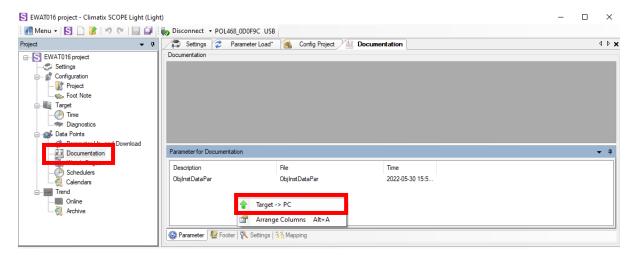


The parameter files are stored in both .par and .ucf format, the ones with .par could be used for manual uploading trough USB drive on main pcb.

Do not delete files at the Cache folder, if you want to delete a parameter file do it by right clicking in Scope and then delete.

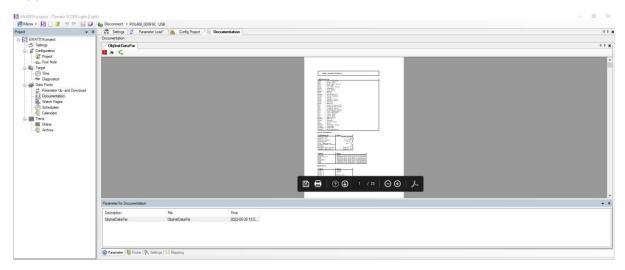
#### 6.2. Documentation

This function allows the creation of a pdf file with the complete list of data points used in the chiller application.



To start, right click in the "parameter for documentation" area and select "target => pc". A predefined filename "ObjInstDataPar0" will be proposed, this filename can be changed if needed. After confirmation the pdf document will be prepared. Be aware that there must be communication with the controller.

The "ObjInstDataPar0.pdf" is stored in the "Output" folder of your project. Simultaneously a .txt copy is also made.



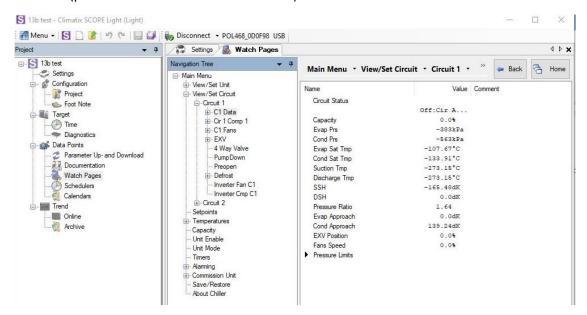
The documentation file can also be directly opened inside scope light, by clicking on the filename while being inside the "documentation" feature.

The created file is an extended source of information, which for field service may be too complicated, might be interesting to have a paper-based parameter backup, to check software version... or other uses you can find to it.

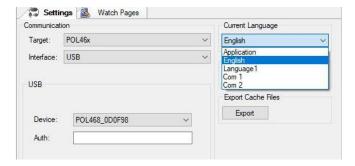
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#### 6.3. Watch Pages: Service Tool alternative within Scope

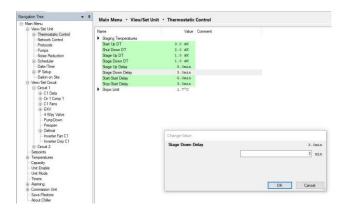
With v1.14.A the watch pages have been implemented to Scope Light in order to use the Scope as a Service Tool (procedure also indicated within SVM) alternative:



Just remember to select the English version at application settings and save after selecting English:



Go to Watch pages to see same confirmation menus as in the Service Tool. If value is highlighted in green is modifiable, double click to change it.



#### 6.4. Schedulers/Calendars

Schedulers and Calendars are not supported for the POL468. In order to set the schedule, use the HMI as indicates in the Operation Manual.

#### 7. Trends

Trending in scope light is a powerful feature allowing real time online trends (graphs) and recording unit operation data. Trends use the internal memory of the chiller controller and will require a spare pcb to read them offline since scope will need to be connected before opening the Trends menu.

#### 7.1. Trendconfig files

To make trend possible a TrendConfigxx.sdf file must be present in the "input" folder of the project. The xx stands for the circuit and revision of the Trendconfig file.

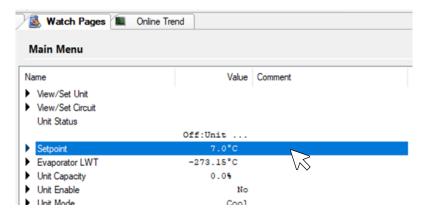
Official Trendconfig files are available within the portal.

#### 7.1.1. How to create your own Trendconfig files

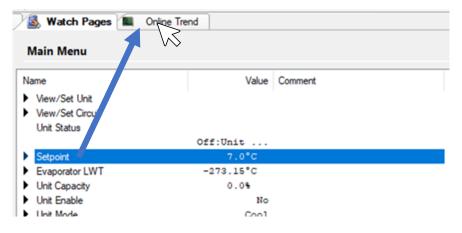
It has to be noted that the creation of the TrendConfig00.sdf can only be made using Siemens SCOPE tool full version. Full version is only available for the factory engineers.

However, on Scope light Trendconfig files can be created, with the only limitation that the datapoint must be available within the Watch Pages menu. Create the Trendconfig file by drag and dropping the desired datapoints (one by one):

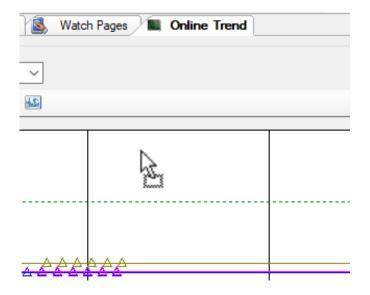
1. Go to Watch pages and click on desired datapoint



2. Drag (Keep the left mouse button clicked all the time) the selected value to the Online Trend tab on top of the screen (if not present, just open it by clicking on it on the left menu)

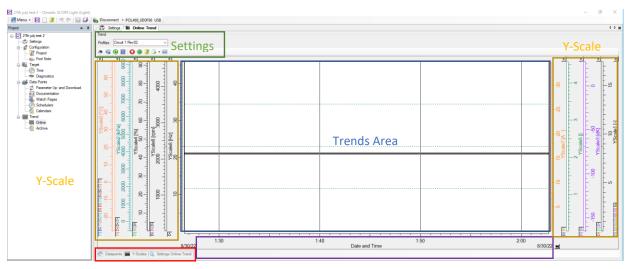


3. While still dragging the Datapoint drop (keep clicked until mouse icon changes to drop icon) it on the Trends screen



#### 7.2. Online Trend

Once Trendconfig files are correctly in folder similar screen will show when starting:



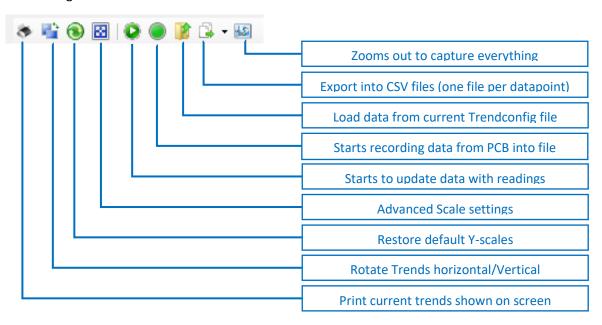
**Datapoint settings** 

X-Scale (Time)

Start a trend: It's evident that the connection to the controller must be established and trends will start updating automatically. In case it doesn't update push the *start update button* on the trend settings pane.

**Remark:** Each TrendConfigxx.sdf will have its own readings and are independent form each other. For double circuit you will have two separate trends each with a Trendconfig file!

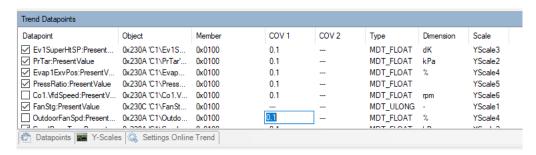
Main Settings for the trends are:



**Remark:** It' important to understand that in standard *online* trending mode the data is NOT recorded automatically so when closing the scope program, the online (the one you have seen on the display) trend is lost. The trend data has to be recorded physically with the button "start recording "has to be selected while performing an online trend. Stored data can then be retrieved.

Trend Datapoints (Bottom left of the trends Screen)

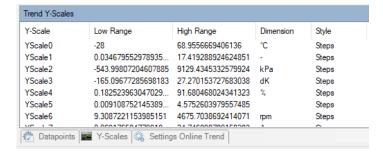
- Select which datapoints to be included if some are missing it might be due to being unselected. Just check the checkbox.
- COV (Change of Value): The value change that will reflect the value change within the trends. For accuracy purpose leave it below 0.2



Note: In order to enlarge the view area for the graph, some screens can be made "float", so more space becomes available on the screen for the graph. This can be done by dragging the Trend datapoints area outside the window. In order to restore drag & drop it back or restore default view:



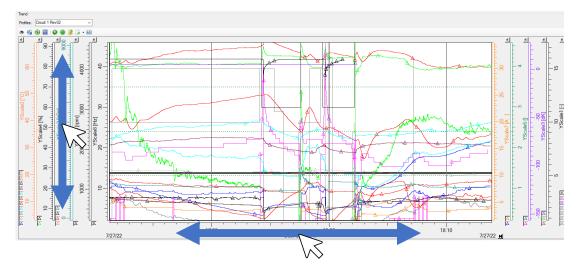
All datapoints are grouped by type of data, for example, all temperatures are grouped on same Y-Scale. When zooming in the trends screen, the Y-Scale will be changed and probably will show unfriendly scales. Current Y-sales range can be changed when scale is showing unfriendly values:



Y-Scale and X-Scale can be changed form main window too by double clicking on the scales on the sides. Also, restore default scale button can be of help.

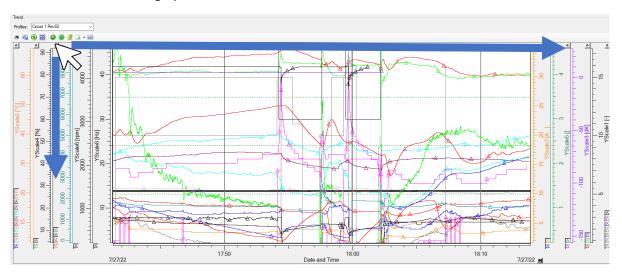


In the normal online mode, the capturing of the data is continuous, the trend data point is only updated on the screen if the value has changed more than the *COV* value. By scrolling the time base (X-axis) we can easily zoom into a detail or abnormality on the graph. Y-Scales can also be scrolled:

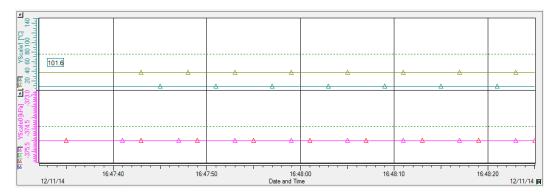


Note while scrolling the time axis more or less detail of the curve can be displayed, up to 1/100 of a second can be visualised.

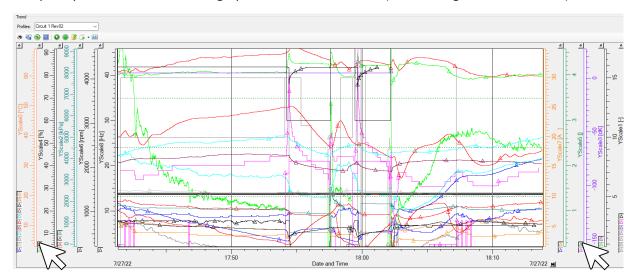
Move the Y-axis (time by default) for better visibility. By clicking, Drag & Drop a y-axis we can put it on the other side of the graph.



Another possibility put the y-curves on each other.

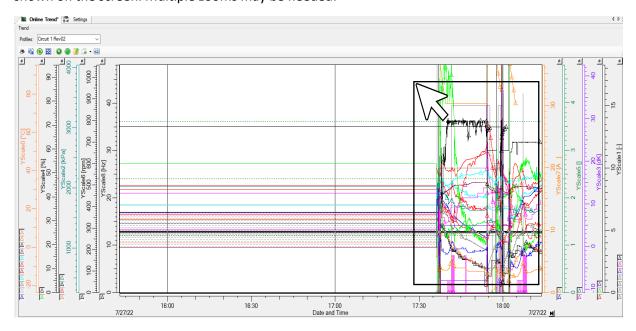


Temporary remove data from the graph, use the hide buttons (Small triangles in the Y-Scales)

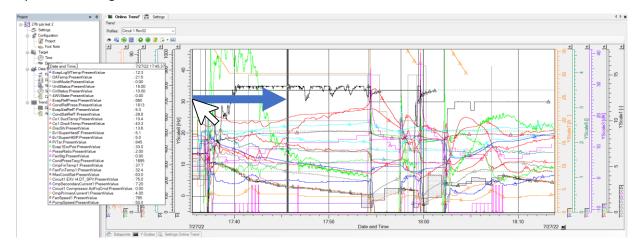




Zoom in with drag box. For magnifying certain detail, it is possible to drag a zoom window around the desired part of the graph. This is very use full when a detail in a long trend has to found back on shown on the screen. Multiple zooms may be needed:



Showing a legend for currently monitored data is possible, this can be useful when quite a lot of data lines are in the online trend. In order to show the legend, click on the left or right y-axis and drag to the middle of the graph, so a measurement ruler becomes visible, this can be used to exactly know data point value and is also use full to have a legend, the legend you can move it around the screen by click and drag.



Move the measurement ruler to location where you want the readout values.

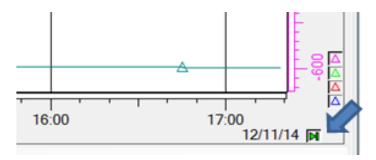
During several zooms it may be required to restore back the y-axis value in order to have again the proper aspect of the graph. Note there is no *undo* function to go back to the view before the zooming. The restore Capture Trend button will help us zoom out completely.



Clicking on" Capture *Trend*" in the configuration dialog box will display the complete graph since beginning.

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Clicking on the bottom right play button: it stops current update of trend display, but datapoints data record continues in the background! Clicking this button again reopens the display for current time.



Further customization of the outlook of the graph is possible using the *show the trend configuration dialog* 



The Export CSV file option will create a separate CSV file per datapoint which can be quite unfriendly to read:



Be aware the project data is stored in the TrendConfigxx.sdf file inside the *input* folder of your current project. When reopening a same trend file later on and if the <u>start recording is activated</u> <u>again</u> the trend data will be added to the existing TrendConfigxx.sdf file. The format of the database file does not allow importing from Microsoft Excel and analysis of the data will need to be done from scope itself.



To avoid recording on top of an existing .sdf file you can add a new "empty" TrendConfigxx.sdf file with a different name locally in the "input" folder of the project. Empty profile files need to be organised and saved by the user itself.

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#### 7.2.1. Trends scale on EWA(Y)T-CZ

In order to see the trends properly on the screen, the recommended scale for the trends are:

• For temperatures [°C]: -40 to +70

• For pressure [kPa]: 0 to 5000

• For percentage [%]: 0 to 100

• For rpm: 0 to 6000

• For Scale [Hz]: 0 to 70

• For Current [A]: 0 to 80

For Defrost stage and Pressure ratio: 0 to 10

• For superheat [dK]: 0 to 60

• For status: 0 to 30

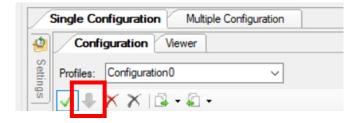
You can doble click on the scale and set you own scale too.

#### 7.3. Archive Trend

Archive trending is used to upload an ArchiveConfigxx.sdf file within the pcb. This ArchiveConfigxx.sdf will record the unit trends within the ArchiveConfigxx.sdf file saved in the controller. Thanks to this, it is not necessary to have the computer connected to record all the time.

However, the POL468 doesn't support the Archive trend due to lack of memory within the POL468. Due to this the Archive trending is not possible in the EWA(Y)T-CZ

POL468 will have the load to target button greyed out and not possible to use:

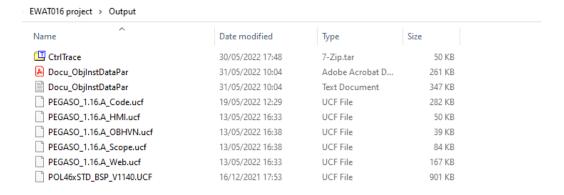


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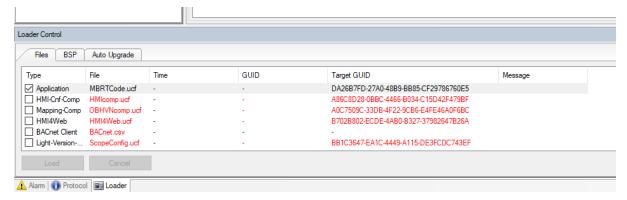
## 8. Update Software using Scope

Apart from updating software with the physical USB, as described in the Daikin portal, software can also be updated using scope following the next steps:

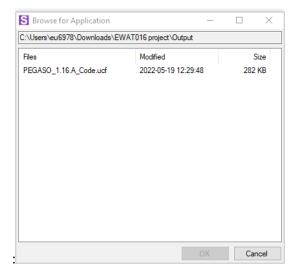
- 1. Connect Scope to pcb and create a new project as described in this manual.
- 2. Open project folder and Select Output Folder
- 3. Paste all Software files inside:



4. Within Scope bottom window click on "loader" at bottom menu:



5. Double click at the Loader screen and select the software file:

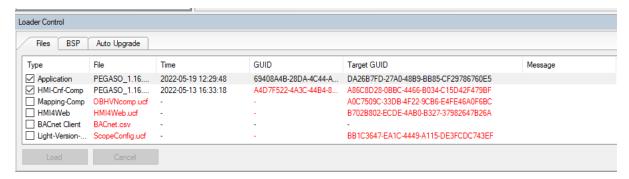


6. Repeat on each item within the loader menu,



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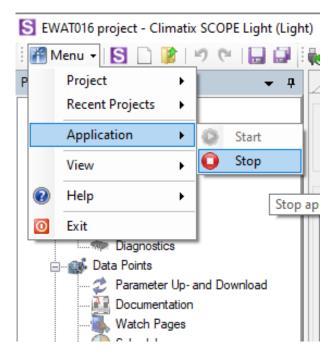
- a. Item will turn from red to black.
- b. only file to ignore is the BACnet Client.



- 7. Once all are selected, do the same at BSP tab with BSP (if BSP requires an updated)
  - c. Click on the 3 dots on top right and select the BSP file (file will contain BSP in the name)



8. Once all files and BSP are selected go to Menu -> Application -> Stop

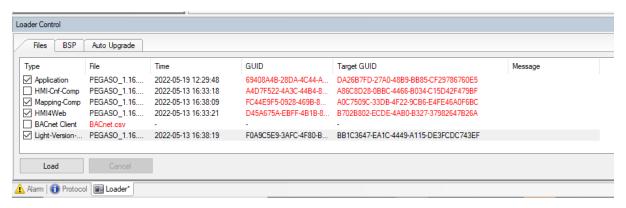


9. Select Stop and pcb LED will now turn Orange

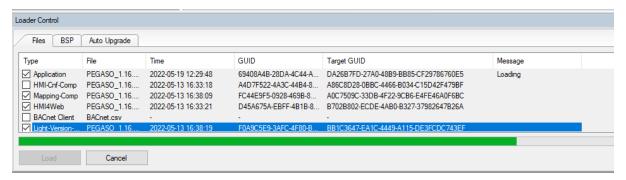


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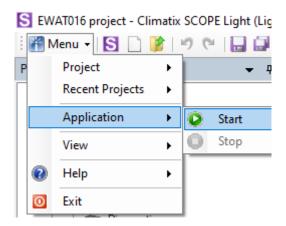
10. Once the LED is Orange, it will be possible to Load the filed. Click on "Load":



11. Selected items will start loading



12. Once software is uploaded go to Menu -> Application -> Start



13. LED is now green, and unit is ready to operate

**WARNING**: When using stop application within scope, pcb LED will stay orange permanently until started again from scope. It will stay orange even when restarting and unit won't operate while led is orange.

Yours sincerely, Alexander Sarasola DENV Technical Service