sylvac

Data processing software

E

Sylcom 1.5.10

User guide

SYLCOM
Data processing software

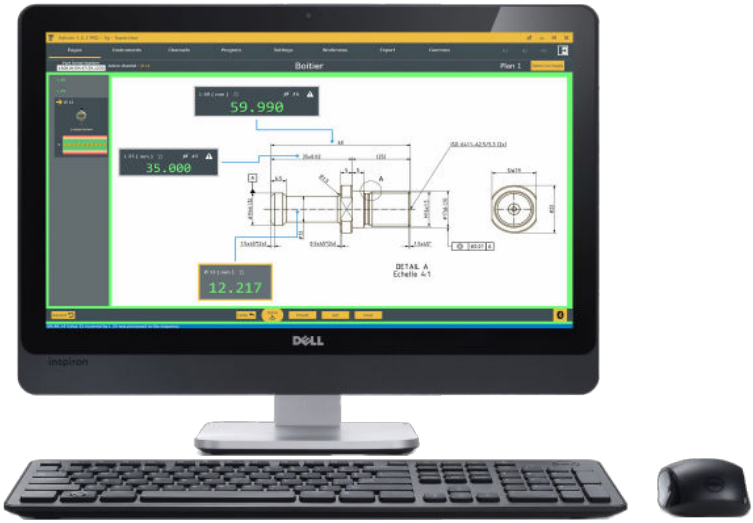
Content

1.	Preamble	4
2.	Minimum hardware and software requirements	4
3.	Installation	5
4.	Licenses	6
5.	Login	7
6.	Home	8
7.	Instruments	9
8.	Measurements	20
9.	Settings	36
10.	Export	43
11.	Data/monitoring	48
12.	Characteristics	50
13.	Program	50
14.	Control plan	53
15.	On the Fly	59
16.	Machine tool compensation (MTC)	61
17.	OPC-UA	64
18.	About screen	64
19.	Connections issues	66
20.	Certificates	68

1. Preamble

Sylcom is the latest software product to be launched by Sylvac and has been designed to process information from instruments connected via Bluetooth® Wireless technology or via a USB cable. It creates an almost limitless number of display characteristics spread over one or several pages. Several display modes are available so that the status of the variable measured (GO/NG) can be visualized instantaneously. Sylcom can also be used to measure components sequentially, to collect all values simultaneously and to define a time interval to save values automatically. The data can be saved in Sylcom and then exported to an Excel file.

The concept is to offer a modular software application based on the specific functionalities required.



2. Minimum hardware and software requirements

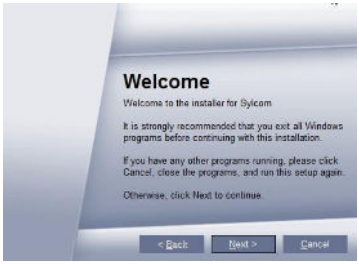
The minimum hardware and software requirement are listed as below:

- Software requirements: Windows 10/11 - Intel i5 64-bit processor
- Hardware requirements: 8GB RAM (16 GB recommended)
- Hard disk (free space 4Go required)
- Minimum display resolution 1280x800 (recommended 1920x1080)
- Bluetooth® 4 minimum (Only for internal Bluetooth usage)

3. Installation

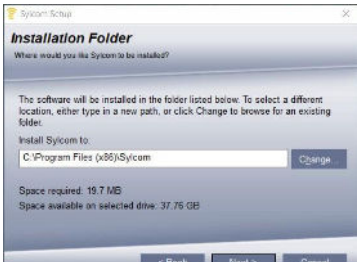
E

1. Run install file as administrator

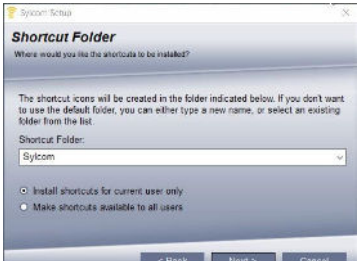


2. Click «Next» on the Welcome page

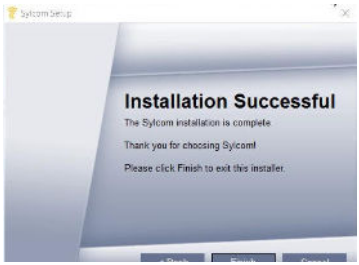
3. Select installation folder or leave as default



4. Option for single or multiple user's accounts



5. Install FTDI driver to connect USB Sylvac instruments



During Sylcom installation, Redistributable. NET 2013 and Framework .Net 4.5 will be installed on your computer if not present.

4. Licenses

There are 4 different license packages that you can choose between:

- Lite
- Standard
- PRO
- Expert

To activate the license, you can choose between a physical USB dongle or a software license. For more information, see About screen.

4.1. Packages

4.1.1. Lite Package

The free version of Sylcom limited to one connection can be downloaded free of charge from our website. It lasts 60 days.

4.1.1. Standard, Pro, Expert

Technical data	Sylcom LITE	Sylcom Standard	Sylcom PRO	Sylcom Expert
Max. number of instruments (Total/Cable/Bluetooth®)	1/1/1	16/15/16	128/15/64	128/15/64
Tolerance, numeric, bar graph, histogram, Go/No Go, manual data insertion	x	x	x	x
Monitoring	x	x	x	x
Basic calculation	x	x	x	x
Foot pedal (USB, BT), bar code reader, MB-I/O, M-Bus	x	x	x	x
Exports focus/file/Excel/COM port	x	x	x	x
Create, activate or deactivate a user	x	x	x	x
Workmenu & flashing display	x	x	x	x
Multiscale data, simple sequence, auto-detection of the instrument, customizable background	x	x	x	x
Planarity and custom formulas		x	x	x
Action programming, mixing measurements, tracea-bility fields, control plans, skip a measurement or a control, display active characteristic only, Control plans mode			x	x
Statistics display			x	x
Export SPC			x	x
«On the fly» mode, no pairing (500 instruments)				x
OPC-UA mode				x
Tool(s) corrector (Machine Tool Compensation 25 connectors)				x
Monitoring Cloud				x

4.2. Licence support

4.2.1 Dongle

By default, when you order the software from Sylvac, you will receive the software box with a USB dongle containing your license.

4.2.2. Software

You can also ask your Sylvac agent for a software license that is not using any physical dongle and then download our software on the website. For more information, see About screen.

5. Login

By default, 2 users are available:

- Supervisor: User having all rights to set hardware and software parameters
- Operator: User with restricted access, e.g., to use only existing configurations and data export

Default password for users: 123

In the Users interface, you will be able to create and manage users' accounts, including changing passwords.

6. Home

This page allows you to access and manage your different parts.

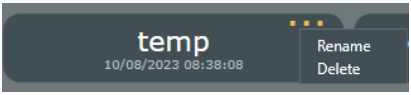
The current version of Sylcom is indicated just below the «Welcome» message.

The **right panel** contains all the recent parts configurations that you can easily find by **sorting** them by **date/name**, or via the «**Search**» text box, as well as a «**Browse**» button that can load parts configurations from your PC.

The «**Save as**...» button allows to save your part configuration, or to copy it.

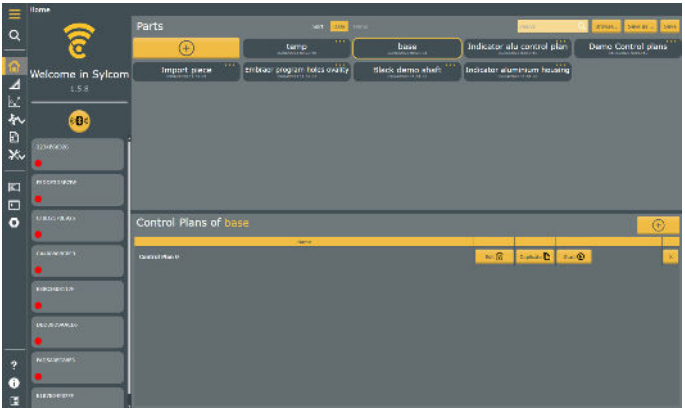
Press the ⊕ button to create a **new part** configuration.

On the top right of the non-selected parts names, there's a menu to **Rename** or **Delete** the configuration:



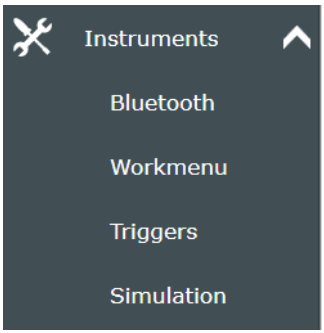
In the «PRO» version of Sylcom, there is also the «Control Plan» panel just under the «Recent» parts one. You could add and use one or several control plans to measure the same part (e.g., different aspects of a part, controlling all the features or only part of them, inspecting the raw part or the rectified one, ...). This will be discussed in a further chapter (see Control Plan).

The **left panel** displays a connection button to connect a new Bluetooth instrument, and, below, the list of the actual connected instruments (green for connected instruments of the selected part configuration, red for missing instruments and green with a white border for connected instruments that are not in use for the selected part configuration).



7. Instruments

This menu gives all information about connected instruments and Bluetooth® management. It is divided in 5 sub-menus:

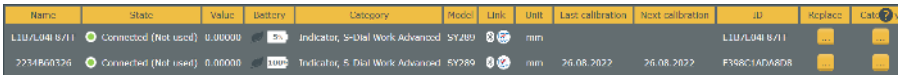


- Instruments
- Bluetooth®
- Workmenu
- Triggers
- M-Bus

E

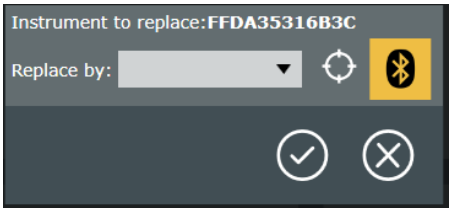
7.1. Instruments

This sub-menu displays all instruments details.



- **Name**: You can edit and customize the name of your instrument (by default, the name is the same as the ID).
- **ID**: The ID is a unique mix of letters and numbers that is used for example for the Bluetooth pairing (used as a MAC address in this case).
- **Model**: It is an internal name used for differentiating the Sylvac instruments
- **Link**: The connection type of the instrument. Can be either USB, M-Bus, or Bluetooth. In the last case, an extra icon will show if the instrument supports IOT connection (IOT is only on recent Bluetooth device and includes 3 profiles: simple, paired, HID).
- **Value**: The instantaneous value of the instrument.
- **Unit**: The unit of the measurement.
- **Battery**: The Battery level of the instrument. In case the «warn on low battery» setting is enabled (see Settings), an explicit message will be displayed in the upper zone of Sylcom window. Also displays the ECO mode state.
- **Last calibration**: Enter the last calibration date (just for information).
- **Next calibration**: Enter the next calibration date. In case the «Instrument usage if calibration expired» setting is set to «Warn» or «Block» (see Settings), and the calibration date is expired, this date text will be displayed with a red frame, and you'll be warned by a message in the upper zone of Sylcom window. In addition, the instrument will either display a «CAL» message or will be blocked if configured that way.

- **State**: The connection status of the instrument. Can be either red, orange, green or «white and green». Disconnect means that the instrument is used by the current part configuration but is disconnected, Connecting means that the instrument is getting connected (working), Connected means that the instrument is connected and used by the current part configuration, Connected means that the instrument is connected but not used by the current part configuration.
- **Replace**: Allows you to replace the instrument used in the current part configuration with a new instrument. It will automatically do the change on every configuration where the «old» instrument was used. e.g., when an instrument is broken, and you want to replace it with a new one without doing the job manually on every configuration using this instrument.



If the new instrument is already connected, you can either select it in the scrolling list menu or with the «autodetect button» by moving the sensor manually. If the instrument is not connected yet, connect it physically to the computer to make it appear on the scrolling list menu (for USB or M-Bus instruments) or press the Bluetooth button and click on the «Connect button» of your instrument.

When pressing on an instrument line, different parameters of the selected instrument will show on two new windows (lower part of the screen). The window at the left is for **General Parameters** while the window at the right is for connection parameters (**Bluetooth, M- Bus, USB**).

7.1.1. General Parameters

Remind essential information about the instrument and allow the user to change parameters:

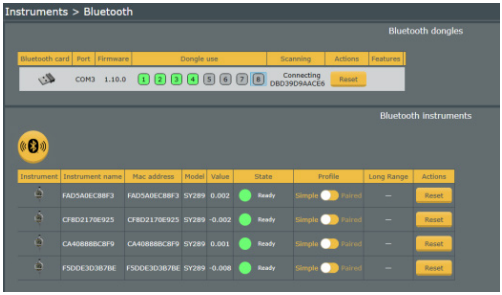
- **Detection threshold**: threshold value used to determine whether the instrument has moved or not, before selecting its characteristic automatically.
- **Commands**: To send different kind of messages to the instrument (e.g., MIN? = What is the Min value).

7.1.2.Bluetooth Parameters

- **MAC**: The unique address used by the Bluetooth device to communicate with the computer.
- **Profile**: The connection mode of the instrument. It can be either Paired or Unpaired. Paired means that the instrument is linked to the PC (Sylcom) even when the instrument is not needed by any part configuration. Unpaired means that the instrument is connected only when the part configuration is open in Sylcom. After closing the configuration, it will be detectable by other PCs as well.
- **Always detectable**: When enabled, the instrument must continuously emit Bluetooth signals even when it isn't connected, to remain detectable. Set it to Disable if you want to save the battery life.
- **Eco mode**: When enabled, instrument goes to standby mode after 1 minute of inactivity, remaining connected via Bluetooth or detectable with a scan. Bluetooth communication is slowed down and measurement refresh rate is lowered
- **Long range**: Indicates if the instrument has the long-range feature. Allows to increase communication distance at the cost of rising power consumption of about 25%.

7.2. Bluetooth®

This sub-menu is dedicated to Bluetooth® management. It is divided in two panel: Bluetooth® dongles and Bluetooth® instruments.

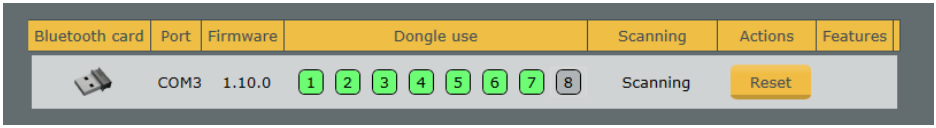


7.2.1. Bluetooth dongle

This tab lists the available dongles on your PC and is dedicated to the interactions between the instruments connected and the internal or external dongles. You can select the master dongle on which you will be able to connect your instruments (white background).

In this table, you can see the Scanning steps as well as the Connecting steps after plugging the dongle(s). You can check the compatibility of your dongle with the «Compatible» field. If the dongle's firmware is too old, the bullet will show red, and you will need to update it before connecting the instruments.

You can also see the number of instrument that are already «Paired» and/or «Connected» and the «Capacity» (max number of instruments) of each dongle.



To connect a Bluetooth® device, at least one dongle must be present on the PC and recognized by Sylcom.

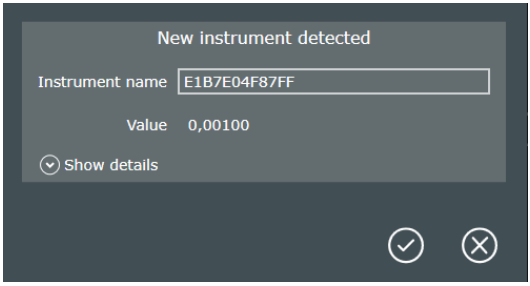
Generally, you must connect one or several external Bluetooth® dongle(s) to the PC to ensure reliable connections with the devices.

Yet, if you have a Windows 10 (or higher) version of Windows, Sylcom could also use the internal Bluetooth® of your PC to connect the different instru-

ments. But be careful: the connections could be less reliable depending on your PC hardware and on the operating system processes in use.

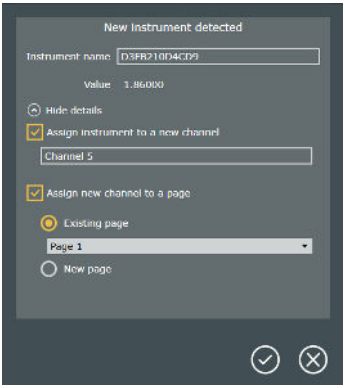
Ensure the Bluetooth® on your instrument is turned on and blinking (otherwise, press on the instrument menu buttons to enable «BT ON»), then run a scan to pair it (with).

In case the «Show popup on new instrument» setting is enabled (see Settings), a prompt window appears as soon as a connection process is successful.



Click on "Show details" to set instrument/characteristic parameters.

- **Assign instrument to a new characteristic**: If checked, will create a new characteristic (characteristic name can be modified just below) which will display value of the device.
- **Assign new characteristic to a page**: If checked, you will be able to choose on which page you want your characteristic («Existing page» or «New page»).



Then, click on  .

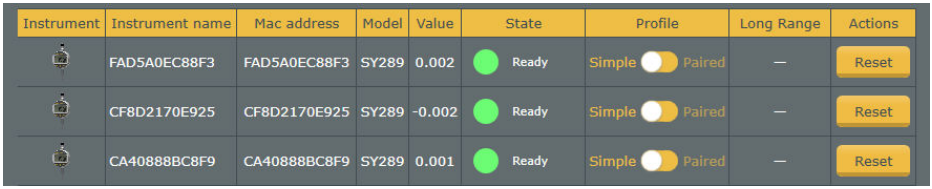
At bottom of interface a blue bar shows the connection status.

The «Reset» button (

) allows you to make a total reset on the selected dongle.

7.2.2. Bluetooth instruments

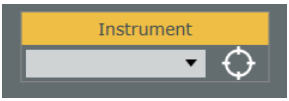
This tab lists the Bluetooth® instruments available. You can see the «Instrument name» and «Mac address» of your device (same name by default) as well as its internal Name and its actual Value. You can check the State of your instrument with the «State» field. The bullet can be either green (the instrument is ready), orange (the instrument is connecting) or red (the instrument is not connected). The «Profile» field (only available with recent instruments) allows the user to choose if he wants the device to be «Paired» or not («Simple»). **Paired** means that the instrument is linked to the PC (Sylcom) even when the instrument is not needed by any part configuration. **Simple** means that the instrument is connected only the duration of the part configuration. Then it will be detectable by other PC. Use the «Reset» button to reset your device to its defaulted Bluetooth® parameters. The «Paired but not connected» field indicate the instruments paired to your PC that are not connected.



E

7.3 Workmenu

This sub-menu is dedicated to instrument management. First, you need to select an instrument with either the «autodetect button» or with the scrolling list menu.



A tab will show with information about the selected instrument. In the «Actions» field, three buttons are available:

- **Read All**: read the information about the menus and the settings of the selected device.
- **Write All**: when having set the different Menus and Settings, click this button to write these changes on the device.
- **Reset instrument**: reset the Menus and Settings of your instrument.

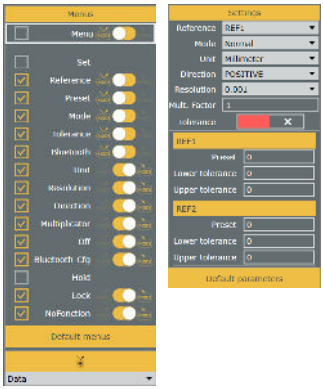
When pressing the «Read All» button, a window that repertories all the different instrument.

Menus and **Settings** will show.

Three buttons are available under the device picture:

- **Load button**: to load an already existing file.
- **Save as button**: to save your actual Menus and Settings and choose a directory to save it.
- **Default configuration button**: to go back to initial configuration.

The instrument Menus allows the user to manage the different menus that will be accessible on the device by clicking on the yellow check boxes ☑ . It is possible to set the way we access a menu on the device by clicking on the ⬤ (left for «simple pressure»). To enable or disable everything at once, use the first line («Menu») check boxes ☐ Menu ⬤ .



To recover the defaulted menus, click on the «Default menus» button.

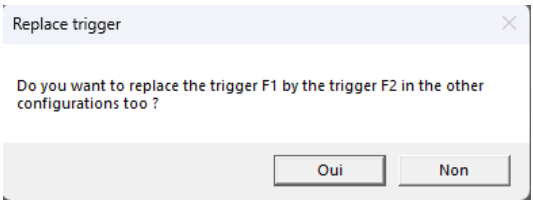
To give a function to the **center button** of your device, click on the scrolling list below the «Default menus» button and choose which function you want.

This panel details you the different device settings. For more information, refer to your Instrument Manual.

7.4. Triggers

This sub-menu allows to see and replace quickly one or several triggers of your configuration(s) by another trigger e.g., replace the F9 (pedal) trigger by F1 or by a Bluetooth pedal on all the characteristics of all the configurations.

When pressing the «...» button, you'll be asked to replace the trigger on all configurations or only on the current one:



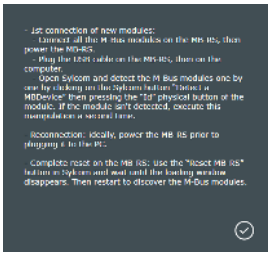
E

7.5. M-Bus

If you need to connect any specific instruments like M8 P5 probs, or an air gauge, or a temperature sensor, etc., you can use M-Bus modules.

The specific M-Bus modules will be chained to a MB-RS module, which will be itself connected to the PC by a USB cable.

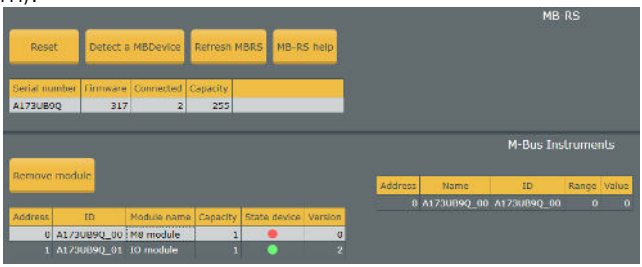
You can access an extra help window with the «MB-RS help» button MB-RS help , to know how to connect the M-Bus modules. It is important to follow it precisely to ensure a good usage of the M-Bus devices.



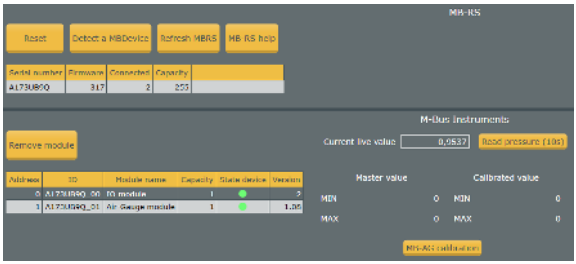
- **Reset**: Press this button Reset if you need to restart a clean configuration of the M-Bus modules connected to your MB-RS.
- After having connected a new M-Bus module on the MB-RS, you can detect it by pressing the «Detect a MBDevice» button . Then, press the «Id» physical detection button on the M-Bus module. If the connection succeeded then, a new line will be displayed in the M-Bus instruments panel below.
- **Refresh MB-RS** : Press this button Refresh MBRS to update the list of the modules connected and detected by the MB-RS.

Under these buttons, you can see information about the MB-RS module such as its 'Serial number', the number of devices 'Connected' to it, etc.

MB-8i module display: You will have 8 probes slots connection reserved, even if less than 8 probes are really connected. A green bullet will be display on the 'State device' column if the device is connected correctly. In the table on the right side, you can see the instant value of the probes and the range (e.g., 10 = -5 to +5mm).

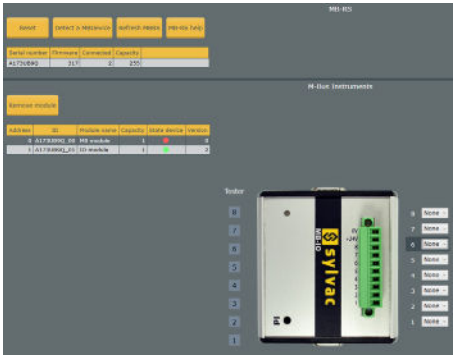


MB-AG module display: You can calibrate the low and high masters by pressing the «Set low/ high standard» buttons.

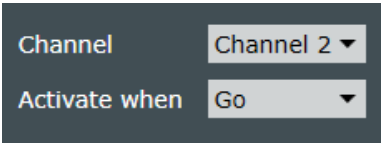


MB-IO module display: After connecting and detecting your MB-IO module, you can check each of the 8 outputs by pressing one of the «Tester» buttons on the left: it will send a «1» (24V) signal on the related output.

On the right side, you can configure the 8 slots as inputs or outputs, depending on the action type you select in the list.

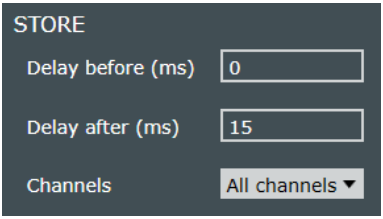


Output: 0V or 24V signal is sent to an external system (e.g., red or green lamp, etc.) after a specific Sylcom result (e.g., characteristic result success or failure).



For example, on slot 1, select 'Characteristic tolerance' 'Go' result of 'Characteristic 2' to turn on a green light when the measurement succeeds (inside tolerances).

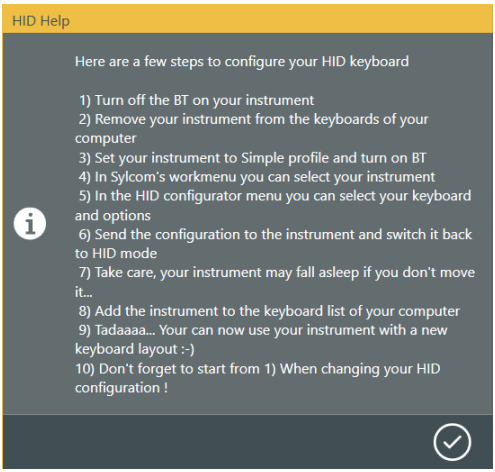
Input: When a 24V signal is read from an external trigger (e.g., pedal, switch, etc.) it executes a specific action (e.g., STORE/PRESET a characteristic, export to CSV format, etc.).



7.6. HID configuration

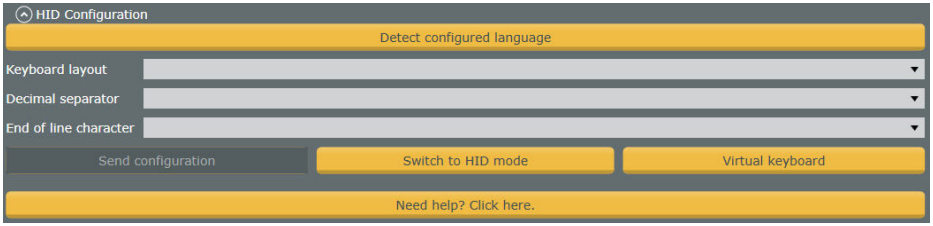
When connecting a recent Sylvac Bluetooth instrument (S CAL-EVO firmware from 4.02 or Universal firmware from 4.10), you will be able to configure the HID keyboard to be compatible with the real keyboard you are using to export the measured values from the instrument to an application on your PC, tablet, or smartphone.

HID configuration steps:



When connecting the Sylvac Bluetooth instrument, you can configure the HID keyboard by selecting a language «Keyboard layout», the «Decimal separator» and the «End of line character». You can also display a virtual keyboard to check your current keyboard layout.

Press the «Help... Click Here» button to display the HID configuration steps like displayed above.



8. Measurements

The measurement screen is divided in 5 sections:

- Measurement panel
- Page panel
- Characteristic panel
- Sequence
- Multigauge

Sylcom interface is designed to connect your Sylvac instruments and configure characteristics in One-click.

If you log in as a supervisor user, you'll have lots of settings available in this window. Otherwise, logged as an operator, this window will be very simple with the minimum user interface only.

Supervisor interface:

USB instruments are automatically connected to your PC. For Bluetooth® devices, you can use the Bluetooth® button . Please refer to chapter Bluetooth for more information about the Bluetooth connection.

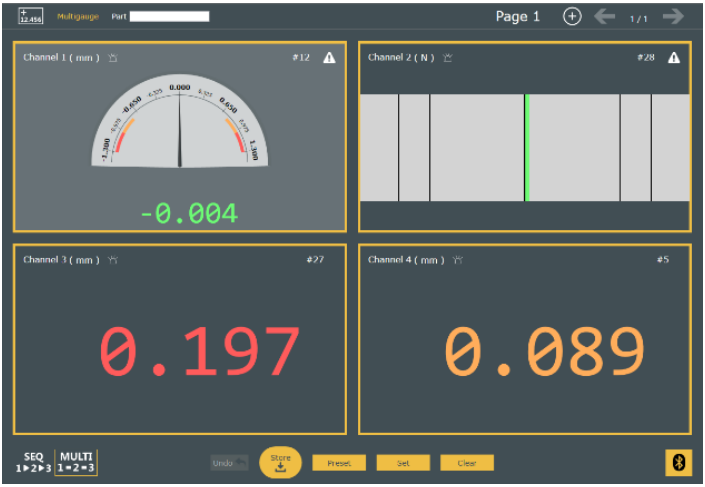
The left panel is dedicated to page functions and settings.

The right panel is dedicated to the selected characteristic.
All characteristic parameters can be set from here.

Note: you can use this button in the upper right corner to hide the status bar.

8.1. Measurements panel

This panel shows a general view of your work.



Note: Green/Red/Yellow: color is related to the result's classification: Go/No-go/ Warning.

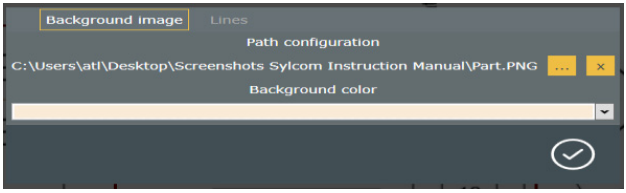
In the top bar, you can find consecutively: the «Add new characteristic» button, the measurement mode (Multigauge or Sequence), the Part name, the Active characteristic (only in Sequence mode), the current page, the «Add a new page» button and the «page navigator».

In the central field, a complete view of the characteristics is displayed. You can change the layout configuration from the Page panel and change the characteristics' displays from the Characteristic panel.

A characteristic is presented as below:

On the top left, we can see its name and its unit followed by a little button («Blink instruments» button). When pressing this button, the device(s) used by the characteristic will blink a few seconds to help finding it. On the top right, we can see the «Store counter»
that shows the number of measurements that are already stored. If «Blind mode» button is active, a little icon ( ) shows up on the top right too (see By pressing the «settings» button , you can add your customized part drawing in the background and link the characteristics to it.

You can also configure the general background color as well as the characteristics' links lines color (even transparent if needed).



The Page options are listed as below:

- **Activate page tolerance**: If enabled, compute tolerance of the whole page. If at least one measurement is out of tolerance, the page background will appear red. Same for green (every measurement are inside tolerances) and yellow (at least one measurement is in the warning limits).
- **Enable Session**: Needs a PRO license. If enabled, the stored measurement will be gathered in a session (the number of measurements of the session is displayed in the upper bar in parenthesis). Then, you will be able to print/export/clear all the measurements of the session by means of programs (e.g., use F3 Key to execute «print session» action).
- **Live export**: If activated, you will be able to export data after each characteristic measurement or after each page measurement. To configure the export data format, see Export.
- **Store data trigger**: Allows you to choose between different kind of triggers to take a measurement (USB Pedal [F9 or CTRL Enter], Bluetooth Pedal, Keyboard, Hotkeys [H1, H2, H3]).

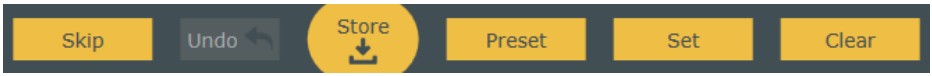
Pressing the trigger has the same effect as pressing the «Store» button .

In case of «Sequence mode» , pressing the trigger will store the selected characteristic. Otherwise, in case of «Multigauge mode» , it will store all the characteristics of the page at once.

If the «Timer» is enabled, measurements will be taken at a specified period from when the trigger was pressed (press it a second time to stop the measurements).

Characteristic settings panel for more info. about this mode).

By double clicking on a characteristic, you will access the characteristic edition page: Page settings panel Under the Characteristics' displays, there are 6 buttons available:

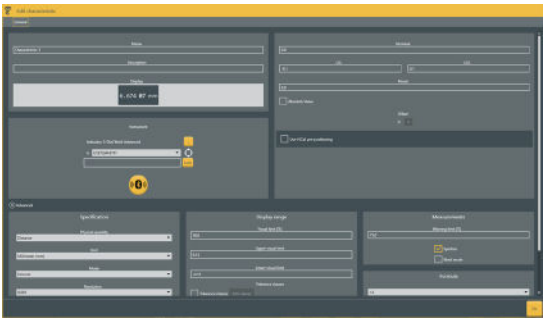


- **Skip**: Skip current measurement. Only available when executing a «Control plan», if «skippable setting» was enabled (needs a PRO license).
- **Undo**: Delete the last stored value (only available in «Sequence» mode).
- **Store**: Store the value of the active characteristic(s) into an internal database before classification and, if needed, for later display or export.
- **Preset**: Preset active characteristics (configure the preset value in Basic edit characteristic)
- **Set**: Set (preset to 0) active characteristics.
- **Clear**: Clear min, max, mean (midrange) and delta values of active characteristic(s).

Note: each button acts differently depending on the current mode («Sequence» or «Multigauge»). In «Sequence» mode, it will only affect the current characteristic whereas in «Multigauge» mode, it will affect every characteristic of a page. E.g., in «Multigauge» mode, a «Set» will preset to 0 each characteristic of a page.

8.1.1. Edit characteristic

This page allows you to manage basic characteristic's parameters (discussed in Measurement screen/Characteristic settings panel/Basic edit characteristic) as well as 'Advanced' parameters. On the right side of the page, the last stored measurements are displayed (you can change the order of the columns with a drag/drop).



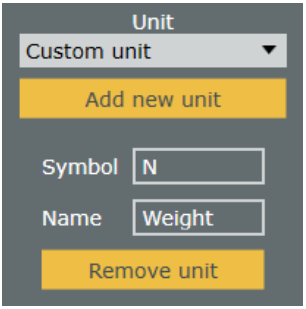
In the upper left, you can manage information about the characteristic: its name, a little description of what it does and its display. Underneath, you can configure the characteristic's instrument:

- **Define the category** of the instrument (type / range / resolution). Needs a PRO license
- **Select the instrument(s)** used by the characteristic in the list of already connected instruments or use the «target» icon and move your instrument to select it automatically.
- **Bluetooth button** to connect a new Bluetooth device
- **«Blind mode»** check box, which is the same as in the Basic edit characteristic: don't refresh characteristic display while adjusting the instrument, but only when the final data is stored. Also, useful to allow sending data from a non-Bluetooth instrument button.

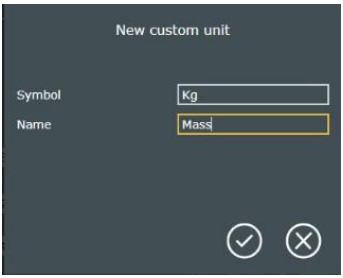
In the center of the page, you can manage the tolerances which are the same as the Tolerance' panel in the Characteristic settings panel with an extra information about the Offset. The Offset is managed only by Sylcom (not at the device level), it is used when the device is not synchronized («Synchro» button not enabled Synchro).

When pressing the 'Advanced' button, you will access a panel with 3 sections: **Specification, Display** range and **Measurement**. Almost each of these parameters can be set with the Basic edit characteristic or the Tolerance' panel in the 'Measurement screen'. Only the 'Physical quantity' is specific to this page.

To choose a particular 'Physical quantity' select the one you need in the list menu or create your own by selecting «Custom definition». It will display a custom unit menu where you can choose between your already created units or create a new one with the «Add new unit» button.

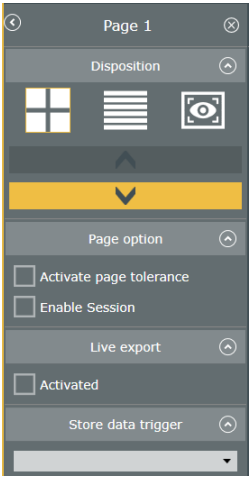


A window will open, and you will be able to complete it with your custom unit symbol and name



8.2. Page settings panel

This panel is dedicated to the pages management.



You can delete a page with the cross button on the upper right and hide the page panel with the «hide» button .

There are **3 layouts** available:

- Grid Layout:

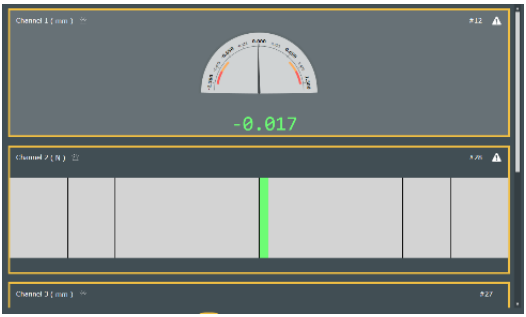
Automatic characteristic sizing and positioning of all the characteristics on the interface (possibility of arranging a lot of characteristics on a single page).

The yellow buttons move the selected characteristic to the next/ previous position.

-  Stack Layout:

Automatic characteristic stacking of the characteristics, like a pile.

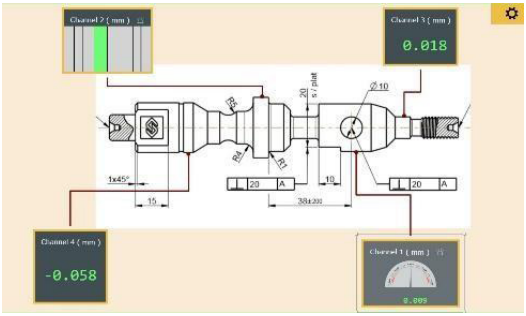
The yellow buttons  move the selected characteristic to the next/previous position.«Edit» check box is enabled.



-  Drawing Layout:

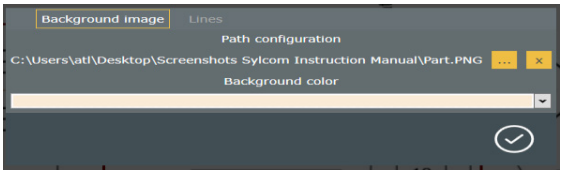
Free layout configuration mode.

All characteristics can be resized and placed on the interface when the «Edit» check box is enabled.



By pressing the «settings» button  , you can add your customized part drawing in the background and link the characteristics to it.

You can also configure the general background color as well as the characteristics' links lines color (even transparent if needed).



The **Page options** are listed as below:

- **Activate page tolerance**: If enabled, compute tolerance of the whole page. If at least one measurement is out of tolerance, the page background will appear red. Same for green (every measurement are inside tolerances) and yellow (at least one measurement is in the warning limits).

- **Enable Session**: Needs a PRO license. If enabled, the stored measurement will be gathered in a session (the number of measurements of the session is displayed in the upper bar in parenthesis). Then, you will be able to print/export/clear all the measurements of the session by means of programs (e.g., use F3 Key to execute «print session» action).
- **Live export**: If activated, you will be able to export data after each characteristic measurement or after each page measurement. To configure the export data format, see Export.
- **Store data trigger**: Allows you to choose between different kind of triggers to take a measurement (USB Pedal [F9 or CTRL Enter], Bluetooth Pedal, Keyboard, Hotkeys [H1, H2, H3]).

Pressing the trigger has the same effect as pressing the «Store» button 

.

In case of «Sequence mode» 

, pressing the trigger will store the selected characteristic. Otherwise, in case of «Multigauge mode» 

, it will store all the characteristics of the page at once.

If the «Timer» is enabled, measurements will be taken at a specified period from when the trigger was pressed (press it a second time to stop the measurements).

8.3. Characteristic settings panel

This panel is dedicated to the characteristic management.

Three menus are available on the top:

- Basic edit characteristic
- Tolerance
- Store

To remove a characteristic, use the «cross button» ⊗ on the upper left of the panel.

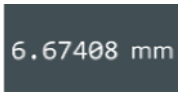
8.3.1. Edit characteristic

You can customize the measurements display by selecting a control in the "Display" list (top of the Edit characteristic panel):

DISPLAY

- **Numeric Microns**: Digital value, with highlighted microns digits.

- **Numeric**: Digital value.



- **Manual**: Enter the value with the keyboard (e.g., for external instruments).

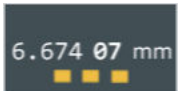
- **Go/No-go**: This display doesn't work the same as the others. It is a manual control of an aspect that cannot be measured by an instrument connected to Sylcom (e.g., the color or a scratch on a part). You can use the mouse to select the «Go» or «No-go» result, or optionally, define two triggers. e.g., H1 for «Go» and «Pedal» for «No-go».

- **Analog**: Looks like an analog device, with warnings and out of tolerance limits, and the measured value displayed below.

- **Bargraph**: The measurement is represented by the size of the horizontal-colored rectangle.

- **Small bargraph**: Small horizontal colored rectangle, to view lots of characteristics in the same page.

- **Numeric with buttons** (Complete): Digital value, and access to some commands directly (Store, Preset, Set, Clear).



- **Chart**: Diagram that shows every value that the device sends to Sylcom, the current value of the instrument. These values are not stored unless you press the «Stored» button.

- **Vertical bargraph**: The measurement is represented by the size of the vertical-colored rectangle.

- **Formatted display**: Display the unit of the measurement, especially for displaying angles. You can also choose a custom unit by double clicking on the selected characteristic and access the «Advanced» settings. Then choose the «Custom definition» in the «Physical quantity» and add a new unit.

- **SPC display**: Display the 10 last values on a diagram.

For almost all the different displays (except for the «Go/No-go»), same parameters can be set on the «Edit characteristic»:

- **Synchro**: If enabled, synchronize the different devices with the current characteristic parameters.

- **Blind Mode**: If enabled, the value displayed on the characteristic window will be refreshed only when pressing the center button of the device (or Sylcom «Store» button). Another option will also be available: «**Store received data**», to allow the operator to use the center button of the device as a «Store button». This Mode could be useful if you don't want the operator to «cheat» on the measurement by adapting the instrument position until the characteristic displays a green color. Note: In case of a **cabled instrument** (non-Bluetooth), the Blind mode must be enabled if you want to use the middle button of your instrument to store the data.

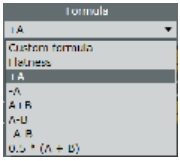
- **Store received data**: Auto store when data is received, can be used with Blind mode activated to store every refreshed data from the instrument.

FORMULA

Choose between basic formulas in the list menu or choose Custom formula or Flatness.

- **Custom formula**:

To use a Custom formula on a characteristic, first select a characteristic in the Pages tab, and choose "Custom formula" in the list:



Then press the Edit button that shows up below, and start typing your formula in the formula editor text box:

By displaying the "Usage" panel, you'll have some examples of allowed functions and calculator buttons:

When writing your formula, you may want to combine the results of several other existing characteristics o r instruments.

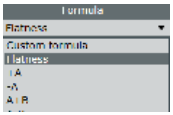
When writing your formula, you may want to combine the results of several other existing characteristics o r instruments. To select each instrument, you can press the target button: , then move the instrument of interest. e.g.: to display the sum of 3 existing instruments, write "(", then press the target and move your 1st instrument, then write "+", then press the target and move your 2nd instrument, and so on. In the formula, your instruments will be named A, B and C by default.

You can also type your formula directly in the text box by using letters (e.g., A, B, C…) or names (e.g., diameter1), and then map the names to real instruments or characteristics later.

Please note the green bullet at the left of your formula text box, which indicates that your formula is valid. In case it isn't, then the bullet will be red.

- **Flatness:**

To calculate a flatness, you can select « Flatness » in the formula's list:



Then press the Edit button that shows up below and select the instruments or characteristics by clicking the check boxes or using the "target" button for each instrument you need.

The result of a flatness is the difference between the Max of the Max instruments values and the Min of the Min.

In the «Mode» list menu, you can choose between two different modes:

- **Static**: This mode will collect the flatness values and output the **cumulated** result of all the values.
- **Dynamic**: This mode will collect the flatness values and output the **instantaneous** value.

- **Units**

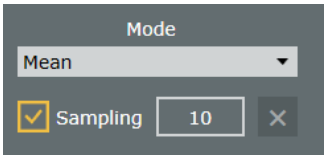
Choose between basic units (inch, mm, m, etc.) or create a custom unit. To create one, double click on the selected measure and access the «Advanced» settings. Then choose the «Custom definition» in the «Physical quantity» and add a new unit.

- **Mode**

List menu where you can choose the measurement mode that will be displayed on the screen (Normal [current value], Min, Max, Delta [Max - Min], Mean [Max+-Min/2]).

With a **PRO license of Sylcom**, in all the modes except the 'Normal' mode, the «**sampling**» check box will allow to take values such as 'Max' or 'Min' at specific positions.

You need to specify the number of measurements you want to take. When you will measure your part, you just need to press the «Store» button until your «Number of samples» is reached, then, you will be able to take the next characteristic measurement (e. g., in case you need to find the 'Max' value of an interrupted cylinder by skipping the interruptions).



- **Resolution**

List menu where you can choose the resolution of the measurement. In the case you are in «Synchro» mode, this parameter will automatically change the instrument's resolution.

8.3.2. Tolerance

This menu is dedicated to the Tolerance, Warning limit, Preset, Visual limit and Tolerance mode.

Tolerance

- Nominal: The nominal value.
- LSL: The Lower Specification Limit.
- USL: The Upper Specification Limit.

Warning limit

The percentage of the «USL» from which the displayed color will be yellow.

Preset

Enter the preset value that you want.

Visual limit

- Visual limit [%]: Choose a percentage of the USL that will be visible in red above the USL/ below the LSL on some display modes (Bargraphs, Analog, SPC, Chart).
- Upper visual limit: You can also select a more custom visual limit by choosing directly the 'Upper visual limit'.
- Lower visual limit: You can also select a more custom visual limit by choosing directly the 'Lower visual limit'.

TOLERANCE MODE

4 modes can be chosen in the list menu.

Go/NoGo: This is the basic mode, with red and/or orange zones in both sides.

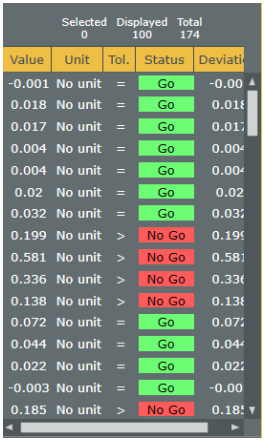
Rework: This mode shows only a red zone in the lower side. It means that the part measured can still be adjusted when above the USL but not when below the LSL (e.g., an external cylinder diameter).

Rework (internal): This mode shows only a red zone in the upper side. It means that the part measured can still be adjusted when below the LSL but not when above the USL (e.g., an internal hole diameter).

None: the result is not classified, and doesn't have a specific color

8.3.3. Store

This panel shows you the 100 last values taken by the current characteristic. You can see information about the Value, Unit, Status, Tolerance and Deviation that you can move with a drag/drop.



8.4. Sequence

Sequences are for measurements that must be made in a particular order due to the impossibility to take all measurements at the same time.

To do that, you must construct you configuration part the same way as usual but select the «SEQ» option 

(Lower part of the screen). Once done, press the «Start» button 

to begin the sequence. You are now able to take the first measurement of your configuration by clicking on the «Store» button 
or, if you are in «Blind mode», by clicking manually on the «center button» of your device. The value will appear in the current characteristic window, and it will automatically switch to the next characteristic.

1.
2.
3.

When all measurements of a sequence have been taken, it will automatically come back to the first measurement to begin the second sequence. You can see in which sequence you are thanks to the «Store counter» 

(upper right corner).

8.5. Multigauge

Multigauge allows to take simultaneously all the measurements. It is the default mode, and it is recommended when conditions permit.

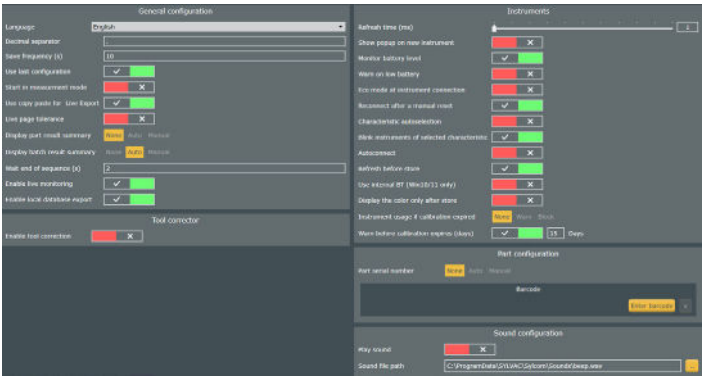
To record the measurements in this mode, just press the «Store» button 
once you have done your part configuration. It will store all the current measurement values.

9. Settings

9.1. Settings

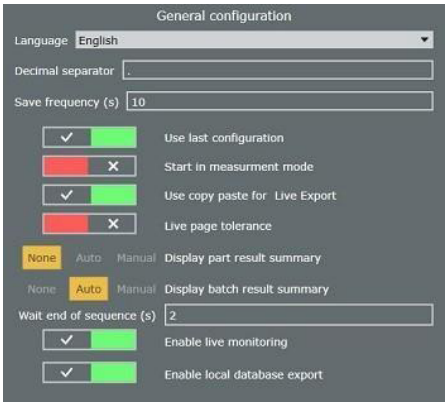
This menu is divided in 5 panels:

- General configuration
- Instruments configuration
- Sound configuration
- Part configuration
- Tool corrector configuration



9.1.1. General configuration

In this panel, you can configure parameters such as «Language», «Decimal separator», «Save frequency (s)» and «Wait end of sequence (s)». Those settings are global to the application.



Underneath, check box parameters can be set:

- **Use last configuration**: Load the last used configuration at startup.
- **Start in measurement mode**: Open the Measurements menu at startup.
- **Use copy paste for Live Export**: Use an integral data copy paste instead of individual characters during Live Export. Faster but less reliable.
- **Live page tolerance**: Refresh page tolerance when moving the instrument.
- **Display part result summary**: If «Auto» mode or «Manual» mode selected, will display a summary of the characteristics' measurements at the end of each sequence. In «Auto» mode, the summary box will disappear after a few seconds to begin the next sequence (this time parameter «Wait end of sequence(s)» can be set just below). In «Manual mode», you must press manually on either the «Continue» or «Stop» button after each sequence.
- **Display batch result summary**
- **Enable live monitoring**
- **Enable local database export**

9.1.2. Instruments configuration

In this panel, you can configure parameters related to the instruments. You can also set the «Refresh time (ms)» parameter, which is the time between two data requests, and the «Warn before calibration expires (days)» parameter.

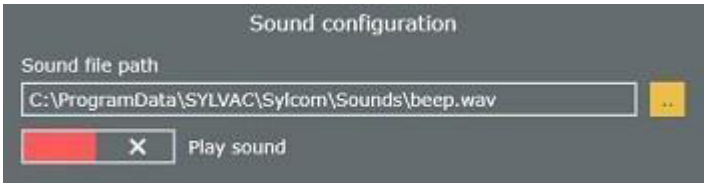
Underneath, check box parameters can be set:

- **Show popup on new instrument**: Show a popup window when an unassigned instrument is connected.
- **Monitor battery level**: Ask the battery level of the instruments at regular intervals.
- **Warn on low battery**: Display a message when the battery level of an instrument is low.

- **Eco mode at instrument connection**: Enable Eco mode upon connecting a new instrument.
- **Reconnect after a manual reset**: Reconnect the instrument when the user makes a Bluetooth reset manually on the instrument.
- **Characteristic auto selection**: Automatically switch to the first characteristic linked to the moving instrument.
- **Blink instruments of selected characteristic**: When selecting a characteristic, make its instruments blink.
- **Auto connect:** Connect automatically the first Bluetooth instrument found during a scan.
- **Refresh before store**: Refresh characteristic value just before storing it. Useful in blind mode.
- **Use internal BT (Win10 only)**: Allow to use the Bluetooth internal card to connect instruments. You need to restart Sylcom to consider the changes. Attention: internal Bluetooth depends on your PC hardware and Windows management (processes that are running at the same time, CPU usage, etc.), so connections may not be as reliable as with an USB Bluetooth dongle.
- **Export advertisement Bluetooth**: Allow to export the numeric data from the Bluetooth advertisement packet.
- **Display the color only after store**: Display the tolerance color only when the characteristic is stored.
- **Instruments usage if calibration expired**: Choose what happens when the «Next calibration» date (set in Instruments) is exceeded. «None» will do nothing, «Warn» will warn you each time the instrument is used with a «CAL» message displayed on the instrument, but you will be able to use it, «Block» will block the instrument when the date is exceeded (not possible to use the instrument)

9.1.3. Sound configuration

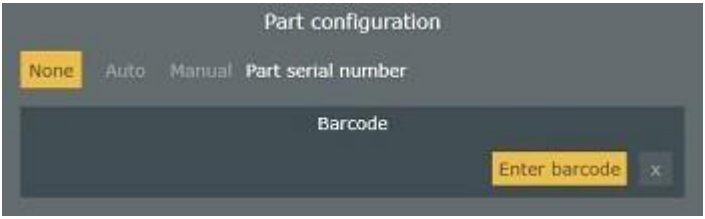
If enabled, emit a sound when a measurement is stored. You can browse the sound you want to play with the «..» button.



9.1.4. Part configuration

In this panel, you can configure specific parameters for the current part:

- **Part serial number**: In «Auto» and «Manual» mode, a pop up will be displayed before starting each 'Sequence', asking you to enter the part 'Serial number'. In «Auto» mode, a default 'Serial number' will be displayed but it is also possible to modify it.
- **Barcode**: Allow to enter a barcode.

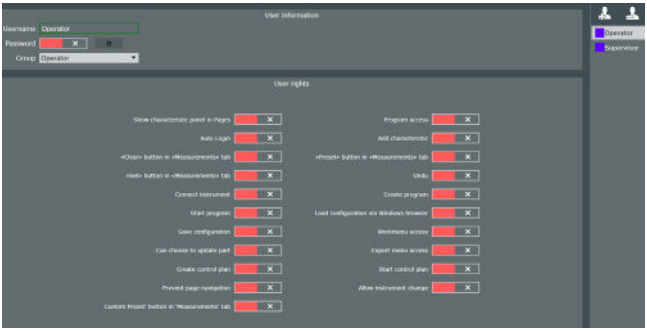


9.1.5. Tool corrector configuration

In this panel you can enable the Tool Corrector.

9.2. Users

Use this tab to add or modify the users accounts, including the passwords. You can also define their user rights.



9.2.1. Users

Use this to manage users.

9.2.2. User information

Use this tab to change the different user information, including the Password and the Group type.

9.2.3. User rights

Use this tab to define the user rights.

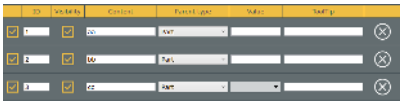
- **Show characteristic panel in Pages**: Let the operator see the 'Characteristic panel' in the 'Measurement screen'.
- **Auto Login**: Open Sylcom application without a login window and password.
- **Clear characteristic**: Let the operator delete one or some characteristic(s) to the part configuration.
- **Set characteristic**: Let the operator set a characteristic.
- **Connect instrument**: Let the operator connect new instrument(s).
- **Start program**: Let the operator start a program.
- **Start configuration**: Let the operator start a part configuration.
- **Can choose to update part**: Let the operator update a part.
- **Create control plan**: Let the operator create and edit control plan(s).
- **Prevent page navigation**: Let the operator switch between pages.
- **Define a custom preset during a control plan**: Let the operator define a custom preset while in a control plan.
- **Program access**: Let the operator access the 'Program screen'.
- **Add characteristic**: Let the operator add one or some characteristic(s) to the part configuration.
- **Preset characteristic**: Let the operator use the «Preset» button to preset characteristic(s).
- **Undo**: Let the operator use the «Undo» button (to remake a measurement in «Sequence» mode).
- **Create program**: Let the operator create a part configuration.
- **Load configuration via Windows browser**: Let the operator load a part configuration from its Windows Explorer.
- **Workmenu access**: Let the operator access the 'Workmenu' in the 'Instruments screen'.
- **Export menu access**: Let the operator access the 'Export screen'.
- **Start control plan**: Let the operator start a «Control plan» configuration.
- **Allow instrument change**: Let the operator use other instruments.

9.3. Traceability fields

This tab is only available with a PRO license. Use it to display SPC (Statistical Process Control) traceability fields for the operator to fill before each sequence.

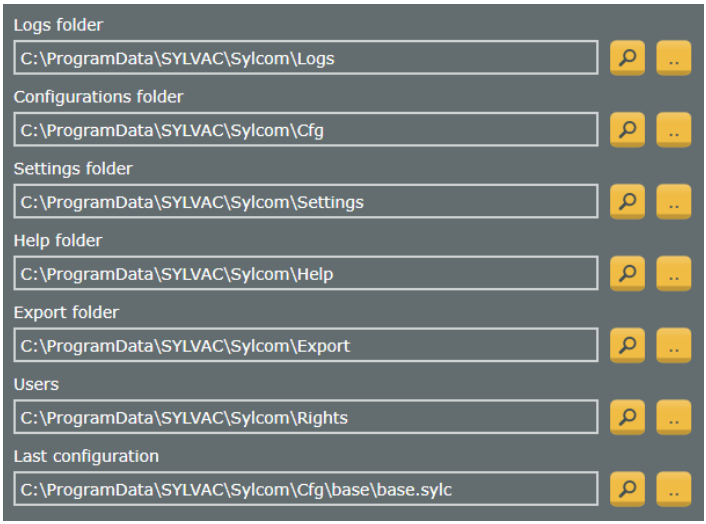
First, use the plus button to add the different items you want. Then, choose if you want either a text or a list box and enter its «Content» (by default).

Repeat it for each item and fill their ID, Content, Value (with the «Edit...» item in the list menu) and ToolTip boxes. Make sure that your items are well selected with the «Check button» in the left.



9.4. Path configuration

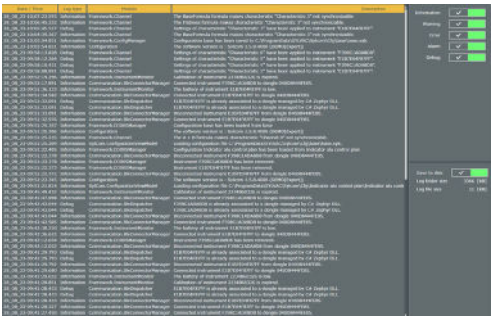
Use this tab to access those directories where you want to store your folders.



- **Logs folder:** Where the logs are stored.
- **Configurations folder:** Where the configurations are stored.
- **Settings folder:** Where the settings are stored.
- **Help folder:** Where the help is stored.
- **Export folder:** Where the exports are stored.
- **Users:** Where the users' rights are stored.
- **Last configuration:** Where the last configuration is stored.

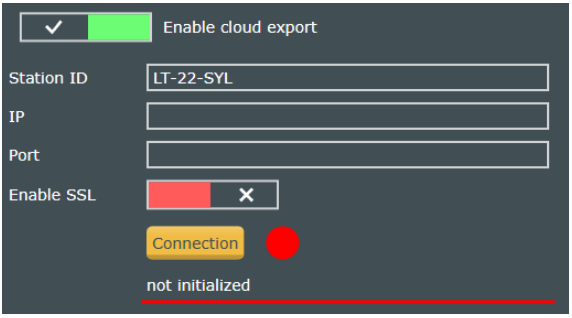
9.5. Logs

The Logs tab displays the history of the program, with several levels that you can filter information, warning, error, alarm, debug.



9.6. Cloud

The Cloud tab allows to set and use the Cloud feature.



9.7. Monitoring

The Monitoring tab allows to enable several features in the corresponding view.

10. Export

To enable this menu, you must activate it with the check box Activated (same button as in the Measurement screen page panel). The screen will then be composed of 5 exports choices:

- Export focus
- Export in file
- Export Excel
- Export COM port
- Export SPC

They all share the «Data to export» bar. Check the different information that you want to see in your export file here. The 'Columns separator' and the 'End character' must be specified in the list menu.

The 'Export focus', 'Export in file', 'Export Excel' and the 'Export COM port' are instantaneous exports as the 'Export SPC' is a cumulated export.

Refer to the Export data issues page if you have any problem with the export.

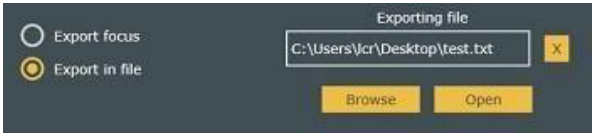
10.1. Export focus

Export the data on the document where the mouse focus is. If the focus is on the Sylcom application, an error will occur.

10.2. Export in file

Export the data on a document already existing on your computer.

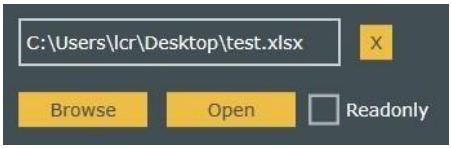
Select the file in which you want to export your data with the «Browse» button. You can also open it with the «Open» button.



10.3. Export Excel

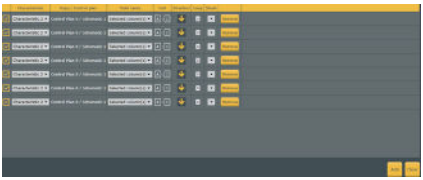
Export the data to an Excel document that already exists on your computer. Select it with the «Browse» button Browse.
You can also open it with the «Open» button.

If the «Read only» check box is enabled, you will be asked a new name for your document when you save it.



Then, use the «Add» button to add information to your Excel file (future stored information will be on the file). Fill the different fields with the information you want.

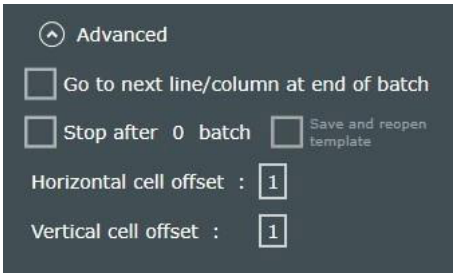
1. The **check box** allows you to export or not the information to your Excel file.
2. Choose the characteristic you want to export the information from with the «**Characteristic**» list menu.
3. Choose which information you want to export with the «**Field name**» list menu.
4. Enter the first Excel cell where your data will be exported with the «**Cell**» field.
5. Select the direction you want your information to be added in the Excel file with the «**Direction**» field. To avoid ambiguities, choose the same direction for all the lines to export. You can also choose the «=» sign to export to a single cell for data that don't need to be repeated (e.g., same operator name or part number).
6. Specify the number of parts of one batch in the «**Loop**» entry box. In case you don't have any batch, just specify 0.
7. If you have more than one sheet in your Excel document, you need to specify it in the «**Sheet**» list menu.
8. To remove one characteristic's information (one line), press the «**Remove**» button (to remove all the lines, press the «**Clear**» button).



Once you have done your measurements, specified characteristic's information will be written on your Excel document.

	A	B	C	D	E	F	G
1	Supervisor	Supervisor	Supervisor	Supervisor	Supervisor		
2	30.04.2019 12:02	30.04.2019 12:02	30.04.2019 12:03	30.04.2019 12:03	30.04.2019 12:04		
3	1	1	1	1	1		
4	1.191	1.123	1.019	1.207	1.354		
5	3.2	3.2	3.2	3.2	3.2		
6	3.181	3.199	3.181	3.227	3.142		
7							
8							

The advanced tab accessible with the little Advanced allows you to set batch parameters and «Cell offset».



- **Go to next line/column at end of batch**: If enabled, at the end of a batch, the export will continue on the first line/column but shifted right/underneath.
- **Stop after ... batch**: If enabled, after the specified number of batches, the export will stop.
- **Save and reopen template**: If enabled (only if «Stop after ... batch» is enabled), will save the document once the specified number of batches is reached and will save next data on a new document. By default, documents will have the name of the first document with the date and hour added to differentiate them.
- **Horizontal cell offset**: Choose the number of horizontal cells that are skipped between each loop (If «Loop» = 0, it will be between each part).
- **Vertical cell offset**: Choose the number of vertical cells that are skipped between each loop (If «Loop» = 0, it will be between each part).

10.4. Export COM port

Export the data to an external application using COM port(s).

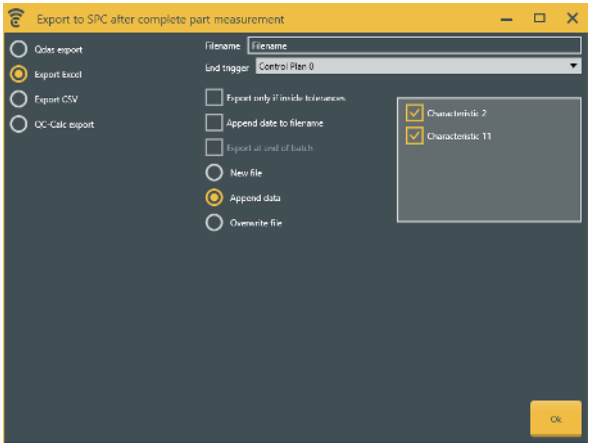
Sylcom will export data of one characteristic to the selected COM port.

10.5. Export SPC

With a PRO license of Sylcom, you can export the data after each part execution (can be after a sequence, a multigauge measurement or a control plan) to a file.

Click on the «Add» button (bottom right) to add an SPC export. It will open a window to set the export parameters. On the left, choose your export format. On the right, choose which characteristics you want to export.

- **Filename**: Enter the filename.
- **End trigger**: Choose the trigger event that marks the end of the part measurement before exporting the data (can be either end of a page or of a control plan).
- **Export only if inside tolerances**: If enabled, it will export only the measurements that are classified as good.
- **Append date to filename**: If enabled, the date/time will be added to the filename.
- **New file**: If enabled, a new file is created after each export, with a «_N» appended to the original filename (N = 1, 2, 3...).
- **Append Data**: If enabled, the new data are appended to the same file after each export.
- **Overwrite file:** If enabled, overwrite the previous file (if existing) after each export.



The overview of your export file(s) is displayed on the 'Export screen'. You can edit them with the «Edit» button Edit .

Export type	Selected trigger	Filename	File mode	Export only if inside tolerances	Append date to filename	Export at end of batch	Selected characteristics
Export Excel	End of page trigger (Control Plan 0)	Filename	Append data				Characteristic 2, Characteristic 11
Export Excel	End of page trigger (Page 1)	Filename	Overwrite file				Characteristic 3, Characteristic 4, Characteristic 5
Export Excel	End of page trigger (Schematic 1)	Filename	New file				Characteristic 2, Characteristic 11

10.6. Export data issues

When data are exported by the function "Live export" to an existing excel sheet, Sylcom will open it as soon as the user is logged in.

If by mistake the document is closed, go to export menu, and select click on OPEN button. Compatibility with Microsoft Excel from version 2003 to latest.

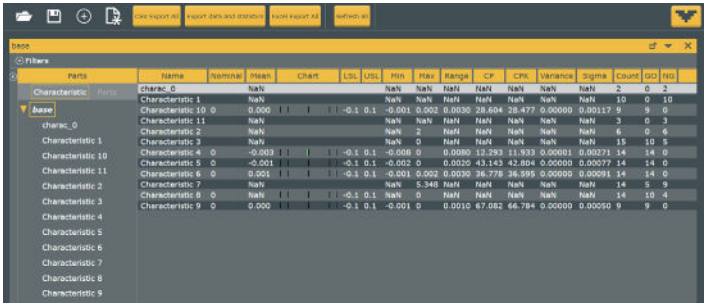
Please note Excel Mobile is not compatible with Sylcom and Live export function activated.

When measurements are done with a timer, please ensure that your computer is not configured to turn off or go to sleeping mode automatically. Otherwise Sylcom will stop running and data will not be stored.

11. Data/monitoring

This screen is divided in 3 sections:

- Manage data (upper part of the screen)
- Filters (center of the screen)
- Data display (main part of the screen)



11.1. Manage data

The «Open button» allows to open a previously exported data file.

The «Save button» allows to save the data in a file.

The «Add a new chart» button allows to display multiple charts on the screen.

The «Create a new and empty configuration» button allows to create a new configuration with no data.

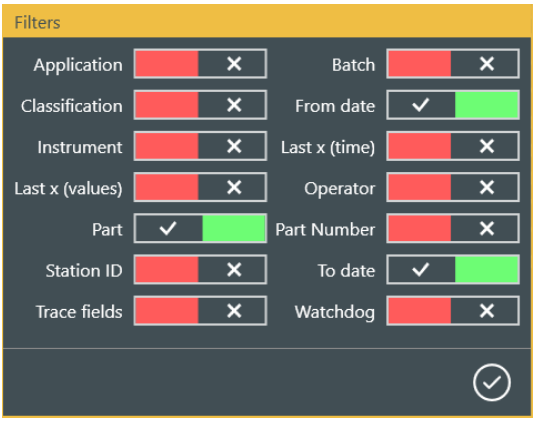
The «CSV Export All» button, «Export data and statistics» button and «Excel Export All» button will generate the results file and allow to select the path or change the filename.

The «Floating window» button will put the current interface in a separate window.

11.2. Filters

This section allows you to manage filters of your data.

First, you can choose which filters you want to display with the «Filters» button Filters . Then you can manage each one of the filters you activated.



Filters:

- Application
- Classification
- Instrument
- Last x (values)
- Part
- To date
- Watchdog
- Batch
- From date
- Last x (time)
- Operator
- Part Number
- Trace fields

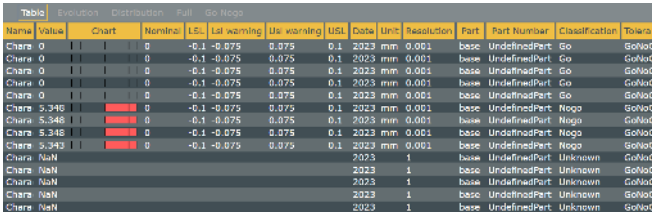
To do a general «Refresh» («Characteristic» + filters applied), use the «Refresh» button Refresh. If enabled, the «Auto refresh» button will automatically refresh the screen when a «Characteristic» modification occurs (can be long enough depending on the number of displayed data). If enabled, the «Follow characteristics» button.

11.3. Data display

This section gives you an overview of the data by **part** and **batch of parts**.

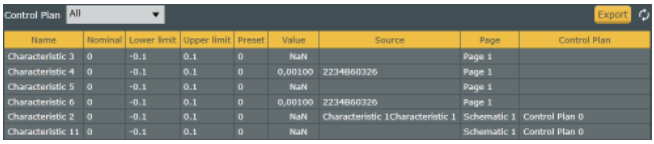
If at least one measurement is out of tolerance, a red box is displayed next to the part name with a «NoGo» message on it. Inverse, if every measurement is inside tolerance, a green box is displayed with a «Go» message on it.

Likewise, if at least one part of a batch is out of tolerance («NoGo»), a red box is displayed next to the batch name with a «NoGo» message on it. Inverse, If every part of a batch is inside tolerance («Go»), a green box is displayed with a «Go» message on it.



12. Characteristics

Characteristics menu overview and parameter settings like characteristic name, nominal, tolerance range and preset value. From there, you can change the «Name», filter the control plans, export data with the «Export» button Export and refresh data with the «Refresh» button .

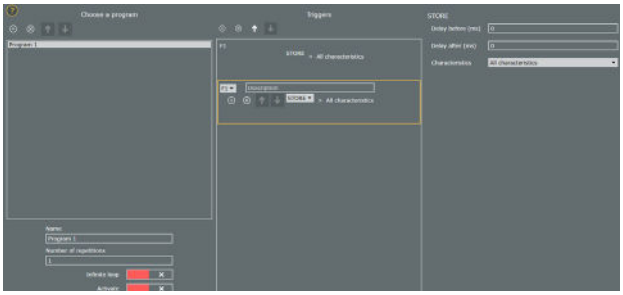


13. Program

This facility is only available with a **PRO license**. It could be useful when:

- you need to execute specific actions during a part measurement. An action is then mapped to a trigger, e.g., a Bluetooth pedal can be configured to export a specific characteristic's data into Excel format.
- you need to execute specific actions in a certain order, e.g., first, presetting a characteristic with a pedal, secondly, automatically activating Min mode, then Max mode, and finally, printing a session of measurements with a shortcut key (see image below).

The screen is divided in 3 parts: Choose a program, Triggers, Selected action.



E

13.1. Choose a program

Use these 2 buttons to add/delete program(s)  .
To move a program above/below use the two arrows  .

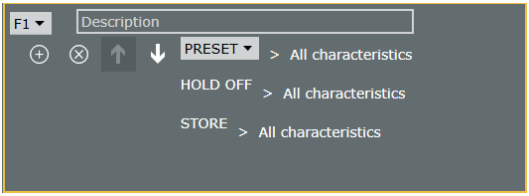
- **Name**: Change the name of the selected program.
- **Number of repetitions**: Choose the number of times the selected program can be used.
- **Infinite loop**: If enabled, the program can be used an infinite number of times.
- **Activate**: If enabled, the program is usable.
- **Display enabled programs**: If enabled, a window shows with information about the progress of the program (see image below).

13.2. Triggers

Use these 2 buttons to add/delete trigger(s)' action(s)  . To move a trigger(s)' action(s) above/below use the two arrows  .

When selecting a trigger's action(s), you will be able to choose the trigger you want with the list menu next to the trigger's action number. Triggers are described as below:

- F1 - F12 and CTRL Enter: Keyboard function keys.
- F9 (Pedal): F9 function key or USB pedal.
- Data received: Whenever a measurement data is received by Sylcom.
- Threshold (state): When a measurement data exceeds the specified threshold.
- Threshold (transition): When a measurement data value exceeds the specified threshold (only the transitions).
- Bluetooth pedal (only if connected): When pressing on the pedal.
- Data Store Trigger: When a measurement data which is explicitly stored exceeds the specified threshold.
- String trigger: When a certain string arrived on a port com
- Continue actions: When le action before is over



A little description can be added in the 'Description' field.

Add or delete an action with the 2 buttons  .
To move an action above/below use the two arrows  .
Then, choose which action you want to execute at this moment with the list menu.

- **STORE**: Store the value(s).
- **SET**: Set the characteristic(s).
- **PRESET**: Preset the characteristic(s).
- **CLEAR**: Clear the value(s).
- **HOLD ON**: Hold the value(s).
- **HOLD OFF**: Stop holding the value(s).
- **Activate min**: Activate min mode on the characteristic(s)' instrument(s).
- **Activate max**: Activate max mode on the characteristic(s)' instrument(s).

- **Activate delta**: Activate delta mode on the characteristic(s)' instrument(s).
- **Activate normal mode**: Activate normal mode on the characteristic(s)' instrument(s).
- **Acquire value in blind mode**: Same as pressing the «Send data» button of the instrument.
- **Export Excel action**: Export in Excel as it is currently configured in Export/Export Excel.
- **Export CSV action**: Export as it is currently configured in Export/Export CSV.
- **Custom command**: Execute the command that you have prior written in the «Define command» field.
- **Start / Stop timer**: Execute periodically a sequence of actions like periodic measurements (e.g., Store selected characteristic and select next characteristic every 2 seconds). At first trigger execution (e.g., F1), a timer is started, and the actions are executed periodically at the selected delay (e.g., 2000 ms). At second trigger execution (e.g., F1), the timer is stopped. You can also configure it to stop by itself by enabling the «Automatic stop» check box with a timing, or you can select a different «Stop trigger» in the list on the right side (e.g., F2).
- **Print session**: Print all the measurements of the current session in case «Enable Session» is enabled (see Page settings panel).
- **Excel export session**: Export on an Excel file all the measurements of the current session in case «Enable Session» is enabled (see Page settings panel).
- **CSV export session**: Export on CSV file all the measurements of the current session in case «Enable Session» is enabled (see Page settings panel).
- **Clear session**: Clear the current session in case «Enable Session» is enabled (see Page settings panel).
- **Select characteristic**: Select the selected characteristic.
- **Go to page**: Go to the selected page.
- **Next page**: Go to the next page.
- **Start the control plan**: Start the selected control plan.
- **Select next characteristic**: Select the next characteristic.

14. Control plan

With a **PRO license** of Sylcom, it is possible to add one or several control plan to a part configuration.

A control plan defines the sequence of measurements for controlling a part with more options than a simple measurement page (e.g., batch management, group characteristics to be measured simultaneously, etc.).

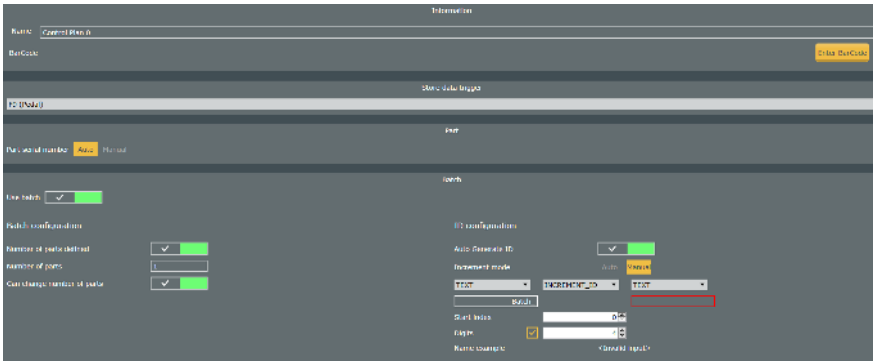
The Supervisor will be guided through a wizard to create the control plans, and the operator will have a simple user interface to execute them on the parts.

First you need to create a part configuration from the 'Home' screen. Then, you will be able to add control plans to it by pressing the ⊕ button.

Once you did the Edit Part info and the Edit schematics, your control plan(s) will be displayed on the 'Home' screen. You are now able to Execute control plan with the «Start» button Start .

14.1. Edit part info

When editing a control plan, you will access this page where you can manage part information.



Information tab:
Choose the «Name» of your control plan and, if one, enter its Barcode with a press on your USB device after pressing the «Enter Barcode» button.

Store data trigger:
Choose the trigger that the operator will use to store data. Part: Choose if you want either an «Auto» or a «Manual» 'Part serial number'.

Batch:
This tab allows you to manage the Batch settings.

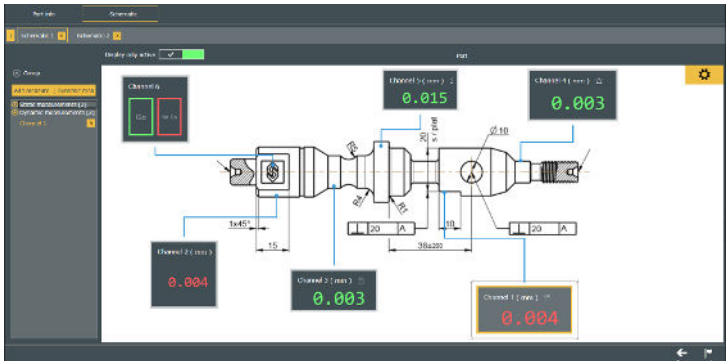
- **Use batch**: Enable it to manage batch(es).
- **Number of parts**: Enter the number of parts of one batch.

- **Can change number of parts**: If enabled, the operator will have the possibility to change the number of parts of one batch.
- **Auto Generate** ID: If enabled, the id at the end of the name will be generated randomly.
- **Increment mode**: Choose between auto or manual incrementation

When you have finished, just press the «Next» button (bottom left).

14.2. Edit schematics

This page is about the schematic of the measurements and the characteristics' edition.



On the top left, you can manage the Schematics. Add a schematic with the plus button + or delete it with the cross button X (e.g., if you need more than one drawing to show every measurement of a part you can add a schematic for each drawing).

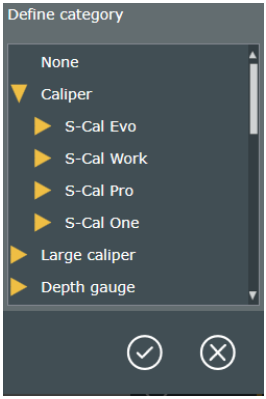
Schematics will execute one after the other.

Just underneath, you can manage the group(s) and the characteristic(s).

Open the 'Group' tab to add a new group with the «Add group» button or change the current group with the list menu just below. A group can be useful if some characteristics need to be measured together (like in 'Multigauge' mode). It offers you the possibility to mix the 'Multigauge' mode with the 'Sequence' mode.

It is also possible to have characteristic(s) that are not in a group. They are just going to be executed sequentially (like in 'Sequence mode').

You can easily change the position of your characteristics with a drag/drop.

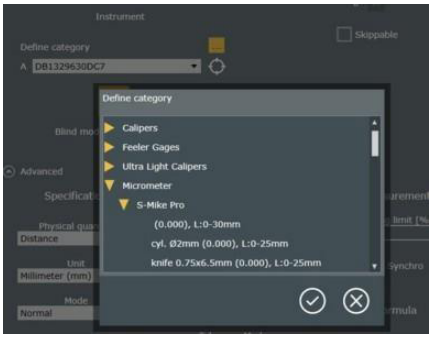


To add a new characteristic in the current group, click on the «**Add new characteristic**» button. It will open the characteristic Edition.

To edit an existing characteristic, double-click on the characteristic text in the left panel, or on the characteristic rectangle on the right panel.

The characteristic edition is mostly the same as for a basic part configuration (see Basic edit characteristic), with some extra options («**Define category**» (...) button and «**Skippable**» check box).

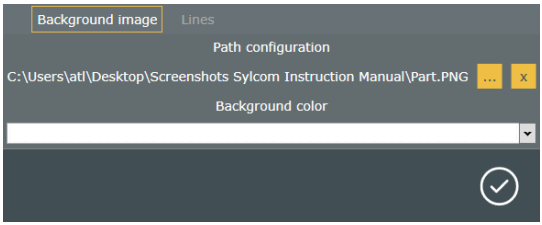
«**Define category**» (...) button to pre-define an instrument family on the characteristic (e.g., S-Mike Pro, range: 30mm, resolution: micron). This facility could be useful for a supervisor to select the type of instrument needed for each characteristic of this control plan, even without having the instruments in his office. Then he could deploy the control plans at several places at the Production line, and it will be the operator task to really affect the actual available instruments at his own working place. For now, this category will only be a displayed information, but later, this parameter could be used to filter and show the available and compatible instruments in a list before selecting the right one.



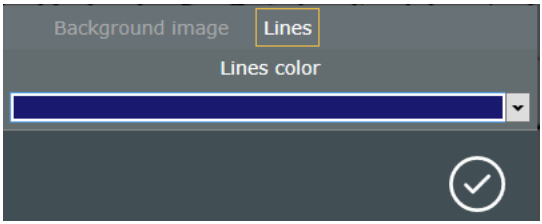
«**Skippable**» check box: if enabled, it will display a new Skip button when the control plan is executed and only for the related characteristic. This button gives the operator the choice to either «Store» a measurement or «Skip» it.

Display only active (check box on top right): If enabled, during the execution of the control plan, only the characteristic that is measured (or the characteristic of a group if in a group) will appear on the screen which makes it cleaner and easier for the operator.

With the «Settings button» , access the 'Background image' and 'Lines' management. From the 'Background image' menu, you can choose the background image from your PC and choose the background color. You can also crop the selected image as you wish.



From the 'Lines' menu, you can choose the Lines color.

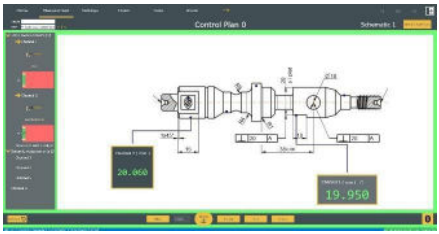


When you have finished the 'Schematic' just press the «Finish» button on bottom right or press the «Back» button to modify the 'Part info'.

14.3. Execute control plan

When starting the control plan, you will access a screen with the view that you edit with the Schematic page.

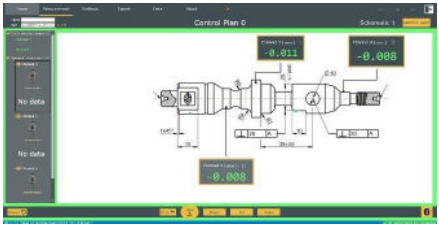
Given that for this example, the «Display only active» button is enabled, only characteristics of the first group are displayed. On the left, a panel displaying a follow-up of the control plan helps you seeing the progress. Information such as devices that are used, names, descriptions are displayed there.



The green contour informs that for now, all measurements are inside tolerance for the current part. If, at some point, a measurement is out of tolerance, the contour will be red (until the beginning of a new part measurement).

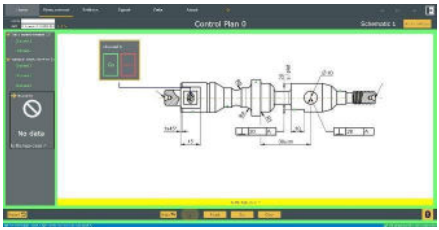
Once ready, just press the «Store» button to go to the next group measurement, or the «Skip» button if available for these measurements.

You can now see the second group characteristics. Little green dots are displayed on the positions of the first group measurements meaning that the values were inside tolerance. If they were out of tolerance, little red dots would be displayed instead (orange if in warning zone). Blue dots are for measurements that are not already taken.

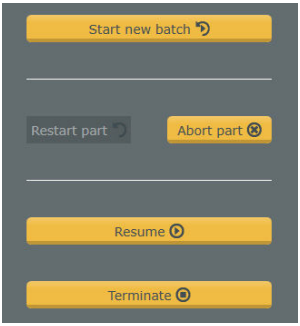


On the follow-up panel, colors (green here) summary the past characteristics' measurements.

Yellow description bar is displayed (bottom of the screen) for measurements that have a description.



The «Return to Pages» button Return to Pages allows you to quit the control plan execution.



The «Stop» button allows you to pause the current control plan and choose between several options:

- Start new batch
- Restart part
- Abort part
- Resume
- Terminate

15. On the Fly

With an **EXPERT license of Sylcom**, you can access the On The Fly page located under Instruments menu. Sylcom will then scan nearby instruments and continuously check their last received value.

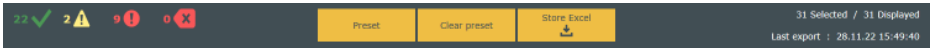
If a new value isn't detected within the timeout (represented by a degressive bar in "Data validation" column), then the data is considered as not valid anymore "---".

15.1. Colums

- **Export**: If checked, the instrument data will be exported when clicking on
- **Model**: Model of the instrument 

- **Name**: Name of the instrument (editable)
- **Mac address**: Mac address of the instrument
- **Value**: Last valid value from the instrument
- **Required**: If store condition is defined, export instruments only if the required one are valid
- **Data validation**: Timer representing the remaining time before the value in "Value" column is considered as not valid anymore
- **Preset**: Preset value
- **Tolerance**: If checked, take tolerances into account, and highlight the value based on LSL, Nominal and USL
- **LSL, Nominal, USL**: Values used to define the tolerance
- **Battery %**: Remaining battery of the instrument

15.2. Icons and buttons




Number of selected instruments that have a valid data


Number of selected instruments that have a valid data which is about to time out

Number of selected instruments that don't have a valid data

Number of selected but not detected instruments

Preset	Preset the value of all instruments
Clear preset	Clear preset of all instruments
Store Excel	Store the data of selected instruments into Excel

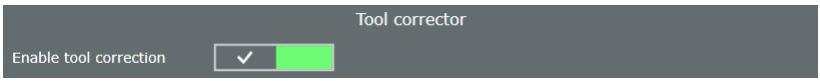
15.3. Settings

- **Filter:** Allows to filter instruments by their model's name
- **Data validation:** Allows to set the validation timeout in seconds
- **Preset:** Allows to set the preset value and apply it to all instruments
- **Tolerance:** Allows to set LSL, Nominal and USL values and apply them to all instruments
- **Store Excel:** Allows to enable / disable the export timer, export in separate files and store under condition

16. Machine tool compensation (MTC)

With an **Expert license of Sylcom**, it is possible to activate the Machine Tool Compensation (MTC) with up to 25 connectors. Otherwise, Sylcom is limited to 1 connector.

To use it, simply go under "Settings" and check the "Enable tool correction" option.



The MTC allows to impart greater precision and compensate for the tools, or material characteristics. The Supervisor can:

- Import some or all characteristics from an existing Control Plan into the MTC

- Create Correctors

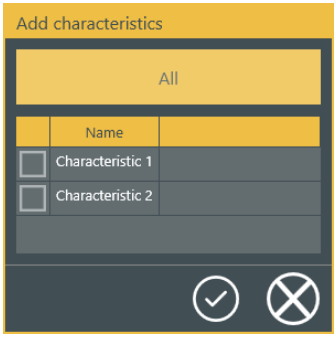
The combination of these two elements generates a Correction Matrix which is editable.

The execution of a Control Plan will then issue a tool correction proposal that the user can accept or not. Many settings allow the Supervisor to refine the MTC.

16.1. Import characteristics

To import characteristics into the MTC, Control Plan must be created with at least one characteristic, because only characteristics from Control Plan can be imported into the MTC.

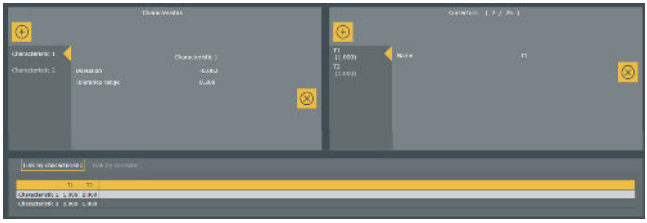
In the MTC main page, left column, a characteristic can be imported by clicking on the ⊕ button. Then, the user can select one or more characteristics from all Control Plans.



16.2. Create correctors

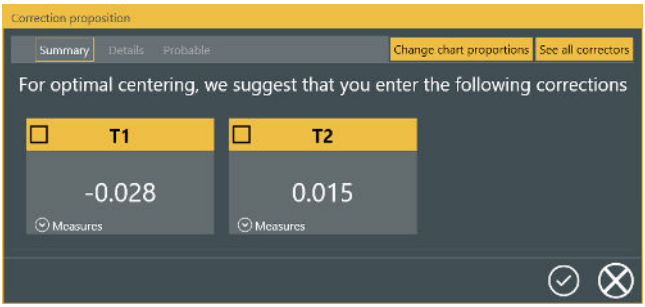
A new corrector can be created by clicking on the ⊕ button.

When at least one characteristic is imported and one corrector created, a Correction Matrix is displayed on the main screen.



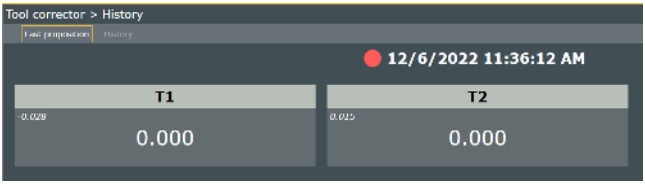
16.3. Tool correction proposal

At the end of a Batch (Control Plan) a correction proposal is generated. User can accept it by clicking on the dedicated checkbox and the correction is applied.



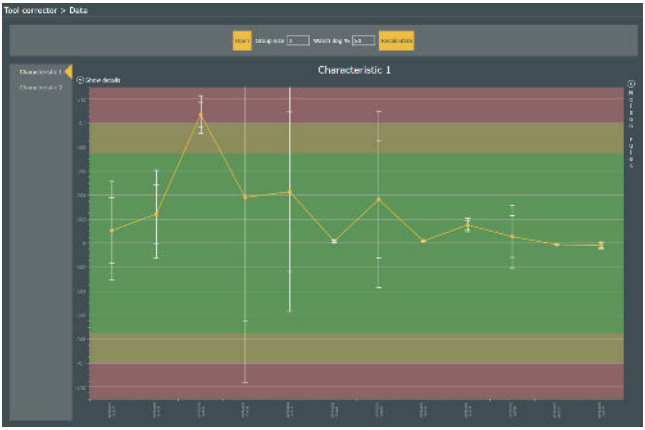
16.4. History

An history of all propositions can be displayed.



16.5. Data

All data are collected and can be displayed in a chart.



17. OPC-UA

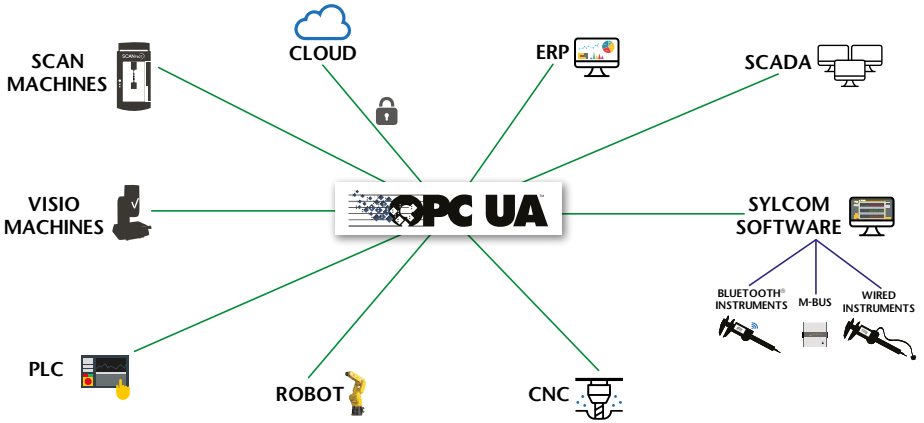
OPC UA is a communication protocol for the automation industry using an Ethernet port.

It is the most flexible automation solution supported by Sylcom Expert (e.g. access to the details of a measurement result). Please note that the Sylcom only supports the binary protocol **opc.tcp**.

17.1. The protocole

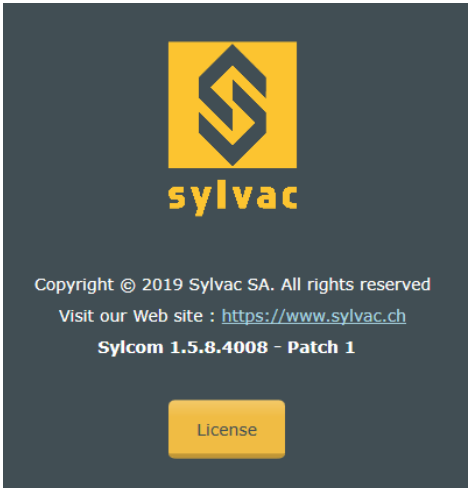
OPC Unified Architecture (OPC UA) is a communication protocol for industrial automation applications, perfec- tly adapted to Industry 4.0. It is based on the client-server principle and bridges the gap between the IP-based world of IT and the production floor.

See the instruction manual OPC-UA configuration with Sylcom for more information.



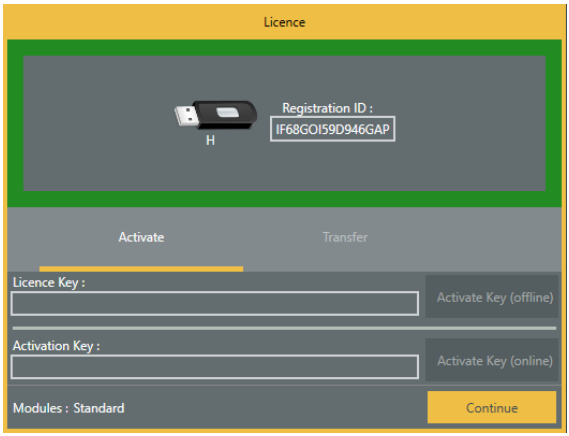
18. About screen

Check your Sylcom version as well as your license status or open the user guide for some help.



There are 2 ways of activating your software license when pressing the «License» button:

- **Activation Key**: The user asks for an Activation Key that he will receive by mail (**needs the Internet connection on the PC**). Then, after filling the «Activation Key» field, press the «Activate Key (online)» button.
- **License Key**: The user first sends his Registration ID to Sylvac by mail from another PC. After a check, the user will receive a License Key (**in case the PC cannot be connected to the Internet**). Then, after filling the «License Key» field, press the «Activate Key (offline)» button.



You can transfer your software license to another PC by using the transfer tab: See «**Sylcom : transfert of a license from a PC to another PC**» document or **ask your local agent**.

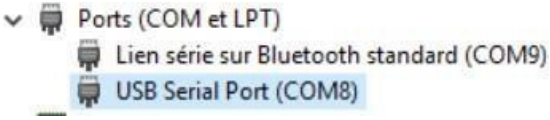
19. Connections issues

- For serial USB cabled instruments
- Instrument with Bluetooth® Wireless Technology
- Upgrade of the Dongle with Bluetooth® Wireless Technology
- Instruments connected on M-Bus modules, via MB-RS (available with "Advanced" package only)
- Windows 10 internal Bluetooth

For serial USB cabled instruments

The maximum number of USB instruments connections depends on the PC hardware and Operating System: 8 (recommended), 15 (Win 64, USB 3.0), 36 (Win32, USB 2.0, with Sylcom "Advanced" option).

Please ensure the cable is well plugged and instrument is switched on. Under devices manager the cable appears in section COM/LPT ports as USB serial port.



If it is not present, check the points below:

- Proximity-USB: Blue LED must be on
- Power-USB: as this cable power supplies the instrument, your device should be switched on.
- Opto-USB: Red LED must be on

Instrument with Bluetooth® Wireless Technology

For Bluetooth® instrument connection, a Sylvac BT dongle is necessary. Windows driver is supplied with the hardware or can be downloaded at www.sylvac.ch.

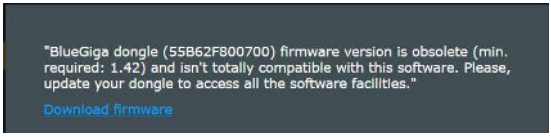
Please note that when plugging several Bluetooth® dongles, there may be some signal interferences between them, that disturb the data communications. Ideally, you should use USB extenders to keep a minimal distance of 10 cm between each dongle.

To communicate with Bluetooth® devices a dongle (981.7100) is mandatory.

Drivers are available on CD-ROM supplied in the dongle box or available on www.sylvac.ch

Upgrade of the Dongle with Bluetooth® Wireless Technology

At start the software checks the dongle compatibility and lets you download manually the firmware update if required. Click on "Download firmware" to access the download section.



To update your dongle Smart, please quit Sylcom, otherwise the update application is not able to communicate with the dongle with Bluetooth® Wireless Technology.

Instruments connected on M-Bus modules, via MB-RS (available with "Advanced" package only)

Just after power on, in case of lots of connected M-BUS modules and instruments, the hardware may take a while to initialize. If starting Sylcom application too early, the initialization phase may be incomplete, and some instruments not detected.

In that case, make sure the blue leds on all the modules are no more blinking (initialization finished), before starting Sylcom application.

Windows 10 internal Bluetooth

Since this Bluetooth hub depends on the PC hardware and on the Windows processed management, the instruments connections may be less reliable than with an external USB Bluetooth dongle.

It is necessary to restart Sylcom for this option to be considered

20. Certificates

CERTIFICATE OF CONFORMITY
Sylvac certifies that this instrument has been manufactured in accordance with our Quality Standard and tested with reference to masters of certified traceability by the federal institute of metrology.

CERTIFICAT DE CONFORMITE
Sylvac certifie que cet instrument a été fabriqué et contrôlé selon ses normes de Qualité et en référence avec des étalons dont la traçabilité est reconnue par l'institut fédéral de métrologie.

QUALITÄTSZEUGNIS
Sylvac bestätigt, dass dieses Gerät gemäss seinen internen Qualitätsnormen hergestellt wurde und mittels Normalen mit anerkannter Rückverfolgbarkeit, kalibriert durch das eidgenössische Institut für Metrologie, geprüft worden ist.

CERTIFICATO DI CONFORMITÀ
Con il presente Sylvac certifica che questo strumento è stato prodotto secondo il nostro standard sulla qualità e controllato rispetto a campioni di riferibilità riconosciuta dall'instituto federale di metrologia.

CERTIFICADO DE CONFORMIDAD
Sylvac certifica que este instrumento ha sido fabricado conforme a nuestras normas de calidad y ha sido controlado en relación con patrónes de trazabilidad reconocida por la oficina nacional de metrología.

Calibration certificate
Because we make our Sylvac instruments in batches, you may find that the date on your calibration certificate is not current. Please be assured that your instruments are certified at point of production and then held in stock in our wa-rehouse in accordance with our Quality Management System ISO 9001. Re-calibration cycle should start from date of receipt..

Certificat d'étalonnage
En raison de la fabrication de nos instruments par lots de production, il est possible que la date de votre certificat d'étalonnage ne soit pas actuelle. Nous garantissons que nos instruments sont certifiés au moment de leur fabrication puis stockés conformément à notre système de gestion de la qualité ISO 9001. Le cycle de réétalonnage peut commencer à partir de la date de réception.

Zertificat
Da wir unsere Instrumente in Serien herstellen, kann es sein, dass das Datum auf dem Zertifikat nicht aktuell ist. Die Instrumente sind jedoch ab der Herstellung zertifiziert und werden dann gemäß unserem Qualitätsmanagementsystem ISO 9001 in unserem Lager aufbewahrt. Der Nachkalibrierungszyklus kann ab dem Empfangsdatum beginnen..

Certificado de calibración
Considerata la nostra produzione in serie di strumenti, è possibile verificare che la data di produzione sul rapporto di prova / certificato di taratura non è attuale. Accertarsi che gli strumenti siano correttamente certificati dalla nostra produzione e che sono conservati in stock presso il nostro magazzino secondo il sistema di gestione della qualità ISO 9001. Il ciclo di nuova taratura puo essere avviato dalla data di ricezione..

Certificato di taratura
Puesto que fabricamos nuestros instrumentos por lotes, puede que la fecha de su informe de prueba / certificado de calibración no esté al día. Asegúrese de que los instrumentos estén certificados en nuestro lugar de producción y estén almacenados en nuestro almacén conforme a nuestro sistema de control de calidad ISO 9001. El ciclo de recalibración puede empezar a partir de la fecha de recepción..

U.S./Canada certification

Sylvac
m.n : UL4

FCC ID: 2AAQS-ISP1807
IC: 11306A-ISP1807

NOTICE :
Changes or modifications made to this equipment not expressly approved by Sylvac may void the FCC authorization to operate this equipment.

NOTICE :
This device complies with Part 15 of the FCC Rules and with RSS-210 of Industry Canada. Operation is subject to the following two conditions.
(1) this device may not cause harmful interference, and
(2) this device must accept any interference received, including interference that may cause undesired operation.

NOTE :
This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Radiofrequency radiation exposure Information :
This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance of 20 cm between the radiator and your body.
This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Brazil certification

Description:
The module ISP1807 is based on Nordic Semiconductor nRF52840 Bluetooth LE system on chip. The nRF52840 is a Bluetooth 5.x SoC that integrates a 64 MHz Arm Cortex-M4 CPU with ultra-low power consumption and Flash/ RAM memory.

ANATEL

MODELO : ISP1807
04057-23-14043

Este equipamento opera em caráter secondário, isto é, não tem direito à proteção contra interferência prejudicial, mesmo de estações do mesmo tipo e não pode causar interferência a sistemas operando em caráter primário.

Korea South certification

R-C-iNs-ISP1807

Class A Equipment (Industrial Use)

이 기기는 업무용(A급) 전자파적합기기로서 판매자 또는 사용자는 이 점을 주의하시기 바라며, 가정 외의 지역에서 사용하는 것을 목적으로 합니다.

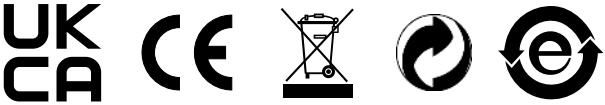
Japan certification

R 020-200037

Taiwan certification

CCAJ23Y10060T5

警語
經型式認證合格之低功率射頻電機,非經許可,公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。
低功率射頻電機之使用不得影響飛航安全及干擾合法通信;經發現有干擾現象時,應立即停用,並改善至無干擾時方得繼續使用。
前項合法通信,指依電信法規定作業之無線電通信。低功率射頻電機須忍受合法通信或工業、科學及醫療用電波輻射性電機設備之干擾。



Changes without prior notice
Sous réserve de toute modification
Änderungen vorbehalten
Soggetto a modifica senza preavviso
Reservados los derechos de modificación sin previo aviso

www.sylvac.ch

Edition : 2024.07 / 681-009-04