

# DATA TRANSMISSION & SOFTWARE

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With the help of the latest technologies, the industry is taking a new historical turn and is becoming increasingly «autonomous». In the sense that processes are simplified, ordered and organised in a predictive manner, inter-system connectivity is at the heart of the Industry 4.0 concept.

This new model is intended to be more interactive, in the sense that it is no longer up to the employee to fetch the information, but up to the devices to give it to them. Measuring instruments are an integral part of this process, which is why Sylvac is committed to offering innovative solutions for data collection and processing, which you will find in this chapter.



# Data transmission and software

## CONNECTIONS

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### What is the future for metrology?

Industry 4.0 and other similar concepts want to take data collection to new levels, monitoring all along the manufacturing process, collecting and storing information from all measuring equipment.

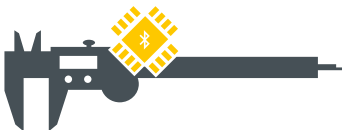
Traditional metrology will evolve towards more automation and digital (paperless) solutions which will enable increased traceability and remote monitoring of a whole set of information centralised on one server.

### Sylvac is ready for the challenge!

As Pioneer and Expert in connected Metrology, Sylvac did not wait the current excitement for data acquisition to offer reliable connection options and data processing software on the market. We have been striving to provide solutions for decades, first of all by offering wired connections (RS232 then USB) and over the last few years, by launching amazing Bluetooth wireless instruments that meet the current requirements, this at a price similar to the wired solutions of yesteryear.

### The advantage of our instruments with Bluetooth® Wireless technology

Wired connections limit operator's freedom of action and more flexibility for the operator requested to execute measurements. New solutions can also be implemented for control-line components using specific instruments or positions. Here are some of the highlights:



- The solution is totally integrated into the instrument  
The wireless Bluetooth® transmitter is fixed on the electronic module of the instrument and no further accessory is required. The Sylvac instrument with Bluetooth® Wireless technology that you receive is ready to be connected. Most of our competitors claim to offer wireless solutions, which are not really wireless solutions, or which require an external element to be acquired which is often fragile and costly! Our integrated system also has the advantage of not being sensitive to liquids or dirt.



- Transmission distance  
The maximum distance between the instrument and the peripheral device receiving the values is generally between 5 and 15 meters, depending on the configuration of the premises and any potential disruptive influences. Given that a wired USB connection is limited to 7 meters, the transmission range of our instruments with Bluetooth® Wireless technology is therefore greater than wired connections most of the time!



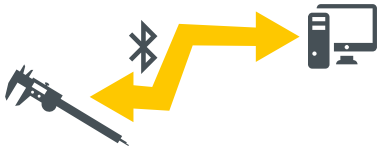
- Autonomy  
Sylvac's technological achievement was to offer a solution with energy-efficient Bluetooth® Wireless technology so that our instruments powered by a standard lithium battery could remain connected and used for several weeks, even several months. This is achieved thanks to our patented measurement system (Sylvac System) which only needs minimum energy. On request our agent can give you an estimate of the battery service life of your instrument taking your specific usage conditions into account.



# Data transmission and software

## CONNECTIONS

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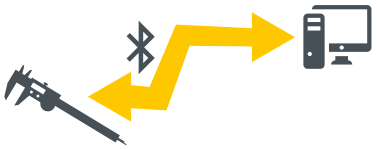
- Duplex Transmission  
Sylvac instruments are currently the only instruments able to communicate bidirectionally by Bluetooth® Wireless technology with the peripheral to which they are connected. This means that they can both send values and information and receive and interpret them. The best example of this is the transmission from the computer of a zero reset command for the instrument. This ensures the synchronisation of the value displayed on the instrument and on the peripheral device in order to limit the risks of error.



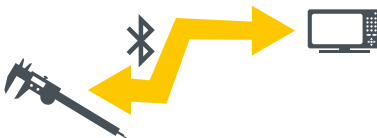
- Freedom of action at the price of a wired connection  
One important factor to consider when selecting an instrument is of course its price! Our Sylvac instruments with Bluetooth® Wireless technology also offer, as well as the features listed above, the benefit of not costing more than a traditional wired digital instrument. Therefore they can be used everywhere as replacements for wired instruments.

### How to connect our instruments with Bluetooth® Wireless technology

Flexibility is one of the watchwords that characterise our Sylvac instruments with Bluetooth® Wireless technology. They can be connected to a computer running Windows, to our D300S and D400S display units and to a Smartphone or Apple or Android tablet. This is how to connect them:



- Connection to a computer  
There are different requirements depending on the instrument and the Windows operating system running on your computer. The most reliable solution is to attach a Sylvac Bluetooth® dongle to your computer which can connect up to 8 instruments. The most recent instruments also have a Human Interface Device (HID) direct communication mode enabling them to connect to a computer as a peripheral keyboard and transmit the values in any software application. (Use without dongle with Windows 10 possible with Sylcom)



- Connection to our multi-functional display units  
Our D300S display unit can be fitted with a Sylvac Bluetooth® dongle in order to connect up to 8 Sylvac Bluetooth® instruments. The same applies to the D400S unit to which one or several (up to 12) M-Bus BT modules can be connected enabling a multitude of Sylvac Bluetooth® instruments to be connected to it.



- Connection to a smartphone or tablet  
Our instruments can be connected directly to a smartphone and to tablets running Android or iOS. Sylvac demonstration apps are available from the Google Store and the Apple Store. These apps demonstrate the connection of one of our instruments with Bluetooth® technology to one of these peripheral devices. As this area is evolving very rapidly, please refer to our website for the latest information.

# Data transmission and software

## CONNECTIONS

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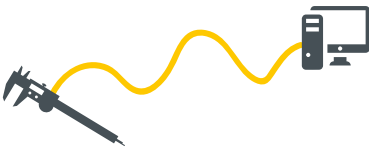
### IOT Ready connection profiles

The second generation of Sylvac Bluetooth® Technology equipped all Smart instrument for more possibilities and easier connection.



- SIMPLE Profile (default mode)
  - Instruments can be connected to several devices, but only one active connection and on a «first come, first served» basis.
  - Best solution if different people share the same instrument which has to be connected to several devices.
  - Avoid pairing manipulations at each device change.
  
- PAIRED Profile
  - Several instruments connected and locked (paired) to a specific device, which allows to have a lot of control stations side by side in a small area.
  - Best secured solution for a permanent control station.
  - Avoid instruments connecting to the wrong device.
  - Device-Instrument link has to be reset in order to connect to another device.
  
- HID Profile (Human Interface Device)
  - The instrument can be connected only to one specific device, but device can accept multiple input devices (keyboards, bar code reader, etc.).
  - Emulate a keyboard action.
  - Write and send data to any software/device without any further settings.
  - Device-Instrument link has to be reset in order to connect to another device.

### Wired connections



- Wired Connections  
Despite all the benefits described above, it could be that Bluetooth® Wireless technology is not the most appropriate solution for a specific application. We are of course able to provide a connection cable fitted either with an RS232 or USB connector for every Sylvac instrument with a data output. Our standard cables are 2 or 3 meters in length depending on the models. On request they can be delivered in special lengths of up to 15 metres for RS232 cables and up to 7 metres for USB cables.

### Use of a digital test indicator without its battery

In some cases, as for example when a digital test indicator is installed in a location that is difficult to access, or if it is fitted on a non-stop operating machine, it may be advisable to replace the battery of the instrument with a special cable (Power) which will ensure both its power supply and the data transfer. Most of our digital test indicators offer this option and they are identified by the Power logo. Other digital test indicators, intended for connection to programmable logic controllers (PLC) also operate without a battery and their power supply is provided by the controller.



Please refer to the chapter on cables for details on the different cables available.



# Data transmission and software

## CONNECTIONS

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**Connection Proximity**



**Connection RS-485**



**Connection M8**



**Bluetooth® Wireless technology with dongle**



**Bluetooth® Wireless technology via HID**

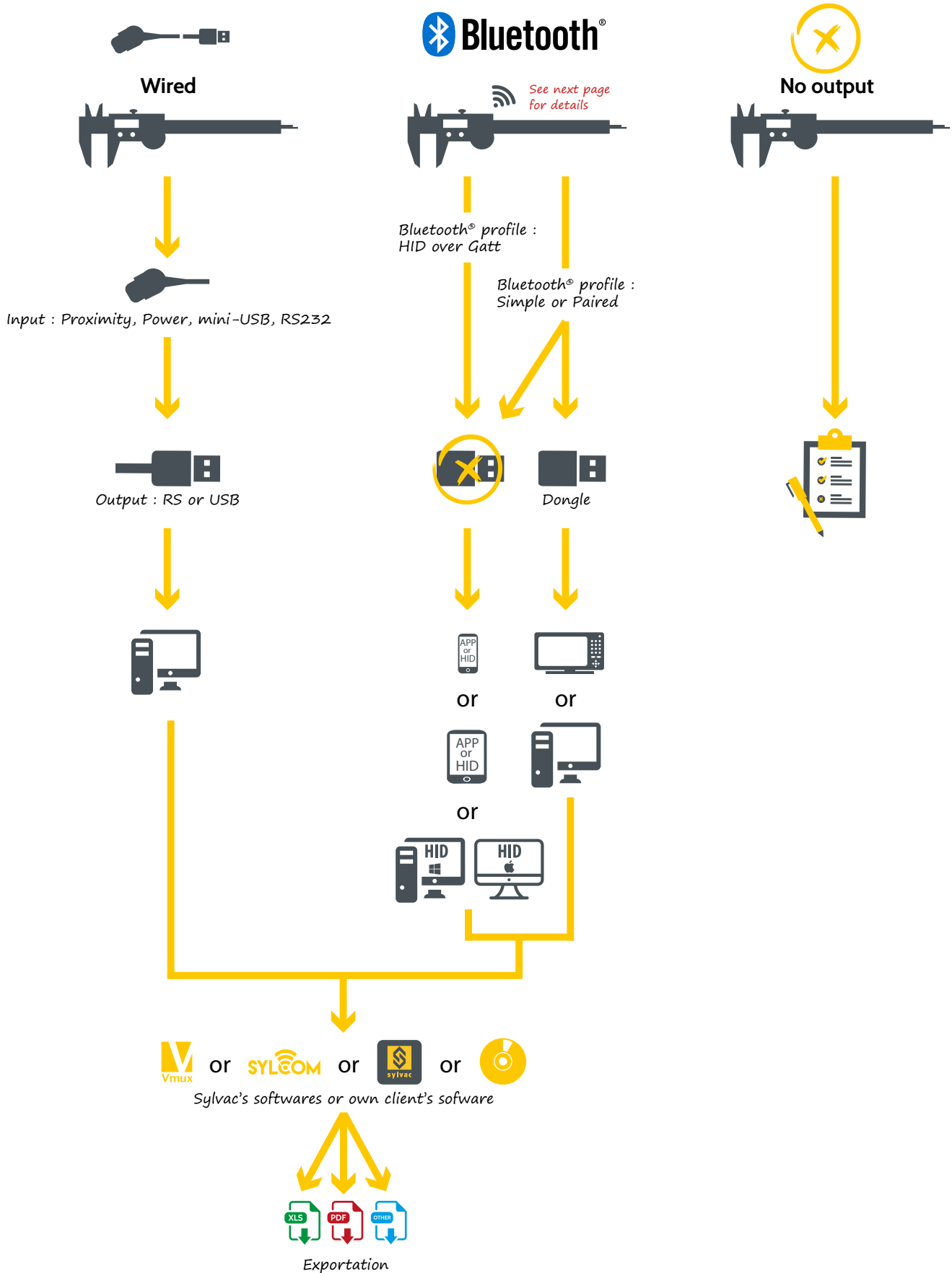


**Bluetooth® Wireless technology and USB**

# Data transmission and software

## CONNECTIONS POSSIBILITIES

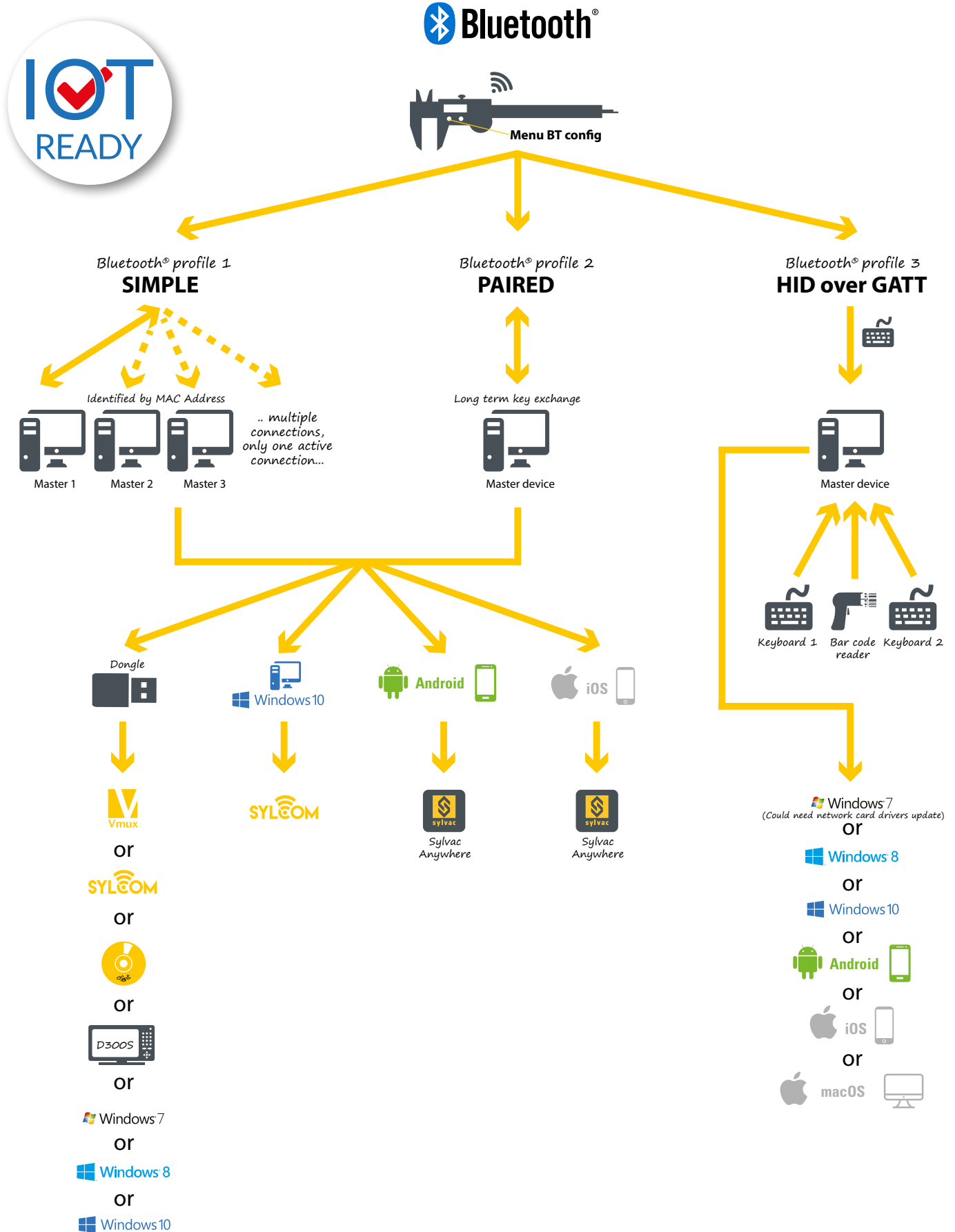
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# Data transmission and software

## WIRELESS CONNECTION PROFILES



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# Sylvac softwares

## DATA TRANSFER

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### SYLCOM

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 channels spread over one or several pages. Several display modes are available so that the status of the variable measured (GO/NG) can be visualised instantaneously. Sylcom can also be used to measure components sequentially, to collect all values simultaneously and to define a time interval in order 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.

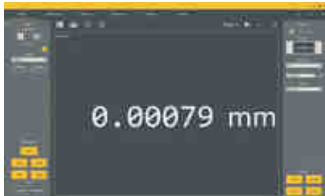


Free Sylcom LITE version on [www.sylvac.ch](http://www.sylvac.ch)

Available in **LITE** version of the software allowing to connect 1 instrument and 1 pedal (free), **Standard** version with standard functions allowing to connect up to 16 instruments or pedals, by USB cable (maximum 15) by Bluetooth® or by M-BUS modules., **PRO** version, allowing to connect up to 15 instruments by USB cable, up to 40 instruments by Bluetooth® and up to 128 instruments by M-BUS modules (total maximum 128 connected instruments). Several features such as control plans, monitoring, statistics and SPC export are available (60 days trial version available) and **Expert** version offering the same functionalities as the PRO version, but with the additional possibility of connecting up to 500 instruments via Bluetooth® with the «On the fly» mode, to communicate in the OPC-UA protocol and to automatically suggest tool corrections to some CNCs machines.

Your metrology partner for the new challenges ahead!

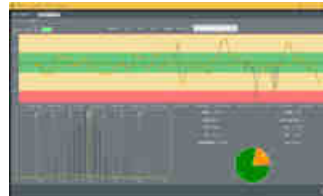
We hope that all the information described above has convinced you that Sylvac is not only a manufacturer of innovative and high-quality measuring instruments but also the partner you need to help your quality control evolve towards the new industrial model that awaits us.



Channel display



Multi-channel display with colour-coded tolerances



Statistics



Control plans

Softwares	Order number Dongle licence	Order number Digital licence	Accessories	Order number
Sylcom LITE	-	<b>FREE</b>	Dongle Smart	981-7100
Sylcom Standard	981-7132	981-7129	USB pedal	926-7020
Sylcom Pro	981-7240	981-7245	USB pedal robust	926-7021
Sylcom Expert	981-7250	981-7255	Footpedal Smart	926-7022
Upgrade Sylconnect to Sylcom*	981-7139	-		

\* contact us to get the procedure for the update





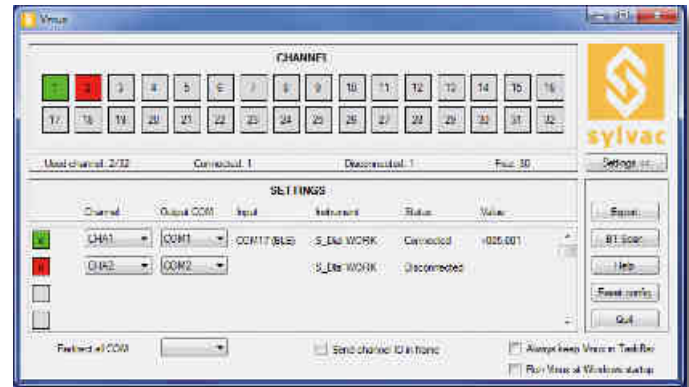
# Applications

## DATA TRANSFER

### Vmux

This software may be considered as a virtual interface which assigns a COM port to instruments connected by wireless Bluetooth® transmission or by USB cable and then redirects the values from these instruments to any Windows software (SPC or other).

For the simplest applications Vmux simply exports the values into a selectable Excel file. Extremely user-friendly, Vmux is an excellent replacement for the multiplexer boxes used in the past.



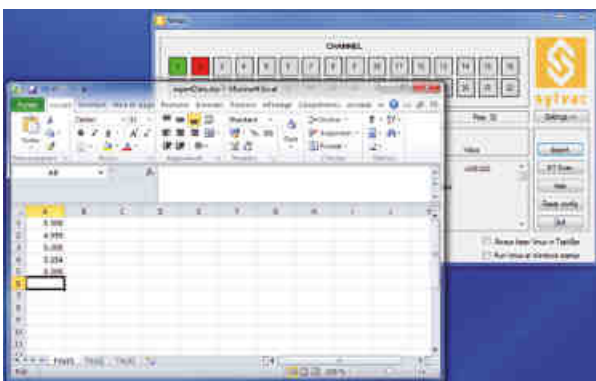
A free version Vmux Lite, limited to eight connections can be downloaded free of charge from our website. The full version of Vmux with the capacity to connect up to 32 instruments (max. 16 instruments with wireless Bluetooth® transmission) can be ordered from the Sylvac distributor in your country.



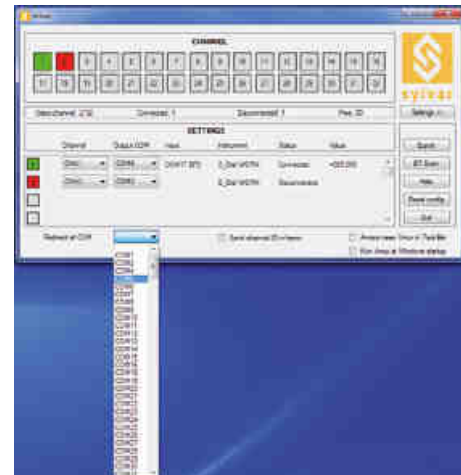
Basic display



Defining a sequence



Exporting data in Excel®



Port COM changing



### Softwares **Vmux**

	Order number
Vmux LITE	<b>FREE</b>
Vmux (Dongle licence)	981-7161
Vmux (Digital licence)	981-7163

Try the free version Vmux LITE available on our website [www.sylvac.ch](http://www.sylvac.ch)

### Accessories

	Order number
Dongle Smart	981-7100
USB pedal	926-7020
USB pedal robust	926-7021
Footpedal Smart	926-7022

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# Applications

## DATA TRANSFER

### A **Sylvac Anywhere**

Allow to display the instruments values with Wireless *Bluetooth®* Technology on tablets and smartphones Android from version 5.0 and Apple from version IOS9, equipped with Wireless *Bluetooth®* Technology 4.0.

Possibility to saved data on the device and to export them to any compatible application.

Available for free on the Google Play Store and the I'App Store.



**Display**



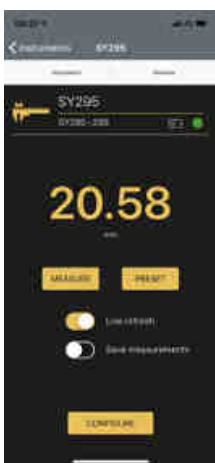
**Save**



**Export**



**Dedicated application for Sylvac instruments with old and new Bluetooth® technology.**



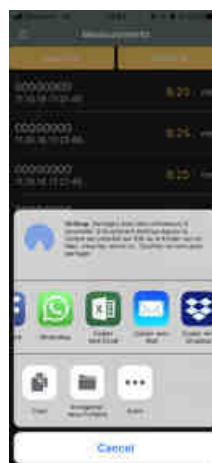
Instrument connected



Available instruments



Data saved



Exportation of data

**No dongle required !**





# Various softwares

## OVERVIEW OF SOFTWARE AND FUNCTIONS

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	SYLCOM					VMUX	
	LITE	Standard	Pro	Expert	Upgrade from Sylconnect	LITE	Standard
		981-7132/29	981-7240	981-7250	981-7139		981-7161
<b>NUMBER OF INSTRUMENTS</b>							
Max. 1	●						
Max. 8						●	
Max. 16		●			●		
Max. 32							● <sup>1)</sup>
Up to 128			● <sup>2)</sup>				
Max. 500				● <sup>3)</sup>			
<b>PLATFORMS</b>							
Windows 7	●	●	●	●	●	●	●
Windows 8.1	●	●	●	●	●	●	●
Windows 10	●	●	●	●	●	●	●
Dongle required for instruments Smart	(●)	(●)	(●)	(●)	(●)	●	●
<b>FUNCTIONS</b>							
Export CSV	●	●	●	●	●		
Export to Microsoft Excel®	●	●	●	●	●		
Immediate export to external program	●	●	●	●	●	●	●
Communication gateway (virtual COM port)						●	●
Display value	●	●	●	●	●	●	●
Display tolerances	●	●	●	●	●		
Analogue display	●	●	●	●	●		
Chart display	●	●	●	●	●		
Multi-channel		●	●	●	●		●
Flatness and advanced formulas			●	●			
Inspection plan			●	●			
Statistics			●	●			
Action sequences		●	●	●	●		
Actions scripts			●	●			
User management	●	●	●	●	●		
Work menu (controlling instrument menus)	●	●	●	●	●		
OPC-UA Mode				●			
Tool corrector				●			

<sup>1)</sup> Max. 32 USB or 16 USB and 16 instruments with Bluetooth® Wireless technology

<sup>2)</sup> via Mbus (depends on hardware), max. 40 instruments with Bluetooth® Wireless technology (5 dongles)

<sup>3)</sup> via «On the fly» Mode, no pairing

# Wireless transmission

# Dongle Smart

## DESCRIPTION

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- Possibility to connect up to 8 instruments per dongle
- Duplex data transmission
- Plug and play !
- Individual identification of each instrument with *Bluetooth®* wireless technology
- Automatic detection of instruments



## TECHNICAL SPECIFICATIONS

		981-7100
USB		•
Coupled instruments per module		8
Automatic detection of instrument		•
Instruments and software compatibility		D300S & Sylcom & Vmux
Transmission distance <sup>1)</sup>	m	15

<sup>1)</sup> depends on the environment.



# Wireless transmission

# S\_Footswitch Smart

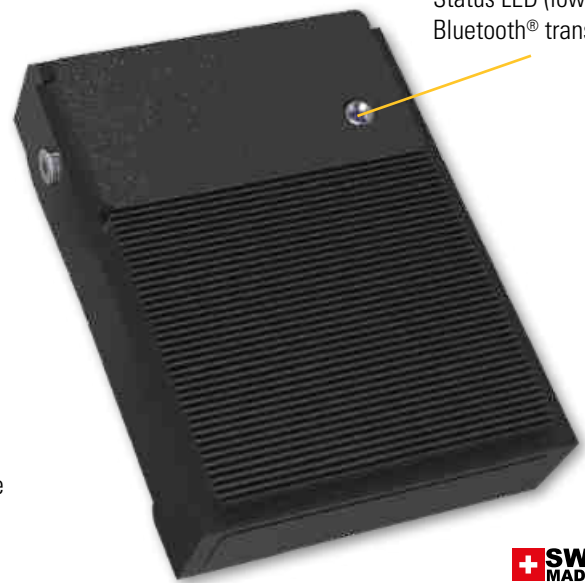
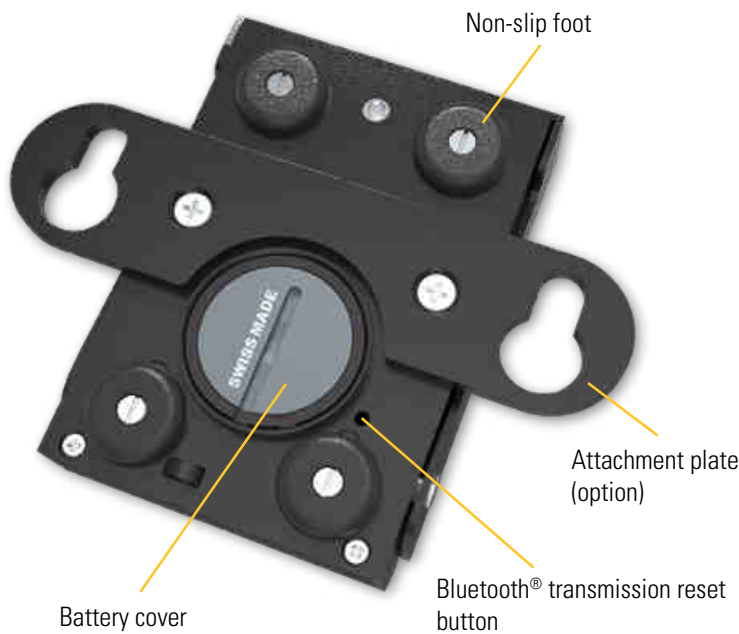
## DESCRIPTION

## FOOTPEDAL SMART

- Robust footpedal with Bluetooth® wireless technology
- IP rating IP53
- Battery life : 3 years (Battery CR2477)
- Possibility of triggering sequences from the software Vmux & Sylcom



Status LED (low battery, Bluetooth® transmission)



Dongle with Bluetooth® Wireless technology 981.7100



## TECHNICAL SPECIFICATIONS

<b>S_Footswitch Smart</b>		<b>926-7022</b>
Connection		Bluetooth® wireless technology*
Weight	g	260
Software compatibility		Vmux (1.37 and later) and Sylcom
Transmission distance <sup>1)</sup>	m	up to 15m

<sup>1)</sup> depends on the environment

\* Connection with dongle #981.7100

<b>Accessories</b>		<b>926-7023</b>	<b>985-2217</b>
Description		Fixing plate	Adapter for battery CR2032
Weight	g	85	5

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# Wireless transmission

# Battery Pack

## DESCRIPTION

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- External power-supply for instruments with Bluetooth® wireless technology
- Compatible with all instruments with Power-RS and Power-USB connections
- Battery type CR2477, 3V
- Cable length : about 150mm



## TECHNICAL SPECIFICATIONS

<b>Battery Pack</b>		<b>926-7024</b>
Connections		Power-RS / Battery-RS
Weight	g	71.6 (91.4g with attachment plate)
Capacity max.	mAh	1000
Clamping		compatible with dial gauges Ø60mm
Cable length	mm	150

<b>Accessories</b>		<b>985-2217</b>
Description		Adapter for battery CR2032
Weight	g	5



# Other

## BATTERIES

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### Order number and compatibilities



<b>Battery CR2032</b>	<b>985-2215</b> Calipers S_Cal, ultra-light calipers ULX4 <sup>1)</sup> , dial gauges S_Dial (except PLC), micrometers, bore gauges, digital scale S_Scale digital micrometer screws, Feeler Gage, depth gauges S_Depth, Protractor, Hi_Gage, footpedal Smart <sup>1)</sup> and benches table PS16 V2 <sup>1)</sup>
<b>Battery CR2477</b>	<b>985-2216</b> Ultra-light calipers ULX4, benches table PS16 V2, footpedal Smart, Battery Pack

<sup>1)</sup> With adapter