sylvac D300S Universal Display Unit User Guide

Contents

sylvac D300S Universal Display Unit

Specifications:

- Software version: V2.41
- OS version: V2.00
- Display unit for Sylvac hand instrument range and probes
- 8.5” touch screen
- IP65 front panel
- USB ports for SYLVAC instruments, keyboard, or mouse
- LAN port, VGA output, RS485 and RS232 connectors

Product Usage Instructions

General Description:
The D300S is a display unit that allows visualization of Sylvac hand instruments and probes. It features an intuitive interface for easy configuration and solving measurement problems.

Front Panel:
The front panel includes a touch screen, configurable user interface, navigation buttons, numeric keypad, standby button, and power switch.

Back Panel:
The back panel features various connections including USB ports, LAN port, probe inputs, digital inputs/outputs, external contacts, VGA output, RS485 and RS232 connectors.

Connections Description:
The connections include USB ports for instruments and peripherals, LAN port for network connectivity, VGA output for external display, and various probe inputs and outputs.

Input/Output Explanations:

- **USB Host:** Send measurements to a PC. Default communication parameters provided.

- **USB Device:** Connect measurement instruments via USB cable. Can extend using a hub.
- **Power Switch:** Complete unit shutdown.
- **Sustain Pedal Input:** Connect pedals or external contacts.
- **Network Connection (RJ45):** Enables data retrieval from local network.
- **Speakers (Jack) Input:** Connect a speaker for audio output.
- **VGA Output:** Connect to an external screen or projector.
- **RS485 and RS232:** Probe and instrument connections.

FAQ:

- **Q: How many USB instruments can be connected at the same time?**
  A: Up to 30 USB instruments can be connected simultaneously.
- **Q: What is the resolution of the VGA output?**
  A: The resolution is fixed at 800×400 and cannot be modified.

Universal display unit

D300S V2

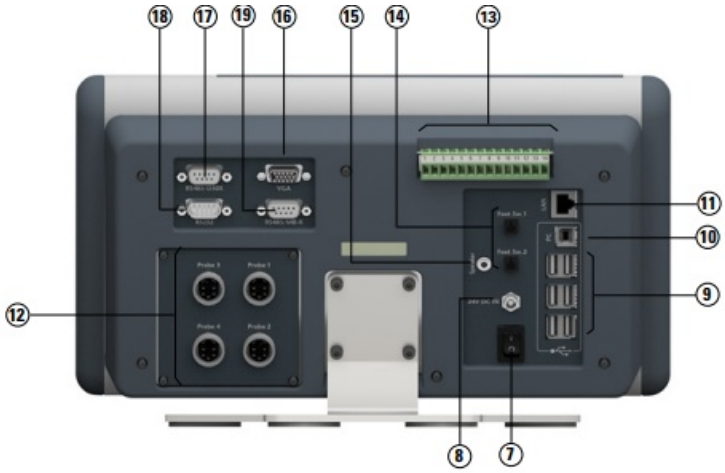
User guide

General description

The D300S is a display unit enabling the visualisation of the entire Sylvac hand instrument range and P2, P5, P10, P25, P50 probes. The intuitive interface enables the user to easily configure the device and solve most measurement
problems met in production or in laboratory.

Front panel

Back panel



Connections description

1. 8.5’’ touch screen
2. Configurable user interface
3. IP65 front panel
4. Navigation buttons
5. Numeric keypad
6. Standby button
7. Master switch for the unit
8. Connector for 24V power supply
9. USB ports for SYLVAC instruments, keyboard or mouse
10. USB port D300S -> PC
11. LAN port
12. SYLVAC probe inputs (4-input module available)
13. Digital inputs/outputs
14. External contacts (pedals, limit switch etc.)
15. Jack socket for speakers
16. VGA output
17. RS485 connector for connecting D302/D304 units RS232 input for SYLVAC instrument
18. RS485 connector for connecting MB-8i / MB-2C /
19. MB-4C / MB-2S units (only available on certain versions)

Input/output explanations

USB Host
Enables measurements sending to a PC. Depending on the operating system, a driver may be required. It can be downloaded directly from the www.ftdichip. com website.

The default communication parameters are as follows:

Baud Rate	4800
Parity	Even
Data Bits	7
Stop Bits	2
Flow Control	None

The list of retro-commands recognised by the D300S are found in the « Retro-command codes list » chapter, P. 24.

USB Device
Enables the connection of measurement instruments through a usb cable (Proximity-USB, Opto-USB, Power-USB, …). It is possible to extend the num-ber of USB ports using a usb hub. 30 USB instruments at the most can be connected at the same time.

Power Switch
Allows the complete switching off of the unit

Sustain pedal input
Two pedals can be connected. Two extra external contacts are also available on the screw terminal (Switch 1 and 2).

Network connection (RJ45)
The connection to a local network enables amongst other things the retrieval of recorded data (ex: recorded measurements, configuration files, …)

Speakers (Jack)
Input enabling the connection to a speaker.

VGA output
Enables the connection of the D300S to an external screen or projector.

Note : The resolution stays identical to the unit's one, i.e. 800×400. It cannot be modified.

- RS485

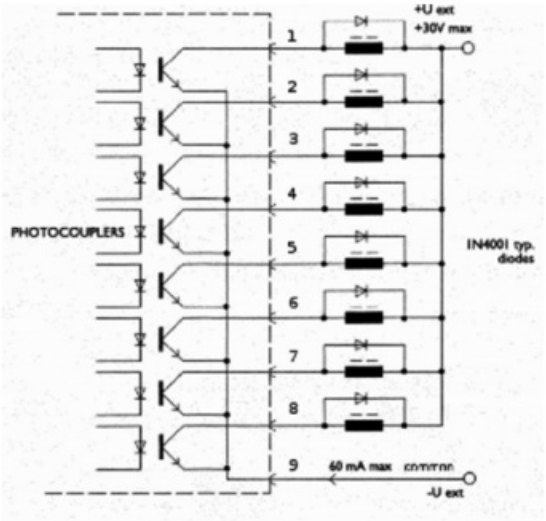
  Enables the connection of the D302 and D304 probe modules.
- RS232

  Enables the connection of a RS232 instrument with a Duplex cable.
- Probe input

  Enables the connection of the Sylvac probes (P2, P5, P10, P25, P50).
- Digital outputs

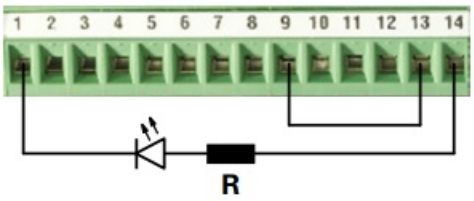
N°	Function
1	Output isolated by optocoupler
2	Output isolated by optocoupler
3	Output isolated by optocoupler
4	Output isolated by optocoupler
5	Output isolated by optocoupler
6	Output isolated by optocoupler
7	Output isolated by optocoupler
8	Output isolated by optocoupler
9	Common for the 8 optocoupler outputs
10	Switch 1
11	Switch 2
12	External power supply +24V (input)
13	GND
14	Internal power supply +24V (output)

Schematic representation

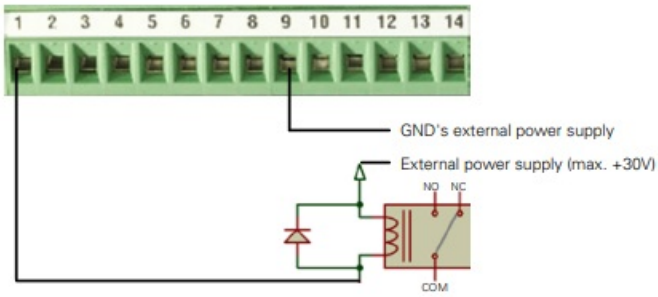


- The maximum voltage is 30V and the maximum current is 60mA per output.
- The supply voltage of the optocoupler outputs are normally brought from the outside, the negative pole on the common transmitters (pin 9)
- The protective diode is indispensable in case of inductive load (solenoid valve, relay, …)

Example to connect a LED on the n°1 digital output

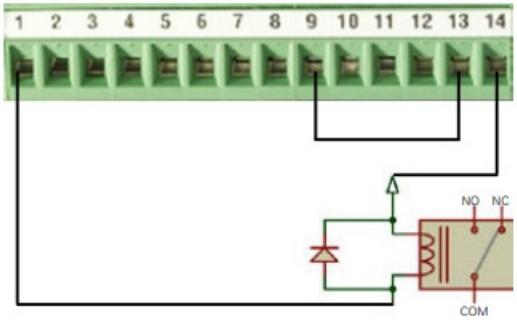


Example to connect a relay on the n°1 digital output (external power supply)



Note: a protective diode must be added in parallel of the relay if it isn't integrated.

Example to connect a relay on the n°1 digital output (internal power supply)

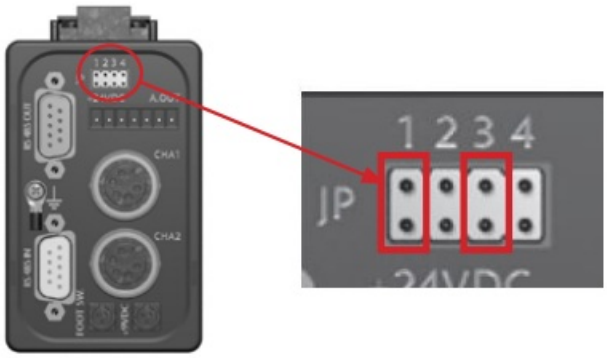


Note: a protective diode must be added in parallel of the relay if it isn't integrated.

Example to connect an external contact on the Switch 1 input

RS485/D30X and RS485/MB-X connections

These two inputs allow an increase in the number of probes connected to the D300S.



The RS485/D30X input

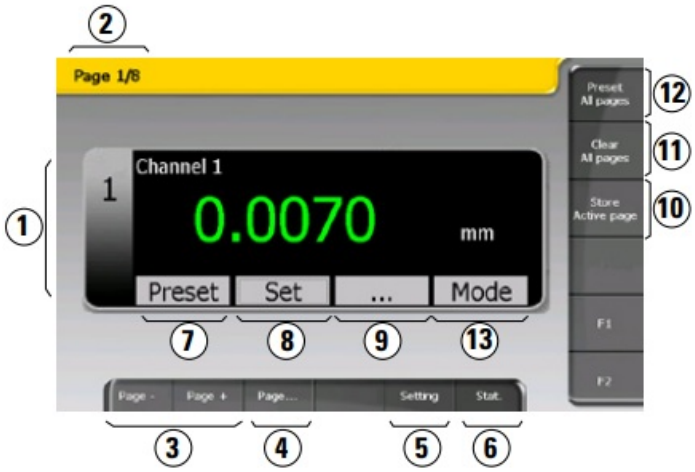
- This input is exclusively used for the D302 and D304 modules.
- The capacitive probes (P5, P10, P25, P50) can be connected to these modules.
- Remark : the configuration jumpers must be placed on JP1 and JP3 so that the module is correctly detected by the D300S.

The RS485/MB-X input (only available on certain versions)
This input is used to connect the MB-8i, MB-2C, MB-4C or even MB-2S type modules. Inductive capacitive and incremental probes can be connected to these modules.

User interface

When you first switch on your D300S unit, the default interface will be active as shown below.

1	Window showing details of channel X
2	Active page indicator
3	Select page X/X
4	Configuration of number of pages (8. max.)
5	General configuration
6	Display type (shift to static mode)
7	Channel individual preset
8	Channel reset
9	Channel configuration
10	Measurement recording (of the active page)
11	Clear all displayed channels
12	Preset all displayed channels
13	Activate the Min/Max extent

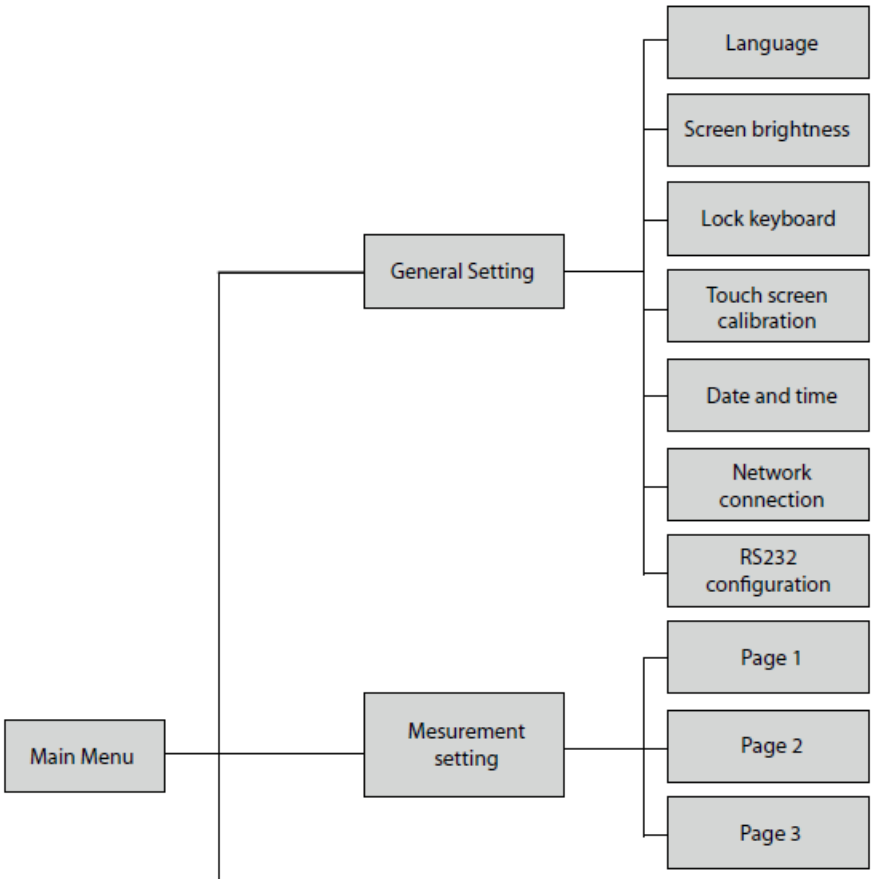


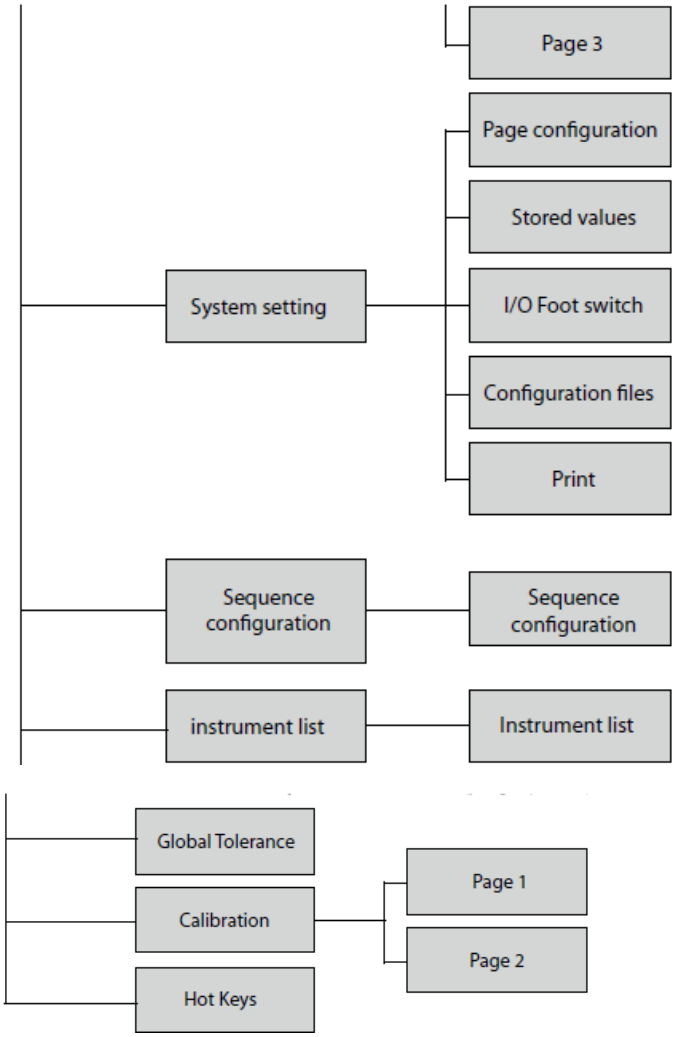
While the unit switches off, all parameters are automatically saved. It is also possible to save your configurations in order to use your D300S for several dif- ferent workstations.

When an instrument is connected, it is automatically assigned a channel. The cable's identification address is registered by the unit. It is therefore vital not to switch it with other instruments. If you disconnect the cable from the unit and use a different USB port when you next connect it, the same channel will be reassigned to it.

The Setting menu
This menu enables the modification of all system parameters.

The setting menu tree

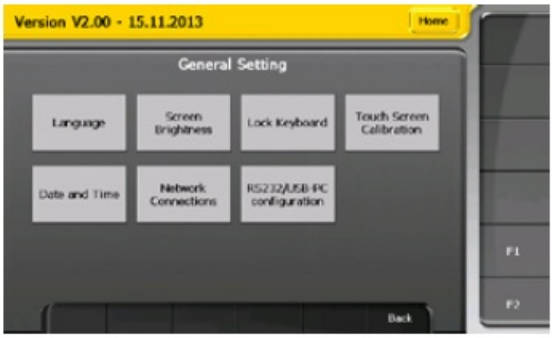




General setting

This menu allows you to configure the general parameters of your unit.

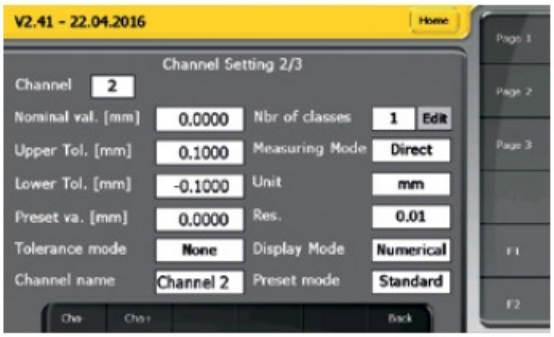
It is, amongst other things, possible to:



- Select the language
- Modify display brightness
- Lock the keyboard and tactile screen
- Modify the date and time • …

Channel setting

- Configuration of a channel’s mea- surement parameters, such as tolerances or preset values.



- Instrument allocation and measurement type selection thanks to the mathematical functions.

Channel allocation
To allocate an instrument to a channel automatically (by movement of the measurement probe) or manually (by selecting it in a list). If the “manual” option is chosen it is then possible to select either an instrument in the list, or a channel on which a calculation has already been configured, for example.

Exclusion from automatic detection
It is possible to exclude a channel from automatic instrument detection when this is moving. This is useful, when for example, the same instrument is allocated to different channels. In this case, when the instrument moves, it is no longer possible to know what channel must be selected. To avoid this problem it is possible to deactivate automatic detection on certain channels.

Tolerance mode
This option enables the modification of colours used to indicate statuses.

<=>	red – green – yellow
GO NOGO	red – green – red
<=> (int)	yellow – green – red (interior measure)

Number of classes
Selection of the number of classes wanted for the classification of measured values. It is possible to choose up to 8 classes. The classes are spread out proportionally between higher tolerance and lower tolerance.

Display mode

- Digital : displays the digital value
- Bargraph : displays the measurement as a bargraph

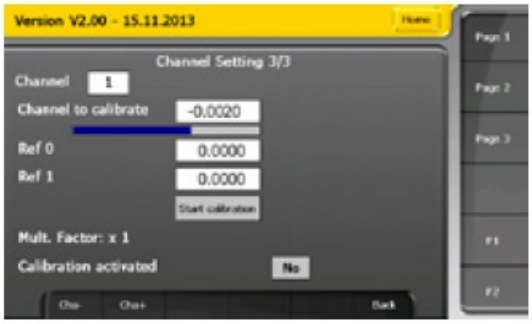
Measurement mode

- Direct : displays the value live
- Max : displays the maximum value
- Min : displays the minimum value
- Delta : displays the difference (maximum – minimum)
- Mean : displays the average (maximum + minimum)/2
- Delta (sampling) : Displays the difference over a given number of samples
- Mean (sampling) : Displays the mean over a given number of samples

To use Delta (sampling) or Mean (sampling) mode, the channel measurement mode must be configured, then the sampling function selected for the desired external contact, for example pedal 1. In this configuration, every time pedal 1 is pressed the channel value is temporarily recorded (n indicates the number of values recorded) and the delta or mean is calculated as a function of the recorded values. This allows a delta to be produced at several points using a single instrument.

Channel calibration at 2 points

It is possible to calibrate the channel at two reference points. A multiplication factor is then calculated so allowing the measurement of diameters on V or the calibration of a channel depending on the reference block. This multiplication factor can then be activated or deactivated. This calibration only affects the channel and not the instrument allocated to the channel.



System setting

This menu enables access to the unit's global configuration :

- Display configuration
- Digital output configuration
- Configuration recording
- Recorded measures visualisation
- Modify printing options

Digital outputs
It is possible to configure the digital outputs as a function of the tolerance of a specific channel, or generally.
Function: allows configuration of which condition activates the output:

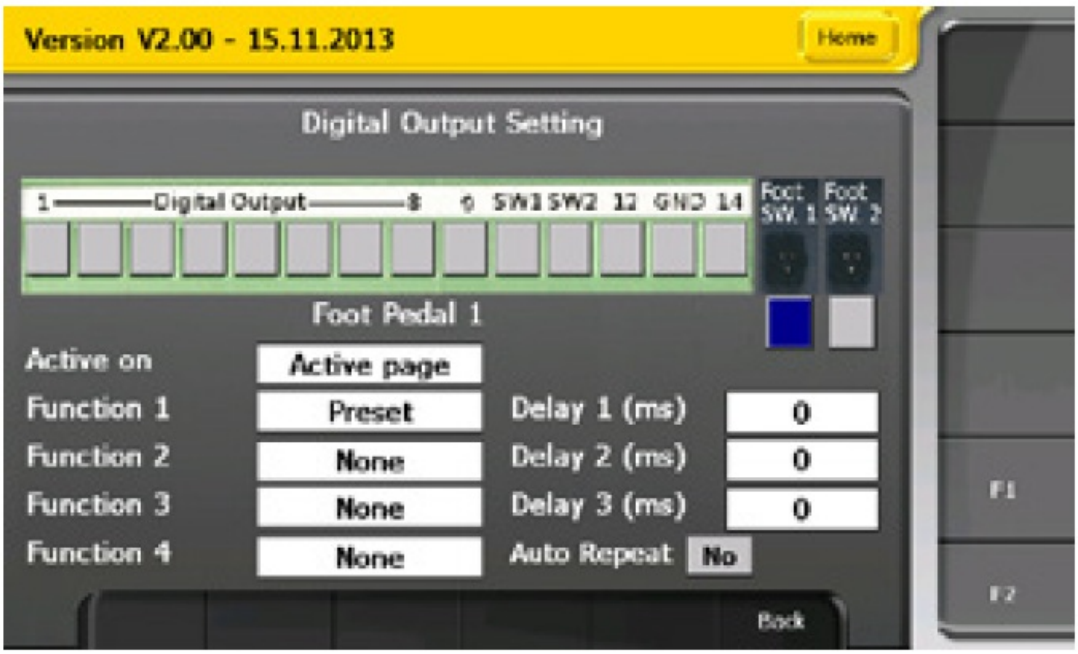
- NO GO channel: when the channel value is outside tolerances
- GO channel: when the channel value is within tolerances
- Global Tol <: when the general measurement is less than the defined tolerances
- Global Tol = : when the general measurement is within the defined tolerances
- Global Tol > :when the general measurement is more than the defined tolerances
- D110 lifting : allows control of the D110 unit (lifting)

- D110 lowering : allows control of the D110 unit (lowering)

Channel: allows channel selection when the Channel GO or Channel NO GO mode is selected.

External contact
The external contacts can combine up to 4 different functions.
Active on: allows configuration of the channels on which the external contact action will act.

- All pages: acts on all the defined channels.
- Active page: acts only on the active page channels.
- Active channel: acts only on the active channel.
- Sequences: acts on the channels configured according to the “Sequence” menu.



Function: Pedal function configuration. Up to 4 different functions can be combined. A delay between each of the functions can be defined in milliseconds.
Delay: Configuration of waiting time between 2 functions in milliseconds
Auto Repetition. : Activates or deactivates automatic repetition of functions configured on the external contact. This typically permits recording of a measurement every x seconds.

Printing

Page 1
The information that will be printed can be configured. Up to 4 different fields and 4 field separators can be configured by the user.

The printable information is as follows:

- Value (##.###) : the value with a ". " as decimal separator.
- Value (##,###): the value with a "," as decimal separator.
- Date and time: the date and time that the measurement was taken.
- Counter: the part counter. Can be reset to zero using the "reinitialise part counter" button.
- Channel name: the channel name can be modified by the user in the "measurement parameter" menu on page 2.
- Channel number
- Min/max value: the min, max, delta and mean values will be printed.
- Tolerance: the measurement tolerance status (<, =, >).
- None: no information to be printed.

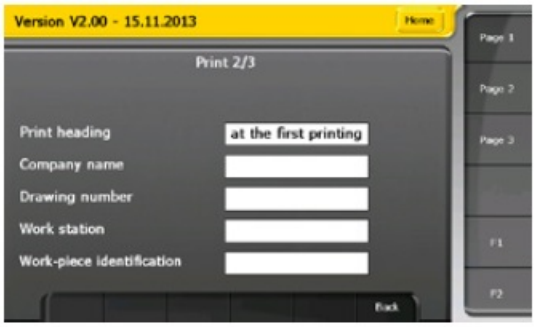
The field separators are as follows:

- {TAB}: a tab.
- {SPACE}: a space.
- {CR}: a carriage return.
- {CR}+{LF}: a carriage return followed by a line feed.
- { :} : two points.
- { :}+{TAB}: two points followed by a tab.

Page 2
The user can define a header that will be printed with the values. An option allows definition of whether the header is printed on each printing or only on the first printing.

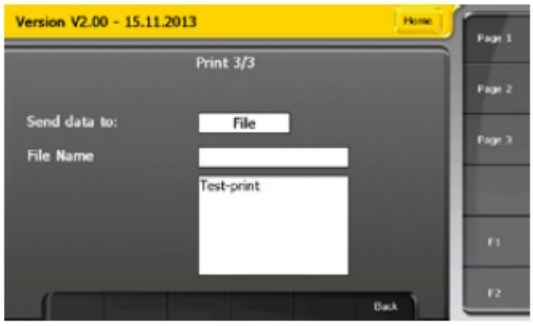
The different header information is as follows:

- Company name
- Drawing number
- Work station
- Part identification



Page 3
It is possible to choose the destination for the printed values. The different options are as follows:

- Printer: The values are sent to the printer. For this a USB printer must be connected to the D300S.
- PC: The values are sent to the PC via the USB-PC port. A virtual COM port is created at PC level.
- File: The values are sent to a file whose name can be entered by the user. The file can then be displayed in the menu System parameter ➡ Recorded values



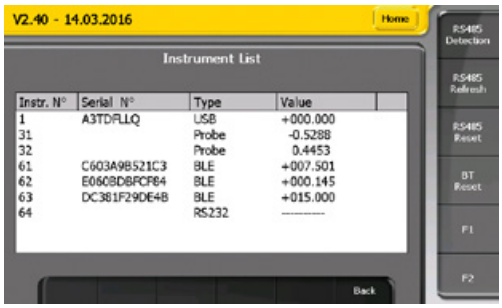
Configuration of sequences

This menu allows the allocation of a certain number of channels to a sequence with the aim of executing a function (e.g.: print, preset, store…) on a defined channel or channels. These functions are configured on one of the external contacts and it is possible to configure up to 3 sequences.

Action: configures whether the external contact acts on all the defined channels or on one channel.

- Manual: pressing the external contact acts on one channel at a time and selects the next channel.
- Auto: pressing the external contact acts on all the channels at the same-time. All the channels defined are selected.
- Trigger : selects the external contact that activates the sequence
- Remark: The “sequence” option must be configured at the external contact in the System parameters –> Pedal I/O menu.

List of instruments



This menu allows display of all the instruments connected to the unit. The dif-ferent instrument types are:

- USB: the instruments connected using the USB cable (proximity-usb, optoRS-usb, …).
- D200S: the D200S equipment connect through the USB port
- S_SCALE: the USB measurement axes
- RS232: the instruments connected using an RS232 cable
- Probe: Sylvac capacitive probes.
- Remark: the “E” symbol appears if point by point correction is active.
- BLE: Bluetooth® instruments
- M-Bus : M-Bus modules

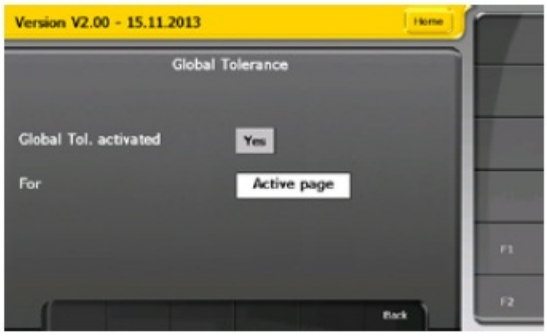
It is also possible to configure the modules connected by RS485:

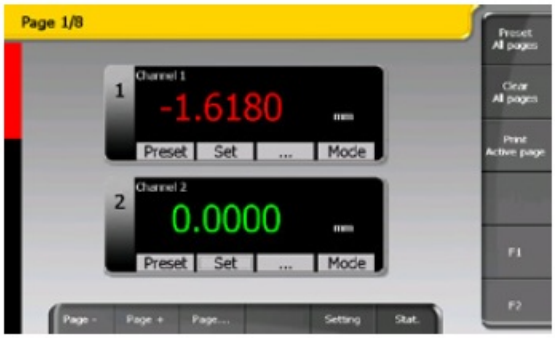
- RS485 Detection: activates the detection of a new RS485 module connected to the unit. A probe movement is sufficient to make the configuration.
- RS485 Refresh: searches for all the RS485 modules connected to the D300S and makes them appear in the list of instruments.
- RS485 Reset: deletes the RS485 modules present in the list of instruments

Detection of Bluetooth® instruments is also done from this menu. (See chapter “Example of configuration with three Bluetooth® Smart” instruments)

Global tolerance

It is possible to add a global tolerance for the measured part. It can be defined on the active page only of for all the defined channels.



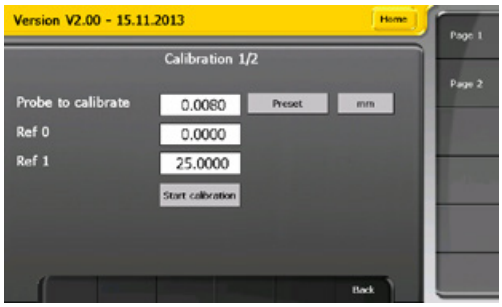


Calibration

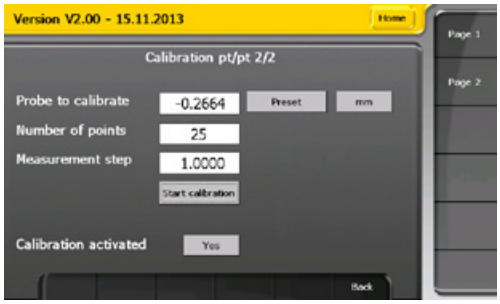
The unit is calibrated in the factory. If recalibration is necessary, the calibration menu allows it to be done.

Remark: The calibration menu can be ac-cessed by holding the digital keypad “Enter” and by selecting at the same time the button calibration on the digital display.

Page 1: allows calibration at 2 reference



Page 2: allows a linearity correction using 2 to 25 points. The number of points and the measurement step can be entered. The value of the calibration blocks can be modified during the calibration procedure if it does not correspond to the measurement step.



Hot Keys
The functions of the 3 buttons on the right of the screen (see user interface chap- ter, point 10, 11 & 12) can be configured by the user. It is also possible to define whether the functions act on the active page, all the pages or the active channel.

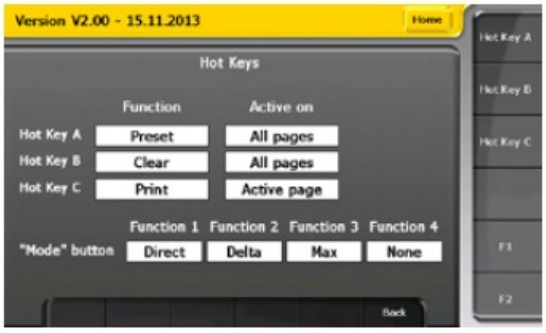
The mode button can also be configured. 4 functions can be defined by each press on the mode button, the different functions are selected successively.

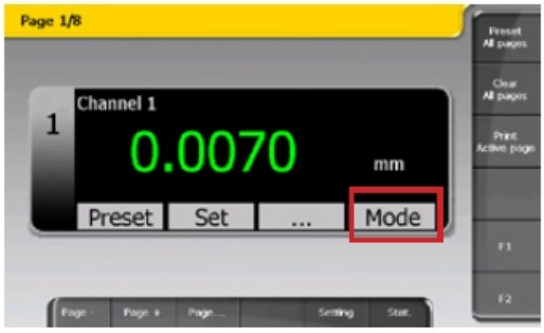
The different functions:

- Direct

- Min
- Max
- Delta
- Mean
- Delta (sampling)
- Mean (sampling)
- Light mode: switches between the min/max/delta/mean/direct modes
- Full mode: switches between the min/max/delta/mean/delta(sampling)//mean(sampling)/direct modes

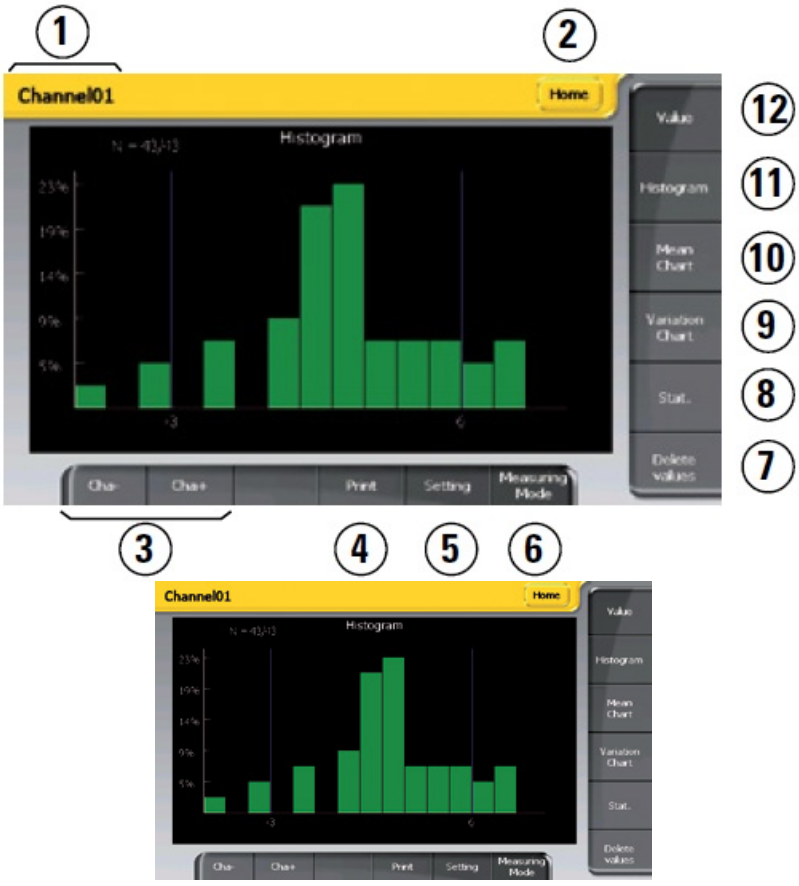
Remark: if the “light mode ” or “full mode” function is selected the other functions are ignored.

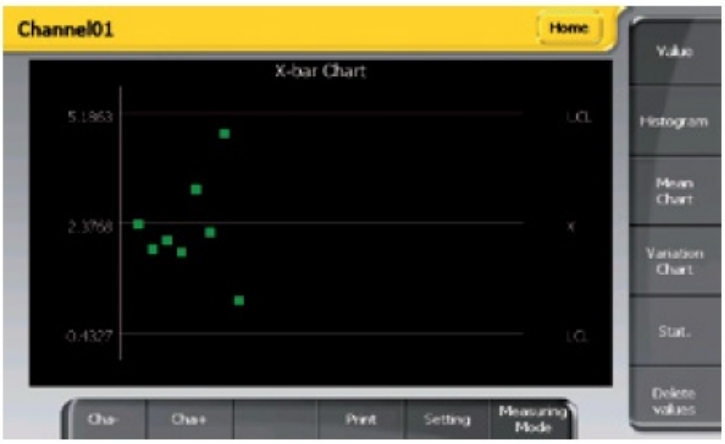




Statistics

This mode enables the display of statistics. They are calculated individually per channel and are based on the values recorded by the user.





$$\frac{\sum_{i=1}^{N} X_i}{N}$$

$$\sqrt{\frac{\sum_{i=1}^{N} (X_i - \overline{X})^2}{N}}$$

$$\sigma$$

$$\sqrt{\frac{\sum_{i=1}^{N} (X_i - \overline{X})^2}{N-1}}$$

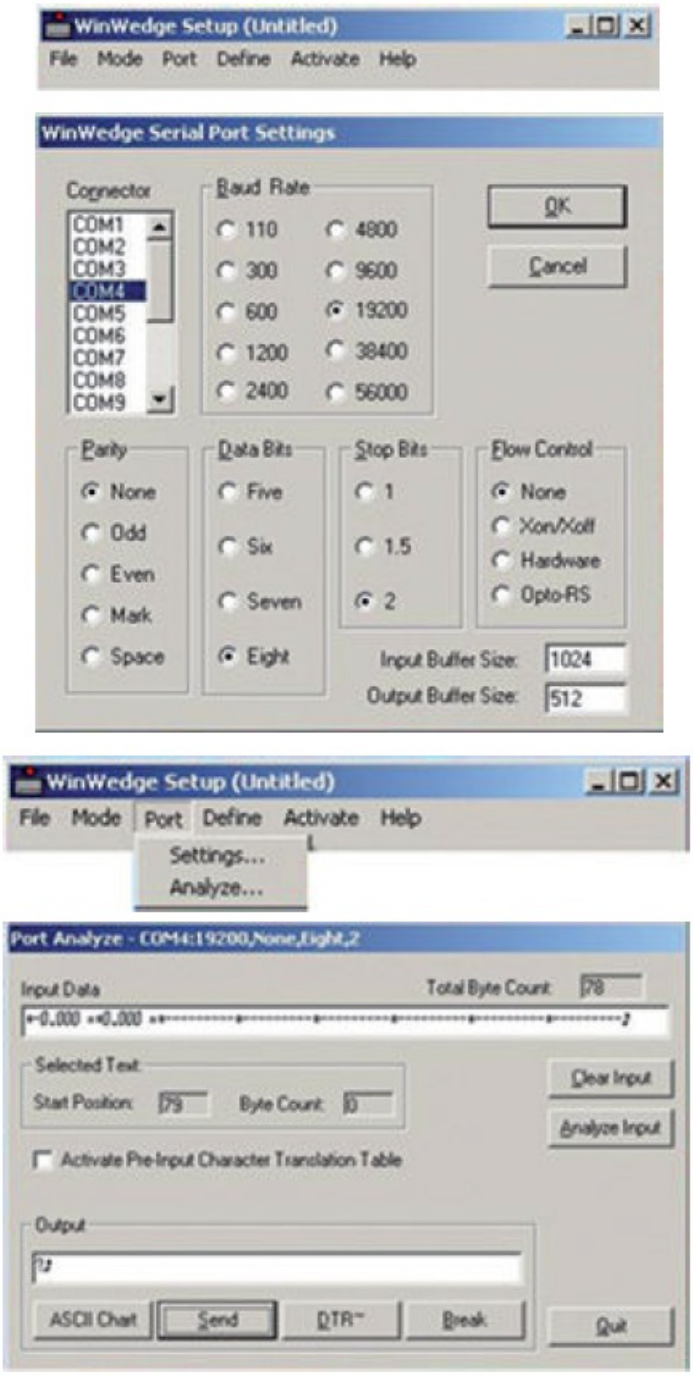
$$\frac{(-NG)+(+NG)}{N}\cdot 100$$

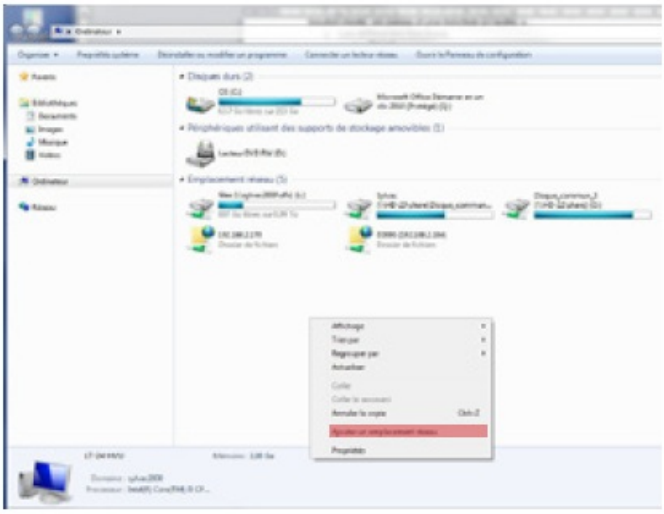
$$\frac{Tsup - Tinf}{6\sigma}$$

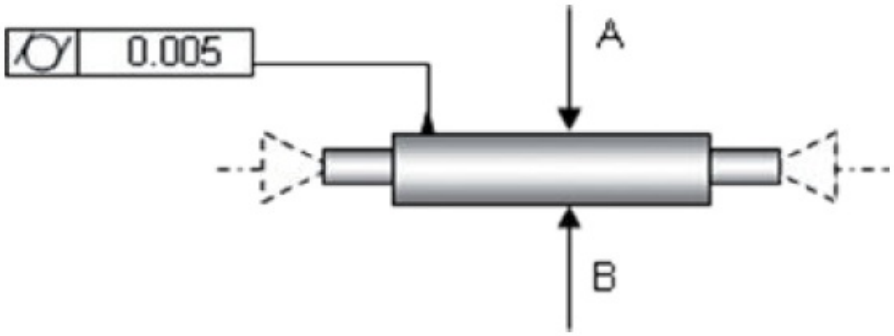
$$\frac{Tsup - Tinf}{6\,s}$$

$$\frac{Tsup - \overline{X}}{3s} \;\&\; \frac{\overline{X} - Tinf}{3s}$$

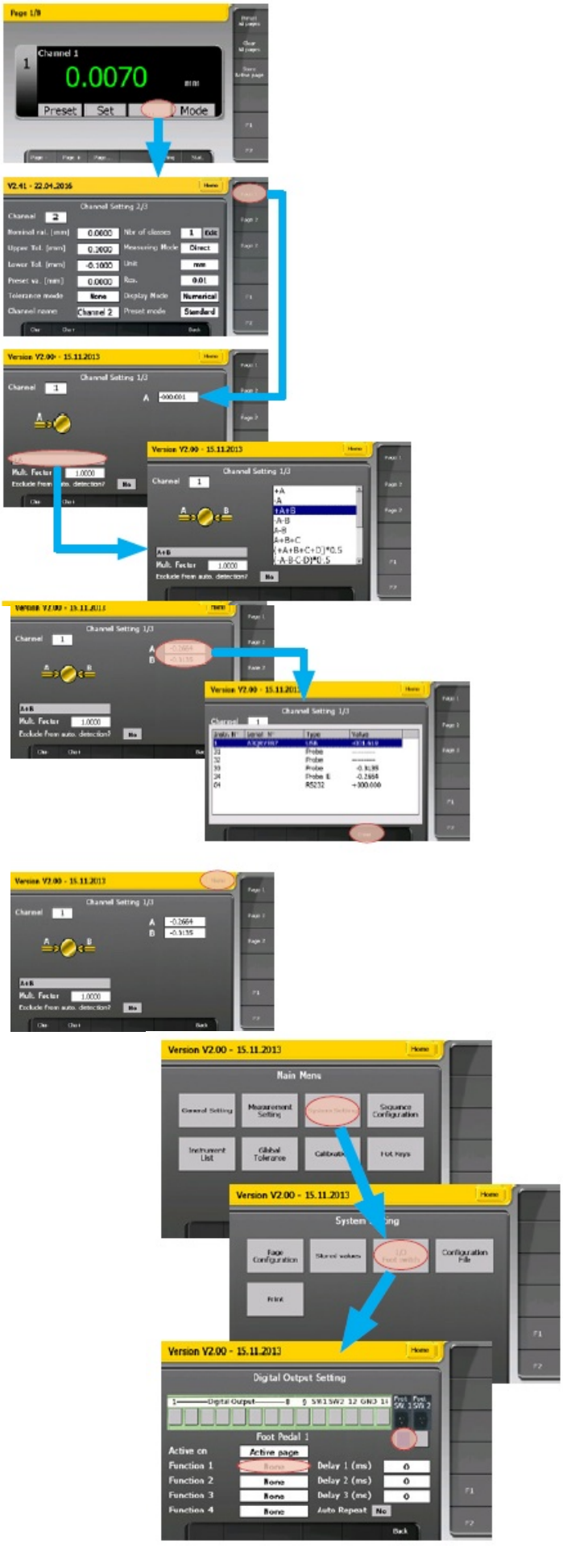
$$\frac{Tsup - \overline{X}}{3\sigma} \;\&\; \frac{\overline{X} - Tinf}{3\sigma}$$

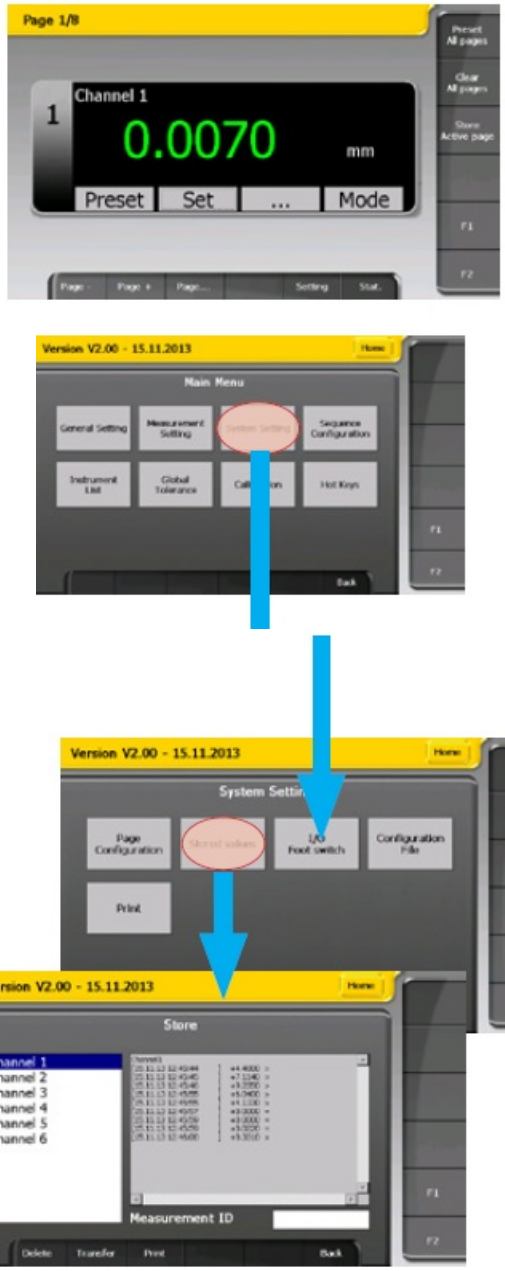


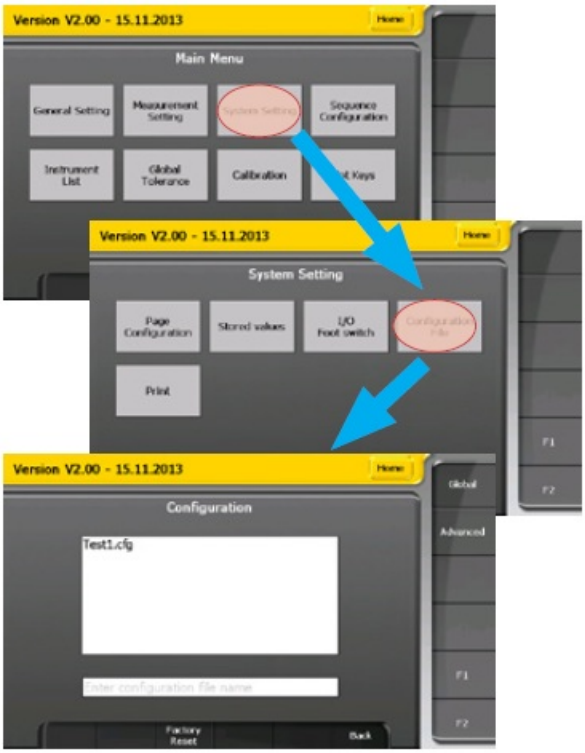



0.005
A
B

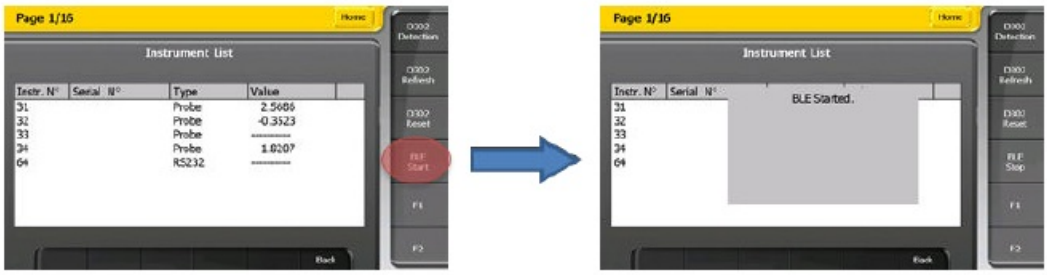

Page 1/8
Channel 1
0.0070
mm
Preset
Set
...
Mode
Channel 2
0.4073
mm
Preset
Set
...
Mode
Page -
Page +
Page...
Setting
Stat.
Preset All pages
Clear All pages
Store Active page
F1
F2
Version V2.00 - 15.11.2013
Home
Page Setting
Nbr of pages
8
Page 1
Page 2
Page 3
Page 4
2
1
1
1
Nbr of channel/page
Page 5
Page 6
Page 7
Page 8
1
1
1
1
Auto. detection mode
Standard
Auto. selection of detected channel
No
Auto. detection of instrument
Yes
Back
Channel 1
0.0070
mm
Preset
Set
...
Mode
Page -
Page +
Page...
Setting
Stat.
Preset All pages
Clear All pages
Store Active page
F1
F2

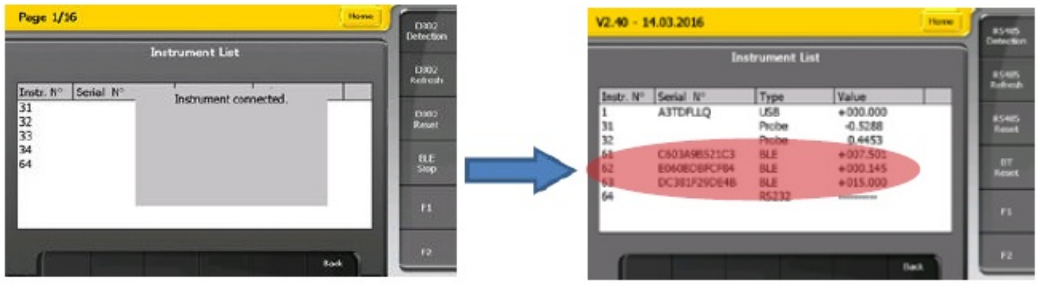

Page 1/9
Channel 1
0.0070
mm
Preset
Set
Mode
V2.41 - 22.04.2016
Channel Setting 2/3
Version V2.00 - 15.11.2013
Channel Setting 1/3
Channel Setting 1/3
Channel Setting 1/3
Version V2.00 - 15.11.2013
Main Menu
Version V2.00 - 15.11.2013
Version V2.00 - 15.11.2013
Digital Output Setting
Foot Pedal 1
Active on
Active page
Function 1
Function 2
Function 3
Function 4
None
Delay 1 (ms)
Delay 2 (ms)
Delay 3 (ms)
Auto Repeat
No
Back


Page 1/8
Channel 1
1
0.0070
mm
Preset
Set
...
Mode
Version V2.00 - 15.11.2013
Home
Main Menu
General Setting
Measurement Setting
Sequence Configuration
Instrument List
Global Tolerance
Hot Keys
Back
System Setting
Page Configuration
Stored values
I/O Foot switch
Configuration File
Print
Store
Channel 1
Channel 2
Channel 3
Channel 4
Channel 5
Channel 6
Measurement ID
Delete
Transfer
Print
Back
F1
F2

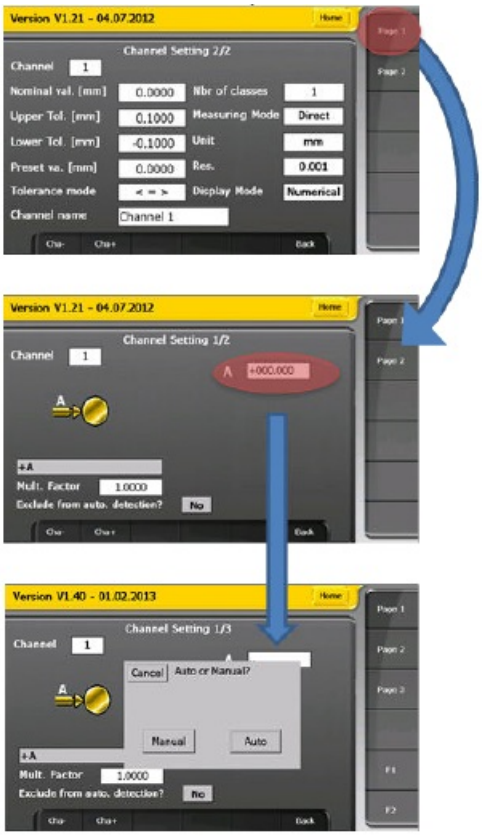

Version V2.00 - 15.11.2013
Home
Main Menu
General Setting
Measurement Setting
System Setting
Sequence Configuration
Instrument List
Global Tolerance
Calibration
Version V2.00 - 15.11.2013
Home
System Setting
Page Configuration
Stored values
I/O Foot switch
Print
Version V2.00 - 15.11.2013
Home
Configuration
Test1.cfg
Factory Reset
Back


Page 1/16
Channel 1
1
BLE Started.
Preset

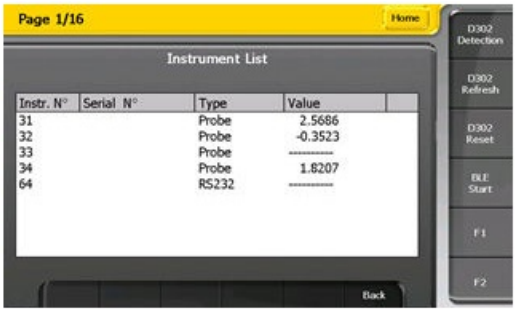

Page 1/16
Home
Instrument List
Instr. N°
Serial N°
Type
Value
31
32
33
34
64
Probe
2.5686
Probe
-0.3523
Probe
Probe
1.8207
RS232
Back
Page 1/16
Home
Instrument List
BLE Started.
Back

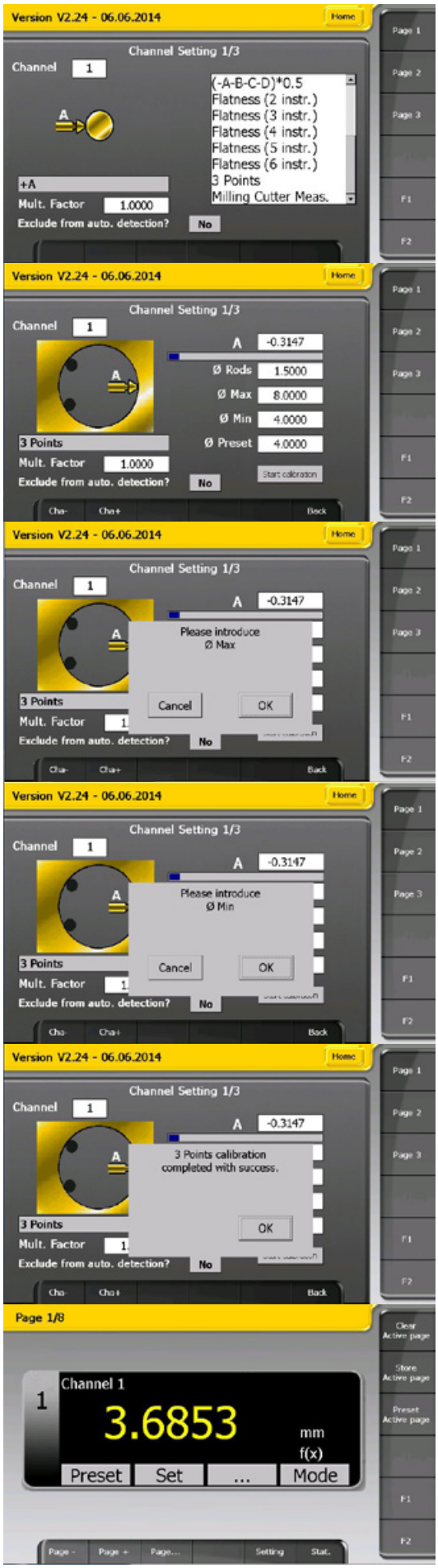

Page 1/16
Home
Instrument List
Instrument connected.
Back
V2.40 - 14.03.2016
Home
Instrument List
Instr. N°
Serial N°
Type
Value
1
A3TDFLLQ
USB
+000.000
31
Probe
-0.5288
32
Probe
0.4453
64
RS232
Back


Page 1/8
Channel 1
1
1.579
mm
Preset
Set
...



By quitting the "Setting" menu, the instrument MAC address is recorded.





Documents / Resources

	**sylvac D300S Universal Display Unit** [pdf] User Guide D300S Universal Display Unit, D300S, Universal Display Unit, Display Unit

References

- Home - FTDI
- User Manual