Sauter GmbH

Instruction manual

SAUTER CE HS

V. 1.0
10/2019
GB

PROFESSIONAL MEASURING

CE_HS-BA-e-1901.docx

GB

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V. 1.0 10/2019

Instruction manual

Summarize:

1 IMPORTANT SAFETY INFORMATION

SAUTER manufactures and tests its products to meet all applicable national and international standards. It is vital that this instrument is correctly installed, used, and maintained to ensure it continues to operate to its optimum specification.
The following instructions must be adhered to and incorporated into your safety program when installing, using, and maintaining SAUTER products. Failure to follow the recommended instructions can affect the system's safety and may increase the risk of serious personal injury, property damage, damage to this instrument and may invalidate the product's warranty.

• Read the instructions fully prior to installing, operating, or servicing the product. Keep this Instruction Manual in a safe place for future reference.
• If you do not fully understand these instructions, contact your SAUTER representative for clarification.
• Pay careful attention to all warnings, cautions, and instructions marked on and supplied with the product.
• Inform and educate your personnel about the correct installation, operation, and maintenance procedures for this product.
• Install your equipment as specified in the installation instructions of the appropriate Instruction Manual and as per applicable local and national codes. Connect all products to the proper electrical sources.
• To ensure correct performance, use qualified personnel to install, operate, update, program, and maintain the product.
• When replacement parts are required, ensure that qualified technicians use replacement parts specified by SAUTER. Unauthorized components and procedures can affect the product's performance and may affect the continued safe operation of your processes. The use of non-specified 'look-alike' substitution parts may result in the risk of fire, electrical hazards, or improper operation.
• Ensure that all equipment doors are closed and protective covers are in place, except when maintenance is being performed by qualified persons, to prevent electrical shock and personal injury.

2 WARNING! ELECTRICAL SHOCK HAZARD

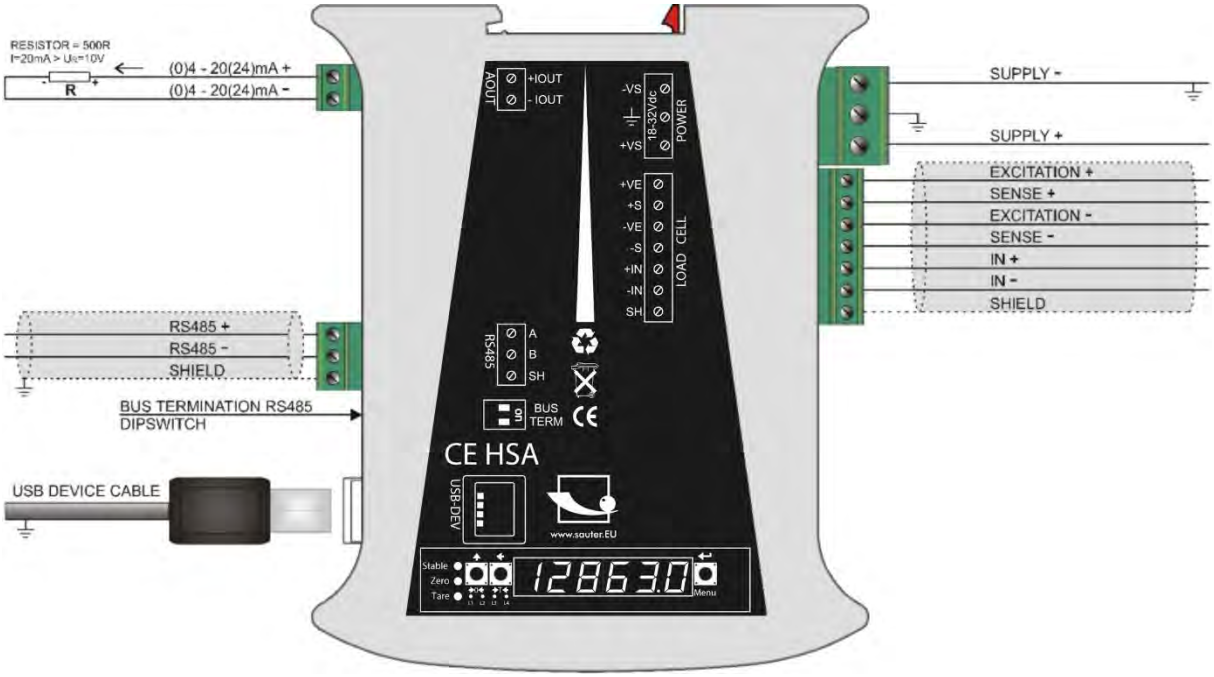
Installing cable connections and servicing this instrument require access to shock hazard level voltages which can cause death or serious injury.
Disconnect separate or external power sources to relay contacts before commencing any maintenance.
The electrical installation must be carried out in accordance with CE directions and/or any other applicable national or local codes.
Unused cable conduit entries must be securely sealed by non-flammable blanking plates or blind grommets to ensure complete enclosure integrity in compliance with personal safety and environmental protection requirements.
To ensure safety and correct performance this instrument must be connected to a properly grounded, three-wire power source.
Proper relay use and configuration is the responsibility of the user.
Do not operate this instrument without the front cover being secured. Refer any installation, operation or servicing issues to qualified personnel.

3 Load cell / power connection

This product is intended to be supplied by a Class 2 or Limited Power Source, rate 18 - 32 Vdc, 0.2A@24Vdc.
When the device is powered by USB (not 24Vdc) the loadcell interface and the outputs don’t work.

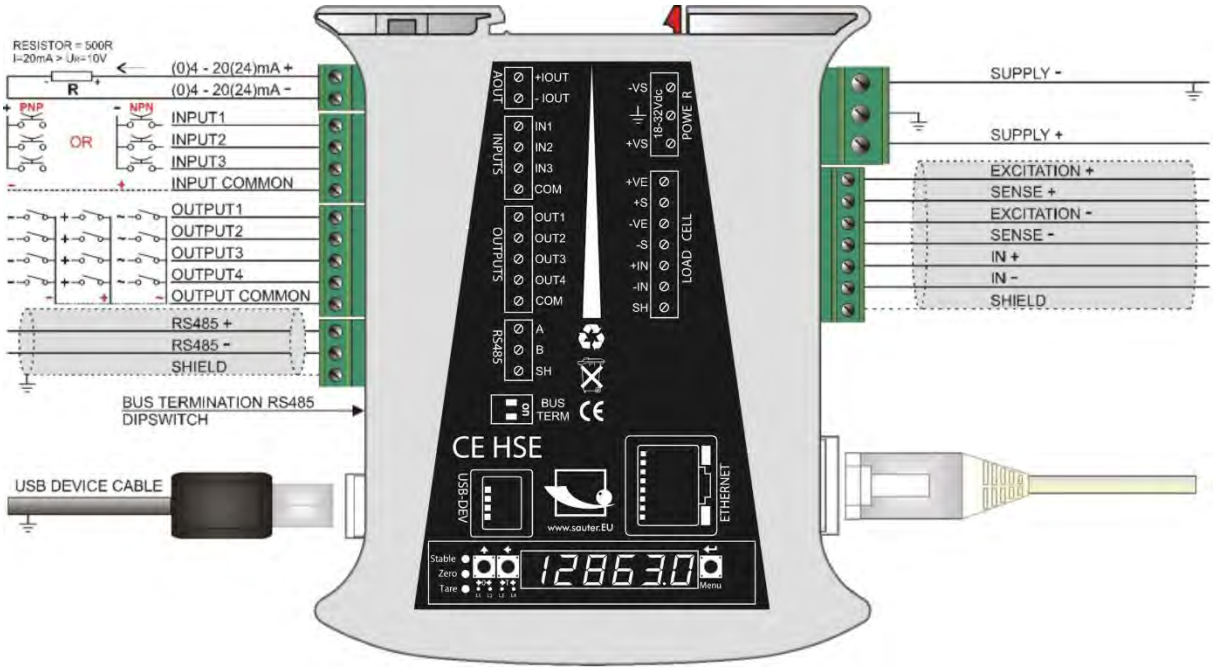
3.1 CE HSA

Device with analog output



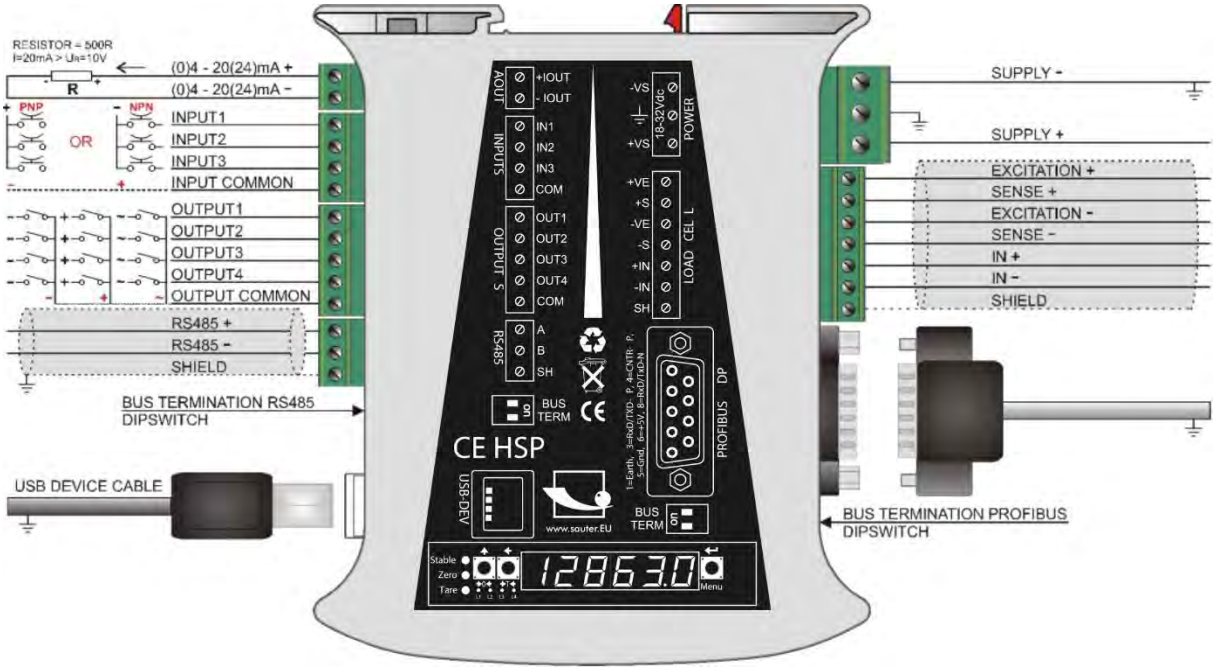
3.2 CE HSE

Device with Ethernet interface



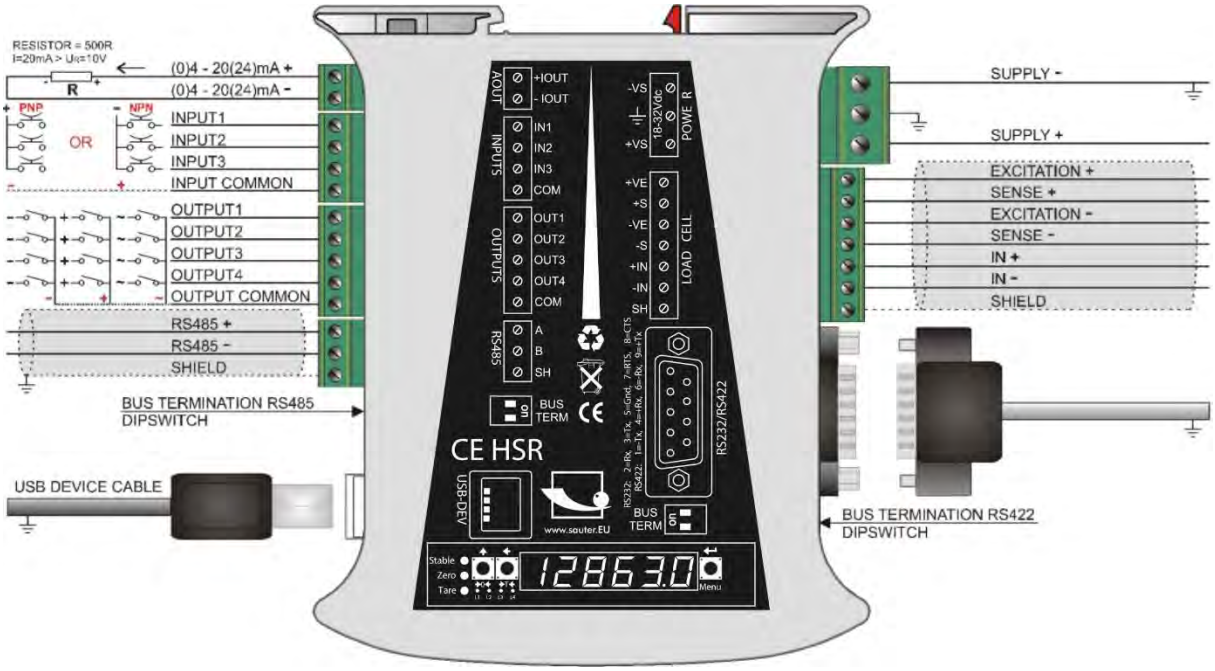
3.3 CE HSP

Device with Profibus interface



3.4 CE HSR

Device with RS232 interface



4 Indication of Display

With cover closed

1. Weigher stable
2. Zero active
3. Tare active
4. Output active 1-4
5. Weigher value

With cover opened

1. key 1 press <2sec.= 1 SHORT
   key 1 press >2sec.= 1 LONG
2. key 2 press <2sec.= 2 SHORT
   key 2 press >2sec.= 2 LONG
3. key 2 press <2sec.= 3 SHORT
   key 2 press >2sec.= 3 LONG

Functions of these keys will be described on the next page.

5 Explanation of front keys

All keys have different functions depending if you are in weighing or menu mode.

Pressing key 1 "short".
In Weighing mode: create a new zero level.
In Menu mode: increase value by 1 or move up in menu.

Pressing key 1 "long".
In Weighing mode: reset zero level to the original zero level.
In Menu mode: decrease value by 1 or move down in menu.

Pressing key 2 "short".
In Weighing mode: set/ reset tare and reset preset tare.
In Menu mode: go into sub-menu or move cursor 1 position to the left.

Pressing key 2 "long".
In Weighing mode: set preset tare.
In Menu mode: move cursor 1 position to the right.

Pressing key 3 "short".
In Weighing mode: enter menu.
In Menu mode: escape move back in menu without saving changes.

Pressing key 3 "long".
In Weighing mode: enter configuration menu.
In Menu mode: Confirm made changes.

Menu will jump back one level every 30 seconds of inactivity.

6 First use of indicator

6.1 Configuration menu structure

- - - Fun	setpoint function settings (not for CE HSA)
- - - ACn	setpoint action settings (not for CE HSA)
- - - dAC	Analog output settings
- - - 485	Local bus communication settings (RS485)
- - - Eth	Ethernet settings (CE HSE only)
- - - - Pb	Profibus settings (CE HSP only)
- - - 232	RS232 port settings (CE HSR only)
- - - 422	RS422 port settings (CE HSR only)
- - - Ind	Indicator settings
- - - rng	Multi range/interval settings
- - - FIL	Filter settings
- - - dSF	Digital filter settings
- - - PCL	Pre-calibration settings
- - - CAL	Calibration settings
- - - tCL	Theoretic calibration
- - - gCL	Geographic calibration
- - - CLo	Date and time configuration (CE HSR only)
- - - rcL	Recall
- - - SoF	Firmware update

6.2 Weigher settings

Set up the correct indicator setting (step size and decimal point position).

The start

Turn the indicator on by connecting it to the power supply.

Press 3 LONG sec.  key 3 for >2 sec. to get in  to **Configuration Menu**.

1 SHORT 

(In SGM710)

Go to the Indicator parameters pressing key 1 <2 sec.

2 SHORT 

Go into the Indicator parameters pressing key 2.

Use **Ind 1** to set the **maximum net weight value**. Set maximum load to prevent overload by the user. The indicator will not show any weight above the filled in value. Range:  2 SHORT 0 – full display.

To change the value, press key 2 <2 sec.

Use 1 SHORT key 1 to change the number. 1 LONG 2 SHORT 2 LONG Key 1 is for changing the value. 3 LONG and 2

When the maximum net weight value is set succesfully, the following screen is visible:

Display step size

Press key 1 <2 sec. untill you see **Ind 5** and press key 2 <2 sec.

Use **Ind 5** to set the **display step size**. The step size defines the scaled parts of the weight value. The display value will be rounded off to the nearest value with a valid step size.

Use key 1 to select the correct step size.
Choose between 1, 2, 5, 10, 20, 50, 100, 200, 500 and confirm by pressing key 3 for >2 sec.

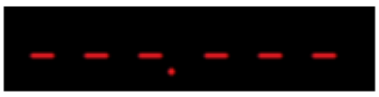
Done succesfully, the following screen is visible:

Decimal point 

To set the **Decimal point position**, enter **Ind 6** by pressing key 2 <2 sec.

The following 

screen is visible:



Press key 1 to define the point position and confirm by pressing key 3 for >2 sec.

Left Right Confirm

Done succesfully, the following screen is visible:

Press key 3 <2  sec to go back to **Configuration Menu.**

Press key 3 <2 sec to go back to **main weigher display.**

6.3 Adjustment

Press key 3 for >2sec. to get in to **Configuration Menu**.

3 LONG 

(In SGM710)

Go to key 1 SHORT 1 

the adjustment parameters by pressing <2 sec. until you see **- - - CAL**

Check and delete calibration points.

To enter the key 2 <2 sec. 

2 SHORT Adjustment settings, press

The following 

screen is visible:

Press and 1 SHORT 

2 SHORT key 1 <2 sec. to go to **CAL 3** press key 2 <2 sec.

Use **CAL 3** to **check and delete all existing adjustment points**. Step through the adjustment points with key 1. Delete a adjustment point by pressing >3 sec.

key 3 1 SHORT 1 LONG 3 LONG

When a number is shown, the deletion of one adjustment point is completed and more points need to be deleted. Press key 3 >3 sec to do so.

>3 sec.

When all calibration points are deleted, the following screen is visible:

Entering new calibration points.

Use key 1 <2 sec. to go to **CAL 1** and press key 2 <2 sec.

After 

entering, the following screen is visible:

And will automatically jump to:

First adjust the **zero point (CP1)**. Make sure the weigher is unloaded and press key 3 >2 sec.

The indicator now shows CP2 to calibrate the **gain point (CP2)**.

And will automatically jump to:

Use key 1 and key 2 to enter the reference value. Key 1 is used for changing the number (1-9), key 2 is used for changing the position of the cursor. Load the weigher with the reference value and press key 3 >2 sec.

Up Down

Left Right Confirm

Done succesfully the following screen is visible:

Press key 3 <2 sec. to go back to **Configuration Menu.**

Press key 3 <2 sec. to go back to **main weigher display.**

6.4 First use by using PI Mach II software

The CE HS can also be configured for first use by using PI mach II software.

Download Software from the Kern & Sohn website and install. Software could be downloaded in the webshop. Search your model and you can see the available downloads. The following items will be installed:

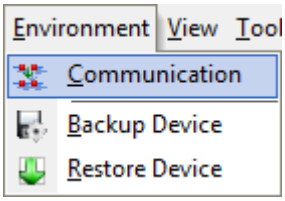
*Pi Mach II	Program Interface to configure all CE HS devices
*Drivers	USB drivers for latest series CE HS devices

After installing, connect the CE HS to the computer using an A-B USB cable.

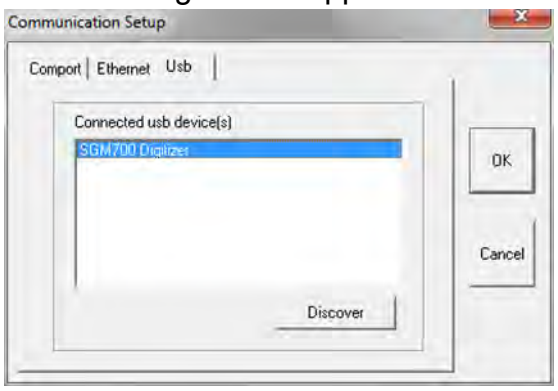
Start Pi Mach II.

The CE HS will be found and connected. This is shown in the status bar (lower left corner).

If there appears a USB error, connect the device manually:
Go to Environment - Communication



The following screen appears:

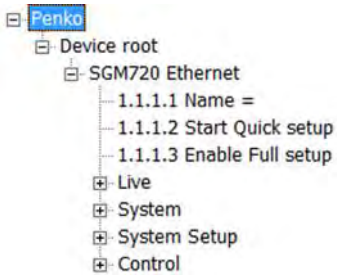


In the Usb tab sheet click Discover, select the CE HS Digitizer and click OK.
If this doesn't work, make sure other USB devices like mobile phones are disconnected from the PC.
In case of Windows 8, a USB driver manual is available in the Penko Suite.

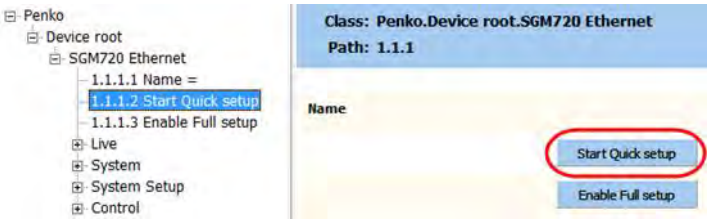
In the communication setup it's also possible to connect the CE HSE through Ethernet. Set the IP-address of the CE HSE in range with the PC (see chapter 6.5 of this manual) and fill in the IP-address in tab "Ethernet".

When communication is established go to Manage.

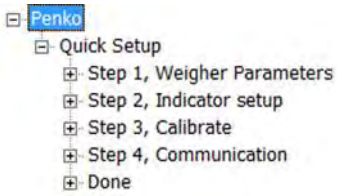
The following tree is shown:



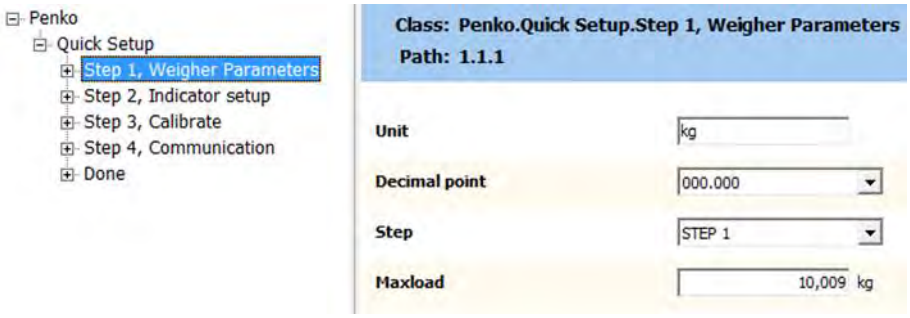
Go to Start Quick setup and click the button:



The following tree is shown:



Use step 1 to set the Weigher Parameters:



The settings you can make are:

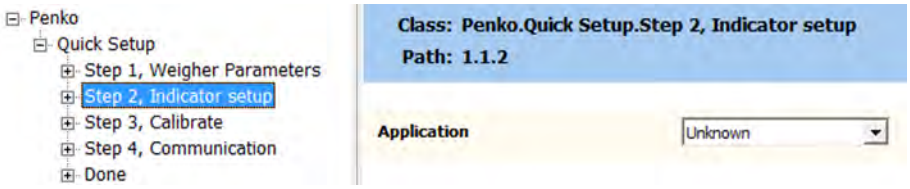
Unit: set the weigher unit (kg, lbs, T, etc.) this will be shown in PI.

Decimal point: Set the decimal point to show the correct weigher value.

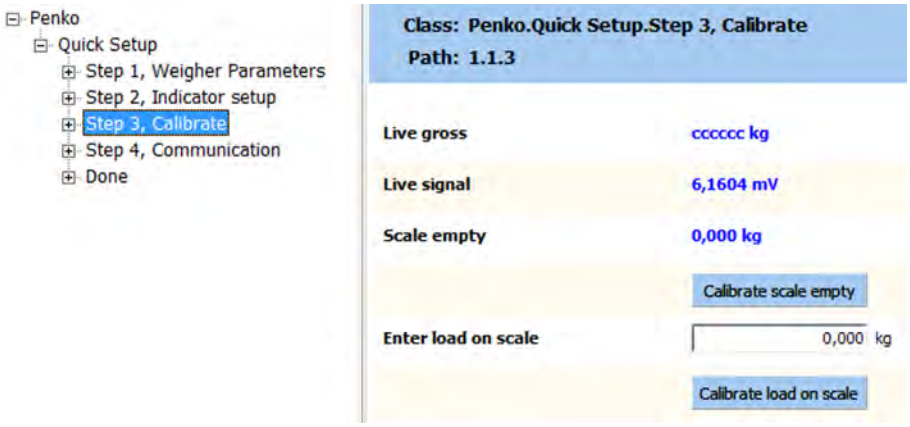
Step: Choose between 1, 2, 5, 10, 20, 50, 100, 200, 500

Maxload: Set maximum load to prevent overload by the user. The indicator will not show any weight above the filled in value. Range: 0 – 999999.

Use step 2 to select the type of indicator:



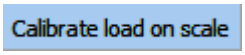
Set the type of weighing the CE HS will be used for. This will automaticly set the most common filter settings to get a stable weigher signal. The options are: Unknown, Standard indicator, Fast indicator, Silo, Platform, Belt slow, Belt fast, Filling slow, Filling fast, Checkweigher slow or Checkweigher fast.



Use step 3 to calibrate the indicator:

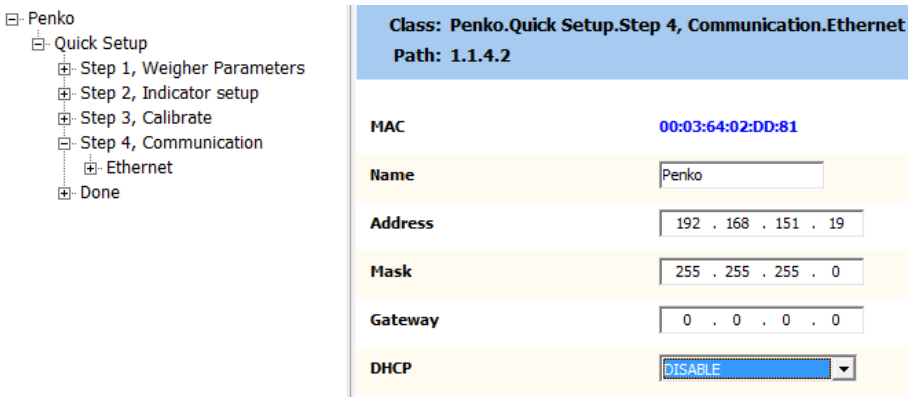
First make sure the weigher is empty and press : 

Put a refrence weight on the weigher and fill in the weight: 

And confirm by pressing: 

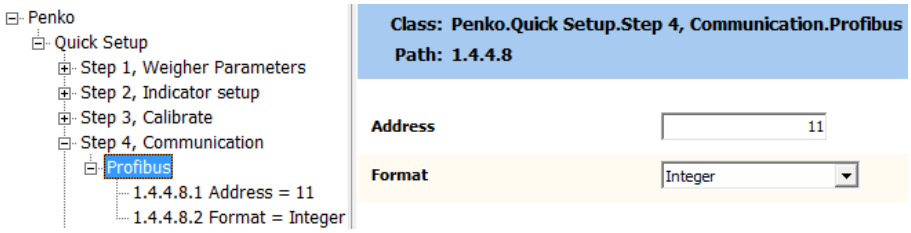
6.5 Communication

6.5.1 CE HSE (Ethernet)



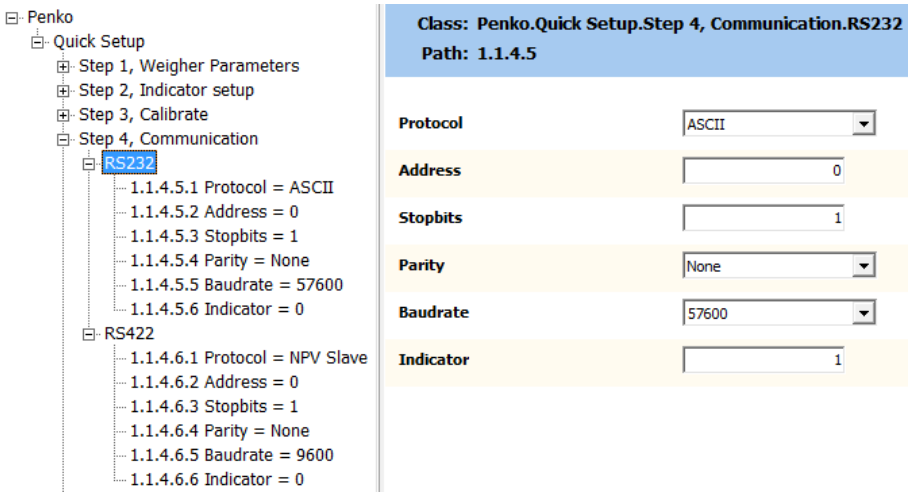
Here you can set:
Name: here you can give the CE HSE a name. Example “platform 1”.
Address: set the IP-address for the CE HSE.
Mask: set the subnetmask for the CE HSE.
Gateway: set the Gateway for the CE HSE.
DHCP: Disable/enable DHCP. When enabled the CE HSE will genarate an IP-address for itself.

6.5.2 CE HSP (Profibus)



Here you can set:
Address: Set the Profibus address of the CE HSP
Format: Set the format of the values sent over Profibus (Integer or Floating Point)

6.5.3 CE HSR (serial RS232)



Here you can set (for both RS232 and RS422):

Protocol: Set the Protocol that is used on the serial port. Options are: None, Printerm ASCII, NPV Slave, Mudbus RTU, Modbus ASCII.

Address: set the address of the CE HSR on the communication bus.

Stopbits: set the stopbits of the CE HSR on the communication bus.

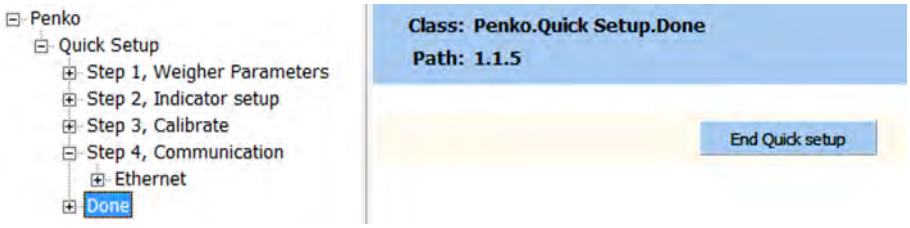
Paritiy: set the parity of the CE HSR on the communication bus. Options are: None, Odd, Even, Mark, Space.

Baudrate: set the speed cummunication of the CE HSR. Options are: 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200.

Indicator: Set the Indicator that is sent out over the communication bus.

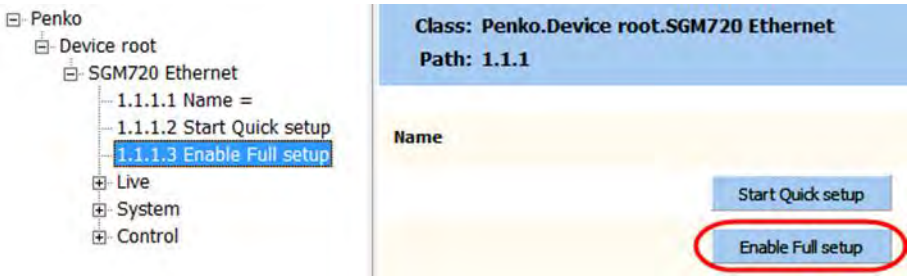
6.6 Finish quick setup

Use Done to finish the quick setup. Click End Quick setup:

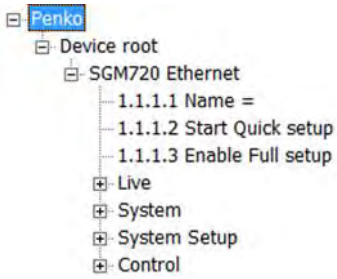


7 Main Menu - Full setup

Click Enable Full setup to gain access to all settings (optional):



The following tree is shown and gives access to all settings:



7.1 Setpoints

The CE HS has four outputs that can switch on/off on different levels.
These levels have to be filled in at the setpoint menu.

Press key 3 <2 sec. to go into the **Main menu**.

Press key 2 <2sec. to the setpoint change menu.

Press key 1 <2 sec. to select a diffrent setpoint (1-4). Press key 2 <2 sec. to change the selected setpoint. Key 1 is used for changing the number (1-9), key 2 is used for changing the position of the cursor. Press key 3 >2sec. to confirm.

When the selected setpoint is changed, the display changes to the next setpoint.

7.2 TAC code (Traceable Acces Code).

The CE HS has a TAC code inside. TAC code is number of times the indicator data is changed. When an indicator gets certified this number will be written on the device and is used by the controlling agency to see if the settings aren't changed after sealing.

To check out the **TAC code** Press key 3 <2 sec. to go into the **Main menu**.

Press key 1 <2sec. to the **dtAC** menu and press key 2 <2sec. to enter.

The following screen will show the actual TAC code.

Press Key 3 <2 sec. to go back to the **main menu**.

Press key 3 <2 sec. to go back to the **main weigher display**.

7.3 CAL code (Calibration counter).

The CE HS has a CAL code inside. CAL code is the number of times the calibration is changed. When an indicator gets certified this number will be written on the device and is used by the controlling agency to see if the settings aren't changed after sealing.

To check out the **CAL code** Press key 3 <2 sec. to go into the **Main menu**.

Press key 1 <2sec. 2x to the **dCAL** menu and press key 2 <2sec. to enter.

The following screen will show the actual CAL code.

Press Key 3 <2 sec. to go back to the **main menu**.

Press key 3 <2 sec. to go back to the **main weigher display**.

Configuration Menu

Press button 3 >2 sec to enter the Configuration Menu.

In the Configuration Menu the following options are available:

- - - Fun	setpoint function settings (not for CE HSA)
- - - ACn	setpoint action settings (not for CE HSA)
- - - dAC	Analog output settings
- - - 485	Local bus communication settings (RS485)
- - - Eth	Ethernet settings (CE HSE only)
- - - - Pb	Profibus settings (CE HSP only)
- - - 232	RS232 port settings (CE HSR only)
- - - 422	RS422 port settings (CE HSR only)
- - - Ind	Indicator settings
- - - rng	Multi range/interval settings
- - - FIL	Filter settings
- - - dSF	Digital filter settings
- - - PCL	Pre-calibration settings
- - - CAL	Calibration settings
- - - tCL	Theoretic calibration
- - - gCL	Geographic calibration
- - - CLo	Date and time configuration (CE HSR only)
- - - rcL	Recall
- - - SoF	Firmware update

Scroll thru the menu options pressing key 1 and enter a sub-menu pressing key 2 <2 sec.

8 Configuration Menu

8.1 setpoint function settings (not for CE HSA)

Configure the weiger mode the outputs has to switch on press key 2 <2 sec to enter the setpoint function settings menu.

Select the output you want to configure pressing key 1 <2 sec. Fun 1= output 1, Fun 2= output 2, Fun 3= output 3 and Fun 4= output 4. Confirm the selected output by pressing key 2 <2 sec.

The following screen is visible:

Scroll thru the weigher function options pressing key 1 and select which weigher mode is needed by pressing key 3 >2sec. (options are: 1-19)

1	Weigher	10	Weigher x 10
2	Fast gross	11	Fast gross x 10
3	Fast net	12	Fast Net x 10
4	Display Gross	13	Display Gross x 10
5	Display Net	14	Display Net x 10
6	Tare	15	Tare x 10
7	Peak	16	Peak x 10
8	Valley	17	Valley x 10
9	Hold	18	Hold x 10
		19	Signal

For further details on the weigher functions check appendix I

8.2 ACn setpoint action settings (not for CE HSA)

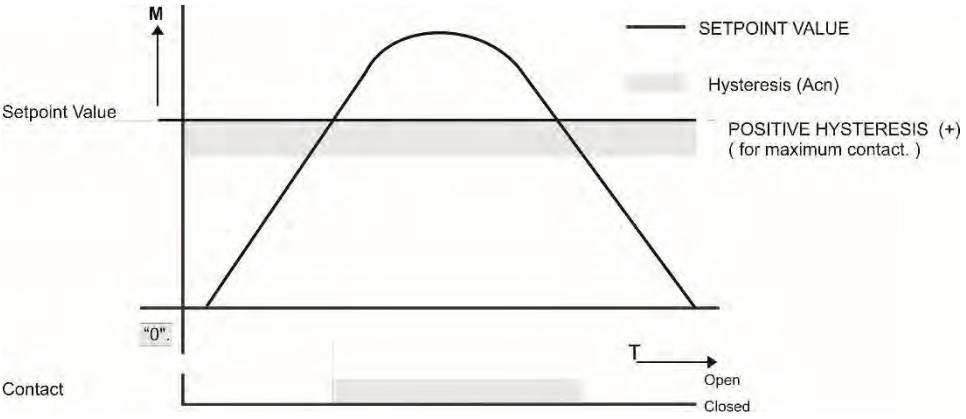
To set the hysteresis for the outputs press key 2 <2 sec to enter the setpoint function settings menu.

Select the output you want to configure pressing key 1 <2 sec. Acn 1= output 1, Acn 2= output 2, Acn 3= output 3 and Acn 4= output 4. Confirm the selected output by pressing key 2 <2 sec.

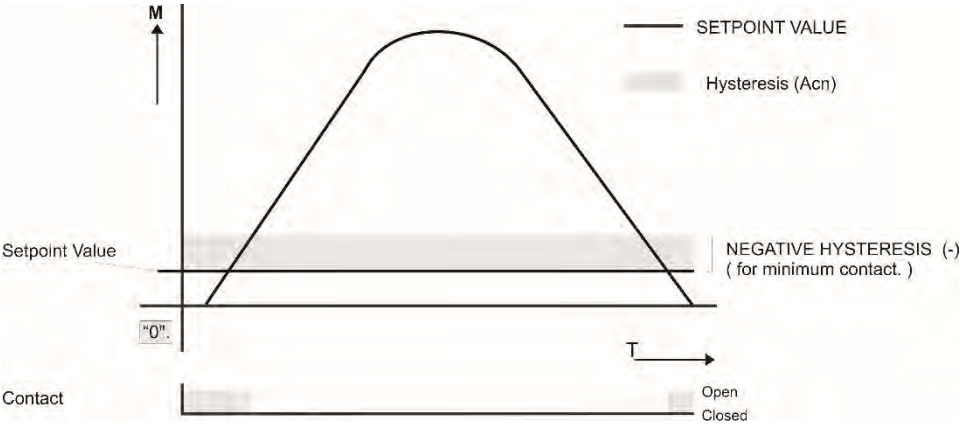
The following screen is vissable:

Fill in the hysteresis for the outputs. Use key 1 and 2 to change the value. Key 1 is for changing the number (1-9), key 2 is for changing the position of the cursor. Confirm by pressing key 3 for >2 sec.See diagram next page. Choose value between -99999 and 999999.

Positive hysteresis



Negative hysteresis



8.3 dAC Analog output settings (only for CE HSA)

In this menu, all analog output parameters can be set.Options are:

dAC 1	Set analog output to minimum level
dAC 2	Set analog output to maximum level
dAC 3	Set analog output to level in percetage
dAC 4	Analog output weigher mode
dAC 5	Zero value for minimum analog output
dAC 6	End value for maximum analog output
dAC 7	Analog output range

Press key 2 <2 sec to enter the analog output settings.

The following screen is visible:

In **dAC 1** you can set the **analog output to its minimum level** for testing purpose.Press key 2 <2 sec to set the analog output to minimum.
Press key 3 <2 sec to go back.

The following screen is vissable:

In **dAC 2** you can set **the analog output to its maximum level** for testing purpose.Press key 2 <2 sec to set the analog output to maximum. Press key 3 <2 sec to go back.

The following screen is vissable:

In dAC 3 you can set the analog output to a level you want for testing purpose.
Press key 2 <2 sec.

Fill in the wanted percentage (0000,00-0100,00 using key 1 and key 2. Key 1 is for changing the number (1-9), key 2 is for changing the position of the cursor. Confirm by pressing key 3 >2 sec. Press key 3 <2 sec. to go back and reset the analog output.

Increase Decrease Left Right Confirm Go back

The following screen is vissable:

In dAC 4 you set the weigher mode that the analog output is based on. Press key 2 < 2sec. to enter dAC 4. Scroll thru the weigher function options pressing key 1 and select which weigher mode is needed by pressing key 3 >2sec. (options are: 1-19)

The options are:

1	Weigher	10	Weigher x 10
2	Fast gross	11	Fast gross x 10
3	Fast net	12	Fast Net x 10
4	Display Gross	13	Display Gross x 10
5	Display Net	14	Display Net x 10
6	Tare	15	Tare x 10
7	Peak	16	Peak x 10
8	Valley	17	Valley x 10
9	Hold	18	Hold x 10
		19	Signal

For further detais on the weigher functions check appendix I

The following screen will be vissable:

In **dAC 5** you set the **weigher start value** for the analog output. At this value the analog

output starts with its minimum value. Press key 2 < 2sec. to enter dAC 5.

Fill in the wanted start weight using key 1 and key 2. Key 1 is for changing the number (1-9), key 2 is for changing the position of the cursor.
Confirm by pressing key 3 >2 sec.

Increase Decrease Left Right Confirm

The following screen will be vissable:

In **dAC 6** you set the **weigher end value** for the analog output. At this value the analog output stops with its maximum value. Press key 2 < 2sec. to enter dAC 6.

Fill in the wanted end value using key 1 and key 2. Key 1 is for changing the number (1-9), key 2 is for changing the position of the cursor. Confirm by pressing key 3 >2 sec.

Increase Decrease Left Right Confirm

The following screen will be vissable:

In **dAC 7** you set **analog output mode**. Press key 2 < 2sec. to enter dAC 7. Scroll thru the weigher function options pressing key 1 and select which analog output mode is needed by pressing key 3 >2sec. (options are: 1-5).

Increase Decrease Confirm

Options are:

1	RAW	Register value 65535 parts
2	0-24mA	input value 0 to 24 mA will be calculated from 0 to 100,00%
3	0-20mA	input value 0 to 20 mA will be calculated from 0 to 100,00%
4	4-20mA	input value 4 to 20 mA will be calculated from 0 to 100,00%
5	4-24mA	input value 4 to 24 mA will be calculated from 0 to 100,00%

When confirmed the following screen will be vissable:

8.4 Local bus communication settings (RS485)

In this menu, the communication address can be set for communication with multiple devices. Press key 2 <2 sec to enter the settings.

The following screen will be vissable:

In **485 1** you set the **address** of the CE HS. Press key 2 < 2sec. to enter 485 1. Set the address using key 1 and key 2.. Key 1 is for changing the number (1-9), key 2 is for changing the position of the cursor. Confirm by pressing key 3 >2sec. (options are: 1-32).

Increase Decrease Left Right Confirm

8.5 Ethernet settings (CE HSE only)

Protocols that can be used are Ethernet IP, Omron Fins and Modbus TCP.
For protocol description please download PENKO Suite from www.penko.com

In this menu, the communication settings can be set for the ethernet port.
Options are:

Adr 1	First three numbers of the IP address
Adr 2	Second three numbers of the IP address
Adr 3	Third three numbers of the IP address
Adr 4	Fourth three numbers of the IP address
Sub 1	First three numbers of the Subnet address
Sub 2	Second three numbers of the Subnet address
Sub 3	Third three numbers of the Subnet address
Sub 4	Fourth three numbers of the Subnet address
gAt 1	First three numbers of the Gateway address
gAt 2	Second three numbers of the Gateway address
gAt 3	Third three numbers of the Gateway address
gAt 4	Fourth three numbers of the Gateway address

Press key 2 <2 sec to enter the ethernet settings.

The following screen is vissable:

In **Adr 1** you set the **first three numbers of the IP address** you want to give the CE HSE (example: 192.168.151.112). Use key 1 and key 2 to change the number Key 1 is for changing the number (1-9), key 2 is for changing the position of the cursor. Confirm by pressing key 3 >2 sec.

Increase Decrease Left Right Confirm

When confirmed the following screen will be visible:

In **Adr 2** you set the **second three numbers of the IP address** you want to give the CE HSE (example: 192.168.151.112). Use key 1 and key 2 to change the number Key 1 is for changing the number (1-9), key 2 is for changing the position of the cursor. and confirm by pressing key 3 >2 sec.

When confirmed the following screen will be visible:

In **Adr 3** you set the third **three numbers of the IP address** you want to give the CE HSE (example: 192.168.151.112). Use key 1 and key 2 to change the number Key 1 is for changing the number (1-9), key 2 is for changing the position of the cursor. Confirm by pressing key 3 >2 sec.

When confirmed the following screen will be visible:

In **Adr 4** you set the **fourth three numbers of the IP address** you want to give the CE HSE (example: 192.168.151.112). Use key 1 and key 2 to change the number Key 1 is for changing the number (1-9), key 2 is for changing the position of the cursor. Confirm by pressing key 3 >2 sec.

When confirmed the following screen will be visible:

In **Sub 1** you set the **first three numbers of the Subnet address** you want to give the CE HSE (example: 255.255.255.000). Use key 1 and key 2 to change the number Key 1 is for changing the number (1-9), key 2 is for changing the position of the cursor. Confirm by pressing key 3 >2 sec.

When confirmed the following screen will be visible:

In **Sub 2** you set the **second three numbers of the Subnet address** you want to give the CE HSE (example: 255.255.255.000). Use key 1 and key 2 to change the number Key 1 is for changing the number (1-9), key 2 is for changing the position of the cursor. Confirm by pressing key 3 >2 sec.

Increase Decrease Left Right Confirm

When confirmed the following screen will be visible:

In **Sub 3** you set the **third three numbers of the Subnet address** you want to give the CE HSE (example: 255.255.255.000). Use key 1 and key 2 to change the number Key 1 is for changing the number (1-9), key 2 is for changing the position of the cursor. Confirm by pressing key 3 >2 sec.

Increase Decrease Left Right Confirm

When confirmed the following screen will be visible:

In **Sub 4** you set the **fourth three numbers of the Subnet address** you want to give the CE HSE (example: 255.255.255.000). Use key 1 and key 2 to change the number Key 1 is for changing the number (1-9), key 2 is for changing the position of the cursor. Confirm by pressing key 3 >2 sec.

Increase Decrease Left Right Confirm

When confirmed the following screen will be visible:

In **gAt 1** you set the **first first numbers of the Gateway address** you want to give the CE HSE (example: 192.168.001.001). Use key 1 and key 2 to change the number Key 1 is for changing the number (1-9), key 2 is for changing the position of the cursor. Confirm by pressing key 3 >2 sec.

Increase Decrease Left Right Confirm

When confirmed the following screen will be visible:

In **gAt 2** you set the **second three numbers of the Gateway address** you want to give the CE HSE (example: 192.168.001.001). Use key 1 and key 2 to change the number Key 1 is for changing the number (1-9), key 2 is for changing the position of the cursor. Confirm by pressing key 3 >2 sec.

Increase Decrease Left Right Confirm

When confirmed the following screen will be visible:

In **gAt 3** you set the **third three numbers of the Gateway address** you want to give the CE HSE (example: 192.168.001.001). Use key 1 and key 2 to change the number Key 1 is for changing the number (1-9), key 2 is for changing the position of the cursor. Confirm by pressing key 3 >2 sec.

Increase Decrease Left Right Confirm

When confirmed the following screen will be visible:

In **gAt 4** you set the **fourth three numbers of the Gateway address** you want to give the CE HSE (example: 192.168.001.001). Use key 1 and key 2 to change the number Key 1 is for changing the number (1-9), key 2 is for changing the position of the cursor. Confirm by pressing key 3 >2 sec.

Increase Decrease Left Right Confirm

When confirmed the following screen will be visible:

Starting at firmware version 1.5.0.9.0.1 the ASCII protocol is available over TCP at port 23.

8.6 Profibus settings (CE HSP only)

For GSD file and protocol description please download PENKO Suite from www.penko.com.

In this menu, the communication settings can be set for profibus.
Options are:

Pb 1	Profibus address
Pb 2	Value mode

Press key 2 <2 sec to enter the profibus settings.

The following screen will be vissable:

In **Pb 1** you set the **profibus address** of the CE HSP. Press key 2 <2 sec. to enter Pb 1. Set the address using key 1 and key 2 confirm by pressing key 3 >2 sec. (options are: 0-255).

Increase Decrease Left Right Confirm

When confirmd the following screen will be vissable:

In **Pb 2** you set the **profibus Value mode**. The profibus value can be shown as Integer (direct value without decimal point) or as Floating Point (real value with decimal point). Press key 2 <2 sec. to change the mode.

The oprions are:

Pb2 FL	Floating point
Pb2 In	Integer

Select the option you want to use by pressing key 1 and confirm by pressing key 3 >2 sec.

Increase Decrease Confirm

The following screen will be vissable:

Note: after a recall or a firmware update, the Profibus needs to be reset. This is done by power down the device and power it up again.

8.7 RS232 Port settings (CE HSR only)

In this menu, the communication settings can be set for RS232 communication. Options are:

232 1	Protocol
232 2	Address
232 3	Stopbits
232 4	Parity
232 5	Baudrate
232 6	Indicator

Press key 2 <2 sec to enter the RS232 port settings.

The following screen will be vissable:

In **232 1** you set the **RS232 Protocol** of the CE HSR. Press key 2 <2 sec. to enter 232 1. Set the Prot using key 1 and key 2 confirm by pressing key 3 >2 sec. (options are: 1= None, 2= Printer, 3= ASCII, 4= NPV Slave, 5= Modbus-RTU, 6= Modbus ASCII). For protocol descriptions please download PENKO Suite from www.penko.com

Increase Decrease Confirm

When confirmd the following screen will be vissable:

In **232 2** you set the **RS232 address** of the CE HSR. Press key 2 <2 sec. to enter 232 2 Set the address using key 1 and key 2 confirm by pressing key 3 >2 sec. (options are: 0-255).

Increase Decrease Left Right Confirm

When confirmd the following screen will be vissable:

In **232 3** you set the **RS232 stopbits** of the CE HSR. Press key 2 <2 sec. to enter 232 3. Set the number of stopbits the protocol needs by using key 1 and key 2 confirm by pressing key 3 >2 sec. (options are: 1-2).

Increase Decrease Confirm

When confirmd the following screen will be vissable:

In **232 4** you set the **RS232 Parity** of the CE HSR. Press key 2 <2 sec. to enter 232 4 Set the Parity using key 1 and key 2 confirm by pressing key 3 >2 sec. (options are: 1= none, 2= odd, 3= even, 4= mark, 5=space).

Increase Decrease Confirm

When confirmd the following screen will be vissable:

In **232 5** you set the **RS232 Baudrate** of the CE HS. Press key 2 <2 sec. to enter 232 5. Set the speed of the protocol by using key 1 and key 2 confirm by pressing key 3 >2 sec. (options are: 1=1200, 2= 2400, 3= 4800, 4= 9600, 5= 19200, 6= 38400, 7= 57600, 8= 115200 kbps).

Increase Decrease Confirm

When confirmd the following screen will be vissable:

In **232 6** you set the **RS232 ASCII Indicator** of the CE HSR. This setting only takes effect when using the ASCII protocol. Press key 2 <2 sec. to enter 232 6 Set the Indicator numer that you want to sent out over the RS232 port by using key 1 and key 2 confirm by pressing key 3 >2 sec. (options are: 1-100).

Increase Decrease Confirm

When confirmd the following screen will be vissable:

8.8 RS422 Port settings (CE HSR only)

In this menu, the communication settings can be set for RS422 communication. Options are:

422 1	Protocol
422 2	Address
422 3	Stopbits
422 4	Parity
422 5	Baudrate
422 6	Indicator

Press key 2 <2 sec to enter the RS422 port settings.

The following screen will be vissable:

In **422 1** you set the **RS422 Protocol** of the CE HSR. Press key 2 <2 sec. to enter 422 1. Set the Prot using key 1 and key 2 confirm by pressing key 3 >2 sec. (options are: 1= None, 2= Printer, 3= ASCII, 4= NPV Slave, 5= Modbus-RTU, 6= Modbus ASCII).For protocol descriptions please download PENKO Suite from www.penko.com

Increase Decrease Confirm

When confirmd the following screen will be vissable:

In **422 2** you set the **RS422 address** of the CE HSR. Press key 2 <2 sec. to enter 422 2 Set the address using key 1 and key 2 confirm by pressing key 3 >2 sec. (options are: 0-255).

Increase Decrease Left Right Confirm

When confirmd the following screen will be vissable:

In **422 3** you set the **RS422 stopbits** of the CE HSR. Press key 2 <2 sec. to enter 422 3. Set the number of stopbits the protocol needs by using key 1 and key 2 confirm by pressing key 3 >2 sec. (options are: 1-2).

Increase Decrease Confirm

When confirmd the following screen will be vissable:

In **422 4** you set the **RS422 Parity** of the CE HSR. Press key 2 <2 sec. to enter 422 4 Set the Parity using key 1 and key 2 confirm by pressing key 3 >2 sec. (options are: 1= none, 2= odd, 3= even, 4= mark, 5=space).

Increase Decrease Confirm

When confirmd the following screen will be vissable:

In **422 5** you set the **RS422 Baudrate** of the CE HSR. Press key 2 <2 sec. to enter 422 5. Set the speed of the protocol by using key 1 and key 2 confirm by pressing key 3 >2 sec. (options are: 1=1200, 2= 2400, 3= 4800, 4= 9600, 5= 19200, 6= 38400, 7= 57600, 8= 115200 kbps).

Increase Decrease Confirm

When confirmd the following screen will be vissable:

In **422 6** you set the **RS422 ASCII Indicator** of the CE HSR. This setting only takes effect when using the ASCII protocol. Press key 2 <2 sec. to enter 422 6 Set the Indicator numer that you want to sent out over the RS424 port by using key 1 and key 2 confirm by pressing key 3 >2 sec. (options are: 1-100).

Increase Decrease Confirm

When confirmd the following screen will be vissable:

8.9 Indicator settings

In this menu, the Indicator settings can be set.
Options are:

Ind 1	Maximum display value
Ind 2	No motion band
Ind 3	Stable time
Ind 4	Digital overall filter
Ind 5	Display step size
Ind 6	Decimal point position
Ind 7	Display refreshment speed
Ind 8	Operation mode
Ind 9	Sample time

Press key 2 <2 sec to enter the indicator settings.

The following screen is vissable:

In **Ind 1** you set the **maximum net weight value**. Set maximum load to prevent overload by the user. The indicator will not show any weight above this value. Range: 0 – full display.

To change the value press key 2 < 2 sec.

The following screen is vissable:

Use key 1 and 2 to change the value. Key 1 is for changing the number (1-9), key 2 is for changing the position of the cursor. Confirm by pressing key 3 for >2 sec.

Increase Decrease Left Right Confirm

The following screen is vissable:

In **Ind 2** you set the **No motion band** Indicator gives stable signal when weigher value is stable within this range and time set with Ind 3.
Choose a value between: 0 – 999999.

To change the value press key 2 < 2 sec.

The following screen is vissable:

Use key 1 and 2 to change the value. Key 1 is for changing the number (1-9), key 2 is for changing the position of the cursor. Confirm by pressing key 3 for >2 sec.

Increase Decrease Left Right Confirm

The following screen is vissable:

In **Ind 3** you set the **Stable time** Indicator gives stable signal when weigher value is stable within the range set in Ind 2 and time set with Ind 3.
Choose a value between: 000.000 – 16.959 seconds.

To change the value press key 2 < 2 sec.

The following screen is vissable:

Use key 1 and 2 to change the value. Key 1 is for changing the number (1-9), key 2 is for changing the position of the cursor. Confirm by pressing key 3 for >2 sec.

Increase Decrease Left Right Confirm

The following screen is vissable:

In **Ind 4** you set the **Digital overall filter.** Set the overall filter to effect all indicator signals used in the device. 0dB means no effect and –50dB is the strongest damping. Choose between -: **0dB**, 1: **-6dB**, 2: **-12dB**, 3: **-24dB**, 4: **-30dB**,
5: **-36dB**, 6: **-42dB** and 7: **–50dB**.

To prevent a loss of information or accuracy, don't set the overall filter higher than 24dB. When no ccuracy is needed, a higher filter setting is allowed to enable extreme filtering.

To change the filter press key 2 < 2 sec.

The following screen is vissable:

Use key 1 change the filter. Confirm by pressing key 3 for >2 sec.

Up Down Confirm

The following screen is vissable:

In **Ind 5** you set the **display step size**. The step size defines the scaled parts of the weight value. The display value will be rounded off to the nearest value with a valid step size.

To change the display step size press key 2 < 2 sec.

The following screen is vissable:

Use key 1 to select the correct step size.
Choose between 1, 2, 5, 10, 20, 50 and confirm by pressing key 3 for >2 sec.

Example step size: weigher value is 2005 kg

Step Size	Weight (kg)
1	2005
2	2006
5	2005
10	2010

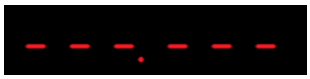
Up Down Confirm

The following screen is vissable:

In **Ind 6** you set the **decimal point**. The decimal point defines the point position of the weight value.

To change the decimal point press key 2 < 2 sec.

The following screen is vissable:



Press key 1 to define the point position and confirm by pressing key 3 for >2 sec.

Up Down Confirm

The following screen is vissable:

In **Ind 7** you set the **Display refreshment speed**. The Display refreshment speed defines the times the weigher value is refresht per second. Options are: 1, 2, 3, 5, 10, 25, 50.

To change the display refreshment speed press key 2 < 2 sec.

The following screen is vissable:

Press key 1 to choose the display refreshment speed and confirm by pressing key 3 for >2 sec.

Up Down Confirm

The following screen is vissable:

In **Ind 8** you set the **operation mode** of the CE HS. Set the operation mode of the unit to Industrial or Certified. In Industrial mode it's always possible to change the indicator parameters and calibration. In certified mode the unit will be sealed by marks and also the weighing parameters will be blocked to satisfy to the calibration laws. A weighing unit must be certified when it's used for measuring for trade aims. Note: In certified mode the zero band = 4% (+2 and -2%). Also zero suppressing (FIL 3) is disabled.
Options are: In = Industrial mode, CE = Certified mode.

To change the operation mode press key 2 < 2 sec.

The following screen is vissable:

Press key 1 to choose the operation mode and confirm by pressing key 3 for >2 sec.

Up Down Confirm

The following screen is vissable:

In **Ind 9** you set the **sample rate** of the indicator. The sample rate is the refreshment speed of the weigher signal.
Options are: 10, 20, 25, 50, 100, 200, 400, 800, 1600 samples/sec.

To change the sample rate press key 2 < 2 sec.

The following screen is vissable:

Press key 1 to choose the sample rate and confirm by pressing key 3 for >2 sec.

Up Down Confirm

The following screen is vissable:

8.10 Multi range/interval settings

In this menu, the multi range/interval can be set.
Options are:

Rng 1	Number of display divisions
Rng 2	Maximum auto range step size
Rng 3	Auto range reset option

Press key 2 <2 sec to enter the multi range/interval settings.

The following screen is vissable:

In **rng 1** you set the **number of display divisions**. Set the number of divisions when the indicator has to display with the next step size. Auto ranging starts with step size set at **Ind 5** and is disabled when range size is set to 0. Choose a value between 000.00 and 999.999.

To change the value press key 2 < 2 sec.

The following screen is vissable:

Use key 1 and 2 to change the value. Key 1 is for changing the number (1-9), key 2 is for changing the position of the cursor. Confirm by pressing key 3 for >2 sec.

Increase Decrease Left Right Confirm

The following screen is vissable:

In **rng 2** you set the **maximum auto range step size**. Set the biggest step size allowed. Choose between 1, 2, 5, 10, 20, 50, 100, 200 and 500.

To change the maximum step size press key 2 < 2 sec.

The following screen is vissable:

Use key 1 change the filter. Key 1 is for changing the number.
Confirm by pressing key 3 for >2 sec.

Up Down Confirm

Example Max Step: If the settings are:Step size = 1, Range = 100 and Max. Step = 50, the table on the right shows the accompanying step size with which the weigher values reduces within the displayed ranges.

When the indicator is set certified, the maximum preset tare is equal to the first level of the autorange. In this example the preset tare is valid to 100.

Displayed range	Step size
0-100	1
100-200	2
200-500	5
500-1000	10
1000-2000	20
2000-5000+	50

The following screen is vissable:

In **rng 3** you set the **auto range reset option**. Choose between:
oF: Multi Range = the highest shown step size will be reseted after the signal has been lower or equal to zero
on: Mulit Interval = the highest shown step size will be reseted after the signal reaches the previous range.

To change the auto range reset option press key 2 < 2 sec.

The following screen is vissable:

Use key 1 change the reset option. Confirm by pressing key 3 for >2 sec.

Up Down Confirm

8.11 Filter settings

In this menu, the **filter settings** can be set. The display filter will damp the weigher signal to the display to get a calm display view.
Options are:

FIL 1	Display filter band
FIL 2	Display filter factor
FIL 3	Zero suppressing
FIL 4	Shown indicator on display

Press key 2 <2 sec to enter the filter settings.

The following screen is visible:

In **FIL 1** you can set the **display filter band.** Set the band where the filter is active. This parameter works together wit FIL 2. Choose a value between –99999 kg and 999999 kg. Press key 2 <2 sec. to change the filter band.

The following screen is visible:

Use key 1 and 2 to change the value. Key 1 is for changing the number (1-9), key 2 is for changing the position of the cursor. Confirm by pressing key 3 for >2 sec.

Increase Decrease Left Right Confirm

The following screen is visible:

In **FIL 2** you can set the **display filter factor.** Set the strength of the filter.
0dB means no effect and –50 is the strongest damping. This parameter works together wit FIL 1. Choose between -: 0dB, 1: -6dB, 2: -12dB, 3: -18dB, 4: -24dB, 5: -30dB, 6: -36dB, 7: -42dB and 8: -50dB.

Press key 2 <2 sec. to change the filter factor.

The following screen is visible:

Use key 1 change the filter. Confirm by pressing key 3 for >2 sec.

Up Down Confirm

The following screen is visible:

In **FIL 3** you set the **band** within the indicator will show 0. When the indicator is certified, this parameter will be disabled. Choose a value between 000000 and 999999. Press key 2 <2 sec. to change the zero suppressing band.

The following screen is visible:

Use key 1 and 2 to change the value. Key 1 is for changing the number (1-9), key 2 is for changing the position of the cursor. Confirm by pressing key 3 for >2 sec.

Increase Decrease Left Right Confirm

The following screen is visible:

In **FIL 4** you can set the **number of the indicator shown in the display**. Choose a number between 1 and 19. When using the FIL parameters use 4, 5, 12 or 13.

The following screen is visible:

The options are:

1	Weigher	10	Weigher x 10
2	Fast gross	11	Fast gross x 10
3	Fast net	12	Fast Net x 10
4	Display Gross	13	Display Gross x 10
5	Display Net	14	Display Net x 10
6	Tare	15	Tare x 10
7	Peak	16	Peak x 10
8	Valley	17	Valley x 10
9	Hold	18	Hold x 10
		19	Signal

For further details on the weigher functions check appendix I

Use key 1 and 2 to change the value. Key 1 is for changing the number (1-9), key 2 is for changing the position of the cursor. Confirm by pressing key 3 for >2 sec.

Increase Decrease Left Right Confirm

The following screen is

8.12 Digital filter settings

In this menu, the **digital filter settings** can be set. This filter is a 2nd order filter. The filter effects all signals up to and including the cutoff frequency. Options are:

dSF 1	Filter type
dSF 2	Cutoff frequency
dSF 3	Moving average cutoff frequency

Press key 2 <2 sec to enter the digital filter settings.

The following screen is visible:

In **dSF 1** you can set the **filter type**.
Choose between None, Dynamic and Static. Dynamic application = used when the weighing signal is constantly changing. Static application = used when the weighing signal is stable . Press key 2 <2 sec. to change the filter band.

The following screen is visible:

Use key 1 change the filter type. Confirm by pressing key 3 for >2 sec.

Up Down Confirm

The following screen is visible:

In **dSF 2** you can set the **Cutoff frequency**. Determines the range used for filtering the signal. Choose between oFF, 1.0Hz, 1.4Hz, 2.5Hz, 5.0Hz, 10.0Hz, 20.0Hz and 40Hz. Press key 2 <2 sec. to change the cutoff frequency range.

The following screen is visible:

Use key 1 change the cutoff frequency. Confirm by pressing key 3 for >2 sec.

Up Down Confirm

The following screen is visible:

In **dSF 3** you can set the **moving average cutoff frequency**. Choose a value between 0-320 Hz. Press key 2 <2 sec. to change the cutoff frequency range.

The following screen is visible:

Use key 1 and 2 to change the value. Key 1 is for changing the number (1-9), key 2 is for changing the position of the cursor. Confirm by pressing key 3 for >2 sec.

Increase Decrease Left Right Confirm

The following screen is visible:

8.13 Pre-calibration settings

In this menu, the **Pre-calibration settings** can be set. Options are:

Pcl 1	Polarity of input range
PcL 2	Amplifier sensitivity
PcL 3	Input offset
PcL 4	Recall pre-calibration

Press key 2 <2 sec to enter the pre-calibration settings.

The following screen is visible:

In **PcL 1** you can set the **polaritiy of the input range**. Un=Unipolar mode the input range for load cells is –0.2 mV/V to + value set at *Range*. Bi=Bipolar mode the input range for load cells is –value set at *Range* to + value set at *Range*.Press key 2 <2 sec. To change the polaritity og the input range.

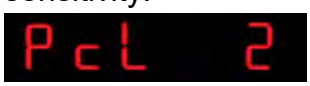
The following screen is visible:

Use key 1 change the polarity. Confirm by pressing key 3 for >2 sec.

Up Down Confirm

The following screen is visible:

In **PcL 2** you can set the **Amplifier sensitivity**. Choose between 1.0mV/V, 1.5mV/V, 2.0mV/V, 2.5mV/V and 3.0mV/V. Press key 2 <2 sec. to change the amplifier sensitivity.



The following screen is visible:

Use key 1 change the sensitiviy. Confirm by pressing key 3 for >2 sec.

Up Down Confirm

The following screen is visible:

In **PcL 3** you can set the **Input offset**. Choose between choose a sample value between –50000 and 50000. Press key 2 <2 sec. to change the input offset

The following screen is visible:

Use key 1 and 2 to change the value. Key 1 is for changing the number (1-9), key 2 is for changing the position of the cursor. Confirm by pressing key 3 for >2 sec.

Increase Decrease Left Right Confirm

The following screen is visible:

In **PcL** you can **Recall** the Pcl parameters.The PcL parameters will be reset to its factory settings. Press key 2 <2 sec. to recall to factory settings

The following screen is visible:

The following screen is visible:

To recall the factory settings press key 3 >2 sec. To cancel press key 3 <2 sec.

Cancel Recall

The following screen is visible:

8.14 Calibration settings

In this menu, the **Calibration settings** can be set. Options are:

CAL 1	Add calibration point
CAL 2	Check weiger information
CAL 3	Show/remove calibration points
CAL 4	Deadload compensation
CAL 5	Show CAL code

Press key 2 <2 sec to enter the calibration settings.

The following screen is visible:

In **CAL 1** you can set the **calibration points** for the weigher. Press key 2 <2 sec. to set the calibration points.

After entering, the following screen is visible (if there are no calibration points available):

And will automatically jump to:

First calibrate the **zero point (CP1)**. Make sure the weigher is unloaded and press key 3 >2 sec.

The indicator now shows CP2 to calibrate the **gain point (CP2)**.

And will automatically jump to:

Use key 1 and key 2 to enter the reference value. Key 1 is used for changing the number (1-9), key 2 is used for changing the position of the cursor. Load the weigher with the reference value and press key 3 >2 sec.

Increase Decrease Left Right Confirm

Done succesfully the following screen is visible:

In **CAL 2** you can check the **weiger** information. You can check out the, actual weigher value, actual weigher value x10 and the actual ADC value.
Press key 2 <2 sec. to check out the weigher information.

The following screen is visible:

Use key 1 <2 sec. to toggle between the actual weight and the actual weight x10.
Use key 2 <2 sec. to toggle between the actual weight and the ADC value.
When finished press key 3< 2 sec.

The following screen is visible:

Use **CAL 3** to **check and delete all existing calibration points**.
Press key 2 <2 sec. to enter CAL 3.

The following screen is visible:

Step through the calibration points with key 1. Delete a calibration point by pressing key 3 >3 sec.

Up Down Confirm

During deletions, the following screen is visible:

When a number is shown, the deletion of one calibration point is completed and more points need to be deleted. Press key 3 >3 sec to do so.

When all calibration points are deleted, the following screen is visible:

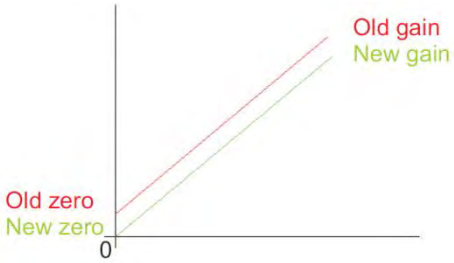
In **CAL 4** you can set a **Deadload compensation**. In this menu, the deadload can be set to pull the whole weighing line back to zero. The zero point could be different because of some modification on the scale or dirt. Press key 2 <2 sec. to set a new deadload compensation.

The following screen is visible:

Use key 1 and key 2 to enter the weight that is in/on the weigher. Key 1 is used for changing the number (1-9), key 2 is used for changing the position of the cursor. And press key 3 >2 sec.to set the new deadload.

Increase Decrease Left Right Confirm

Normally, the deadload is zero, but it is possible to change the line position if there is weight on the scale. To do so, edit the actual weigh value to the new known value.



When the new dead load is set the following screen is visible:

8.15 Theoretic calibration

In this menu, the **Theoretic calibration settings** can be set. Here you can set a calibration without using a refrence weight. For this you only need the specification sheets of the used loadcells. Options are:

tCL 1	Maximum load loadcells
tCL 2	Sensitivity loadcell 1
tCL 3	Sensitivity loadcell 2
tCL 4	Sensitivity loadcell 3
tCL 5	Sensitivity loadcell 4

Press key 2 <2 sec to enter the theoreatic calibration settings.

The following screen is visible:

In **tcL 1** you can set the **maximum loadcell load**. When more then one loadcell is used all loadcells should have the same maximum load. Press key 2 <2 sec. to set the maximum load.

The following screen is visible:

Use key 1 and key 2 to enter the maximum load of the loadcell(s). Key 1 is used for changing the number (1-9), key 2 is used for changing the position of the cursor. And press key 3 >2 sec.to set the maximum load.

Increase Decrease Left Right Confirm

The following screen is visible:

In **tcL 2** you can set the **loadcell sensitivity** for loadcell 1. This information can be found on the datasheet deliverd with the loadcell. Press key 2 <2 sec. to set the loadcell sensitivity.

The following screen is visible:

Use key 1 and key 2 to enter the sensitivitiy of loadcell 1. Key 1 is used for changing the number (1-9), key 2 is used for changing the position of the cursor. Sensitivity has to be filled in as 0.00000 mV/V. Press key 3 >2 sec. to set the sensitivity of the loadcell.

Increase Decrease Left Right Confirm

The following screen is visible:

In **tcL 3** you can set the **loadcell sensitivity** for loadcell 2. This information can be found on the datasheet deliverd with the loadcell. Press key 2 <2 sec. to set the loadcell sensitivity.

The following screen is visible:

Use key 1 and key 2 to enter the sensitivitiy of loadcell 2. Key 1 is used for changing the number (1-9), key 2 is used for changing the position of the cursor. Sensitivity has to be filled in as 0.00000 mV/V. Press key 3 >2 sec. to set the sensitivity of the loadcell.

Increase Decrease Left Right Confirm

The following screen is visible:

In **tcL 4** you can set the **loadcell sensitivity** for loadcell 3. This information can be found on the datasheet deliverd with the loadcell. Press key 2 <2 sec. to set the loadcell sensitivity.

The following screen is visible:

Use key 1 and key 2 to enter the sensitivitiy of loadcell 3. Key 1 is used for changing the number (1-9), key 2 is used for changing the position of the cursor. Sensitivity has to be filled in as 0.00000 mV/V. Press key 3 >2 sec. to set the sensitivity of the loadcell.

Increase Decrease Left Right Confirm

The following screen is visible:

In **tcL 5** you can set the **loadcell sensitivity** for loadcell 4. This information can be found on the datasheet deliverd with the loadcell. Press key 2 <2 sec. to set the loadcell sensitivity.

The following screen is visible:

Use key 1 and key 2 to enter the sensitivitiy of loadcell 4. Key 1 is used for changing the number (1-9), key 2 is used for changing the position of the cursor. Sensitivity has to be filled in as 0.00000 mV/V. Press key 3 >2 sec. to set the sensitivity of the loadcell.

Increase Decrease Left Right Confirm

The following screen is visible:

When using a theoretical calibration, note that the 2mV/V and 3mV/V range are calibrated ranges.

8.16 Geographic calibration

In this menu, the **Geographic calibration settings** can be set. Here you can set a geographic information of the loadcells filled in al **tCL**. Options are:

gCL 1	Origin latitude
gCL 2	Origin elevation
gCL 3	Location latitude
gCL 4	Location elevation

Press key 2 <2 sec to enter the Geographic calibration settings.

The following screen is visible:

In **gcL 1** you can set the **origin latitude** of the loadcell. This is the geographic latitude of where the loadcell is manufactured. Press key 2 <2 sec. to set the origin latitude.

The following screen is visible:

Use key 1 and key 2 to enter the origin latitide of the loadcell(s). Key 1 is used for changing the number (1-9), key 2 is used for changing the position of the cursor. And press key 3 >2 sec.to set the origin latitude. Choose value between –90,00 and 90,00°

Increase Decrease Left Right Confirm

The following screen is visible:

In **gcL 2** you can set the **origin elevation** of the loadcell. This is the geographic elevation of where the loadcell is manufactured. Press key 2 <2 sec. to set the origin elevation.

The following screen is visible:

Use key 1 and key 2 to enter the origin elavation of the loadcell(s). Key 1 is used for changing the number (1-9), key 2 is used for changing the position of the cursor. And press key 3 >2 sec.to set the origin elevation. Choose value between –1000 and 30000 meter.

Increase Decrease Left Right Confirm

The following screen is visible:

In **gcL 3** you can set the **location latiude** of the loadcell(s). This is the geographic latitude of where the loadcell is going to be used. Press key 2 <2 sec. to set the location latitude.

The following screen is visible:

Use key 1 and key 2 to enter the location latitude of the loadcell(s). Key 1 is used for changing the number (1-9), key 2 is used for changing the position of the cursor. And press key 3 >2 sec.to set the location latitude. Choose value between –90,00 and 90,00°

Increase Decrease Left Right Confirm

The following screen is visible:

In **gcL 4** you can set the **location elevation** of the loadcell. This is the geographic elevation of where the loadcell is going to be used. Press key 2 <2 sec. to set the location elevation.

The following screen is visible:

Use key 1 and key 2 to enter the location elevation of the loadcell(s). Key 1 is used for changing the number (1-9), key 2 is used for changing the position of the cursor. And press key 3 >2 sec.to set the location latitude. Choose value between –1000 and 30000 meter.

Increase Decrease Left Right Confirm

The following screen is visible:

8.17 Date and time configuration (CE HSR only)

In **Clock**, you can set the internal date and time.

Press key 2 <2 sec to enter **Clock**.

The following screen is visible:

Set the date. Use key 1 and key 2 to change the number Key 1 is for changing the number (1-9), key 2 is for changing the position of the cursor. Confirm by pressing key 3 >2 sec. Format DD.MM.YY

Increase Decrease Left Right Confirm

The following screen is visible:

Set the time. Use key 1 and key 2 to change the number Key 1 is for changing the number (1-9), key 2 is for changing the position of the cursor. Confirm by pressing key 3 >2 sec. Format HH.MM.SS

Increase Decrease Left Right Confirm

8.18 Recall

In **Recall**, you can reset all parameters back to facatory settings.

Press key 2 <2 sec to enter **Recall**.

The following screen is visible. Press key 2 <2 sec.

The following screen is visible.

There are two recalls available. Parameters back to factory, or an erase of the file system. Use the erase function only when a normal recall does not solve the problem.

To set all parameters back to factory settings Press key 3 >2 sec.

The device will reboot.

To reset the file system Press key 1 >2 sec.

The following screen is visible. Confirm by pressing key 3 >2 sec.

The device will reboot.

8.19 Firmware update

In **SoF**, you can set the CE HS in boot mode for software update.

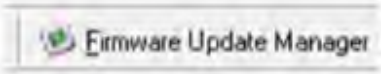
Press key 2 <2 sec to enter Boot mode.

The following screen is visible:

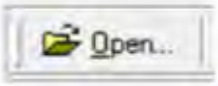
Press key 3 >2 sec to set the CE HS in Boot mode.

Connect the SGM to the computer through USB. Start PI Mach II. Set communication to USB.

Start the Firmware Update Manager.

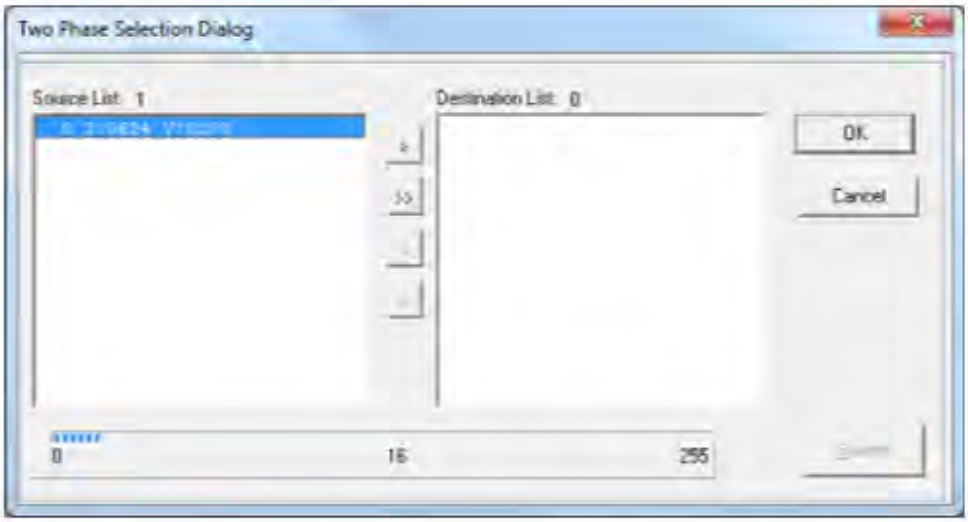


Click Open and select the PIP file.



Click Search For Devices and select the device with source “0”.

Use double click or the arrow button to put the address in the Destination List and click OK.



Now set the SGM in boot mode:

Go into the configuration menu by pressing key 3 >2 sec.
The following screen will appear:

Go to- **- - SoF** by pressing key 1 <2 sec untll you see **- - - SoF**

Press key 2 <2 sec to enter Boot mode.

The following 

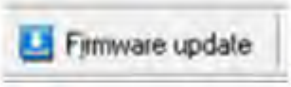
screen is visible:

Press key 3 >2 

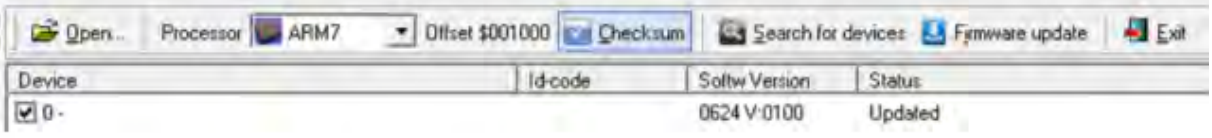
sec to set the SGM700 in Boot mode.

Now 

click Firmware Update to start the update.

The 

SGM will reboot automatically and the Firmware Update Manager wil show Updated.



9 Error Codes

Error Code	Description	Solution
2001	Parameter error	Invalid entry, choose a valid value
2005	Input value is not valid	Invalid entry, choose value within range
2101	Weigher not stable	Wait for stable weigher signal and try again
2102	Parameter exceeds maxload	Remove load from scale
2103	Parameter below zero	Check if scale is blocked
2104	Not in zero range	Remove load
2105	Arithmetic overflow occurred	Change calibration levels
2106	A/D reads all 1’s	Check load cell connection
2107	A/D reads all 0’s	Check load cell connection
2108	Gain ref. < zero ref.	Change calibration levels
2109	Gain > 0.99984741211	Change calibration levels
2110	Save error	Contact SAUTER
2111	Flash ROM exhausted	Contact SAUTER
2112	Error on header creation	Contact SAUTER
2113	Error on date write	Contact SAUTER
2114	Header validation failed	Contact SAUTER
2115	De-active old data fail	Contact SAUTER
2116	Load errors	Contact SAUTER
2117	Item not found in store	Contact SAUTER
2118	Error in stored data	Contact SAUTER
2119	Bad calibration	Change calibration levels

Error Code	Description	Solution
CCCCCC	No proper calibration available	Check calibration setting
UUUUUU	Underflow	Check loadcell check platform construction
OOOOOO	Overflow	Check loadcell Check platform construction
======	Display overflow; Exceed maximum display value (max. load)	Reduce load on platform

10 Profibus Protocol Description

Inputs to PLC	
D word 32 bit	Weight register
word 16 bit	Status
byte 8 bit	Reserved
byte 8 bit	Weight selected register
word 16 inputs	Input 1-16
word 16 outputs	Output 201-216
D word 32 bit	Preset Tare
D word 32 bit	Gross indicator x10
D word 32 bit	Net indicator x10
D word 32 bit	Indicator tare x10
D word 32 bit	Multirange weight

Outputs from PLC	
byte 8 bit	Command
byte 8 bit	Weight selector register
D word 32 bit	Preset Tare
D word 32 bit	Level 1
D word 32 bit	Level 2
D word 32 bit	Level 3
D word 32 bit	Level 4

Command bit definition:	
1	Zero reset command
2	Zero set command
3	Tare off
4	Tare on
5	Preset tare command
6	Freeze bit
7	Reserved
8	Reserved

Weight selection register definition:	
0x00	Display weigt includes multi range/interval step
0x01	Fast gross
0x02	Fast net
0x03	Display gross
0x04	Display net
0x05	Tare
0x06	Peak
0x07	Valley
0x08	Display weight x10
0x09	Fast gross x10
0x0A	Fast netx10
0x0B	Display gross x10
0x0C	Display net x10
0x0D	Tare x10
0x0E	Peak x10
0x0F	Valley x10
0x10	ADC Sample
0x11-0x75	Indicator register 1-100
0x76-0xFF	Reserved

Status bit definition:	
1	hardware overload detected
2	overload detected
3	stable signal
4	in stable range
5	zero corrected
6	center of zero
7	in zero range
8	zero tracking possible
9	tare active
10	preset tare active
11	new sample available
12	calibration invalid
13	calibration enabled
14	user certified operation
15	reserved
16	reserved

11 Standard Factory Settings

Description	Display	Value	Your setting
Setpoint function	Fun 1	1	
	Fun 2	1	
	Fun 3	1	
	Fun 4	1	
Setpoint action	Acn 1	000,010	
	Acn 2	000,010	
	Acn 3	000,010	
	Acn 4	000,010	
Analog output	dAC 4	2	
	dAC 5	000.000	
	dAC 6	010.000	
	dAC 7	4	
Local bus communication	485 1	1	
Profibus	Pb 1	1	
	Pb 2	FL	
Ethernet	Adr 1	010	
	Adr 2	001	
	Adr 3	002	
	Adr 4	004	
	Sub 1	255	
	Sub 2	255	
	Sub 3	255	
	Sub 4	0	

Description	Display	Value	Your setting
Ethernet	gAT 1	0	
	gAT 2	0	
	gAT 3	0	
	gAT 4	0	
Indicator	Ind 1	10.009	
	Ind 2	2	
	Ind 3	1.000	
	Ind 4	-	
	Ind 5	1	
	Ind 6	- - - . - - -	
	Ind 7	25	
	Ind 8	In	
	Ind 9	1.60	
Multi range/interval	Rng 1	0	
	Rng 2	1	
	Rng 3	oF	
Filter	FIL 1	0	
	FIL 2	-	
	FIL 3	0	
Digital filter	dSF 1	Dynamic	
	dSF 2	2.5Hz	
	sSF 3	50	

Description	Display	Value	Your setting
Pre-calibration	Pcl 1	un	
	Pcl 2	2.0	
	Pcl 3	0	
Theoretic calibration	tCL 1	10.000	
	tCL 2	0.000	
	tCL 3	0.000	
	tCL 4	0.000	
	tCL 5	0.000	
Geographic calibration	gCL 1	52.00	
	gCL 2	0	
	gCL 3	52.00	
	gCL 4	0	

12 Appendix I

Description	Definition
Weight	filtered net weigher value that can react on mulit range/interval
Fast Gross	unfiltered gross weigher value
Fast Net	unfiltered net weigher value
Display Gross	filtered gross weigher value
Display Net	filtered net weigher value
Tare	tare value
Peak	highest reached weigher value can be reset by button peak reset
Valley	lowest reached weigher value can be reset by button valley reset
Hold	Stored hold value
Weight x 10	filtered net weigher value shown with extra decimal that can react on multi range / multi interval
Fast Gross x 10	unfiltered gross weigher value shown with extra decimal
Fast Net x 10	unfiltered bet weigher value shown with extra decimal
Display Gross x 10	filtered gross weigher value shown with extra decimal
Display Net x 10	filtered net weigher value shown with extra decimal
Tare x 10	tare value shown with extra decimal
Peak x 10	highest reached weigher value shown with extra decimal can be reset by button peak reset
Valley x 10	lowest reached weigher value shown with extra decimal can be reset by button valley reset
Hold x10	Stored hold value shown with extra decimal
Signal	mV signal from the load cell(s)

13 Certificate of Compliance

To have a look at the CE Declaration of Conformity, please click onto the following link: https://www.kern-sohn.com/shop/de/Downloads