Manual

INDUSTRIAL INSTRUMENTATION

Weight controller type Flex-MF

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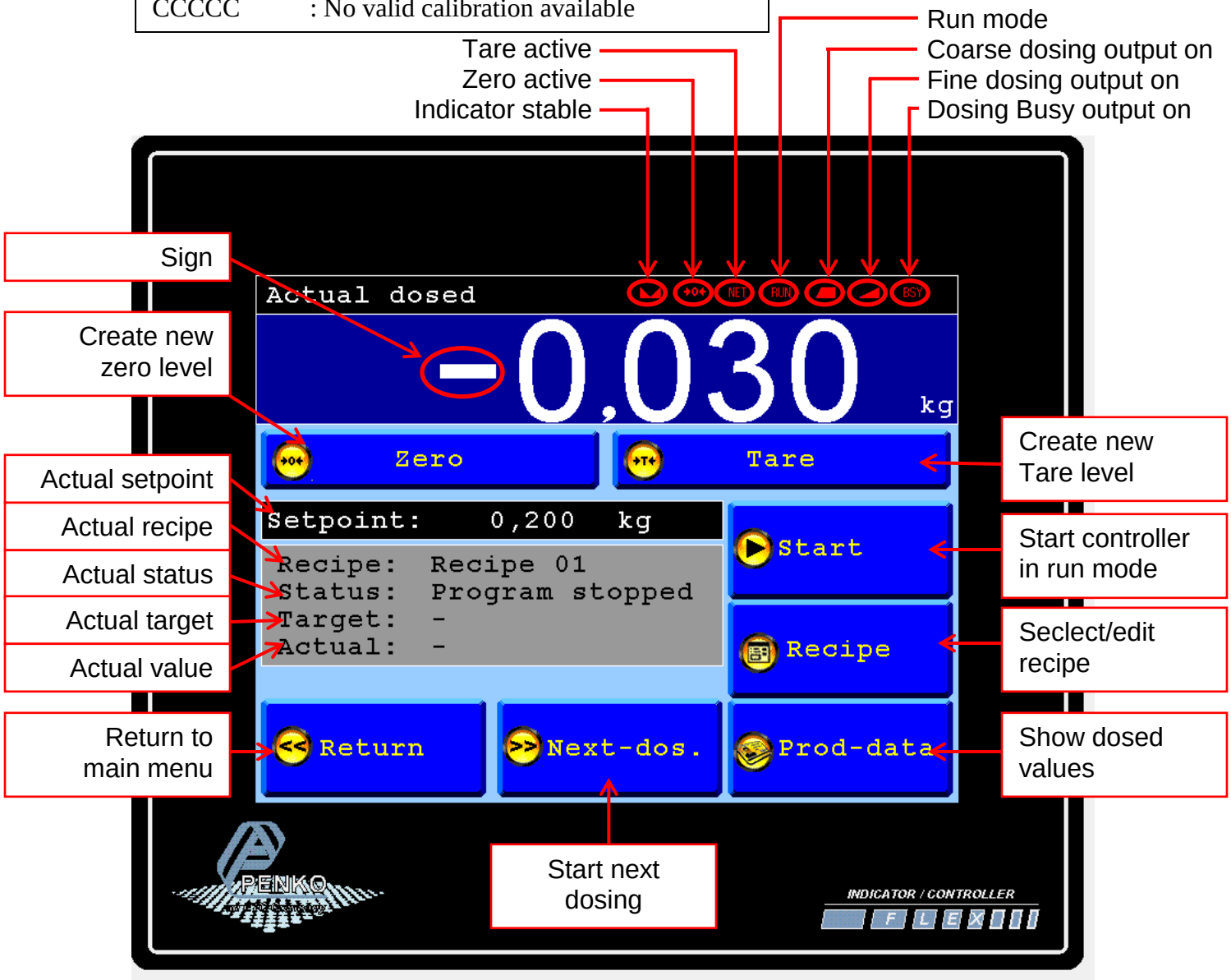
Explanation of production screen.

Possible Indicator Errors:

----------	: Indicator not available.
= = = = =	: Maximum display value exceeded.
UUUUU	: Hardware Under load (loadcell defect?).
OOOOO	: Hardware Over load (loadcell defect?).
CCCCC	: No valid calibration available

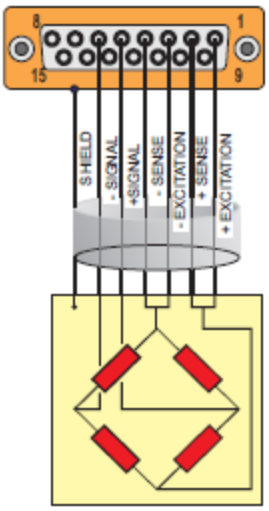


Wiring connection for Flex-MF model Flex.

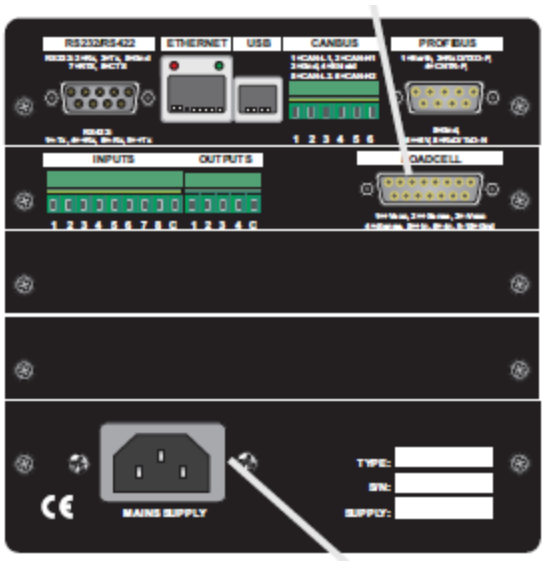
Loadcell connection, 15p sub-D Female:

1. + Excitation
2. + sense
3. – Excitation
4. – Sense
5. + Signal
6. – Signal

Housing. Shield

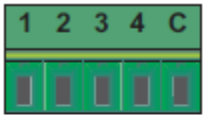


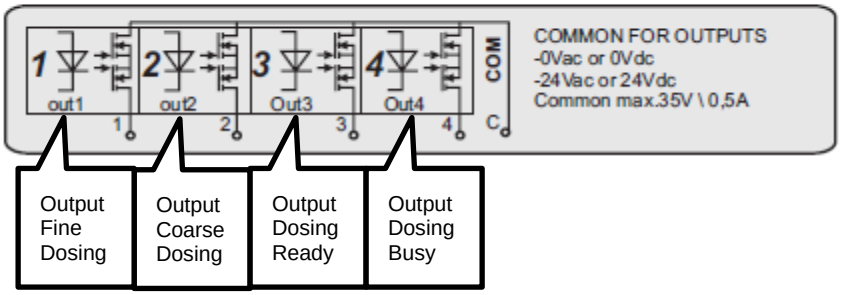
Loadcell connection



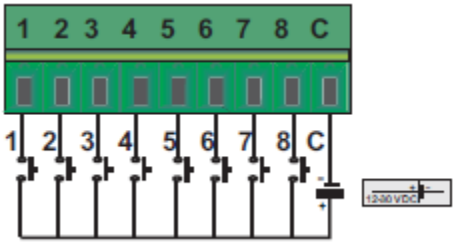
AC Power supply
230 Vac 50/60 Hz

Digital Outputs:





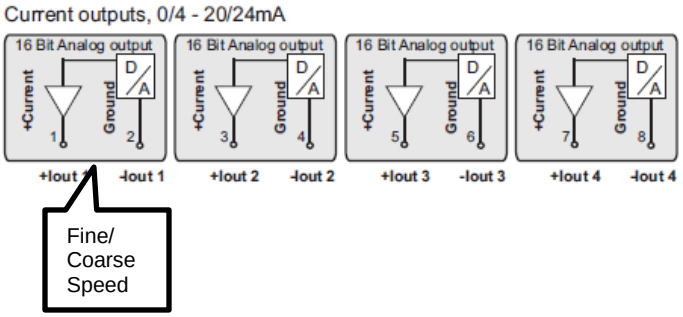
Digital Inputs:



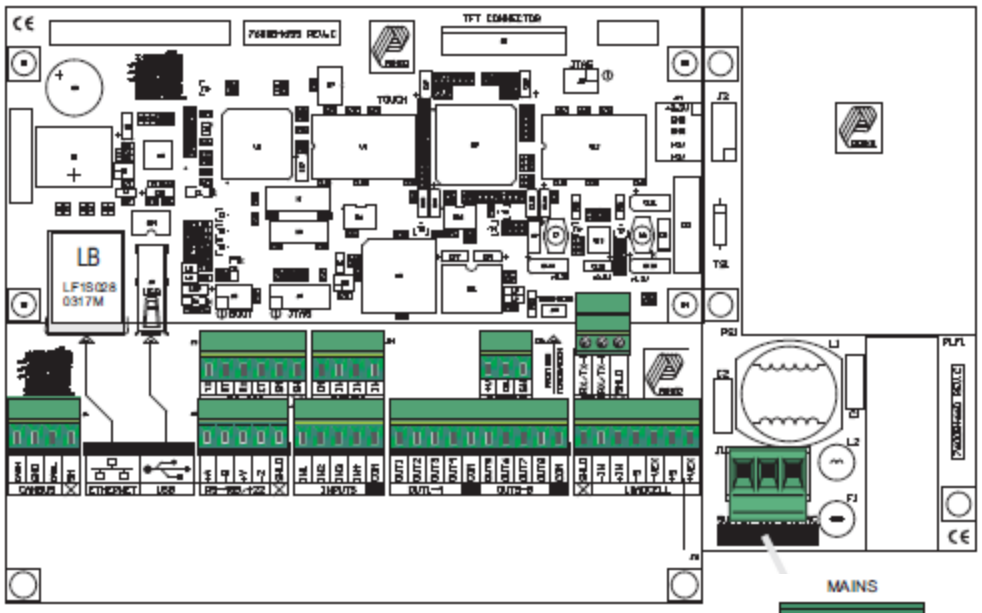
Input 1: Start (option)
Input 2: Stop (option)
Input 3: Start dosing
Input 4-8: Not used

Analog Outputs: (option)

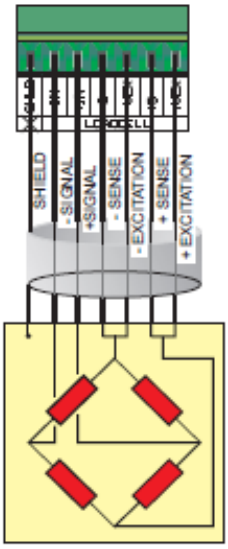
Analog output 1:
Fine/Coarse speed



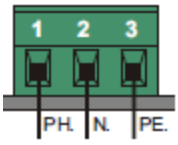
Wiring connection for Flex-MF model Flex-2100.



Loadcell connection,

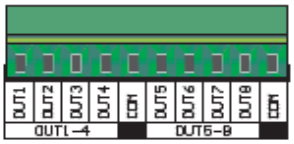


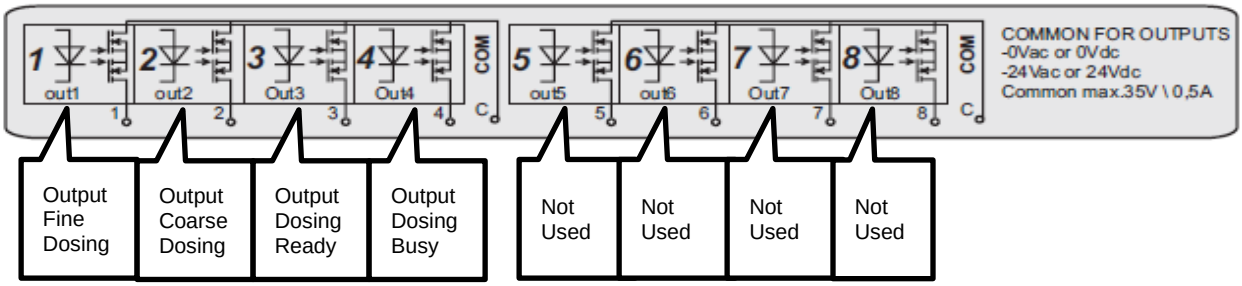
MAINS



AC Power supply
230 Vac 50/60 Hz

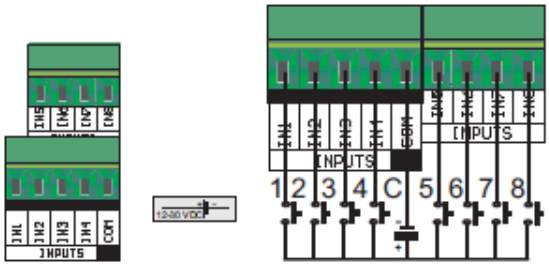
Digital Outputs:





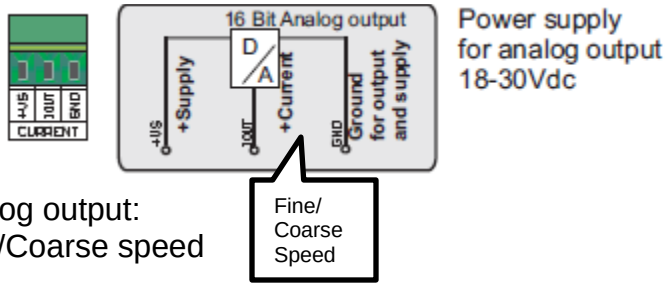
Output Fine Dosing	Output Coarse Dosing	Output Dosing Ready	Output Dosing Busy	Not Used	Not Used	Not Used	Not Used

Digital Inputs:



Input 1: Start (option)
Input 2: Stop (option)
Input 3: Start dosing
Input 4-8: Not used

Analog Output: (option)



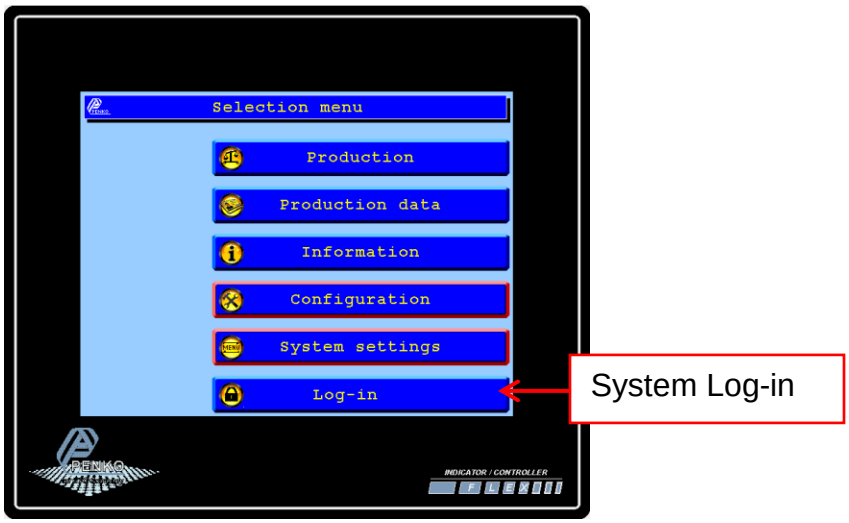
Analog output:
Fine/Coarse speed

Selection Menu.

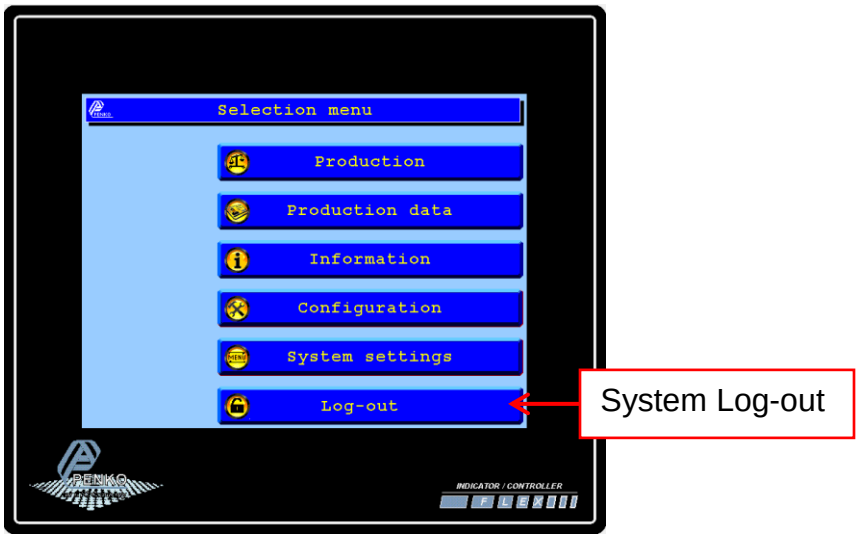
From the Selection menu it's possible to enter the several Screens.

The Configuration and System setting are locked by a password, log-in with the Log-in button first. To log-out, press the Log-out button.

Screen if Configuration and System settings are disabled:



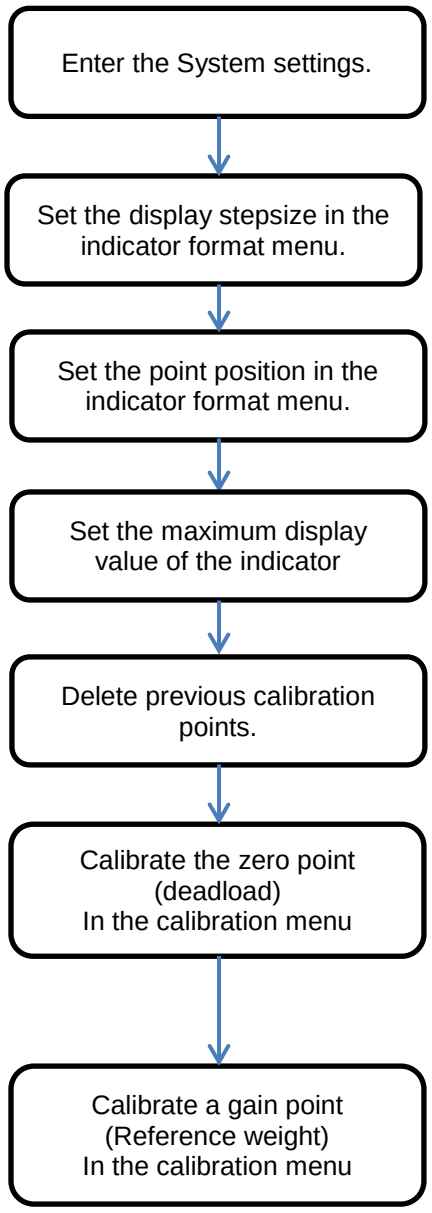
Screen if Configuration and System settings are enabled:



First use of the indicator.

Before using the controller, please setup the internal indicator first.

Login first to enter the System settings,
Default no password is selected.
The overall password is “25630”.



The step size defines the scaled parts of the weight value.
The display value will be round off to the nearest value with a valid step size.
Step size can be set at 1, 2, 5, 10, 20, 50, 100, 200, 500, 1000, 2000 or 5000.

The Decimal point defines the point position of the weight value.
Decimal point position can be set from NONE to 0,00000.

To prevent overload by the user, the FLEX will not show any weight above this value.
In certified mode the max load is not allowed to be more then the maximum load + 9 scale parts.

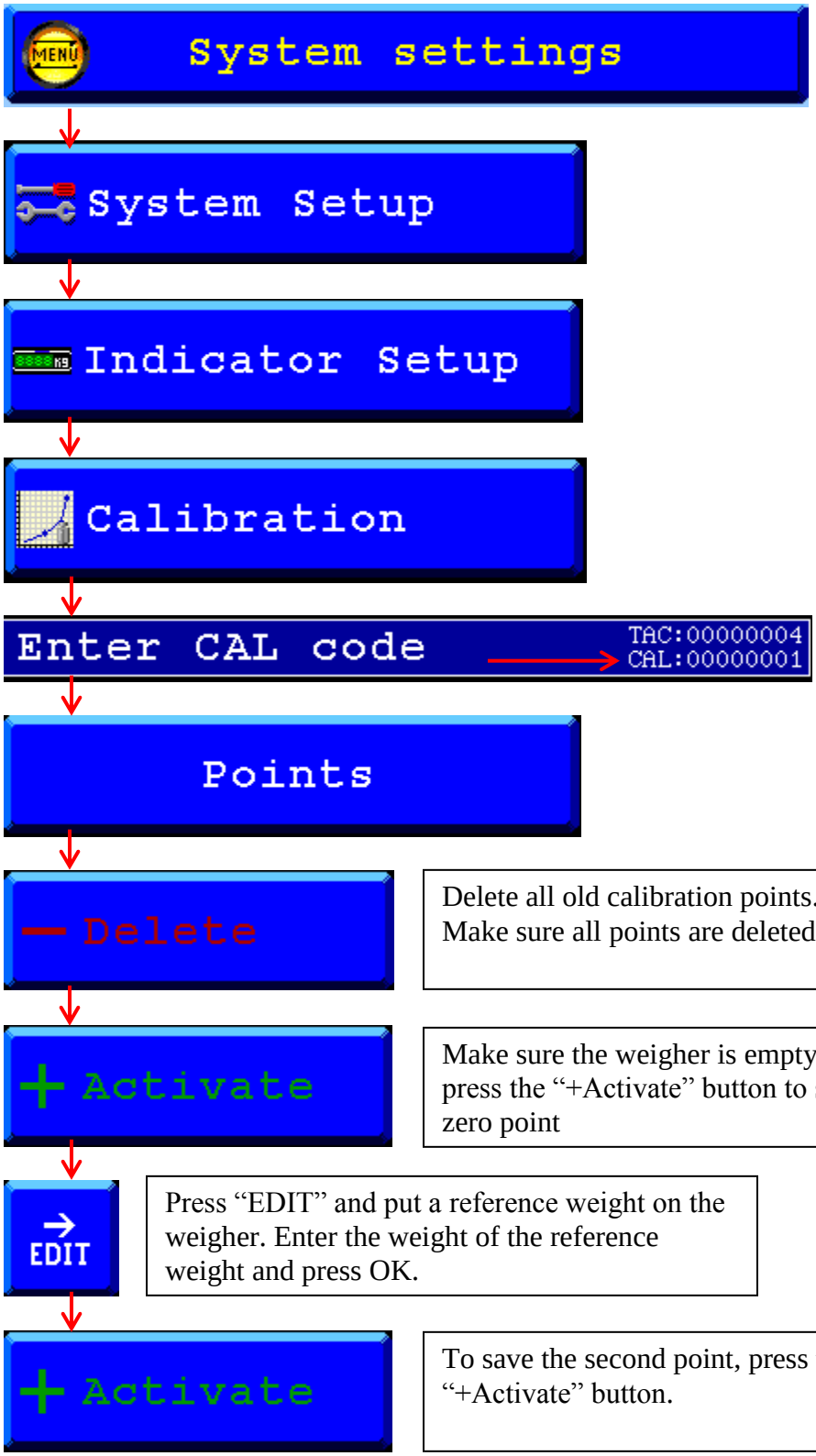
All previous calibration points should first be deleted before making a new calibration.

When all points are deleted, first calibrate the Dead load (0).
Make sure the scale is completely empty and type 0 in the “Add/Replace” field by pressing the “Edit” button.
To save the zero point press the “+ Activate” button.
The Dead load is calibrated now.

To calibrate the gain weight put a reference weight on the scale.
Press the “Edit” button to type the exact reference weight in the “Add/Replace” field.
To save the reference weight, press the “ + activate button”.
The reference weight is calibrated now.

Calibration.

To calibrate the indicator, follow the next steps:



Enter the "CAL" code and press OK.
This "CAL" code is shown in the right upper corner.

Delete all old calibration points.
Make sure all points are deleted.

Make sure the weigher is empty and press the "+Activate" button to save the zero point

Press "EDIT" and put a reference weight on the weigher. Enter the weight of the reference weight and press OK.

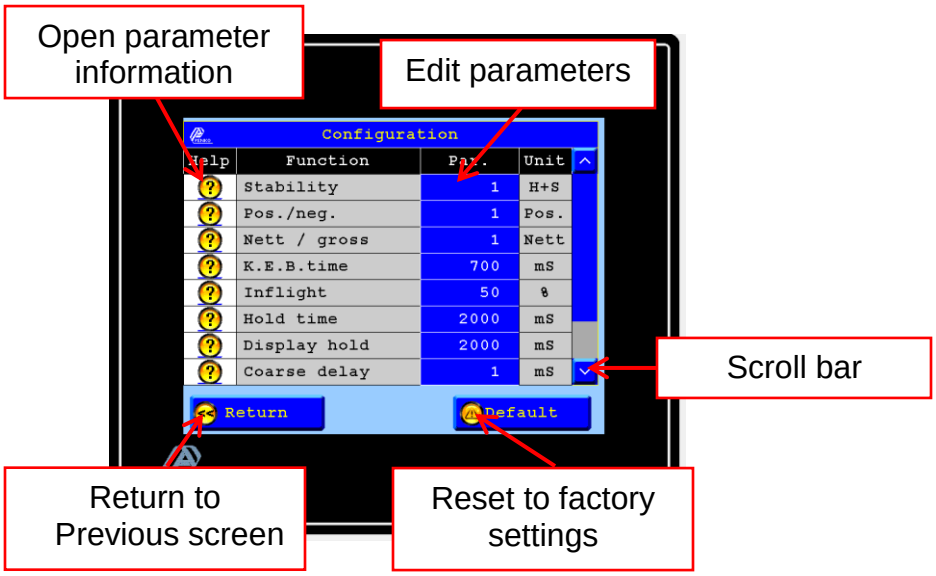
To save the second point, press the "+Activate" button.

Setup the filling configuration.

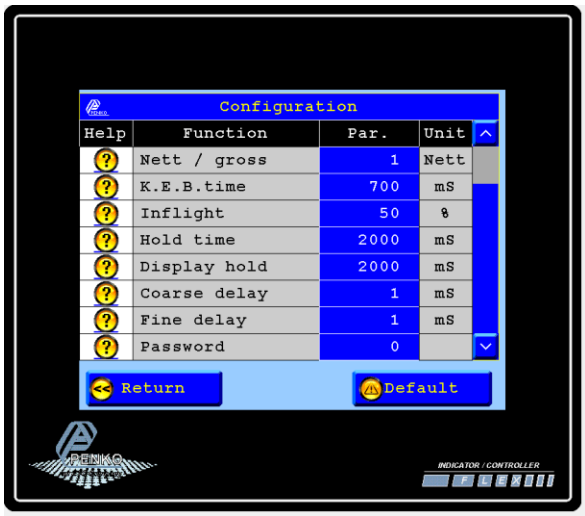
Before using the controller, please setup the configuration for your application first.

Login first to enter the System settings,
Default no password is selected.
The overall password is “25630”.

Press the blue “Par.” fields to enter the needed values.
Press the Question marks to open information about the parameter.
Press the “Default” button to reset to factory setting.
Press the “Return” button to return to the previous screen.



Use the scroll bar to enter the next values.



Factory settings:

Stability	:Hold time + Stable
Pos/neg	:Positive weighing
Nett/Gross	:Nett weighing
K.E.B.time	:700 msec
Inflight correction	:50 %
Hold time	:2000 msec
Display hold time	:2000 msec
Coarse delay	:1 msec
Fine delay	:1 msec
Password	:0 (disabled)

Configuration Parameters.

Stability X

Weigher stability can be switched on or off.
This par. works together with the H-time.
1= First H-time then stable
2= only H-time.
3= Stable or H-time.
4= first stable then H-time.

Positive / negative weighing X

select if dosing is positive (in dosing)

or,

select if dosing is negative (out dosing)

1 = Positive weighing
2 = Negative weighing

Nett or Gross weighing X

When weigher has to be set to zero (tare), Nett has to be Selected.
1 = Nett.
2 = Gross.

Kenetic blind time. X

This is the time (miliseconds) in which the kinetic energie, after coarse turns of, Dissapears.
KEBtime in milliseconds

KEBtime must be less then remaining fine time.

Inflight correction X

Inflight is the amount of product, which is falling on the weigher, after the Fine output is switched off.
The correction value indicates strenth of the correction (%).
Min = 0 Max = 50 %
0 means fixed inflight.

Hold time X

This is the time the controller waits before calculating the really dosed value.
Wait after dose time = milliseconds.
The H-time works together with the stability parameter.

Display hold time X

After the dosing is finished The display hold time starts.
The dosed value is froozen for this time. after this time the display is "live" again.
A new dosing can start during this time.

Coarse output delay time X

This is the time that the coarse output waits after the dosing starts.
Time in miliseconds.

Fine output delay time X

This is the time that the fine dosing waits when the dosing Starts.
Time in milliseconds.

Change password X

password to close some page's

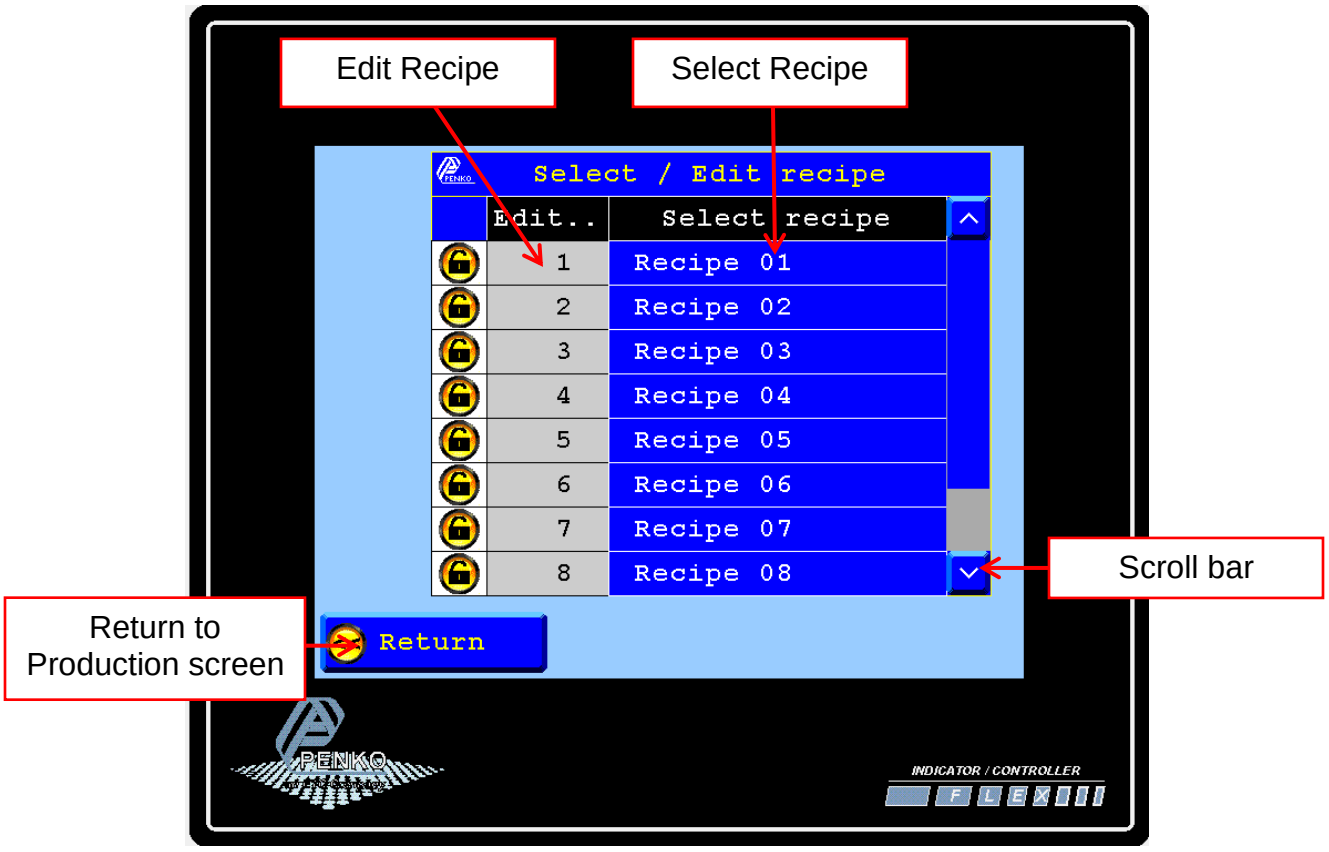
Zero is no password needed

Select/Edit Recipe.

To select a recipe, press the “recipe” button from the production screen.

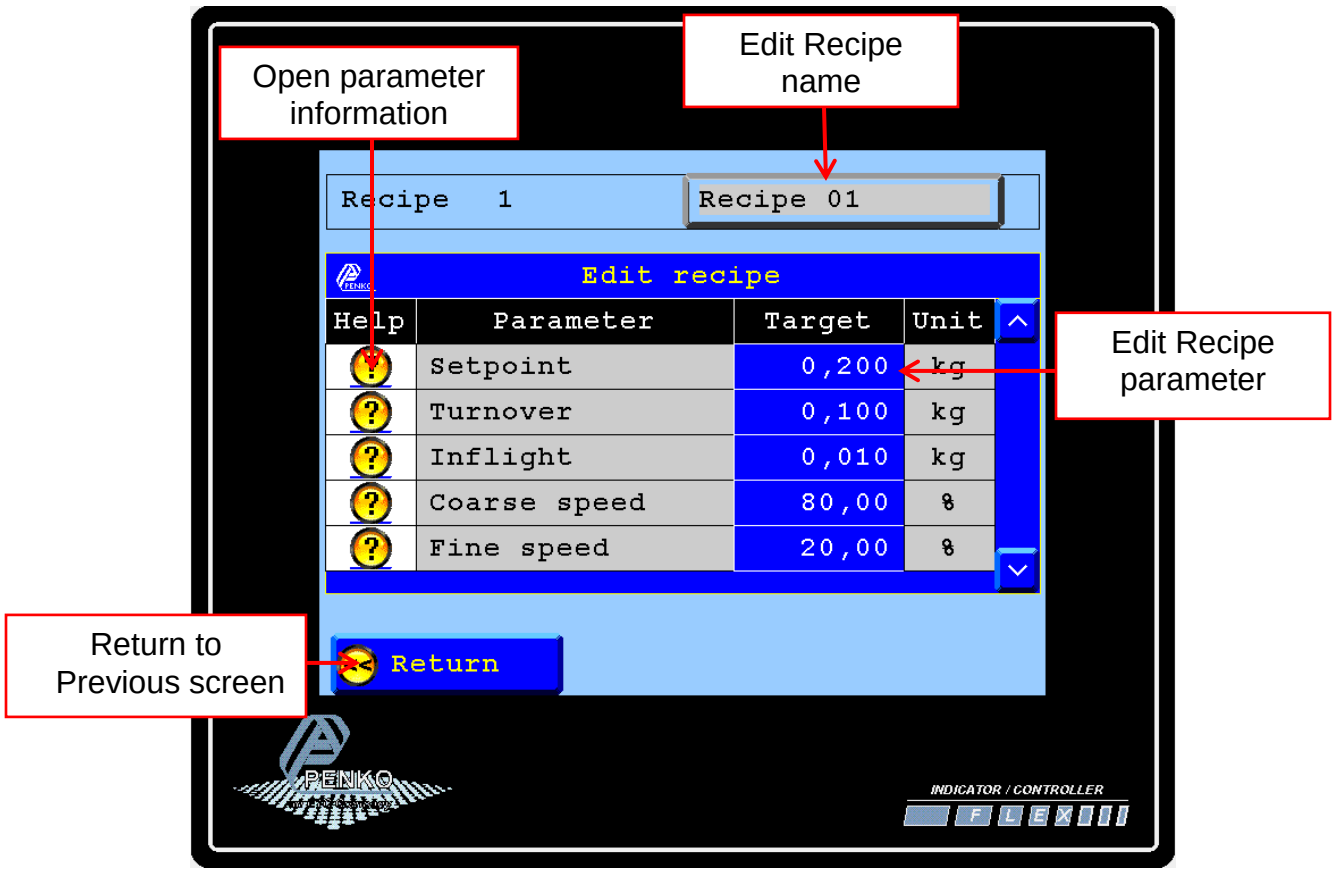
Select a recipe by pressing on the recipe name in the blue fields.
Use the scroll bar to select the next recipes.
The screen will automatically return to the production screen after selection.

To edit a recipe Press the recipe number in the gray fields.
To enter the recipe edit screen the user must be logged in.
To return to the production screen without changes, press the “Return” button.



Edit Recipe parameters.

To edit the recipe name, press the recipe name button.
To edit a recipe parameter, press the value in the blue fields.
Press the question marks to open information about the parameter.
To return to the previous screen and save the recipe, press the “Return” button.



Recipe parameters.

Setpoint X

Setpoint is the amount of product,which is wanted on/in the weigher.
The selection Nett or gross and in or out is made in the configuration menu.

Turnover X

Coarse dosing stops when the setpoint - turnover is reached. The dosing continues in fine mode.
Remaining time must be > KEBt

Inflight X

Inflight is the amount of product, which is falling on the weigher, after the Fine output is switched off.
The correction strenght is set in the configuration menu.

Coarse speed X

During the coarse dosing mode This value is used for analogue output.
Min= 0.00 %
Max= 100.00 %

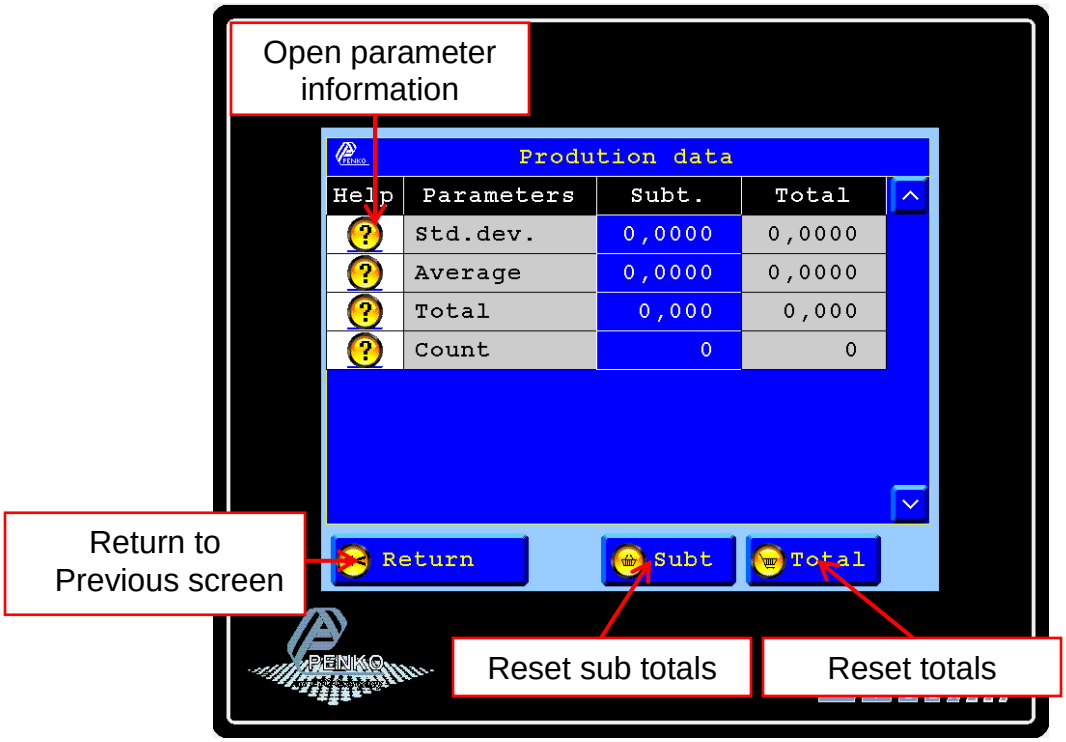
Fine speed X

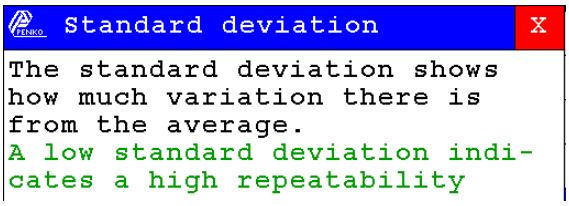
During the fine dosing mode this value is used for the analogue output.
Min= 0.00 %
Max= 100.00 %

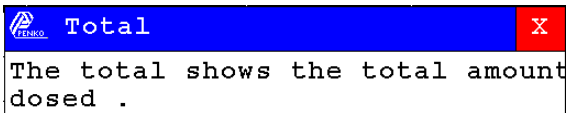
Production data.

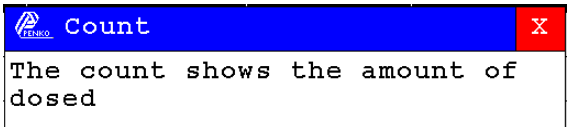
To view the total dosed values, press the “production data” button.

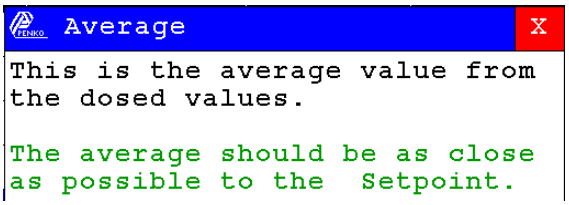
To reset the subtotals, press the Subt.” Button
To reset the totals and subtotals, press the “Total” button.
Press the question marks to open information about the parameter.
To return to the previous screen, press the “Return” button.





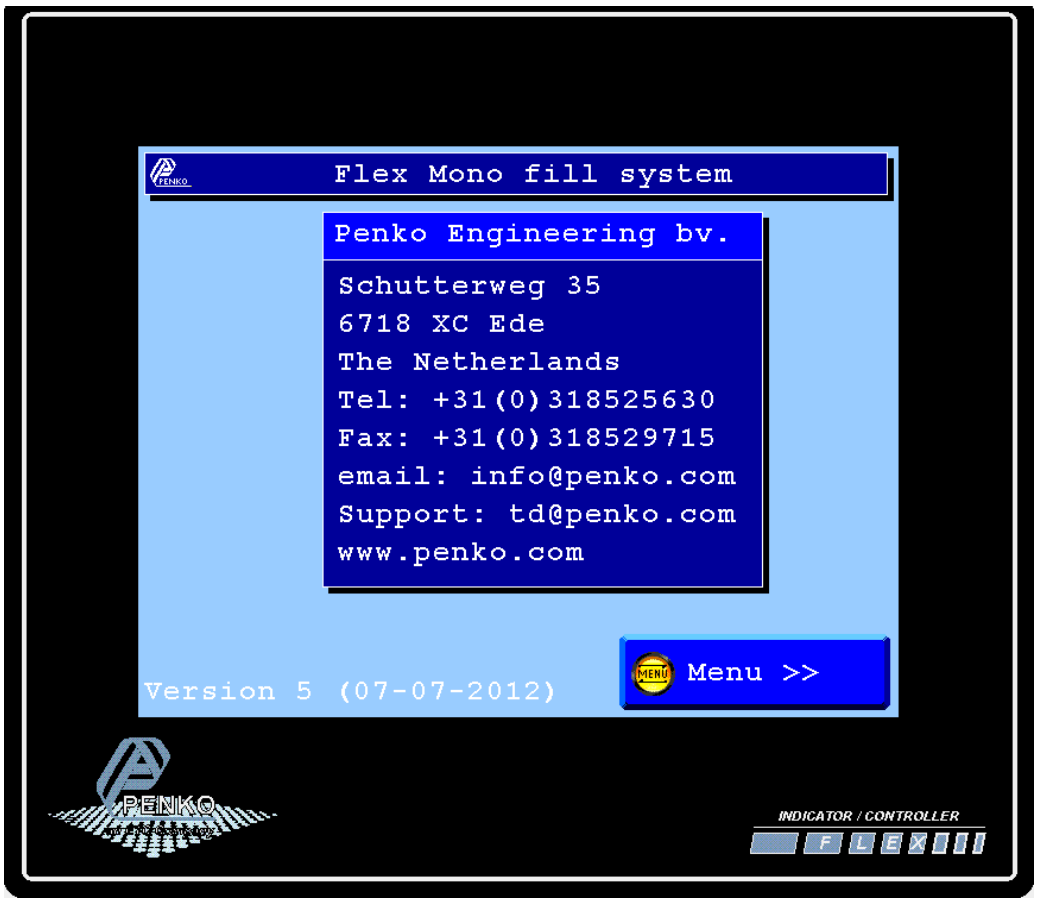




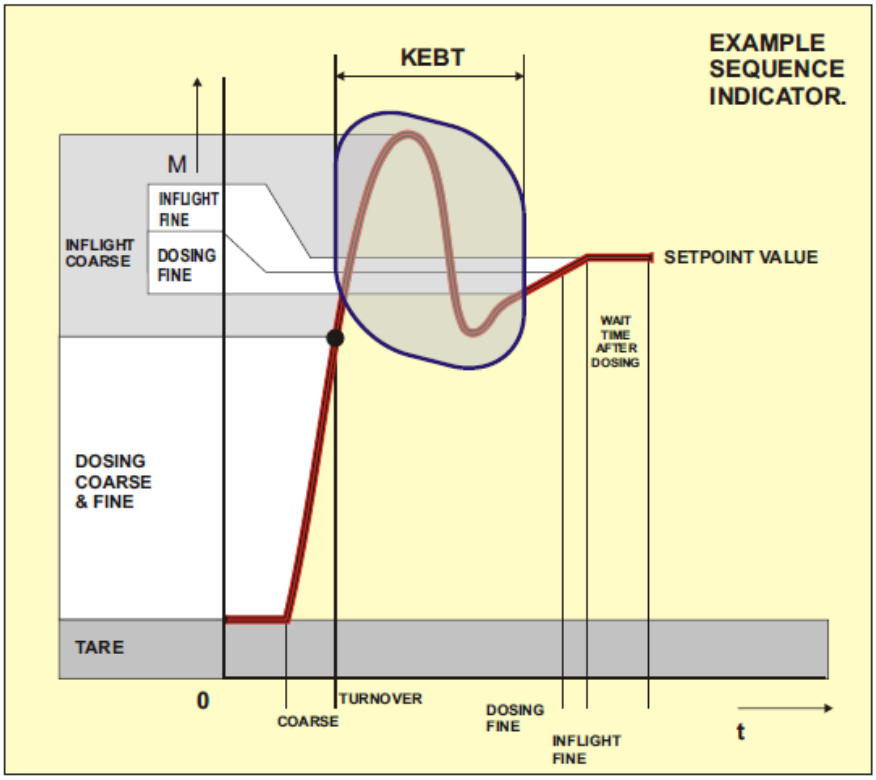


Information.

To view the Penko contact information, press the “information” button from the selection menu.



Sequence example.



Sequence:

1. Start.
2. Wait for start dosing.(ready ON)
3. Start dosing (Input 3)
4. Dosing busy ON.
5. Tare (if Nett dosing is enabled).
6. Coarse and Fine delay.
7. Coarse and Fine dosing.
8. Dosing until Setpoint – Turnover.
9. Coarse dosing OFF.
10. K.E.B.Time.
11. Dosing Fine until Setpoint – Inflight.
12. Fine dosing OFF.
13. Wait for stable and Holdtime parameter.
14. Calculate new inflight.
15. Dosing Busy OFF.
16. Dosing ready ON.
17. Wait till input start dosing OFF.
18. Restart.

Profibus Data Explanation.

Status Information from the Controller:

1) 32 bit signed Integer / float Gross Weight
2) 16 bit status information
   - 1 = tare active
   - 2 = preset tare active
   - 3 = new sample available
   - 4 = calibration invalid
   - 5 = calibration enabled
   - 6 = user certified operation
   - 7 = reserved
   - 8 = reserved
   - 9 = hardware overload detected
   - 10 = overload detected
   - 11 = stable signal
   - 12 = in stable range
   - 13 = zero corrected
   - 14 = center of zero
   - 15 = in zero range
   - 16 = zero tracking posible
3) 16 bit command/Reserve bits
4) 16 bits input status
   - 1 = Start
   - 2 = Stop
   - 3 = Start Dosing
   - Others not use
5) 16 bits output status
   - 201 = Fine Dosing
   - 202 = Coarse Dosing
   - 203 = Ready
   - 204 = Dosing Busy
   - Others not use
6) 32 bits marker status
   - 401 = Positive weighing
   - 402 = Negative weighing
   - 403 = Nett
   - 404 = H+S
   - 405 = H
   - 406 = H/S
   - 407 = S+H
   - 411 = Fine Maker
   - 412 = Coarse marker.
   - Others not in Use

7) 32 bits signed integer, Nett Weight
8) 32 bits signed integer, Last Dosed
9) 32 bits signed integer, Setpoint
10) 32 bits signed integer, Dac Speed

Status Information from the PLC:

1) 16 bits Command/ Reserved Bits
   1 = zero reset command
   2 = zero set command
   3 = tare off
   4 = tare on
   5 = free
   6 = free
   7 = free
   8 = free
2) 32 bits Control markers
   969 = Start
   970 = Start Dosing
   971 = spare 1
   972 = spare 2
   973 = Used Setpoint from Profibus
   974 = Used Turnover from Profibus
   975 = Used Inflight from Profibus
   976 = Used Analoge from Profibus
   Others not in use.
3) 32 bits Signed integer, Setpoint
4) 32 bits Signed integer, Turnover
5) 32 bits Signed integer, Inflight / Coarse Speed
6) 32 bits Signed integer, Fine Speed