PENKO Engineering B.V.

Your Partner for Fully Engineered Factory Solutions

Manual:
Indicator 1020
Penko Engineering 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 Penko 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. If this Instruction Manual is not the correct manual for the Penko product you are using, call 0031(0)318-525630 for a replacement copy. Keep this Instruction Manual in a safe place for future reference.

• If you do not fully understand these instructions, contact your Penko 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 Penko. 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.
1020 Indicator

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.

WWW.PENKO.COM

Penko is an ETC Company

e-mail: info@penko.com
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</tr>
</tbody>
</table>
1020 Indicator

Indication of Display

1. Zero active
2. Tare active
3. Weigher stable
4. Inputs
5. Value
6. Range active
7. Bargraph
8. Outputs

2. Screen Elements

1. Active keys
2. Menu level
3. Traceable Acces Code
4. Calibration Code
2. Explanation of front keys

*Tare*
Check the NET sign (See page 5, Indication of Display, number 2) if there is a tare active.
Press key to set tare. Press key again to reset tare.

*Preset Tare*
Check the NET sign (See page 5, Indication of Display, number 2) if there is a tare active.
Press key to set preset tare. Press Tare key to reset preset tare.

*Enter*
Press key >2s to enter main menu.

*Zero*
Press key <2s to create a new zero level.
Press key >2s to reset zero level to the original zero level.

*Print/Escape*
If in a menu, press key to go to the previous menu. If on main screen, use for printing the value. Press key <2s to print the actual value. Press key >2s to print batch total.

*Up or increase value by 1*

*Down or decrease value by 1*

*Left or change position of cursor*

*Right or change position of cursor*
1020 Indicator

3. Load cell / power connection

PENKO 1020 Basic

The power cable must be looped through a ferrite core 3 times.
Recommended ferrite core:
Würth Elektronik 7427154

Counter inputs <= 1kHz @ 24VDC with 50% duty cycle

This product is intended to be supplied by a Class 2 or Limited Power Source, rate 18 - 32 Vdc, 0.4A@24Vdc.
1020 Indicator

3. Load cell / power connection -continue-

The power cable must be looped through a ferrite core 3 times.

Recommended ferrite core:
Würth Elektronik 7427154

The product is intended to be supplied by a Class 2 or Limited Power Source, rate 18 - 32 Vdc, 0.4A@24Vdc.
## 1020 Indicator

### 3. Load cell / power connection

**PENKO 1020 Profibus**

Profibus connection wiring

<table>
<thead>
<tr>
<th>PIN No.</th>
<th>Symbol</th>
<th>Name</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1:</td>
<td>SHIELD</td>
<td>SHIELD Protective Ground</td>
<td></td>
</tr>
<tr>
<td>2:</td>
<td>RP</td>
<td>Reserved for Power</td>
<td></td>
</tr>
<tr>
<td>3:</td>
<td>B/B</td>
<td>Rxd/TxD-P</td>
<td>Receive/Transmit-Data-P</td>
</tr>
<tr>
<td>4:</td>
<td>CNTR-P</td>
<td>Control-P</td>
<td></td>
</tr>
<tr>
<td>5:</td>
<td>C/C</td>
<td>DGND</td>
<td>Data Ground</td>
</tr>
<tr>
<td>6:</td>
<td>VP</td>
<td>Voltage plus</td>
<td></td>
</tr>
<tr>
<td>7:</td>
<td>RP</td>
<td>Reserved for Power</td>
<td></td>
</tr>
<tr>
<td>8:</td>
<td>A/A</td>
<td>RxD/Txd-N</td>
<td>Receive/Transmit-Data-N</td>
</tr>
<tr>
<td>9:</td>
<td>CNTR-N</td>
<td>Control-N</td>
<td></td>
</tr>
</tbody>
</table>

![Diagram of Profibus connection wiring](image)
1020 Indicator

3. Load cell / power connection -continue-

PENKO 1020 RS232/RS422

The power cable must be looped through a ferrite core 3 times.

Recommended ferrite core:
Würth Elektronik 7427154

Option PENKO 1020 RS232/RS422
Supply 18 - 32 Vdc

This product is intended to be supplied by a Class 2 or Limited Power Source, rate 18 - 32 Vdc, 0.4A@24Vdc.
1020 Indicator

3. Load cell / power connection -continue-

PENKO 1020 RS232

This product is intended to be supplied by a Class 2 or Limited Power Source, rate 18 - 32 Vdc, 0.4A@24Vdc.

Connection example of a printer through RS232 communication.
1020 Indicator

3. Load cell / power connection -continue-

PENKO 1020 RS422

This product is intended to be supplied by a Class 2 or Limited Power Source, rate 18 - 32 Vdc, 0.4A@24Vdc.

Example of communication through RS422 for multiple devices using PV protocol.
1020 Indicator

3. Load cell / power connection -continue-

PENKO 1020 Profinet

The power cable must be looped through a ferrite core 3 times.

Recommended ferrite core:

Würth Elektronik
7427154

This product is intended to be supplied by a Class 2 or Limited Power Source, rate 18 - 32 Vdc, 0.4A@24Vdc.
4. First use of indicator

Make the indicator ready for its first use.

With the button it is possible to remove letters and numbers when the keyboard screen is visible.

4.1. First use of indicator -Weigher Settings-

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

The start

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

Press ENTER for more than 2 seconds to get in to Main Menu screen

Select System setup and press Enter
1020 Indicator

4.1. First use of indicator - Weigher Settings - continue-

Use the DOWN key to select Indicator Setup and press Enter

![Indicator Setup Menu]

**Entering the TAC number**

Select Indicator and press Enter

![Indicator Setup - TAC Enter]

Enter TAC (number) by using the UP key and confirm with Enter

![TAC Entry]

TAC (Traceable Access Code) shows on lower right of the screen.

Every time settings are changed, the TAC automatically levels up by 1.

Example TAC:2
4.1. First use of indicator - Weigher Settings - continue -

**Step size**

Select Weigher and press **Enter**

Use the DOWN key to select **Step** and confirm with **Enter**

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. Step size can be 1, 2, 5, 10, 20, 50, 100, 200.

**Example step size:**
weigher value is 2005 kg

<table>
<thead>
<tr>
<th>Step Size</th>
<th>Weight (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2005</td>
</tr>
<tr>
<td>2</td>
<td>2006</td>
</tr>
<tr>
<td>5</td>
<td>2005</td>
</tr>
<tr>
<td>10</td>
<td>2010</td>
</tr>
</tbody>
</table>
1020 Indicator

4.1. First use of indicator - Weigher Settings - continue -

Use the UP and DOWN key to select the correct step size and confirm with Enter

Decimal point position

Use the DOWN key to select Decimal point and press Enter

The decimal point defines the point of decimal of the weight value.
Choose between 0, 1, 2 or 3 decimals.

Use the UP and DOWN key to select the correct decimal point and confirm with Enter
1020 Indicator

4.1. First use of indicator - Weigher Settings - continue -

**Maxload**

Use the DOWN key to select **Maxload** and press **Enter**.

The max load prevents overload by user. Any weight above this set value will not be shown. If there is an overload, display shows the error code =======.

*Note: In certified mode the max. load is not allowed to be more then the maximum load + 9 scale parts.*

Use the UP, DOWN and LEFT key to enter the reference value. The UP and DOWN keys are used for changing the number (1-9), the LEFT key is used for changing the position of the cursor.

Press ESC twice to go back to the Indicator Setup Menu.
1020 Indicator

4.2. First use of indicator -Calibration-

Calibration settings are used to check, delete and set calibration points.

First, enter the Indicator Setup menu as described on page 14, and press the DOWN key to go to Calibration and press Enter. If you are already in the Indicator Setup menu, use the DOWN key to go to Calibration and press Enter.

Enter CAL code (number) by using the UP key and confirm with Enter. CAL code shows on the lower right of the screen. Every time calibration settings are changed, the CAL code automatically levels up by 1.

Example CAL:0
1020 Indicator

4.2. First use of indicator -Calibration - continue-

Setting calibration points

Use the DOWN key to select **Calibration** and press **Enter**

Select **dual point** and press **Enter**

**Before you proceed, make sure the weigher is unloaded.**

First calibrate the zero point with the unloaded weigher by pressing **Enter**
4.2. First use of indicator - Calibration - continue -

For setting the second calibration point a reference value is needed. For this example, an actual reference weight of 20 kg was used.

Use the DOWN key to select the second calibration point and press **Enter**.

Load the weigher with the reference value and press the **Enter** key.

The calibration was successful when the following screen is visible:

Press the **Esc** key six times to go back to the main screen.
5. Menu Settings

Press ENTER for more than 2 seconds to get in to Main Menu screen

> 2 s

The main menu options are: System Setup, Totals, Info and Certified Info.

To enter one of the menu options, select the correct option with the UP or DOWN key and press Enter

5.1. Menu Settings -System Setup-

System Setup

The System Setup options are Port Setup, Indicator Setup, In/Outputs, Password, Screen Setup, Set Clock, Printer, System Recall and Software update.
1020 Indicator

5.1.1. Menu Settings - System Setup - Port Setup-

Scroll through the menu options by using the UP or DOWN key and press Enter to select the chosen option.

**Port Setup**

In this menu, all communication ports and protocols can be set. The options are Ethernet Setup, RS232 Port, RS422 Port, Profibus Setup.

**Ethernet Setup**

In this menu, all settings for the Ethernet comport can be set.
1020 Indicator

5.1.1. Menu Settings - System Setup - Port Setup - continue -

Scroll through the Ethernet Setup menu using the UP or DOWN key. Press Enter for editing the setting.

Settings in the Ethernet Setup menu

<table>
<thead>
<tr>
<th>Feature</th>
<th>Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>IP Number</td>
<td>192.168.151.112</td>
</tr>
<tr>
<td>Subnet Mask</td>
<td>255.255.255.000</td>
</tr>
<tr>
<td>Gateway</td>
<td>000.000.000.000</td>
</tr>
<tr>
<td>Speed</td>
<td>Auto</td>
</tr>
<tr>
<td>Buslink Address</td>
<td>Off</td>
</tr>
<tr>
<td>Buslink Subaddress</td>
<td>none</td>
</tr>
</tbody>
</table>

ASCII over Ethernet

Starting at firmware version 1.4.0.9.0.5 the PENKO ASCII protocol is available over TCP at port 23. This feature is automatically enabled when both RS232 and RS422 are not set to ASCII.

Set the speed of the Ethernet communication. Choose between 10 Mbps, 100 Mbps and Auto.

Set the Buslink Address. Up to 8 devices can communicate with each other, sharing inputs, outputs, markers and indicator. Choose between Off and 1-8.
5.1.1. Menu Settings - System Setup - Port Setup - continue -

**RS232 Port**

In this menu, all settings for the RS232 comport can be set.

- **Protocol**
- **Printer**
- **Address**
- **Stopbits**

Scroll through the RS232 Port menu using the UP or DOWN key. Press Enter for editing the setting.

Select the communication protocol. Choose between **None**, **Printer**, **ASCII**, **NPV Slave**, **Modbus RTU** and **Modbus ASCII**.

Select an address to identify the device in a configuration with multiple devices. Choose a **number between 0 and 255**.

Select the number of needed stopbits for the protocol. Choose between **1** and **2**.
1020 Indicator

5.1.1. Menu Settings - System Setup - Port Setup - continue -

**Parity**

*none*

Select a parity for the protocol. Choose between **None, Odd, Even, Mark** and **Space**.

**Baudrate**

*9600*

Select a speed for the protocol. Choose between **1200, 2400, 4800, 9600, 19200, 38400, 57600** and **115200** pbs.

**Indicator**

*0*

Only active when protocol ASCII is chosen. Selected indicator will be sent out over the communication port. Choose a number between **0** and **100**. For explanation of the options, see appendix I.

**RS422 Port**

In this menu, all settings for the RS422 communication port can be set.

Scroll through the RS422 Port menu using the UP or DOWN key. Press Enter for editing the setting.
1020 Indicator
5.1.1. Menu Settings -System Setup - Port Setup - continue-

Settings in the RS422 menu

**Protocol**
NPV Slave

Select the communication protocol. Choose between **None**, **Printer**, **ASCII**, **NPV Slave**, **Modbus RTU** and **Modbus ASCII**.

**Address**
0

Select an address to identify the device in a configuration with multiple devices. Choose a **number between 0 and 255**.

**Stopbits**
1

Select the number of needed stopbits for the protocol. Choose between **1** and **2**.

**Parity**
none

Select a parity for the protocol. Choose between **None**, **Odd**, **Even**, **Mark** and **Space**.

**Baudrate**
9600


**Indicator**
0

Only active when protocol ASCII is chosen. Selected indicator will be sent out over the communication port. Choose a **number between 0 and 100**.

For explanation of the options, see appendix I.
1020 Indicator

5.1.1. Menu Settings - System Setup - Port Setup - continue -

**CAN Port**

In this menu, all settings for the CAN comport can be set.

Scroll through the CAN Port menu using the UP or DOWN key. Press Enter for editing the setting.

- **Protocol**
  - Choose between None and Buslink.

- **Buslink Address**
  - Up to 8 devices can communicate with each other, sharing inputs, outputs, markers and indicators. Choose between 1-8.

- **Buslink Subaddress**
  - When using a subaddress, up to 40 devices can communicate with each other. Choose between 1-5.
1020 Indicator

5.1.1. Menu Settings - System Setup - Port Setup - continue -

**Baudrate**

250 kbps

Select a speed of the protocol. Choose between 100, 125, 250 and 500 kbps.

*Profibus Setup - Only available when Profibus option board is installed.*

In this menu, all settings for the Profibus comport can be set.

**Profibus Setup**

Channel

1

Format

Floating Point

Scroll through the Profibus Setup menu using the UP or DOWN key. Press Enter for editing the setting.

Select a channel to identify the device in the used configuration. Choose a number between 0 and 255.

Select the format in which the profibus value is shown. Choose between **Integer** (direct value without decimal point) and **Floating Point** (real value with decimal point).
1020 Indicator

5.1.2. Menu Settings - System Setup - Indicator Setup -

Indicator Setup

The Indicator Setup options are Indicator, Calibration and Recall.

![Indicator Setup Menu]

Scroll through the menu options by using the UP or DOWN key and press Enter to select the chosen option.

In this menu, all settings for the indicator can be set. Enter the TAC code to enter the menu.

**Entering the TAC number**

Select **Indicator** and press **Enter**
Enter TAC (number) by using the UP key and confirm with Enter

TAC (Traceable Access Code) shows on lower right of the screen. Every time settings are changed, the TAC automatically levels up by 1. Example TAC:2

The Indicator menu is now visible.

The Indicator menu options are Weigher, Stable condition, Zero tracking, Range/Interval and Filter.

Scroll through the menu options by using the UP or DOWN key and press Enter to select the chosen option.
1020 Indicator
5.1.2. Menu Settings - System Setup - Indicator Setup - continue -

**Weigher**

In this menu, all settings for the weigher can be set.

![Weigher Menu](image)

Scroll through the Weigher menu using the UP or DOWN key. Press Enter for editing the setting.

**Settings in the Weigher menu**

- **Name**
  - Give the PENKO 1020 a unique name within the application so it's easy to recognize in the process or in the factory.

- **Unit label**
  - kg
  - Define the unit of measurement.

- **Step**
  - 1
  - 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. Step size can be 1, 2, 5, 10, 20, 50, 100, 200.
**1020 Indicator**

5.1.2. Menu Settings - System Setup - Indicator Setup - continue-

Example step size: weigher value is 2005 kg

<table>
<thead>
<tr>
<th>Step Size</th>
<th>Weight (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2005</td>
</tr>
<tr>
<td>2</td>
<td>2006</td>
</tr>
<tr>
<td>5</td>
<td>2005</td>
</tr>
<tr>
<td>10</td>
<td>2010</td>
</tr>
</tbody>
</table>

*Decimal point*

*none*

The decimal point defines the point of decimal of the weight value.

Choose between 0, 1, 2 or 3 decimals.

*Operation Mode*

*Industrial*

Select the operation mode of the PENKO 1020. Choose between **Industrial** or **Certified**. Certified must be chosen when the unit is used for measuring for trade aims.

In the industrial mode it is always possible to change the indicator parameters and calibration. In the certified mode the unit will be sealed by marks and also the weighing parameters will be blocked to satisfy to calibration laws.

*Note: In certified mode the zero band = 4% (+2 and –2%). Also zero suppressing is disabled.*

*Max Load*

*10009 kg*

Set maximum load to prevent overload by user. The PENKO 1020 will not show any weight above the set value. Choose a **weight between -8388608 and +8388607**.

*Note: In certified mode the max. load is not allowed to be more then the maximum load + 9 scale parts.*
1020 Indicator

5.1.2. Menu Settings - System Setup - Indicator Setup - continue-

Stable condition

The PENKO 1020 will give a stable signal when the weigher value is stable within the set range and time.

Stable condition

Range
2 kg

Time
1.00 s

Scroll through the Weigher menu using the UP or DOWN key. Press Enter for editing the setting.

Settings in the Stable condition menu

Range
2 kg

Set the range the weigher has to be in for the set time to give a stable signal. Choose a weight between 0 and 8388607.

Time
1.00 s

Set the time the weigher has to be within the range to give the stable signal. Choose a time between 0.00s and 100.00s.
1020 Indicator

5.1.2. Menu Settings - System Setup - Indicator Setup - continue-

Zero tracking

Zero tracking is able to tune the zero point back to zero when the scale becomes dirty.

Scroll through the Zero tracking menu using the UP or DOWN key. Press Enter for editing the setting.

Settings in the Zero tracking menu

**Range**

- **0 kg**

Set the maximum offset to tune back to zero. Choose a weight between 0 and 8388607.

**Step**

- **0 kg**

Set the step size that will be tuned every time when the offset is within the maximum range. Choose a step size between 0 and 8388607.

**Time**

- **0.00 s**

Set the time that the signal has to be within the range to tune 1 step back to zero. Choose a time between 0.00s and 10.00s.
1020 Indicator

5.1.2. Menu Settings - System Setup - Indicator Setup - continue-

Range/Interval

Set the indicator to change its step size when the weigher signal reaches a certain value.

Scroll through the Range/Interval menu using the UP or DOWN key. Press Enter for editing the setting.

Settings in the Range/Interval menu

Set the number of divisions when the indicator has to display with the next step size. Auto ranging is disabled when range size is set to 0. Choose a value between 0 and 8388607.

Set the biggest step size allowed. Choose between 1, 2, 5, 10, 20, 50, 100 and 200.
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 to certified, the maximum preset tare is equal to the first level of the autorange. In this example the preset tare is valid to 100.

<table>
<thead>
<tr>
<th>Displayed range</th>
<th>Step size</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-100</td>
<td>1</td>
</tr>
<tr>
<td>100-200</td>
<td>2</td>
</tr>
<tr>
<td>200-500</td>
<td>5</td>
</tr>
<tr>
<td>500-1000</td>
<td>10</td>
</tr>
<tr>
<td>1000-2000</td>
<td>20</td>
</tr>
<tr>
<td>2000-5000+</td>
<td>50</td>
</tr>
</tbody>
</table>

Choose between Multi Range and Multi Interval.
Multi Range = the highest shown step size will be reset after the signal has been lower or equal to zero.
Multi Interval = the highest shown step size will be reset after the signal reaches the previous range.
### 1020 Indicator

#### 5.1.2. Menu Settings - System Setup - Indicator Setup - continue-

**Filter**

Filters are used because of the vibrations present in an industrial environment.

<table>
<thead>
<tr>
<th>Filter Menu</th>
<th>Overall Settings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Digital</td>
<td></td>
</tr>
<tr>
<td>Display</td>
<td></td>
</tr>
</tbody>
</table>

Scroll through the Filter menu using the UP or DOWN key. Press Enter for editing the setting.

**Settings in the Filter menu**

**Overall**

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, -6dB, -12dB, -24dB, -30dB, -36dB, -42dB and -50dB**.

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

**Digital**

This filter is a 2nd order filter. The filter effects all signals up to and including the cutoff frequency. Within this menu, serveral options can be adjusted.
1020 Indicator

5.1.2. Menu Settings - System Setup - Indicator Setup - continue-

Digital Filter
Static App.

Cutoff Frequency

1.0 Hz
50 Hz

Scroll through the Filter menu using the UP or DOWN key. Press Enter for editing the setting.

Settings in the Filter– Digital Menu

Choose between None, Dynamic Application and Static Application.

Dynamic application = used when the weighing signal is constantly changing fast.

Static application = used when weighing signal is slowly changing.

Cutoff Frequency

1.0 Hz

Determines the range used for filtering the signal. Choose between 1.0Hz, 1.4Hz, 2.5Hz, 5.0Hz and 10Hz.

Frequency

50 Hz

Calculate the greatest common divisor of the disturbance frequency. Choose a value between 1Hz and 200Hz.

Display

The display filter will damp the weigher signal to the display to get a calm display view.
5.1.2 Menu Settings - System Setup - Indicator Setup - continue-

Scroll through the Filter menu using the UP or DOWN key. Press Enter for editing the setting.

Settings in the Filter - Display Menu

Set the band where the filter is active. Choose a weight between –8338608 and 8668608.

Set the strength of the filter. 0 means no effect and –50 is the strongest damping. Choose between 0dB, -6dB, -12dB, -18dB, -30dB, -36dB, -42dB and -50dB.

Set the refreshment speed of the filter. Choose between 1, 2, 3, 5, 10, and 25 updates/s.

Set the band within the indicator will show 0. When the indicator is certified, this parameter will be disabled. Choose a weight between
1020 Indicator
8388608 and 8388607.
In this menu, the calibration can be set. Enter the CAL code to enter the menu.

**Entering the CAL number**
Select **Calibration** and press **Enter**

Enter **CAL (number)** by using the UP key and confirm with **Enter**.

CAL code shows on the lower right of the screen. Every time calibration settings are changed, the CAL code automatically levels up by 1.

*Example CAL:0*
5.1.2. Menu Settings - System Setup - Indicator Setup - continue-

The calibration menu is now visible:

```
Calibration
Show
Calibrate
Deadload
Geo-CAL
Range
```

The calibration menu options are Show, Calibrate, Deadload, Geo-CAL and Range.

Scroll through the menu options by using the UP and DOWN key and press Enter to select the chosen option.

**Show**

This menu shows all calibration information

```
Show
TAC 2
CAL 12
Points 2
Sample 445258
Weight 1020
Weight x10 1019.8
```

**Explanation of the Show menu**

**TAC**: ‘Traceable access code’ is the number of times the Indicator menu is entered. 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.
5.1.2. Menu Settings - System Setup - Indicator Setup - continue -

**CAL**: ‘Calibration 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.

**Points**: shows the amount of existing calibration points. It’s possible to have more than 2 calibration points. This is mostly used if the weigher signal is not linear.

**Sample**: shows the direct value of the analog digital converter (ACD).

**Weight**: shows the actual weigher value.

**Weigher x10**: shows the actual weigher value + an extra digit, so this weigher value is 10 times more accurate then the normal value. This value is needed when the indicator gets certified.

**Calibrate**

In this menu the calibration points can be set.

Scroll through the Calibrate menu using the UP or DOWN key. Press Enter for editing the setting.
1020 Indicator

5.1.2. Menu Settings - System Setup - Indicator Setup - continue-

**Dual Point**

A calibration with 2 points.

<table>
<thead>
<tr>
<th>Weight</th>
<th>Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 kg</td>
<td>43987</td>
</tr>
<tr>
<td>1020 kg</td>
<td>445254</td>
</tr>
</tbody>
</table>

See page 11, 12 and 13 for calibration instructions.

**Multi Point**

A calibration with more than 2 points. Calibration upto 10 points is possible. Multi point calibration is mostly used if the weigher signal is not linear. Also existing points can be deleted or replaced in this menu.

<table>
<thead>
<tr>
<th>Weight</th>
<th>Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 kg</td>
<td>43987</td>
</tr>
<tr>
<td>1020 kg</td>
<td>445254</td>
</tr>
</tbody>
</table>

Multipoint calibration instructions

**Before you proceed, make sure the weigher is unloaded.**

Deleting an existing calibration point:
1020 Indicator

5.1.2. Menu Settings -System Setup - Indicator Setup - continue-

Select the ‘to be deleted’ calibration point by using the UP or DOWN key, press 0 to remove the calibration points and confirm by Enter.

Confirm deletion by Enter of cancel deletion by ESC.

Adding a new calibration point:

Select ‘Add New’ by using the DOWN key and confirm by Enter.
1020 Indicator

5.1.2. Menu Settings - System Setup - Indicator Setup - continue-

**Calibrate the zero point:**
Make sure the weigher is unloaded and press Enter.

**Calibration second or higher calibration point:**
An actual reference value is needed. For this example, a reference value of 1020 kg was used.

![MultiPoint](image)

Use the UP, DOWN and LEFT key to enter the reference value. The UP and DOWN keys are used for changing the number (1-9), the LEFT key is used for changing the position of the cursor.

![Load weigher](image)

Load the weigher with the reference value and press the Enter key.

The calibration was successful when the following screen is visible:
1020 Indicator

5.1.2. Menu Settings - System Setup - Indicator Setup - continue-

Repeat the process from *Calibration second or higher calibration point* for each extra calibration point.

Press the **Esc** key six times to go back to the main screen.

Repeat the process from *Calibration second or higher calibration point* for each extra calibration point.

Press the **Esc** key six times to go back to the main screen.

**Transducers**

Calibration without using an actual weight. It is based on the information provided with new load cells.

When this function is used, calibration with weights is disabled.

It is possible to set up a maximum of load cells. To set up the used load cells choose Transducer 1, 2, 3 or 4.

---

**Settings in the Transducer menu**

<table>
<thead>
<tr>
<th>Transducer</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Output</strong></td>
<td>0.00000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Zero Balance</strong></td>
<td>0.00000</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The output value will be provided by the supplier of the load cells.

The zero balance value will be provided by the supplier of the load cells.
### 1020 Indicator

#### 5.1.2. Menu Settings - System Setup - Indicator Setup - continue-

**Indicator Setup**

<table>
<thead>
<tr>
<th>Type</th>
<th>None</th>
</tr>
</thead>
</table>

Enter the type of load cells.

**Deadload**

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.

**Make sure the weigher is empty.** Press Enter to enter weight. Set the deadload value by using the UP and DOWN key and confirm with Enter.
1020 Indicator

5.1.2 Menu Settings - System Setup - Indicator Setup - continue -

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.

**Geo-CAL**

In this menu, the geometric location and height of the place where the load cells are fabricated and the recent location must be filled in after calibrating with the Transducer menu.

Scroll through the Geo-CAL menu using the UP or DOWN key. Press Enter for editing the setting.
1020 Indicator

5.1.2 Menu Settings - System Setup - Indicator Setup - continue -

Settings in the Geo-CAL menu

Origin

Edit the Latitude and Elevation of the place of fabrication of the load cells.

![Image of Origin Location]

Scroll through the Geo-CAL menu using the UP or DOWN key. Press Enter for editing the setting.

Settings in the Geo-CAL - Origin Location menu

Latitude
52.00 degrees

Enter your geographical latitude

Elevation
0 m

Enter your geographical elevation
1020 Indicator

5.1.2 Menu Settings - System Setup - Indicator Setup - continue-

Location

Edit the Latitude and Elevation of the place of installation.

![Install Location](image)

Latitude
52.00 degrees

Elevation
0 m

Coordinates on southern hemisphere are entered as negative values

Scroll through the Geo-CAL install Location menu using the UP or DOWN key. Press Enter for editing the setting.

Settings in the Geo-CAL - Install Location menu

Latitude
52.00 degrees

Enter the geographical latitude of the place of installation.

Elevation
0 m

Enter the geographical elevation of the place of installation
Range

In this menu the range for the load cells input can be set.

**Warning**

Changing the range Invalidates Geo-CAL and Transducer Calibration

ENTER = Ok
ESC = Cancel

Enter the Range menu by pressing Enter of

Scroll through the Range menu using the UP or DOWN key. Press Enter for editing the setting.

**Settings in the Range menu**

<table>
<thead>
<tr>
<th>Mode</th>
<th>Unipolar</th>
</tr>
</thead>
</table>

Choose between Unipolar mode and Bipolar mode.

In Unipolar mode the input range for load cells is 0 mV/V to + selected value in mV/V.

In Bipolar mode the input range for load cells is doubled below zero.
5.1.2. Menu Settings -System Setup - Indicator Setup - continue-

**Range**

2 mV/V

Set the input range for load cells. Choose between 1 mV/V, 1.5 mV/V, 2 mV/V, 2.5 mV/V and 3 mV/V.

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

**Offset**

0

Set an ADC value offset. This can be used when the weigher gets out of its ADC range. Choose a value between –500000 and +500000.

For more information, contact PENKO.

**Recall**

This menu allows to set all indicator parameter back to factory settings.  
*Note: the calibration values remain in the indicator memory.*

Enter the TAC code to enter the menu.

**Enter TAC (number)** by using the UP key and confirm with **Enter**.

*TAC (Traceable Access Code) shows on the lower right of the screen. Every time settings are changed, the TAC code automatically levels up by 1.  
Example TAC:2*
1020 Indicator

5.1.3. Menu Settings -System Setup - In/Outputs-

Confirm the recall by pressing Enter or leave the menu by pressing ESC.

In/Outputs

In this menu, the inputs and outputs can be set. The In/Output options are Inputs, Outputs/Levels, DAC Setup, DAC Calibration and DAC Test.

The DAC settings are only available when DAC option board is installed.

Scroll through the In/Outputs menu using the UP or DOWN key. Press Enter for editing the setting.

Inputs

In this menu, the inputs can be set. The PENKO 1020 has 3 digital inputs. All inputs can be configured as different functions.
1020 Indicator

5.1.3. Menu Settings - System Setup - In/Outputs -

For input 1, 2 and 3, enter the correct configuration.
For explanation of the options, see appendix II.

Outputs/Levels

In this menu, the outputs can be set. The PENKO 1020 has 4 digital outputs.

Scroll through the Outputs/Levels menu using the UP or DOWN key. Press Enter for editing the setting.
### 1020 Indicator

#### 5.1.3. Menu Settings - System Setup - In/Outputs - continue-

**Settings in the Outputs/Levels menu**

<table>
<thead>
<tr>
<th>Output 1</th>
<th>Select the output. Choose between 1, 2, 3 and 4.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mode</td>
<td>Select the weigher mode the output has to switch on. For explanation of the options, see appendix III.</td>
</tr>
<tr>
<td>Weight</td>
<td></td>
</tr>
<tr>
<td>Level 0 kg</td>
<td>Set the level at which the output will switch on. Choose a weight between -8388608 and +8388607.</td>
</tr>
<tr>
<td>Hysteresis 10 kg</td>
<td>Set the hysteresis for the outputs. See diagrams on the next page. Choose a value between -8388608 and +8388607.</td>
</tr>
</tbody>
</table>

**Positive hysteresis**
Contact opens at or above setpoint value. Contact closed below setpoint value minus hysteresis.

**Negative hysteresis**
Contact closes above setpoint value plus hysteresis. Contact opens at or below setpoint value.
Positive hysteresis

Negative hysteresis
5.1.3. Menu Settings - System Setup - In/Outputs - continue -

**DAC Setup**

In this menu, all DAC parameters can be set.

Select the indicator. Choose a number between 1 and 30.

Select the minimum value. Choose a value between -8388608 and +8388607.

Select the maximum value. Choose a value between -8388608 and +8388607.

Select the needed output signal
1020 Indicator

5.1.3. Menu Settings - System Setup - In/Outputs - continue-

Choose between the following options:

**RAW**: Register the value from 0 to 6500 parts.

- **0-24mA**: Input value 0 to 24mA will be calculated from 0 to 100,00%.
- **0-20mA**: Input value 0 to 20mA will be calculated from 0 to 100,00%.
- **4-20mA**: Input value 4 to 20mA will be calculated from 0 to 100,00%.
- **4-24mA**: Input value 4 to 24mA will be calculated from 0 to 100,00%.

**DAC Calibration**

In this menu, the DAC can be calibrated using a mA meter.

**Calibration**:

Connect the mA meter to the DAC output. The output of the 1020 is set to 0mA and press Enter to continue.

1. Press Enter. Use the UP, DOWN and LEFT key to enter the reference value. The UP and DOWN keys are used for changing the number (1-9), the LEFT key is used for changing the position of the cursor. Confirm with Enter.
1020 Indicator

5.1.3. Menu Settings - System Setup - In/Outputs - continue-

The output 1020 is set to 24mA. Press Enter to continue.

Use the UP, DOWN and LEFT key to enter the reference value. The UP and DOWN keys are used for changing the number (1-9), the LEFT key is used for changing the position of the cursor. Confirm with Enter.

**DAC Test**

In this menu, the DAC can be tested.
1020 Indicator

5.1.4. Menu Settings -System Setup - Password-

Setting in the DAC Test menu

**Minimum**
Sets the DAC output to the minimum value.

**Level**
0.00 %

Enter a percentage of the DAC output level.

**Maximum**
Sets the DAC output to the maximum value.

**Password**
In this menu, a password to block access to certain parts of the menu can be set.

Enter Password. **This is default turned off so press Enter to go to the Password menu.** If there is a password set up fill it in here and press Enter.

Use the UP, DOWN, LEFT and RIGHT key to enter the password. The UP and DOWN keys are used for changing from line, the LEFT and RIGHT key is used for changing the position of the cursor within the line. When the correct character is chosen, press Enter. Confirm the complete password by pressing Enter when the cursor is set on OK.

1. OK for confirming password
2. Walk through password going right
3. Walk through password going left
4. Space
If different characters are required, press the Preset Tare key. Additional character set are:

Passwords

A password for certain parts of the menu can be set.

Scroll through the Passwords menu using the UP or DOWN key. Press Enter for editing the setting.
1020 Indicator

5.1.4. Menu Settings - System Setup - Password - continue-

Setting in the Password menu

**System Setup**

Set a password for System Setup. This will block all menu items.

Use the UP, DOWN, LEFT and RIGHT key to enter the password. The UP and DOWN keys are used for changing from line, the LEFT and RIGHT key is used for changing the position of the cursor within the line. Different character set are acquired by pressing the Preset Tare key. Confirm the password with Enter.

**Set Time/Date**

Set a password for Time/Date. This will block the option to change the time and date.

Default setting for this password is 1234.

Delete the default password by pressing the Zero key 4 times.

Use the UP, DOWN, LEFT and RIGHT key to enter the new password. The UP and DOWN keys are used for changing from line, the LEFT and RIGHT key is used for changing the position of the cursor within the line. Different character set are acquired by pressing the Preset Tare key.

Confirm the password with Enter.
1020 Indicator

5.1.5. Menu Settings -System Setup - Screen Setup-

**Screen Setup**
In this menu, all screen options, button options, language and buzzer can be set.

Scroll through the Screen Setup menu using the UP or DOWN key. Press Enter for editing the setting.

**Buttons**
In this menu, extra functions for the keys can be set.

Scroll through the Screen Setup menu using the UP or DOWN key. Press Enter for editing the setting.
### 1020 Indicator

#### 5.1.5. Menu Settings - System Setup - Screen Setup - continue-

**Settings in the Buttons menu**

<table>
<thead>
<tr>
<th>Button</th>
<th>Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up</td>
<td>none</td>
</tr>
<tr>
<td>Down</td>
<td>Set Levels</td>
</tr>
<tr>
<td></td>
<td>Left</td>
</tr>
<tr>
<td></td>
<td>none</td>
</tr>
<tr>
<td>Right</td>
<td>none</td>
</tr>
<tr>
<td>Enter</td>
<td>none</td>
</tr>
</tbody>
</table>

For these 5 keys, the extra functions to choose from are the same.

<table>
<thead>
<tr>
<th>Button</th>
<th>Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zero</td>
<td>On</td>
</tr>
</tbody>
</table>

For explanation of the options, see appendix II.

<table>
<thead>
<tr>
<th>Button</th>
<th>Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tare</td>
<td>On</td>
</tr>
</tbody>
</table>

Turn the Zero key on or off.

<table>
<thead>
<tr>
<th>Button</th>
<th>Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preset Tare</td>
<td>On</td>
</tr>
</tbody>
</table>

Turn the Tare key on or off.

<table>
<thead>
<tr>
<th>Button</th>
<th>Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Esc/Print</td>
<td>On</td>
</tr>
</tbody>
</table>

Turn the Preset Tare key on or off.

Turn the ECS/Print key on or off.
1020 Indicator

5.1.5. Menu Settings - System Setup - Screen Setup - continue-

Led Bar
In this menu, the bargraph can be set.

Scroll through the Led Bar menu using the UP or DOWN key. Press Enter for editing the setting.

Set- tings in the Led Bar menu

Set the style of the Bar. Options:

Bar

Dot

Bar Peak

Dot Peak
5.1.5. Menu Settings - System Setup - Screen Setup - continue -

Bar Reversed

Set the minimum value of the bar. Choose a weight between -8388608 and +8388607.

Dot Reversed

Set the lower margin of the bar. Choose a value between -8388608 and +8388607.

Set the upper margin of the bar. Choose a value between -8388608 and +8388607.

Set the maximum value of the bar. Choose a value between -8388608 and +8388607.

Set the step size of the bar. Choose a value between -8388608 and +8388607.

Example:
Min = 0 | Lower = 2.000 | Upper = 9.000 | max = 10.000 | Step = 1.000 | Weigher = 3.000
1020 Indicator

5.1.5. Menu Settings - System Setup - Screen Setup - continue-

**Screen options**

In this menu, the all screen options can be set.

Scroll through the Screen options menu using the UP or DOWN key. Press Enter for editing the setting.

- **Decimal**
  - Select the correct sign for decimal. Choose between a **comma** or a **point**.

- **Keybeep**
  - On

- **Language**
  - English

Set display language. Choose between **English**, **German**, **French** or **Dutch**.

- **Menu Timer**
  - 0 s

Set time for auto escape menu. Any value lower than 10 seconds disables the auto escape function. Choose a time between **0 seconds** and **240 seconds**.
1020 Indicator

5.1.6. Menu Settings -System Setup - Set Clock-

Select the type of indicator that is displayed on the screen. For explanation of the options, see appendix III.

Set Clock
In this menu, date and time can be set.

Scroll through the Set Clock menu using the UP or DOWN key. Press Enter for editing the setting.

Set time (hh:mm:ss).
Use the UP, DOWN, LEFT and RIGHT key to set the time. The UP and DOWN keys are used for changing the value, the LEFT and RIGHT key is used for changing the position of the cursor. Confirm the correct time with Enter.
Set date (dd-mm-yy).
Use the UP, DOWN, LEFT and RIGHT key to set the time. The UP and DOWN keys are used for changing the value, the LEFT and RIGHT key is used for changing the position of the cursor. Confirm the correct time with Enter.

Printer
In this menu, all printer, header and footer settings can be set.

Scroll through the Printer menu using the UP or DOWN key. Press Enter for editing the setting.
1020 Indicator

5.1.7. Menu Settings - System Setup - Printer - continue-

**Printer Settings**
In this menu, the printer's settings can be set.

**Printer Settings**

**Printer Layout**

**Ticket**

**Columns**
40

**Rows**
24

Scroll through the Printer Settings menu using the UP or DOWN key. Press Enter for editing the setting.

**Set-**

**tings in the Printer Settings menu**

**Ticket** or **Line**.

**Example Line:**

<table>
<thead>
<tr>
<th>Line</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>22</td>
<td>2,114</td>
</tr>
<tr>
<td>23</td>
<td>2,114</td>
</tr>
<tr>
<td>24</td>
<td>2,115</td>
</tr>
<tr>
<td>25</td>
<td>2,115</td>
</tr>
<tr>
<td>26</td>
<td>2,115</td>
</tr>
<tr>
<td>27</td>
<td>2,115</td>
</tr>
</tbody>
</table>

**Example Ticket:**

<table>
<thead>
<tr>
<th>Line</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Programmable header</strong></td>
<td>--------------</td>
</tr>
<tr>
<td><strong>04-07-41 14:43.51</strong></td>
<td></td>
</tr>
<tr>
<td><strong>NR:</strong> 28</td>
<td></td>
</tr>
<tr>
<td><strong>N</strong> 2,114 kg</td>
<td></td>
</tr>
<tr>
<td><strong>T</strong> 0,000 kg</td>
<td></td>
</tr>
<tr>
<td><strong>B/G</strong> 2,114 kg</td>
<td></td>
</tr>
<tr>
<td><strong>Programmable footer</strong></td>
<td></td>
</tr>
</tbody>
</table>
5.1.7. Menu Settings -System Setup - Printer - continue-

Set the number of columns. Choose a number between 0 and 80.

Set the number of rows. Choose a number between 0 and 80.

Set the margin. Choose a number between 0 and 80.

Set the newline. Choose between None, CR, LF, CR+LF, CR+00 and Zebra ZPL II. For examples of the options, see your printer manual.

Set the communication port used for the printer. Choose None, RS232 Port, RS422 Port, IP Number or Alibi Memory.

Header

In this menu, the headers for the printer ticket can be set. In total, 4 headers for printer tickets can be set.
1020 Indicator
5.1.7. Menu Settings - System Setup - Printer - continue -

Setting in the Header menu

For Line 1, 2, 3 and 4 enter the desired printer header. Maximum number of characters per line: 32.

Use the UP, DOWN, LEFT and RIGHT key to enter the header. The UP and DOWN keys are used for changing from line, the LEFT and RIGHT key is used for changing the position of the cursor within the line. When the correct character is chosen, press Enter. If a mistake is made, delete with the ZERO key. Confirm the complete password by pressing Enter when the cursor is set on OK.

1. OK for confirming header
2. Walk through header going left
3. Walk through header going right
4. Space

If different characters are required, press the Preset Tare key.
In this menu, the footers for the printer ticket can be set. In total, 4 footers for printer tickets can be set.

**Setting in the Footer menu**

For Line 1, 2, 3 and 4 enter the desired printer footer. Maximum number of characters per line: 32

Use the UP, DOWN, LEFT and RIGHT key to enter the footer. The UP and DOWN keys are used for changing from line, the LEFT and RIGHT key is used for changing the position of the cursor within the line. The ZERO key is used for deleting a character. Different character set are obtained by pressing the Preset Tare key. Confirm the footer with Enter.
**1020 Indicator**

5.1.7. Menu Settings - System Setup - Printer - continue-

*Ethernet Printing*

In this menu, the ethernet printer can be connected.

*Settings in the Ethernet printing menu*

Set IP number for ethernet printer.

Use the UP, DOWN, LEFT and RIGHT key to set the time. The UP and DOWN keys are used for changing the value, the LEFT and RIGHT key is used for changing the position of the cursor. Confirm the correct time with Enter.
5.1.8. Menu Settings -System Setup - Software Recall-

**System Recall**

This menu allows to set all indicator parameters back to factory settings.
See page 92 for factory settings.

*Note: calibration values remain in memory.*

Confirm the recall by pressing **Enter** or leave the menu by pressing **ESC**.

Starting at firmware version 1.5.0.9.0.3 a backup of the device configuration can be made within the device.

A password is required for the backup. Contact PENKO for this password.

When using Pi Mach II manage to make a backup, first enter this password in the service code field.
1020 Indicator

5.1.8. Menu Settings - System Setup - Software Recall - continue -

Confirm the backup:

**Restore Parameters** only restores the non-certified parameters.

**Restore Full** restores all parameters.

The device restarts after a restore action.
Software Update

This menu sets the PENKO 1020 in USB update mode. Continue by pressing **Enter** or leave the menu by pressing **ESC**.

The PENKO 1020 can be updated through ethernet and through USB. Only use PIP files, Penko Image Package, for firmware updates!

**Ethernet**

Connect the PENKO 1020 to the computer through ethernet. Start PI Mach II.

Start the Firmware Update Manager.

Click ‘Open’ and select the PIP file.

Click ‘Search for devices’ and select the IP address of the PENKO 1020.
Use double click or the arrow button to put the address in the ‘Destination List’ and click ‘OK’.

Click ‘Firmware update’ to start the update.

The PENKO 1020 will automatically reboot and the ‘Firmware Update Manager’ will show ‘Updated’.

Connect the PENKO 1020 to the computer through USB. Start PI Mach II.

Start the Firmware Update Manager.

Click ‘Open’ and select the PIP file.
1020 Indicator

5.1.9. Menu Settings - System Setup - Software Update - continue-

Click ‘Search for devices’ and select the 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 PENKO 1020 in update mode.

Click ‘Firmware update’ to start the update.

The PENKO 1020 will automatically reboot and the ‘Firmware Update Manager’ will show ‘Updated’.
1020 Indicator

5.2. Menu Settings -Totals-

Totals

From the main screen, press Enter to get into the Totals menu.

The selected totals values will be printed on the selected printer when pressed Enter.

The Totals options are **Subtotal**, **Total**, **Day Total** and **Batch Total**.

Scroll through the menu options by using the UP or DOWN key.

Select the desired Totals option using the UP or DOWN key. Press the ZERO key to clear the value. Confirm the clearing by pressing **Enter** of leave the menu by pressing **ESC**.
1020 Indicator

5.3. Menu Settings -Info-

Info

From the main screen, press Enter to get into the Info menu.

The hardware and software information of the device is shown.

The Info options are Software Version, MAC Address, Licence, Display Version, Bootloader Version, HWID and SWID.
1020 Indicator

5.3. Menu Settings -Info - continue-

Scroll through the menu options by using the UP or DOWN key.

Settings in the Info menu

Software Version:
1.1.4.9.0.2
Shows the software version.

Serial Number:
FFFFFFFF
Shows the serial number of the PENKO 1020.

MAC Address:
00 03 64 02 e0 06
Shows the MAC address of the Ethernet chip.

License
1020 Indicator
Shows what kind of licence the PENKO 1020 has.

Display version:
1.1.2.9.0.8
Shows the display software version.

Bootloader Version:
1.4.2.9.0.3
Shows the bootloader software version.

Hardware Version:
1.0
Shows the version of the circuit boards of the PENKO 1020.
1020 Indicator

5.4. Menu Settings –Certified Info-

Shows the hardware ID number.

Shows the software ID number.

Certified Info

From the main screen, press Enter to get into the Certified Info menu.

The certified information for when the PENKO 1020 is used as a certified weigher is shown.

The Certified Info options are Version, Date and Time, CRC Checksum and Software Counter.
1020 Indicator

5.4. Menu Settings -Certified Info-

Scroll through the menu options by using the UP or DOWN key.

Settings in the Certified Info menu

**Version:**

1.0.0.52

Shows the certified version.

**Date and Time**

19-9-2012 15:47:48

Shows when the PENKO 1020 was set to certified mode.

**CRC Checksum**

BFBDC4D2

Shows the checksum on the program.

**Software Counter**

4

Shows the number of times a new firmware update to the PENKO 1020 is done.
5.5. Menu Settings - Event Log -

From the main screen, press Enter to get into the Event Log menu.

The Event Log shows all logged systems event.

This function is only available from firmware version 1.3.7.9.0.1 and hardware revision 2.

The Event Log filters are From Date, To Date, UID and All.

Scroll through the menu options by using the UP or DOWN key.

Settings in the Event Log menu

Set the starting date for the Event Log.
1020 Indicator

5.5. Menu Settings - Event Log - continue

Use the UP, DOWN, LEFT and RIGHT key to enter the From Date. The UP and DOWN keys are used for changing the value, the LEFT and RIGHT key is used for changing the position of the cursor. Confirm the From Date with Enter.

Set the end date for the Event Log.
Use the UP, DOWN, LEFT and RIGHT key to enter the To Date. The UP and DOWN keys are used for changing the value, the LEFT and RIGHT key is used for changing the position of the cursor. Confirm the To Date with Enter.

Set the Unique Identifier (UID) code for the Event Log. To make each record unique, a UID is used.

Use the UP, DOWN, LEFT and RIGHT key to enter the UID code. The UP and DOWN keys are used for changing the value, the LEFT and RIGHT key is used for changing the position of the cursor. Confirm the UID with Enter.
5.5. Menu Settings - Event Log - continue

Selects all filters in the Event Log menu (From Date, To Date and UID).

Example of an Event Log:

<table>
<thead>
<tr>
<th>Entry</th>
<th>00211/00211</th>
</tr>
</thead>
<tbody>
<tr>
<td>Code</td>
<td>SoftwareUpdate</td>
</tr>
<tr>
<td>Date/Value</td>
<td>29-01-14</td>
</tr>
<tr>
<td>Time/Date</td>
<td>10:55:42</td>
</tr>
<tr>
<td>UID</td>
<td>1221551264</td>
</tr>
</tbody>
</table>

Use the UP, DOWN, key to move through the Event Log entries. The white bar or dot on the right side of the screen shows the position of the cursor in the log. You can jump to the oldest event in the log by pressing ZERO. You can jump to the newest event in the log by pressing TARE.

ESC > 2 s.

print the current log selection, press

> 2 s
1020 Indicator

5.5. Menu Settings - Event Log - continue

Example of Event Log printer layout:

<table>
<thead>
<tr>
<th>Number</th>
<th>UID</th>
<th>Code</th>
<th>Date/Value</th>
<th>Time/Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3591503872</td>
<td>TAC Changed</td>
<td>16-01-14</td>
<td>14:46:14</td>
</tr>
<tr>
<td>2</td>
<td>3053060097</td>
<td>Events Cleared</td>
<td>16-01-14</td>
<td>14:46:14</td>
</tr>
<tr>
<td>3</td>
<td>2369650690</td>
<td>CAL Changed</td>
<td>16-01-14</td>
<td>15:07:28</td>
</tr>
<tr>
<td>4</td>
<td>1368391683</td>
<td>CAL Changed</td>
<td>16-01-14</td>
<td>15:07:38</td>
</tr>
<tr>
<td>5</td>
<td>2804285444</td>
<td>TAC Changed</td>
<td>16-01-14</td>
<td>15:08:22</td>
</tr>
<tr>
<td>6</td>
<td>4086824965</td>
<td>SoftwareUpdate</td>
<td>16-01-14</td>
<td>15:52:22</td>
</tr>
<tr>
<td>7</td>
<td>0305004550</td>
<td>SoftwareUpdate</td>
<td>16-01-14</td>
<td>15:53:52</td>
</tr>
</tbody>
</table>

To go back to the filter menu press ENTER.
5.6. Menu Settings -Alibi Memory-

This function is only available from firmware version 1.3.7.9.0.1 and hardware revision 2.

**Generation of Alibi records**
Select Alibi memory in the Printer Setting for the System Setup - Printer menu (page 72) and press ENTER.

**Alibi memory menu**
From the main screen, press Enter to get into the Alibi memory menu.

The Alibi memory shows all logged Alibi records.

The stored information is Net, Tare and Gross.
The Alibi memory filters are From Date, To Date, UID and All.

Scroll through the menu options by using the UP or DOWN key.

Settings in the Event Log menu

Set the starting date for the Alibi memory.

Use the UP, DOWN, LEFT and RIGHT key to enter the From Date. The UP and DOWN keys are used for changing the value, the LEFT and RIGHT key is used for changing the position of the cursor. Confirm the From Date with Enter.

Set the end date for the Event Log.

Use the UP, DOWN, LEFT and RIGHT key to enter the To Date. The UP and DOWN keys are used for changing the value, the LEFT and RIGHT key is used for changing the position of the cursor. Confirm the To Date with Enter.
5.6. Menu Settings -Alibi memory- continue

Set the Unique Identifier (UID) code for the Event Log. To make each record unique, a UID is used.

Use the UP, DOWN, LEFT and RIGHT key to enter the UID code. The UP and DOWN keys are used for changing the value, the LEFT and RIGHT key is used for changing the position of the cursor. Confirm the UID with Enter.

Example of an Alibi memory, entry Alibi 1:
Example of an Alibi memory, stored gross weight:

Use the UP, DOWN, key to move through the Alibi memory entries. The white bar or dot on the right side of the screen shows the position of the cursor in the log. You can jump to the oldest event in the log by pressing ZERO. You can jump to the newest event in the log by pressing TARE.

To print the current log selection, press ESC > 2 s.

An example of the Alibi memory printer layout:

<table>
<thead>
<tr>
<th>Number</th>
<th>UID</th>
<th>Code</th>
<th>Date/Value</th>
<th>Time/Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1334190080</td>
<td>Alibi 001</td>
<td>29-01-14</td>
<td>13:56:12</td>
</tr>
<tr>
<td>2</td>
<td>1326325761</td>
<td>Net</td>
<td>4.021</td>
<td>g</td>
</tr>
<tr>
<td>3</td>
<td>4274659331</td>
<td>Tare</td>
<td>0.000</td>
<td>g</td>
</tr>
<tr>
<td>4</td>
<td>1146363909</td>
<td>Gross</td>
<td>4.021</td>
<td>g</td>
</tr>
<tr>
<td>5</td>
<td>1995448327</td>
<td>Alibi 001</td>
<td>29-01-14</td>
<td>13:56:14</td>
</tr>
<tr>
<td>6</td>
<td>1326325768</td>
<td>Net</td>
<td>4.021</td>
<td>g</td>
</tr>
<tr>
<td>7</td>
<td>4274659338</td>
<td>Tare</td>
<td>0.000</td>
<td>g</td>
</tr>
<tr>
<td>8</td>
<td>1146363916</td>
<td>Gross</td>
<td>4.021</td>
<td>g</td>
</tr>
</tbody>
</table>
5.6. Menu Settings -Alibi Memory- continue

To clear the Alibi memory, press ZERO > 2 s. This will only work when the filter is set to All. An Alibi cleared event is added to the Event Log

> 2 s

The following screen will be visible:

Alibi memory

Erase Alibi memory?

Press ENTER to continue, press ESC to return to the Alibi memory log screen.

or

Once returned to the Alibi memory log screen, go back to the filter menu press ENTER.
1020 Indicator

6. Software Tool

Connections

USB Connection
Install PI Mach II on your computer from the technical support page on www.penko.com. Connect the USB cable to your computer and the PENKO 1020 and follow the install wizard. When necessary install the driver manually through system control. Start PI Mach II and select USB in the ‘Environment’ menu. Select the ‘1020 instrument’.

Ethernet Connection
Install PI Mach II on your computer from the technical support page on www.penko.com. Connect the ethernet cable to your computer and the PENKO 1020. Check/change the IP address of the 1020, see page 15 and 16. Start PI Mach II and select Ethernet in the ‘Environment’ menu. Enter the IP address of the PENKO 1020. Click the button next to the address to ping the connection.

**NOTE:** The IP Address must be in the PC range or it will not start to communicate. If communication does not start change the IP address of the indicator or change the range.
1020 Indicator

7. Dimensions

Panel Mount version
7. Dimensions

Stainless Steel version

Use appropriate bracket mounting screws with a total minimum strength of 6.8kg
## 8. Error Codes

<table>
<thead>
<tr>
<th>Error Code</th>
<th>Description</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td>Parameter error</td>
<td>Invalid entry, choose a valid value</td>
</tr>
<tr>
<td>2005</td>
<td>Input value is not valid</td>
<td>Invalid entry, choose value within range</td>
</tr>
<tr>
<td>2101</td>
<td>Weigher not stable</td>
<td>Wait for stable weigher signal and try</td>
</tr>
<tr>
<td>2102</td>
<td>Parameter exceeds maxload</td>
<td>Remove load from scale</td>
</tr>
<tr>
<td>2103</td>
<td>Parameter below zero</td>
<td>Check if scale is blocked</td>
</tr>
<tr>
<td>2104</td>
<td>Not in zero range</td>
<td>Remove load</td>
</tr>
<tr>
<td>2105</td>
<td>Arithmetic overflow occurred</td>
<td>Change calibration levels</td>
</tr>
<tr>
<td>2106</td>
<td>A/D reads all 1’s</td>
<td>Check load cell connection</td>
</tr>
<tr>
<td>2107</td>
<td>A/D reads all 0’s</td>
<td>Check load cell connection</td>
</tr>
<tr>
<td>2108</td>
<td>Gain ref. &lt; zero ref.</td>
<td>Change calibration levels</td>
</tr>
<tr>
<td>2109</td>
<td>Gain &gt; 0.99984741211</td>
<td>Change calibration levels</td>
</tr>
<tr>
<td>2110</td>
<td>Save error</td>
<td>Contact PENKO</td>
</tr>
<tr>
<td>2111</td>
<td>Flash ROM exhausted</td>
<td>Contact PENKO</td>
</tr>
<tr>
<td>2112</td>
<td>Error on header creation</td>
<td>Contact PENKO</td>
</tr>
<tr>
<td>2113</td>
<td>Error on date write</td>
<td>Contact PENKO</td>
</tr>
<tr>
<td>2114</td>
<td>Header validation failed</td>
<td>Contact PENKO</td>
</tr>
<tr>
<td>2115</td>
<td>De-active old data fail</td>
<td>Contact PENKO</td>
</tr>
<tr>
<td>2116</td>
<td>Load errors</td>
<td>Contact PENKO</td>
</tr>
<tr>
<td>2117</td>
<td>Item not found in store</td>
<td>Contact PENKO</td>
</tr>
<tr>
<td>2118</td>
<td>Error in stored data</td>
<td>Contact PENKO</td>
</tr>
<tr>
<td>2119</td>
<td>Bad calibration</td>
<td>Change calibration levels</td>
</tr>
</tbody>
</table>
### 1020 Indicator

#### 8.1. Weigher Error Codes

<table>
<thead>
<tr>
<th>Error Code</th>
<th>Description</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>CCCCCC</td>
<td>No proper calibration available</td>
<td>Check calibration setting</td>
</tr>
<tr>
<td>UUUUUU</td>
<td>Underflow</td>
<td>Check loadcell</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Check platform construction</td>
</tr>
<tr>
<td>OOOOOO</td>
<td>Overflow</td>
<td>Check loadcell</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Check platform construction</td>
</tr>
<tr>
<td>=========</td>
<td>Display overflow; Exceed maximum display value</td>
<td>Reduce load on platform</td>
</tr>
<tr>
<td></td>
<td>(max. load)</td>
<td></td>
</tr>
</tbody>
</table>
# 1020 Indicator

## 10. Profibus Protocol Description

Note that the GSD Profibus file for the 1020 Indicator differ from 1020 controller GSD file. Use 1020.GSD.File This file is available in the Penko Suite.

<table>
<thead>
<tr>
<th>Inputs to PLC</th>
<th>Outputs from PLC</th>
</tr>
</thead>
<tbody>
<tr>
<td>D word 32 bit</td>
<td>Weight register</td>
</tr>
<tr>
<td>word 16 bit</td>
<td>Status</td>
</tr>
<tr>
<td>byte 8 bit</td>
<td>Reserved</td>
</tr>
<tr>
<td>byte 8 bit</td>
<td>Weight selected register</td>
</tr>
<tr>
<td>word 16 inputs</td>
<td>Input 1-16</td>
</tr>
<tr>
<td>word 16 outputs</td>
<td>Output 201-216</td>
</tr>
<tr>
<td>D word 32 bit</td>
<td>Preset Tare</td>
</tr>
<tr>
<td>D word 32 bit</td>
<td>Gross indicator x10</td>
</tr>
<tr>
<td>D word 32 bit</td>
<td>Net indicator x10</td>
</tr>
<tr>
<td>D word 32 bit</td>
<td>Indicator tare x10</td>
</tr>
<tr>
<td>D word 32 bit</td>
<td>Multirange weight</td>
</tr>
</tbody>
</table>

### Command bit definition:

<table>
<thead>
<tr>
<th>Command bit</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Zero reset command</td>
</tr>
<tr>
<td>2</td>
<td>Zero set command</td>
</tr>
<tr>
<td>3</td>
<td>Tare off</td>
</tr>
<tr>
<td>4</td>
<td>Tare on</td>
</tr>
<tr>
<td>5</td>
<td>Preset tare command</td>
</tr>
<tr>
<td>6</td>
<td>Freeze bit</td>
</tr>
<tr>
<td>7</td>
<td>Reserved</td>
</tr>
<tr>
<td>8</td>
<td>Reserved</td>
</tr>
</tbody>
</table>

### Weight selection register definition:

<table>
<thead>
<tr>
<th>Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0x00</td>
<td>Display weight includes multi range/interval step</td>
</tr>
<tr>
<td>0x01</td>
<td>Fast gross</td>
</tr>
<tr>
<td>0x02</td>
<td>Fast net</td>
</tr>
<tr>
<td>0x03</td>
<td>Display gross</td>
</tr>
<tr>
<td>0x04</td>
<td>Display net</td>
</tr>
<tr>
<td>0x05</td>
<td>Tare</td>
</tr>
<tr>
<td>0x06</td>
<td>Peak</td>
</tr>
<tr>
<td>0x07</td>
<td>Valley</td>
</tr>
<tr>
<td>0x08</td>
<td>Display weight x10</td>
</tr>
<tr>
<td>0x09</td>
<td>Fast gross x10</td>
</tr>
<tr>
<td>0x0A</td>
<td>Fast net x10</td>
</tr>
<tr>
<td>0x0B</td>
<td>Display gross x10</td>
</tr>
<tr>
<td>0x0C</td>
<td>Display net x10</td>
</tr>
<tr>
<td>0x0D</td>
<td>Tare x10</td>
</tr>
<tr>
<td>0x0E</td>
<td>Peak x10</td>
</tr>
<tr>
<td>0x0F</td>
<td>Valley x10</td>
</tr>
</tbody>
</table>

### Status bit definition:

<table>
<thead>
<tr>
<th>Status bit</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>hardware overload detected</td>
</tr>
<tr>
<td>2</td>
<td>overload detected</td>
</tr>
<tr>
<td>3</td>
<td>stable signal</td>
</tr>
<tr>
<td>4</td>
<td>in stable range</td>
</tr>
<tr>
<td>5</td>
<td>zero corrected</td>
</tr>
<tr>
<td>6</td>
<td>center of zero</td>
</tr>
<tr>
<td>7</td>
<td>in zero range</td>
</tr>
<tr>
<td>8</td>
<td>zero tracking possible</td>
</tr>
<tr>
<td>9</td>
<td>tare active</td>
</tr>
<tr>
<td>10</td>
<td>preset tare active</td>
</tr>
<tr>
<td>11</td>
<td>new sample available</td>
</tr>
<tr>
<td>12</td>
<td>calibration invalid</td>
</tr>
<tr>
<td>13</td>
<td>calibration enabled</td>
</tr>
<tr>
<td>14</td>
<td>user certified operation</td>
</tr>
<tr>
<td>15</td>
<td>reserved</td>
</tr>
<tr>
<td>16</td>
<td>reserved</td>
</tr>
</tbody>
</table>
## 1020 Indicator
### 11. Standard Factory Setting

<table>
<thead>
<tr>
<th>Description</th>
<th>Display</th>
<th>Value</th>
<th>Your setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weigher</td>
<td>Name</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Unit label</td>
<td>Kg</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Step</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Decimal Point</td>
<td>0,000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Operation Mode</td>
<td>Industrial</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Max Load</td>
<td>10,009</td>
<td></td>
</tr>
<tr>
<td>Stable condition</td>
<td>Range</td>
<td>0,002</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Time</td>
<td>1,00 s</td>
<td></td>
</tr>
<tr>
<td>Zero tracking</td>
<td>Range</td>
<td>0,000 kg</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Step</td>
<td>0,000 kg</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Time</td>
<td>0,00 s</td>
<td></td>
</tr>
<tr>
<td>Range / Interval</td>
<td>Range</td>
<td>0 Parts</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Max Step</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mode</td>
<td>Multi Range</td>
<td></td>
</tr>
<tr>
<td>Overall Filter</td>
<td>Overall</td>
<td>0 dB</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Static App</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Digital Filter</td>
<td>Cutoff Frequency</td>
<td>1.0 Hz</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Frequency</td>
<td>50 Hz</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Range</td>
<td>0,000 kg</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Display Filter</td>
<td>0 dB</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Display Rate</td>
<td>25 updates/s</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Disp.Suppress</td>
<td>0,000 kg</td>
<td></td>
</tr>
</tbody>
</table>
## 1020 Indicator

### Appendix I

<table>
<thead>
<tr>
<th>Setting</th>
<th>Indicator type</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Weight</td>
</tr>
<tr>
<td>2</td>
<td>Fast Gross</td>
</tr>
<tr>
<td>3</td>
<td>Fast Net</td>
</tr>
<tr>
<td>4</td>
<td>Display Gross</td>
</tr>
<tr>
<td>5</td>
<td>Display Net</td>
</tr>
<tr>
<td>6</td>
<td>Tare</td>
</tr>
<tr>
<td>7</td>
<td>Peak</td>
</tr>
<tr>
<td>8</td>
<td>Valley</td>
</tr>
<tr>
<td>9</td>
<td>Hold</td>
</tr>
<tr>
<td>10</td>
<td>Weight x 10</td>
</tr>
<tr>
<td>11</td>
<td>Fast Gross x 10</td>
</tr>
<tr>
<td>12</td>
<td>Fast Net x 10</td>
</tr>
<tr>
<td>13</td>
<td>Display Gross x 10</td>
</tr>
<tr>
<td>14</td>
<td>Display Net x 10</td>
</tr>
<tr>
<td>15</td>
<td>Tare x 10</td>
</tr>
<tr>
<td>16</td>
<td>Peak x 10</td>
</tr>
<tr>
<td>17</td>
<td>Valley x 10</td>
</tr>
<tr>
<td>18</td>
<td>Hold x 10</td>
</tr>
<tr>
<td>19</td>
<td>Signal</td>
</tr>
</tbody>
</table>

See Appendix III for an explanation of the Indicator types.
## 1020 Indicator

### Appendix II

<table>
<thead>
<tr>
<th>Description</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>No extra function</td>
</tr>
<tr>
<td>Zerost</td>
<td>Set to zero</td>
</tr>
<tr>
<td>Zeroreset</td>
<td>Undo set to zero</td>
</tr>
<tr>
<td>Tare</td>
<td>Set tare</td>
</tr>
<tr>
<td>Tarereset</td>
<td>Undo set tare</td>
</tr>
<tr>
<td>Tare Toggle</td>
<td>Switch between tare &amp; net and vice versa</td>
</tr>
<tr>
<td>Preset Tare on</td>
<td>Automatic tare on configured weight</td>
</tr>
<tr>
<td>Print</td>
<td>Print ticket</td>
</tr>
<tr>
<td>Print Subtotal</td>
<td>Print ticket including subtotal</td>
</tr>
<tr>
<td>Print Total</td>
<td>Print ticket including weighing total so far</td>
</tr>
<tr>
<td>Print Day Total</td>
<td>Print ticket including day total</td>
</tr>
<tr>
<td>Print Batch Total</td>
<td>Print ticket including batch total</td>
</tr>
<tr>
<td>Totalize</td>
<td>Add current weight to totals</td>
</tr>
<tr>
<td>Reset Subtotal</td>
<td>Set subtotal to zero</td>
</tr>
<tr>
<td>Reset Total</td>
<td>Set weighing total so far to zero</td>
</tr>
<tr>
<td>Reset Day Total</td>
<td>Set day total to zero</td>
</tr>
<tr>
<td>Reset Batch Total</td>
<td>Set batch total to zero</td>
</tr>
<tr>
<td>Reset Peak</td>
<td>Reset highest value to current value</td>
</tr>
<tr>
<td>Reset Valley</td>
<td>Reset lowest value to current value</td>
</tr>
<tr>
<td>Hold</td>
<td>Hold value on screen</td>
</tr>
<tr>
<td>Key Lock</td>
<td>Lock key pad</td>
</tr>
<tr>
<td>Set Levels</td>
<td>Set setpoint for level contact</td>
</tr>
</tbody>
</table>
# 1020 Indicator

## Appendix III

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

Our design expertise include systems for manufacturing plants, bulk weighing, check weighing, force measuring and process control. For over 35 years, PENKO Engineering B.V. has been at the forefront of development and production of high-accuracy, high-speed weighing systems and our solutions continue to help cut costs, increase ROI and drive profits for some of the largest global brands, such as Cargill, Sara Lee, Heinz, Kraft Foods and Unilever to name but a few.

Whether you are looking for a simple stand-alone weighing system or a high-speed weighing and dosing controller for a complex automated production line, PENKO has a comprehensive range of standard solutions you can rely on.

Certifications

PENKO sets high standards for its products and product performance which are tested, certified and approved by independent expert and government organizations to ensure they meet – and even – exceed metrology industry guidelines. A library of testing certificates is available for reference on:

http://penko.com/nl/publications_certificates.html

PENKO Professional Services

PENKO is committed to ensuring every system is installed, tested, programmed, commissioned and operational to client specifications. Our engineers, at our weighing center in Ede, Netherlands, as well as our distributors around the world, strive to solve most weighing-system issues within the same day. On a monthly basis PENKO offers free training classes to anyone interested in exploring modern, high-speed weighing instruments and solutions. A schedule of training sessions is found on: www.penko.com/training

PENKO Distributor

A complete overview you will find on: www.penko.com/Find-A-Dealer