

## Operating Instructions

### Phase PR 5500/81



Translation of original operating instructions

9499 050 55500

Edition 1.1.0

08/27/2020

**Release 1.11**

## **Foreword**

### **Must be followed!**

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# 1 Introduction

## 1.1 Read the manual

- Please read this manual carefully and completely before using the product.
- This manual is part of the product. Keep it in a safe and easily accessible location.

## 1.2 This is what operating instructions look like

- 1. - n. are placed before steps that must be done in sequence.
- ▶ is placed before a step.
- ▷ describes the result of a step.

## 1.3 This is what lists look like

- indicates an item in a list.

## 1.4 This is what menu items and softkeys look like

[ ] frame menu items and softkeys.

**Example:**

[Start]- [Applications]- [Excel]

## 1.5 This is what the safety instructions look like

Signal words indicate the severity of the danger involved when measures for preventing hazards are not followed.

### **DANGER**

#### **Warning of personal injury**

DANGER indicates death or severe, irreversible personal injury which will occur if the corresponding safety measures are not observed.

- ▶ Take the corresponding safety precautions.

### **WARNING**

#### **Warning of hazardous area and/or personal injury**

WARNING indicates that death or severe, irreversible injury may occur if appropriate safety measures are not observed.

- ▶ Take the corresponding safety precautions.

### **CAUTION**

#### **Warning of personal injury.**

CAUTION indicates that minor, reversible injury may occur if appropriate safety measures are not observed.

- ▶ Take the corresponding safety precautions.

**NOTICE****Warning of damage to property and/or the environment.**

NOTICE indicates that damage to property and/or the environment may occur if appropriate safety measures are not observed.

- Take the corresponding safety precautions.

**Note:**

User tips, useful information, and notes.

## 1.6 Hotline

Phone: +49.40.67960.444

Fax: +49.40.67960.474

eMail: [help@minebea-intec.com](mailto:help@minebea-intec.com)

## 2 Overview

### 2.1 General information

These operating instructions describe the configuration and operation of the "Phase" application.

For installation, basic configuration, and calibration of the device, please refer to the PR 5500 installation manual and the operating instructions.

### 2.2 Equipment supplied

#### 2.2.1 Components

The Phase product consists of the following components:

- Maxxis 4 basic unit with software "BIOS," "firmware" and application software "Phase", including licenses for ProBatch+ and OPC server
- license for dosing E9 ( PR 5500/93)
- Manuals in PDF format on CD-ROM

The "Phase" application requires installation of the following programs in the device:

- BIOS
- Firmware
- Application "Phase"

PR 1721/6x or PR 1721/7x fieldbus cards are **not** supported.

#### 2.2.2 Accessories (not included with the equipment supplied)

- Plug-in cards for Option-1/FB, Option-2, see Chapter [2.2.3](#)
- Software:
  - PR 1792/13 OPC server
  - PR 8400 ProBatch+
- Scales:

A maximum of one scale can be controlled and displayed.

---

**Note:**

The following weighing functions are **not** supported:

- Alibi memory
- 

#### 2.2.3 Plug-in cards

Product	Description	Position
<b>PR 5500/04</b> 2 x RS-485 serial inter- faces	The interface can be configured by software. For further information, refer to the PR 5500 installation manual.	Option-1/FB and/or Option-2



<b>Product</b>	<b>Description</b>	<b>Position</b>
<b>PR 5500/07</b> 1 analog input 1 analog output	Analog input: internal 14 bits binary = 20,000 counts, @ e.g. 0...20 mA/0...10 V Analog output: internal 16 bits = 65,536 counts, resolution of 20,000 @ 20 mA For further information, refer to the PR 5500 installation manual.	Option-1/FB and/or Option-2
<b>PR 5500/10 (W1)</b> Weighing electronics	Internal weighing electronics for connecting load cells or weighing platforms in non-Ex areas. For further information, refer to the PR 5500 installation manual.	WP A
<b>PR 5500/12</b> 4 digital inputs 4 digital outputs	4 passive opto-decoupled inputs 4 relay outputs with potential-free change- over contacts For further information, refer to the PR 5500 installation manual.	Option-1/FB and/or Option-2
<b>PR 5500/13</b> 4 digital inputs 4 digital outputs	4 active opto-decoupled inputs 4 relay outputs with potential-free change- over contacts For further information, refer to the PR 5500 installation manual.	Option-1/FB and/or Option-2
<b>PR 5500/17</b> 6 digital inputs 8 digital outputs	6 passive opto-decoupled inputs 8 passive opto-decoupled outputs For further information, refer to the PR 5500 installation manual.	Option-1 and/or Option-2
<b>PR 5500/32</b> 2 RS-232 serial interfa- ces	The interface can be configured by software. For further information, refer to the PR 5500 installation manual.	Option-1 and/or Option-2

## 2.3 Function of application "Phase"

The Phase application is used to conduct batching applications using several scales controlled via PR 8400 ProBatch+ recipe control.

Production plans, recipes and materials/components are created in PR 8400.

Maxxis 4 is the interface between the process and the operator.

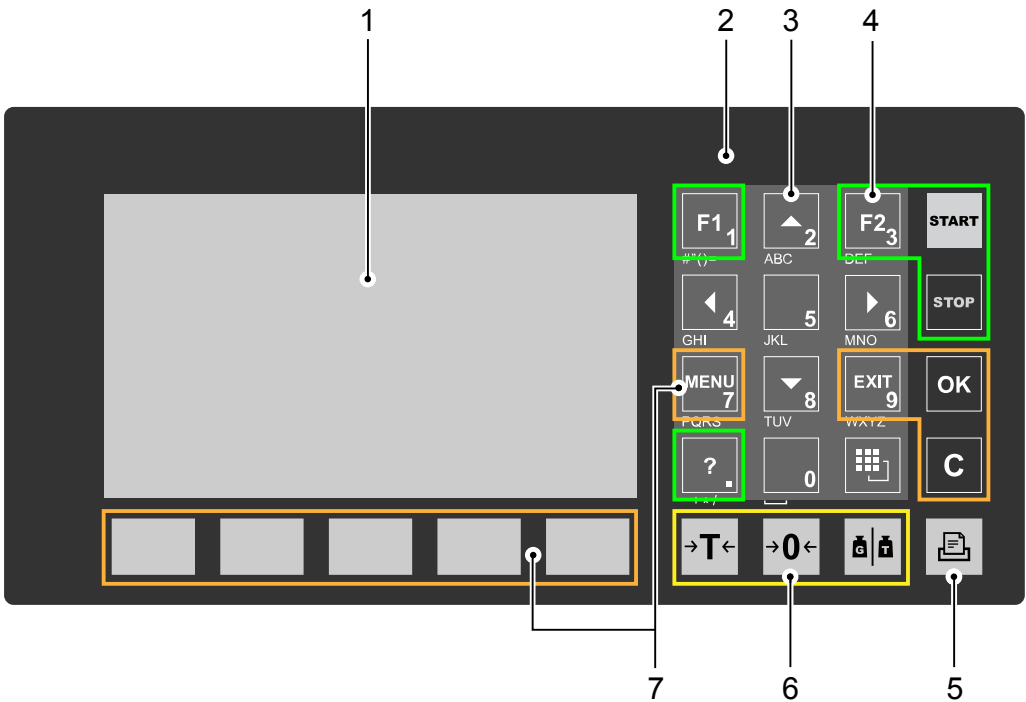
- There are material types for signals to control the process.
- Digital inputs and outputs can be configured.
- Up to 3 limit values can be set.
- Analog inputs and outputs can be configured.
- Analog signals can be exported and imported.
- Recipes and production plans remain in PR 8400 (ProBatch+) at all times.

- For visualization purposes, there is one configurable scale view (1 scale) and one configurable scale overview (2 scales).
- Weights to be dosed are displayed with a bar graph and tolerance range.
- Recipes, production plans or individual planning lines can be started and executed.
- Recipes (recipe cycles) can be repeated up to 9999 times.
- Materials for manual batching can be checked using a barcode or entry.
- LOT number(s) are registered for manual batching.
- Configurable dialog for manual batching.
- Manual batching can be divided into several steps (split, using LOT number if necessary).
- Coefficients such as customer, order and production ID are configurable.
- Taring approved for manual components via digital input.
- Recipes can be checked before production using a simulation (function can be switched off).

3 Operating

3.1 Display and operating elements

3.1.1 Overview



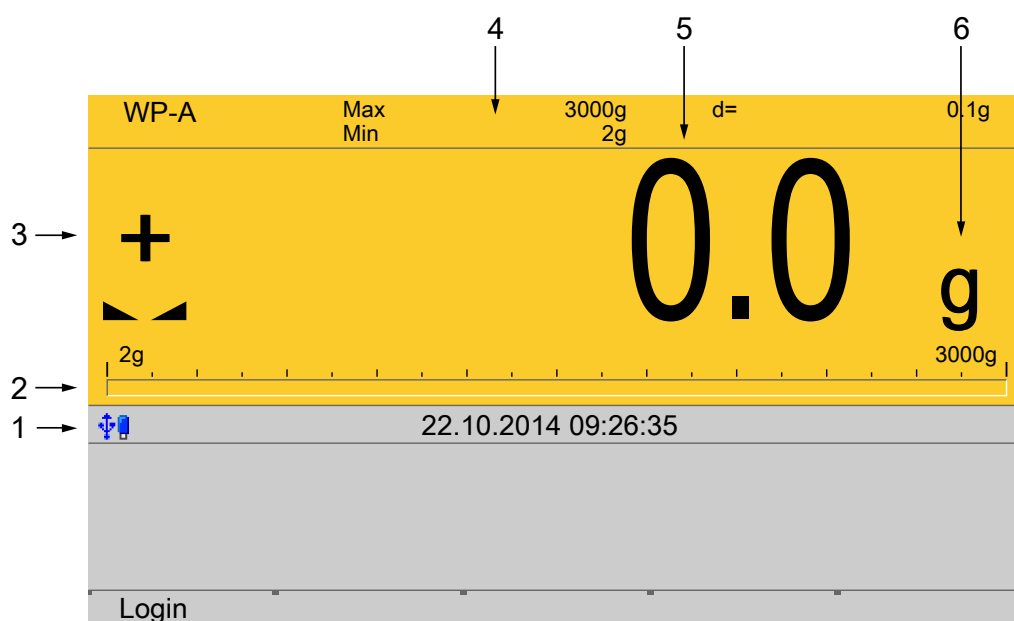
No.	Name
<b>Display elements</b>	
1	4.3" TFT color display, see Chapter 3.1.2
2	LED status display, see Chapter 3.1.3
<b>Operating elements, see Chapter 3.1.4.1</b>	
3	Alphanumeric keys Navigation keys (key 2, 4, 6, 8)
4	Function keys
5	Application key
6	Indicator keys
7	Menu keys, incl. soft keys

3.1.2 TFT user interface display

The TFT color graphics display can show weight values of up to 7 digits with decimal point and plus or minus sign. The available mass units are t, kg, g, mg, lb, or oz.






The lb and oz units are not permitted for use in legal metrology in the EU and EEC.


Below the weight display, the currently displayed weight is shown in a bar graph that indicates the percentage of the maximum capacity (Max). 0 is on the left, and 100% on the right.









No.	Description
1	Info line
2	Bar graph
3	Weight type/plus or minus sign/standstill
4	Status display
5	Weight value
6	Symbols/mass unit




Weight type/plus or minus sign	Description
<b>B</b>	Gross weight
<b>G</b>	Gross weight in NTEP or NSC mode
<b>NET</b>	Net weight (Net = gross - tare)
<b>T</b>	Tare weight
<b>PT</b>	Preset tare, not tared
No display	- Test value - Gross, not tared
<b>User</b>	Additional weight display, application-dependent
<b>Setp</b>	Additional weight display, application-dependent
<b>Diff</b>	Additional weight display, application-dependent
<b>+</b>	Positive value
<b>-</b>	Negative value

Standstill/zero/batching/monitoring	Description
	Weight value standstill
	The gross weight value is within $\pm 1/4$ d of zero
	Batching mode: flashes when batching is "stopped"; rapid flashing indicates "error status"
	Pendeo load cells: Plausibility monitoring; the average deviation of the individual load cells is calculated
	Pendeo load cells: Temperature monitoring; 1–n load cells above or below permissible temperature

Symbols/mass unit	Description
	Value not permissible in legal metrology (e.g., 10x resolution, deactivated load cell)
<b>R1</b>	Range 1
<b>R2</b>	Range 2
<b>R3</b>	Range 3
<b>WP A</b>	Weighing point A
<b>Max</b>	Maximum capacity (weighing range)
<b>Min</b>	Minimum weight
t, kg, g, mg, lb, oz	These mass units are available.

#### Status icons in the info line

Icon	Description
	Remote control via VNC (Virtual Network Computing) is active.
	General warning
	<ul style="list-style-type: none"> <li>- The clock battery is empty.</li> <li>- The standby battery is empty.</li> </ul>
	The standby battery is too hot and is not charging. If this does not go away, the ambient temperature must be checked, see PR 5500 installation manual under [Technical data] - [Environmental influences] - [Ambient conditions] .
	<ul style="list-style-type: none"> <li>- An unsupported USB device is connected.</li> <li>- The maximum current of <math>i_{\max} = 200</math> mA has been exceeded.</li> </ul>
	Check newly connected devices.

Icon	Description
	USB stick was recognized and is operational.
	Stick is in use and may <b>not</b> be removed.
	Conflict in the network settings of the IP address.

### 3.1.3 LEDs

Operating status	Color	LED status	Description
Normal operation		Off	
System ready (standby)	Red	Continuous illumination	The display is switched off.
Power interruption <5 seconds	Red	Slow flashing	After 5 seconds, the device returns to normal operation.
Power interruption >5 seconds	Red	Fast flashing	The device is running a data backup. Once power is restored, the device returns to normal operation (LED off).
After the data backup, there is still a power interruption.		Off	The device switches off.
		Off	The device initiates a warm start, see PR 5500 operating instructions.


### 3.1.4 Operating elements



- Operation using the front-panel keys, see Chapter [3.1.4.1](#)
- Operation using the soft keys, see Chapter [3.1.4.2](#)
- Operation using the navigation keys, see Chapter [3.1.4.3](#)
- Operation using the PC keys, see Chapter [3.1.4.4](#)

#### 3.1.4.1 Operation using the front-panel keys


The following table shows the basic meanings of the symbols on the front-panel keys. Depending on the applications, the keys may also have other meanings.

##### Indicator keys

Key	Description
	<b>Set tare</b> The current gross weight is stored in the tare memory, provided that <ul style="list-style-type: none"> <li>- the weight value is stable.</li> <li>- the device is not in error status.</li> </ul> (Function is dependent on configuration)

Key	Description
	Sets gross weight to zero, provided that <ul style="list-style-type: none"> <li>- the weight value is stable.</li> <li>- weight is within zero setting range.</li> </ul> (Function is dependent on configuration)
	<b>Display gross/tare weight</b> Pressing the key switches to the next weight (only with tared scale). During calibration, pressing this key displays the weight for 5 seconds with 10x resolution.

### Application keys

Key	Description
	Starts an application-specific printout.

### Navigation keys

Key	Description
▲	Scroll up in the menu.
▼	Scroll down in the menu.
◀	<ul style="list-style-type: none"> <li>- Cursor to the left</li> <li>- Selection</li> <li>- Exit menu window.</li> </ul>
▶	<ul style="list-style-type: none"> <li>- Cursor to the right</li> <li>- Selection</li> <li>- Confirm input/selection.</li> </ul>

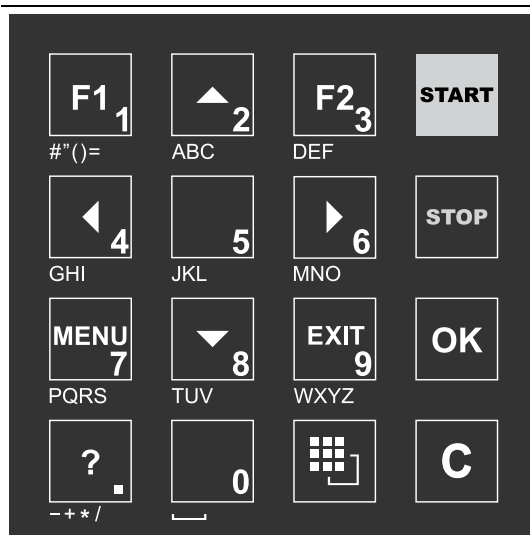
### Menu keys

Key	Description
OK	Confirm input/selection.
EXIT	<ul style="list-style-type: none"> <li>- Cancel entry/selection (after a confirmation prompt) without saving the change.</li> <li>- Exit parameters/menu window.</li> </ul>
C	Pressing the delete key deletes individual characters (within an entry) or whole strings of characters.
Soft key 1 to 5	Select appropriate menu function, see also Chapter <a href="#">3.1.4.2</a> .
MENU	Switch to the operating menu.

### Function keys

Key	Description
<b>F1</b>	Assigned to a defined function (see system menu [System setup] - [Operating parameters]).
<b>F2</b>	Assigned to a defined function (see system menu [System setup] - [Operating parameters]).
<b>?</b>	Displays the relevant help window.
<b>START</b>	No function
<b>STOP</b>	Same functions as the indicator key <b>EXIT</b> .

### Alphanumeric keypad


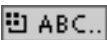
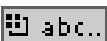

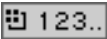







### Toggle key

Pressing switches between the following functions:

-  Cursor
-  Uppercase letters
-  Lowercase letters
-  Pinyin  
When Chinese has been selected or set under [Operating parameters] - [Input method].
- Hepburn  
When Japanese has been selected or set under [Operating parameters] - [Input method].
-  Numbers
-  Units  
Select the unit using the cursor keys ▲/▼ and confirm using the key **OK**.

### Note:

It is also possible to select a unit by double-clicking on the shift key.



### Input without the character table

Pressing once displays the corresponding first character, e.g., "A", at the cursor position. After pressing twice, "B" is displayed at the cursor position and after pressing three times, "C" is displayed.

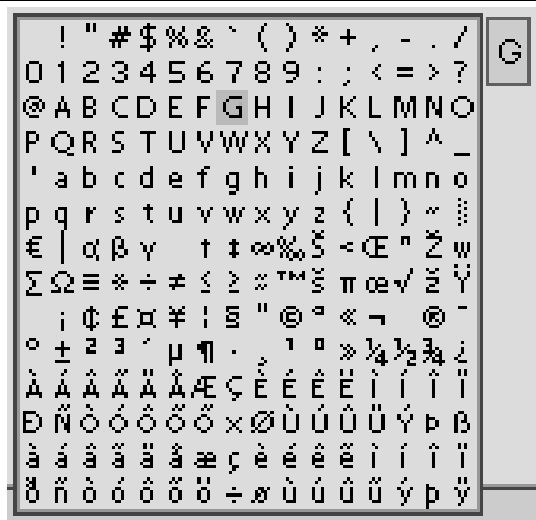
If only numeric values are required for input, letters are not enabled.

Press the cursor key ◀ within an entry to return to the previous character.

Press the cursor key ▶ within an entry to select the next character.

Within an entry, pressing the delete key **C** deletes the character to the left of the cursor.

Outside of an input, pressing the delete key **C** deletes the whole string of characters.



**Input with the character table**

Double-clicking on the key displays the character table.  
Only characters authorized for this input are displayed.

**Note:**

Only possible when entering text, not when entering numbers or weights.  
The switching function is turned off.

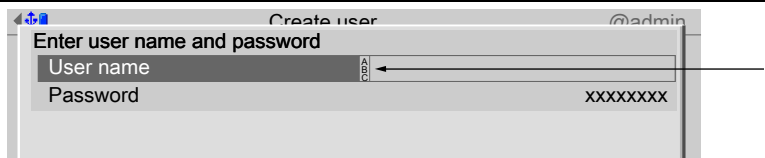
**Procedure:**

- Highlight the desired character with the cursor.
- The selected character is shown magnified in the field at the top right.
- Press the key **OK** to enter the character in the input field.
- Another double-click on the toggle key and other characters can be input as described previously.

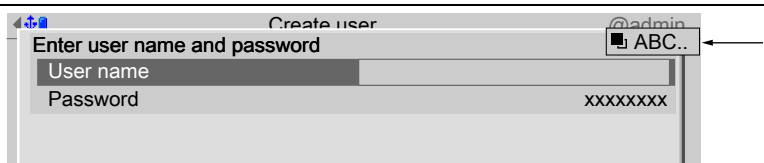
**Input field**

**In principle:**

If alphanumeric characters are already present in the input field of the selected line, they will be completely overwritten after immediate entry.  
If alphanumeric characters are already present in the input field of the selected line, you can press the cursor key ► to select the characters to be overwritten and overwrite them.



In front of the input field it is indicated whether numeric and/or alphabetic characters can be entered (see arrow).  
Switch to the input field using the cursor key ►.



The respective options are displayed (see arrow).

**Note:**

The character table is turned off.

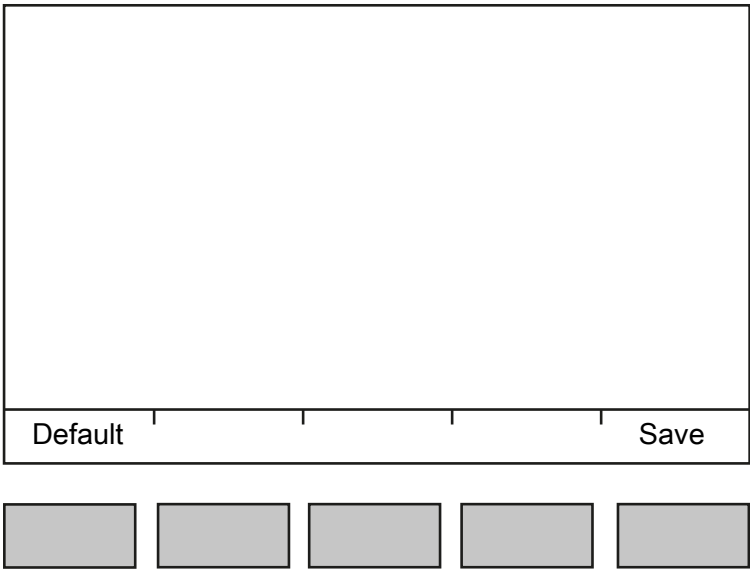
**Keyboard shortcuts**



Trigger a cold start, see also PR 5500 operating manual.

+  
**EXIT**

**3.1.4.2    Operation using softkeys**



The functions of the five softkeys below the graphic display are indicated in the bottommost text line of the display. Softkey functions shown in gray cannot be selected at the active menu level or with the current access privileges.

In the descriptions of operating sequences which entail the use of softkeys, the softkey function to be selected is shown in square brackets; the softkey symbol is not displayed; example: [Save].

**3.1.4.3    Navigation key operation**

**Menu**

The cursor keys, the **OK** and **EXIT** keys are used to navigate through the menus.

**Parameters**

Use the ▼/▲ cursor keys to select the individual parameters.

Use the **OK** key to confirm the selection.

The required values | texts are entered via the alphanumeric keys.

The **OK** key is used to check the ☒ box.

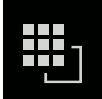


If the list of parameters is long, a vertical bar graph on the left (black and gray) shows which part of the list is displayed.

An existing selection list is indicated by an arrow ► following it.

The parameter is selected using the **OK** key.

#### 3.1.4.4 Operation via PC keys

The device can also be operated using a PC keyboard. The corresponding key assignment is shown in the table below:

PC keyboard	Front keypad
F1	<b>F1</b>
F2	<b>F2</b>
F3	<b>?</b>
F4	<b>MENU</b>
F5...F9	Softkey 1...5
F10	
F11	
F12	
ESC	<b>EXIT</b>
Cursor keys: ↑, ↓, ←, →	▲, ▼, ◀, ▶
Enter key: ↵	<b>OK</b>
Backspace key: ←	<b>C</b>

## 4 Setting up the application menu

- Visualization

Display of weighing point overview, weight values and the parameters set under [Configuration] - [...].

### 4.1 Configuration

<b>Configuration</b>	
— <b>inputs</b>	See Chapter <a href="#">4.1.1</a> .
— <b>Outputs</b>	See Chapter <a href="#">4.1.2</a> .
— <b>ModBus-TCP master</b>	See Chapter <a href="#">4.1.3</a> .
— <b>Limit values</b>	See Chapter <a href="#">4.1.4</a> .
— <b>Parameters</b>	See Chapter <a href="#">4.1.5</a> .
— <b>Production lines</b>	Load (refresh) the production lines created and configured in ProBatch+, see Chapter <a href="#">4.1.6</a> .
— <b>Local operation</b>	See Chapter <a href="#">4.1.7</a> .
— <b>Overview of weighing points</b>	The contents are represented in the form of an overview, see Chapter <a href="#">4.1.8</a> .
— <b>Weighing Point View</b>	Incorporate the view into the visualization, see Chapter <a href="#">4.1.9</a> .
— <b>Simulation</b>	see Chapter <a href="#">4.1.10</a> .
— <b>Printing</b>	Print configuration, see Chapter <a href="#">4.1.11</a> .

#### 4.1.1 Inputs

<b>Configuration</b>	
— <b>Inputs</b>	Function assignment for installed input cards.
<b>Inputs</b>	
— <b>Option</b>	Selection: Option-1, Option-2, Internal, remote terminal if necessary
— <b>Type</b>	Display only

#### 4.1.2 Outputs

<b>Configuration</b>	
— <b>Outputs</b>	Function assignment for installed output cards.
<b>Outputs</b>	
— <b>Option</b>	Selection: Option-1, Option-2, Internal, remote terminal if necessary
— <b>Type</b>	Display only

#### 4.1.3 ModBus-TCP master





<b>Configuration</b>	
— <b>ModBus-TCP master</b>	
<b>ModBus-TCP master</b>	
— <b>Communication error</b>	Selection: Cancel, Show message
— <b>ModBus-TCP module</b>	Selection: Phoenix 1...8
— <b>Activate module</b>	

<ul style="list-style-type: none"> <li>— IP address</li> <li>— I/O type</li> <li>— Input</li> <li>— SPM address %MX</li> <li>— Default</li> <li>— Input/Output -</li> <li>— Input/Output +</li> <li>— Save</li> </ul>	<p>Check the <input checked="" type="checkbox"/> box to activate the module. The menu expands.</p> <p>Enter the IP address of the module.</p> <p>Selection: Digital input, Digital output 1...16</p> <p>See SPM table in Chapter 8.</p> <p>Settings are reset to factory settings.</p> <p>Switch to previous Input/Output.</p> <p>Switch to next Input/Output.</p> <p>The settings are saved.</p>
---	---

#### 4.1.4 Limit values

<ul style="list-style-type: none"> <li>— Configuration</li> <li>— Limit values</li> </ul>	<p>Define switch on/switch off points.</p>
<ul style="list-style-type: none"> <li>— Limit values</li> <li>— Scales</li> <li>— Limit value 1...2 On/off</li> <li>— Default</li> <li>— Save</li> </ul>	<p>Weighing point A</p> <p>Enter 0...Max (maximum capacity);</p> <p>Adopt unit from the calibration.</p> <p>Settings are reset to factory settings.</p> <p>The settings are saved.</p>

#### 4.1.5 Parameters

<ul style="list-style-type: none"> <li>— Configuration</li> <li>— Parameters</li> </ul>	<p>Define the parameters for the applications.</p>
<ul style="list-style-type: none"> <li>— Parameters</li> <li>— Printer for config. print-out</li> <li>— Dialog manual phase</li> <li>— LOT input field</li> <li>— ID input field</li> <li>— Default</li> <li>— Save</li> </ul>	<p>No printer, Printer, Printer 1, Printer 2</p> <p>Configure the operation dialog.</p> <p>Default setting: Start dosing</p> <p>Enter alphanumeric characters (max. 30).</p> <p>Preset the entry using keypad: Text =  ABC..</p> <p>Numeric =  123..; max. 18 characters</p> <p>Preset the entry using keypad: Text =  ABC..</p> <p>Numeric =  123..; max. 18 characters</p> <p>Settings are reset to factory settings.</p> <p>The settings are saved.</p>

#### 4.1.6 Production lines

<ul style="list-style-type: none"> <li>— Configuration</li> <li>— Production lines</li> </ul>	<p>Load (refresh) the production lines created and configured in ProBatch+.</p>
<ul style="list-style-type: none"> <li>— Production lines</li> <li>— Name of production line (e.g.: PL 1)</li> <li>— Default</li> <li>— Load</li> <li>— Save</li> </ul>	<p>Check the <input checked="" type="checkbox"/> box to activate the production line.</p> <p>Settings are reset to factory settings.</p> <p>The production lines are displayed in the form of a list.</p> <p>The settings are saved.</p>

### 4.1.7 Local operation

#### Configuration

- Local operation

#### Local operation

- Local start
- Plan (if selected)
- Local stop

- Local abort

- Customer

- Order

- Production ID

- Recipe cycles

- Default

- Save

Deactivated, recipe, plan

Start entire plan, start line of plan

Check the ☒ box to perform the "Stop" function during production on the device under [Recipe] or [Plan].

Check the ☒ box to perform the "Abort" function during production on the device under [Recipe] or [Plan].

[Local start] - [Recipe] selected: Not used, input at start, permanent entry (max. 20 characters)

[Local start] - [Recipe] selected: Not used, display

[Local start] - [Recipe] selected: Not used, input at start, permanent entry (max. 20 characters)

[Local start] - [Recipe] selected: Not used, display

[Local start] - [Recipe] selected: Not used, input at start, permanent entry (max. 20 characters)

[Local start] - [Recipe] selected: Not used, display

[Local start] - [Recipe] selected: Not used, input at start, permanent entry (1...9999)

[Local start] - [Recipe] selected: Not used, display

Settings are reset to factory settings.

The settings are saved.

### 4.1.8 Overview of weighing points

#### Configuration

- Overview of weighing points

The contents are represented in the form of an overview.

#### Overview of weighing points

- Overview of weighing points

- Status of weighing point

- 1st line

- 2nd to 6th line

Incorporate the overview into the visualization.

Deactivated, activated

Not active, active

Display only: WP status material

[Status WP] - [active] selected: Possible selection: Production line, recipe, recipe line, target value, actual value, difference (between target value and actual value), blank line

[Status WP] - [not active] selected: Possible selection: Blank line

- Default

- Save

Settings are reset to factory settings.

The settings are saved.

**4.1.9 View of weighing point****Configuration**| **View of weighing point**

Incorporate the view into the visualization.

**View of weighing point**| **Number of lines**

Number of lines that is to be displayed.

| **Status of weighing point**

Not active, active

| **1st line**

Display only: WP status material

| **2nd to 6th line**

[Status WP] - [active] selected: Possible selection: Production line, recipe, recipe line, target value, actual value, difference (between target value and actual value), blank line

[Status WP] - [not active] selected: Possible selection: Gross, blank line

Settings are reset to factory settings.

| **Default**

The settings are saved.

| **Save****4.1.10 Simulation****Configuration**| **Simulation**

Only possible if the dosing license has been activated and the "Settings locked" parameter has not been enabled.

**Simulation**| **Weighing point A**

Check the ☒ box to weighing point for the simulation.

| **Material flow**

Only possible if a weighing point has been selected.

Applies the weight value from the scale (in this case, g).

Enter value for coarse flow, e.g.: 100 g/sec

Settings are reset to factory settings.

| **Default**

The settings are saved.


| **Save****4.1.11 Printing****Configuration**| **Printing**

Print configuration.



## 5 Getting started

### 5.1 Safety instructions

 **WARNING**

**Warning of a hazard area.**

► It is essential that the safety instructions in Chapter 2 of the PR 5500 Installation manual are read before installation and commissioning!

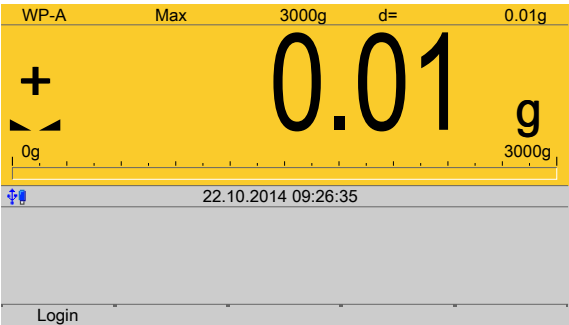
### 5.2 Switching on the device

The device can be set up as follows:

- Via keys on the front of the device
- Via an external PC keyboard
- Via a notebook/PC using the VNC software (included on the CD)

When the device is powered up, the following is shown on the display and/or notebook/PC:

Checking... Booting... Restoring...	The device is booting up.
PR 5500	<ul style="list-style-type: none"><li>- The instrument type is displayed, PR 5500</li><li>- BIOS version</li><li>- Firmware version</li><li>- Automatic display test</li><li>- Weight display</li></ul>
No signal	Error message: no load cells are connected, see also PR 5500 operating instructions.
No values from scale	Error message: no communication with the xBPI scale, see also PR 5500 operating instructions. Error message: unable to read weight values from the ADC (analog-digital converter); see also PR 5500 operating instructions.
Scale not ready	Error message: no load cells or scale connected, see also PR 5500 operating instructions.



The weight display is shown.

Check the date and time after first turning on the device, see PR 5500 operating instructions.

### 5.3 User login

User management is **not** activated by default.

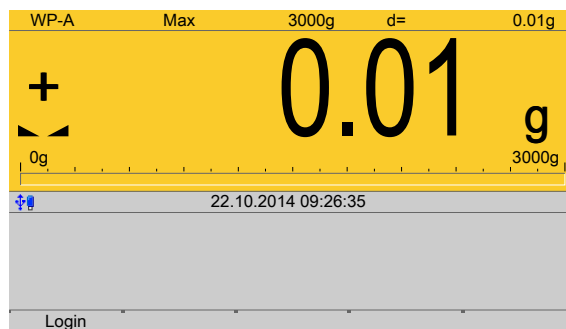
Activate user management with the menu item [System setup] - [User management] , see also PR 5500 operating instructions.

---

**Note:**

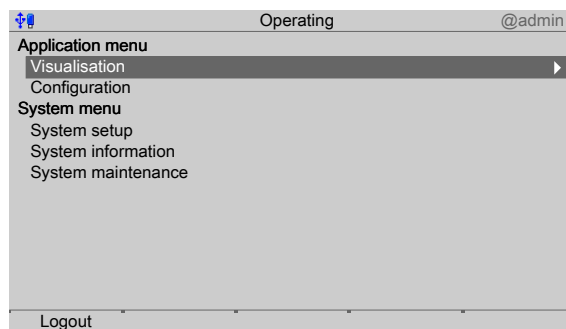
An authorized user must log in to start or configure the application.

---



1. Press the [Login] soft key.
2. Enter the password using the keyboard and confirm. If user management is not active, you only need to confirm.
  - ▷ The operating menu is displayed.

The application and system menus are selected here.

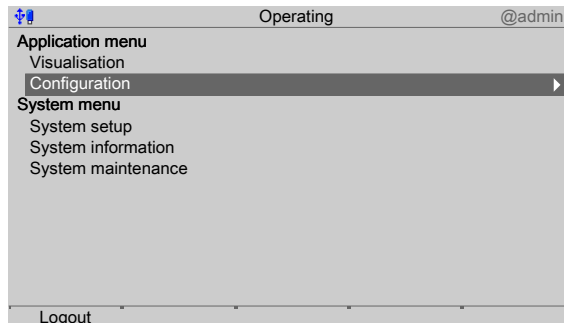


3. Select and confirm the desired menu item using the cursor.

## 5.4 Configuration

### 5.4.1 General information

In this menu item, application is configured.



- Select and confirm [Configuration] using the cursor.

### 5.4.2 Configuring inputs

This function is required to configure the analog and digital inputs.

- Analog input, see Chapter [5.4.2.1](#)
- Digital inputs, see Chapter [5.4.2.2](#)
- I/O cards test, see Chapter PR 5500 operating instructions.

When changing the I/O card type, the configuration data remains unchanged. Functions for a non-installed scale can be selected, however, they are without effect.

The free and assigned SPM addresses are documented in Chapter [8](#).

If several inputs are assigned to an SPM address, the input with the higher number prevails.

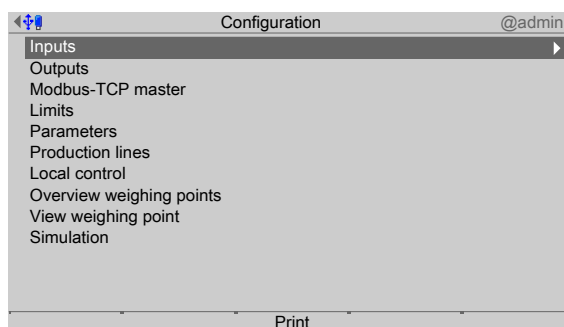
Option-1 = No. 1

Option-2 = No. 2

Built-in = No. 3

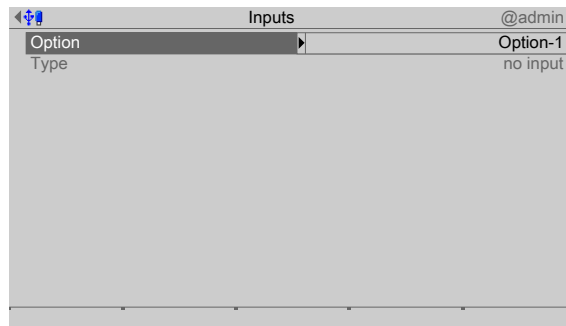
Unused inputs are ignored.

The card type and the available inputs and outputs are detected automatically.



- In the operating menu, select and confirm [Configuration] - [Inputs].

### 5.4.2.1 Analog input

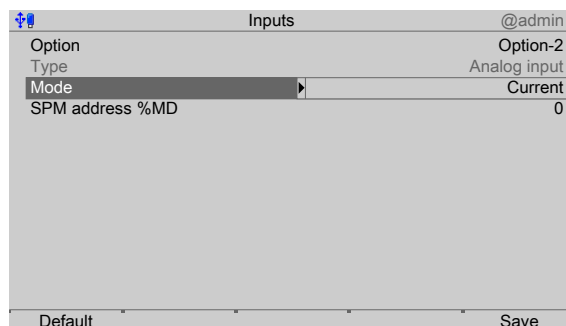


1. Select and confirm [Option] using the cursor.

▷ A selection window opens.

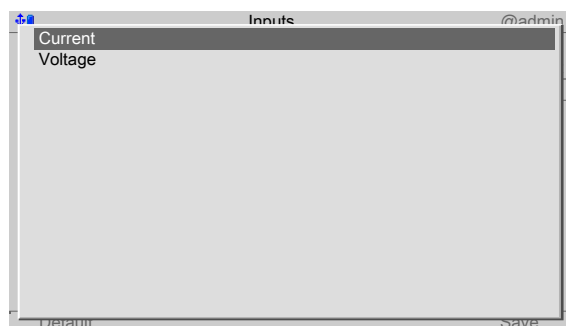


2. Select and confirm the corresponding interface using the cursor.

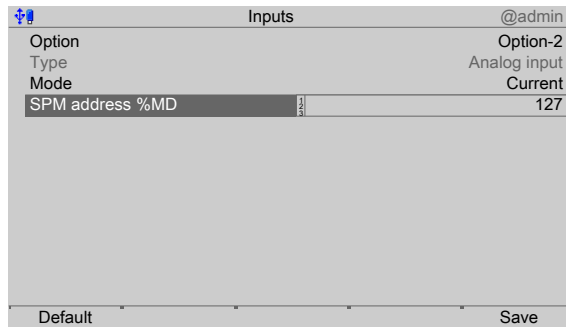


3. Select and confirm [Mode] using the cursor.

▷ A selection window opens.



4. Select and confirm the appropriate input type using the cursor (see also PR 5500 operating instructions).



5. Select [SPM address %MD] using the cursor.
6. Use the keyboard to enter and confirm a free address %MD (see Chapter 8).
7. Press the [Default] soft key to return to the factory settings, if required.
8. Press the [Save] soft key to save the settings.

---

**Note:**

If the SPM address is equal to 0, the analog value is not written to the SPM.

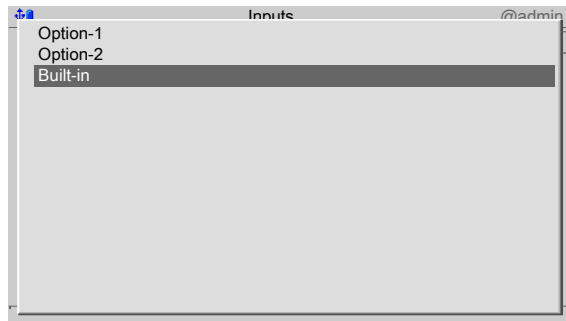
**General:**

No reserved SPM addresses are overwritten by the analog inputs.

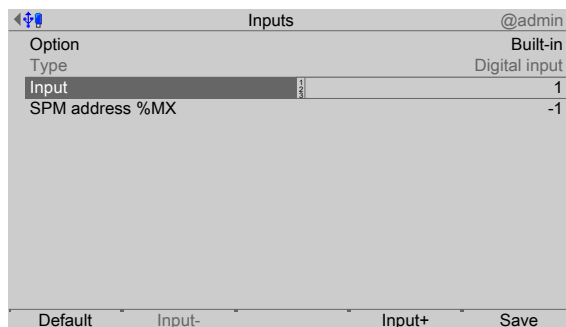
---

#### 5.4.2.2 Digital inputs

1. Select and confirm [Option] using the cursor.
  - ▷ A selection window opens.



2. Select and confirm the corresponding interface using the cursor.



3. Select [Input] using the cursor.
4. Confirm input "1".

Inputs		@admin
Option	Built-in	
Type	Digital input	
Input	1	
SPM address %MX	26	

Default   Input-   Input+   Save

5. Select [SPM address %MX] using the cursor.
6. Use the keyboard to enter and confirm a free address %MX (see also PR 5500 operating instructions).

---

**Note:**

A negative address inverts the function.

---

Inputs		@admin
Option	Built-in	
Type	Digital input	
Input	2	
SPM address %MX	27	

Default   Input-   Input+   Save

7. Press the [Input+] soft key to configure the next input.

Inputs		@admin
Option	Built-in	
Type	Digital input	
Input	2	
SPM address %MX	1089	

Default   Input-   Input+   Save

8. Select [SPM address %MX] using the cursor.
9. Use the keyboard to enter and confirm a free address %MX (see also PR 5500 operating instructions).
10. Configure inputs 3+4 in the same way.
11. Press the [Default] soft key to return to the factory settings, if required.
12. Finally, press the [Save] soft key to save the settings.

---

**Note:**

The value of the digital input is not written to the SPM if the address = 0 (inactive).

---

### 5.4.3 Configuring outputs

This function is required to configure the analog and digital outputs.

- Analog output, see Chapter 5.4.3.1.
- Adapting the analog output, see PR 5500 operating instructions.
- Digital inputs, see Chapter 5.4.3.3.
- I/O cards test, see PR 5500 operating instructions.

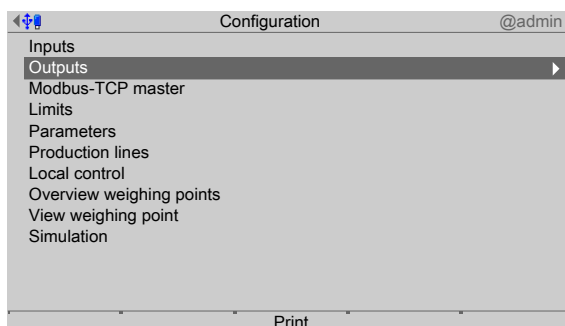
When changing the I/O card type, the configuration data remains unchanged. Functions for a non-installed scale can be selected, however, they are without effect.

The free and assigned SPM addresses are documented in Chapter 8.

The assignment of SPM addresses to a scale is only valid if the scale exists.

Non-allocated outputs are switched off.

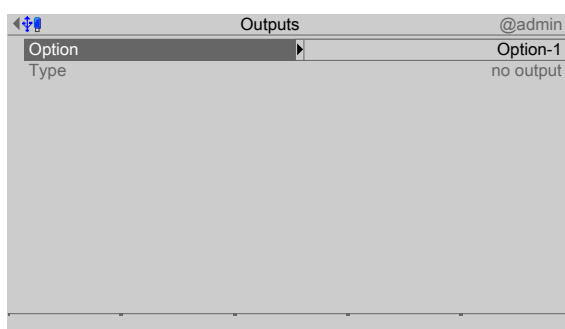
The card type and the available inputs and outputs are detected automatically.



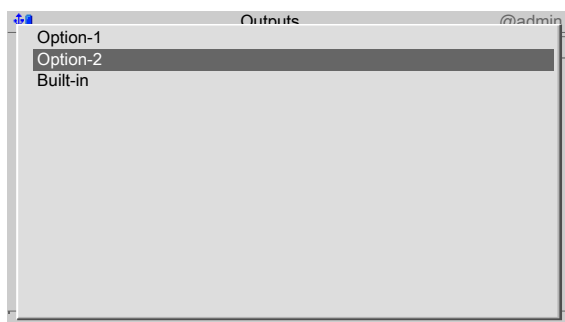
- In the operating menu, select and confirm [Configuration] - [Outputs].

#### 5.4.3.1 Analog output

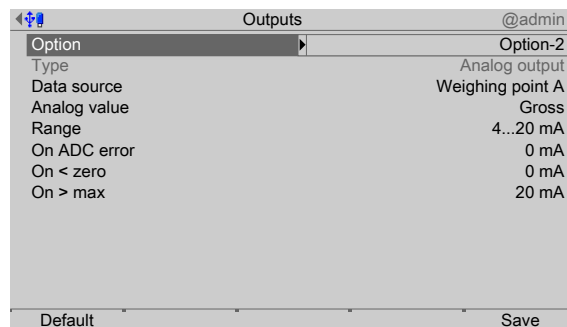
The weight value of the selected weighing point is transmitted to the output.



1. Select and confirm [Option] using the cursor.
  - ▷ A selection window opens.



2. Select and confirm the corresponding interface using the cursor.
- ▷ The factory settings are displayed.



3. Configure the analog output in accordance with the table below.
4. Press the [Default] soft key to return to the factory settings, if required.
5. Press the [Save] soft key to save the settings.

#### Analog output

Menu item	Selection	Description
[Data source]	Weighing point A	Output of maximum value of the scales. 0...Max are converted into 0/4 mA...20 mA.
[Analog value]	Gross	Output of the gross value
	Net/Gross	Output of the net value, if tared; otherwise gross
	Net/0 mA	Output of the net value, if tared; otherwise 0 mA
	Net/4 mA	Output of the net value, if tared; otherwise 4 mA
	Net/20 mA	Output of the net value, if tared; otherwise 20 mA
[Range]	0...20 mA	Output of 0...Max as 0...20 mA
	4...20 mA	Output of 0...Max as 4...20 mA
[On ADC error]	0 mA	Set output to 0 mA.
	4 mA	Set output to 4 mA.
	20 mA	Set output to 20 mA.
	hold	The last output value is held.
[On < zero]	0 mA	Set output to 0 mA.
	4 mA	Set output to 4 mA.
	20 mA	Set output to 20 mA.
	hold	The last output value is held.
	linear	Only for [4...20 mA]: Output goes below 4 mA until the limit is reached.
[On > Max]	0 mA	Set output to 0 mA.
	4 mA	Set output to 4 mA.
	20 mA	Set output to 20 mA.
	hold	The last output value is held.
	linear	Output goes below 20 mA until the limit is reached.

#### 5.4.3.2 Adapting analog output

The analog output current on the receiving end (PLC) is generally fed through a resistor, measured as a voltage and then digitized. The output current can be adjusted in small ranges. This is required if small deviations from the nominal value occur in a connected PLC.



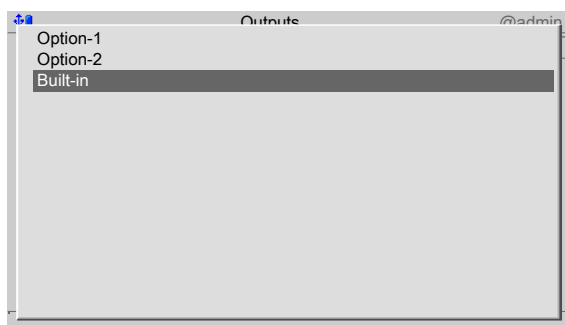
**Note:**

Adapting the analog output, see PR 5500 operating instructions.

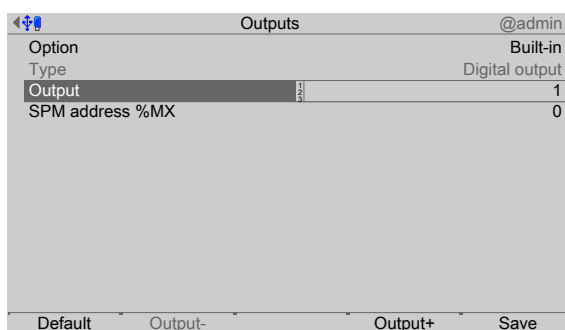
**5.4.3.3 Digital outputs**

1. Select and confirm [Option] using the cursor.

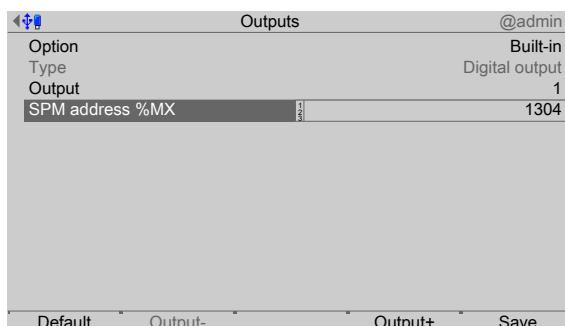
▷ A selection window opens.



2. Select and confirm the corresponding interface using the cursor.



3. Select and confirm [Output] using the cursor.
4. Confirm output "1".

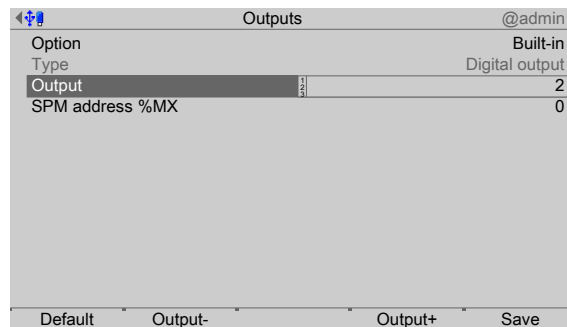


5. Select [SPM address %MX] using the cursor.
6. Using the keypad, enter and confirm a corresponding fixed or free address %MX (see also PR 5500 operating instructions) for the weighing point.

**Note:**

The SPM address %MX for an **unused** digital output = 0

A negative address inverts the function.



7. Press the [Output+] soft key to configure the next output.
8. Select [SPM address %MX] using the cursor.
9. Using the keypad, enter and confirm a corresponding fixed or free address %MX (see also PR 5500 operating instructions) for the weighing point.
10. Configure outputs 3+4 in the same way.
11. Press the [Default] soft key to return to the factory settings, if required.
12. Finally, press the [Save] soft key to save the settings.

#### 5.4.4 Configuring the ModBus TCP master

In this application, the ModBus master supports up to 8 predefined ModBus modules.

- For supported modules, see Chapter [5.4.4.1](#)
- Configuration tool, see Chapter [5.4.4.2](#)
- Device configuration, see Chapter [5.4.4.3](#)

In the operating menu, select and confirm [Configuration] - [ModBus-TCP master] .

##### 5.4.4.1 Supported modules

###### Modules 1 - 4

Modules 1-4 relate in each case to the following module:

Phoenix Contact Inline Block IO (ILB ETH 24 DI16 DIO16-2TX)

They each offer 16 digital inputs and 16 digital outputs.

###### Modules 5 - 6

Modules 5-6 relate in each case to the following modules:

- Phoenix Contact Inline module (IL ETH BK DI8 DO4 2-TX-PAC)
- Phoenix Contact output module (IB IL 24 DO16-PAC)
- Phoenix Contact output module (IB IL 24 DO16-PAC)

They offer a total of 8 digital inputs and 36 digital outputs.

###### Modules 7 - 8

Modules 7-8 relate in each case to the following modules:

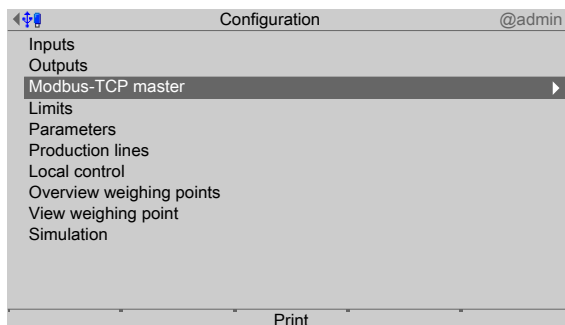
- Phoenix Contact Inline module (IL ETH BK DI8 DO4 2-TX-PAC)
- Phoenix Contact output module (IB IL 24 DO16-PAC)
- Phoenix Contact output module (IB IL 24 DO16-PAC)
- Phoenix Contact power supply (IB IL 24 PWR IN-PAC)
- Phoenix Contact output module (IB IL 24 DO16-PAC)

They offer a total of 8 digital inputs and a total of 52 digital outputs.

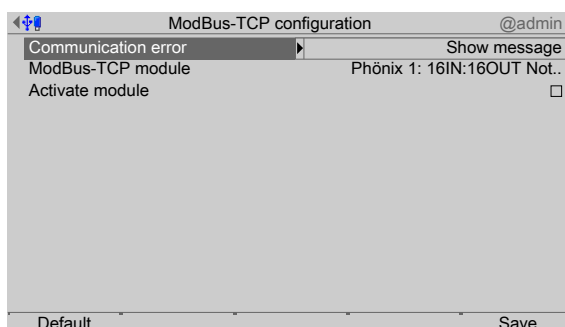
#### 5.4.4.2 Configuration tool

The modules must be configured in terms of hardware according to the Phoenix instructions. In addition, an IP address must be assigned to each terminal. Phoenix provides the "IPAssign.exe" configuration tool for that purpose.

#### 5.4.4.3 Configuration on the device

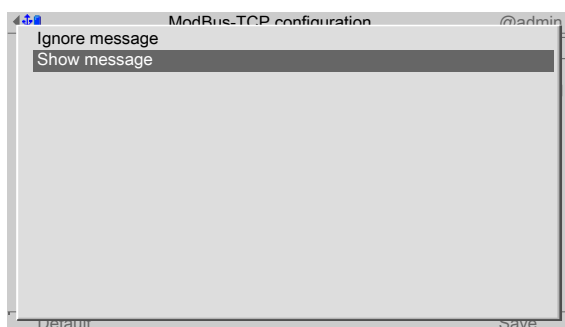


1. In the operating menu, select and confirm [Configuration] - [ModBus-TCP master].

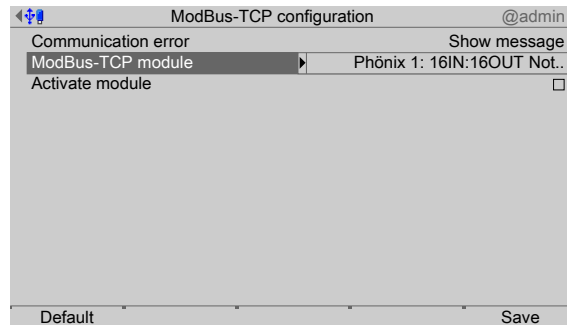


2. Select and confirm [Communication error].

▷ A selection window opens.

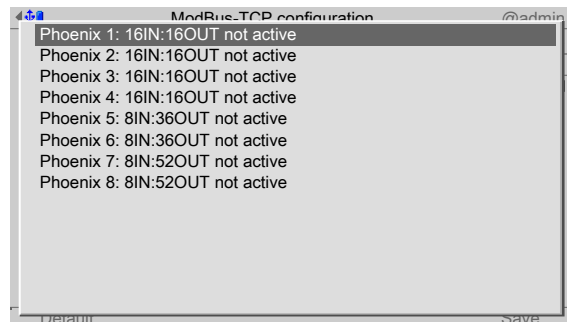


3. Select the appropriate function using the cursor (in this case, "Show message") and confirm.

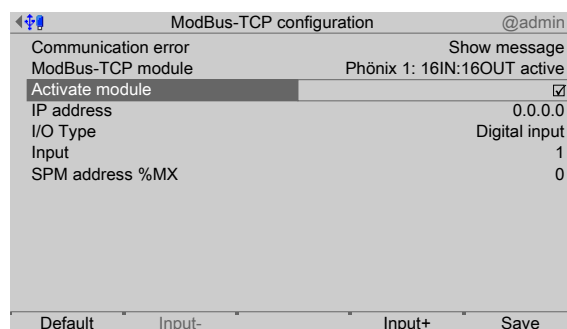


4. Select and confirm [ModBus Module] using the cursor .

▷ A selection window opens.



5. Select the appropriate function using the cursor (in this case, "Phoenix 1: ...") and confirm.



6. Check the ☒ box to activate the module.
7. Select and confirm the individual settings using the cursor.

#### [IP address]

Selection: speak with the responsible system administrator

#### [I/O type]

Selection: Digital input, Digital output

#### [Input/Output]

Selection: Input+/Output+ (higher), Input-/Output- (lower)

#### [SPM address %MX]

Set: Fixed SPM address, see Chapter 8.

8. Press the [Default] soft key to return to the factory settings, if required.
9. Finally, press the [Save] soft key to save the settings.

### 5.4.5 Limit values: configuration

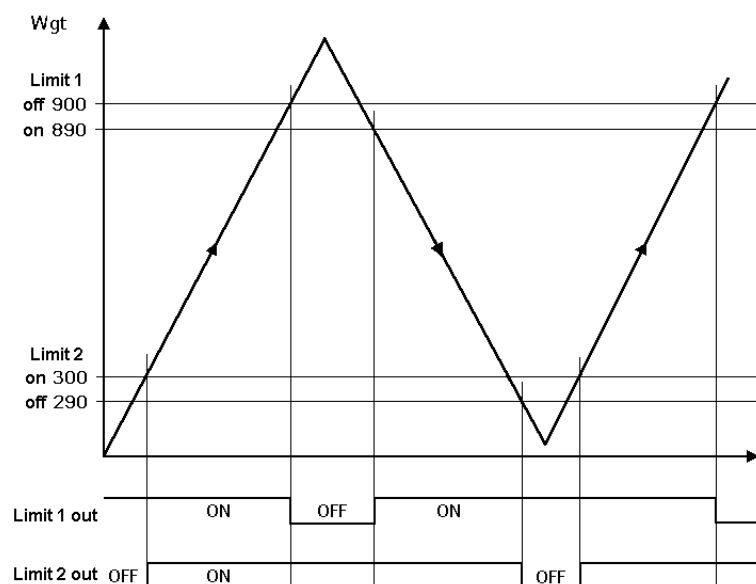
Each limit consists of a switch-on and a switch-off point for definition of a hysteresis.

The 4- values for each weighing point are entered according to the same pattern. The values may be within  $-0,01 \times \text{Max}$  and  $1,01 \times \text{Max}$  for the related scale.

For the SPM addresses for the limits, see Chapter 8.

These do not have a function for batching.

#### Example 1:

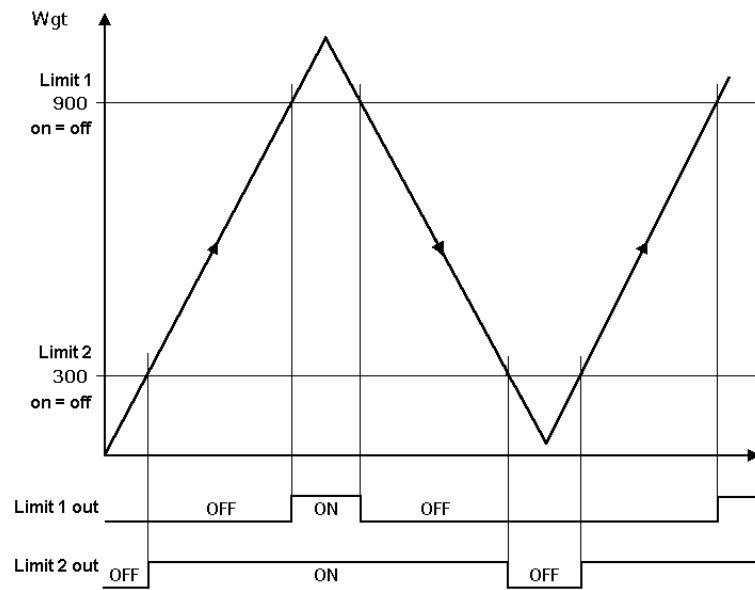


The output signal (Limit 1 out) of limit 1 switches OFF above a weight (Wgt) of 900 .

The output signal (Limit 2 out) of Limit 2 switches OFF below 290 .

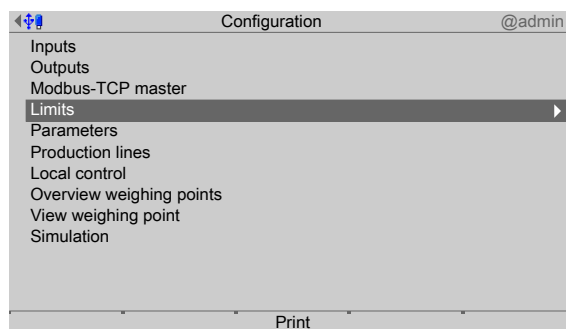
The two limit values have a hysteresis of 10 .

In the event of a power failure both outputs turn to "off" ("OFF"), thus indicating underfill and overfill simultaneously.

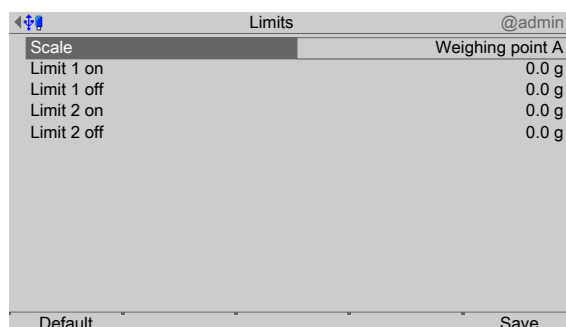
**Example 2:**

If the Limits 1 and 2 are the same for "On" and "Off" (on = off),

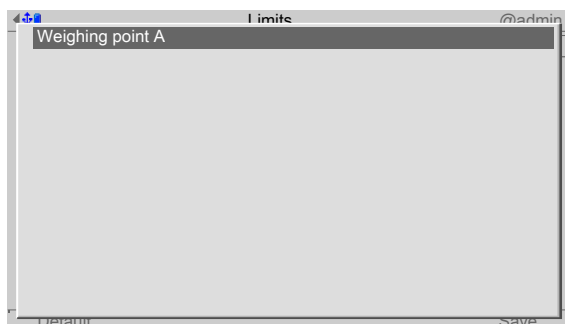
- switches output 1 (Limit 1 out) ON if the weight (Wgt) exceeds the value.
- switches output 2 (Limit 2 out) OFF if the weight falls below the value.



1. Select and confirm [Limits] using the cursor.

**Select weighing point**

2. Select and confirm [Scale] using the cursor.
  - ▷ A selection window opens.



3. Confirm weighing point.

#### Set limit values according to example 1

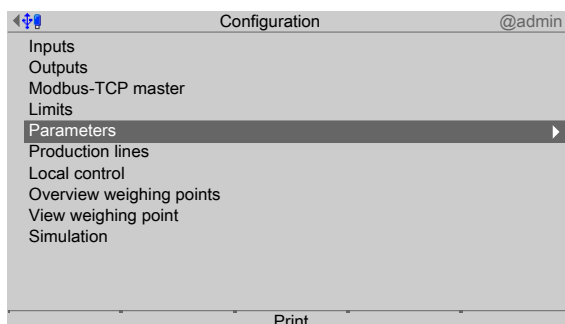
Limits		@admin
Scale		Weighing point A
Limit 1 on	890.0 g	
Limit 1 off	900.0 g	
Limit 2 on	300.0 g	
Limit 2 off	290.0 g	

Default Save

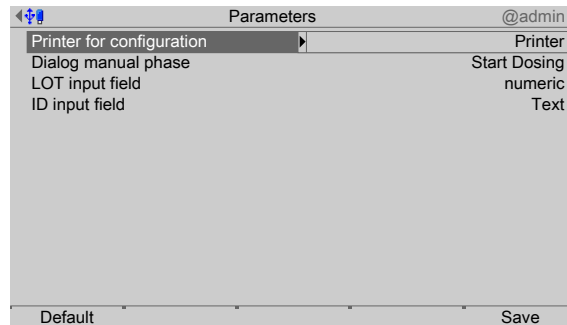
4. Using the cursor, select appropriate lines.
5. Use the keyboard to enter and confirm the desired values (in this case: see example 1).
6. Press the [Default] soft key to return to the factory settings, if required.
7. Finally, press the [Save] soft key to save the settings.

### 5.4.6 Parameters

The parameters valid for all applications are configured in this menu item.

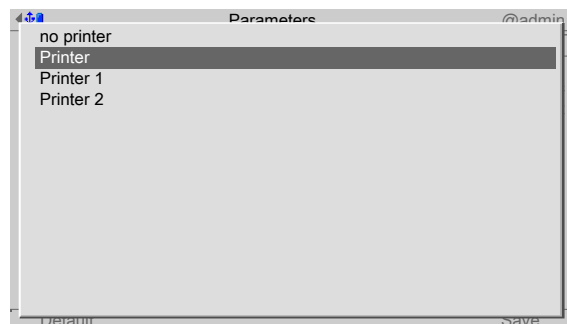


1. Use the cursor to select and confirm [Parameters].
  - ▷ A selection window opens.



2. Use the cursor to select and confirm [Printer for configuration].

▷ A selection window opens.



3. Use the cursor to select and confirm the appropriate printer.

Selection: no printer, Printer, Printer 1, Printer 2

This requires previous setup in the system menu under [System setup] - [Connected devices]

#### [Dialog manual phase]

This text is displayed as a prompt for manual phases. A maximum of 30 alphanumeric characters can be entered; default setting is "Start dosing."

#### [LOT input field]

The keypad entry preset is selected: Text = ABC.., Numeric = 123.. A maximum of 18 alphanumeric characters can be entered using the keypad.

#### [ID input field]

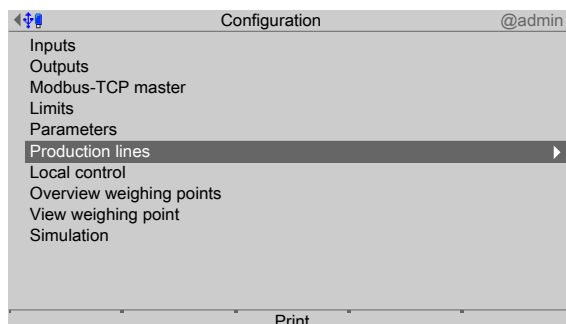
The keypad entry preset is selected: Text = ABC.., Numeric = 123.. A maximum of 18 alphanumeric characters can be entered using the keypad.

4. Press the [Default] softkey to return to the factory settings, if required.
5. Finally, press the [Save] softkey to save the settings.

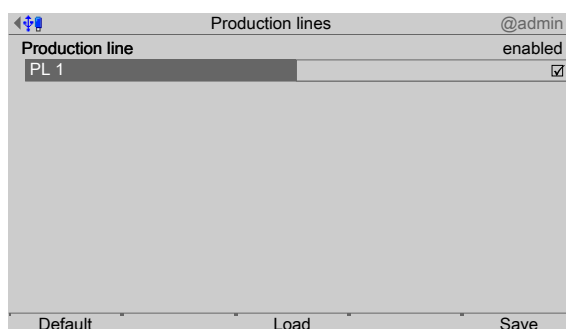
### 5.4.7 Production Lines

In this menu item, you can load the production lines created in PR 8400 (ProBatch+).





1. Select and confirm [Production lines] using the cursor.



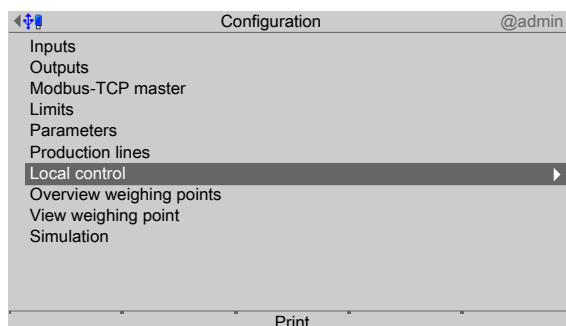
2. Using the cursor, select and confirm the corresponding production line to activate this for the device.
3. Press the [Default] soft key to return to the factory settings, if required.
4. Press the [Load] soft key in order to load the production line.

If a production line is deactivated, downloading to start related plans/plan lines/recipes locally will not be possible. Recipes for non-activated production lines do not appear in the menu [Plan]/[Recipe].

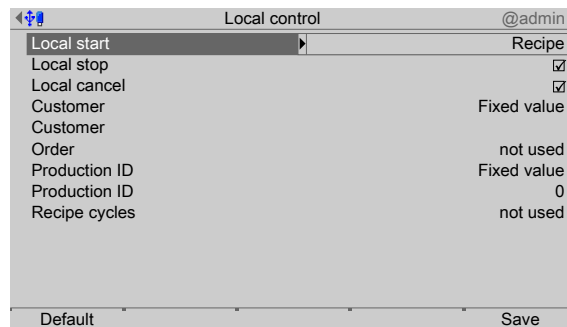
5. Finally, press the [Save] soft key to save the settings.

#### 5.4.8 Local Control

In this menu item, you can configure the parameters to start the [recipe]/[plan] on the device.



1. Select and confirm [Local control] using the cursor.
  - ▷ A selection window appears.



2. Select and confirm the individual settings.

### **[Local start]**

You can choose between [disabled], [Recipe] or [Plan]. The following menu items are adjusted based on the one you select.

### **[Local stop]**

Check the ☒ box to perform the "Stop" function during production on the device under [Recipe] or [Plan].

### **[Local cancel]**

Check the ☒ box to perform the "Cancel" function during production on the device under [Recipe] or [Plan].

### **[Customer], [Order]**

If [Local start] - [Recipe] was selected, you can choose between:

not used, input at start, permanent entry (enter an alphanumeric text of no more than 20 characters in the next line).

If [Local start] - [Plan] was selected, you can choose between:

not used, display.

### **[Production ID]**

If [Local start] - [Recipe] was selected, you can choose between:

not used, input at start, permanent entry (enter an alphanumeric text of no more than 20 characters in the next line).

If [Local start] - [Plan] was selected, you can choose between:

not used, display.

### **[Recipe cycles]**

If [Local start] - [Recipe] was selected, you can choose between:

Not used, input at start, permanent entry (enter 1...9999 in the next line.).

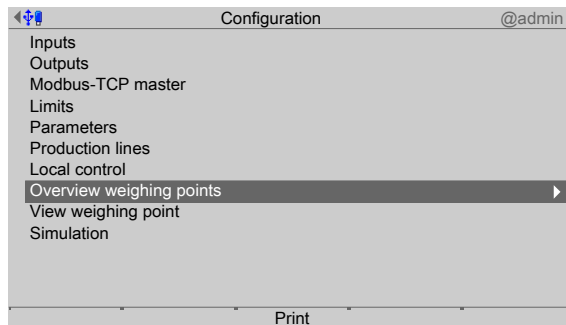
If [Local start] - [Plan] was selected, you can choose between:

not used, display.

3. Press the [Default] soft key to return to the factory settings, if required.
4. Finally, press the [Save] soft key to save the settings.

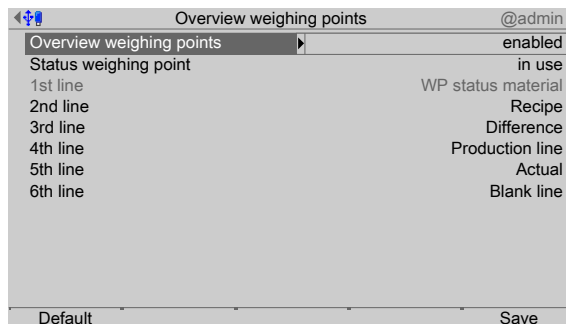
### 5.4.9 Overview Weighing Points

In this menu item, you can configure the overview of weighing points in the visualization.



1. Select and confirm [Overview weighing points] using the cursor.

▷ A selection window appears.



2. Select and confirm the individual settings.

#### [Overview weighing points]

If [enabled] was selected, the overview is also included in the visualization.

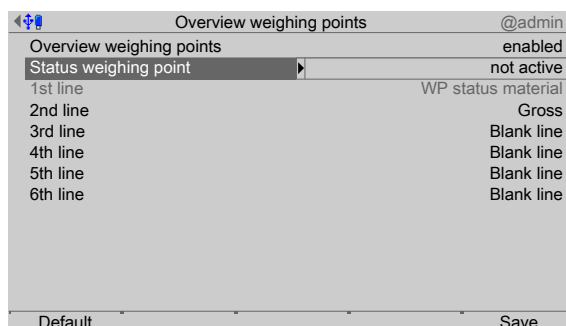
#### [Status WP]

If [in use] was selected, a maximum of 6 lines can be displayed.

WP status material is displayed in line 1.

Possible selection for line 2...6:

Production line, Recipe, target value, actual value, difference (between target value and actual value), Gross, Blank line.

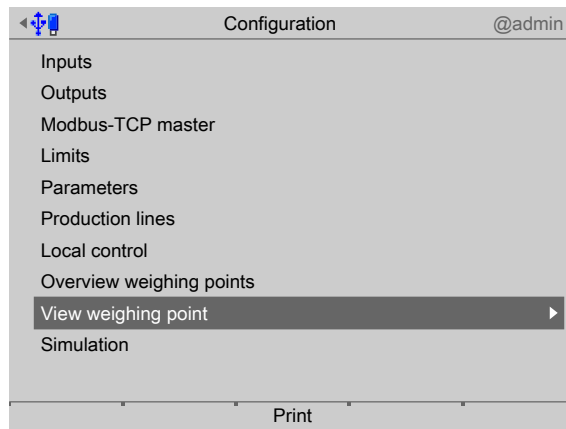


If [not in use] was selected under [Status weighing point], only [Gross] and [Blank line] can be selected.

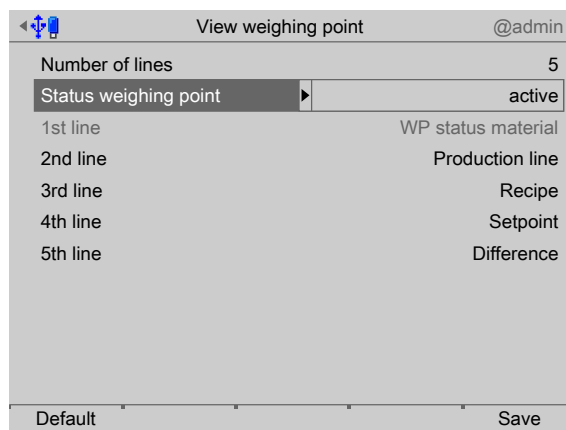
3. Press the [Default] soft key to return to the factory settings, if required.
4. Finally, press the [Save] soft key to save the settings.

### 5.4.10 Weighing point view

In this menu item, you can configure the view of a weighing point in the visualization.



1. Select and confirm [Weighing point view] using the cursor.



▷ A selection window is displayed.

2. Select and confirm the individual settings using the cursor.

#### [Number of lines]

Set the number of lines displayed (1...5) in the visualization.

#### [Weighing point status]

If [active] was selected, a maximum of 5 lines can be displayed.

WP status material is displayed in line 1.

Possible selection for lines 2...5:

Production line, Recipe name, Recipe line, Set point, Actual value, Difference (between target value and actual value), Gross, Blank line.

View weighing point		@admin
Number of lines	5	
Status weighing point	not active	
1st line	WP status material	
2nd line	Blank line	
3rd line	Blank line	
4th line	Blank line	
5th line	Blank line	
Default		Save

If [not active] was selected under [Status WP], lines 2...5 are always empty.

3. Press the [Default] soft key to return to the factory settings, if required.
4. Finally, press the [Save] soft key to save the settings.

#### 5.4.11 Simulation

It is possible to test whether the settings/links of the digital inputs and outputs have been parameterized correctly.

In a test structure, the process can be simulated in advance so that any necessary changes can be made before installation.

The dosing signals for Coarse, Fine and Discharge are also operated in the simulation. The speed of the coarse flow to be simulated is adjustable in units/minutes (e.g. 10 kg/min for a scale with kg graduations).

The fine flow is carried out at approx.  $\frac{1}{5}$  of the speed of the coarse flow. The discharge is carried out at 5 times the speed of the coarse flow.

After a cold start, the simulation is off. The parameters are saved.

#### WARNING

##### **Risk due to uncontrolled material flow!**

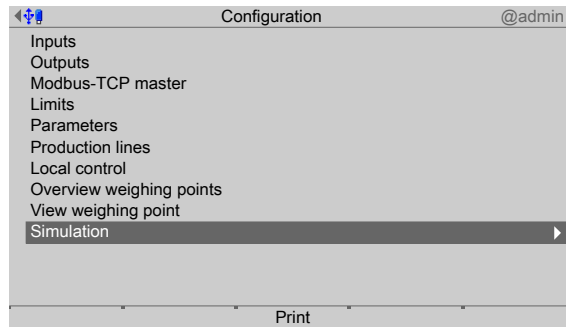
All signals are operated for real when the function is activated.

- The simulation may only be carried out in a test structure!

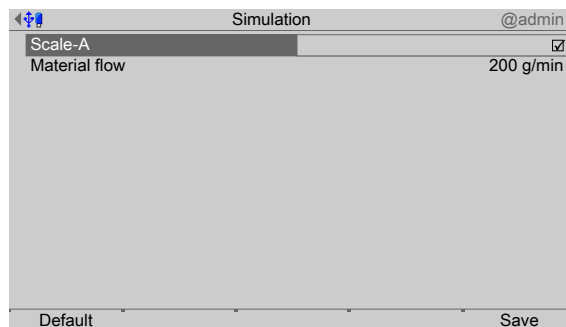
#### **Note:**

**A scale can only be simulated if the "Settings locked" parameter has not been activated under [System setup] - [Weighing points] - [Parameters].**

- After exiting the simulation, set the parameter "Settings locked" to reactivate overwrite protection via the software under [System setup] - [Weighing points] - [Parameters].



1. Use the cursor to select and confirm [Simulation].



2. Check the box ☒ to activate the simulation mode.
3. Enter the coarse flow speed.
4. Press the [Default] softkey to return to the factory settings, if required.
5. Press the [Save] softkey to save the settings for the simulation.
6. To start the recipe, see Chapter [7.3.12](#).
7. After the end of the test phase, deactivate the simulation and perform a cold start (see PR 5500 operating instructions) in order to switch off the simulation.

## 5.5 Switching off the device

This function is required to disconnect the device from the power immediately, e.g., to install an option card. The rechargeable battery is immediately deactivated.

---

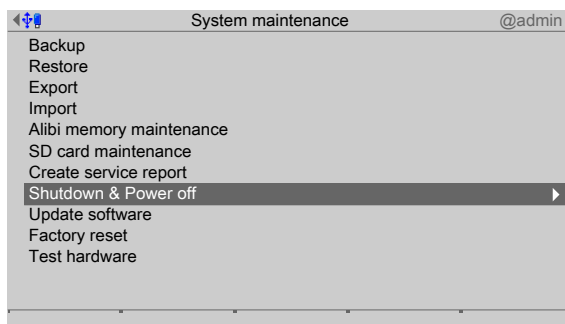
### Note:

With a menu-driven shutdown, not all the content of the SD-RAM will be saved to a NAND flash memory.

When restarting, a cold start is forced. For example, database entries **no longer** exist.

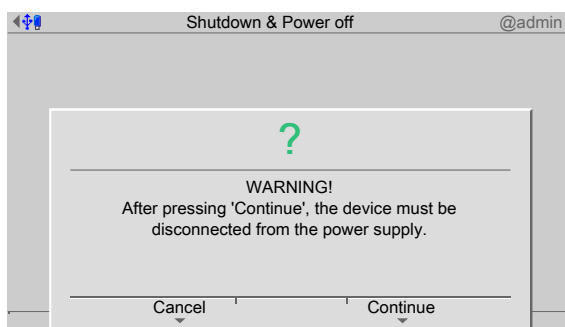
It is recommended to first make a backup on the SD card and/or export the data to a USB stick; see Chapter PR 5500 operating instructions.

---



1. In the operating menu, select and confirm [System maintenance] - [Shutdown & Power off].

▷ A prompt window opens.



2. Press the [Next] soft key.
3. Disconnect the power plug.

## 6 Application

### 6.1 Maxxis 4 connected directly/via Network to PC

Recipe management runs on the PC with program PR 8400 (ProBatch+).

PR 8400 is configured for Maxxis 4 using the "Phase" application (referred to as the "Phase-Controller" from this point onwards). The recipe control runs on the batch server.

Maxxis 4 is connected to the PC via Ethernet.

The batch server can communicate with multiple devices via OPC server PR 1792.

When batching starts, the recipe remains in the PC. Only the data from the active batching phase is downloaded to the device and started up.

The device runs through the batching phase independently. PR 8400 (ProBatch+) and the Phase-Controller visualize the current status.

The container valve(s) (coarse and fine valves) must be connected to the device. An external SPS that processes these output signals further does not have to be used.

The SPM output and SPM input address must be specified in the component parameters for PR 8400 (ProBatch+).

### 6.2 Examples with Local Inputs and Outputs

#### 6.2.1 General Information

In the following examples, all inputs and outputs are activated by the Phase-Controller directly. The SPS does not intervene in the controls. It does not use any data provided for this weighing point by any proxy server.

The SPM addresses can be found in Chapter 8.

#### 6.2.2 Example 1

In program PR 8400 (ProBatch+), the following components are defined for WP-A:

- The "Mehl" ("flour") component with batching mode B1 uses SPM output address X24.
- The "Zucker" ("sugar") component with batching mode B1 uses SPM output address X25.

The image shows two screenshots of the 'Edit Component' dialog boxes. The top screenshot is for 'Mehl B1' and the bottom is for 'Zucker B1'. Both dialog boxes have the following fields:

- Name:** Mehl B1 (top) / Zucker B1 (bottom)
- WP:** WPA (dropdown)
- Batchmode:** B1 (dropdown)
- SPM Output Address:** 24 (top) / 25 (bottom)
- SPM Input Address:** -1 (both)
- Parameter:** (empty text area)
- Restart Mode:**
  - ☒ No Correction
  - ☐ Correction, No Optimizing

If a recipe uses these components, the data for the current component is transferred to the Phase-Controller and started.



In the Phase-Controller, the valves should be activated directly by the digital output card.

Outputs		@admin
Option		Built-in
Type		Digital output
Output		1
SPM address %MX		1304

Default Output- Output+ Save

Output 1 is configured with address X4 and is active when the batching is being done in the coarse flow.

Outputs		@admin
Option		Built-in
Type		Digital output
Output		2
SPM address %MX		5

Default Output- Output+ Save

Output 2 is configured with address X5 and is active when the batching is being done in the fine flow..

Outputs		@admin
Option		Built-in
Type		Digital output
Output		3
SPM address %MX		24

Default Output- Output+ Save

Output 3 is configured with address X24 and is active so long as the "Mehl" ("flour") component is active.

Outputs		@admin
Option		Built-in
Type		Digital output
Output		4
SPM address %MX		25

Default Output- Output+ Save

Output 4 is configured with address X25 and is active while the "Zucker" ("sugar") component is active.

### 6.2.3 Example 2

In program PR 8400 (ProBatch+), the following component is defined for WP-A:

- The "Regler" ("stabilizer") component with batching mode A1 uses SPM output address W199.

In the Phase-Controller, the analog value should be output directly by the analog output card.

The value from the "Regler" ("stabilizer") component is then output as an analog signal.

### 6.2.4 Example 3

In program PR 8400 (ProBatch+), the following component is defined for WP-A:

- The manual "Hand" ("hand") component with batching mode D1 uses SPM input address X26.

In the Phase-Controller, manual addition should be acknowledged with a digital input.

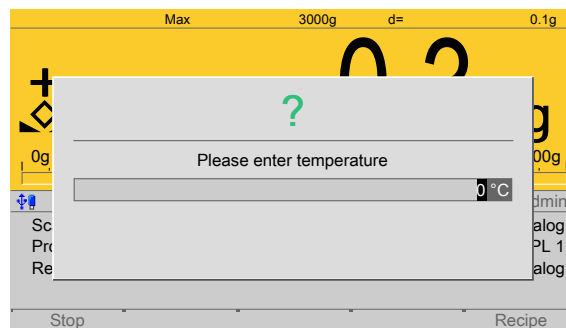
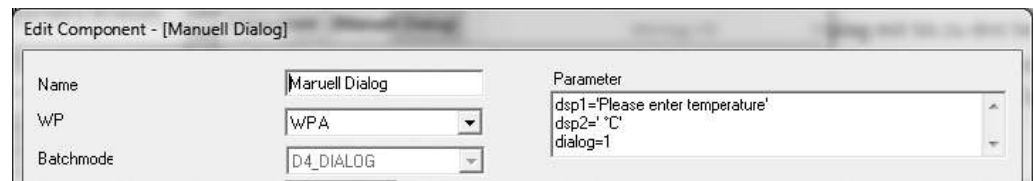
Option	Type	Built-in	Digital input
Input		1	
SPM address %MX		26	

Input 1 is configured with address X26. This address is "TRUE" if the input is activated. Manual addition can also be confirmed by pressing the **OK** key.

### 6.2.5 Example 4

In program PR 8400 (ProBatch+), the following component is defined for WP-A:

- The manual "Manuell Dialog" ("Manual dialog") component is used with batching mode D4\_DIALOG.
- The additional parameter is set with "dialog=1" (see Chapter [7.3.9](#)).
- The other parameters, "dsp1" and "dsp2", are ignored.



The input window shows:

- the header defined under [dsp1=];
- the unit defined under [dsp2=];
- the entry position marked in black.

► Confirm the entry.

## 7 Operation and visualization of the scales

### 7.1 General information

The visualized data and the possible/necessary operation depend on the current process.

### 7.2 Visualization

#### 7.2.1 General

How the phases are displayed will depend on the batching mode you choose. The batching modes are described in the PR 8400 ProBatch+ (Release 2.00) instruction manual. The following rules apply:

- The **STOP** key stops all active phases of the weighing points configured on the device.
- In a menu such as the configuration you can use arrow keys to navigate, a key to select the item you have marked and a key to exit the menu item.
- Soft keys are shown only if the function related to these is permitted.
- If a phase has a status that requires intervention by an operator, the status of the phase flashes gray on the overview page. In the weighing point view, the status is also indicated by a colored marking on the first line (red = Hold or Alarm; Yellow = Material flow warning).

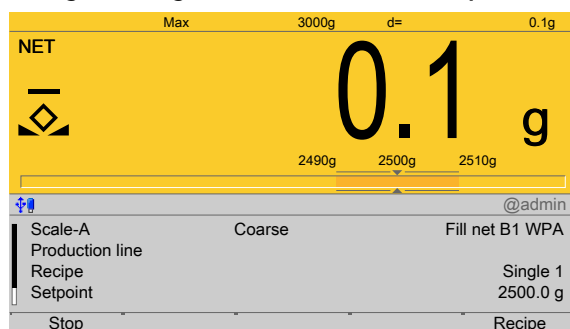
#### 7.2.2 Bar graph and tolerance field

In the case of both automatic and manual batching, a bar graph appears over the weight display, which is always scaled to the set point for the current material.

The tolerance field is labeled and is always the same width irrespective of the absolute value. The set point is marked using 2 triangles and is always (even if the tolerance is not symmetrical) in the middle of the field.

As soon as the tolerance field is reached, the color changes from orange to green. If the field is exceeded, the bar graph becomes red.

If both tolerance values are set to 0, then no tolerance field is displayed and the bar graph changes from green to red when the set point is exceeded.



Set point: 2500 g

Lower tolerance: 10 g

Upper tolerance: 10 g

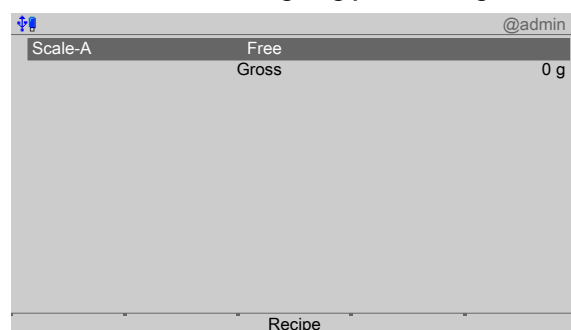
## 7.3 Operating

### 7.3.1 General Information

The keypad is used to operate the device; essential items (entries such as material numbers or LOT numbers) are displayed.

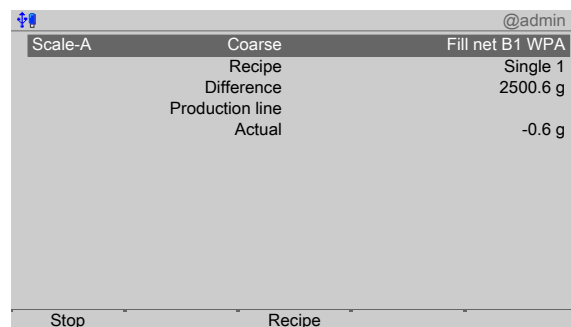
### 7.3.2 Weighing Point Overview

This view shows the weighing point configured on the device.



In the first line, the weighing point is displayed with the status of the selected material by default.

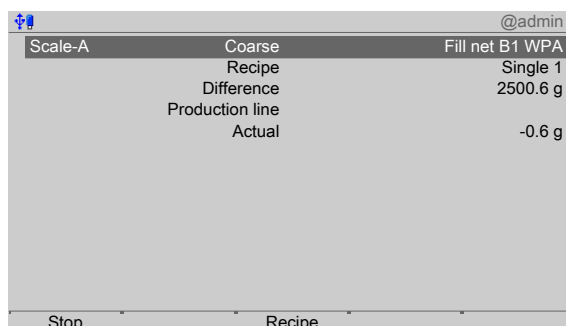
If no phase is active on the weighing point, it has "free" status.



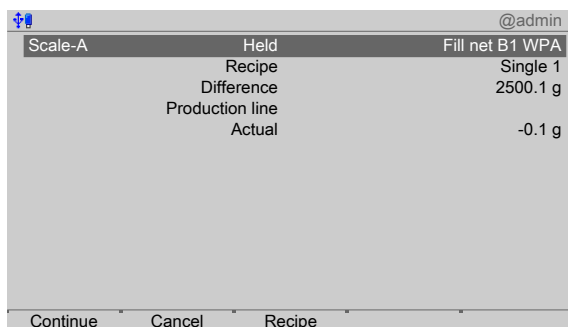
If a phase is active on the weighing point, the weighing point is displayed with the status of the selected material (in this case: "Coarse" status). Lines 2...6 are displayed as configured under [Configuration] - [Overview weighing points] ; see Chapter [5.4.9](#).

### 7.3.3 Production Started Using PR 8400

Production started using PR 8400 can be stopped, resumed or canceled on the device.



- Press the [Stopp] soft key to hold the production.
  - ▷ The status is set to "Stopped".



- ▶ Press the [Continue] soft key to continue production.
- ▶ Press the [Cancel] soft key to cancel production.

### 7.3.4 Production Started on the Device

Production can be started, stopped, resumed or canceled on the device.

- Requirements, see Chapter [7.3.4.1](#)
- Procedure, see Chapter [7.3.4.2](#)

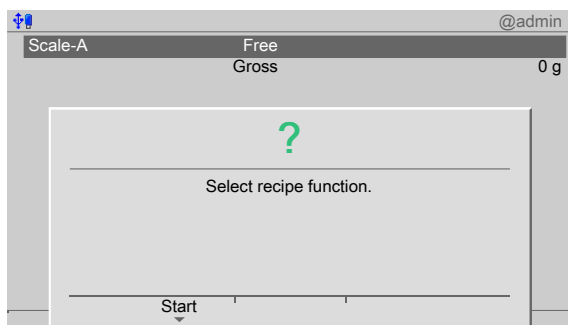
#### 7.3.4.1 Requirements

- The production line has been loaded under [Configuration] - [Production lines] and activated (in this case: PL 1).
- The parameters for local operation have been selected under [Configuration] - [Local control] .

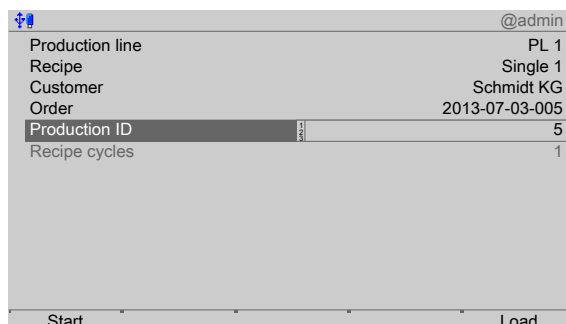
#### 7.3.4.2 Procedure



1. Press the [Recipe]/[Plan] soft key.
  - ▷ A prompt window appears.



2. Press the [Start] soft key.
  - ▷ A selection window appears.

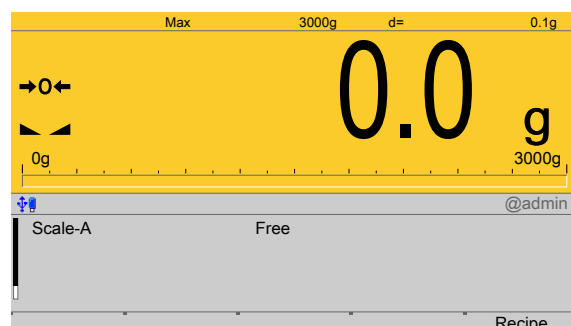


3. Press the [Load] soft key to load the available recipes/plans of the activated production line into the device.
4. Using the keyboard, enter and confirm the values on the next few lines (if [Local control] was selected under [Configuration]).
5. Press the [Start] soft key.

### 7.3.5 Weighing Point View

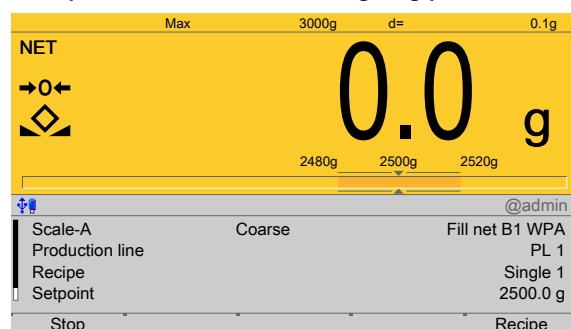
The weight display appears if:

- the selected weighing point is confirmed in the overview;
- the "Overview weighing points" menu item was deactivated under [Configuration] - [Overview weighing points] .

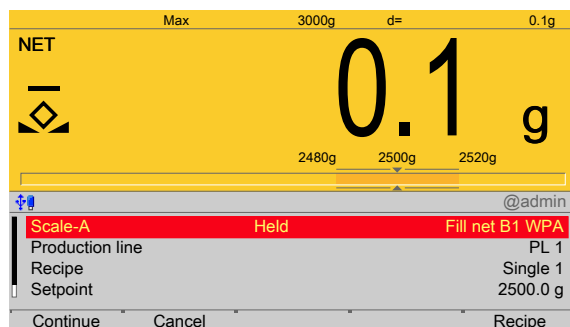


The metrological line, the bargraph, the status and the current weight for the weighing point A are displayed.

If no phase is active on the weighing point, it has "free" status.



If a phase is active on the weighing point, the weighing point is displayed with the status of the selected material (in this case: "Coarse" status). Lines 2...6 are displayed as configured under [Configuration] - [View weighing point] ; see Chapter 5.4.10.



Selecting [Stop] will halt the active phase.

The symbol for the batching mode flashes. The first line is marked in red.

Selecting [Continue] will resume the batching process.

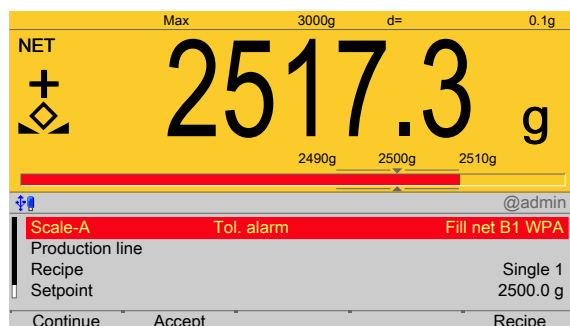
Selecting [Cancel] will terminate the phase that was stopped. The subsequent line of the recipe is executed.

Selecting [Recipe] will take you to the menu items set in the configuration.

Select **ESC/EXIT** to exit the view. Exiting has no impact on the ongoing process.

### 7.3.6 Acknowledging the Tolerance Alarm

If the value entered for the tolerance in ProBatch+ is exceeded with the component, a tolerance alarm is triggered.



In PR 8400 (ProBatch+), the alarm is displayed in the "Process" window for the production line; it is entered into the alarm table at the same time.

Selecting [Continue] will resume the batching process following manual correction (in this case: removing material).

Selecting [Accept] will accept the batching (quantities are recorded).

### 7.3.7 Checking the Material

The "Check material ID" function is used to verify the manual components to be batched via a bar code scanner or keypad entry.

The default setting for entering the ID via the keypad can be selected on the device under

[Configuration] - [Parameter] - [ID input field] : Text =  ABC.., numerical =  123..

This means switching on the device is no longer necessary.

To activate the material check, [ID=1] must be entered in the [Parameter] field under [Component] - [Edit] /[Create] in PR 8400 (ProBatch+).

You also have the option of transmitting the contents of the barcode to the device. If a value is specified for [Bar], the check takes place for the entry. If no value is specified, the check takes place for the material name.



Edit Component - [Manuell Befüllen]

Name	Manuell Befüllen	Parameter
WP	WPA	ID=1 Bar='000987E54'
Batchmode	D1	

Max 3000g d= 0.1g

NET 0.7g

Material ident check for  
'Fill manually'

123...

Stop Recipe

After you start a manual component with a material check, an input window opens.

- Enter the ID using the keypad and confirm and/or scan this in.
  - ▷ If the ID read/entered does not match the value set under [Parameter] - [Bar] , a query window appears.

Max 3000g d= 0.1g

NET 0.7g

!!!


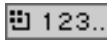
ID check failed.  
Retry or cancel?  
'Fill manually'

Retry Cancel

- Press the [Retry] soft key to repeat the entry.
- Press the [Cancel] soft key to abort the phase.

### 7.3.8 LOT-Documentation

This function facilitates the documentation of any number of LOT numbers for each phase (manual components only). The LOT numbers are transmitted to the PC with PR 8400 (ProBatch+) along with the weight batched in each case, prior to any new LOT number being entered.

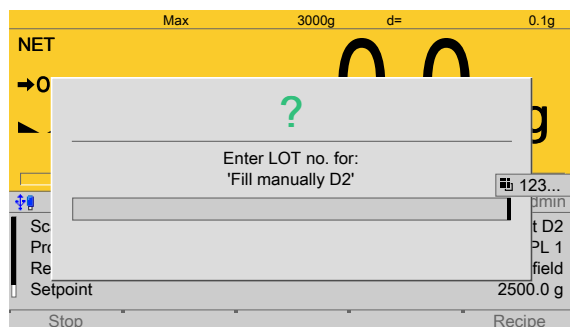
The default setting for entering the ID via the keypad can be selected on the device under [Configuration] - [Parameter] - [ID input field] : Text = , numerical = . This means switching on the device is no longer necessary.

To activate the LOT documentation, [Lot=1] must be entered in the [Parameter] field under [Component] - [Edit] /[Create] in PR 8400 (ProBatch+).

This function can be combined with the material check.

Edit Component - [Manuell Befüllen D2]

Name	Manuell Befüllen D2	Parameter
WP	WPA	Lot=1
Batchmode	D2	



After you start a manual component with LOT documentation, an input window opens.

- Enter the LOT no. using the keyboard and confirm.
  - ▷ The LOT number is saved in PR 8400 (ProBatch+), the input window is closed, and the phase starts taring.

### 7.3.9 Preceding Dialog

In PR 8400 (ProBatch+), dialog type dialog=X and the other parameters labeled with [dsp] are entered under [Component] - [Edit] /[Create] in the [Parameter] field.

There are nine types of dialog the user can choose.

Dialogtyp	Dialog function
dialog=1	Enters a number (INT); "dsp1" acts as a headline, "dsp2" as a possible unit.
dialog=2	Enters a number (REAL); "dsp1" acts as a headline, "dsp2" as a possible unit.
dialog=3	Enters a weight value; "dsp1" acts as a headline; unit for the weight is transferred from the device.
dialog=4	Enters a text (STRING); "dsp1" acts as a headline.
dialog=5	Dialog with [Ok] soft key; "dsp1" acts as a headline.
dialog=6	Dialog with [Ok] and [Cancel] soft key; "dsp1" acts as a headline.
dialog=7	Dialog with [Yes] and [No] soft key; "dsp1" acts as a headline.
dialog=8	Dialog with [Yes], [No] or [Continue] soft key; "dsp1" acts as a headline.
dialog=9	Dialog with up to three user-defined soft keys; "dsp1" acts as a headline. Entering the soft keys is done using dsp2. Example: dsp2="key1 key2 key3"

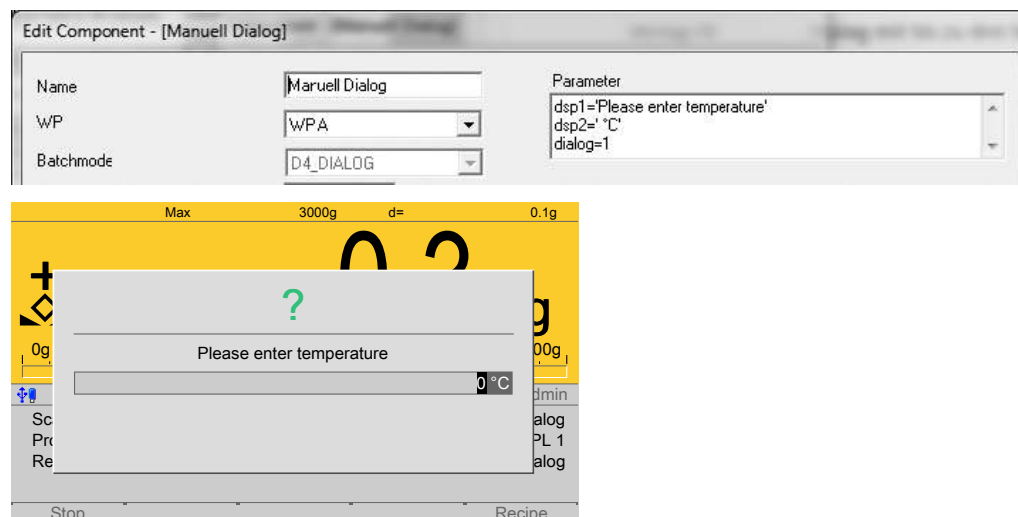
#### Example:

Hand component D4\_Dialog, dialog type: dialog=1

[dsp1=] defined headline

[dsp2=] defined unit

The value to be entered is stored in floating point format.



The input window shows:

- the header defined under [dsp1=];
- the unit defined under [dsp2=];
- the entry position marked in black.

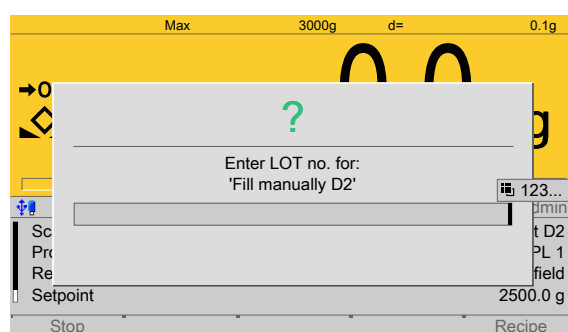
### 7.3.10 Split Function

You can divide up a manual batching into as many phases you want. Between the individual phases, the batched weight (with the related LOT number if necessary) is sent to PR 8400 (ProBatch+) and the scale is tared again. This function is possible for any manual phase during the batching.

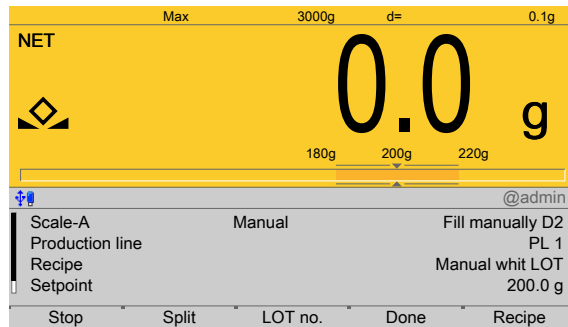
If the data is successfully sent to PR 8400 (ProBatch+), the next phase begins in the same way as a standard manual phase, i.e. if the material check and LOT documentation are configured for the material, these parameters have to be entered again.

#### 1. Start production using PR 8400 (ProBatch+).

- ▷ In this example, the input window opens for the LOT no.



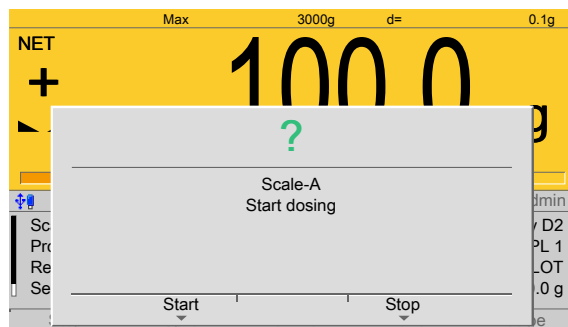
#### 2. Enter the LOT no. using the keyboard and confirm.



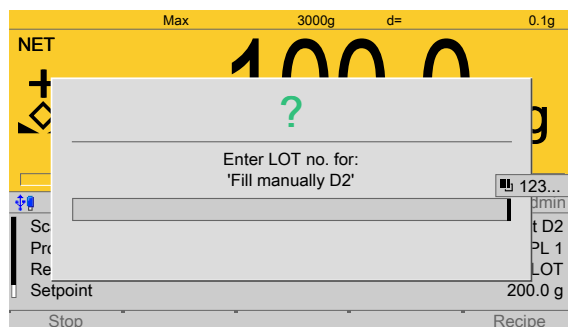
3. Start the manual batching (added weight).
4. If the batched amount < target value, a new material bag will have to be taken for further batching.
5. Press the [Split] soft key to divide the phase up into multiple phases during the batching, e.g. divide the batching into a first batched quantity of 100 g and a second batched quantity of 100 g.

The first batched quantity is sent to PR 8400 (ProBatch+) with all relevant data.

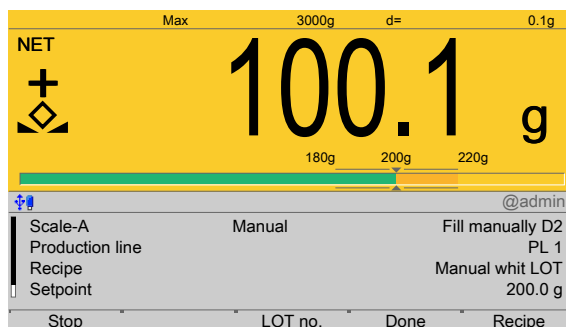
▷ The configured dialog appears in this particular example.



6. Press the [Start] soft key to continue the batching process.
- ▷ In this example, the input window opens for the LOT no.



7. Enter the LOT no. using the keyboard and confirm.
- ▷ Continue with the batching process.

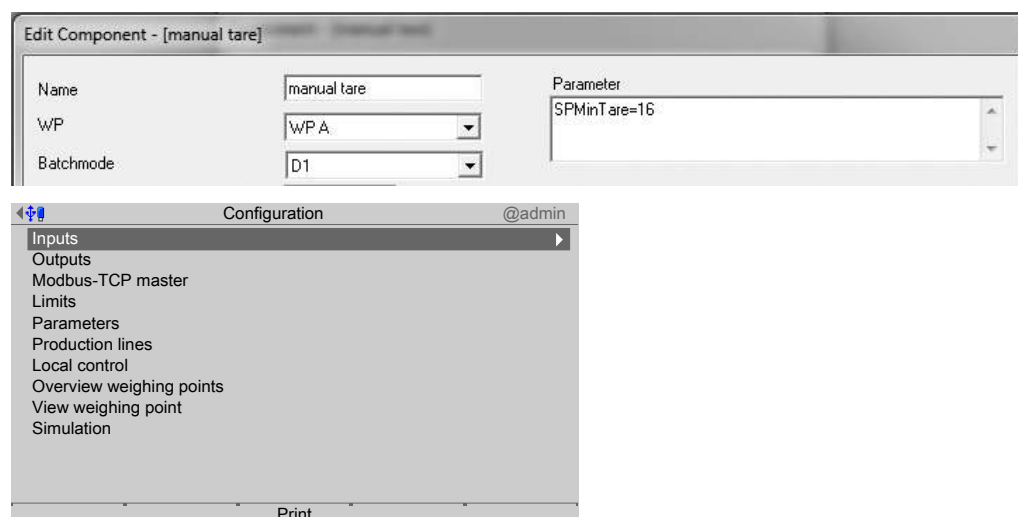


8. If the target value has been reached, press the [Done] soft key.
  - ▷ The second batched quantity is sent to PR 8400 (ProBatch+) with all relevant data.

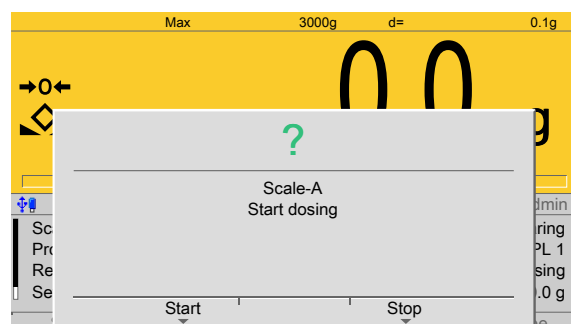
### 7.3.11 Release for Taring

Automatic taring of the manual dosing does not have to be carried out straight away; instead, the taring can be triggered by the operator.

In PR 8400 (ProBatch+), the input to trigger the taring process is entered in the [Parameter] field under [Component] - [Edit] / [Create], e.g. "SPMinTare=16".



The "SPMinTare=16" input can then, for example, be set to a free digital input on the device under [Configuration] - [Inputs] .



If you press [Start], the input is not queried and the device is tared. Alternatively, you can use the configured input to trigger taring. This will switch to the overview.

Selecting [Stopp] will give the phase "Hold" status. Selecting [Continue] will make this configured dialog window appear again.

### 7.3.12 Starting Recipe on the Device

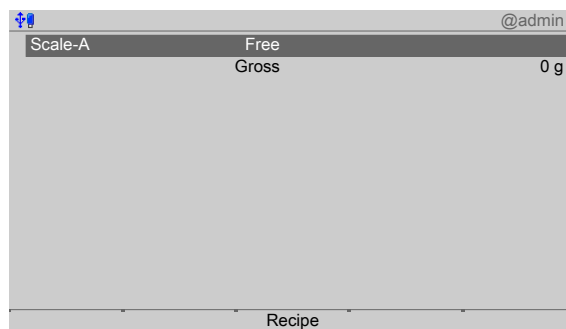
Recipes can be started from Maxxis 4 (local start) at any time.

- Requirements, see Chapter [7.3.12.1](#)
- Procedure, see Chapter [7.3.12.2](#)

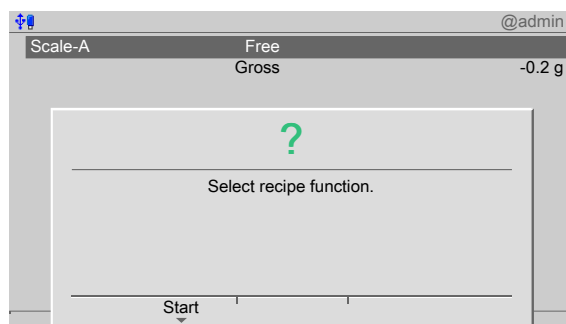
#### 7.3.12.1 Requirements

- In PR 8400 (ProBatch+), recipes are created with [Create] for the respective production line.
- Access to the recipes available in PR 8400 (ProBatch+) has been activated under [Recipe] - [Create] /[Edit] for each recipe [Recipe access] (usually this is already activated).
- Connection between Phase and PR 8400 (ProBatch+) has been set up; if not, the message "Unable to load recipes" will appear on the device display.
- In Maxxis 4, the parameter has been set to [Recipe] under [Configuration] - [Local control] - [Local start] .

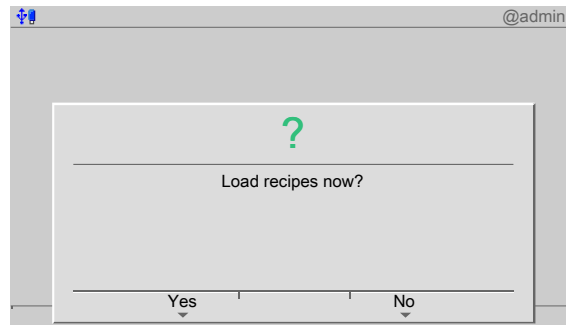
#### 7.3.12.2 Procedure



1. Select [Visualization] in the operating menu and confirm.
  - ▷ Depending on the configuration, either the weighing point view or the weighing point overview will appear.
2. Select the weighing point A.
3. Press the [Recipe] soft key.
  - ▷ This window is displayed only if no recipe has been started yet or [Local stop] and [Local start] have not been activated for [Recipe].



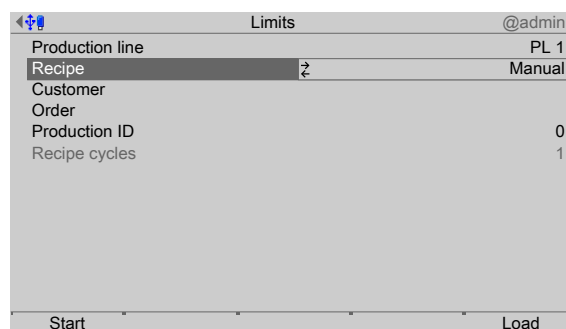
4. Press the [Start] soft key.
  - ▷ This window is displayed only if no recipe has been started yet or [Local stop] and [Local start] have not been activated for [Recipe].



5. Press the [Yes] soft key.

Loading the recipes may take longer than expected.

▷ A selection window appears.



6. Select the following parameters.

**[Production line]**

All production lines activated under [Configuration] - [Production lines] are listed here; see Chapter [5.4.7](#).

**[Recipe]**

All recipes included in the recipe database are listed here, depending on what the production line is.

**[Customer], [Order], [Production ID], [Recipe cycles]**

These parameters are dependent on the configuration; see Chapter [5.4.8](#).

**[Start]**

The selected recipe starts. A message is sent to PR 8400 (ProBatch+), which transfers the recipe parameters displayed. If the recipe was started successfully, the visualization switches back to the previous display (weighing point view or weighing point overview).

**[Load]**

Communication to PR 8400 (ProBatch+) is established and the recipes for the activated production lines are downloaded.

Loading is necessary after the error message "Unable to start recipe" occurs. This error message appears if no connection could be set up to PR 8400 (ProBatch+) (e.g. PR 8400 not started yet; network cable disconnected).

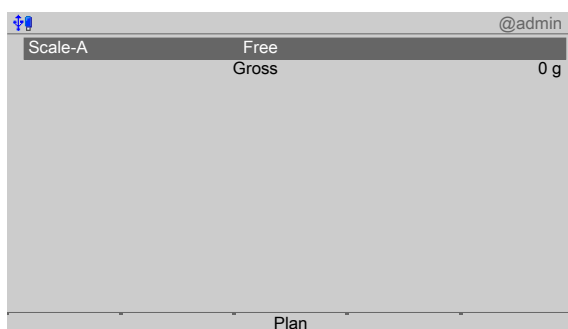
### 7.3.13 Start of a Production Plan/Planning Line on the Device

- Requirements, see Chapter [7.3.13.1](#)
- Procedure, see Chapter [7.3.13.2](#)

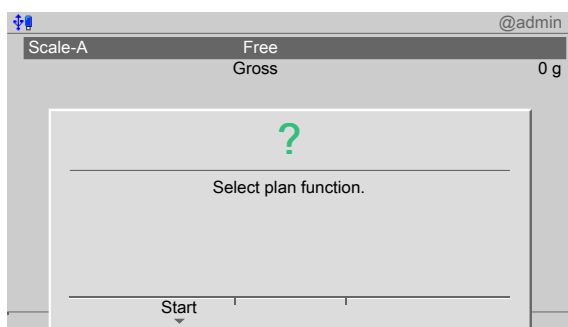
#### 7.3.13.1 Requirements

- In PR 8400 (ProBatch+), recipes are created with [Create] for the respective production line.
- Connection between Maxxis 4 and PR 8400 (ProBatch+) has been set up; if not, the message "Unable to load recipes" will appear on the device display.
- In Maxxis 4, the parameter has been set to [Plan] under [Configuration] - [Local control] - [Local start]

#### 7.3.13.2 Procedure

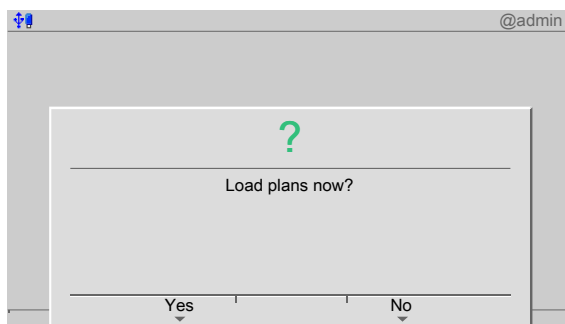


1. Select [Visualization] in the operating menu and confirm.
  - ▷ Depending on the configuration, either the weighing point view or the weighing point overview will appear.
2. Select the weighing point A.
3. Press the [Plan] soft key.
  - ▷ This window is displayed only if no plan has been started yet or [Local stop] and [Local start] have not been activated for [Plan].



4. Press the [Start] soft key.
  - ▷ This window is displayed only if no recipe has been started yet or [Local stop] and [Local start] have not been activated for [Plan].

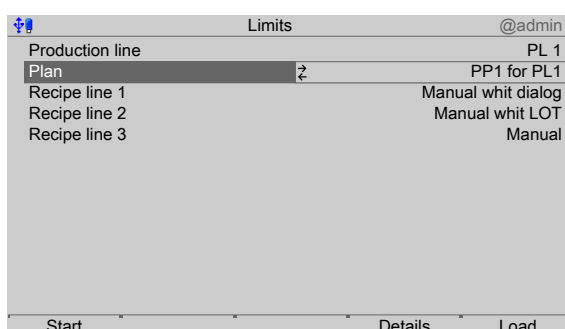




5. Press the [Yes] soft key.

Loading the recipes may take longer than expected.

▷ A selection window appears.



6. Select the following parameters.

#### **[Production line]**

All production lines activated under [Configuration] - [Production lines] are listed here; see Chapter [5.4.7](#).

#### **[Plan]**

All plans included in the database are listed here, depending on what the production line is.

#### **[Recipe line 1...n]**

All recipes included in the plan are listed here.

#### **[Page-], [Page+]**

If there are more than nine lines in the plan, you can scroll through the pages with [Page+] und [Page-].

#### **[Start]**

The [Plan] parameter determines whether the entire plan is started with [Start whole plan], or merely the selected line of the plan with [Start single line]; see Chapter [5.4.8](#).

A message is sent to PR 8400 (ProBatch+), which transfers the plan parameters displayed. If the start was successful, the visualization switches back to the previous display (weighing point view or weighing point overview).

#### **[Details]**

The target value and the number of recipe cycles, etc. (if configured) are displayed.

**[Customer], [Order], [Production ID], [Recipe cycles]**

These parameters appear only if the [Details] soft key has been pressed.

These parameters are dependent on the configuration; see Chapter [5.4.8](#).

**[List]**

This soft key appears only if the [Details] soft key was pressed before.

Switches back to the previous display (weighing point view or weighing point overview).

**[Load]**

Communication to PR 8400 (ProBatch+) is established and the plans for the activated production lines are downloaded.

## 8 SPM

### 8.1 General information

The memory accessible to the user is the SPM (Scratch Pad Memory). This memory is used to store lots of internal data from which weights, statuses and reports can be read and control data can be written.

- System data are defined by the firmware and the respective application.
- The free user range can be used freely, for example, via the configuration of logical links.

The SPM table can be accessed via OPC and ModBus communication.

In addition, individual bits are copied back and forth between digital inputs and outputs and the SPM via the I/O configuration.

---

**Note:**

If a text is defined e.g. from SPM address B401, this must be defined in the OPC server from SPM address B400 so that the content actually begins at B401.

---

### 8.2 Elementary data types

The elementary data types are characterized by their bit width and possible value range. All commands of the data type BOOL are executed with a rising edge.

Data type	Description	Value range
BOOL	bool	0 (FALSE) or 1 (TRUE)
SINT	short integer	-128 to 127
INT	integer	-32768 to 32767
DINT	double integer	$-2^{31}$ to $2^{31}-1$
LINT	long integer	$-2^{63}$ to $2^{63}-1$
USINT	unsigned short integer	0 to 255
UINT	unsigned integer	0 to 65535
UDINT	unsigned double integer	0 to $2^{32}-1$
ULINT	unsigned long integer	0 to $2^{64}-1$
REAL	real number	$\pm 1.18\text{E}-38$ bis $3.4\text{E}38$ (with approx. 7 significant digits)
LREAL	long real number	$\pm 1.18\text{E}-308$ bis $3.4\text{E}308$ (with approx. 16 significant digits)
TIME	time duration	1 ms to $\pm 2^{47}$ ms
DATE	date (only)	1.1.1900 to 31.12.2099
TIME_OF_DAY	time of day (only)	00:00:00.00 to 23:59:59.99
DATE_AND_TIME	Date and time of day	see DATE and TIME_OF_DAY

Data type	Description	Value range
STRING	variable-long character string	max. 255 characters (ISO)
WSTRING	variable-long wide character string	max. 255 characters (Unicode)
BYTE	bit-sequence 8	...
WORD	bit-sequence 16	...
DWORD	bit-sequence 32	...
LWORD	bit-sequence 64	...

### 8.3 Addressing

The SPM table can be addressed via different counts. Bit addressing is used to count the individual bits (MX). Byte addressing is used to count individual bytes (MB), whereby, e.g. bits MX0...MX7 are identical to byte MB0.

Accordingly, addresses ML20, MD40-41, MW80-83, MB160-167 and MX1280-1343 contain the same data (see Chapter [8.8](#)).

Code	Data type	Address example
%ML	LWORD	L21
%MD	DINT	D42...43
%MW	WORD	W84...87
%MB	BYTE	B168...175
%MX	BOOL (bit)	X1344...1407

### 8.4 System data Weighingpoint A

SPM-Address	Keyword	R/W	Function
X1	BOOL	R	Zero $\pm 1/4$ d
X2	BOOL	R	Stability
X3	BOOL	R	tared
X4	BOOL	R	Coarse flow
X5	BOOL	R	Fine flow
X6	BOOL	R	Discharge
X7	BOOL	R	Weight is valid
X8	BOOL	R	Direction for simulation
X9	BOOL	R	Limit 1
X10	BOOL	R	Limit 2
X12	BOOL	R	Flow rate alarm

<b>SPM-Address</b>	<b>Keyword</b>	<b>R/W</b>	<b>Function</b>
X13	BOOL	R	Tolerance alarm
X14	BOOL	R	Phase is running
X15	BOOL	R	Phase stopped
X16	BOOL	R/W	Zero
X17	BOOL	R/W	Tare
X18	BOOL	R/W	Reset tare
X19	BOOL	R/W	Stop
X20	BOOL	R/W	Restart
X21	BOOL	R/W	Cancel
<b>L1</b>	<b>LWORD</b>	R	<b>SPM out</b>
X64...127	BOOL	R	Output
<b>L2</b>	<b>LWORD</b>	R	<b>SPM out AND coarse</b>
X128...191	BOOL	R	Output and coarse
<b>L3</b>	<b>LWORD</b>	R	<b>SPM out AND fine</b>
X192...255	BOOL	R	Output and fine

**Note:**

Freely assignable SPM address D1, see Chapter [8.8](#).

**Note:**

The system variables (e.g.: ST\_WGT\_A) for communication via OPC are described in the operating instructions PR 1792 (Chapter 4 + 5).

## 8.5 Digital and analog inputs and outputs

<b>SPM address</b>	<b>Data type</b>	<b>R/W</b>	<b>Function</b>
D88	DINT	R	Digital input 1 (option-1)
D89	DINT	R	Digital input 2 (option-2)
D90	DINT	R	Digital input 3 (built-in)
D92	DINT	R/W	Digital output 1 (option-1)
D93	DINT	R/W	Digital output 2 (option-2)
D94	DINT	R/W	Digital output 3 (built-in)
D96	DINT	R	Analog input 1 (option-1)
D97	DINT	R	Analog input 2 (option-2)
D99	DINT	R/W	Analog output 1 (option-1)

SPM address	Data type	R/W	Function
D100	DINT	R/W	Analog output 2 (option-2)

## 8.6 ModBus TCP modules

SPM address	Data type	R/W	Function
<b>W204</b> X3264...3279	<b>UINT</b> BOOL	R R	Input module 1 Digital inputs 1...16
<b>W205</b> X3280...3295	<b>UINT</b> BOOL	R R	Input module 2 Digital inputs 1...16
<b>W206</b> X3296...3311	<b>UINT</b> BOOL	R R	Input module 3 Digital inputs 1...16
<b>W207</b> X3312...3327	<b>UINT</b> BOOL	R R	Input module 4 Digital inputs 1...16
<b>W208</b> X3328...3343	<b>UINT</b> BOOL	R R	Input module 5 Digital inputs 1...8
<b>W209</b> X3344...3359	<b>UINT</b> BOOL	R R	Input module 6 Digital inputs 1...8
<b>W210</b> X3360...3375	<b>UINT</b> BOOL	R R	Input module 7 Digital inputs 1...8
<b>W211</b> X3376...3391	<b>UINT</b> BOOL	R R	Input module 8 Digital inputs 1...8
<b>W214</b> X3424...3439	<b>UINT</b> BOOL	R/W R/W	Output module 1 Digital outputs 1...16
<b>W215</b> X3440...3455	<b>UINT</b> BOOL	R/W R/W	Output module 2 Digital outputs 1...16
<b>W216</b> X3456...3471	<b>UINT</b> BOOL	R/W R/W	Output module 3 Digital outputs 1...16
<b>W217</b> X3472...3487	<b>UINT</b> BOOL	R/W R/W	Output module 4 Digital outputs 1...16
<b>W218</b> X3488...3503	<b>UINT</b> BOOL	R/W R/W	Output module 5-0 Digital outputs 1...16
<b>W219</b> X3504...3519	<b>UINT</b> BOOL	R/W R/W	Output module 5-1 Digital outputs 17...32
<b>W220</b> X3520...3535	<b>UINT</b> BOOL	R/W R/W	Output module 5-2 Digital outputs 33...36
<b>W221</b> X3536...3551	<b>UINT</b> BOOL	R/W R/W	Output module 6-0 Digital outputs 1...16
<b>W222</b> X3552...3567	<b>UINT</b> BOOL	R/W R/W	Output module 6-1 Digital outputs 17...32

SPM address	Data type	R/W	Function
<b>W223</b> X3568...3583	<b>UINT</b> BOOL	R/W R/W	Output module 6-2 Digital outputs 33...36
<b>W224</b> X3584...3599	<b>UINT</b> BOOL	R/W R/W	Output module 7-0 Digital outputs 1...16
<b>W225</b> X3600...3615	<b>UINT</b> BOOL	R/W R/W	Output module 7-1 Digital outputs 17...32
<b>W226</b> X3616...3631	<b>UINT</b> BOOL	R/W R/W	Output module 7-2 Digital outputs 33...48
<b>W227</b> X3632...3647	<b>UINT</b> BOOL	R/W R/W	Output module 7-3 Digital outputs 49...52
<b>W228</b> X3648...3663	<b>UINT</b> BOOL	R/W R/W	Output module 8-0 Digital outputs 1...16
<b>W229</b> X3664...3679	<b>UINT</b> BOOL	R/W R/W	Output module 8-1 Digital outputs 17...32
<b>W230</b> X3680...3695	<b>UINT</b> BOOL	R/W R/W	Output module 8-2 Digital outputs 33...48
<b>W231</b> X3696...3711	<b>UINT</b> BOOL	R/W R/W	Output module 8-3 Digital outputs 49...52

## 8.7 Common SPM addresses

SPM address	Data type	R/W	Function
X3841	BOOL	R	Batching phase is active
X3842	BOOL	R/W	Stop batching
X3843	BOOL	R/W	Batching alarm for at least one weighing point
X3844	BOOL	R	Tolerance alarm for at least one weighing point
X3845	BOOL	R	ModBus error

## 8.8 Freely assigned ranges

### Weighing point A

%ML	%MD	%MW	%MB	%MX							
				0	1	2	3	4	5	6	7
	1		3	24	25	26	27	28	29	30	31
			4	32	33	34	35	36	37	38	39
		2	5	40	41	42	43	44	45	46	47
			6	48	49	50	51	52	53	54	55
			7	56	57	58	59	60	61	62	63

### Weighing point B

%ML	%MD	%MW	%MB	%MX							
				0	1	2	3	4	5	6	7
	9		35	280	281	282	283	284	285	286	287
			36	288	289	290	291	292	293	294	295
		18	37	296	297	298	299	300	301	302	303
			38	304	305	306	307	308	309	310	311
			39	312	313	314	315	316	317	318	319



**from weighing point independently**

%ML	%MD	%MW	%MB	%MX							
				0	1	2	3	4	5	6	7
63	126	252	504	4032	4033	4034	4035	4036	4037	4038	4039
			505	4040	4041	4042	4043	4044	4045	4046	4047
		253	506	4048	4049	4050	4051	4052	4053	4054	4055
			507	4056	4057	4058	4059	4060	4061	4062	4063
	127	254	508	4064	4065	4066	4067	4068	4069	4070	4071
			509	4072	4073	4074	4075	4076	4077	4078	4079
		255	510	4080	4081	4082	4083	4084	4085	4086	4087
			511	4088	4089	4090	4091	4092	4093	4094	4095
64	128	256	512	4096	4097	4098	4099	4100	4101	4102	4103
			513	4104	4105	4106	4107	4108	4109	4110	4111
		257	514	4112	4113	4114	4115	4116	4117	4118	4119
			515	4120	4121	4122	4123	4124	4125	4126	4127
	129	258	516	4128	4129	4130	4131	4132	4133	4134	4135
			517	4136	4137	4138	4139	4140	4141	4142	4143
		259	518	4144	4145	4146	4147	4148	4149	4150	4151
			519	4152	4153	4154	4155	4156	4157	4158	4159
65	130	260	520	4160	4161	4162	4163	4164	4165	4166	4167
			521	4168	4169	4170	4171	4172	4173	4174	4175
		261	522	4176	4177	4178	4179	4180	4181	4182	4183
			523	4184	4185	4186	4187	4188	4189	4190	4191
	131	262	524	4192	4193	4194	4195	4196	4197	4198	4199
			525	4200	4201	4202	4203	4204	4205	4206	4207
		263	526	4208	4209	4210	4211	4212	4213	4214	4215
			527	4216	4217	4218	4219	4220	4221	4222	4223
66	132	264	528	4224	4225	4226	4227	4228	4229	4230	4231
			529	4232	4233	4234	4235	4236	4237	4238	4239
		265	530	4240	4241	4242	4243	4244	4245	4246	4247
			531	4248	4249	4250	4251	4252	4253	4254	4255
	133	266	532	4256	4257	4258	4259	4260	4261	4262	4263
			533	4264	4265	4266	4267	4268	4269	4270	4271
		267	534	4272	4273	4274	4275	4276	4277	4278	4279
			535	4280	4281	4282	4283	4284	4285	4286	4287
67	134	268	536	4288	4289	4290	4291	4292	4293	4294	4295
			537	4296	4297	4298	4299	4300	4301	4302	4303
		269	538	4304	4305	4306	4307	4308	4309	4310	4311
			539	4312	4313	4314	4315	4316	4317	4318	4319
	135	270	540	4320	4321	4322	4323	4324	4325	4326	4327
			541	4328	4329	4330	4331	4332	4333	4334	4335
		271	542	4336	4337	4338	4339	4340	4341	4342	4343
			543	4344	4345	4346	4347	4348	4349	4350	4351

**from weighing point independently**

%ML	%MD	%MW	%MB	%MX							
				0	1	2	3	4	5	6	7
68	136	272	544	4352	4353	4354	4355	4356	4357	4358	4359
			545	4360	4361	4362	4363	4364	4365	4366	4367
		273	546	4368	4369	4370	4371	4372	4373	4374	4375
			547	4376	4377	4378	4379	4380	4381	4382	4383
	137	274	548	4384	4385	4386	4387	4388	4389	4390	4391
			549	4392	4393	4394	4395	4396	4397	4398	4399
		275	550	4400	4401	4402	4403	4404	4405	4406	4407
			551	4408	4409	4410	4411	4412	4413	4414	4415
69	138	276	552	4416	4417	4418	4419	4420	4421	4422	4423
			553	4424	4425	4426	4427	4428	4429	4430	4431
		277	554	4432	4433	4434	4435	4436	4437	4438	4439
			555	4440	4441	4442	4443	4444	4445	4446	4447
	139	278	556	4448	4449	4450	4451	4452	4453	4454	4455
			557	4456	4457	4458	4459	4460	4461	4462	4463
		279	558	4464	4465	4466	4467	4468	4469	4470	4471
			559	4472	4473	4474	4475	4476	4477	4478	4479
70	140	280	560	4480	4481	4482	4483	4484	4485	4486	4487
			561	4488	4489	4490	4491	4492	4493	4494	4495
		281	562	4496	4497	4498	4499	4500	4501	4502	4503
			563	4504	4505	4506	4507	4508	4509	4510	4511
	141	282	564	4512	4513	4514	4515	4516	4517	4518	4519
			565	4520	4521	4522	4523	4524	4525	4526	4527
		283	566	4528	4529	4530	4531	4532	4533	4534	4535
			567	4536	4537	4538	4539	4540	4541	4542	4543
71	142	284	568	4544	4545	4546	4547	4548	4549	4550	4551
			569	4552	4553	4554	4555	4556	4557	4558	4559
		285	570	4560	4561	4562	4563	4564	4565	4566	4567
			571	4568	4569	4570	4571	4572	4573	4574	4575
	143	286	572	4576	4577	4578	4579	4580	4581	4582	4583
			573	4584	4585	4586	4587	4588	4589	4590	4591
		287	574	4592	4593	4594	4595	4596	4597	4598	4599
			575	4600	4601	4602	4603	4604	4605	4606	4607
72	144	288	576	4608	4609	4610	4611	4612	4613	4614	4615
			577	4616	4617	4618	4619	4620	4621	4622	4623
		289	578	4624	4625	4626	4627	4628	4629	4630	4631
			579	4632	4633	4634	4635	4636	4637	4638	4639
	145	290	580	4640	4641	4642	4643	4644	4645	4646	4647
			581	4648	4649	4650	4651	4652	4653	4654	4655
		291	582	4656	4657	4658	4659	4660	4661	4662	4663
			583	4664	4665	4666	4667	4668	4669	4670	4671

**from weighing point independently**

%ML	%MD	%MW	%MB	%MX							
				0	1	2	3	4	5	6	7
73	146	292	584	4672	4673	4674	4675	4676	4677	4678	4679
			585	4680	4681	4682	4683	4684	4685	4686	4687
		293	586	4688	4689	4690	4691	4692	4693	4694	4695
			587	4696	4697	4698	4699	4700	4701	4702	4703
	147	294	588	4704	4705	4706	4707	4708	4709	4710	4711
			589	4712	4713	4714	4715	4716	4717	4718	4719
		295	590	4720	4721	4722	4723	4724	4725	4726	4727
			591	4728	4729	4730	4731	4732	4733	4734	4735
74	148	296	592	4736	4737	4738	4739	4740	4741	4742	4743
			593	4744	4745	4746	4747	4748	4749	4750	4751
		297	594	4752	4753	4754	4755	4756	4757	4758	4759
			595	4760	4761	4762	4763	4764	4765	4766	4767
	149	298	596	4768	4769	4770	4771	4772	4773	4774	4775
			597	4776	4777	4778	4779	4780	4781	4782	4783
		299	598	4784	4785	4786	4787	4788	4789	4790	4791
			599	4792	4793	4794	4795	4796	4797	4798	4799
75	150	300	600	4800	4801	4802	4803	4804	4805	4806	4807
			601	4808	4809	4810	4811	4812	4813	4814	4815
		301	602	4816	4817	4818	4819	4820	4821	4822	4823
			603	4824	4825	4826	4827	4828	4829	4830	4831
	151	302	604	4832	4833	4834	4835	4836	4837	4838	4839
			605	4840	4841	4842	4843	4844	4845	4846	4847
		303	606	4848	4849	4850	4851	4852	4853	4854	4855
			607	4856	4857	4858	4859	4860	4861	4862	4863
76	152	304	608	4864	4865	4866	4867	4868	4869	4870	4871
			609	4872	4873	4874	4875	4876	4877	4878	4879
		305	610	4880	4881	4882	4883	4884	4885	4886	4887
			611	4888	4889	4890	4891	4892	4893	4894	4895
	153	306	612	4896	4897	4898	4899	4900	4901	4902	4903
			613	4904	4905	4906	4907	4908	4909	4910	4911
		307	614	4912	4913	4914	4915	4916	4917	4918	4919
			615	4920	4921	4922	4923	4924	4925	4926	4927
77	154	308	616	4928	4929	4930	4931	4932	4933	4934	4935
			617	4936	4937	4938	4939	4940	4941	4942	4943
		309	618	4944	4945	4946	4947	4948	4949	4950	4951
			619	4952	4953	4954	4955	4956	4957	4958	4959
	155	310	620	4960	4961	4962	4963	4964	4965	4966	4967
			621	4968	4969	4970	4971	4972	4973	4974	4975
		311	622	4976	4977	4978	4979	4980	4981	4982	4983
			623	4984	4985	4986	4987	4988	4989	4990	4991



**from weighing point independently**

%ML	%MD	%MW	%MB	%MX							
				0	1	2	3	4	5	6	7
78	156	312	624	4992	4993	4994	4995	4996	4997	4998	4999
			625	5000	5001	5002	5003	5004	5005	5006	5007
		313	626	5008	5009	5010	5011	5012	5013	5014	5015
			627	5016	5017	5018	5019	5020	5021	5022	5023
	157	314	628	5024	5025	5026	5027	5028	5029	5030	5031
			629	5032	5033	5034	5035	5036	5037	5038	5039
		315	630	5040	5041	5042	5043	5044	5045	5046	5047
			631	5048	5049	5050	5051	5052	5053	5054	5055
79	158	316	632	5056	5057	5058	5059	5060	5061	5062	5063
			633	5064	5065	5066	5067	5068	5069	5070	5071
		317	634	5072	5073	5074	5075	5076	5077	5078	5079
			635	5080	5081	5082	5083	5084	5085	5086	5087
	159	318	636	5088	5089	5090	5091	5092	5093	5094	5095
			637	5096	5097	5098	5099	5100	5101	5102	5103
		319	638	5104	5105	5106	5107	5108	5109	5110	5111
			639	5112	5113	5114	5115	5116	5117	5118	5119
80	160	320	640	5120	5121	5122	5123	5124	5125	5126	5127
			641	5128	5129	5130	5131	5132	5133	5134	5135
		321	642	5136	5137	5138	5139	5140	5141	5142	5143
			643	5144	5145	5146	5147	5148	5149	5150	5151
	161	322	644	5152	5153	5154	5155	5156	5157	5158	5159
			645	5160	5161	5162	5163	5164	5165	5166	5167
		323	646	5168	5169	5170	5171	5172	5173	5174	5175
			647	5176	5177	5178	5179	5180	5181	5182	5183
81	162	324	648	5184	5185	5186	5187	5188	5189	5190	5191
			649	5192	5193	5194	5195	5196	5197	5198	5199
		325	650	5200	5201	5202	5203	5204	5205	5206	5207
			651	5208	5209	5210	5211	5212	5213	5214	5215
	163	326	652	5216	5217	5218	5219	5220	5221	5222	5223
			653	5224	5225	5226	5227	5228	5229	5230	5231
		327	654	5232	5233	5234	5235	5236	5237	5238	5239
			655	5240	5241	5242	5243	5244	5245	5246	5247
82	164	328	656	5248	5249	5250	5251	5252	5253	5254	5255
			657	5256	5257	5258	5259	5260	5261	5262	5263
		329	658	5264	5265	5266	5267	5268	5269	5270	5271
			659	5272	5273	5274	5275	5276	5277	5278	5279
	165	330	660	5280	5281	5282	5283	5284	5285	5286	5287
			661	5288	5289	5290	5291	5292	5293	5294	5295
		331	662	5296	5297	5298	5299	5300	5301	5302	5303
			663	5304	5305	5306	5307	5308	5309	5310	5311

**from weighing point independently**

%ML	%MD	%MW	%MB	%MX							
				0	1	2	3	4	5	6	7
83	166	332	664	5312	5313	5314	5315	5316	5317	5318	5319
			665	5320	5321	5322	5323	5324	5325	5326	5327
		333	666	5328	5329	5330	5331	5332	5333	5334	5335
			667	5336	5337	5338	5339	5340	5341	5342	5343
	167	334	668	5344	5345	5346	5347	5348	5349	5350	5351
			669	5352	5353	5354	5355	5356	5357	5358	5359
		335	670	5360	5361	5362	5363	5364	5365	5366	5367
			671	5368	5369	5370	5371	5372	5373	5374	5375
84	168	336	672	5376	5377	5378	5379	5380	5381	5382	5383
			673	5384	5385	5386	5387	5388	5389	5390	5391
		337	674	5392	5393	5394	5395	5396	5397	5398	5399
			675	5400	5401	5402	5403	5404	5405	5406	5407
	169	338	676	5408	5409	5410	5411	5412	5413	5414	5415
			677	5416	5417	5418	5419	5420	5421	5422	5423
		339	678	5424	5425	5426	5427	5428	5429	5430	5431
			679	5432	5433	5434	5435	5436	5437	5438	5439
86	172	344	688	5504	5505	5506	5507	5508	5509	5510	5511
			689	5512	5513	5514	5515	5516	5517	5518	5519
		345	690	5520	5521	5522	5523	5524	5525	5526	5527
			691	5528	5529	5530	5531	5532	5533	5534	5535
	173	346	692	5536	5537	5538	5539	5540	5541	5542	5543
			693	5544	5545	5546	5547	5548	5549	5550	5551
		347	694	5552	5553	5554	5555	5556	5557	5558	5559
			695	5560	5561	5562	5563	5564	5565	5566	5567
87	174	348	696	5568	5569	5570	5571	5572	5573	5574	5575
			697	5576	5577	5578	5579	5580	5581	5582	5583
		349	698	5584	5585	5586	5587	5588	5589	5590	5591
			699	5592	5593	5594	5595	5596	5597	5598	5599
	175	350	700	5600	5601	5602	5603	5604	5605	5606	5607
			701	5608	5609	5610	5611	5612	5613	5614	5615
		351	702	5616	5617	5618	5619	5620	5621	5622	5623
			703	5624	5625	5626	5627	5628	5629	5630	5631
88	176	352	704	5632	5633	5634	5635	5636	5637	5638	5639
			705	5640	5641	5642	5643	5644	5645	5646	5647
		353	706	5648	5649	5650	5651	5652	5653	5654	5655
			707	5656	5657	5658	5659	5660	5661	5662	5663
	177	354	708	5664	5665	5666	5667	5668	5669	5670	5671
			709	5672	5673	5674	5675	5676	5677	5678	5679
		355	710	5680	5681	5682	5683	5684	5685	5686	5687
			711	5688	5689	5690	5691	5692	5693	5694	5695

**from weighing point independently**

%ML	%MD	%MW	%MB	%MX							
				0	1	2	3	4	5	6	7
89	178	356	712	5696	5697	5698	5699	5700	5701	5702	5703
			713	5704	5705	5706	5707	5708	5709	5710	5711
		357	714	5712	5713	5714	5715	5716	5717	5718	5719
			715	5720	5721	5722	5723	5724	5725	5726	5727
	179	358	716	5728	5729	5730	5731	5732	5733	5734	5735
			717	5736	5737	5738	5739	5740	5741	5742	5743
		359	718	5744	5745	5746	5747	5748	5749	5750	5751
			719	5752	5753	5754	5755	5756	5757	5758	5759
90	180	360	720	5760	5761	5762	5763	5764	5765	5766	5767
			721	5768	5769	5770	5771	5772	5773	5774	5775
		361	722	5776	5777	5778	5779	5780	5781	5782	5783
			723	5784	5785	5786	5787	5788	5789	5790	5791
	181	362	724	5792	5793	5794	5795	5796	5797	5798	5799
			725	5800	5801	5802	5803	5804	5805	5806	5807
		363	726	5808	5809	5810	5811	5812	5813	5814	5815
			727	5816	5817	5818	5819	5820	5821	5822	5823
91	182	364	728	5824	5825	5826	5827	5828	5829	5830	5831
			729	5832	5833	5834	5835	5836	5837	5838	5839
		365	730	5840	5841	5842	5843	5844	5845	5846	5847
			731	5848	5849	5850	5851	5852	5853	5854	5855
	183	366	732	5856	5857	5858	5859	5860	5861	5862	5863
			733	5864	5865	5866	5867	5868	5869	5870	5871
		367	734	5872	5873	5874	5875	5876	5877	5878	5879
			735	5880	5881	5882	5883	5884	5885	5886	5887
92	184	368	736	5888	5889	5890	5891	5892	5893	5894	5895
			737	5896	5897	5898	5899	5900	5901	5902	5903
		369	738	5904	5905	5906	5907	5908	5909	5910	5911
			739	5912	5913	5914	5915	5916	5917	5918	5919
	185	370	740	5920	5921	5922	5923	5924	5925	5926	5927
			741	5928	5929	5930	5931	5932	5933	5934	5935
		371	742	5936	5937	5938	5939	5940	5941	5942	5943
			743	5944	5945	5946	5947	5948	5949	5950	5951
93	186	372	744	5952	5953	5954	5955	5956	5957	5958	5959
			745	5960	5961	5962	5963	5964	5965	5966	5967
		373	746	5968	5969	5970	5971	5972	5973	5974	5975
			747	5976	5977	5978	5979	5980	5981	5982	5983
	187	374	748	5984	5985	5986	5987	5988	5989	5990	5991
			749	5992	5993	5994	5995	5996	5997	5998	5999
		375	750	6000	6001	6002	6003	6004	6005	6006	6007
			751	6008	6009	6010	6011	6012	6013	6014	6015



## from weighing point independently

%ML	%MD	%MW	%MB	%MX							
				0	1	2	3	4	5	6	7
94	188	376	752	6016	6017	6018	6019	6020	6021	6022	6023
			753	6024	6025	6026	6027	6028	6029	6030	6031
		377	754	6032	6033	6034	6035	6036	6037	6038	6039
			755	6040	6041	6042	6043	6044	6045	6046	6047
	189	378	756	6048	6049	6050	6051	6052	6053	6054	6055
			757	6056	6057	6058	6059	6060	6061	6062	6063
		379	758	6064	6065	6066	6067	6068	6069	6070	6071
			759	6072	6073	6074	6075	6076	6077	6078	6079
95	190	380	760	6080	6081	6082	6083	6084	6085	6086	6087
			761	6088	6089	6090	6091	6092	6093	6094	6095
		381	762	6096	6097	6098	6099	6100	6101	6102	6103
			763	6104	6105	6106	6107	6108	6109	6110	6111
	191	382	764	6112	6113	6114	6115	6116	6117	6118	6119
			765	6120	6121	6122	6123	6124	6125	6126	6127
		383	766	6128	6129	6130	6131	6132	6133	6134	6135
			767	6136	6137	6138	6139	6140	6141	6142	6143
96	192	384	768	6144	6145	6146	6147	6148	6149	6150	6151
			769	6152	6153	6154	6155	6156	6157	6158	6159
		385	770	6160	6161	6162	6163	6164	6165	6166	6167
			771	6168	6169	6170	6171	6172	6173	6174	6175
	193	386	772	6176	6177	6178	6179	6180	6181	6182	6183
			773	6184	6185	6186	6187	6188	6189	6190	6191
		387	774	6192	6193	6194	6195	6196	6197	6198	6199
97	194	388	776	6208	6209	6210	6211	6212	6213	6214	6215
			777	6216	6217	6218	6219	6220	6221	6222	6223
		389	778	6224	6225	6226	6227	6228	6229	6230	6231
			779	6232	6233	6234	6235	6236	6237	6238	6239
	195	390	780	6240	6241	6242	6243	6244	6245	6246	6247
			781	6248	6249	6250	6251	6252	6253	6254	6255
		391	782	6256	6257	6258	6259	6260	6261	6262	6263
			783	6264	6265	6266	6267	6268	6269	6270	6271
98	196	392	784	6272	6273	6274	6275	6276	6277	6278	6279
			785	6280	6281	6282	6283	6284	6285	6286	6287
		393	786	6288	6289	6290	6291	6292	6293	6294	6295
			787	6296	6297	6298	6299	6300	6301	6302	6303
	197	394	788	6304	6305	6306	6307	6308	6309	6310	6311
			789	6312	6313	6314	6315	6316	6317	6318	6319
		395	790	6320	6321	6322	6323	6324	6325	6326	6327
			791	6328	6329	6330	6331	6332	6333	6334	6335

**from weighing point independently**

%ML	%MD	%MW	%MB	%MX							
				0	1	2	3	4	5	6	7
99	198	396	792	6336	6337	6338	6339	6340	6341	6342	6343
			793	6344	6345	6346	6347	6348	6349	6350	6351
		397	794	6352	6353	6354	6355	6356	6357	6358	6359
			795	6360	6361	6362	6363	6364	6365	6366	6367
	199	398	796	6368	6369	6370	6371	6372	6373	6374	6375
			797	6376	6377	6378	6379	6380	6381	6382	6383
		399	798	6384	6385	6386	6387	6388	6389	6390	6391
			799	6392	6393	6394	6395	6396	6397	6398	6399
100	200	400	800	6400	6401	6402	6403	6404	6405	6406	6407
			801	6408	6409	6410	6411	6412	6413	6414	6415
		401	802	6416	6417	6418	6419	6420	6421	6422	6423
			803	6424	6425	6426	6427	6428	6429	6430	6431
	201	402	804	6432	6433	6434	6435	6436	6437	6438	6439
			805	6440	6441	6442	6443	6444	6445	6446	6447
		403	806	6448	6449	6450	6451	6452	6453	6454	6455
			807	6456	6457	6458	6459	6460	6461	6462	6463
101	202	404	808	6464	6465	6466	6467	6468	6469	6470	6471
			809	6472	6473	6474	6475	6476	6477	6478	6479
		405	810	6480	6481	6482	6483	6484	6485	6486	6487
			811	6488	6489	6490	6491	6492	6493	6494	6495
	203	406	812	6496	6497	6498	6499	6500	6501	6502	6503
			813	6504	6505	6506	6507	6508	6509	6510	6511
		407	814	6512	6513	6514	6515	6516	6517	6518	6519
			815	6520	6521	6522	6523	6524	6525	6526	6527
102	204	408	816	6528	6529	6530	6531	6532	6533	6534	6535
			817	6536	6537	6538	6539	6540	6541	6542	6543
		409	818	6544	6545	6546	6547	6548	6549	6550	6551
			819	6552	6553	6554	6555	6556	6557	6558	6559
	205	410	820	6560	6561	6562	6563	6564	6565	6566	6567
			821	6568	6569	6570	6571	6572	6573	6574	6575
		411	822	6576	6577	6578	6579	6580	6581	6582	6583
			823	6584	6585	6586	6587	6588	6589	6590	6591
103	206	412	824	6592	6593	6594	6595	6596	6597	6598	6599
			825	6600	6601	6602	6603	6604	6605	6606	6607
		413	826	6608	6609	6610	6611	6612	6613	6614	6615
			827	6616	6617	6618	6619	6620	6621	6622	6623
	207	414	828	6624	6625	6626	6627	6628	6629	6630	6631
			829	6632	6633	6634	6635	6636	6637	6638	6639
		415	830	6640	6641	6642	6643	6644	6645	6646	6647
			831	6648	6649	6650	6651	6652	6653	6654	6655



**from weighing point independently**

%ML	%MD	%MW	%MB	%MX							
				0	1	2	3	4	5	6	7
104	208	416	832	6656	6657	6658	6659	6660	6661	6662	6663
			833	6664	6665	6666	6667	6668	6669	6670	6671
		417	834	6672	6673	6674	6675	6676	6677	6678	6679
			835	6680	6681	6682	6683	6684	6685	6686	6687
	209	418	836	6688	6689	6690	6691	6692	6693	6694	6695
			837	6696	6697	6698	6699	6700	6701	6702	6703
		419	838	6704	6705	6706	6707	6708	6709	6710	6711
			839	6712	6713	6714	6715	6716	6717	6718	6719
105	210	420	840	6720	6721	6722	6723	6724	6725	6726	6727
			841	6728	6729	6730	6731	6732	6733	6734	6735
		421	842	6736	6737	6738	6739	6740	6741	6742	6743
			843	6744	6745	6746	6747	6748	6749	6750	6751
	211	422	844	6752	6753	6754	6755	6756	6757	6758	6759
			845	6760	6761	6762	6763	6764	6765	6766	6767
		423	846	6768	6769	6770	6771	6772	6773	6774	6775
			847	6776	6777	6778	6779	6780	6781	6782	6783
106	212	424	848	6784	6785	6786	6787	6788	6789	6790	6791
			849	6792	6793	6794	6795	6796	6797	6798	6799
		425	850	6800	6801	6802	6803	6804	6805	6806	6807
			851	6808	6809	6810	6811	6812	6813	6814	6815
	213	426	852	6816	6817	6818	6819	6820	6821	6822	6823
			853	6824	6825	6826	6827	6828	6829	6830	6831
		427	854	6832	6833	6834	6835	6836	6837	6838	6839
			855	6840	6841	6842	6843	6844	6845	6846	6847
107	214	428	856	6848	6849	6850	6851	6852	6853	6854	6855
			857	6856	6857	6858	6859	6860	6861	6862	6863
		429	858	6864	6865	6866	6867	6868	6869	6870	6871
			859	6872	6873	6874	6875	6876	6877	6878	6879
	215	430	860	6880	6881	6882	6883	6884	6885	6886	6887
			861	6888	6889	6890	6891	6892	6893	6894	6895
		431	862	6896	6897	6898	6899	6900	6901	6902	6903
			863	6904	6905	6906	6907	6908	6909	6910	6911
108	216	432	864	6912	6913	6914	6915	6916	6917	6918	6919
			865	6920	6921	6922	6923	6924	6925	6926	6927
		433	866	6928	6929	6930	6931	6932	6933	6934	6935
			867	6936	6937	6938	6939	6940	6941	6942	6943
	217	434	868	6944	6945	6946	6947	6948	6949	6950	6951
			869	6952	6953	6954	6955	6956	6957	6958	6959
		435	870	6960	6961	6962	6963	6964	6965	6966	6967
			871	6968	6969	6970	6971	6972	6973	6974	6975

**from weighing point independently**

%ML	%MD	%MW	%MB	%MX							
				0	1	2	3	4	5	6	7
109	218	436	872	6976	6977	6978	6979	6980	6981	6982	6983
			873	6984	6985	6986	6987	6988	6989	6990	6991
		437	874	6992	6993	6994	6995	6996	6997	6998	6999
			875	7000	7001	7002	7003	7004	7005	7006	7007
	219	438	876	7008	7009	7010	7011	7012	7013	7014	7015
			877	7016	7017	7018	7019	7020	7021	7022	7023
		439	878	7024	7025	7026	7027	7028	7029	7030	7031
			879	7032	7033	7034	7035	7036	7037	7038	7039
110	220	440	880	7040	7041	7042	7043	7044	7045	7046	7047
			881	7048	7049	7050	7051	7052	7053	7054	7055
		441	882	7056	7057	7058	7059	7060	7061	7062	7063
			883	7064	7065	7066	7067	7068	7069	7070	7071
	221	442	884	7072	7073	7074	7075	7076	7077	7078	7079
			885	7080	7081	7082	7083	7084	7085	7086	7087
		443	886	7088	7089	7090	7091	7092	7093	7094	7095
			887	7096	7097	7098	7099	7100	7101	7102	7103
111	222	444	888	7104	7105	7106	7107	7108	7109	7110	7111
			889	7112	7113	7114	7115	7116	7117	7118	7119
		445	890	7120	7121	7122	7123	7124	7125	7126	7127
			891	7128	7129	7130	7131	7132	7133	7134	7135
	223	446	892	7136	7137	7138	7139	7140	7141	7142	7143
			893	7144	7145	7146	7147	7148	7149	7150	7151
		447	894	7152	7153	7154	7155	7156	7157	7158	7159
			895	7160	7161	7162	7163	7164	7165	7166	7167
112	224	448	896	7168	7169	7170	7171	7172	7173	7174	7175
			897	7176	7177	7178	7179	7180	7181	7182	7183
		449	898	7184	7185	7186	7187	7188	7189	7190	7191
			899	7192	7193	7194	7195	7196	7197	7198	7199
	225	450	900	7200	7201	7202	7203	7204	7205	7206	7207
			901	7208	7209	7210	7211	7212	7213	7214	7215
		451	902	7216	7217	7218	7219	7220	7221	7222	7223
			903	7224	7225	7226	7227	7228	7229	7230	7231
113	226	452	904	7232	7233	7234	7235	7236	7237	7238	7239
			905	7240	7241	7242	7243	7244	7245	7246	7247
		453	906	7248	7249	7250	7251	7252	7253	7254	7255
			907	7256	7257	7258	7259	7260	7261	7262	7263
	227	454	908	7264	7265	7266	7267	7268	7269	7270	7271
			909	7272	7273	7274	7275	7276	7277	7278	7279
		455	910	7280	7281	7282	7283	7284	7285	7286	7287
			911	7288	7289	7290	7291	7292	7293	7294	7295

## from weighing point independently

%ML	%MD	%MW	%MB	%MX							
				0	1	2	3	4	5	6	7
114	228	456	912	7296	7297	7298	7299	7300	7301	7302	7303
			913	7304	7305	7306	7307	7308	7309	7310	7311
		457	914	7312	7313	7314	7315	7316	7317	7318	7319
			915	7320	7321	7322	7323	7324	7325	7326	7327
	229	458	916	7328	7329	7330	7331	7332	7333	7334	7335
			917	7336	7337	7338	7339	7340	7341	7342	7343
		459	918	7344	7345	7346	7347	7348	7349	7350	7351
			919	7352	7353	7354	7355	7356	7357	7358	7359
115	230	460	920	7360	7361	7362	7363	7364	7365	7366	7367
			921	7368	7369	7370	7371	7372	7373	7374	7375
		461	922	7376	7377	7378	7379	7380	7381	7382	7383
			923	7384	7385	7386	7387	7388	7389	7390	7391
	231	462	924	7392	7393	7394	7395	7396	7397	7398	7399
			925	7400	7401	7402	7403	7404	7405	7406	7407
		463	926	7408	7409	7410	7411	7412	7413	7414	7415
			927	7416	7417	7418	7419	7420	7421	7422	7423
116	232	464	928	7424	7425	7426	7427	7428	7429	7430	7431
			929	7432	7433	7434	7435	7436	7437	7438	7439
		465	930	7440	7441	7442	7443	7444	7445	7446	7447
			931	7448	7449	7450	7451	7452	7453	7454	7455
	233	466	932	7456	7457	7458	7459	7460	7461	7462	7463
			933	7464	7465	7466	7467	7468	7469	7470	7471
		467	934	7472	7473	7474	7475	7476	7477	7478	7479
			935	7480	7481	7482	7483	7484	7485	7486	7487
117	234	468	936	7488	7489	7490	7491	7492	7493	7494	7495
			937	7496	7497	7498	7499	7500	7501	7502	7503
		469	938	7504	7505	7506	7507	7508	7509	7510	7511
			939	7512	7513	7514	7515	7516	7517	7518	7519
	235	470	940	7520	7521	7522	7523	7524	7525	7526	7527
			941	7528	7529	7530	7531	7532	7533	7534	7535
		471	942	7536	7537	7538	7539	7540	7541	7542	7543
			943	7544	7545	7546	7547	7548	7549	7550	7551
118	236	472	944	7552	7553	7554	7555	7556	7557	7558	7559
			945	7560	7561	7562	7563	7564	7565	7566	7567
		473	946	7568	7569	7570	7571	7572	7573	7574	7575
			947	7576	7577	7578	7579	7580	7581	7582	7583
	237	474	948	7584	7585	7586	7587	7588	7589	7590	7591
			949	7592	7593	7594	7595	7596	7597	7598	7599
		475	950	7600	7601	7602	7603	7604	7605	7606	7607



**from weighing point independently**

%ML	%MD	%MW	%MB	%MX							
				0	1	2	3	4	5	6	7
119	238	476	952	7616	7617	7618	7619	7620	7621	7622	7623
			953	7624	7625	7626	7627	7628	7629	7630	7631
		477	954	7632	7633	7634	7635	7636	7637	7638	7639
			955	7640	7641	7642	7643	7644	7645	7646	7647
	239	478	956	7648	7649	7650	7651	7652	7653	7654	7655
			957	7656	7657	7658	7659	7660	7661	7662	7663
		479	958	7664	7665	7666	7667	7668	7669	7670	7671
			959	7672	7673	7674	7675	7676	7677	7678	7679
120	240	480	960	7680	7681	7682	7683	7684	7685	7686	7687
			961	7688	7689	7690	7691	7692	7693	7694	7695
		481	962	7696	7697	7698	7699	7700	7701	7702	7703
			963	7704	7705	7706	7707	7708	7709	7710	7711
	241	482	964	7712	7713	7714	7715	7716	7717	7718	7719
			965	7720	7721	7722	7723	7724	7725	7726	7727
		483	966	7728	7729	7730	7731	7732	7733	7734	7735
			967	7736	7737	7738	7739	7740	7741	7742	7743
121	242	484	968	7744	7745	7746	7747	7748	7749	7750	7751
			969	7752	7753	7754	7755	7756	7757	7758	7759
		485	970	7760	7761	7762	7763	7764	7765	7766	7767
			971	7768	7769	7770	7771	7772	7773	7774	7775
	243	486	972	7776	7777	7778	7779	7780	7781	7782	7783
			973	7784	7785	7786	7787	7788	7789	7790	7791
		487	974	7792	7793	7794	7795	7796	7797	7798	7799
			975	7800	7801	7802	7803	7804	7805	7806	7807
122	244	488	976	7808	7809	7810	7811	7812	7813	7814	7815
			977	7816	7817	7818	7819	7820	7821	7822	7823
		489	978	7824	7825	7826	7827	7828	7829	7830	7831
			979	7832	7833	7834	7835	7836	7837	7838	7839
	245	490	980	7840	7841	7842	7843	7844	7845	7846	7847
			981	7848	7849	7850	7851	7852	7853	7854	7855
		491	982	7856	7857	7858	7859	7860	7861	7862	7863
			983	7864	7865	7866	7867	7868	7869	7870	7871
123	246	492	984	7872	7873	7874	7875	7876	7877	7878	7879
			985	7880	7881	7882	7883	7884	7885	7886	7887
		493	986	7888	7889	7890	7891	7892	7893	7894	7895
			987	7896	7897	7898	7899	7900	7901	7902	7903
	247	494	988	7904	7905	7906	7907	7908	7909	7910	7911
			989	7912	7913	7914	7915	7916	7917	7918	7919
		495	990	7920	7921	7922	7923	7924	7925	7926	7927
			991	7928	7929	7930	7931	7932	7933	7934	7935

**from weighing point independently**

%ML	%MD	%MW	%MB	%MX							
				0	1	2	3	4	5	6	7
124	248	496	992	7936	7937	7938	7939	7940	7941	7942	7943
			993	7944	7945	7946	7947	7948	7949	7950	7951
		497	994	7952	7953	7954	7955	7956	7957	7958	7959
			995	7960	7961	7962	7963	7964	7965	7966	7967
	249	498	996	7968	7969	7970	7971	7972	7973	7974	7975
			997	7976	7977	7978	7979	7980	7981	7982	7983
		499	998	7984	7985	7986	7987	7988	7989	7990	7991
			999	7992	7993	7994	7995	7996	7997	7998	7999
125	250	500	1000	8000	8001	8002	8003	8004	8005	8006	8007
			1001	8008	8009	8010	8011	8012	8013	8014	8015
		501	1002	8016	8017	8018	8019	8020	8021	8022	8023
			1003	8024	8025	8026	8027	8028	8029	8030	8031
	251	502	1004	8032	8033	8034	8035	8036	8037	8038	8039
			1005	8040	8041	8042	8043	8044	8045	8046	8047
		503	1006	8048	8049	8050	8051	8052	8053	8054	8055
			1007	8056	8057	8058	8059	8060	8061	8062	8063
126	252	504	1008	8064	8065	8066	8067	8068	8069	8070	8071
			1009	8072	8073	8074	8075	8076	8077	8078	8079
		505	1010	8080	8081	8082	8083	8084	8085	8086	8087
			1011	8088	8089	8090	8091	8092	8093	8094	8095
	253	506	1012	8096	8097	8098	8099	8100	8101	8102	8103
			1013	8104	8105	8106	8107	8108	8109	8110	8111
		507	1014	8112	8113	8114	8115	8116	8117	8118	8119
			1015	8120	8121	8122	8123	8124	8125	8126	8127
127	254	508	1016	8128	8129	8130	8131	8132	8133	8134	8135
			1017	8136	8137	8138	8139	8140	8141	8142	8143
		509	1018	8144	8145	8146	8147	8148	8149	8150	8151
			1019	8152	8153	8154	8155	8156	8157	8158	8159
	255	510	1020	8160	8161	8162	8163	8164	8165	8166	8167
			1021	8168	8169	8170	8171	8172	8173	8174	8175
		511	1022	8176	8177	8178	8179	8180	8181	8182	8183
			1023	8184	8185	8186	8187	8188	8189	8190	8191

## 9 Printouts

### 9.1 General notes

The following printouts are available in PR 5500 using the Phase application:

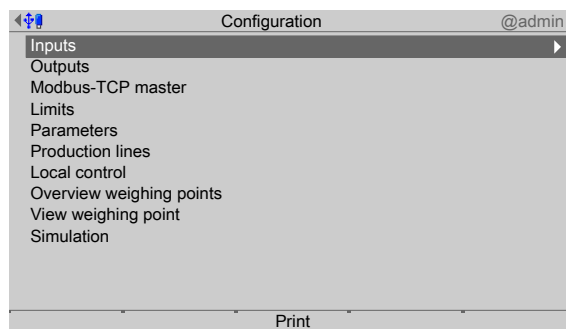
- Device configuration data, see PR 5500 operating instructions
- Phase configuration data, see Chapter [9.2](#)

### 9.2 Phase-Configuration data

The option is available to print out the Phaseconfiguration data. The configuration data is output to the printer configured in the [System setup] - [Connected devices] system menu under "General Devices" (see PR 5500 operating instructions).

The print width is limited to 39 characters per line. This means a ticket printer can also be used. When printing the first line, the program checks whether printing is possible. In the event of a printer failure during printing, a time-out of approximately 3 s is active for each print line.

The printout cannot be changed using "NiceLabelExpress." The printout reflects the current data status.



- Press the [Print] soft key or the  button to print out the configuration.



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