

Operating instructions

Count PR 5900/82



Translation of original operating instructions

9499 050 59600

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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

2 Overview

2.1 General information

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

For installation, basic configuration, and calibration of the device, please refer to the PR 5900 installation manual and the operating instructions.

2.2 Equipment supplied

2.2.1 Components

The Count product consists of the following components:

- Maxxis 5 basic unit with software "BIOS," "firmware" and application software "Count", including license
- Manuals in PDF format on CD-ROM

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

- BIOS
- Firmware
- Application "Count"

PR 1721/5x or PR 1721/7x fieldbus cards are supported, see Chapter [2.2.3](#).

The application supports Alibi memory, see Chapter [2.2.2](#).

2.2.2 Accessories (not included with the equipment supplied)

- Plug-in cards for Option-1, Option-2, see Chapter [2.2.3](#)
- Software (license):
 - PR 1792/13 OPC server communication
 - Alibi memory
- Scales:

A maximum of 4 scales can be controlled and displayed.

- PR 5900/10 (W1) Internal weighing electronics (max. 2)
- PR 5900/10 (WE1) Internal Ex weighing electronics (max. 1)
- Platform/scale with xBPI protocol (max. 3)

The digital load cells (of type Pendeo) are connected over a maximum of 2 serial RS-485 interfaces and a digital connection counter.

Note:

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

- The totalizing function (tandem scale): $WP\ A + WP\ B = WP\ C$
-

2.2.3 Plug-in cards

Product	Description	Position
PR 5900/04 2 x RS-485 serial inter- faces	The interface can be configured by software. For further information, refer to the PR 5900 installation manual.	Option-1 and/or Option-2
PR 5900/07 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 5900 installation manual.	Option-1 and/or Option-2
PR 5900/10 (W1) Weighing electronics	Internal weighing electronics for connecting load cells or weighing platforms in non-Ex areas. A maximum of two internal weighing electro- nics units can be inserted. For further information, refer to the PR 5900 installation manual.	WP A and/or WP B
PR 5900/10 (WE1) Weighing electronics with Ex approval	Internal weighing electronics for connecting load cells or weighing platforms in Ex areas. A maximum of one internal weighing electro- nics unit can be inserted. For further information, see Option WE1 ad- ditional information.	WP A
PR 5900/12 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 5900 installation manual.	Option-1 and/or Option-2
PR 5900/13 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 5900 installation manual.	Option-1 and/or Option-2
PR 5900/17 6 digital inputs 8 digital outputs	6 passive opto-decoupled inputs 8 passive opto-decoupled outputs For further information, refer to the PR 5900 installation manual.	Option-1 and/or Option-2
PR 5900/32 2 RS-232 serial interfa- ces	The interface can be configured by software. For further information, refer to the PR 5900 installation manual.	Option-1 and/or Option-2

Product	Description	Position
CX1 Module with Ex approval	Connection for remote terminal PR 5900/6x, PR 5900/7x For further information, see Option CX1 additional information.	Remote Terminal
PR 1721/51 Profibus-DP	Profibus DP V0 slave with 9.6 kbit/s...12 Mbit/s, baud rate auto-detection For further information, refer to the PR 5900 installation manual.	Option-FB
PR 1721/54 DeviceNet	DeviceNet master-slave with 125, 250, and 500 kbit/s For further information, refer to the PR 5900 installation manual.	Option-FB
PR 1721/55 CC-Link	CC-Link master-slave with 10 Mbit/s For further information, refer to the PR 5900 installation manual.	Option-FB
PR 1721/56 ProfiNet I/O	ProfiNet I/O with 10 Mbit/s and 100 Mbit/s, auto-detection (10/100, HalfDX/FullDX) For further information, refer to the PR 5900 installation manual.	Option-FB
PR 1721/57 EtherNet IP	EtherNet IP with 10 Mbit/s and 100 Mbit/s, auto-detection (10/100, HalfDX/FullDX) For further information, refer to the PR 5900 installation manual.	Option-FB
PR 1721/76 ProfiNet I/O 2-port	ProfiNet I/O with 10 Mbit/s and 100 Mbit/s, auto-detection (10/100, HalfDX/FullDX) For further information, refer to the PR 5900 installation manual.	Option-FB
PR 1721/77 EtherNet IP 2-port	EtherNet IP with 10 Mbit/s and 100 Mbit/s, auto-detection (10/100, HalfDX/FullDX) For further information, refer to the PR 5900 installation manual.	Option-FB

2.3 Function of application "Count"

2.3.1 General information

The Count application is used for daily quality control in industry.
It fulfills the highest reliability requirements for weighing results in

- the food industry
- the pharmaceutical industry
- the chemical industry
- the electronics and metal industries.

The following functions are available:

- Counting
- Check weighing
- Totalizing

The master data of products will be collected and can be expanded by so-called "identifiers." These are included on any printouts that are generated.

2.3.2 Counting

The number of parts is determined using this function.

- Features, see Chapter [2.3.2.1](#)
- Single scale, see Chapter [2.3.2.2](#)
- Two scales simultaneously, see Chapter [2.3.2.3](#)
- Calculation, see Chapter [2.3.2.4](#)

2.3.2.1 Characteristics

- Entering the reference sample weight using the keyboard
- Saving the reference sample weight from the weighing platform
- Entering the reference quantity using the keyboard
- Specifying the reference quantity "nRef" via parameters.
- Automatic piece weight optimization
- It is possible to define the level of accuracy applied when a calculated reference sample weight is saved
- Automatic taring of container weight
- When the scale is switched on the last reference quantity used is displayed (factory default setting: 10 pcs) and the last used reference sample weight.
- Switch back and forth between piece and weight using the [Weight] and [Piece] soft keys
- Selection of product data memory
- Defining and configuring the product data memory
- Counting with one or more scales.

A single scale or multiple scales can be used simultaneously for counting.

- Single scale, see Chapter [2.3.2.2](#)
- Two scales simultaneously, see Chapter [2.3.2.3](#)

2.3.2.2 Single scale

A single scale can be used for counting when the parts to be counted have a piece weight that is nearly equal.

2.3.2.3 Two scales simultaneously

Two scales can be used for counting when the weight difference between the parts to be counted is very high. There are two different operating modes:

- Counting with two platforms of the same type
Use this mode to count different types of sample material with different weights. For example, count the lighter pieces on one platform and the heavier pieces on another.
- Counting with one reference platform and one weighing platform

In this mode, the reference platform is a high-resolution scale with a relatively low maximum capacity. The other platform is used for weighing heavier samples and has a high capacity with a relatively low resolution. This configuration allows you to determine the average piece weight with a high resolution and count very precisely on the weighing platform.

2.3.2.4 Calculation

Before the quantity on the platform can be calculated, the average piece weight (reference piece weight) must be known. The calculation of the piece weight can be carried out in four different ways:

- Placing the number of parts defined as the reference quantity on the scale and calculating the average piece weight by pressing the [Start] soft key and/or [n=10].
- Place any number of parts on the scale, enter the number of parts using the keyboard, and then press the [Start] soft key to calculate the average piece weight.

Note:

How the reference weight is calculated depends on the application setting for resolution. This can be set in the operating menu under [Configuration] - [Applications] - [Counting] - [Accuracy of piece weight calculation].

Selection: Display accuracy, +1 decimal place, +2 decimal places, Internal trigger

- Entering a reference sample weight (i.e., the weight of one piece) using the keyboard and saving it.
- Opening the product memory in which the reference sample weight of the product is saved.

After initialization, you can use the connected weighing platform to count parts. The initialization values are active until deleted or until overwritten by a new value. The non-permanent values for the "0" product are lost after shut-off.

2.3.3 Check weighing

- Task, see Chapter [2.3.3.1](#)
- Features, see Chapter [2.3.3.2](#)
- Set point input, see Chapter [2.3.3.3](#)

2.3.3.1 Task

With this function, you can check whether the sample matches a set point or lies within a given tolerance range. Check weighing also makes it easy to fill sample materials to a specified set point.

2.3.3.2 Characteristics

- Enter the set point and the tolerance range (min. and max. value) or as a percentage deviation via the keyboard, or save the weight value from the weighing platform.
- Enter the tolerance limits as absolute values (min. and max. values) or as percentages of the set point.

This can be set in the operating menu under [Configuration] - [Applications] - [Check weighing] - [Type of control value input].

- Results are output to the main display as a colored bar graph (yellow, green, red) as well as sent to control output ports for further electronic processing.
- The weight value representation is shown in a display window: "LL"(too low) or "HH" (too high). For the limit value, if the weight in the readout is outside the tolerance range, "LL" (too low) or "HH" (too high) is displayed.
- Automatic printout of results.

This can be set in the operating menu under [Configuration] - [Applications] - [Check weighing] - [Automatic printout of results].

- Automatic taring of container weight.

This can be set in the operating menu under [Configuration] - [Parameters] - [Auto. tare 1st weight].

2.3.3.3 Set point entry

Check weighing entails comparing the current weight value to a defined set point. You can enter the value for this set point using the keyboard, or by saving the weight value indicated. You can also define upper and lower tolerance limits based on this set point. You can do this by:

- Entering absolute values using the keypad or placing the desired amounts of weight on the platform and saving the values
- or
- by entering each value as a percentage deviation of the set point.

The initialization data remains valid until deleted or until overwritten by a new value. They remain saved after switch-off.

2.3.4 Totalizing

This function is used to total weight values.

The device has a totalizing memory for totalizing individual net and gross values. You can save weight values in totalizing memory manually or automatically.

Features, see Chapter [2.3.4.1](#)

2.3.4.1 Characteristics

- Up to 9999 items can be weighed in.
- One totalizing memory for each product memory.
- Simultaneous saving of net values and calculated values (if available).

This can be set in the operating menu under [Configuration] - [Applications] - [Check weighing] - [Saved value].

- Current transaction number displayed in the text line (indicating the transactions already added).
- Weighing in up to a total weight, with the totalizing memory content plus the current weight on the scale displayed in the text lines.
- Saves weight values manually or automatically.
- Accurate calculation of total of weight values from two weighing platforms.
- Automatic printout when value saved.
- Automatic taring of container weight.

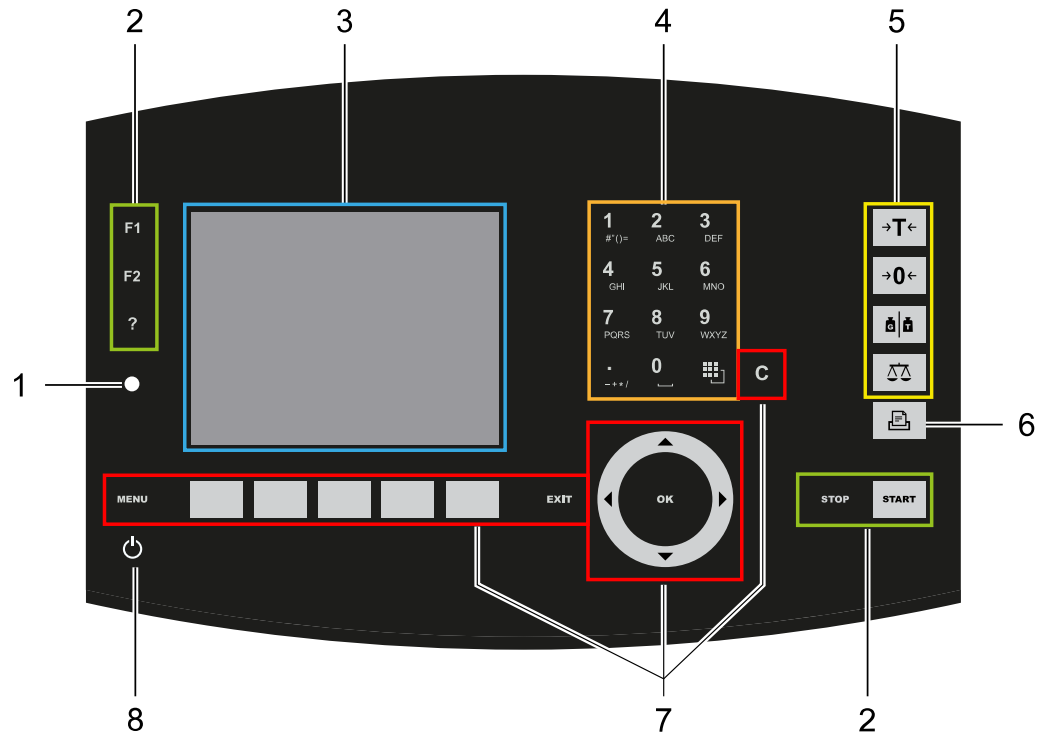
This can be set in the operating menu under [Configuration] - [Parameters] - [Auto. tare 1st weight].

- Totalizing memory saved in battery-backed memory when the device is switched off.

3 Operating

3.1 Display and operating elements

3.1.1 Overview



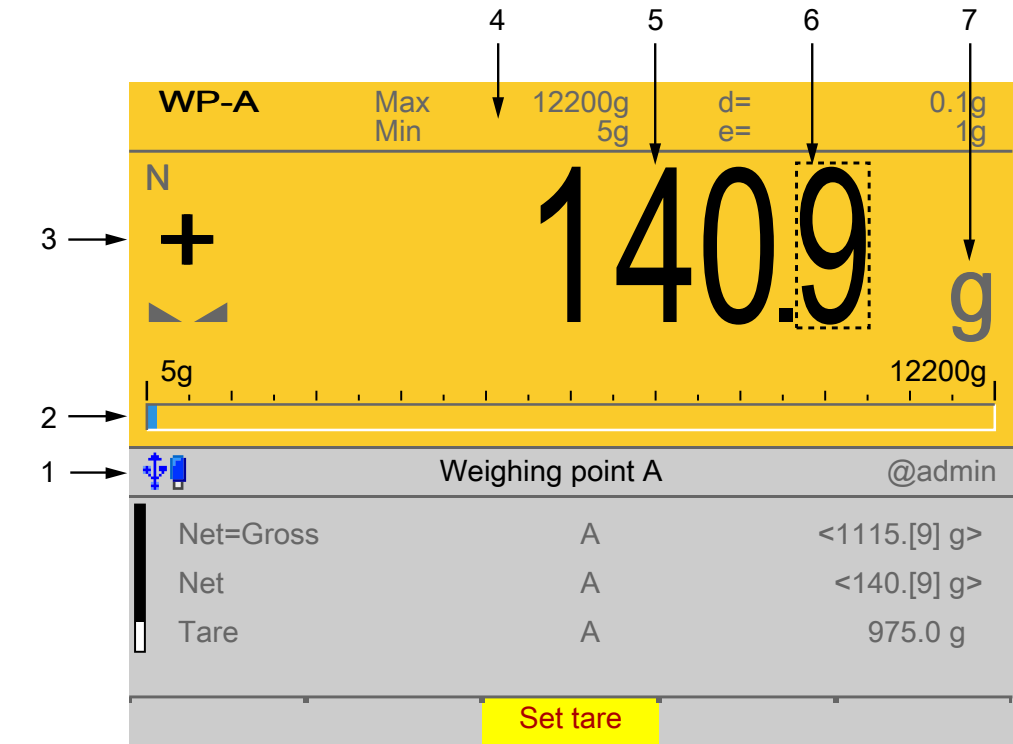
No.	Name
Display elements	
1	LED status display, see Chapter 3.1.3
3	5.7" TFT color display, see Chapter 3.1.2
Operating elements, see Chapter 3.1.4.1	
2	Function keys
4	Alphanumeric keypad
5	Indicator keys
6	Application keys
7	Navigation/menu keys, incl. soft keys
8	On/off button

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	Border around decimal place
7	Symbols/mass unit

Weight type/plus or minus sign	Description
B	Gross weight
G	Gross weight in NTEP or NSC mode
T	Tare weight
PT	Preset tare, not tared

Weight type/plus or minus sign	Description
No display	- Test value - Gross, not tared
User	Additional weight display, application-dependent
Setp	Additional weight display, application-dependent
Diff	Additional weight display, application-dependent
+	Positive value
-	Negative value
Standstill/zero/batching/monitoring	Description
	Weight value standstill
→0←	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)
R1	Range 1
R2	Range 2
R3	Range 3
WP A	Weighing point A
WP B	Weighing point B
WP C	Weighing point C
WP D	Weighing point D
Max	Maximum capacity (weighing range)
Min	Minimum weight
	Only if W&M is selected: Border around inadmissible decimal place.
t, kg, g, mg, lb, oz	These mass units are available.

Bar graph

Diagram	Description
Bar graph	The result is displayed in the bar graph as a color. - Yellow: weight value < lower tolerance limit - Green: weight value is within OK range - Red: weight value > upper tolerance limit
Additional window	There are additional displays: - "LL" is shown on the display for weight values < lower tolerance limit. - "HH" is shown on the display for weight values > upper tolerance limit.

Status icons in the info line

Icon	Description
	Remote control via VNC (Virtual Network Computing) is active.
	General warning
	- The clock battery is empty. - The standby battery is empty.
	The standby battery is too hot and is not charging. If this does not go away, the ambient temperature must be checked, see PR 5900 installation manual under [Technical data] - [Environmental influences] - [Ambient conditions].
	- An unsupported USB device is connected. - The maximum current of $i_{\max} = 200 \text{ mA}$ has been exceeded.
	Check newly connected devices.
	USB stick was recognized and is operational.
	Stick is in use and may not be removed.
	Conflict in the network settings of the IP address.
	Interface (CX1) was detected. However, there is no connection to the operator terminal.

3.1.3 LEDs

Operating status	Color	LED status	Description
Normal operation		Off	

Operating status	Color	LED status	Description
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 5900 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
	Set tare The current gross weight is stored in the tare memory, provided that - the weight value is stable. - the device is not in error status. (Function is dependent on configuration)
	Sets gross weight to zero, provided that - the weight value is stable. - weight is within zero setting range. (Function is dependent on configuration)
	Display gross/tare weight 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.

Key	Description
	Switching of display between the weighing points: - WP-A - WP-B - WP-C - WP-D

Application keys

Key	Description
	Starts an application-specific printout.

Navigation keys

Key	Description
▲	Scroll up in the menu.
▼	Scroll down in the menu.
◀	- Cursor to the left - Selection - Exit menu window.
▶	- Cursor to the right - Selection - Confirm input/selection.

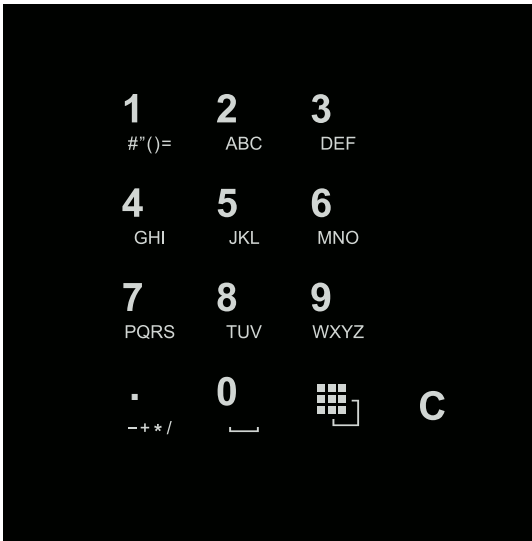
Menu keys

Key	Description
OK	Confirm input/selection.
EXIT	- Cancel entry/selection (after a confirmation prompt) without saving the change. - Exit parameters/menu window.
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 3.1.4.2 .
MENU	Switch to the operating menu.

Function keys

Key	Description
F1	Assigned to a defined function (see system menu [System setup] - [Operating parameters]).
F2	Assigned to a defined function (see system menu [System setup] - [Operating parameters]).
?	Displays the relevant help window.
	- Turns off the display. - Ignores all key presses. - LED is red. Pressing again will switch the display on again.
	No function
	Stops an application-specific function.

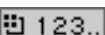
Alphanumeric keypad





Toggle key

Pressing switches between the following functions:

-  ABC..
Uppercase letters
-  abc..
Lowercase letters
-  IME..
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].
-  123..
Numbers
-  unit
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.

Press the cursor keys ▼/▲ to finish entering a character or wait approx. 2 seconds.

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:

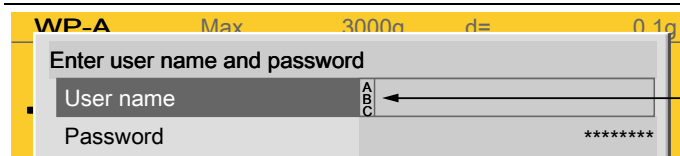
- Highlight the desired character with the cursor.
- The selected character is shown magnified in the field at the top right.
- Press the key **OK** to enter the character in the input field.
- Another double-click on the toggle key and other characters can be input as described previously.

Input field

In principle:

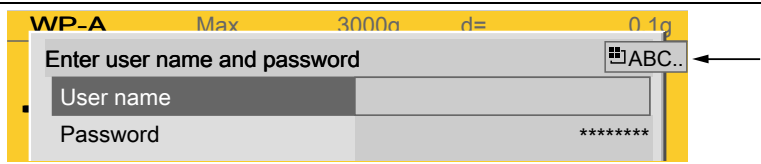
If alphanumeric characters are already present in the input field of the selected line, they will be completely overwritten after immediate entry.

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.

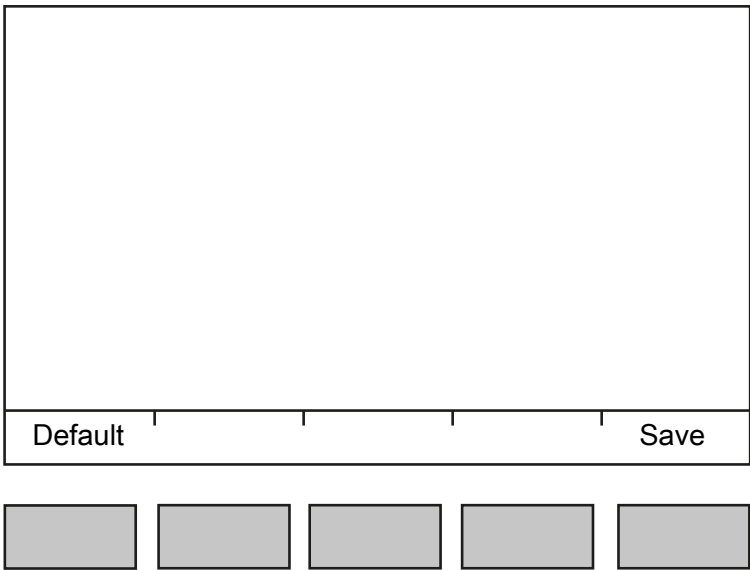
Keyboard shortcuts



Trigger a cold start, see also PR 5900 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	F1
F2	F2
F3	?
F4	MENU
F5...F9	Softkey 1...5
F10	
F11	
F12	
ESC	EXIT
Cursor keys: ↑, ↓, ←, →	▲, ▼, ◀, ▶
Enter key: ↵	OK
Backspace key: ←	C
Numeric keypad	Alphanumeric keypad

4 Setting up the application menu

4.1 Production

Production display of the selected application.

Production

Counting application / weighing application

ID

Select under [Configuration] - [Parameters] - [Basic application]

Identification of the weighing, also appears on the printout.

Input: 20 alphanumeric characters

Initialize

This soft key is only displayed when the "Check weighing active" menu item was selected under [Configuration] - [Parameters].

Input: Set point weight, minimum weight and maximum weight.

Memory

The entered values are saved to the product data memory.

Weight

Apply the set point values, minimum values, and maximum values entered under "Initialize" as weight values.

Start

Counting starts with the default setting $n = 10$ units.

4.2 Databases

Databases

Product database

Creating records for products, see Chapter [4.2.1](#).

Tare database

Creating records for tare memory, see Chapter [4.2.2](#).

4.2.1 Product database

Databases

Product database

Create data records for products.

Product database

New/Edit

Product

Edit/Create a new data record.

Identification (short name)

Input: 15 alphanumeric characters

Product name

Identification (long name)

Input: 20 alphanumeric characters

Reference weight

Enter value.

Set point weight

Enter value.

Minimum weight

Enter a value $<$ set point.

Maximum weight

Enter a value $>$ set point.

Set point quantity

The value is calculated.

Min. quantity

The value is calculated.

Max. quantity

Upper limit of the set point is projected based on the quantity.

Tare memory

Select tare memory from the database.

	Product ID 1...4
	Default
	Save

Additional description for product.
Input: max. 20 alphanumeric characters
Settings are reset to factory settings.
The settings are saved.

4.2.2 Tare database

Databases
— Tare database

Create data records for tare memory.

Tare database
— New/Edit
— Tare memory
— Tare name
— Tare value
— Default
— Weight
— Save
— Delete
— Delete
— Print

Edit/Create a new data record.
Identification (short name)
Input: 15 alphanumeric characters
Identification (long name)
Input: 20 alphanumeric characters
Enter/Save value.
Settings are reset to factory settings.
The displayed weight is saved.
The settings are saved.
Delete data records.
Selection: All, Selected, Cancel
Delete data records.
Selection: All, Selected, Cancel
Print data records.
Selection: All, Select

4.3 Configuration

Configuration
— inputs
— Outputs
— ModBus-TCP master
— Limit values
— Applications
— Parameters
— Print parameters
— Printing

See Chapter [4.3.1](#).
See Chapter [4.3.2](#).
See Chapter [4.3.3](#).
See Chapter [4.3.4](#).
Define parameters for counting, check
weighing and totalizing, see Chapter [4.3.5](#).
See Chapter [4.3.6](#).
See Chapter [4.3.7](#).
Print configuration, see Chapter [4.3.8](#).

4.3.1 Inputs

Configuration
— Inputs

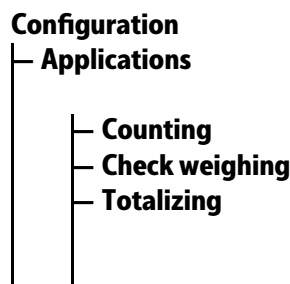
Function assignment for installed input cards.

Inputs
— Option
— Type
— Input
— SPM address %MX
— Default
— Input-

Selection: Option-1, Option-2, Internal, remote
terminal if necessary
Display only
1...4
See SPM table in Chapter [8](#).
Settings are reset to factory settings.
Switch to the previous input.

	- Input+ - Save	Switch to the next input. The settings are saved.
4.3.2	Outputs	
	Configuration Outputs	Function assignment for installed output cards.
	Outputs - Option - Type - Output - SPM address %MX - Default - Output- - Output+ - Save	Selection: Option-1, Option-2, Internal, remote terminal if necessary Display only 1...4 See SPM table in Chapter 8. Settings are reset to factory settings. Switch to the previous output. Switch to the next output. The settings are saved.
4.3.3	ModBus-TCP master	
	Configuration ModBus-TCP master	Function assignment for the pre-set ModBus modules.
	ModBus-TCP master - Communication error - ModBus-TCP module - Activate module - IP address - I/O type - Input - SPM address %MX - Default - Input/Output - - Input/Output + - Save	Selection: Ignore message, Show message Selection: Phoenix 1...8 Check the ☒ box to activate the module. The menu expands. Enter the IP address of the module. Selection: Digital input, Digital output 1...16 See SPM table in Chapter 8. Settings are reset to factory settings. Switch to previous Input/Output. Switch to next Input/Output. The settings are saved.
4.3.4	Limit values	
	Configuration Limit values	Define switch on/switch off points.
	Limit values - Weighing point - Limit value 1...2 On - Limit value 1...2 Off - Default - Save	Weighing point A...D Enter 0...Max (maximum capacity); Adopt unit from the calibration. Enter 0...Max (maximum capacity); Adopt unit from the calibration. Settings are reset to factory settings. The settings are saved.

4.3.5 Applications



Define parameters for counting, check weighing and totalizing.

see Chapter [4.3.5.1](#)

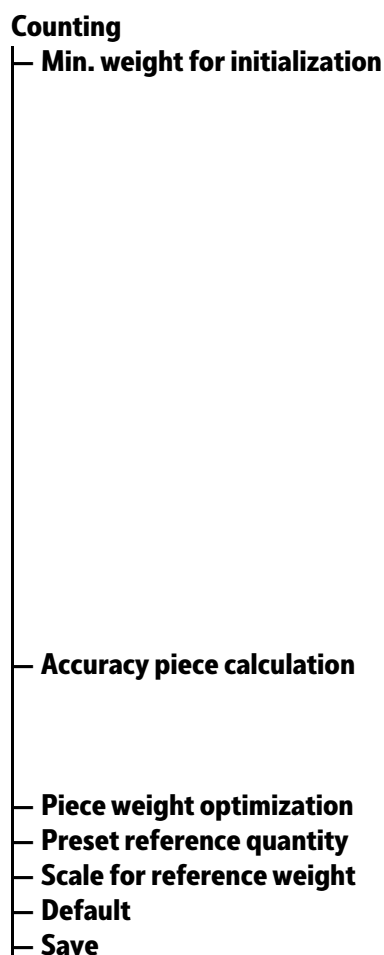
see Chapter [4.3.5.2](#)

You can save weight values in totalizing memory manually or automatically, see Chapter [4.3.5.3](#)

4.3.5.1 Counting



Define parameters for counting, check weighing and totalizing.



The minimum weight that must be placed on the weighing platform, for example, in order to start an initialization.

For a scale interval of, e.g. 1 kg, this results in

- a minimum weight of 1 kg if "1 step" has been selected.
- a minimum weight of 2 kg if "2 steps" has been selected.
- a minimum weight of 5 kg if "5 steps" has been selected.
- a minimum weight of 10 kg if "10 steps" has been selected.

etc.

Selection: 1, 2, 5, 10, 20, 50, 100, 200, 500, 1000 steps

Define the resolution for calculating the reference weight.

Selection: Display accuracy, +1 decimal place, +2 decimal places, With internal resolution

Selection: Off, Automatic

Selection: 5, 10, 20, 50, 100

Selection: Do not change, Weighing point A...D

Settings are reset to factory settings.

The settings are saved.

4.3.5.2 Check weighing



Define parameters for counting, check weighing and totalizing.

Check weighing

- **Control range**
- **Type of control value input**
- **Automatic printout of results**
- **LL/HH display**
- **Tare after printout of 'OK' result**
- **Default**
- **Save**

Define the control range of the weight value.
 Selection: 30 % ... 170 % , 10 % ... max. weight
 Selection: Set point value, min. value, max. value; set point value, min. % value, max. % value
 Selection: Off, On, Only print 'OK' values, Only print 'Not OK' values
 Selection: Off, On
 Selection: Off, On
 Settings are reset to factory settings.
 The settings are saved.

4.3.5.3 Totalizing**Configuration**

- **Applications**
 - **Totalizing**

Define parameters for counting, check weighing and totalizing.
 You can save weight values in totalizing memory manually or automatically.

Totalizing

- **Automatic value transfer**
- **Min. weight for auto. transfer**
- **Printout after value transfer**
- **Default**
- **Save**

Selection: Off, On
 The minimum weight that must be placed on the weighing platform, for example, in order to save to totalizing memory.
 For a scale interval of, e.g. 1 kg, this results in

- a minimum weight of 1 kg if "1 step" has been selected.
- a minimum weight of 2 kg if "2 steps" has been selected.
- a minimum weight of 5 kg if "5 steps" has been selected.
- a minimum weight of 10 kg if "10 steps" has been selected.

etc.
 Selection: 1, 2, 5, 10, 20, 50, 100, 200, 500, 1000 steps
 Selection: Off, Individual printout
 Settings are reset to factory settings.
 The settings are saved.

4.3.6 Parameters**Configuration**

- **Parameters**

Define the parameters for the applications.

Parameters

- **Basic application**
- **Check weighing active**

Selection: Counting, Check weighing
 Check the ☒ box to activate check weighing for configuration and production.

— Totalizing active	Check the ☒ box to activate the totalizing memory.
— Static sum display	Check the ☒ box to activate the number of previously weighed and counted products. This is an extra text display during counting.
— Auto. tare 1st weight	Check the ☒ box to activate the function.
— Min. wgt. for auto. tar./prin.	The minimum weight that must be placed on the weighing platform, for example, in order to save to totalizing memory. For a scale interval of, e.g. 1 kg, this results in - a minimum weight of 1 kg if "1 step" has been selected. - a minimum weight of 2 kg if "2 steps" has been selected. - a minimum weight of 5 kg if "5 steps" has been selected. - a minimum weight of 10 kg if "10 steps" has been selected. etc. Selection: 1, 2, 5, 10, 20, 50, 100, 200, 500, 1000 steps
— Default	Settings are reset to factory settings.
— Save	The settings are saved.

4.3.7 Print parameters

Configuration	
— Print parameters	Configure the printout parameters. see Chapter 4.3.7.1
— Printer selection	see Chapter 4.3.7.2
— Printer settings	see Chapter 4.3.7.3
— Print template	

4.3.7.1 Printer selection

Configuration	
— Print parameters	
— Printer selection	Configure the printout parameters.

Printer selection	
— Ticket printer	This printer is used for report and label tickets. Selection: No printer, Printer, Printer 1, Printer 2 The printers are assigned to the device under [System setup] - [Connected devices]
— Additional printer	This printer is used for barcode printing, for example. Selection: No printer, Printer, Printer 1, Printer 2 The printers are assigned to the device under [System setup] - [Connected devices]
— Default	Settings are reset to factory settings.
— Save	The settings are saved.

4.3.7.2 Printer settings

Configuration

- **Print parameters**
 - **Printer settings**

Configure the printout parameters.

Printer settings

- **ID1...4**
- **Header 1...2**
- **Print once during standstill**
- **Default**
- **Save**

Enter up to four ID codes for identifying results on the printout.

Input: max. 20 alphanumeric characters

Enter up to two headers to identify the printout.

Input: max. 20 alphanumeric characters

Check the ☒ box to activate the function.

Settings are reset to factory settings.

The settings are saved.

4.3.7.3 Print template

Configuration

- **Print parameters**
 - **Print template**

Configure the printout parameters.

Print template

- **Printout type**
- **Number of printouts**
- **Use NLE**
- **Line 1...33**
- **Default**
- **Save**

Selection: Individual printout, Component print, Total

An individual printout is made by pressing the Print key.

Component printout is only triggered when the "Automatic printout of results" option was activated under [Applications] - [Check weighing].

The Total option is always triggered when the M keys are pressed during the counting process. This is thus the intermediate result of the counting.

Input: 1...99

Check the ☒ box to activate printing with NiceLabelExpress.

The following selection depends on the basic application selected under [Configuration] - [Parameters].

Selection: Blank, -----, Date/time, Time, Product, Product name, ID1...4, Product ID1...4, Header 1...2, Reference quantity, Reference weight, Set point quantity, Minimum, Min. quantity, Maximum, Max. quantity, Sequence number, Board number, Form feed, Net, Gross, Tare, Quantity (current), Set point (weight), Deviation in %, Deviation (as weight)

Settings are reset to factory settings.

The settings are saved.

4.3.8 **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 5900 Installation manual are read before installation and commissioning!

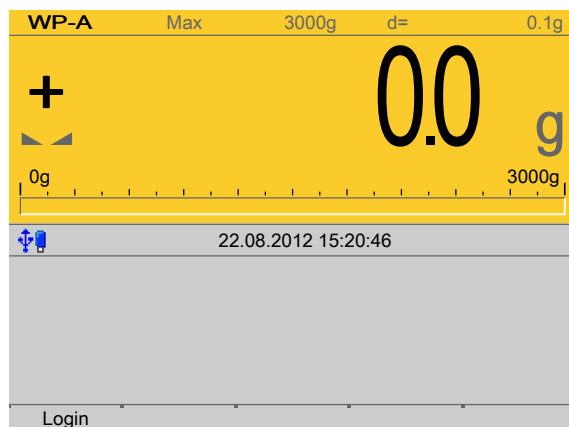
5.2 Switching on the device

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 5900	- The instrument type is displayed, PR 5900 - BIOS version - Firmware version - Automatic display test - Weight display
No signal	Error message: no load cells are connected, see also PR 5900 operating instructions.
No values from scale	Error message: no communication with the xBPI scale, see also PR 5900 operating instructions. Error message: unable to read weight values from the ADC (analog-digital converter); see also PR 5900 operating instructions.
Scale not ready	Error message: no load cells or scale connected, see also PR 5900 operating instructions.



The weight display is shown.

Check the date and time after first turning on the device, see PR 5900 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 5900 operating instructions.

The application rights "Administrator", "Supervisor" and "Operator" are preset and cannot be changed.

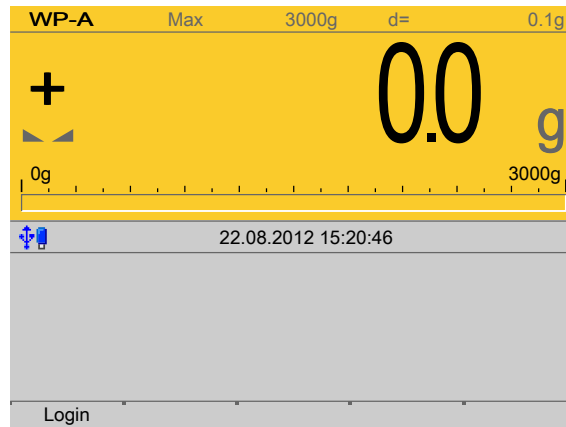
The application rights are defined as follows:

Access privilege	Operator	Supervisor	Administrator
Start application	X	X	X
Set ID1...4.	X	X	X
Set tare reset. The current tare value is stored in the tare memory.	X	X	X
Select memory.	X	X	X
Execute [M+]/[M-]/[MR].	X	X	X
Initialize "Counting."	X	X	X
Set reference sample weight [wRef].	X	X	X
Set reference quantity [nRef].	X	X	X
Re-initialize with n pieces	X	X	X
Set control parameters		X	X
Create product		X	X
Edit product		X	X
Delete product		X	X
Create tare memory		X	X
Edit tare memory		X	X

Access privilege	Operator	Supervisor	Administrator
Delete tare memory		X	X
Edit firmware settings			X

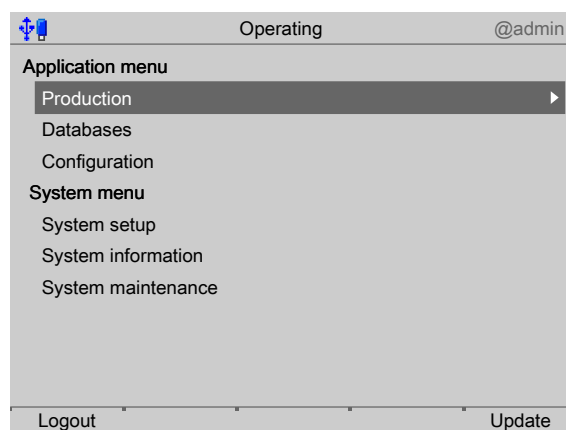
Note:

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.

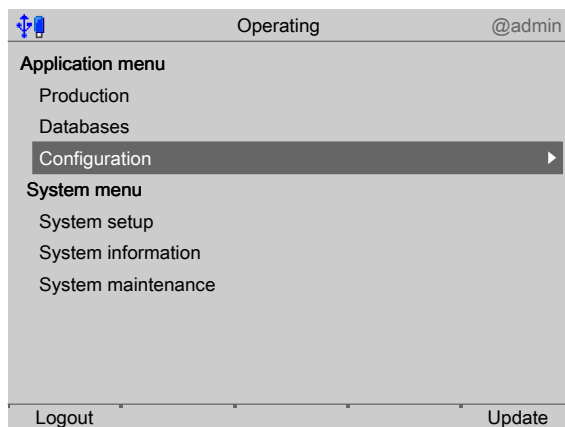
5.4 Configuration

5.4.1 General information

In this menu item, application is configured.

Note:

When user management is active, the configuration can only be performed if a user with application rights "Supervisor" or "Administrator" is logged in.



- 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 5900 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.

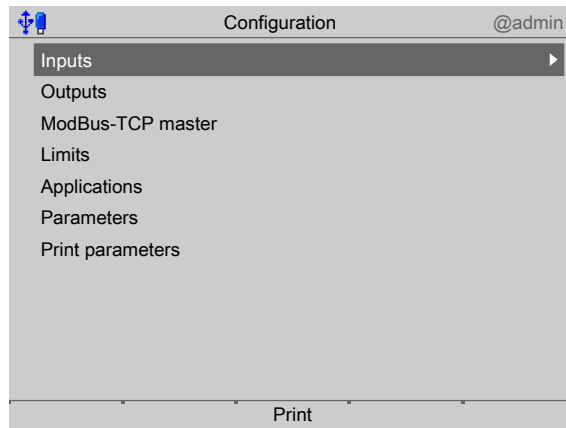
Option-1 = No. 1

Option-2 = No. 2

Built-in = No. 3

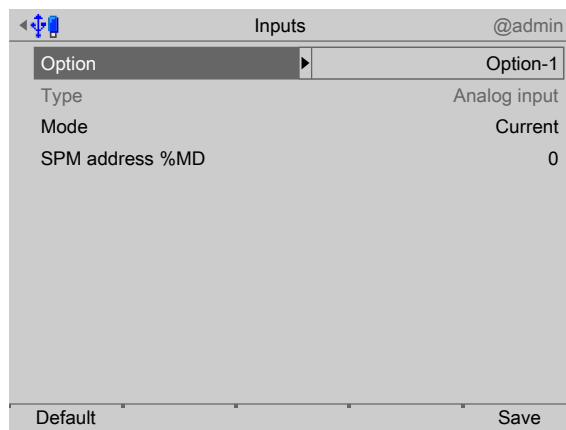
Unused inputs are ignored.

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



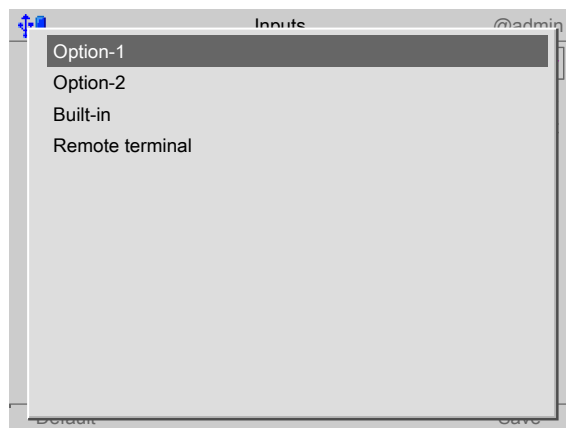
- In the operating menu, select and confirm [Configuration] - [Inputs].

5.4.2.1 Analog input

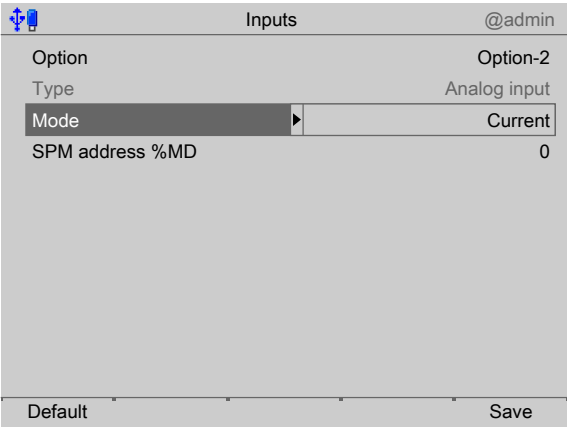


1. Select and confirm [Option] using the cursor.

► A selection window opens.



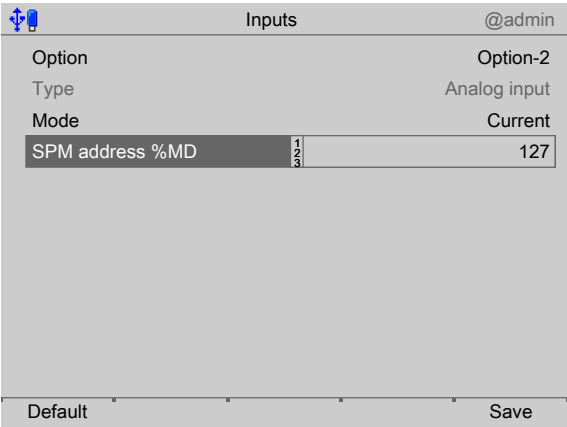
2. Select and confirm the corresponding interface using the cursor.



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 5900 operating instructions).



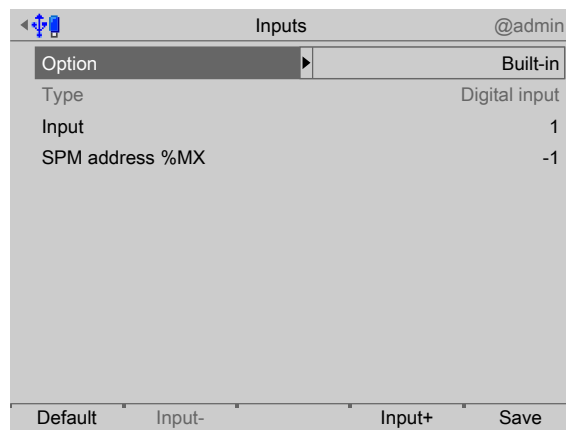
5. Select [SPM address %MD] using the cursor.
6. Use the keyboard to enter and confirm a free address %MD (see Chapter 8).
7. Press the [Default] soft key to return to the factory settings, if required.
8. Press the [Save] soft key to save the settings.

Note:

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

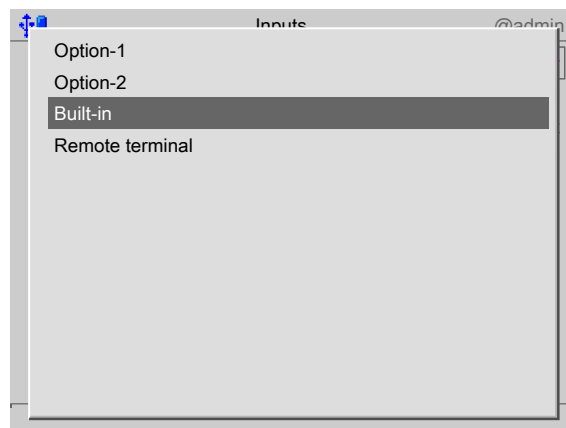
General:

No reserved SPM addresses are overwritten by the analog inputs.

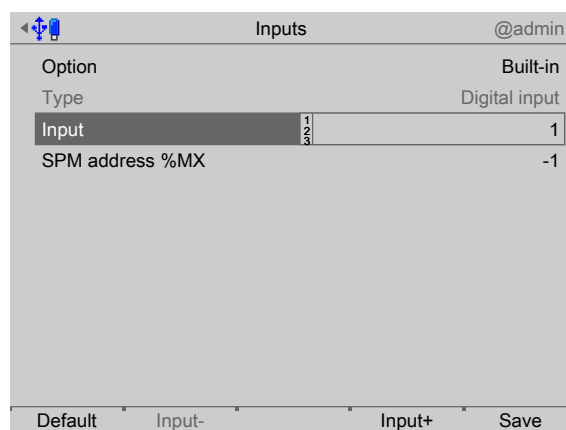
5.4.2.2 Digital inputs

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	1 2 3 1088

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 5900 operating instructions).

Note:

A negative address inverts the function.

Inputs

@admin

Option	Built-in
Type	Digital input
Input	2
SPM address %MX	-1

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	1 2 3 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 5900 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).

5.4.2.3 I/O cards test

See PR 5900 operating instructions.

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 5900 operating instructions.
- Digital inputs, see Chapter [5.4.3.2](#).
- I/O cards test, see PR 5900 operating instructions.

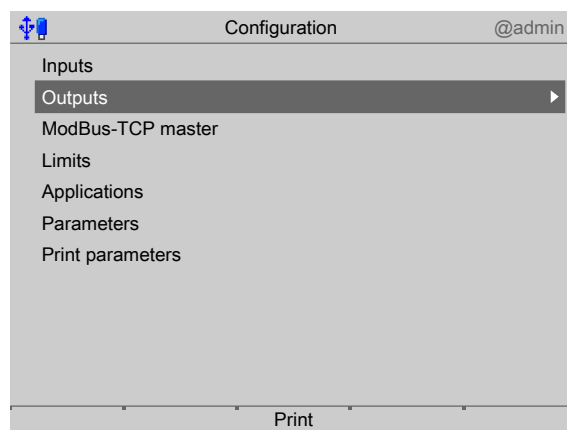
When changing the I/O card type, the configuration data remains unchanged. Functions for a non-installed scale can be selected, however, they are without effect.

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.

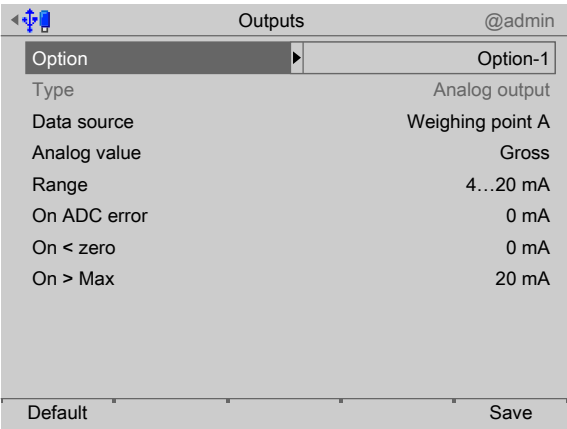
The card type and the available inputs and outputs are detected automatically.



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

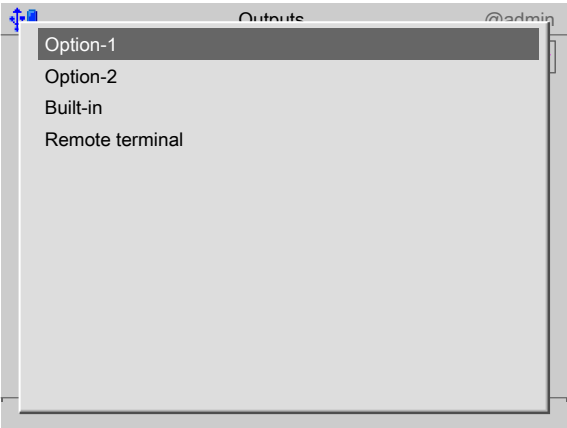
5.4.3.1 Analog output

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



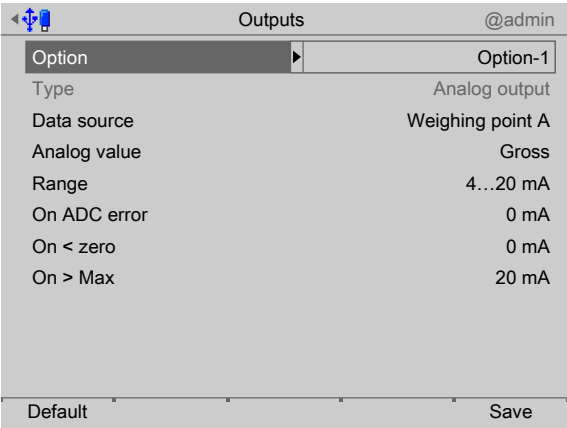
- 1. Select and confirm [Option] using the cursor.

▷ A selection window opens.



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

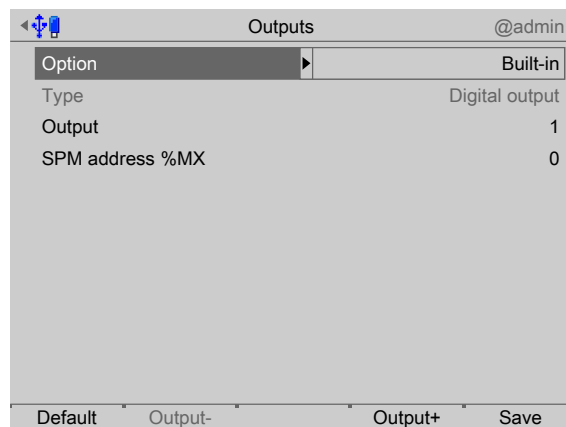
▷ The factory settings are displayed.



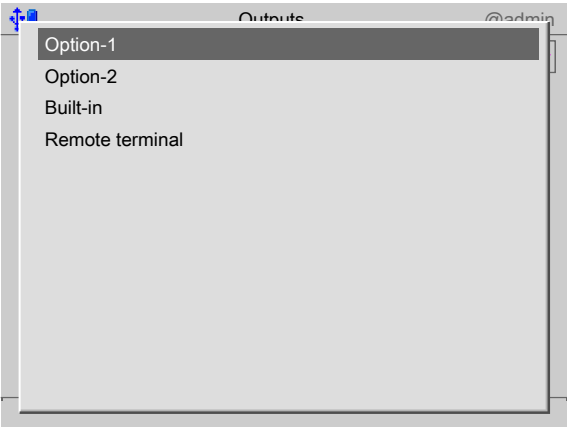
- 3. Configure the analog output in accordance with the table below.
- 4. Press the [Default] soft key to return to the factory settings, if required.
- 5. Press the [Save] soft key to save the settings.

Analog output

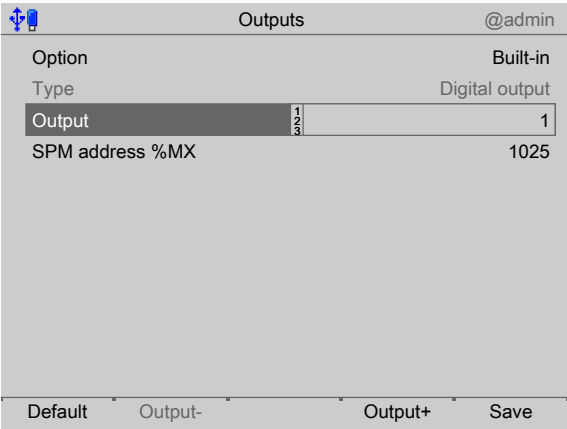
Menu item	Selection	Description
[Data source]	Weighing point A...D	Output of the weight values from scales A, B, C or D. 0...Max are converted into 0/4 mA...20 mA.
[Analog value]	Gross	Output of the gross value
	Net/Gross	Output of the net value, if tared; otherwise gross
	Net/0 mA	Output of the net 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 Digital outputs

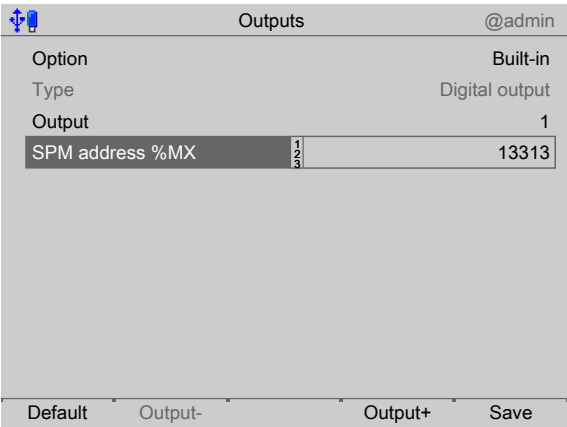
1. Select and confirm [Option] using the cursor.
 ▷ A selection window opens.



- 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 5900 operating instructions) for the weighing point.

Note:

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

A negative address inverts the function.

Option	Built-in
Type	Digital outputs
Output	2
SPM address %MX	-1

Default Output- Output+ Save

7. Press the [Output+] soft key to configure the next output.

Option	Built-in
Type	Digital output
Output	2
SPM address %MX	13314

Default Output- Output+ Save

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 5900 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.

5.4.3.3 I/O cards test

See PR 5900 operating instructions.

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:

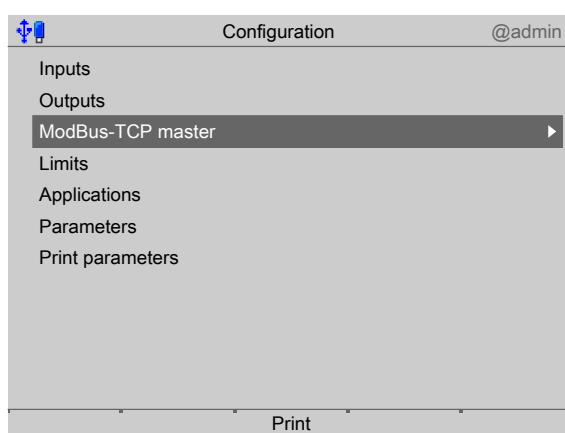
- Phoenix Contact Inline module (IL ETH BK DI8 DO4 2-TX-PAC)
- Phoenix Contact output module (IB IL 24 DO16-PAC)
- Phoenix Contact output module (IB IL 24 DO16-PAC)
- Phoenix Contact power supply (IB IL 24 PWR IN-PAC)
- Phoenix Contact output module (IB IL 24 DO16-PAC)

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

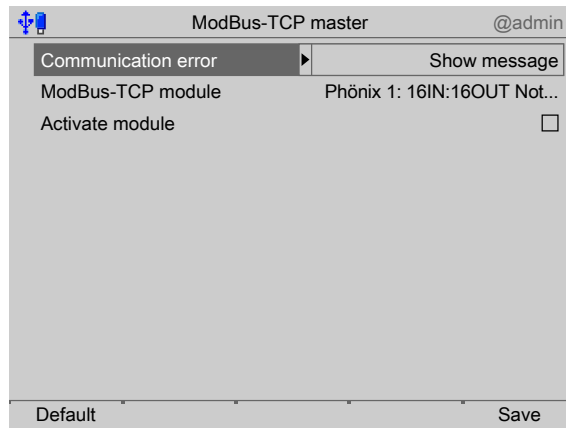
5.4.4.2 Configuration tool

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].

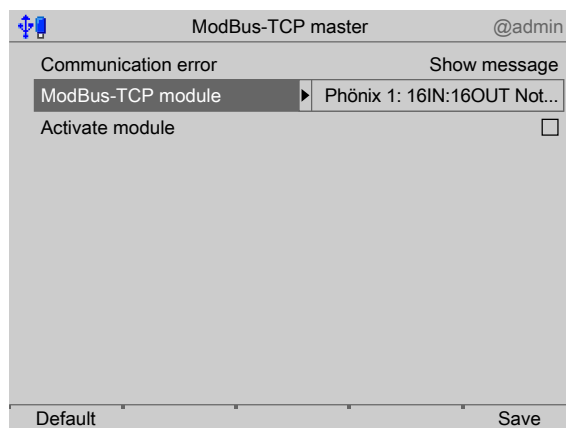


2. Select and confirm [Communication error].

▷ A selection window opens.

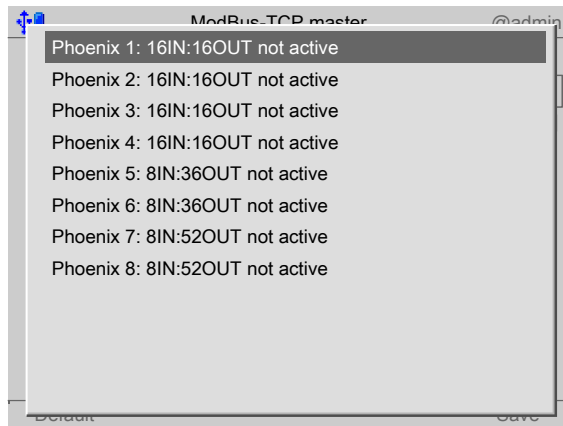


3. Select the appropriate function using the cursor (in this case, "Show message") and confirm.

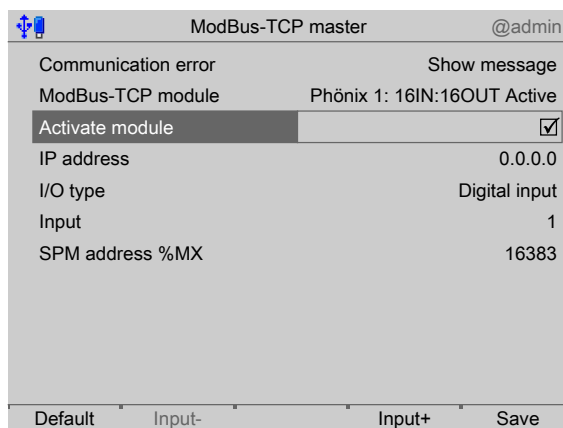


4. Select and confirm [ModBus-TCP Module] using the cursor .

▷ 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.

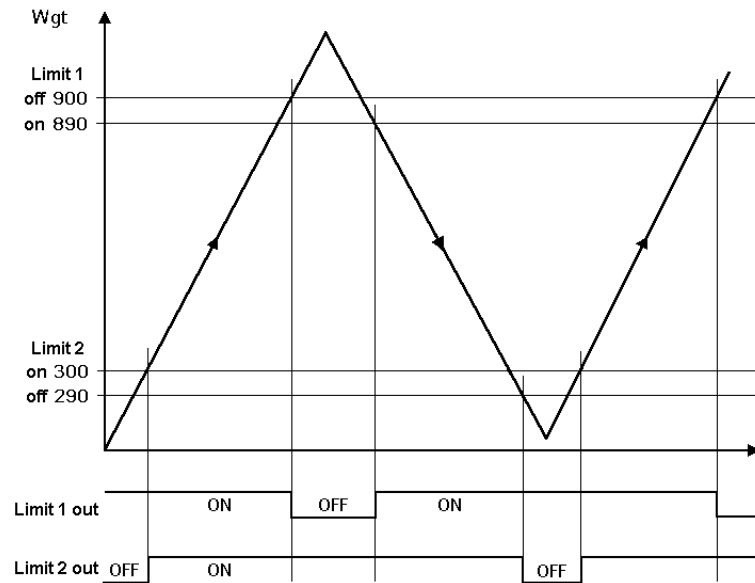
8. Press the [Default] soft key to return to the factory settings, if required.
9. Finally, press the [Save] soft key to save the settings.

5.4.5 Limit values: configuration

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

The 3 pairs of values must be entered according to the same principle. The limit values always refer to the gross weight.

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

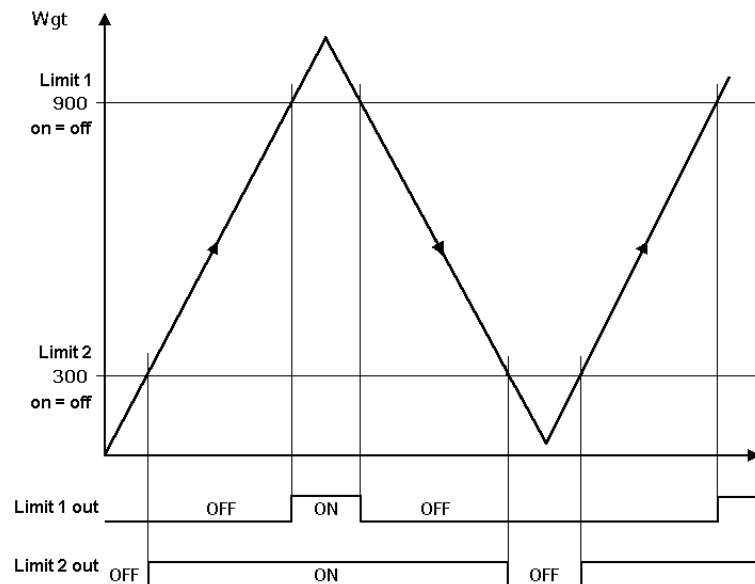
Example 1:

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

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

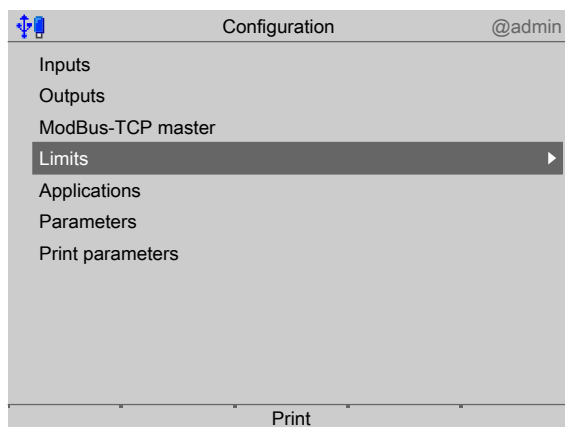
The two limit values have a hysteresis of 10 g.

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

Example 2:

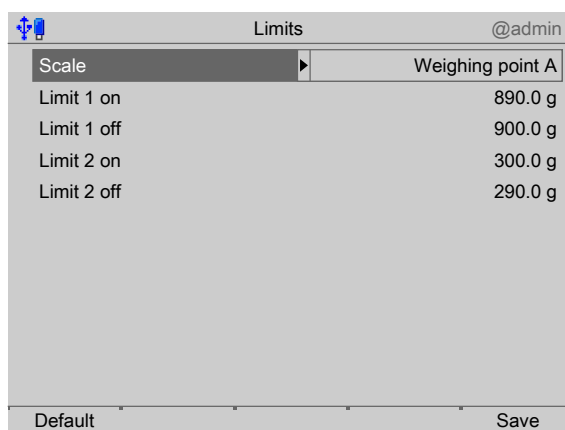
If the Limits 1 and 2 are the same for "On" and "Off" (on = off),

- 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.



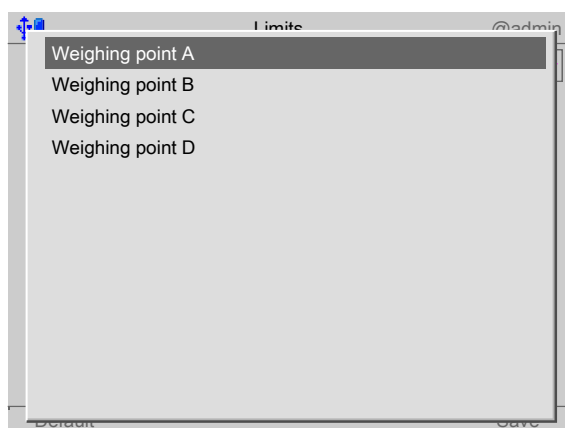
1. Select and confirm [Limits] using the cursor.

Select weighing point



2. Select and confirm [Scale] using the cursor.

▷ A selection window opens.



3. Select and confirm the appropriate weighing point using the cursor.

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 Applications

The following processes are configured in the application menu:

- Configuring the counting process, see Chapter [5.4.6.1](#)
- Configuring the check weighing process, see Chapter [5.4.6.2](#)
- Configuring the totalizing process, see Chapter [5.4.6.3](#)

The application menu is accessed via [Configuration].

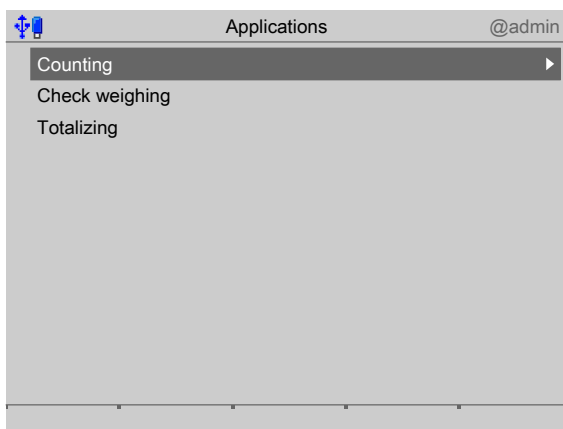
Configuration		@admin
Inputs		
Outputs		
ModBus-TCP master		
Limits		
Applications	▶	
Parameters		
Print parameters		

Print

- Select and confirm [Applications] using the cursor.

5.4.6.1 Configuring the counting process

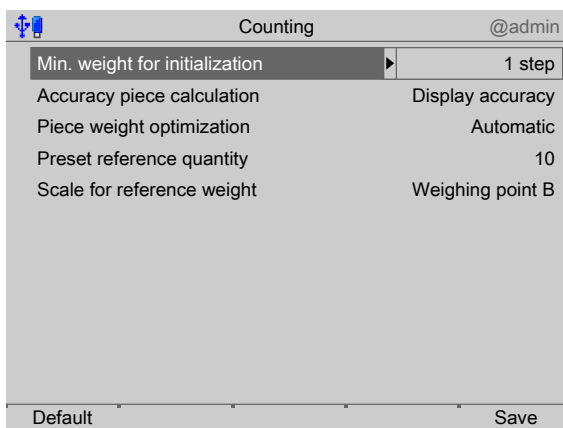
The configuration menu is accessed in the operating menu via [Configuration] - [Applications].



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

Note:

The [Counting] menu item is only displayed when "Counting" has been selected under [Configuration] - [Parameters] - [Basic application].



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

[Min. weight for initialization]

Selection: 1, 2, 5, 10, 20, 50, 100, 200, 500, 1000 steps

For a scale interval of, e.g. 1 kg, this results in

- a minimum weight of 1 kg if "1 step" has been selected.
- a minimum weight of 2 kg if "2 steps" has been selected.
- a minimum weight of 5 kg if "5 steps" has been selected.
- a minimum weight of 10 kg if "10 steps" has been selected.

etc.

The minimum weight required for initialization of the weighing platform is configured in this menu.

Once the limit is exceeded by the load, the counting program can begin.

If the load on the platform is too light,

- then the following error message is displayed: "Weight too low."
- The weighing platform is not initialized.
- The preset reference quantity is not saved.

[Accuracy of piece weight calculation]

Selection: [Display accuracy], +1 decimal place, +2 decimal places, With internal resolution

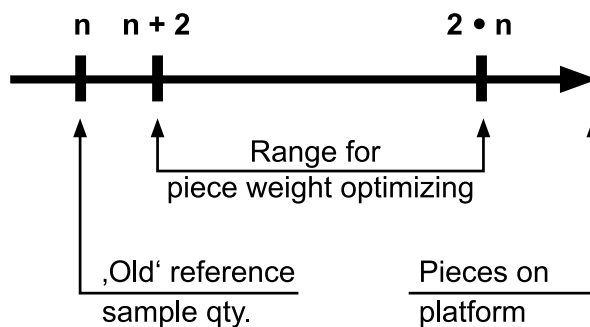
The resolution of the net value for calculating the reference weight is increased

- At "+1 decimal place" by one place (display accuracy times 10).
- At "+2 decimal places" by two places (display accuracy times 100).
- At "With internal resolution" to the maximum available internal resolution.

[Piece weight optimization]

Selection: Off, [Automatic]

Determines whether or not the piece weight is optimized automatically during the counting process.



To automatically carry out piece weight optimization, the following 6 criteria have to be fulfilled:

- Piece weight optimization must be set to "Automatic".
- The current quantity exceeds the original quantity by at least two.
- The new quantity may not exceed twice the original quantity (this limitation does not apply for the first optimization if the piece weight is entered using the keypad or a bar code reader).
- The new quantity must be <1000 pieces.
- The internally calculated quantity (such as 17.24 pcs) differs by less than ± 0.3 pcs from the nearest whole number (in this example: 17).
- The standstill criteria for the scale must be fulfilled. If an optimization is really being carried out, an "Optimizing" window is shown briefly in the display.

When optimization is complete, an "Optimized" window is displayed.

The note (opt) optimized weight value is displayed in the measured value line behind the weight value.

The new reference sample weight and reference quantity are saved.

[Preset reference quantity]

Selection: 5, [10], 20, 50, 100

The number of reference samples are configured in this menu item.

[Scale for reference weight]

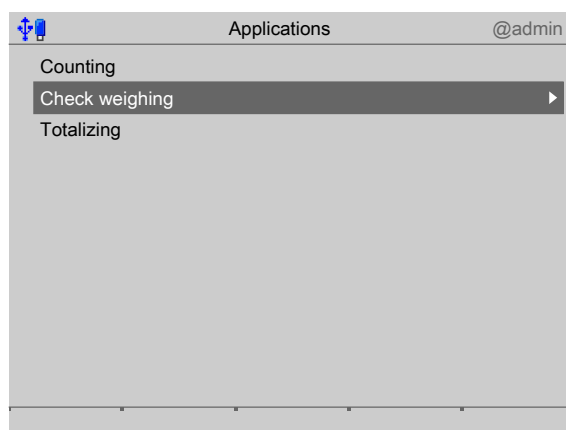
Selection: Do not change, Weighing point A...D

The reference scale is selected in this menu item.

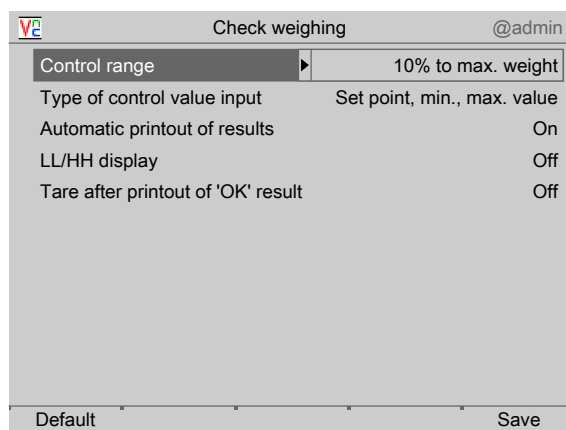
3. Finally, press the [Save] soft key to save the settings.

5.4.6.2 Configuring the check weighing process

The menu is accessed via [Configuration] - [Applications].



1. Select and confirm [Check weighing] using the cursor.



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

[Control range]

Selection: 30 % to 170 %, 10 % to max. weight

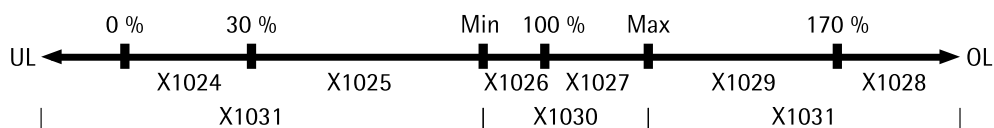
30 % to 170 %:

The control range is defined from 30 % to 170 % of the set point (100 %).

Note:

When selecting this range, the max. weighing capacity (scale end value) must be taken into account, i.e.: 170 % < FSD!

The figure shows an example with SPM addresses of WP A, see Chapter 8.

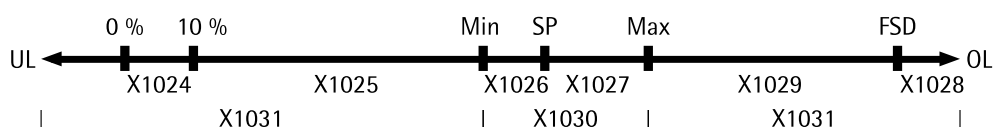


UL = unloaded; OL = overload; Min = minimum value; Max = maximum value

10 % to max. weight:

The control range is defined from 10 % to max. weight (scale end value FSD).

The figure shows an example with SPM addresses of WP A, see Chapter 8.



UL = unloaded; OL = overload; Min = minimum value; SP = set point; Max = maximum value; FSD = scale end value

[Type of control value input]

Selection: Set point, min., max. value; Set point, min., max. value in %

[Automatic printout of results]

Selection: Off, On, Only print 'OK' values, Only print 'Not OK' values

[LL/HH display]

Selection: Off, On

The weight value representation is shown in a display window: "LL" (too low) or "HH" (too high).

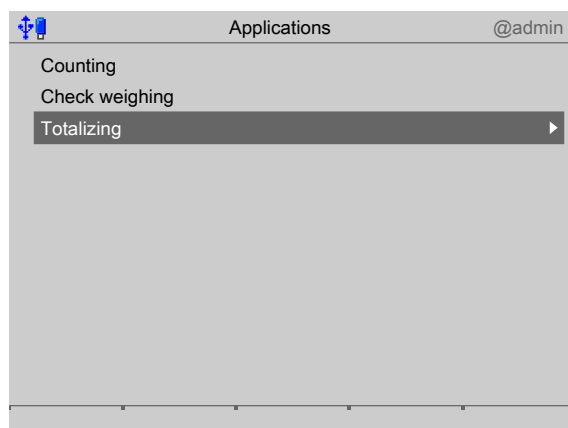
[Tare after printout of 'OK' result]

Selection: Off, On

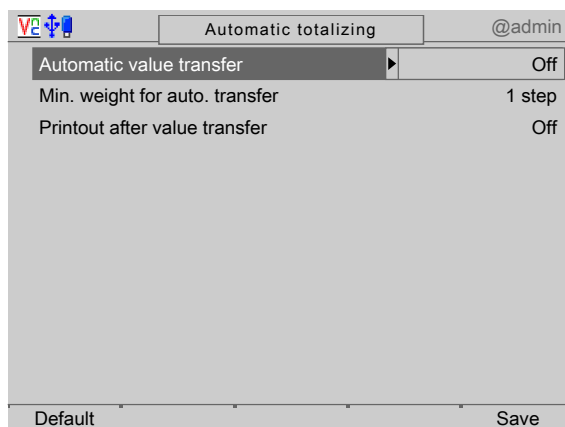
3. Finally, press the [Save] soft key to save the settings.

5.4.6.3 Configuring the totalizing process

The configuration menu is accessed via [Configuration] - [Applications].



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



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

[Automatic value transfer]

Selection: Off, On

Save value manually by pressing the [M+] soft key. The value taken from the active platform (or the quantity) is added to the value already saved in totalizing memory and the transaction counter value is increased by one. When a value is added manually, the program does not check whether the platform has been unloaded since the last time the [M+] soft key was pressed.

Value saved automatically when the weighing platform is stable and the defined minimum load is exceeded. If the defined minimum load (or quantity) is not exceeded, you can save the item manually by pressing the [M+] soft key. Regardless of these settings, the current value cannot be saved automatically unless the platform is unloaded before the next sample is placed on it. The weighing platform is considered to be unloaded when the load is less than 50 % of the minimum load.

[Min. weight for auto. transfer]

Selection: 1, 2, 5, 10, 20, 50, 100, 200, 500, 1000 steps

The minimum weight that must be placed on the weighing platform, for example, in order to save to totalizing memory.

For a scale interval of, e.g. 1 kg, this results in

- a minimum weight of 1 kg if "1 step" has been selected.
- a minimum weight of 2 kg if "2 steps" has been selected.
- a minimum weight of 5 kg if "5 steps" has been selected.
- a minimum weight of 10 kg if "10 steps" has been selected.

etc.

[Printout after value transfer]

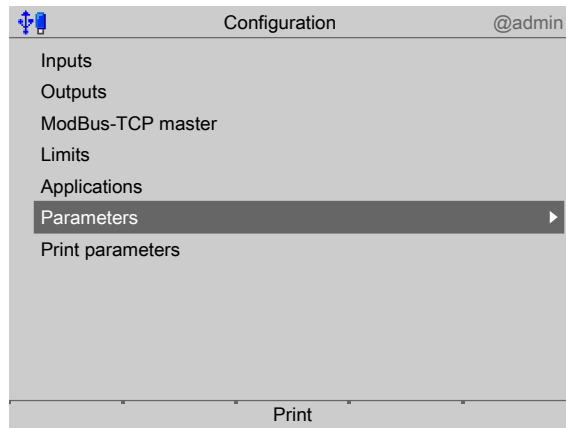
Selection: Off, Individual printout

The weight value representation is shown in a display window: "LL" (too low) or "HH" (too high).

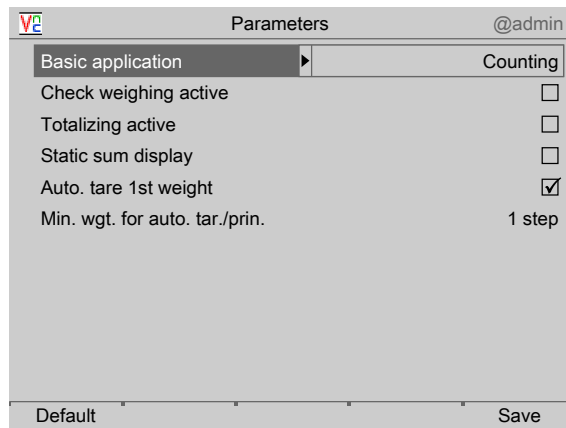
3. Finally, press the [Save] soft key to save the settings.

5.4.7 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 the desired parameters.

[Basic application]

Selection: Counting, Check weighing

[Check weighing active]

If "Check weighing" was selected under basic application, then this parameter must be confirmed.

[Totalizing active]

This parameter must be confirmed to use totalizing.

[Static sum display]

This parameter controls the display during counting. When active, the totals (weight and piece) are displayed as text.

[Auto. tare 1st weight]

This parameter must be confirmed to use autotare.

Note:

This function is not supported by all scales.

[Min. wgt. for auto. tar./prin.]

Selection: 1, 2, 5, 10, 20, 50, 100, 200, 500, 1000 steps

The minimum weight that must be placed on the weighing platform, for example, in order to save to totalizing memory.

For a scale interval of, e.g. 1 kg, this results in

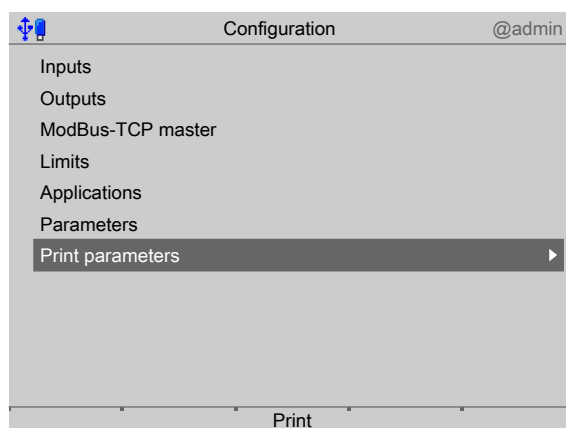
- a minimum weight of 1 kg if "1 step" has been selected.
- a minimum weight of 2 kg if "2 steps" has been selected.
- a minimum weight of 5 kg if "5 steps" has been selected.
- a minimum weight of 10 kg if "10 steps" has been selected.

etc.

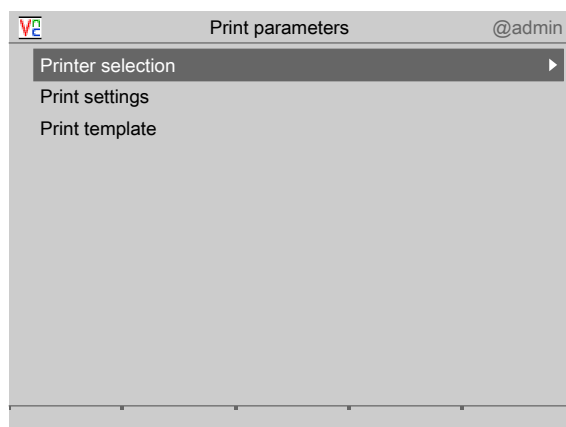
3. Press the [Default] softkey to return to the factory settings, if required.
4. Finally, press the [Save] softkey to save the settings.

5.4.8 Print parameters

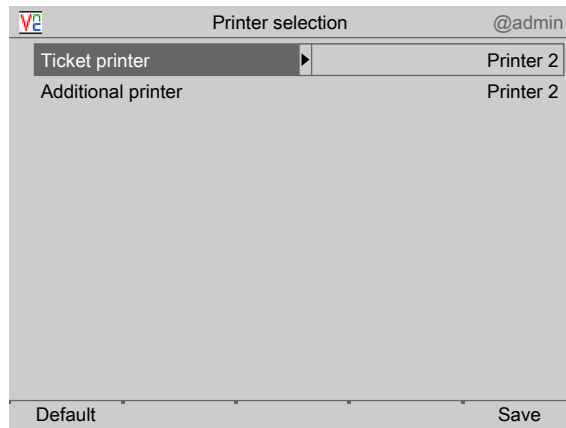
This menu item is used to configure printouts and assign corresponding printers. The configuration menu is accessed via [Configuration].



1. Select and confirm [Print parameters] using the cursor.



2. Select and confirm [Printer selection] using the cursor.



3. Select and confirm the appropriate printer.

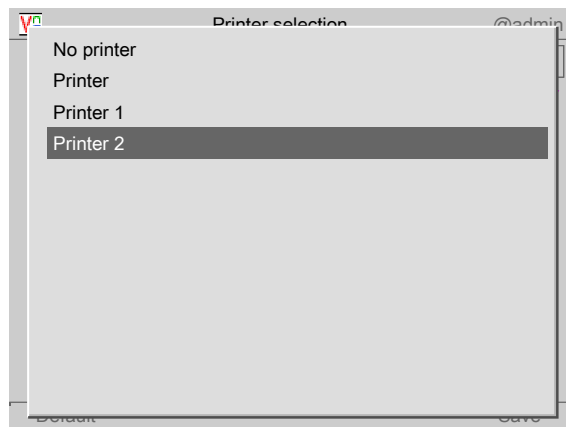
[Ticket printer]

This printer is used for printing all tickets and reports. The print width is limited to 80 characters per line.

[Additional printer]

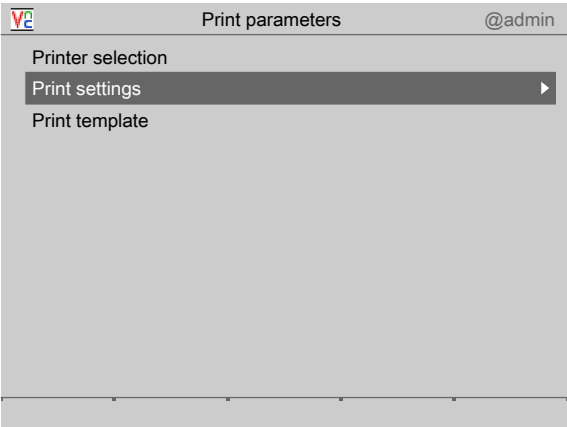
All tickets and reports are printed on this printer, e.g. from a barcode printer. The print width is limited to 39 characters per line.

- ▷ A selection window opens.

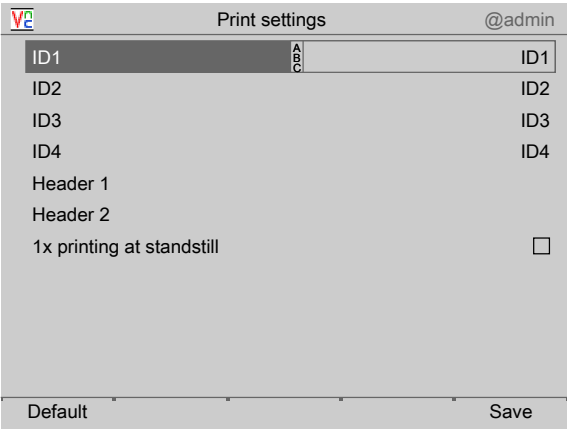


4. Select and confirm the appropriate printer.

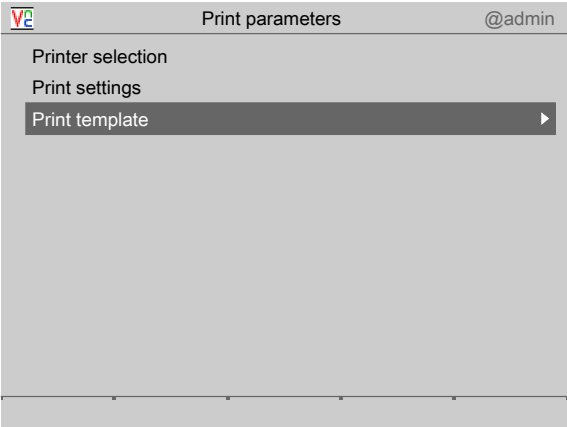
This requires previous setup in the system menu under [System setup] - [Connected devices].
5. Finally, press the [Save] soft key to save the settings.



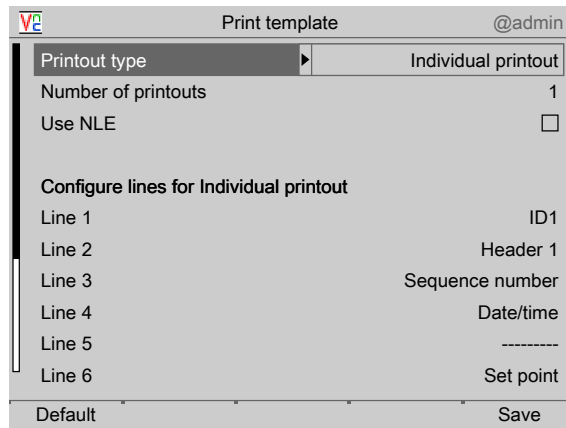
- 6. Select and confirm [Print settings] using the cursor.



- 7. Select and confirm the desired parameters using the cursor.
[ID1...4]
Enter up to four ID codes for identifying results on the printout.
[Header 1...2]
Enter up to two headers to identify the printout.
[Print once during standstill]
Check the ☒ box to activate the function.
- 8. Finally, press the [Save] soft key to save the settings.



- 9. Select and confirm [Print template] using the cursor.



10. Select and confirm the desired parameters using the cursor.

[Printout type]

Selection: Individual printout, Component print, Total

[Number of printouts]

Input: 1...99

[Use NLE]

Check the ☒ box to activate printing with NiceLabelExpress.

[Line 1...33]

The following selection depends on the basic application selected under [Configuration] - [Parameters].

Selection: Blank, -----, Date/time, Time, Product, Product name, ID1...4, Product ID1...4, Header 1...2, Reference quantity, Reference weight, Set point quantity, Minimum, Min. quantity, Maximum, Max. quantity, Sequence number, Board number, Form feed, Net, Gross, Tare, Quantity, Set point, Deviation in %, Deviation

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

5.5 Switching off the device

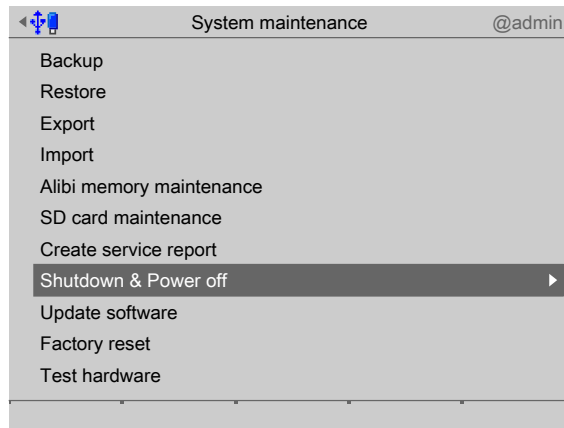
This function is required to disconnect the device from the power immediately, e.g., to install an option card. The rechargeable battery is immediately deactivated.

Note:

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

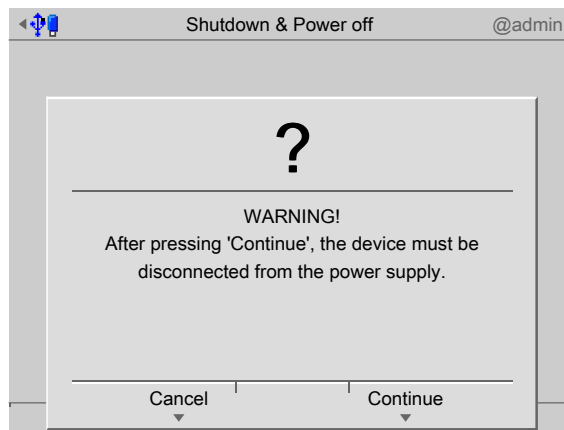
When restarting, a cold start is forced. For example, database entries **no longer** exist.

It is recommended to first make a backup on the SD card and/or export the data to a USB stick; see Chapter PR 5900 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 Production

6.1 Counting

6.1.1 Counting with one platform

Tasks

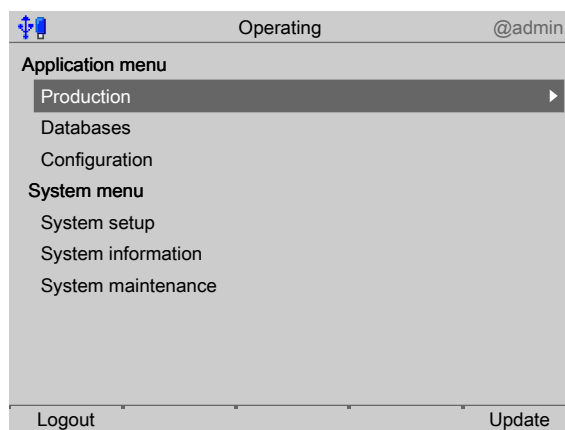
Determining the number of uncounted parts.

Automatic tare function is active, reference quantity = 10.

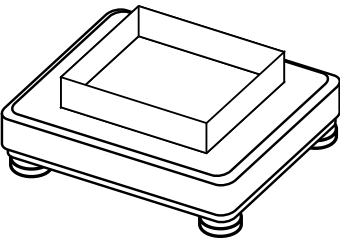
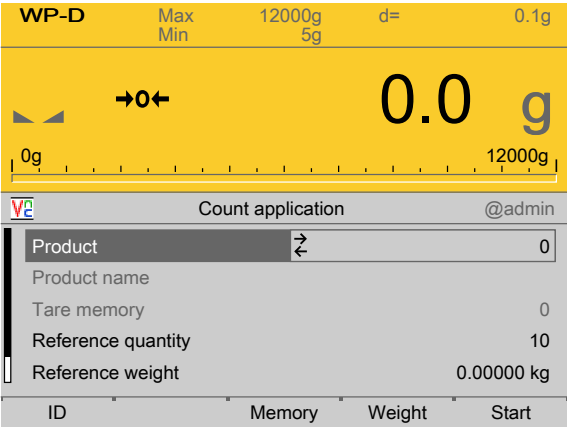
Default Settings

- Select "Counting" under [Configuration] - [Parameters] - [Basic application].
- Activate [Configuration] - [Parameters] - [Auto. tare 1st weight].
- In this example, select "10 steps" under [Configuration] - [Parameters] - [Min. wgt. for auto. tar./prin.].
- In this example, select "Printer 1" under [Configuration] - [Print parameters] - [Printer selection] - [Ticket printer].
- In this example, select "Individual printout" under [Configuration] - [Print parameters] - [Print template] with the corresponding line settings, see Chapter 5.4.8.
- For example, select "1 step" under [Configuration] - [Applications] - [Counting] - [Min. weight for initialization].
- Select "Display accuracy" under [Configuration] - [Applications] - [Counting] - [Accuracy of piece weight calculation].
- Select "Automatic" under [Configuration] - [Applications] - [Counting] - [Piece weight optimization].
- Enter "10" under [Configuration] - [Applications] - [Counting] - [Preset reference quantity].
- Select "Do not change" under [Configuration] - [Applications] - [Counting] - [Scale for reference weight].
- Press the [Save] soft key to save the settings.

Procedure



1. Select the [Production] line and confirm.
 ▷ The product menu appears.

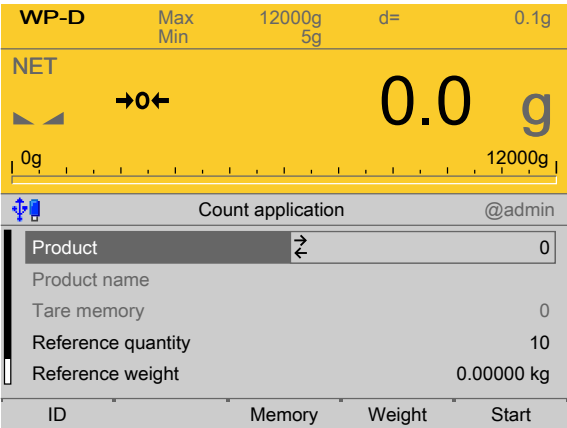


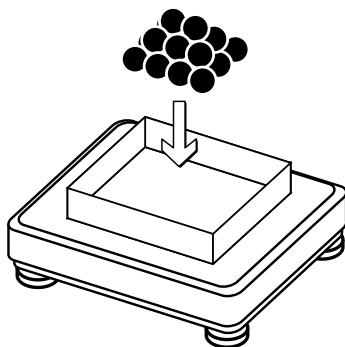
2. Place an empty container on the scale.

Note:

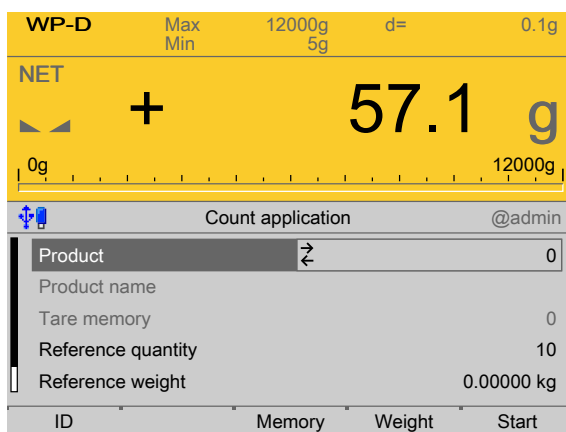
If the automatic tare function was not activated, then you must press the  key to tare the scale.

- ▷ The weight display shows the "NET" value type.



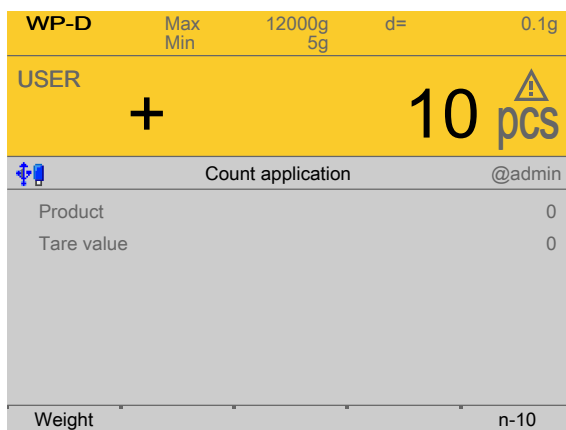


3. Place the reference quantity (10 in this example) in the container.

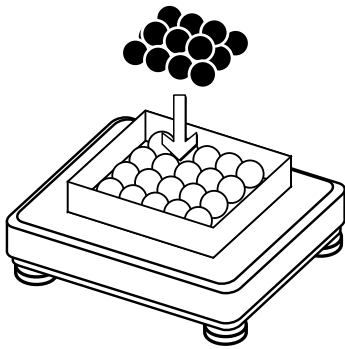


4. Press the [Start] soft key to start the calculation.

▷ The quantity is shown on the display.



5. If required, press the [Weight] soft key to switch to the weight display.



- 6. Place an unknown number of additional parts in the container.
 - ▷ The quantity is shown on the display.

Note:

"Optimized" is displayed when automatic reference sample optimization has been carried out.

WP-D		Max Min	12000g 5g	d=	0.1g
USER		+	25  pcs		
		Count application			@admin
Product					0
Tare value					0
Weight					n-10

- 7. Press the key.
 - ▷ The result is printed.

Test phase 1	
Sequence number	35
Date/time	23.02.2015-16:26:51

Reference quantity	10 pcs
Reference weight	5.71 g
Gross	221.5 g
Net	171.4 g
Tare database	50.1 g
Quantity	30

- 8. Press the **EXIT** key to exit the current counting process.
- 9. Empty the scale.

6.1.2 Counting with two platforms

- Counting with two platforms of the same type, see Chapter [6.1.2.1](#)
- Counting with one reference platform and one weighing platform, see Chapter [6.1.2.2](#)

6.1.2.1 Counting with two platforms of the same type

Tasks

Determining the number of uncounted parts at weighing point B and D.

Automatic tare function is not active.

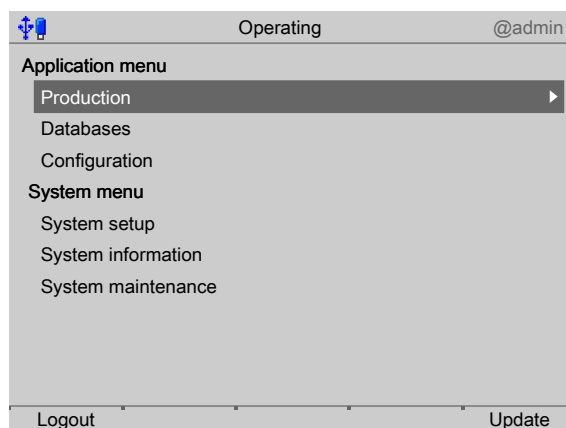
Reference quantity = 5 at weighing point B

Reference quantity = 10 at weighing point D

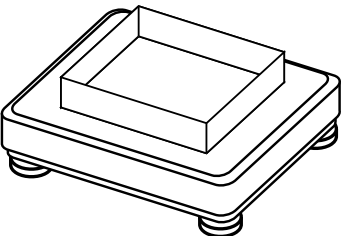
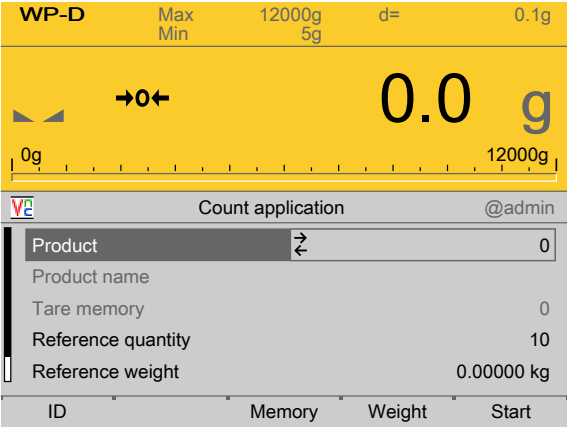
Default Settings

- Select "Counting" under [Configuration] - [Parameters] - [Basic application].
- Deactivate [Configuration] - [Parameters] - [Auto. tare 1st weight].
- In this example, select "10 steps" under [Configuration] - [Parameters] - [Min. wgt. for auto. tar./prin.].
- In this example, select "Printer 1" under [Configuration] - [Print parameters] - [Printer selection] - [Ticket printer].
- In this example, select "Individual printout" under [Configuration] - [Print parameters] - [Print template] with the corresponding line settings, see Chapter [5.4.8](#).
- For example, select "1 step" under [Configuration] - [Applications] - [Counting] - [Min. weight for initialization].
- Select "Display accuracy" under [Configuration] - [Applications] - [Counting] - [Accuracy of piece weight calculation].
- Select "Automatic" under [Configuration] - [Applications] - [Counting] - [Piece weight optimization].
- Enter "5" for weighing point B and "10" for weighing point D under [Configuration] - [Applications] - [Counting] - [Preset reference quantity].
- Select "Do not change" under [Configuration] - [Applications] - [Counting] - [Scale for reference weight].
- Press the [Save] soft key to save the settings.

Procedure

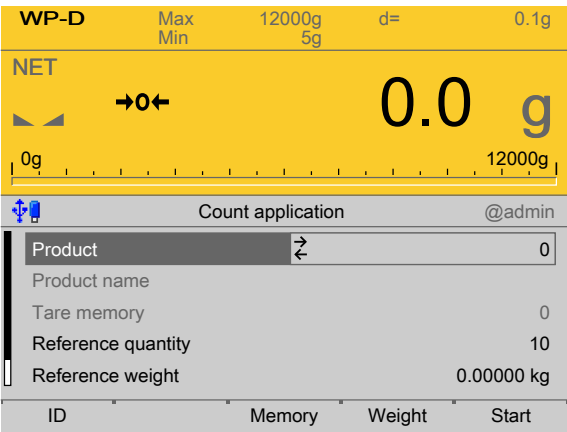


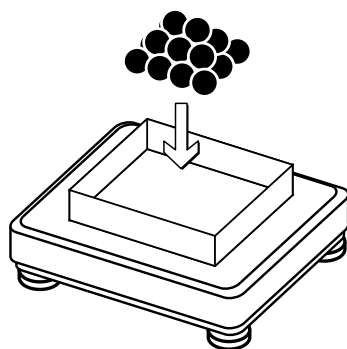
- 1. Select the [Production] line and confirm.
 - ▷ The product menu appears.



WP D

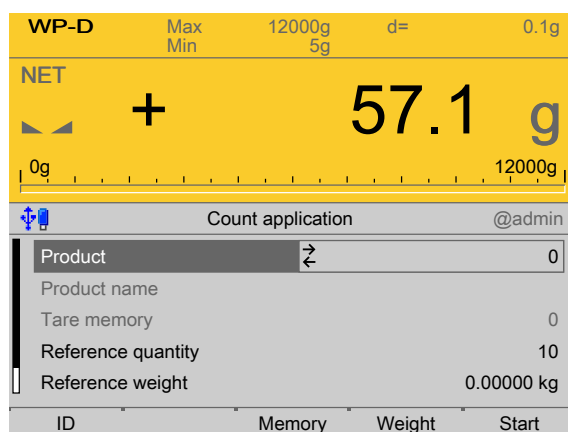
- 2. Place an empty container on the scale (WP D in this example).
- 3. Press the **→T←** key to tare the scale.
 - ▷ The weight display shows the "NET" value type.





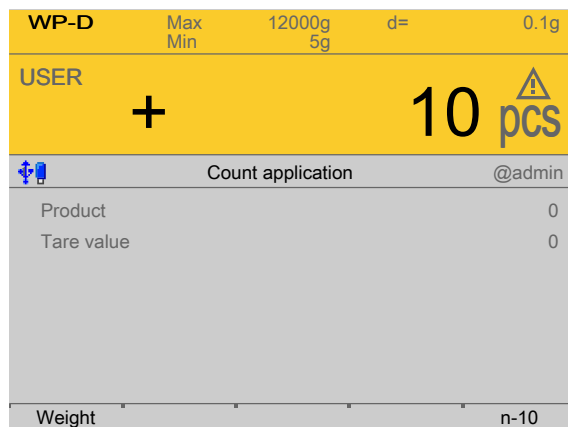
WP D

4. Place the reference quantity (10 in this example) in the container.

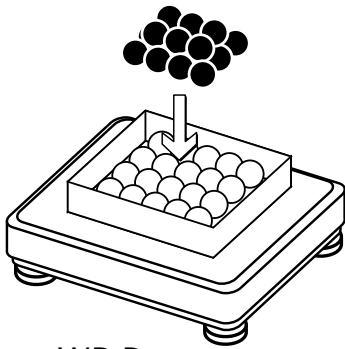


5. Press the [Start] soft key to start the calculation.

▷ The quantity is shown on the display.

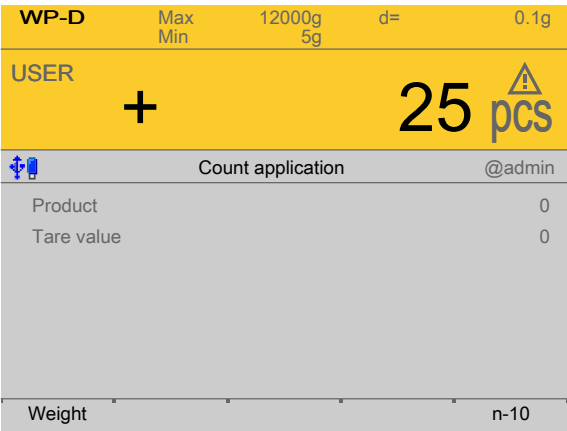


6. If required, press the [Weight] soft key to switch to the weight display.

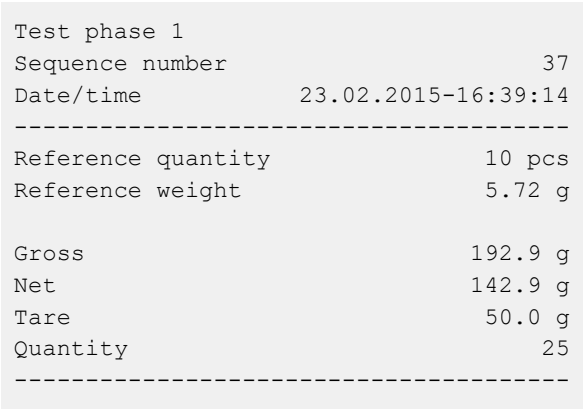


WP D

- 7. Place an unknown number of additional parts in the container.
▷ The quantity is shown on the display.



- 8. Press the  key.
▷ The result is printed.



- 9. Empty the scale.
- 10. Press the  key to cancel the scale tare.
- 11. Press the  key to switch to weighing point B.
▷ The product menu appears.

WP-B Max 1.2kg d= 0.0001kg
Min 0kg

→0← 0.0000 kg

0kg 1.2kg

Count application @admin

Product	↔	0
Product name		
Tare memory		0
Reference quantity		10
Reference weight		0.00000 kg

ID Memory Weight Start

WP-B Max 1.2kg d= 0.0001kg
Min 0kg

→0← 0.0000 kg

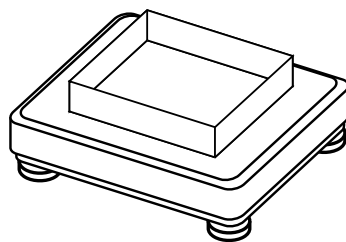
0kg 1.2kg

Count application @admin

Product		0
Product name		
Tare memory		0
Reference quantity	↔	5
Reference weight		0.00000 kg

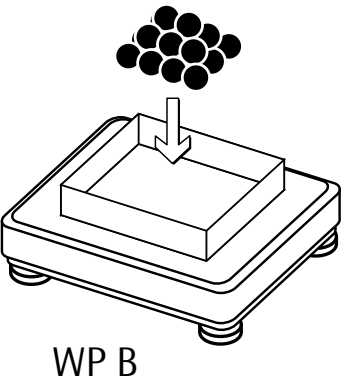
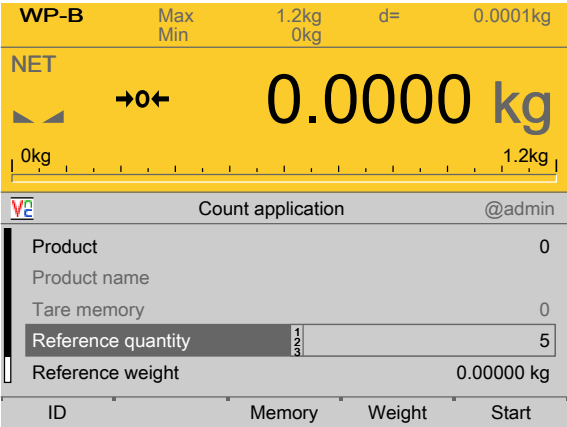
ID Memory Weight Start

12. Select the [Reference quantity] line and confirm.
13. Enter the desired quantity (5 in this example) using the keyboard and confirm.

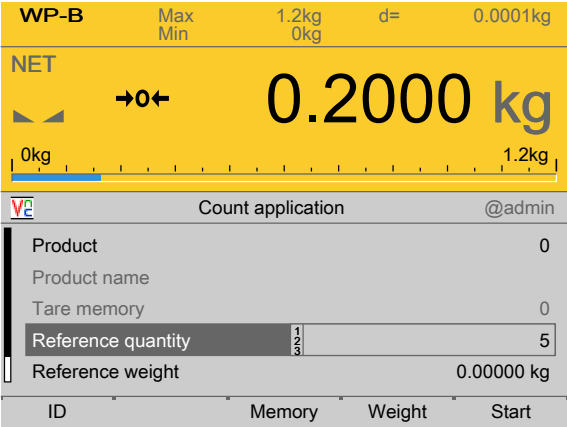


WP B

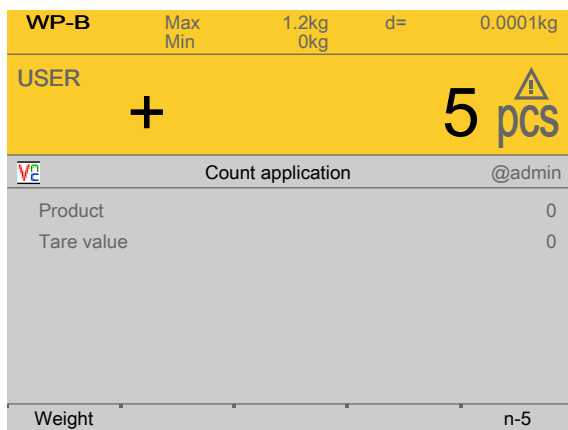
14. Place an empty container on the scale (WP B in this example).
15. Press the **→T←** key to tare the scale.
 - ▷ The weight display shows the "Net" value type.



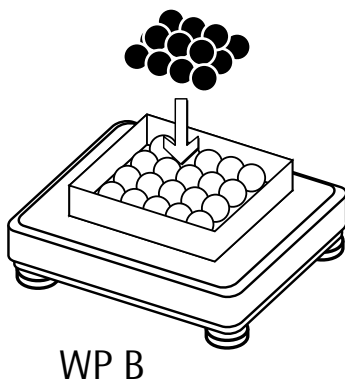
16. Place the reference quantity (5 in this example) in the container.



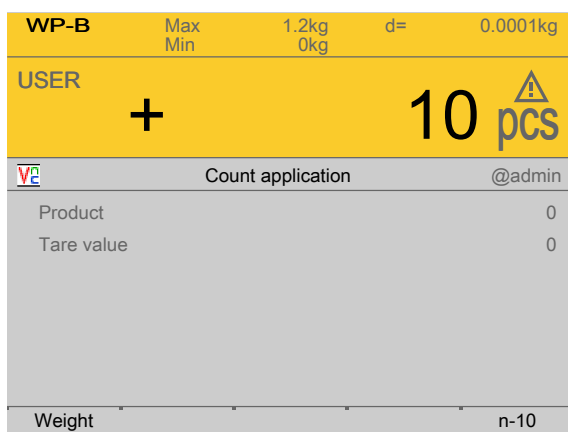
17. Press the [Start] soft key to start the calculation.
- ▷ The quantity is shown on the display.



18. If required, press the [Weight] soft key to switch to the weight display.



19. Place an unknown number of additional parts in the container.
 ▷ The quantity is shown on the display.



20. Press the  key.
 ▷ The result is printed.

```
Test phase 1
Sequence number      37
Date/time           23.02.2015-16:39:14
-----
Reference quantity   10 pcs
Reference weight     5.72 g

Gross                192.9 g
Net                  142.9 g
Tare                  50.0 g
Quantity             25
-----
```

21. Empty the scale.

22. Press the  key to cancel the scale tare.

6.1.2.2 Counting with one reference platform and one weighing platform

Tasks

Determining the number of uncounted parts at weighing point D.

Reference scale at weighing point B

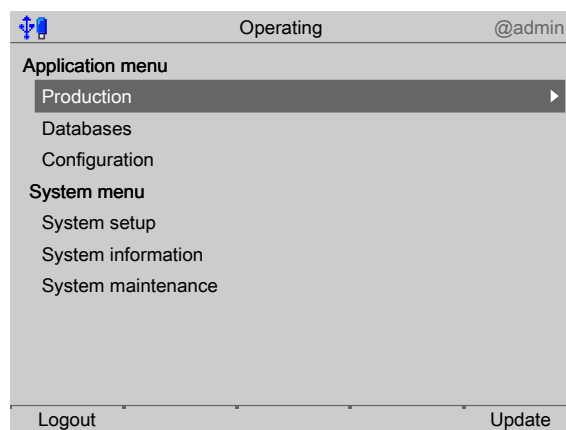
Automatic tare function is not active.

Reference quantity = 10 at weighing point B

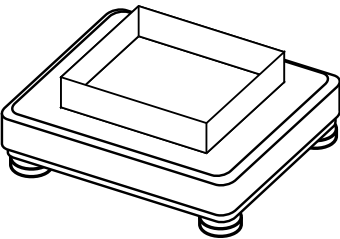
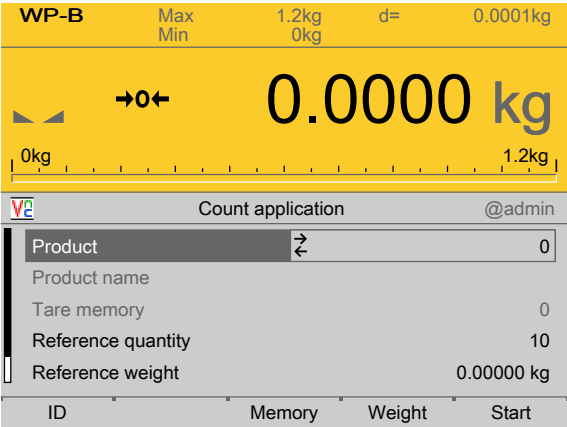
Default Settings

- Select "Counting" under [Configuration] - [Parameters] - [Basic application].
- Deactivate [Configuration] - [Parameters] - [Auto. tare 1st weight].
- In this example, select "10 steps" under [Configuration] - [Parameters] - [Min. wgt. for auto. tar./prin.].
- In this example, select "Printer 1" under [Configuration] - [Print parameters] - [Printer selection] - [Ticket printer].
- In this example, select "Individual printout" under [Configuration] - [Print parameters] - [Print template] with the corresponding line settings, see Chapter 5.4.8.
- For example, select "1 step" under [Configuration] - [Applications] - [Counting] - [Min. weight for initialization].
- Select "Display accuracy" under [Configuration] - [Applications] - [Counting] - [Accuracy of piece weight calculation].
- Select "Automatic" under [Configuration] - [Applications] - [Counting] - [Piece weight optimization].
- Enter "10" under [Configuration] - [Applications] - [Counting] - [Preset reference quantity].
- Select "Weighing point B" under [Configuration] - [Applications] - [Counting] - [Scale for reference weight].
- Press the [Save] soft key to save the settings.

Procedure

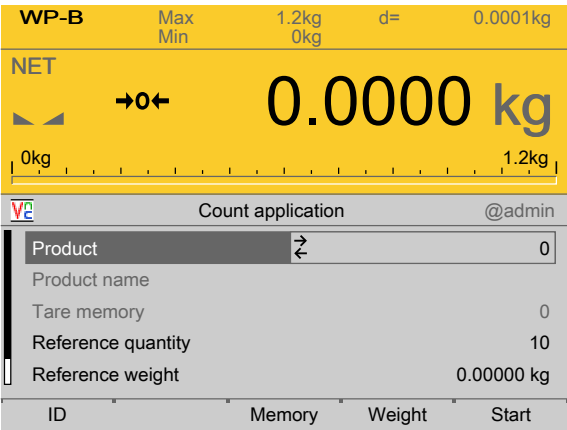


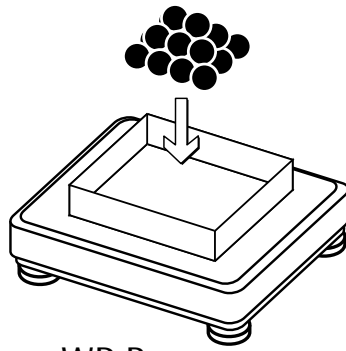
1. Select the [Production] line and confirm.
 - ▷ The product menu appears.



WP B

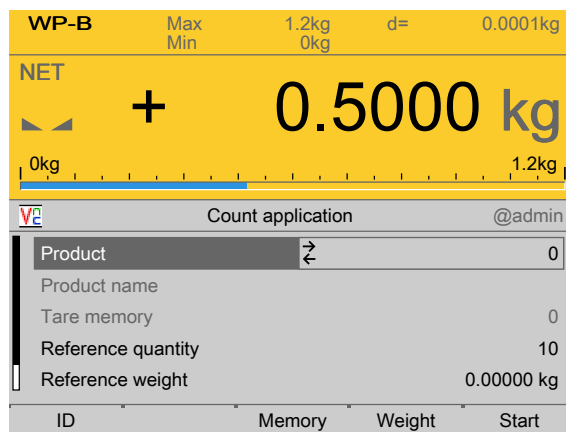
- 2. Place an empty container on the scale (WP B in this example).
- 3. Press the **→T←** key to tare the scale.
 - ▷ The weight display shows the "NET" value type.





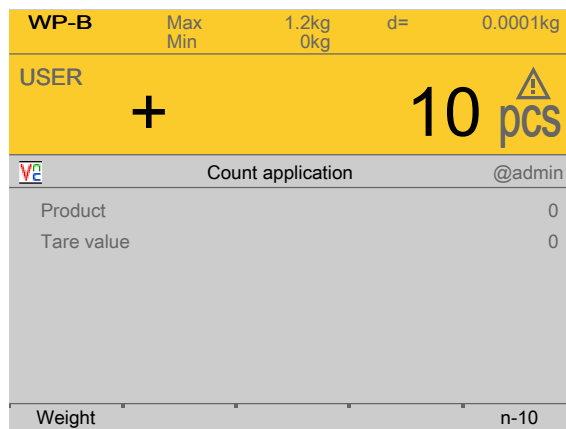
WP B

4. Place the reference quantity (10 in this example) in the container.



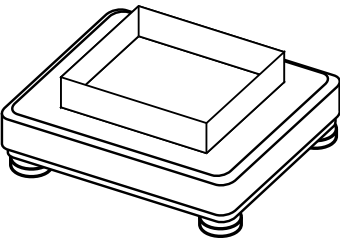
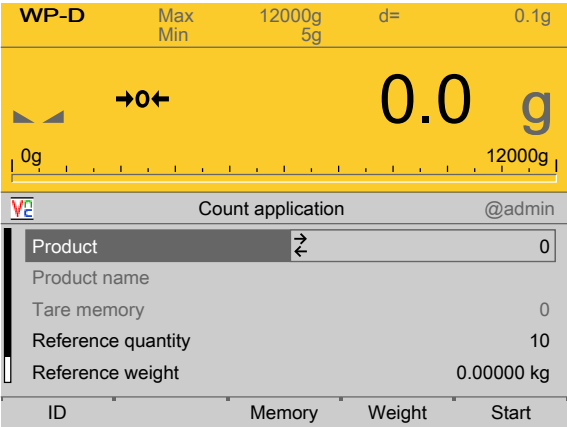
5. Press the [Start] soft key to start the calculation.

▷ The quantity is shown on the display.



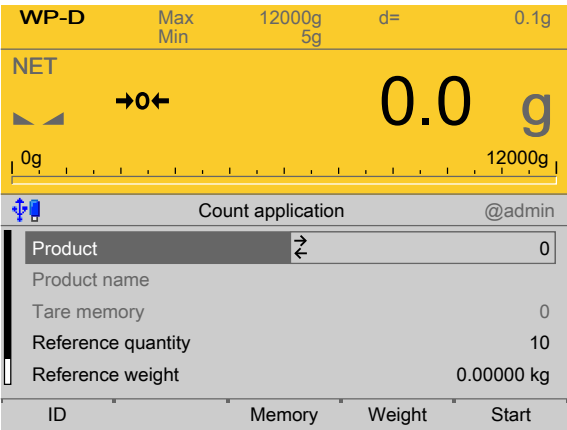
6. Press the  key to switch to weighing point D.

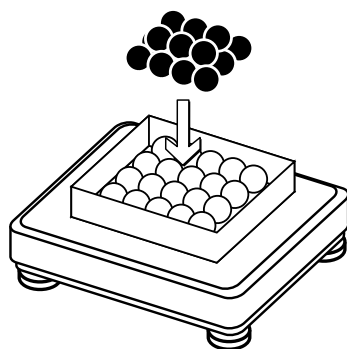
▷ The product menu appears.



WP D

- 7. Place an empty container on the scale (WP D in this example).
- 8. Press the **→T←** key to tare the scale.
 - ▷ The weight display shows the "NET" value type.





WP D

9. Place an unknown number of additional parts in the container.

▷ The weight is shown on the display.

WP-D	Max Min	12000g 5g	d=	0.1g
NET				
+ 2516.5 g				
Count application @admin				
Product	0			
Product name				
Tare memory	0			
Reference quantity	10			
Reference weight	0.05000 kg			
Reference weight has an error.	0.0000 kg			
ID	Memory	Weight	Start	

10. Press the [Start] soft key to start the calculation.

▷ The quantity is shown on the display.

WP-D	Max Min	12000g 5g	d=	0.1g
USER				
+		50  pcs		
	Count application			@admin
Product				0
Tare value				0
Weight				

11. Press the  key.

▷ The result is printed.

```

Test phase 1
Sequence number          39
Date/time                27.02.2015-12:11:42
-----
Reference quantity      10 pcs
Reference weight        0.05 kg

Gross                   3516.5 g
Net                     2516.5 g
Tare                    1000.0 g
Quantity                50
-----

```

12. If additional counting needs to be done: remove the counted parts and place an unknown number of additional parts in the container.
13. Press the **EXIT** key to exit the current counting process.
14. Press the **EXIT** key to exit the counting application.

6.2 Check weighing

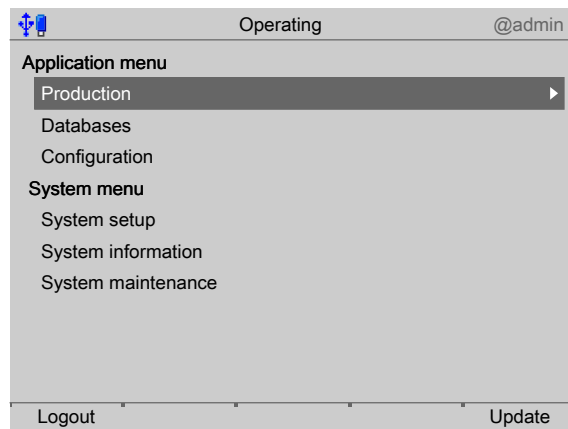
Tasks

Check weighing samples with a set point weight of 1.00 kg and a tolerance range from -10 g to +10 g.

Default Settings

- Select "Check weighing" under [Configuration] - [Parameters] - [Basic application].
- Select "Check weighing active" under [Configuration] - [Parameters].
- In this example, select "10 steps" under [Configuration] - [Parameters] - [Min. wgt. for auto. tar./prin.].
- In this example, select "Printer 1" under [Configuration] - [Print parameters] - [Printer selection] - [Ticket printer].
- In this example, select "Individual printout" under [Configuration] - [Print parameters] - [Print template] with the corresponding line settings, see Chapter 5.4.8.
- Select "10 % to max. weight" under [Configuration] - [Applications] - [Check weighing] - [Control range].
- Select "Set point, min., max. value" under [Configuration] - [Applications] - [Check weighing] - [Type of control value input].
- Select "On" under [Configuration] - [Applications] - [Check weighing] - [Automatic printout of results].
- Select "Off" under [Configuration] - [Applications] - [Check weighing] - [LL/HH display].
- Select "Off" under [Configuration] - [Applications] - [Check weighing] - [Tare after printout of 'OK' result].
- Press the [Save] soft key to save the settings.
- Use the  key to select the corresponding weighing point (weighing point B in this example).

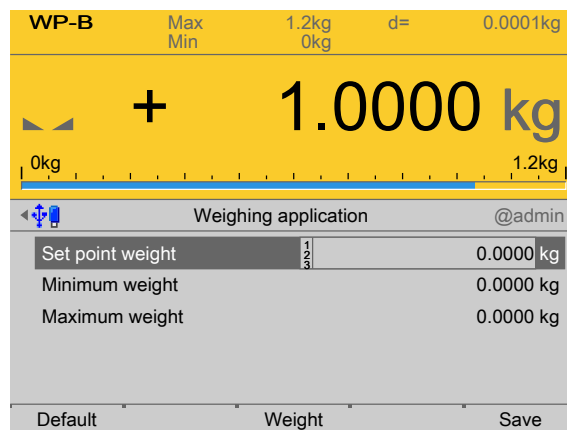
Procedure



1. Select the [Production] line and confirm.



2. Press the **→T←** key to tare the weighing point.
3. Press the [Initialize] soft key.



4. Place the set point on the scale (1.00 kg in this example).
5. Press the [Weight] soft key.
 - ▷ The weight value is applied to the set point line.

WP-B Max Min 1.2kg d= 0.0001kg 0kg

+ 1.0000 kg

0kg 1.2kg

Weighing application @admin

Set point weight 1.0000 kg

Minimum weight 0.0000 kg

Maximum weight 0.0000 kg

Default Weight Save

6. Remove the weight from the scale.

WP-B Max Min 1.2kg d= 0.0001kg 0kg

→0← 0.0000 kg

0kg 1.2kg

Weighing application @admin

Set point weight 1.0000 kg

Minimum weight 0.9000 kg

Maximum weight 0.0000 kg

Default Weight Save

7. Select line 2 and enter the minimum weight of 0.9 kg via the keypad.
8. Press the **OK** key.

WP-B Max Min 1.2kg d= 0.0001kg 0kg

→0← 0.0000 kg

0kg 1.2kg

Weighing application @admin

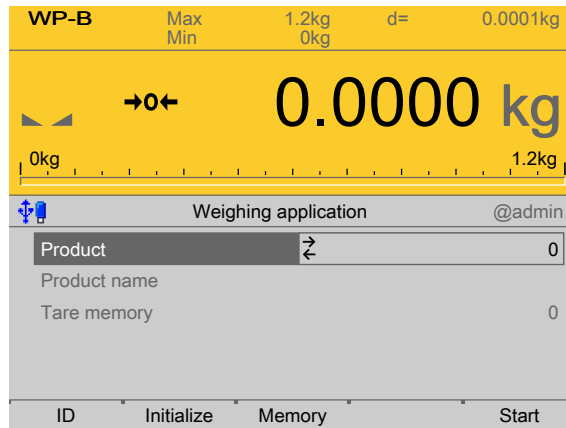
Set point weight 1.0000 kg

Minimum weight 0.9000 kg

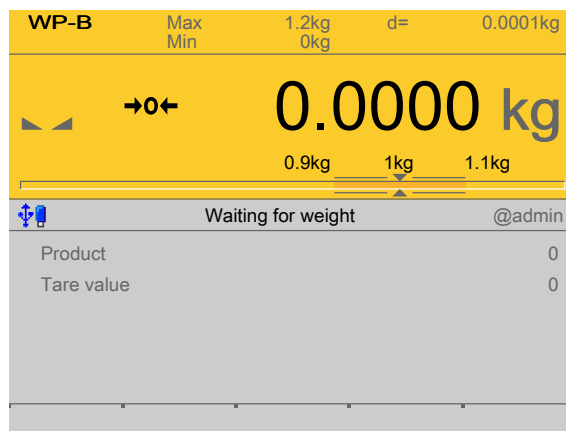
Maximum weight 1.1000 kg

Default Weight Save

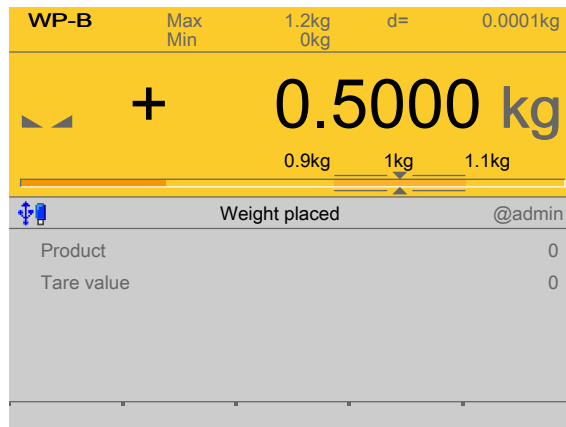
9. Select line 3 and enter the maximum weight of 1.1 kg via the keypad.
10. Press the **OK** key.
11. Press the [Save] soft key to save the entry.



12. Press the [Start] soft key.



13. Place the sample on the scale.



- ▷ The sample has a weight value of 0.5 kg; this means: < Minimum. The bar graph turns yellow.

The result is printed.

```
Sequence number          26
Date/time                14.01.2015-17:28:38
-----
Set point                1 kg
Min.                    0.9 kg
Max.                    1.1 kg

Gross                   0.5000 kg
Net                     0.5000 kg
Tare database           0.0000 kg
Deviation               -50 %
Deviation               -0.5 kg
-----
```

14. Remove the sample and place the next and read the results. Repeat this step as needed.
15. Press the **EXIT** key to exit weighing.

6.3 Totalizing

Tasks

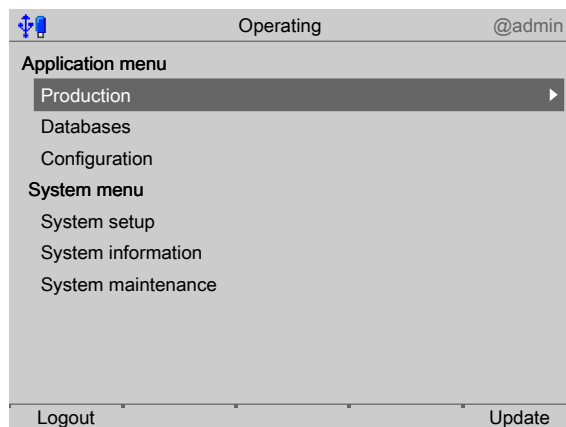
Totalizing weight values.

Automatic tare function is not active.

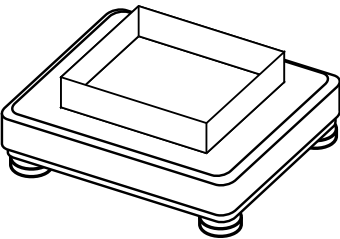
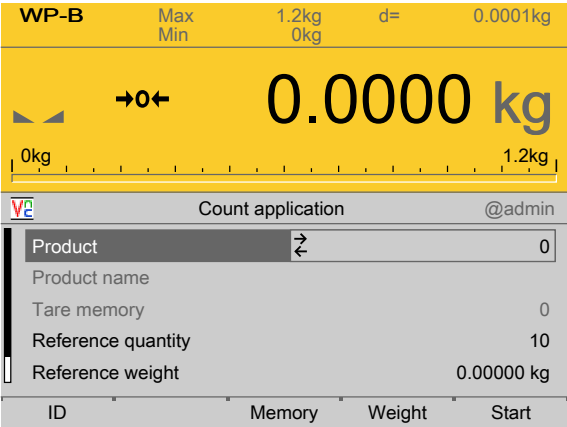
Default Settings

- Select "Counting" under [Configuration] - [Parameters] - [Basic application].
- Select [Configuration] - [Parameters] - [Totalizing active].
- Activate [Configuration] - [Parameters] - [Static sum display].
- Deactivate [Configuration] - [Parameters] - [Auto. tare 1st weight].
- In this example, select "10 steps" under [Configuration] - [Parameters] - [Min. wgt. for auto. tar./prin.].
- In this example, select "Printer 1" under [Configuration] - [Print parameters] - [Printer selection] - [Ticket printer].
- In this example, select "Individual printout" under [Configuration] - [Print parameters] - [Print template] with the corresponding line settings, see Chapter 5.4.8.
- Select "Off" under [Configuration] - [Applications] - [Totalizing] - [Automatic value transfer].
- Select "Individual printout" under [Configuration] - [Applications] - [Totalizing] - [Printout after value transfer].
- Press the [Save] soft key to save the settings.

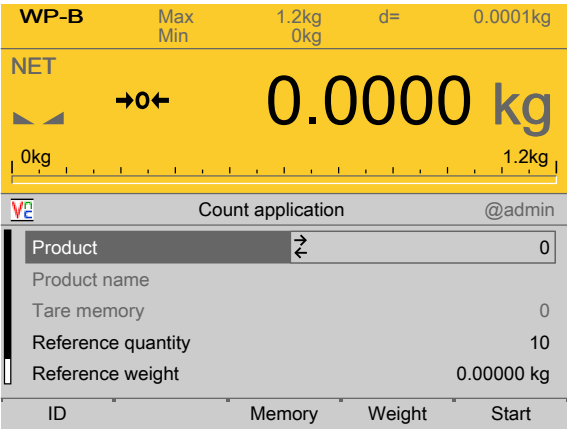
Procedure



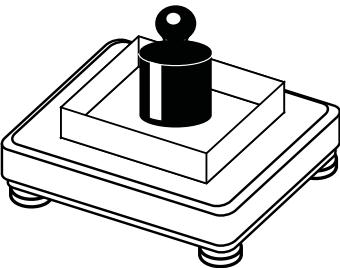
1. Select the [Production] line and confirm.
 - ▷ The product menu appears.



- 2. Place an empty container on the scale.
- 3. Press the **→T←** key to tare the scale.



▷ The weight display shows the "NET" value type.



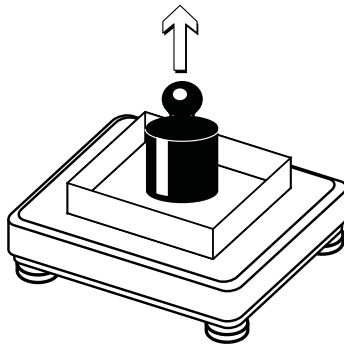
- 4. Place the first weight in the container.

WP-B	Max Min	1.2kg 0kg	d=	0.0001kg
NET	+ 1.0000 kg			
	Count application		@admin	
Product			0	
Tare value			0	
Weight total			1.0000 kg	
Total quantity			10	
wRef			0.1000 kg	
n=			1	
Piece	M+	MR	M-	n-10

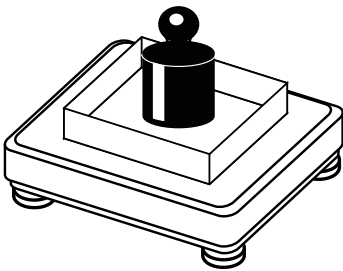
5. Press the [Start] soft key to start the calculation.
 - ▷ The quantity is shown on the display.
6. Press the [Weight] soft key to switch to the weight display.
7. Press the [M+] soft key to save the first weight value to the totalizing memory.
 - ▷ The (n = 1) item is printed automatically.

Sequence number	251
Date/time	20.04.2015-10:50:22

Net	1.0000 kg
Reference quantity	10 pcs
Reference weight	0.1 kg
Quantity	10
Item counter weight	1
Item counter pieces	1



8. Remove the first weight from the weighing platform.



9. Place the next weight in the container.

WP-B	Max Min	1.2kg 0kg	d=	0.0001kg
NET	+ 0.1500 kg			
VE	Count application			@admin
Product				0
Tare value				0
Weight total				1.1500 kg
Total quantity				12
wRef				0.1000 kg
n=				2
Piece	M+	MR	M-	n-10

10. Press the [M+] soft key to save the next weight value to the totalizing memory.

▷ The (n = 2) item is printed automatically.

Sequence number	252
Date/time	20.04.2015-11:05:16

Net	0.1500 kg
Reference quantity	10 pcs
Reference weight	0.1 kg
Quantity	2
Item counter weight	2
Item counter pieces	2

WP-B	Max Min	1.2kg 0kg	d=	0.0001kg
NET	+ 0.1500 kg			
VE	Totals:			min
*N	1.1500 kg			0
*QNT	12 pcs			0
wRef				kg
n=				12
Piece	M+	MR	M-	n-10

11. Press the [MR] soft key to end totalizing.

▷ An information window appears.

12. Press the  key.

▷ The configured total data record is printed.

```
Sequence number          264
Date/time                20.04.2015-12:53:44
-----
Net total                1.15kg
Total quantity           12 pcs
Reference quantity       10 pcs
Reference weight         0.1 kg
Item counter weight      2
Item counter pieces      2
-----
\012
```

13. Empty the scale.
14. Press the **EXIT** key to return to the production window.

7 Fieldbus interface

7.1 General notes

The interface is configured under [System settings] - [Fieldbus parameters] .

There are two different access protocols.

Scale protocol

8 bytes for simple scale functions: Read weights and states.

The protocol and the functions of the firmware are described in the operating instructions PR 5900.

SPM protocol

This wider interface can be used to access all the data described in the SPM table.

The protocol and the functions of the firmware are described in the operating instructions PR 5900.

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 and fieldbus with SPM interface.

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

Data type	Description	Value range
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
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 8.11).

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 weighing point A

SPM address	Data type	R/W	Function
X0...X3	BOOL	R	Internal digital input 1...4
X8...11	BOOL	R	Internal digital output 1...4
X16...17	BOOL	R	Output limit 1...2

SPM address	Data type	R/W	Function
B4	BYTE	R	Indicator status
X32	BOOL	R	ADC error
X33	BOOL	R	> Max (FSD = Full Scale Deflection)
X34	BOOL	R	> Max + permitted range (OVL)
X35	BOOL	R	< zero
X36	BOOL	R	Zero $\pm \frac{1}{4}$ d
X37	BOOL	R	Within the zeroset range (ZSR)
X38	BOOL	R	The weight is stable
X39	BOOL	R	Weight < zero or > Max (FSD = Full Scale Deflection)
B5	BYTE	R	ADC status
X40	BOOL	R	Measuring signal negative (error 7)
X41	BOOL	R	Measuring signal >36 mV (error 3)
X42	BOOL	R	Internal arithmetic error; CAL data are perhaps faulty (error 1)
X43	BOOL	R	No or too low sense voltage (error 6)
X44	BOOL	R	No communication with xBPI scale (error 9)
B6	BYTE	R	Command status
X48	BOOL	R	Command error
X49	BOOL	R	Command active
X50	BOOL	R	Network failure signal
B7	BYTE	R	Active status
X56	BOOL	R	Test mode active
X57	BOOL	R	Calibration active
X58	BOOL	R	Instrument is tared
X59	BOOL	R	Pendeo only: parameter [Unbalanced check deviation]
X60	BOOL	R	Pendeo only: operation with a simulated load cell
X112	BOOL	W	Zero device.
X113	BOOL	W	Tare device
X114	BOOL	W	Reset the tare of the device
X115	BOOL	W	Start the test mode
X116	BOOL	W	Finish the test mode
X117	BOOL	W	Reset the power fail signal
X118	BOOL	W	Set fixed tare weight D31 as tare
X119	BOOL	W	Store the current gross weight in the preset tare memory (D31)
X121	BOOL	W	Reset error B19 = 0.
B16	SINT	R	Exponent Number of decimal places Example: 1.23 is displayed Exponent: 2
B17	SINT	R	Weight unit 1 = mg, 2 = g, 3 = kg, 4 = t, 5 = lb, 9 = oz
B18	SINT	R	Verification interval (for multi-interval/multi-range = d1 or e1)
B19	BYTE	R	Last weighing point error, see PR 5900 operating instructions.

SPM address	Data type	R/W	Function
B20	BYTE	R	Higher byte of product code (0x59)
B21	BYTE	R	Lower byte of product code (0x00)
B22	BYTE	R	Major part of version number (1.0)
B23	BYTE	R	Minor part of version number (1.0)
B31	BYTE	R	ADC status
D6	UDINT	R	Serial number (board number)
W14	INT	R	Counter will be increased for every measured value.
D8	DINT	R	Current gross weight
D9	DINT	R	Current net weight
D10	DINT	R	Current tare weight
D14	DINT	R	Max weight (FSD = Full Scale Deflection)
D15	DINT	R	Min weight
D23	DINT	R	Activity counter, test of communication with device
D24	DINT	R	Limit 1 on
D25	DINT	R	Limit 1 off
D26	DINT	R	Limit 2 on
D27	DINT	R	Limit 2 off
D31	DINT	R/W	Preset tare memory (X118, X119)
B128	BYTE		Control status, see Chapter 5.4.6.2
X1024	BOOL	R	Weight < lower limit: 0.1*set point OR Weight < 0.3*Set point: controlled via the parameter under [Configuration] - [Applica- tions] - [Check weighing] - [Control range]
X1025	BOOL	R	Weight < min. value AND $\geq$ lower limit
X1026	BOOL	R	Weight $\geq$ min. value AND weight < set point
X1027	BOOL	R	Weight $\geq$ set point $\leq$ max. value
X1028	BOOL	R	Weight > max. value AND $\geq$ upper limit
X1029	BOOL	R	Weight < upper limit: FSD (Full Scale Deflection) OR 1,7*Set point: controlled via the parameter under [Configuration] - [Applica- tions] - [Check weighing] - [Control range]
X1030	BOOL	R	Weight within the tolerance range (green = good)
X1031	BOOL	R	Weight outside of the tolerance range (red = bad)

SPM address	Data type	R/W	Function
B129	BYTE		Control status and standstill
X1032	BOOL	R	X1024 AND standstill
X1033	BOOL	R	X1025 AND standstill
X1034	BOOL	R	X1026 AND standstill
X1035	BOOL	R	X1027 AND standstill
X1036	BOOL	R	X1028 AND standstill
X1037	BOOL	R	X1029 AND standstill
X1038	BOOL	R	X1030 AND standstill
X1039	BOOL	R	X1031 AND standstill
D34	DINT	R	Reference quantity
D35	DINT	R	Reference weight
D36	DINT	R	Current quantity
D37	DINT	R	Preset tare value
L19	LWORD	R	Weight total
L20	LWORD	R	Total quantity

Note:

Freely assignable SPM addresses D42...D49, see Chapter [8.11](#).

Note:

The system variables (e.g. ST_WGT_A) for communication via OPC are described in operating instructions PR 1792 (Chapter 4 + 5).

8.5 System data weighing point B

SPM address	Data type	R/W	Function
X4096...4099	BOOL	R	Internal digital input 1...4
X4104...4107	BOOL	R	Internal digital output 1...4
X4112...4113	BOOL	R	Output limit 1...2
B516	BYTE	R	Indicator status
X4128	BOOL	R	ADC error
X4129	BOOL	R	> Max (FSD = Full Scale Deflection)
X4130	BOOL	R	> Max + permitted range (OVL)
X4131	BOOL	R	< zero
X4132	BOOL	R	Zero $\pm \frac{1}{4}$ d
X4133	BOOL	R	Within the zeroset range (ZSR)
X4134	BOOL	R	The weight is stable
X4135	BOOL	R	Weight < zero or > Max (FSD = Full Scale Deflection)

SPM address	Data type	R/W	Function
B517	BYTE	R	ADC status
X4136	BOOL	R	Measuring signal negative (error 7)
X4137	BOOL	R	Measuring signal >36 mV (error 3)
X4138	BOOL	R	Internal arithmetic error; CAL data are perhaps faulty (error 1)
X4139	BOOL	R	No or too low sense voltage (error 6)
X4140	BOOL	R	No communication with xBPI scale (error 9)
B518	BYTE	R	Command status
X4144	BOOL	R	Command error
X4145	BOOL	R	Command active
X4146	BOOL	R	Network failure signal
B519	BYTE	R	Active status
X4152	BOOL	R	Test mode active
X4153	BOOL	R	Calibration active
X4154	BOOL	R	Instrument is tared
X4155	BOOL	R	Pendeo only: parameter [Unbalanced check deviation]
X4156	BOOL	R	Pendeo only: operation with a simulated load cell
X4208	BOOL	W	Zero device.
X4209	BOOL	W	Tare device
X4210	BOOL	W	Reset the tare of the device
X4211	BOOL	W	Start the test mode
X4212	BOOL	W	Finish the test mode
X4213	BOOL	W	Reset the power fail signal
X4214	BOOL	W	Set fixed tare weight D159 as tare
X4215	BOOL	W	Store the current gross weight in the preset tare memory (D159)
X4217	BOOL	W	Reset error B531 = 0.
B528	SINT	R	Exponent Number of decimal places Example: 1.23 is displayed Exponent: 2
B529	SINT	R	Weight unit 1 = mg, 2 = g, 3 = kg, 4 = t, 5 = lb, 9 = oz
B530	SINT	R	Verification interval (for multi-interval/multi-range = d1 or e1)
B531	BYTE	R	Last weighing point error, see PR 5900 operating instructions.
B532	BYTE	R	Higher byte of product code (0x59)
B533	BYTE	R	Lower byte of product code (0x00)
B534	BYTE	R	Major part of version number (1.0)
B535	BYTE	R	Minor part of version number (1.0)
B543	BYTE	R	ADC status
D134	UDINT	R	Serial number (board number)

SPM address	Data type	R/W	Function
W270	INT	R	Counter will be increased for every measured value.
D136	DINT	R	Current gross weight
D137	DINT	R	Current net weight
D138	DINT	R	Current tare weight
D142	DINT	R	Max weight (FSD = Full Scale Deflection)
D143	DINT	R	Min weight
D151	DINT	R	Activity counter, test of communication with device
D152	DINT	R	Limit 1 on
D153	DINT	R	Limit 1 off
D154	DINT	R	Limit 2 on
D155	DINT	R	Limit 2 off
D159	DINT	R/W	Preset tare memory (X4214, X4215)
B640	BYTE		Control status, see Chapter 5.4.6.2
X5120	BOOL	R	Weight < lower limit: 0.1*Set point OR Weight < 0.3*Set point: controlled via the parameter under [Configuration] - [Applications] - [Check weighing] - [Control range]
X5121	BOOL	R	Weight < min. value AND $\geq$ lower limit
X5122	BOOL	R	Weight $\geq$ min. value AND weight < set point
X5123	BOOL	R	Weight $\geq$ set point $\leq$ max. value
X5124	BOOL	R	Weight > max. value AND $\geq$ upper limit
X5125	BOOL	R	Weight < upper limit: FSD (Full Scale Deflection) OR 1,7*Set point: controlled via the parameter under [Configuration] - [Applications] - [Check weighing] - [Control range]
X5126	BOOL	R	Weight within the tolerance range (green = good)
X5127	BOOL	R	Weight outside of the tolerance range (red = bad)
B641	BYTE		Control status and standstill
X5128	BOOL	R	X5120 AND standstill
X5129	BOOL	R	X5121 AND standstill
X5130	BOOL	R	X5122 AND standstill
X5131	BOOL	R	X5123 AND standstill
X5132	BOOL	R	X5124 AND standstill
X5133	BOOL	R	X5125 AND standstill
X5134	BOOL	R	X5126 AND standstill
X5135	BOOL	R	X5127 AND standstill
D162	DINT	R	Reference quantity
D163	DINT	R	Reference weight
D164	DINT	R	Current quantity
D165	DINT	R	Preset tare value

SPM address	Data type	R/W	Function
L83	LWORD	R	Weight total
L84	LWORD	R	Total quantity

Note:

Freely assignable SPM addresses D170...D177, see Chapter [8.11](#).

Note:

The system variables (e.g. ST_WGT_A) for communication via OPC are described in operating instructions PR 1792 (Chapter 4 + 5).

8.6 System data weighing point C

SPM address	Data type	R/W	Function
X8192...8195	BOOL	R	Internal digital input 1...4
X8200...8203	BOOL	R	Internal digital output 1...4
X8208...8209	BOOL	R	Output limit 1...2
B1028	BYTE	R	Indicator status
X8224	BOOL	R	ADC error
X8225	BOOL	R	> Max (FSD = Full Scale Deflection)
X8226	BOOL	R	> Max + permitted range (OVL)
X8227	BOOL	R	< zero
X8228	BOOL	R	Zero $\pm \frac{1}{4}$ d
X8229	BOOL	R	Within the zeroset range (ZSR)
X8230	BOOL	R	The weight is stable
X8231	BOOL	R	Weight < zero or > Max (FSD = Full Scale Deflection)
B1029	BYTE	R	ADC status
X8232	BOOL	R	Measuring signal negative (error 7)
X8233	BOOL	R	Measuring signal >36 mV (error 3)
X8234	BOOL	R	Internal arithmetic error; CAL data are perhaps faulty (error 1)
X8235	BOOL	R	No or too low sense voltage (error 6)
X8236	BOOL	R	No communication with xBPI scale (error 9)
B1030	BYTE	R	Command status
X8240	BOOL	R	Command error
X8241	BOOL	R	Command active
X8242	BOOL	R	Network failure signal
B1031	BYTE	R	Active status
X8248	BOOL	R	Test mode active
X8249	BOOL	R	Calibration active
X8250	BOOL	R	Instrument is tared
X8251	BOOL	R	Pendeo only: parameter [Unbalanced check deviation]
X8252	BOOL	R	Pendeo only: operation with a simulated load cell

SPM address	Data type	R/W	Function
X8304	BOOL	W	Zero device.
X8305	BOOL	W	Tare device
X8306	BOOL	W	Reset the tare of the device
X8307	BOOL	W	Start the test mode
X8308	BOOL	W	Finish the test mode
X8309	BOOL	W	Reset the power fail signal
X8310	BOOL	W	Set fixed tare weight D287 as tare
X8311	BOOL	W	Store the current gross weight in the preset tare memory (D287)
X8313	BOOL	W	Reset error B1043 = 0.
B1040	SINT	R	Exponent Number of decimal places Example: 1.23 is displayed Exponent: 2
B1041	SINT	R	Weight unit 1 = mg, 2 = g, 3 = kg, 4 = t, 5 = lb, 9 = oz
B1042	SINT	R	Verification interval (for multi-interval/multi-range = d1 or e1)
B1043	BYTE	R	Last weighing point error, see PR 5900 operating instructions.
B1044	BYTE	R	Higher byte of product code (0x59)
B1045	BYTE	R	Lower byte of product code (0x00)
B1046	BYTE	R	Major part of version number (1.0)
B1047	BYTE	BYTE	Minor part of version number (1.0)
B1055	BYTE	BYTE	ADC status
D262	UDINT	R	Serial number (board number)
W526	INT	R	Counter will be increased for every measured value.
D264	DINT	R	Current gross weight
D265	DINT	R	Current net weight
D266	DINT	R	Current tare weight
D270	DINT	R	Max weight (FSD = Full Scale Deflection)
D271	DINT	R	Min weight
D279	DINT	R	Activity counter, test of communication with device
D280	DINT	R	Limit 1 on
D281	DINT	R	Limit 1 off
D282	DINT	R	Limit 2 on
D283	DINT	R	Limit 2 off

SPM address	Data type	R/W	Function
D287	DINT	R/W	Preset tare memory (X8311, X8312)
B1152	BYTE		Control status, see Chapter 5.4.6.2
X9208	BOOL	R	Weight < lower limit: 0.1*Set point OR Weight < 0.3*Set point: controlled via the parameter under [Configuration] - [Applications] - [Check weighing] - [Control range]
X9209	BOOL	R	Weight < min. value AND $\geq$ lower limit
X9210	BOOL	R	Weight $\geq$ min. value AND weight < set point
X9211	BOOL	R	Weight $\geq$ set point $\leq$ max. value
X9212	BOOL	R	Weight > max. value AND $\geq$ upper limit
X9213	BOOL	R	Weight < upper limit: FSD (Full Scale Deflection) OR 1,7*Set point: controlled via the parameter under [Configuration] - [Applications] - [Check weighing] - [Control range]
X9214	BOOL	R	Weight within the tolerance range (green = good)
X9215	BOOL	R	Weight outside of the tolerance range (red = bad)
B1153	BYTE		Control status and standstill
X9216	BOOL	R	X9208 AND standstill
X9217	BOOL	R	X9209 AND standstill
X9218	BOOL	R	X9210 AND standstill
X9219	BOOL	R	X9211 AND standstill
X9220	BOOL	R	X9212 AND standstill
X9221	BOOL	R	X9213 AND standstill
X9222	BOOL	R	X9214 AND standstill
X9223	BOOL	R	X9215 AND standstill
D290	DINT	R	Reference quantity
D291	DINT	R	Reference weight
D292	DINT	R	Current quantity
D293	DINT	R	Preset tare value
L147	LWORD	R	Weight total
L148	LWORD	R	Total quantity

Note:

Freely assignable SPM addresses D298...D305, see Chapter 8.11.

Note:

The system variables (e.g. ST_WGT_A) for communication via OPC are described in operating instructions PR 1792 (Chapter 4 + 5).

8.7 System data weighing point D

SPM address	Data type	R/W	Function
X12288...12291	BOOL	R	Internal digital input 1...4
X12296...12299	BOOL	R	Internal digital output 1...4
X12304...12305	BOOL	R	Output limit 1...2
B1540	BYTE	R	Indicator status
X12320	BOOL	R	ADC error
X12321	BOOL	R	> Max (FSD = Full Scale Deflection)
X12322	BOOL	R	> Max + permitted range (OVL)
X12323	BOOL	R	< zero
X12324	BOOL	R	Zero $\pm 1/4$ d
X12325	BOOL	R	Within the zeroset range (ZSR)
X12326	BOOL	R	The weight is stable
X12327	BOOL	R	Weight < zero or > Max (FSD = Full Scale Deflection)
B1541	BYTE	R	ADC status
X12328	BOOL	R	Measuring signal negative (error 7)
X12329	BOOL	R	Measuring signal >36 mV (error 3)
X12330	BOOL	R	Internal arithmetic error; CAL data are perhaps faulty (error 1)
X12331	BOOL	R	No or too low sense voltage (error 6)
X12332	BOOL	R	No communication with xBPI scale (error 9)
B1542	BYTE	R	Command status
X12336	BOOL	R	Command error
X12337	BOOL	R	Command active
X12338	BOOL	R	Network failure signal
B1543	BYTE	R	Active status
X12344	BOOL	R	Test mode active
X12345	BOOL	R	Calibration active
X12346	BOOL	R	Instrument is tared
X12347	BOOL	R	Pendeo only: parameter [Unbalanced check deviation]
X12348	BOOL	R	Pendeo only: operation with a simulated load cell
X12400	BOOL	W	Zero device.
X12401	BOOL	W	Tare device
X12402	BOOL	W	Reset the tare of the device
X12403	BOOL	W	Start the test mode
X12404	BOOL	W	Finish the test mode
X12405	BOOL	W	Reset the power fail signal
X12406	BOOL	W	Set fixed tare weight D415 as tare
X12407	BOOL	W	Store the current gross weight in the fixed tare memory (D415)
X12409	BOOL	W	Reset error B1555 = 0.

SPM address	Data type	R/W	Function
B1552	SINT	R	Exponent Number of decimal places Example: 1.23 is displayed Exponent: 2
B1553	SINT	R	Weight unit 1 = mg, 2 = g, 3 = kg, 4 = t, 5 = lb, 9 = oz
B1554	SINT	R	Verification interval (for multi-interval/multi-range = d1 or e1)
B1555	BYTE	R	Last weighing point error, see PR 5900 operating instructions.
B1556	BYTE	R	Higher byte of product code (0x59)
B1557	BYTE	R	Lower byte of product code (0x00)
B1558	BYTE	R	Major part of version number (1.0)
B1559	BYTE	BYTE	Minor part of version number (1.0)
B1567	BYTE	BYTE	ADC status
D390	UDINT	R	Serial number (board number)
W782	INT	R	Counter will be increased for every measured value.
D392	DINT	R	Current gross weight
D393	DINT	R	Current net weight
D394	DINT	R	Current tare weight
D398	DINT	R	Max weight (FSD = Full Scale Deflection)
D399	DINT	R	Min weight
D407	DINT	R	Activity counter, test of communication with device
D408	DINT	R	Limit 1 on
D409	DINT	R	Limit 1 off
D410	DINT	R	Limit 2 on
D411	DINT	R	Limit 2 off
D415	DINT	R/W	Preset tare memory (X12406, X12407)

SPM address	Data type	R/W	Function
B1664	BYTE		Control status, see Chapter 5.4.6.2
X13312	BOOL	R	Weight < lower limit: 0.1*Set point OR Weight < 0.3*Set point: controlled via the parameter under [Configuration] - [Applications] - [Check weighing] - [Control range]
X13313	BOOL	R	Weight < min. value AND $\geq$ lower limit
X13314	BOOL	R	Weight $\geq$ min. value AND weight < set point
X13315	BOOL	R	Weight $\geq$ set point $\leq$ max. value
X13316	BOOL	R	Weight > max. value AND $\geq$ upper limit
X13317	BOOL	R	Weight < upper limit: FSD (Full Scale Deflection) OR 1,7*Set point: controlled via the parameter under [Configuration] - [Applications] - [Check weighing] - [Control range]
X13318	BOOL	R	Weight within the tolerance range (green = good)
X13319	BOOL	R	Weight outside of the tolerance range (red = bad)
B1665	BYTE		Control status and standstill
X13320	BOOL	R	X13312 AND standstill
X13321	BOOL	R	X13313 AND standstill
X13322	BOOL	R	X13314 AND standstill
X13323	BOOL	R	X13315 AND standstill
X13324	BOOL	R	X13316 AND standstill
X13325	BOOL	R	X13317 AND standstill
X13326	BOOL	R	X13318 AND standstill
X13327	BOOL	R	X13319 AND standstill
D418	DINT	R	Reference quantity
D419	DINT	R	Reference weight
D420	DINT	R	Current quantity
D421	DINT	R	Preset tare value
L211	LWORD	R	Weight total
L212	LWORD	R	Total quantity

Note:

Freely assignable SPM addresses D426...D433, see Chapter 8.11.

Note:

The system variables (e.g. ST_WGT_A) for communication via OPC are described in operating instructions PR 1792 (Chapter 4 + 5).

8.8 Digital and analog inputs and outputs

SPM address	Data type	R/W	Function
D512	DINT	R	Digital input 1 (option-1)
D513	DINT	R	Digital input 2 (option-2)
D514	DINT	R	Digital input 3 (built-in)
D516	DINT	R/W	Digital output 1 (option-1)
D517	DINT	R/W	Digital output 2 (option-2)
D518	DINT	R/W	Digital output 3 (built-in)
D520	DINT	R	Analog input 1 (option-1)
D521	DINT	R	Analog input 2 (option-2)
D523	DINT	R/W	Analog output 1 (option-1)
D524	DINT	R/W	Analog output 2 (option-2)

8.9 ModBus TCP modules

SPM address	Data type	R/W	Function
W1052	UINT	R	Input module 1
X16832...16847	BOOL	R	Digital inputs 1...16
W1053	UINT	R	Input module 2
X16848...16863	BOOL	R	Digital inputs 1...16
W1054	UINT	R	Input module 3
X16864...16879	BOOL	R	Digital inputs 1...16
W1055	UINT	R	Input module 4
X16880...16895	BOOL	R	Digital inputs 1...16
W1056	UINT	R	Input module 5
X16896...16903	BOOL	R	Digital inputs 1...8
W1057	UINT	R	Input module 6
X16912...16919	BOOL	R	Digital inputs 1...8
W1058	UINT	R	Input module 7
X16928...16935	BOOL	R	Digital inputs 1...8
W1059	UINT	R	Input module 8
X16944...16951	BOOL	R	Digital inputs 1...8
W1062	UINT	R/W	Output module 1
X16992...17007	BOOL	R/W	Digital outputs 1...16
W1063	UINT	R/W	Output module 2
X17008...17023	BOOL	R/W	Digital outputs 1...16
W1064	UINT	R/W	Output module 3
X17024...17039	BOOL	R/W	Digital outputs 1...16

SPM address	Data type	R/W	Function
W1065	UINT	R/W	Output module 4
X17040...17055	BOOL	R/W	Digital outputs 1...16
W1066	UINT	R/W	Output module 5-0
X17056...17071	BOOL	R/W	Digital outputs 1...16
W1067	UINT	R/W	Output module 5-1
X17072...17087	BOOL	R/W	Digital outputs 17...32
W1068	UINT	R/W	Output module 5-2
X17100...17103	BOOL	R/W	Digital outputs 33...36
W1069	UINT	R/W	Output module 6-0
X17104...17119	BOOL	R/W	Digital outputs 1...16
W1070	UINT	R/W	Output module 6-1
X17120...17135	BOOL	R/W	Digital outputs 17...32
W1071	UINT	R/W	Output module 6-2
X17148...17151	BOOL	R/W	Digital outputs 33...36
W1072	UINT	R/W	Output module 7-0
X17152...17167	BOOL	R/W	Digital outputs 1...16
W1073	UINT	R/W	Output module 7-1
X17168...17183	BOOL	R/W	Digital outputs 17...32
W1074	UINT	R/W	Output module 7-2
X17184...17199	BOOL	R/W	Digital outputs 33...48
W1075	UINT	R/W	Output module 7-3
X17212...17215	BOOL	R/W	Digital outputs 49...52
W1076	UINT	R/W	Output module 8-0
X17216...17231	BOOL	R/W	Digital outputs 1...16
W1077	UINT	R/W	Output module 8-1
X17232...17247	BOOL	R/W	Digital outputs 17...32
W1078	UINT	R/W	Output module 8-2
X17248...17263	BOOL	R/W	Digital outputs 33...48
W1079	UINT	R/W	Output module 8-3
X17276...17279	BOOL	R/W	Digital outputs 49...52

8.10 Common SPM addresses

SPM address	Data type	R/W	Function
B2560	BYTE	R	System status
X20480	BOOL	R	The application is ready.
X20482	BOOL	R	All batching processes have been stopped.
X20484	BOOL	R	A tolerance alarm was triggered at a weighing point.
X20487	BOOL	R	If a ModBus module is configured and the connection is disconnected, then the error bit is set.

8.11 Freely assigned ranges

Weighing point A

%ML	%MD	%MW	%MB	%MX							
				0	1	2	3	4	5	6	7
21	42	84	168	1344	1345	1346	1347	1348	1349	1350	1351
			169	1352	1353	1354	1355	1356	1357	1358	1359
		85	170	1360	1361	1362	1363	1364	1365	1366	1367
			171	1368	1369	1370	1371	1372	1373	1374	1375
			172	1376	1377	1378	1379	1380	1381	1382	1383
	43	86	173	1384	1385	1386	1387	1388	1389	1390	1391
			174	1392	1393	1394	1395	1396	1397	1398	1399
		87	175	1400	1401	1402	1403	1404	1405	1406	1407
			176	1408	1409	1410	1411	1412	1413	1414	1415
			177	1416	1417	1418	1419	1420	1421	1422	1423
22	44	88	178	1424	1425	1426	1427	1428	1429	1430	1431
			179	1432	1433	1434	1435	1436	1437	1438	1439
		90	180	1440	1441	1442	1443	1444	1445	1446	1447
			181	1448	1449	1450	1451	1452	1453	1454	1455
			182	1456	1457	1458	1459	1460	1461	1462	1463
	45	91	183	1464	1465	1466	1467	1468	1469	1470	1471
			184	1472	1473	1474	1475	1476	1477	1478	1479
		92	185	1480	1481	1482	1483	1484	1485	1486	1487
			186	1488	1489	1490	1491	1492	1493	1494	1495
			187	1496	1497	1498	1499	1500	1501	1502	1503
23	46	93	188	1504	1505	1506	1507	1508	1509	1510	1511
			189	1512	1513	1514	1515	1516	1517	1518	1519
		94	190	1520	1521	1522	1523	1524	1525	1526	1527
			191	1528	1529	1530	1531	1532	1533	1534	1535
			192	1536	1537	1538	1539	1540	1541	1542	1543
	47	95	193	1544	1545	1546	1547	1548	1549	1550	1551
			194	1552	1553	1554	1555	1556	1557	1558	1559
		96	195	1560	1561	1562	1563	1564	1565	1566	1567
			196	1568	1569	1570	1571	1572	1573	1574	1575
			197	1576	1577	1578	1579	1580	1581	1582	1583
24	48	97	198	1584	1585	1586	1587	1588	1589	1590	1591
			199	1592	1593	1594	1595	1596	1597	1598	1599
		98	192	1536	1537	1538	1539	1540	1541	1542	1543
			193	1544	1545	1546	1547	1548	1549	1550	1551
			194	1552	1553	1554	1555	1556	1557	1558	1559
	49	99	195	1560	1561	1562	1563	1564	1565	1566	1567
			196	1568	1569	1570	1571	1572	1573	1574	1575
		99	197	1576	1577	1578	1579	1580	1581	1582	1583
			198	1584	1585	1586	1587	1588	1589	1590	1591
			199	1592	1593	1594	1595	1596	1597	1598	1599

Weighing point B

%ML	%MD	%MW	%MB	%MX								
				0	1	2	3	4	5	6	7	
85	170	340	680	5440	5441	5442	5443	5444	5445	5446	5447	
			681	5448	5449	5450	5451	5452	5453	5454	5455	
			341	682	5456	5457	5458	5459	5460	5461	5462	5463
			683	5464	5465	5466	5467	5468	5469	5470	5471	
	171	342	684	5472	5473	5474	5475	5476	5477	5478	5479	
			685	5480	5481	5482	5483	5484	5485	5486	5487	
			343	686	5488	5489	5490	5491	5492	5493	5494	5495
			687	5496	5497	5498	5499	5500	5501	5502	5503	
	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	

Weighing point C

%ML	%MD	%MW	%MB	%MX							
				0	1	2	3	4	5	6	7
149	298	596	1192	9536	9537	9538	9539	9540	9541	9542	9543
			1193	9544	9545	9546	9547	9548	9549	9550	9551
		597	1194	9552	9553	9554	9555	9556	9557	9558	9559
			1195	9560	9561	9562	9563	9564	9565	9566	9567
	299	598	1196	9568	9569	9570	9571	9572	9573	9574	9575
			1197	9576	9577	9578	9579	9580	9581	9582	9583
		599	1198	9584	9585	9586	9587	9588	9589	9590	9591
			1199	9592	9593	9594	9595	9596	9597	9598	9599
150	300	600	1200	9600	9601	9602	9603	9604	9605	9606	9607
			1201	9608	9609	9610	9611	9612	9613	9614	9615
		601	1202	9616	9617	9618	9619	9620	9621	9622	9623
			1203	9624	9625	9626	9627	9628	9629	9630	9631
	301	602	1204	9632	9633	9634	9635	9636	9637	9638	9639
			1205	9640	9641	9642	9643	9644	9645	9646	9647
		603	1206	9648	9649	9650	9651	9652	9653	9654	9655
			1207	9656	9657	9658	9659	9660	9661	9662	9663
151	302	604	1208	9664	9665	9666	9667	9668	9669	9670	9671
			1209	9672	9673	9674	9675	9676	9677	9678	9679
		605	1210	9680	9681	9682	9683	9684	9685	9686	9687
			1211	9688	9689	9690	9691	9692	9693	9694	9695
	303	606	1212	9696	9697	9698	9699	9700	9701	9702	9703
			1213	9704	9705	9706	9707	9708	9709	9710	9711
		607	1214	9712	9713	9714	9715	9716	9717	9718	9719
			1215	9720	9721	9722	9723	9724	9725	9726	9727
152	304	608	1216	9728	9729	9730	9731	9732	9733	9734	9735
			1217	9736	9737	9738	9739	9740	9741	9742	9743
		609	1218	9744	9745	9746	9747	9748	9749	9750	9751
			1219	9752	9753	9754	9755	9756	9757	9758	9759
	305	610	1220	9760	9761	9762	9763	9764	9765	9766	9767
			1221	9768	9769	9770	9771	9772	9773	9774	9775
		611	1222	9776	9777	9778	9779	9780	9781	9782	9783
			1223	9784	9785	9786	9787	9788	9789	9790	9791

Weighing point D

%ML	%MD	%MW	%MB	%MX							
				0	1	2	3	4	5	6	7
213	426	852	1704	13632	13633	13634	13635	13636	13637	13638	13639
			1705	13640	13641	13642	13643	13644	13645	13646	13647
		853	1706	13648	13649	13650	13651	13652	13653	13654	13655
			1707	13656	13657	13658	13659	13660	13661	13662	13663
	427	854	1708	13664	13665	13666	13667	13668	13669	13670	13671
			1709	13672	13673	13674	13675	13676	13677	13678	13679
		855	1710	13680	13681	13682	13683	13684	13685	13686	13687
			1711	13688	13689	13690	13691	13692	13693	13694	13695
214	428	856	1712	13696	13697	13698	13699	13700	13701	13702	13703
			1713	13704	13705	13706	13707	13708	13709	13710	13711
		857	1714	13712	13713	13714	13715	13716	13717	13718	13719
			1715	13720	13721	13722	13723	13724	13725	13726	13727
	429	858	1716	13728	13729	13730	13731	13732	13733	13734	13735
			1717	13736	13737	13738	13739	13740	13741	13742	13743
		859	1718	13744	13745	13746	13747	13748	13749	13750	13751
			1719	13752	13753	13754	13755	13756	13757	13758	13759
215	430	860	1720	13760	13761	13762	13763	13764	13765	13766	13767
			1721	13768	13769	13770	13771	13772	13773	13774	13775
		861	1722	13776	13777	13778	13779	13780	13781	13782	13783
			1723	13784	13785	13786	13787	13788	13789	13790	13791
	431	862	1724	13792	13793	13794	13795	13796	13797	13798	13799
			1725	13800	13801	13802	13803	13804	13805	13806	13807
		863	1726	13808	13809	13810	13811	13812	13813	13814	13815
			1727	13816	13817	13818	13819	13820	13821	13822	13823
216	432	864	1728	13824	13825	13826	13827	13828	13829	13830	13831
			1729	13832	13833	13834	13835	13836	13837	13838	13839
		865	1730	13840	13841	13842	13843	13844	13845	13846	13847
			1731	13848	13849	13850	13851	13852	13853	13854	13855
	433	866	1732	13856	13857	13858	13859	13860	13861	13862	13863
			1733	13864	13865	13866	13867	13868	13869	13870	13871
		867	1734	13872	13873	13874	13875	13876	13877	13878	13879
			1735	13880	13881	13882	13883	13884	13885	13886	13887

9 Databases

9.1 General information

The Count application provides a database with several tables:

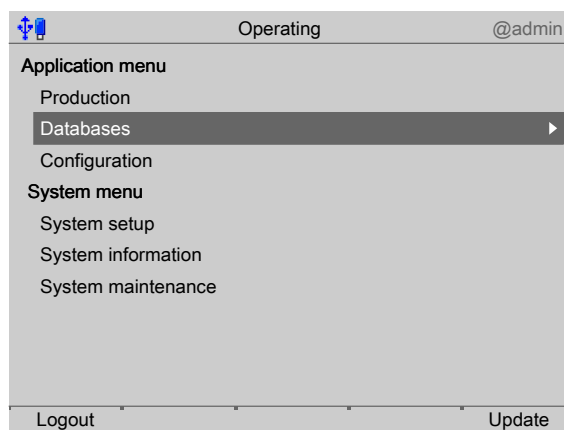
- Product table, see Chapter [9.2](#)
- Tare table, see Chapter [9.3](#)

Product entries and tare entries can be made here. If a product has been created, an available tare entry can be allocated to it. The program has a search function. For example, if the first letter of a stored product is entered, the corresponding memories are activated. The program continues to search as additional characters are entered (e.g., SCR for "screw"). Product/tare memory "0" is a working memory that is always available.

The master data of products can be expanded by so-called "identifiers." These are included on any printouts that are generated.

Note:

When user management is active, database entries can only be made if the "Supervisor" or "Administrator" is logged in.



- Select and confirm [Databases] using the cursor.

9.2 Product database

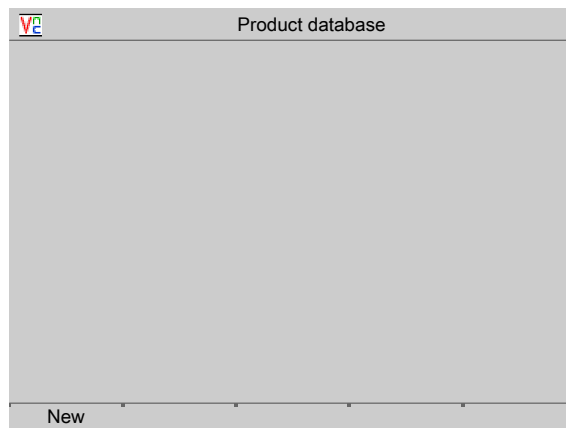
The database manages the products in the product table.

New entries can be added in the menu, available entries can be edited and deleted.

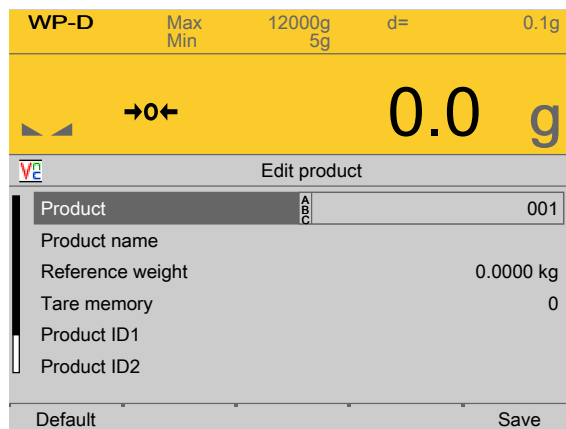


- Select and confirm [Product database] using the cursor.

9.2.1 Create product



1. Press the [New] soft key to create a new product.



2. Confirm the first line with the ► cursor key.
3. Enter a short name using the keypad (max. 15 characters) and confirm with the **OK** button.

WP-D Max Min 12000g 5g d= 0.1g

0.0 g

Edit product

Product 001

Product name sc-M8x12

Reference weight 0.0000 kg

Tare memory 0

Product ID1

Product ID2

Default Save

4. Select the second line using the cursor and confirm using the ► cursor key.
5. Enter a long name using the keypad (max. 20 characters) and confirm with the **OK** button.

WP-D Max Min 12000g 5g d= 0.1g

0.0 g

Edit product

Product 001

Product name sc-M8x12

Reference weight 5.71 g

Tare memory 0

Product ID1

Product ID2

Default Save

6. Select the third line using the cursor and confirm using the ► cursor key.
7. The reference weight is known: enter the weight using the keypad and confirm with the **OK** button.
8. The reference weight is not known: place the item to be weighed on the scale, press the [Weight] soft key and confirm with the **OK** button.
 - ▷ The reference weight is displayed and added to the database.
9. Unload the scale.

WP-D Max Min 12000g 5g d= 0.1g

0.0 g

Edit product

Product 001

Product name sc-M8x12

Reference weight 5.71 g

Tare memory 101

Product ID1

Product ID2

Default Save

10. Select the fourth line using the cursor and confirm using the ► cursor key.

11. Select the tare from the tare database and confirm with the **OK** button.

WP-D Max Min 12000g 5g d= 0.1g

→0← 0.0 g

Edit product

Product	001
Product name	sc-M8x12
Reference weight	5.71 g
Tare memory	101
Product ID1	L0234
Product ID2	

Default Save

12. If required, select the fifth line using the cursor and confirm using the ► cursor key.
13. Enter an additional entry using the keypad (max. 20 characters) and confirm with the **OK** button.
14. Press the [Save] soft key to save the entry.

Product database

Product	001
Product name	sc-M8x12
Reference weight	5.71 g
Tare memory	101
Product ID1	L0234
Product ID2	
Product ID3	
Product ID4	

New Edit Delete Print

15. Press the [Print] soft key to print product data.

Product database

Product	001
Product name	sc-M8x12
Reference weight	5.71 g
Tare memory	101
Product ID1	L0234
Product ID2	
Product ID3	
Product ID4	

Print product?

All Select

16. Press the corresponding soft key to finally print the product data.

```

Product database      19.02.2015 11:31:00
-----
Product              001
Product name         sc-M8x12
Reference weight     5.71 g
Tare memory          101
Product ID 1         L0234
Product ID 2
Product ID 3
Product ID 4
-----

```

9.2.2 Edit product

Product database	
Product	001
Product name	sc-M8x12
Reference weight	5.71 g
Tare memory	101
Product ID1	L0234
Product ID2	
Product ID3	
Product ID4	

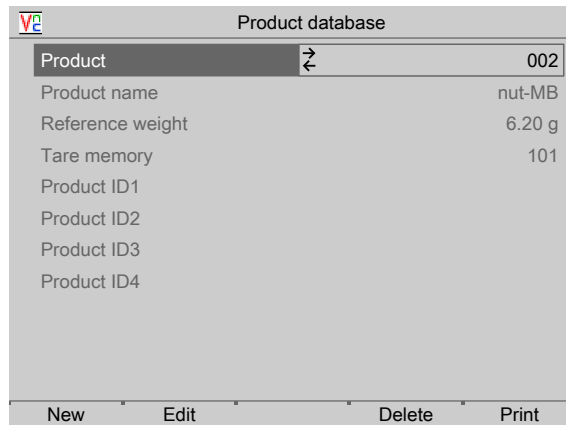
New Edit Delete Print

1. Press the [Edit] soft key to edit the selected product.

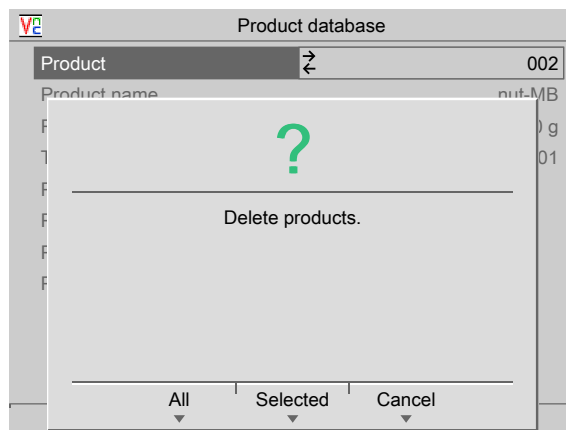
WP-D	
Max	12000g
Min	5g
d=	0.1g
→0← 0.0 g	
Edit product	
Product	001
Product name	sc-M8x12
Reference weight	5.71 g
Tare memory	101
Product ID1	L0234
Product ID2	
Default	Save

2. Change the product as required, see also Chapter [9.2.1](#).
3. Press the [Save] soft key to save the entry.

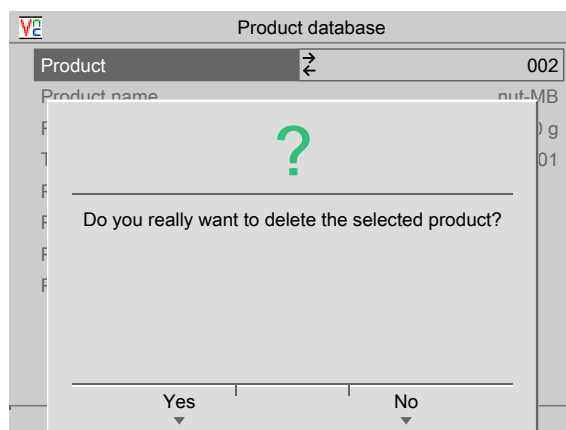
9.2.3 Delete product



1. Press the [Delete] soft key to delete the selected product.



2. For example, press the [Selected] soft key.

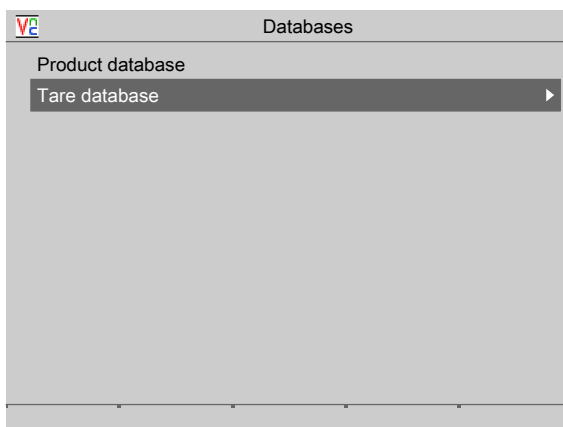


3. Press the [Yes] soft key to finally delete the selected product.

9.3 Tare database

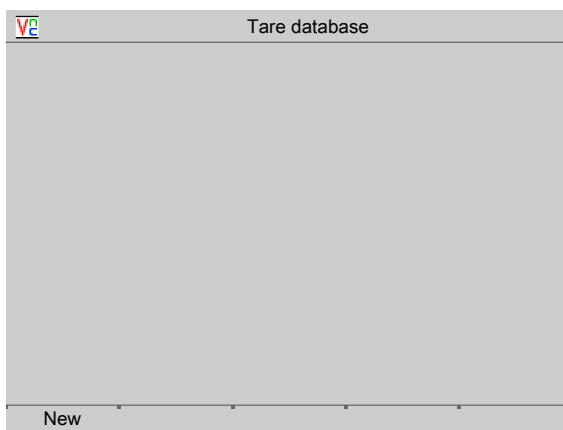
The database manages the preset tare values in the tare memory.

New entries can be added in the menu, available entries can be edited and deleted.

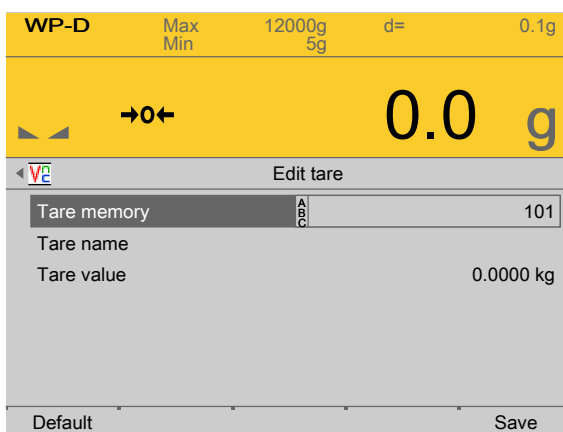


- Select and confirm [Tare database] using the cursor.

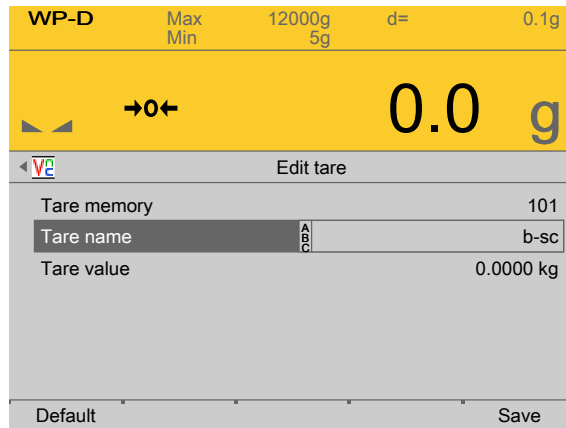
9.3.1 Create tare memory



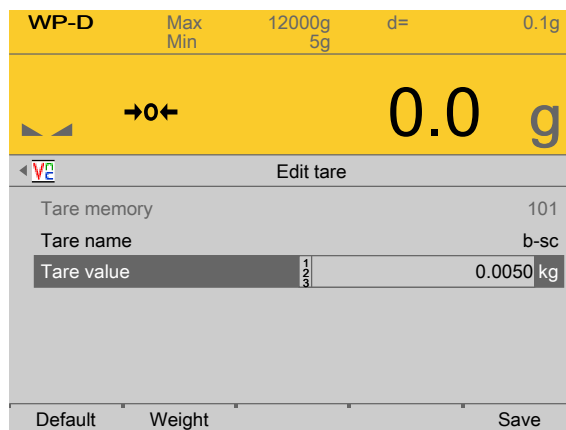
1. Press the [New] soft key to create a new tare memory.



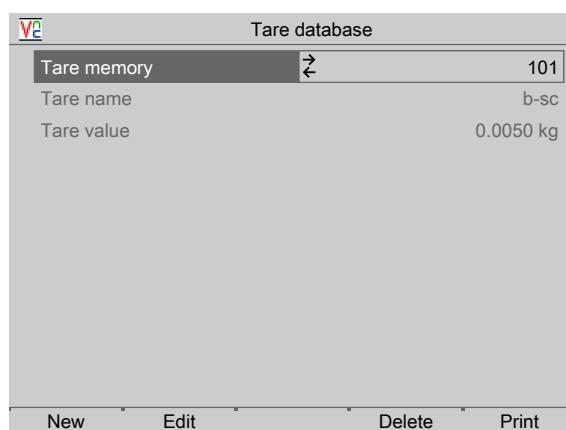
2. Confirm the first line with the ► cursor key.
3. Enter a short name using the keypad (max. 15 characters) and confirm with the **OK** button.



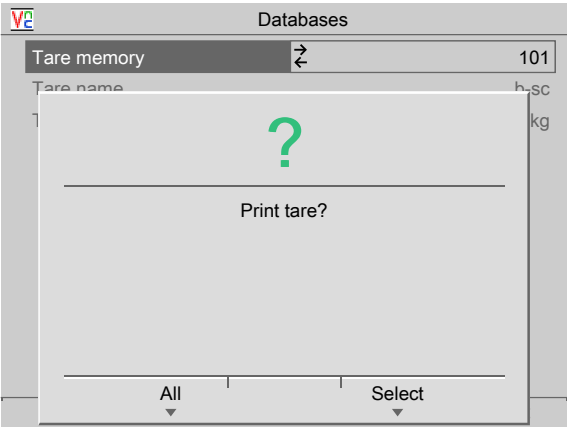
4. Select the second line using the cursor and confirm using the ► cursor key.
5. Enter a long name using the keypad (max. 20 characters) and confirm with the **OK** button.



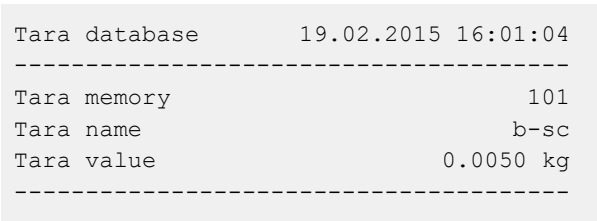
6. Select the third line using the cursor and confirm using the ► cursor key.
7. The container weight is known: enter the weight using the keypad and confirm with the **OK** button.
8. The container weight is not known: place the container on the scale and press the [Weight] soft key and confirm with the **OK** button.
 - ▷ The container weight (tare weight) is displayed and added to the database.
9. Unload the scale.



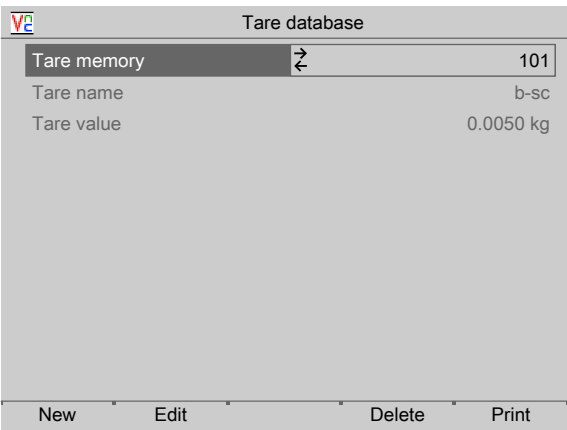
10. Press the [Print] soft key to print tare data.



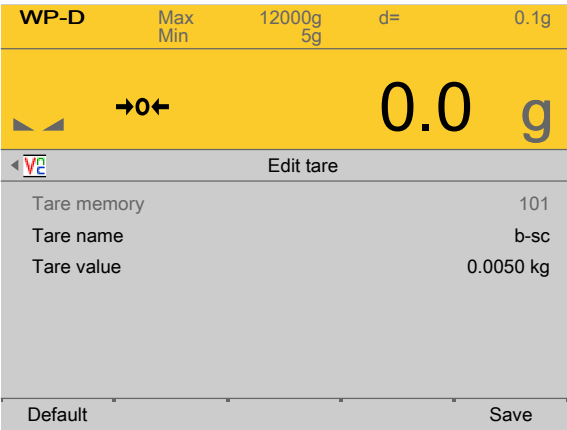
11. Press the corresponding soft key to finally print the tare data.



9.3.2 Edit tare memory

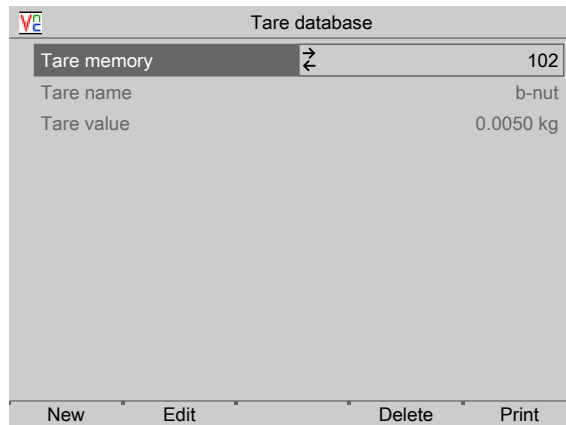


1. Press the [Edit] soft key to edit the selected tare memory.

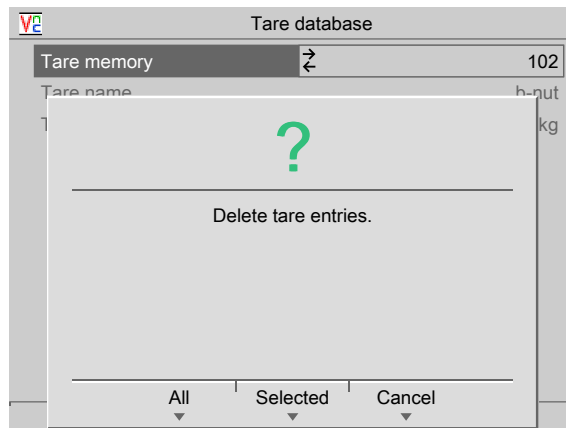


- 2. Change the tare memory as required, see also 9.3.1.
- 3. Press the [Save] soft key to save the entry.

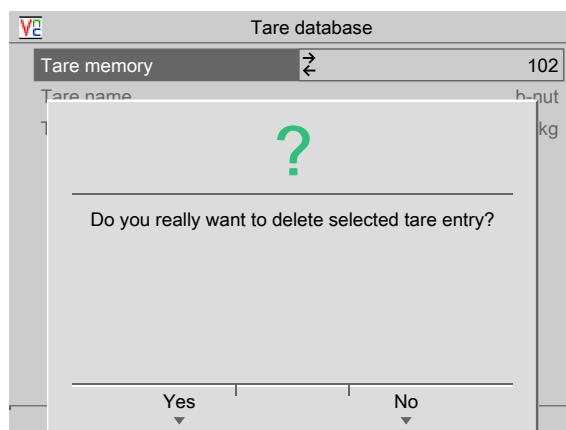
9.3.3 Delete tare memory



1. Press the [Delete] soft key to delete the selected tare memory.



2. For example, press the [Selected] soft key.



3. Press the [Yes] soft key to finally delete the selected tare memory.

10 Printouts

10.1 General notes

The following printouts are available in PR 5900 using the Count application:

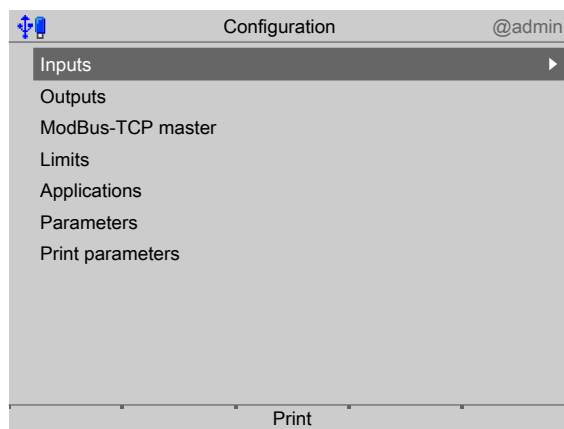
- Device configuration data, see PR 5900 operating instructions
- Count configuration data, see Chapter [10.2](#)

10.2 Count-Configuration data

The option is available to print out the Countconfiguration data. The configuration data is output to the printer configured in the [System setup] - [Connected devices] system menu under "General Devices" (see PR 5900 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.

10.3 Tickets

10.3.1 General notes

The configuration for tickets is performed in the [Configuration] - [Print parameters] - [Print template] operating menu, see Chapter [5.4.8](#).

To start printing, the application must be started.

A printout can be initiated by the following signals:

- Press the  key.
- Activate the "Automatic printout of results" option.
- Press the M keys during the counting process.

10.3.2 Tickets and labels without NLE (NiceLabelExpress)

Example:

```

Test phase 1
Sequence number          35
Date/time                23.02.2015-16:26:51
-----
Reference quantity      10 pcs
Reference weight        5.71 g

Gross                   221.5 g
Net                     171.4 g
Tare database           50.1 g
Quantity                30
-----

```

10.3.3 Tickets and labels with NLE (NiceLabelExpress)

Tickets can be printed directly or using NLE. The names of the NLE files are:

- Individual printout: single.lbl
- Component print: mplus.lbl
- Total: msub.lbl

To create a user-defined ticket, the "NiceLabelExpress" program is required. All variable contents (e.g., weights) and invariable texts (e.g., "sequence number") for these tickets are transmitted to the ticket using variables. In many cases this enables the user to create language adjustments for NLE with "PoEdit". In this case, "NiceLabelExpress" does not need to be called up. A fixed structure of variables from the application is provided for "NiceLabelExpress."

If an NLE file is loaded into the device, it will always be printed using NiceLabelExpress if "Use NLE" has been activated.

Default variables

Variables for NLE	Data formats	Description Parameter content	Indivi- dual printout	Compo- nent print	Total
NowDate	STR10	Current date	X	X	X
NowTime	STR10	Current time	X	X	X
HTime	STR6	Heading for time	X	X	X
ProdNo	STR20	Product number	X	X	X
ProdNam	STR20	Product name	X	X	X
TareNam	STR20	Tare memory name	X	X	
HID1	STR20	Heading for ID1	X	X	X
ID1	STR20	Identifier ID1	X	X	X

Variables for NLE	Data formats	Description Parameter content	Indivi- dual printout	Compo- nent print	Total
HID2	STR20	Heading for ID2	X	X	X
ID2	STR20	Identifier ID2	X	X	X
HID3	STR20	Heading for ID3	X	X	X
ID3	STR20	Identifier ID3	X	X	X
HID4	STR20	Heading for ID4	X	X	X
ID4	STR20	Identifier ID4	X	X	X
PrID1	STR20	Product ID1	X	X	X
PrID2	STR20	Product ID2	X	X	X
PrID3	STR20	Product ID3	X	X	X
PrID4	STR20	Product ID4	X	X	X
Head1	STR20	Header 1	X	X	X
Head2	STR20	Header 2	X	X	X
HUser	STR6	Heading for user	X	X	X
User	STR20	User	X	X	X
HSerNo	STR6	Heading for serial number	X	X	X
SerNo	STR14	Serial number	X	X	X
HTransNo	STR6	Heading for transaction num- ber	X	X	X
TransNo	STR14	Transaction number	X	X	X
HNet	STR6	Heading for net weight value	X	X	
Net	STR12	Net weight value	X	X	
UNet	STR4	Unit for net weight value	X	X	
HGross	STR6	Heading for gross weight	X	X	
Gross	STR12	Gross weight	X	X	
UGross	STR4	Unit for net weight	X	X	
HTare	STR6	Heading for tare weight	X	X	
Tare	STR12	Tare weight	X	X	
UTare	STR4	Unit for tare weight	X	X	
HwRef	STR6	Heading for reference weight	X	X	X
wRef	STR10	Reference weight	X	X	X
UwRef	STR4	Unit for reference weight	X	X	X

Variables for NLE	Data formats	Description Parameter content	Indivi- dual printout	Compo- nent print	Total
HnRef	STR6	Heading for reference quantity	X	X	X
nRef	STR10	Reference quantity	X	X	X
UnRef	STR4	Unit for reference quantity	X	X	X
HQnt	STR6	Heading for quantity	X	X	
Qnt	STR10	Quantity	X	X	
UQnt	STR4	Unit for quantity	X	X	
HSet	STR6	Heading for set point	X	X	X
Set	STR10	Set point	X	X	X
USet	STR4	Unit for set point	X	X	X
HSetP	STR6	Heading for quantity (set point)	X	X	X
SetP	STR10	Quantity (set point)	X	X	X
USetP	STR4	Unit for quantity (set point)	X	X	X
HMin	STR6	Heading for min.	X	X	X
Min	STR10	Min.	X	X	X
UMin	STR4	Unit for min.	X	X	X
HMinP	STR6	Heading for quantity (min.)	X	X	X
MinP	STR10	Quantity (min.)	X	X	X
UMinP	STR4	Unit for quantity (min.)	X	X	X
HMax	STR6	Heading for max.	X	X	X
Max	STR10	Max.	X	X	X
UMax	STR4	Unit for max.	X	X	X
HMaxP	STR6	Heading for quantity (max.)	X	X	X
MaxP	STR10	Quantity (max.)	X	X	X
UMaxP	STR4	Unit for quantity (max.)	X	X	X
HLim	STR6	Heading for deviation in %	X	X	
Lim	STR10	Deviation in %	X	X	
ULim	STR4	Unit for deviation in %	X	X	
HDiffW	STR6	Heading for deviation as weight x	X	X	
DiffW	STR10	Deviation as weight x	X	X	
UDiffW	STR4	Unit for deviation as weight x	X	X	

Variables for NLE	Data formats	Description Parameter content	Indivi- dual printout	Compo- nent print	Total
HSNet	STR6	Heading for total net weight value			X
SNet	STR10	Total net weight value			X
USNet	STR4	Unit for total net weight value			X
HSGross	STR6	Heading for total gross weight			X
SGross	STR10	Total gross weight			X
USGross	STR4	Unit for total gross weight			X
HSTare	STR6	Heading for total tare weight			X
STare	STR10	Total gross weight			X
USTare	STR4	Unit for total gross weight			X
HSQnt	STR6	Heading for total quantity			X
SQnt	STR10	Total quantity			X
USQnt	STR4	Heading for total quantity			X
Hn	STR6	Heading for item counter weight	X	X	X
n	STR14	Item counter weight	X	X	X
HnP	STR6	Unit for item counter weight	X	X	X
nP	STR14	Item counter pieces	X	X	X

Short variables

Variables for SNLE	Data formats	Description Parameter content	Indivi- dual printout	Compo- nent print	Total
S_NetH	STR6	Heading for net weight value	X	X	
S_Net	REAL	Net weight value	X	X	
S_NetU	STR3	Unit for net weight value	X	X	
S_GrossH	STR6	Heading for gross weight	X	X	
S_Gross	REAL	Gross weight	X	X	
S_GrossH	STR3	Unit for net weight	X	X	
S_TareH	STR6	Heading for tare weight	X	X	
S_Tare	REAL	Tare weight	X	X	
S_TareU	STR3	Unit for tare weight	X	X	
S_wRefH	STR6	Heading for reference weight	X	X	X

Variables for SNLE	Data formats	Description Parameter content	Indivi- dual printout	Compo- nent print	Total
S_wRef	REAL	Reference weight	X	X	X
S_wRefU	STR3	Unit for reference weight	X	X	X
S_nRefH	STR6	Heading for reference quantity	X	X	X
S_nRef	REAL	Reference quantity	X	X	X
S_nRefU	STR3	Unit for reference quantity	X	X	X
S_QntH	STR6	Heading for quantity	X	X	
S_Qnt	REAL	Quantity	X	X	
S_QntU	STR3	Unit for quantity	X	X	
S_SetH	STR6	Heading for set point	X	X	X
S_Set	REAL	Set point	X	X	X
S_SetU	STR3	Unit for set point	X	X	X
S_SetPH	STR6	Heading for quantity (set point)	X	X	X
S_SetP	REAL	Quantity (set point)	X	X	X
S_SetPU	STR3	Unit for quantity (set point)	X	X	X
S_MinH	STR6	Heading for min.	X	X	X
S_Min	REAL	Min.	X	X	X
S_MinU	STR3	Unit for min.	X	X	X
S_MinPH	STR6	Heading for quantity (min.)	X	X	X
S_MinP	REAL	Quantity (min.)	X	X	X
S_MinPU	STR3	Unit for quantity (min.)	X	X	X
S_MaxH	STR6	Heading for max.	X	X	X
S_Max	REAL	Max.	X	X	X
S_MaxU	STR3	Unit for max.	X	X	X
S_MaxPH	STR6	Heading for quantity (max.)	X	X	X
S_MaxP	REAL	Quantity (max.)	X	X	X
S_MaxPU	STR3	Unit for quantity (max.)	X	X	X
S_LimH	STR6	Heading for deviation in %	X	X	
S_Lim	REAL	Deviation in %	X	X	
S_LimU	STR3	Unit for deviation in %	X	X	
S_DiffWH	STR6	Heading for deviation as weight x	X	X	

Variables for SNLE	Data formats	Description Parameter content	Indivi- dual printout	Compo- nent print	Total
S_DiffW	REAL	Deviation as weight x	X	X	
S_DiffWU	STR3	Unit for deviation as weight x	X	X	
S_SNetH	STR6	Heading for total net weight value			X
S_SNet	REAL	Total net weight value			X
S_SNetU	STR3	Unit for total net weight value			X
S_SGrossH	STR6	Heading for total gross weight			X
S_SGross	REAL	Total gross weight			X
S_SGrossU	STR3	Unit for total gross weight			X
S_STareH	STR6	Heading for total tare weight			X
S_STare	REAL	Total gross weight			X
S_STareU	STR3	Unit for total gross weight			X
S_SQntH	STR6	Heading for total quantity			X
S_SQnt	REAL	Total quantity			X
S_SQntU	STR4	Heading for total quantity			X
S_nH	STR6	Heading for item counter weight	X	X	X
S_n	INT	Item counter weight	X	X	X
S_nU	STR3	Unit for item counter weight	X	X	X
S_nPH	STR6	Unit for item counter weight	X	X	X
S_nP	INT	Item counter pieces	X	X	X
S_nPU	STR3	Unit for item counter pieces	X	X	X

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