Minebea intec
The true measure

Operating Instructions

Basic PR 5500/80

Translation of original operating instructions 9499 050 55100 Edition 1.4.0 08/28/2020

Release 1.11

Minebea Intec GmbH, Meiendorfer Str. 205 A, 22145 Hamburg, Germany
Phone: +49.40.67960.303 Fax: +49.40.67960.383

Foreword

Must be followed!

Any information in this document is subject to change without notice and does not represent a commitment on the part of Minebea Intec unless legally prescribed. This product should only be operated/installed by trained and qualified personnel. In correspondence concerning this product, the type, name, and release number/serial number as well as all license numbers relating to the product have to be cited.

Note

Table of contents

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 "Basic" application.

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

2.2 Equipment supplied

2.2.1 Components

The Basic product consists of the following components:

- Maxxis 4 basic unit with software "BIOS," "firmware" and application software "Basic"
- Manuals in PDF format on CD-ROM

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

- BIOS
- Firmware
- Application "Basic"

PR 1721/6x 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/FB, Option-2, see Chapter 2.2.3
- Software (license):
  - PR 1792/13 OPC server communication
  - Alibi memory
  - Tilt correction
- Scales:

  A maximum of one scale can be controlled and displayed.

2.2.3 Plug-in cards

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

Product	Description	Position
PR 5500/07 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 5500 installation manual.	Option-1/FB and/or Option-2
PR 5500/10 (W1) Weighing electronics	Internal weighing electronics for connecting load cells or weighing platforms in non-Ex areas. For further information, refer to the PR 5500 installation manual.	WP A
PR 5500/12 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 5500 installation manual.	Option-1/FB and/or Option-2
PR 5500/13 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 5500 installation manual.	Option-1/FB and/or Option-2
PR 5500/17 6 digital inputs 8 digital outputs	6 passive opto-decoupled inputs 8 passive opto-decoupled outputs For further information, refer to the PR 5500 installation manual.	Option-1/FB and/or Option-2
PR 5500/32 2 RS-232 serial interfa-ces	The interface can be configured by software. For further information, refer to the PR 5500 installation manual.	Option-1/FB and/or Option-2
PR 1721/61 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 5500 installation manual.	Option-1/FB (Connection card installed rotated)
PR 1721/64 DeviceNet	DeviceNet master-slave with 125, 250, and 500 kbit/s For further information, refer to the PR 5500 installation manual.	Option-1/FB (Connection card installed rotated)
PR 1721/65 CC-Link	CC-Link master-slave with 10 Mbit/s For further information, refer to the PR 5500 installation manual.	Option-1/FB (Connection card installed rotated)

Product	Description	Position
PR 1721/66 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 5500 installation manual.	Option-1/FB (Connection card installed rotated)
PR 1721/67 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 5500 installation manual.	Option-1/FB (Connection card installed rotated)
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 5500 installation manual.	Option-1/FB (Connection card installed rotated)
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 5500 installation manual.	Option-1/FB (Connection card installed rotated)

2.3 Function of application "Basic"

The "Basic" application represents the indicator function for the Maxxis 4 device.

Weight values can be printed and, at the same time, saved to an internal Alibi memory.

The saved data can be viewed and printed.

Via communication, values and signals can be read from and written to the Basic controller. It can also be used as an efficient remote terminal. This means that messages can be displayed from a higher-level system, operation dialogs can be conducted and texts or values can be edited.

A PC can communicate with the Basic controller via OPC. The transmission takes place by Ethernet.

A PLC can communicate with the Basic controller via a fieldbus.

Two weighing electronics units can be installed internally in a Basic controller.

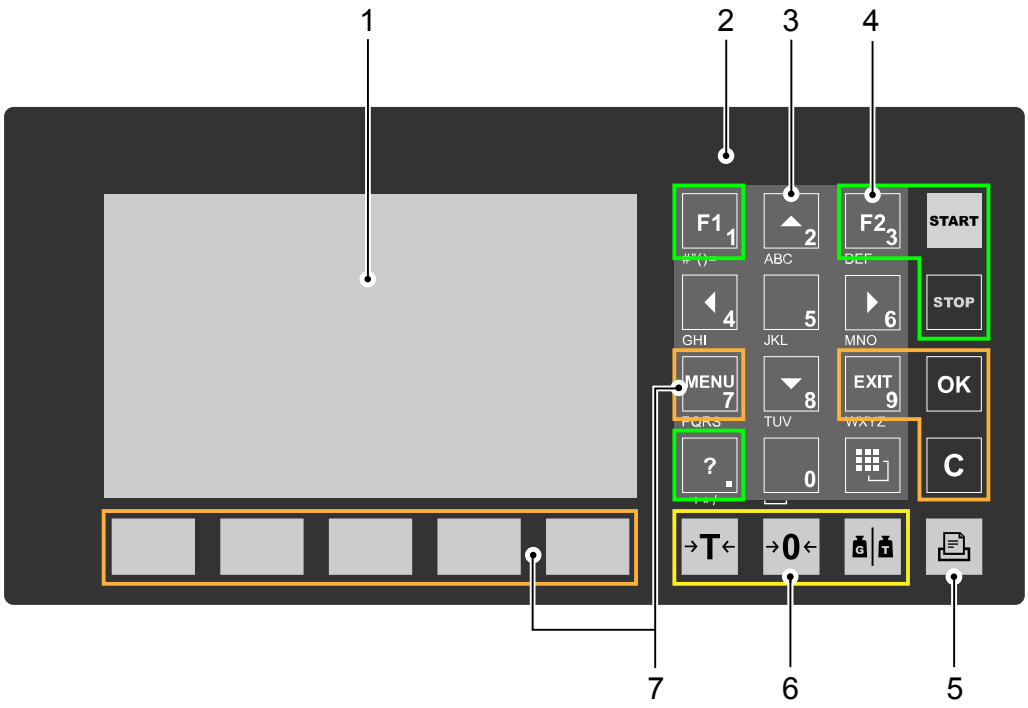
Other features at a glance:

- Preset tare values can be saved
- Input of defined texts for the terminal function
- Internal Alibi memory (activation via license); not possible with user weighing point
- Weight printout via configurable report
- Configurable limit switch (3 limits per scale, which can be combined with conditions and actions.)
- Configurable digital and analog inputs and outputs (requires additional plug-in cards)
- Remote-controlled operation dialog via color display and keypad
- Tilt correction (enabled by license)

3 Operating

3.1 Display and operating elements

3.1.1 Overview



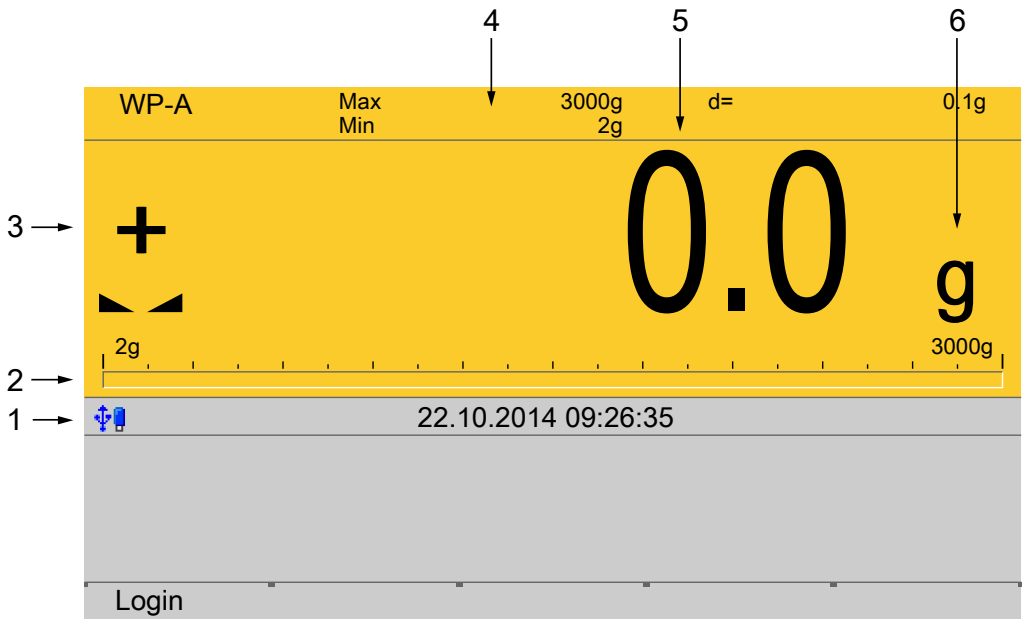
No.	Name
	Display elements
1	4.3" TFT color display, see Chapter 3.1.2
2	LED status display, see Chapter 3.1.3
	Operating elements, see Chapter 3.1.4.1
3	Alphanumeric keys Navigation keys (key 2, 4, 6, 8)
4	Function keys
5	Application key
6	Indicator keys
7	Menu keys, incl. soft keys

3.1.2 TFT user interface display

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

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

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



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

Weight type/plus or minus sign	Description
B	Gross weight
G	Gross weight in NTEP or NSC mode
NET	Net weight (Net = gross - tare)
T	Tare weight
PT	Preset tare, not tared
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 ±¼ 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, tilt correction active)
R1	Range 1
R2	Range 2
R3	Range 3
WP A	Weighing point A
Max	Maximum capacity (weighing range)
Min	Minimum weight
t, kg, g, mg, lb, oz	These mass units are available.

Status icons in the info line

Icon	Description
	Remote control via VNC (Virtual Network Computing) is active.
	General warning
	- 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 5500 installation manual under [Technical data] - [Environmental influences] - [Ambient conditions] .
	- An unsupported USB device is connected. - The maximum current of i_{max} = 200 mA has been exceeded.
	Check newly connected devices.

Icon	Description
	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.

3.1.3 LEDs

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

3.1.4 Operating elements

- Operation using the front-panel keys, see Chapter 3.1.4.1
- Operation using the soft keys, see Chapter 3.1.4.2
- Operation using the navigation keys, see Chapter 3.1.4.3
- Operation using the PC keys, see Chapter 3.1.4.4

3.1.4.1 Operation using the front-panel keys

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

Indicator keys

Key	Description
→T←	**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)

Key	Description
→0←	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.

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.

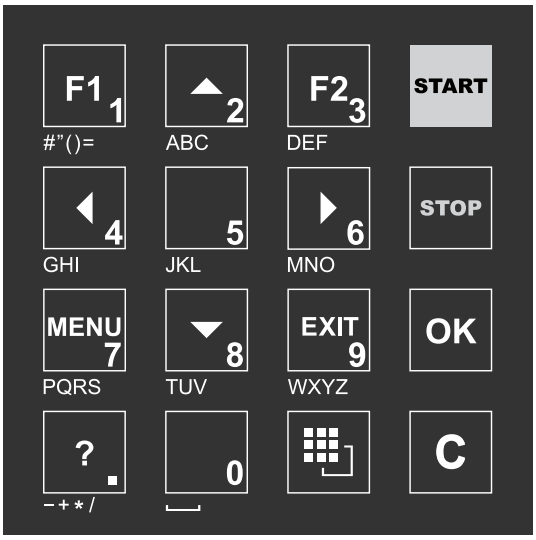
Menu keys

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

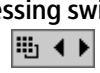
Key	Description
F1	Assigned to a defined function (see system menu [System setup] - [Operating parameters]).
F2	Assigned to a defined function (see system menu [System setup] - [Operating parameters]).
?	Displays the relevant help window.
START	Starts a printout of previous dialog display, see Chapter 5.4.9.
STOP	Same functions as the indicator key **EXIT**.

Alphanumeric keypad



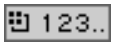
Toggle key

Pressing switches between the following functions:

- 
  Cursor
- 

  Uppercase letters
- 

  Lowercase letters
- 

  Pinyin
  When Chinese has been selected or set under [Operating parameters] - [Input method].
- Hepburn
  When Japanese has been selected or set under [Operating parameters] - [Input method].
- 

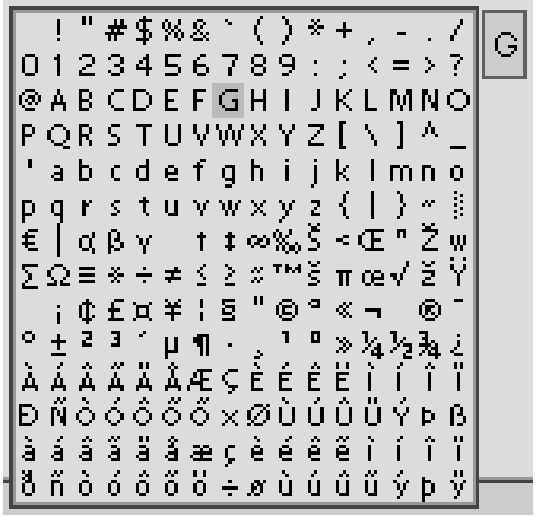
  Numbers
- 

  Units
  Select the unit using the cursor keys ▲/▼ and confirm using the key **OK**.

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

Input without the character table

Pressing once displays the corresponding first character, e.g., "A", at the cursor position. After pressing twice, "B" is displayed at the cursor position and after pressing three times, "C" is displayed.
If only numeric values are required for input, letters are not enabled.
Press the cursor key ◀ within an entry to return to the previous character.
Press the cursor key ▶ within an entry to select the next character.
Within an entry, pressing the delete key **C** deletes the character to the left of the cursor.
Outside of an input, pressing the delete key **C** deletes the whole string of characters.



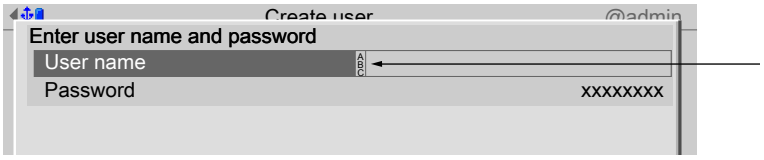
Input with the character table
Double-clicking on the key displays the character table.
Only characters authorized for this input are displayed.

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

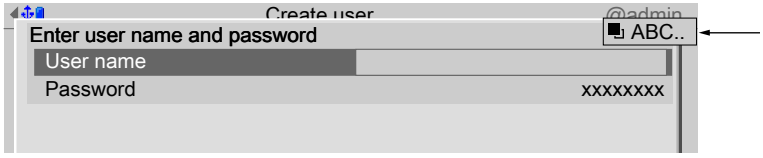
Procedure:
- Highlight the desired character with the cursor.
- The selected character is shown magnified in the field at the top right.
- Press the key **OK** to enter the character in the input field.
- Another double-click on the toggle key and other characters can be input as described previously.

Input field

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



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



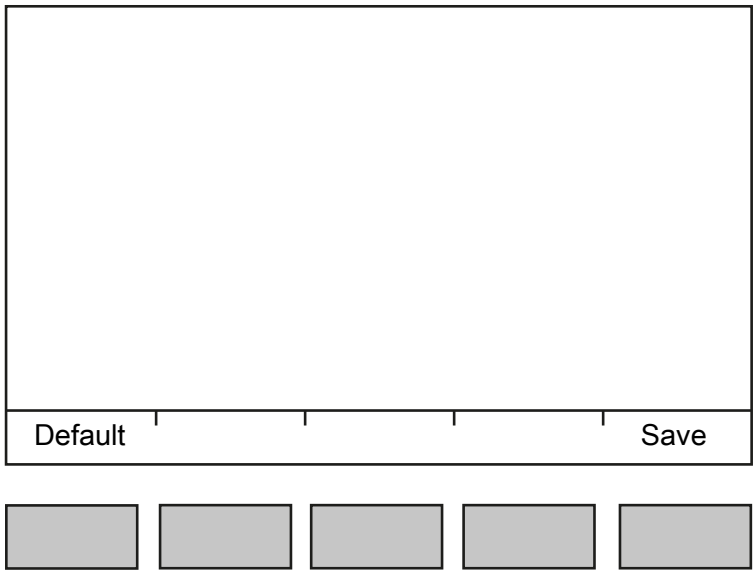
The respective options are displayed (see arrow).

Note:
The character table is turned off.

Keyboard shortcuts

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

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	START
F12	STOP
ESC	**EXIT**
Cursor keys: ↑, ↓, ←, →	▲, ▼, ◀, ▶
Enter key: ↵	**OK**
Backspace key: ←	**C**
Numeric keypad	Alphanumeric keypad

4 Setting up the application menu

- Weighing

  Display of weight values and the parameters set under [Configuration] - [Functions/ applications/procedures] - [Weighing]

- Check weighing

  Display of weight values and the parameters set under [Configuration] - [Functions/ applications/procedures] - [Check weighing]

- Device employed as terminal

  Weight display

4.1 Configuration

Configuration	
├─ **Inputs and outputs**	See Chapter 4.1.1.
├─ **Functions/applications/procedures**	See Chapter 4.1.2.
├─ **Printout**	See Chapter 4.1.3.
├─ **Databases**	See Chapter 4.1.4.
├─ **Display weighing points**	See Chapter 4.1.5.
├─ **Printing**	Print configuration, see Chapter 4.1.6.

4.1.1 Inputs and outputs

Configuration	
├─ **Inputs and outputs**	
│ ├─ **Inputs**	Function allocation for installed input cards, see Chapter 4.1.1.1.
│ ├─ **Outputs**	Function allocation for installed output cards, see Chapter 4.1.1.2.
│ ├─ **ModBus-TCP master**	See Chapter 4.1.1.3

4.1.1.1 Inputs

Configuration	
├─ **Inputs and outputs**	
│ ├─ **Inputs**	Function assignment for installed input cards.

Inputs	
├─ **Option**	Option-1, Option-2, Internal
├─ **Type**	Display only
├─ **Input**	1...4
├─ **SPM address %MX**	See SPM table in Chapter 8.
├─ **Default**	Settings are reset to factory settings.
├─ **Input-**	Switch to the previous input.
├─ **Input+**	Switch to the next input.
├─ **Save**	The settings are saved.

4.1.1.2 Outputs

Configuration	
├─ **Inputs and outputs**	
│ ├─ **Outputs**	Function assignment for installed output cards.

Outputs

├─ **Option**	Option-1, Option-2, Internal
├─ **Type**	Display only
├─ **Output**	1...4
├─ **SPM address %MX**	See SPM table in Chapter 8.
├─ **Default**	Settings are reset to factory settings.
├─ **Output-**	Switch to the previous output.
├─ **Output+**	Switch to the next output.
├─ **Save**	The settings are saved.

4.1.1.3 ModBus-TCP master

Configuration
├─ **Inputs and outputs**
│ ├─ **ModBus-TCP master**

ModBus-TCP master

├─ **Communication error**	Selection: Cancel, Show message
├─ **ModBus-TCP module**	Selection: Phoenix 1...8
├─ **Activate module**	Check the ☑ box to activate the module. The menu expands.
├─ **IP address**	Enter the IP address of the module.
├─ **I/O type**	Selection: Digital input, Digital output
├─ **Input**	1...16
├─ **SPM address %MX**	See SPM table in Chapter 8.
├─ **Default**	Settings are reset to factory settings.
├─ **Input/Output -**	Switch to previous Input/Output.
├─ **Input/Output +**	Switch to next Input/Output.
├─ **Save**	The settings are saved.

4.1.2 Functions/Applications/Procedures

Configuration
├─ **Functions/Applications/Procedures**

│ ├─ **Weighing**	See Chapter 4.1.2.1
│ ├─ **Checkweighing**	See Chapter 4.1.2.2
│ ├─ **Limits**	See Chapter 4.1.2.3
│ ├─ **Dialogs**	See Chapter 4.1.2.4
│ ├─ **Tilt correction**	See Chapter 4.1.2.5
│ ├─ **Binary weight output**	See Chapter 4.1.2.6

4.1.2.1 Weighing

Configuration
├─ **Functions/Applications/Procedures**
│ ├─ **Weighing**

Weighing

├─ **Weighing point**	Weighing point A–D
├─ **Instructions**	Enter text (20 characters)
├─ **e.g.: Customer**	Transferred from the application database: Select record.
├─ **Use preset tare**	Check the ☑ box to use the preset tare.

├ **Save alibi**	Check the ☑ box to activate the storage of printed weight values in the Alibi memory.
├ **Default**	Settings are reset to factory settings.
├ **Save**	The settings are saved.

4.1.2.2 Checkweighing

Configuration
├ **Functions/Applications/Procedures**
│ ├ **Checkweighing**

Checkweighing

├ **Weighing point**	Weighing point A–D
├ **Instructions**	Enter text (20 characters)
├ **e.g.: Customer**	Transferred from the application database: Select record.
├ **Weighing mode**	Gross, net
├ **Only display set point**	Check the ☑ box to confirm the selection. The set point can therefore no longer be changed in weighing mode.
├ **Set point**	Enter value
├ **Set point min.**	Enter value < set point
├ **Set point max.**	Enter value > set point
├ **Save alibi**	Check the ☑ box to activate the storage of printed weight values in the Alibi memory.
├ **Show dialogs before printing**	Check the ☑ box to confirm the selection.
├ **Default**	Settings are reset to factory settings.
├ **Save**	The settings are saved.

4.1.2.3 Limit values

Configuration
├ **Functions/applications/procedures**
│ ├ **Limit values**

Limit values

│	Weighing point A
├ **Limit value 1...3 On/Off**	Enter 0 ... Max (maximum capacity); take unit from calibration.
│ ├ **Action 1...3 On**	<None> marker 1...3 set, clear marker 1...3
│ ├ **Action 1...3 Off**	<None> marker 1...3 set, clear marker 1...3
│ ├ **Condition 1...3 On**	<No condition>, not active: Internal digital input 1...4, Current limit value 1...3, ADC error, Above MAX, Overload, Below zero, Center zero, Inside zeroset, Standstill, Not W&M approved (dimmed), Internal error = command error, Command busy, Power fail, Test active, Calibration active, Tare active, Marker bit 1...3 active: Internal digital input 1...4, Current limit value 1...3, ADC error, Above MAX, Overload, Below zero, Center zero
│ ├ **Condition 1...3 Off**	<No condition>, not active: Internal digital input 1...4, Current limit value 1...3, ADC error,

	Above MAX, Overload, Below zero, Center zero, Inside zeroset, Standstill, Not W&M approved (dimmed), Internal error = command error, Command busy, Power fail, Test active, Calibration active, Tare active, Marker bit 1...3 active: Internal digital input 1...4, Current limit value 1...3, ADC error, Above MAX, Overload, Below zero, Center zero
Default	Settings are reset to factory settings.
Save	The settings are saved.

4.1.2.4 Dialogs

Configuration
- **Functions/Applications/Procedures**
  - **Dialogs**

Dialogs

Dialog message 1–10	
Type	Free text, Free text with timeout, Text with user unit, Weight, Dialog reply: Yes or No, Tare before printing
Default	Settings are reset to factory settings.
Save	The settings are saved.

4.1.2.5 Tilt correction

Configuration
- **Functions/Applications/Procedures**
  - **Tilt correction** — Function can only be performed with a valid license, see Chapter 9.

Tilt correction

Weighing point	Weighing point A–D
Activated	Check the box ☑. The current weight is displayed during tilt correction to simplify the configuration.
Number of correction values	Enter 0–99 to define the number of correction values, including start and end points.
Start position	Manually define the start position of the silo, for example, and use the "Accept" soft key to transfer it to the device.
End position	Manually define the end position of the silo, for example, and use the "Accept" soft key to transfer it to the device.
Default	Settings are reset to factory settings.
Edit	Change the calculated points.
Start	Start the calculation. The manually launched tilting process must be performed very slowly, because the individual silo positions can only be calculated at a standstill.
Apply	Transfer the start and end positions of the silo on the device.

├─ **Save**	The settings are saved.

4.1.2.6 Binary weight output

Configuration

├─ **Functions/Applications/Procedures**	
│ ├─ **Binary weight output**	With binary weight output, the current gross weight output of a weighing point will be given as a 12 bit binary weight.

Binary weight output

├─ **Weighing point**	Weighing point A
├─ **Activated**	Check the box ☑ to activate the binary weight output for the corresponding weighing point.
├─ **Weight per count value**	Enter the value. This value corresponds to the weight to which the binary output will be scaled.
├─ **Output value**	Gross, Net
├─ **Default**	Settings are reset to factory settings.
├─ **Save**	The settings are saved.

4.1.3 Printing

Configuration

├─ **Printout**

Printout

├─ **Parameters**	
│ ├─ **Device name**	Enter alphanumeric characters.
│ ├─ **Use NLE**	Check the ☑ box to activate printing with NiceLabelExpress. See Chapter 10.3.3.
│ ├─ **Number of printouts**	Enter value.
├─ **Print layout "weighing"**	
│ ├─ **Printer**	none, printer, ticket printer, printer 2 The printers are assigned to the device under [System setup]- [Connected devices]
│ ├─ **Line 1–99**	Blank line, -------, Form feed, Device name, Weighing point, Sequence number, Date, Time, Gross, Net, Tare, Header, Weighing mode; Dialog reply 1–10, Free number 1–3, Entered weight, Entered string, Edited int, Edited real, Field key name, Field 1–6, User name
│ ├─ **Default**	Settings are reset to factory settings.
│ ├─ **Insert**	Insert lines. 99 lines are possible in total.
│ ├─ **Delete**	Delete the highlighted line.
│ ├─ **Save**	The settings are saved.
├─ **Print layout "check weighing"**	
│ ├─ **Printer**	none, printer, ticket printer, printer 2 The printers are assigned to the device under [System setup] - [Connected devices]
│ ├─ **Line 1–99**	Blank line, -------, Form feed, Device name, Weighing point, Sequence number, Date, Time,

	Gross, Net, Tare, Header, Weighing mode; Dialog reply 1–10, Free number 1–3, Entered weight, Entered string, Edited int, Edited real, Setpoint min., Setpoint, Setpoint max., Out of range, Field key name, Field 1–6, User name
Default	Settings are reset to factory settings.
Insert	Insert lines. 99 lines are possible in total.
Delete	Delete the highlighted line.
Save	The settings are saved.

4.1.4 Databases

Configuration
- **Databases**

Databases

Preset tare	Create records for defined tare values.
ID (1–999)	Record no.
Tare name	Enter alphanumeric characters (max. 20).
Tare weight	Display of the placed and transferred weight value.
New	Create new record.
Modify	Change highlighted record.
Delete	Delete the highlighted line.
Predefined texts	Create records for texts to be displayed on the terminal.
ID (1–999)	Record no.
Line 1	Enter alphanumeric characters (max. 20).
Line 2	Display of the placed and transferred weight value.
New	Create new record.
Modify	Change highlighted record.
Delete	Delete the highlighted line.
Application database - field names	**Note:** Before making changes, the current database should be saved on the SD card or USB stick.
Field key name	Create new database (e.g.: materials/customer database).
Field name 1–6	Enter alphanumeric characters (max. 20).
Save	The input is saved.
Application database - entries	Add, edit and delete database entries.
Field key name	Create new database (e.g.: materials/customer database).
New	Create new record.
Modify	Change highlighted record.
Delete	Delete the highlighted line.

4.1.5 Displaying weighing points

Configuration
- **Displaying weighing points**

Displaying weighing points

- **All weighing points**
- **Single weighing point**
  - **Line -** Delete line
  - **Line +** Insert lines 1–8. Selections: Blank line, Gross, net, tare, limit 1–3, analog out 1+2, field key name, field 1–6
  - **Size -** Reduce size of weight display.
  - **Size +** Increase size of weight display.
  - **Save** The settings are saved.
- **Check weighing**
  - **Line -** Delete line
  - **Line +** Insert lines 1–8. Selections: Blank line, Gross, net, tare, limit 1–3, analog out 1+2, field key name, field 1–6
  - **Size -** Reduce size of weight display.
  - **Size +** Increase size of weight display.
  - **Save** The settings are saved.

4.1.6 Printing

Configuration

- **Printing** Print configuration.

5 Getting started

5.1 Safety instructions

⚠ WARNING

Warning of a hazard area.

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

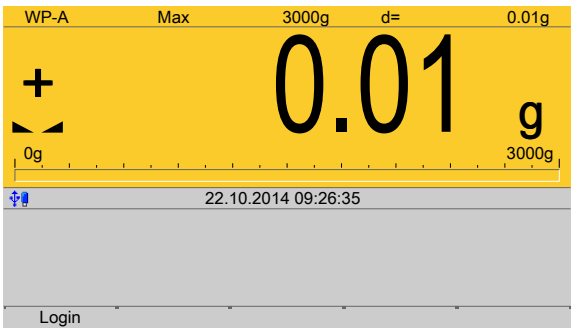
5.2 Switching on the device

The device can be set up as follows:

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

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

Checking... **Booting...** **Restoring...**	The device is booting up.
PR 5500	- The instrument type is displayed, PR 5500 - BIOS version - Firmware version - Automatic display test - Weight display
No signal	Error message: no load cells are connected, see also PR 5500 operating instructions.
No values from scale	Error message: no communication with the xBPI scale, see also PR 5500 operating instructions. Error message: unable to read weight values from the ADC (analog-digital converter); see also PR 5500 operating instructions.
Scale not ready	Error message: no load cells or scale connected, see also PR 5500 operating instructions.



The weight display is shown.

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

5.3 User login

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

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

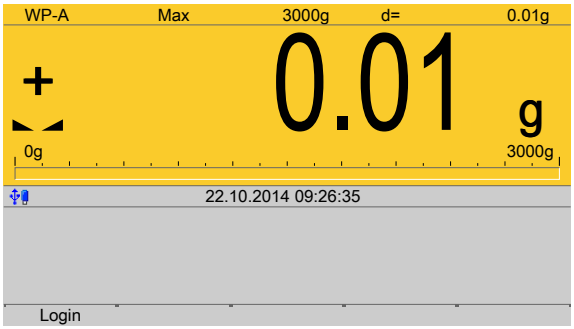
The application rights "Administrator", "Supervisor" and "Operator" are preset and cannot be changed.

The application rights are defined as follows:

- "Administrator" is allowed to edit firmware and application settings and order data.
- "Administrator" can create new users with all rights, see PR 5500 operating instructions.
- "Supervisor" is allowed to edit application settings and order data.
- "Operator" is allowed to start weighing and edit order data.

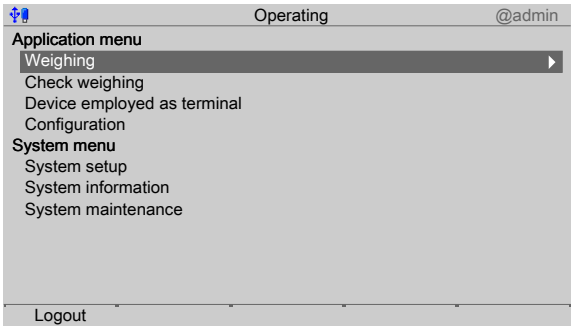
Note:

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.

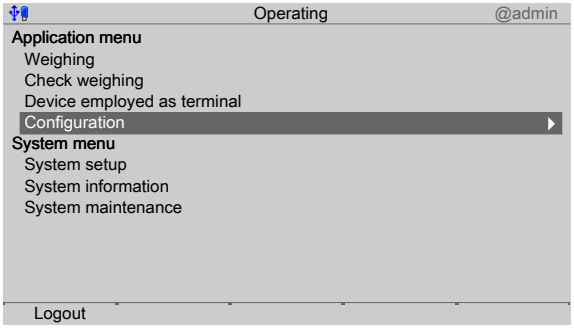
5.4 Configuration

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 5500 operating instructions.

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

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

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

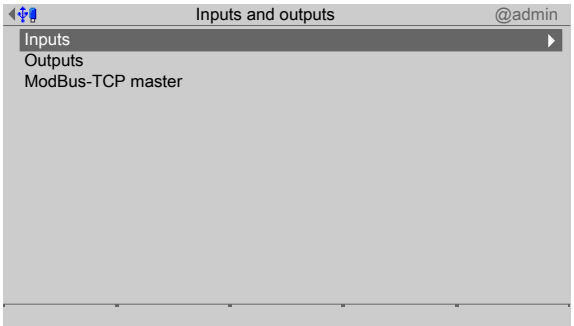
Option-1 = No. 1

Option-2 = No. 2

Built-in = No. 3

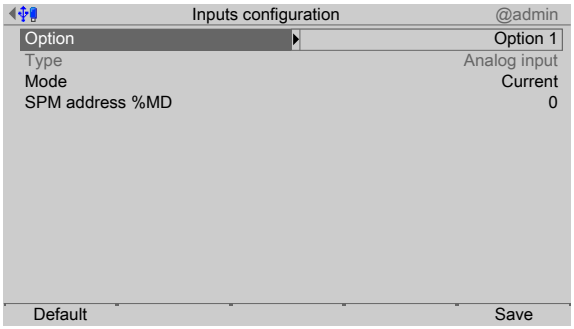
Unused inputs are ignored.

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

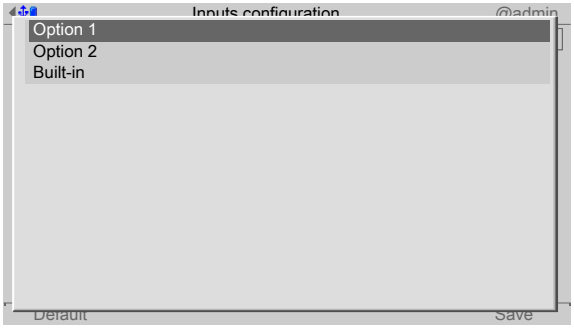


▶ In the operating menu, select and confirm [Configuration] - [Inputs and outputs] - [Inputs] .

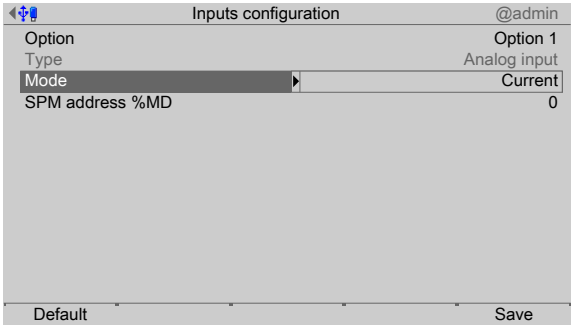
5.4.2.1 Analog input



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

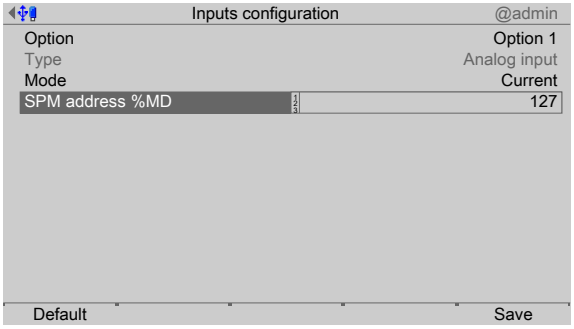


2. Select and confirm the corresponding interface using the cursor.



3. Select and confirm [Mode] using the cursor.
   ▷ A selection window opens.

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



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

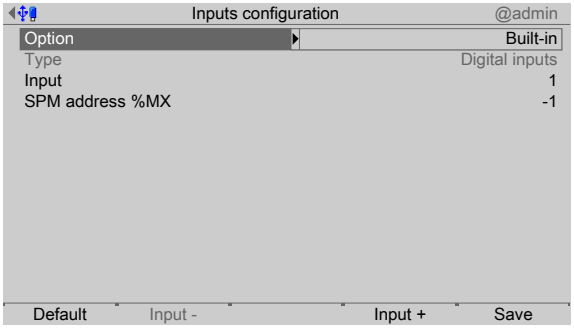
Note:

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

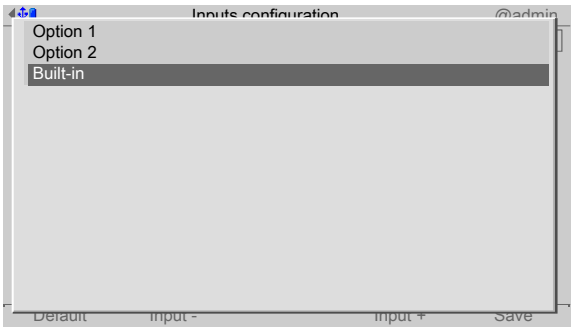
General:

No reserved SPM addresses are overwritten by the analog inputs.

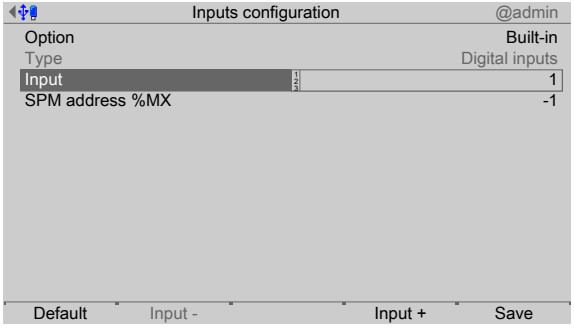
5.4.2.2 Digital inputs



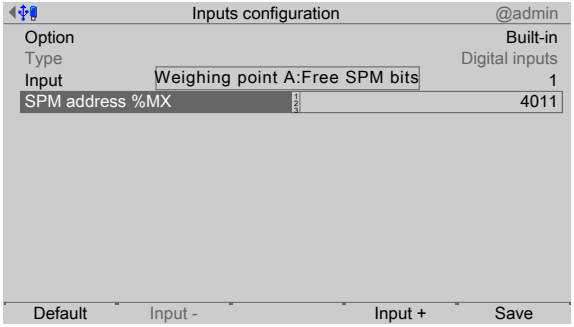
1. Select and confirm [Option] using the cursor.
   ▷ A selection window opens.



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



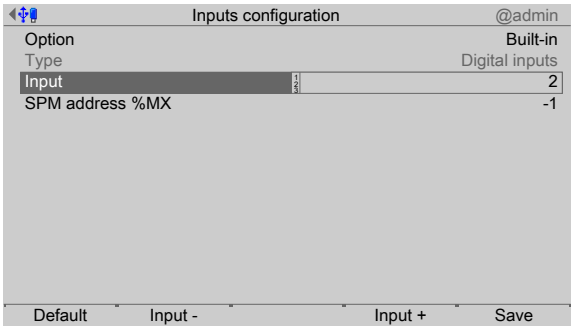
3. Select [Input] using the cursor.
4. Confirm input "1".



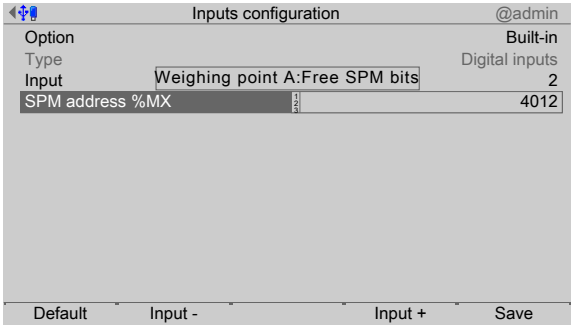
5. Select [SPM address %MX] using the cursor.
6. Use the keyboard to enter and confirm a free address %MX (see also PR 5500 operating instructions).

Note:

A negative address inverts the function.



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



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

Note:

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

5.4.3 Configuring outputs

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

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

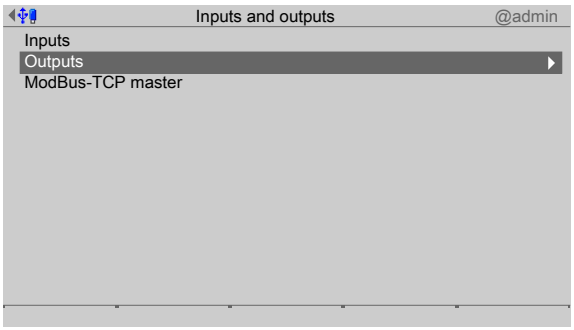
When changing the I/O card type, the configuration data remains unchanged. Functions for a non-installed scale can be selected, however, they are without effect.

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

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

Non-allocated outputs are switched off.

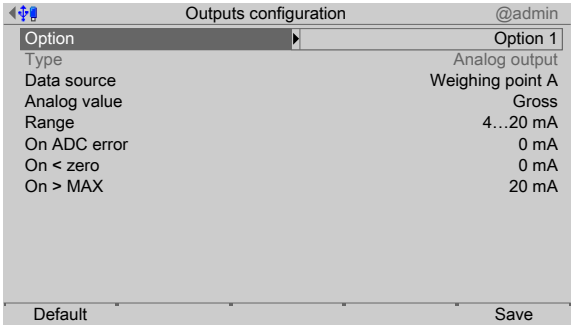
The card type and the available inputs and outputs are detected automatically.



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

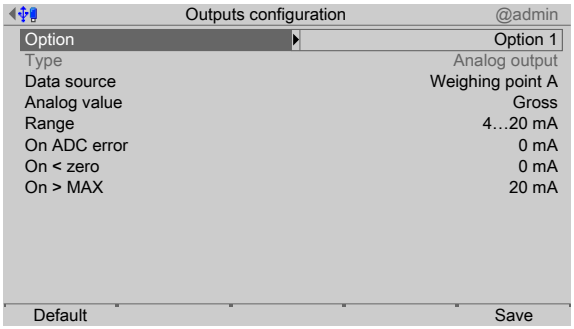
5.4.3.1 Analog output

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



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

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



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

Analog output

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

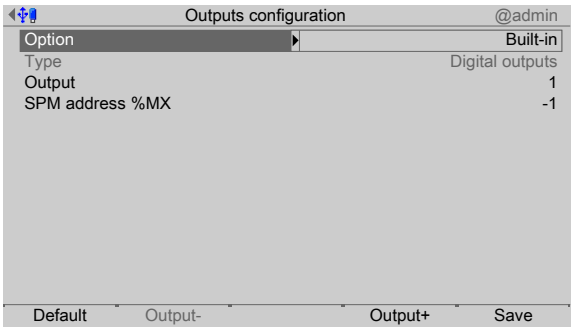
5.4.3.2 Adapting analog output

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

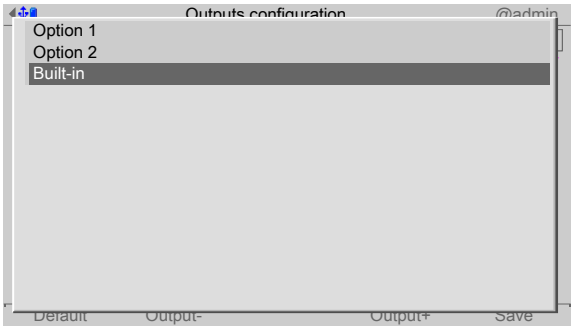
Note:

Adapting the analog output, see PR 5500 operating instructions.

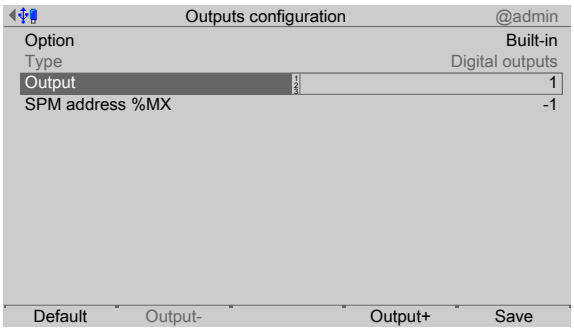
5.4.3.3 Digital outputs



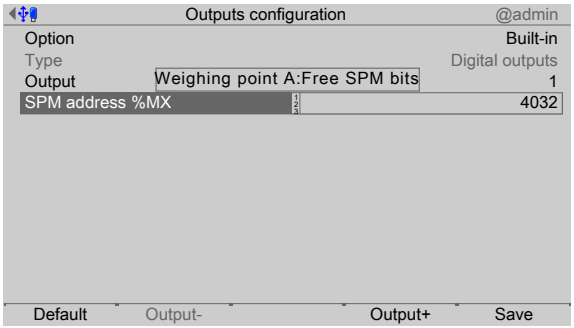
1. Select and confirm [Option] using the cursor.
   ▷ A selection window opens.



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



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

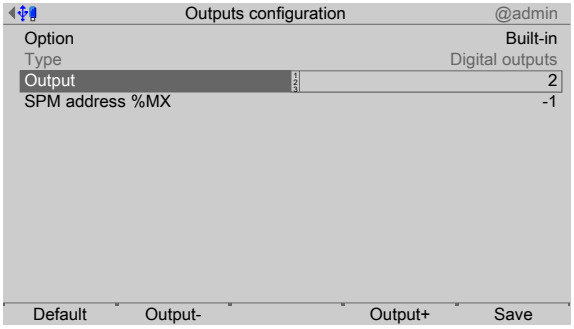


5. Select [SPM address %MX] using the cursor.
6. Using the keypad, enter and confirm a corresponding fixed or free address %MX (see also PR 5500 operating instructions) for the weighing point.

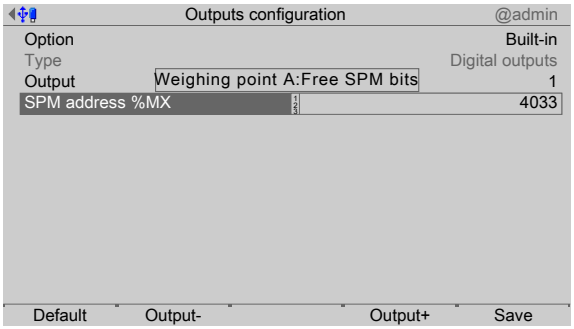
Note:

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

A negative address inverts the function.



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



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

5.4.4 I/O cards test

See PR 5500 operating instructions.

5.4.5 Configuring the ModBus TCP master

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

- For supported modules, see Chapter 5.4.5.1
- Configuration tool, see Chapter 5.4.5.2
- Device configuration, see Chapter 5.4.5.3

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

5.4.5.1 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:

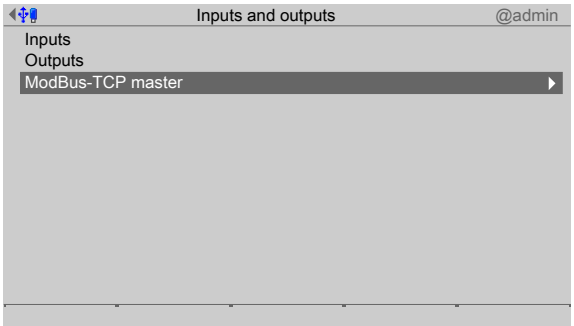
- Phoenix Contact Inline module (IL ETH BK DI8 DO4 2-TX-PAC)
- Phoenix Contact output module (IB IL 24 DO16-PAC)
- Phoenix Contact output module (IB IL 24 DO16-PAC)
- Phoenix Contact power supply (IB IL 24 PWR IN-PAC)
- Phoenix Contact output module (IB IL 24 DO16-PAC)

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

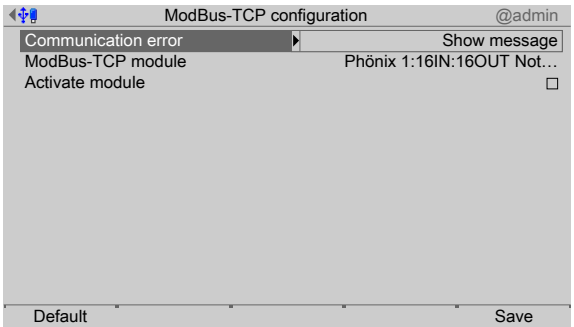
5.4.5.2 Configuration tool

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.

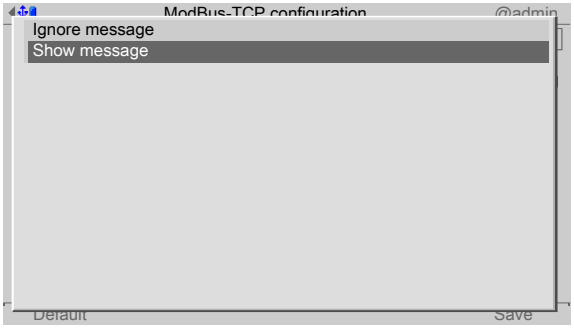
5.4.5.3 Configuration on the device



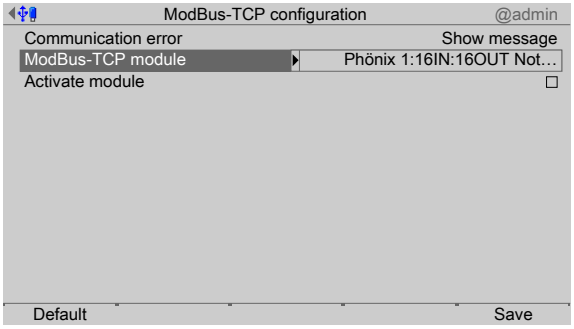
1. In the operating menu, select and confirm [Configuration] - [Inputs and outputs] - [ModBus-TCP master] .



2. Select and confirm [Communication error].
   ▷ A selection window opens.

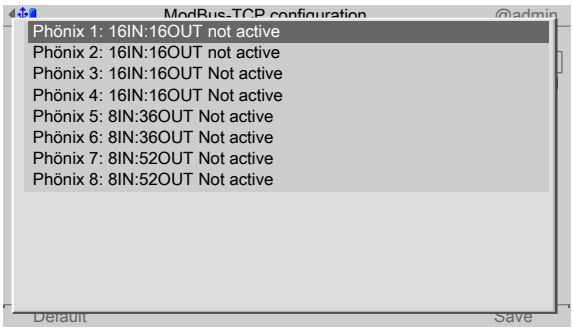


3. Select the appropriate function using the cursor (in this case, "Show message") and confirm.

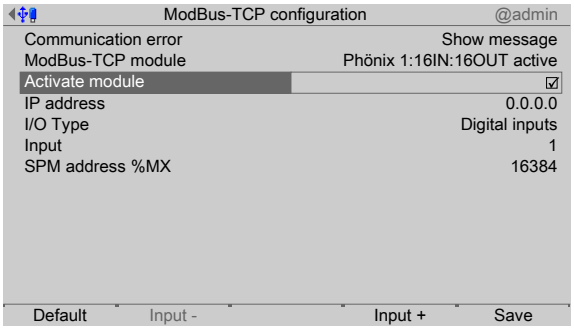


4. Select and confirm [ModBus-TCP Module] using the cursor .

   ▷ 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]

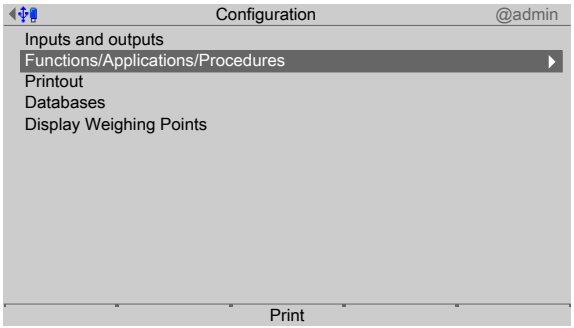
Selection: Input+/Output+ (higher), Input-/Output- (lower)

[SPM address %MX]

Set: Fixed SPM address, see Chapter 8.

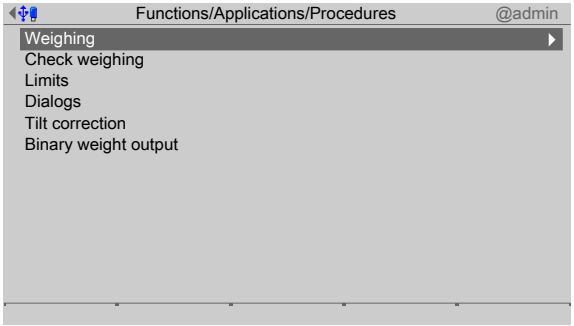
8. Press the [Default] soft key to return to the factory settings, if required.
9. Finally, press the [Save] soft key to save the settings.

5.4.6 Configuring the weighing process

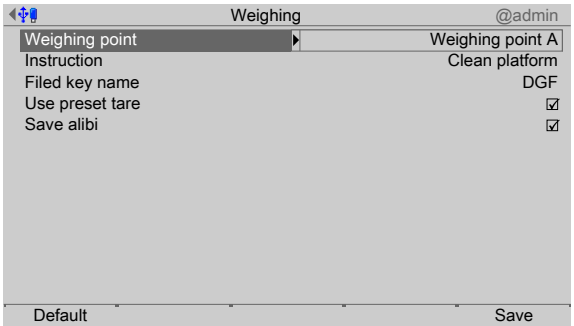


The configuration menu is displayed.

1. Select and confirm [Functions/Applications/Procedures] using the cursor.



2. E.g. using the cursor select and confirm [Weighing].



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

[Weighing point]

Selections: Weighing point A

[Instructions]

Input: Max. 20 characters via keypad

[Field key name]: e.g.: [Customer name] (here: DGF)

Selections: Database entries, see Chapter 5.4.12.3.

[Use preset tare]

Check the ☑ box to be able to use the preset tare when weighing. Preset tare is defined in Chapter 5.4.12.1.

[Save alibi]

Check the ☑ box to write the values to the Alibi memory.

Note:

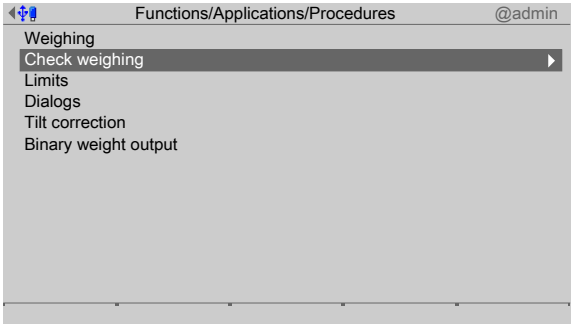
"Save alibi" is disabled: SPM address = 0

"Save alibi" is not possible with a user-defined weighing point!

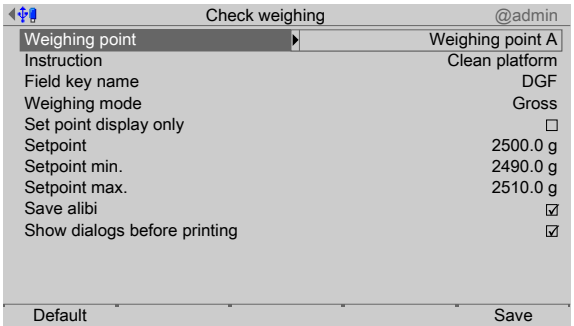
---

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

5.4.7 Configuring the checkweighing process



1. E.g. using the cursor select [Checkweighing] and confirm.



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

[Weighing point]

Selections: Weighing point A

[Instructions]

Input: Max. 20 characters via keypad

[Field key name]: e.g.: [Customer name] (here: DGF)

Selections: Database entries, see Chapter 5.4.12.3.

[Weighing mode]

Selections: Gross, net

[Only display set point]

Check the ☑ box to display only the set point. This means it is no longer possible to change the set points.

[Set point]

Input: Weight value via keyboard

[Set point min.]

Input: Weight value via keyboard

[Set point max.]

Input: Weight value via keyboard

[Save alibi]

Check the ☑ box to write the values to the Alibi memory.

Note:

"Save alibi" is disabled: SPM address = 0

"Save alibi" is not possible with a user-defined weighing point!

[Show dialogs before printing]

Check the ☑ box to display the dialog before printing. This function is only possible if printing is initiated by the **START** key. Define dialogs, see Chapter 5.4.9.

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

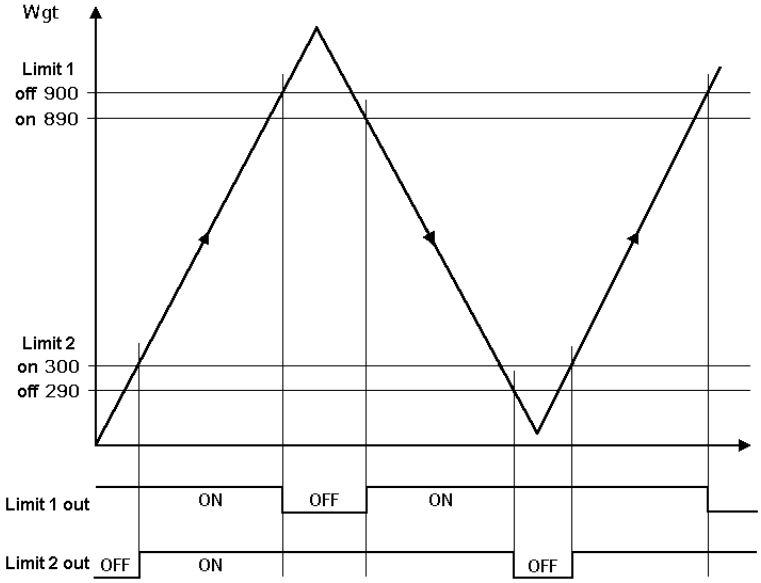
5.4.8 Limit values: configuration

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:



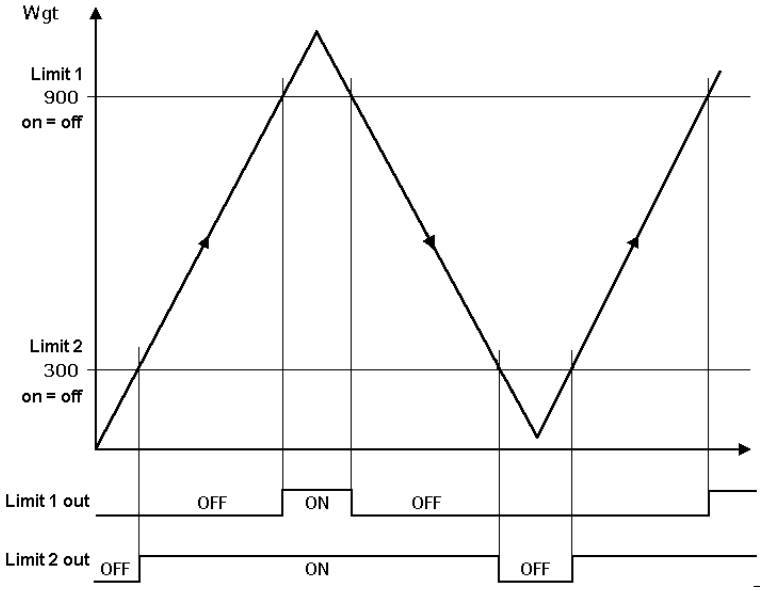
The output signal (Limit 1 out) of limit 1 switches OFF above a weight (Wgt) of 900 g.

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

The two limit values have a hysteresis of 10 g.

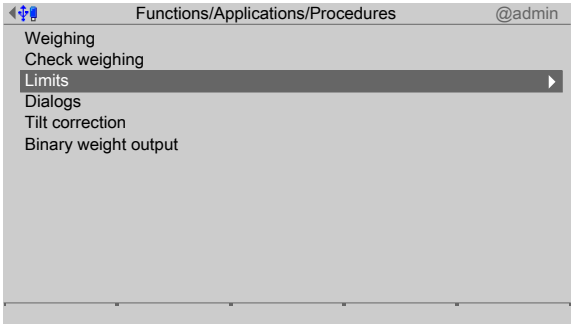
In the event of a power failure both outputs turn to "off" ("OFF"), thus indicating underfill and overfill simultaneously.

Example 2:



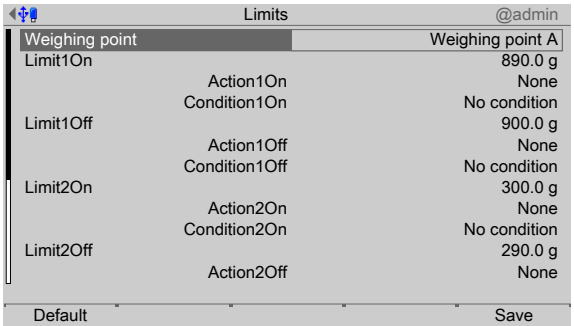
If the Limits 1 and 2 are the same for "On" and "Off" (on = off),

- 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

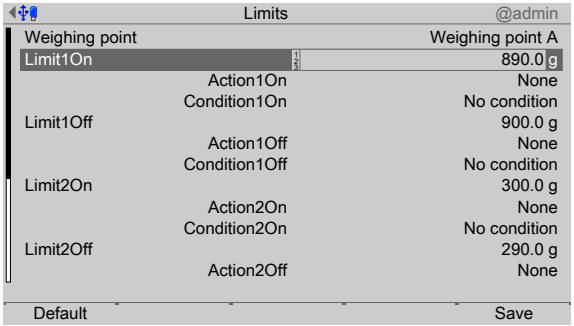


2. Select and confirm [Weighing point] using the cursor.

   ▷ A selection window opens.

3. Confirm weighing point.

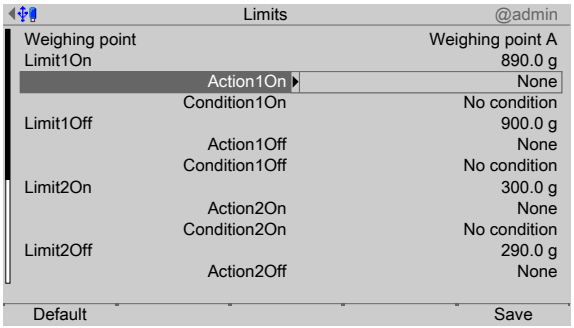
Set limit values according to example 1



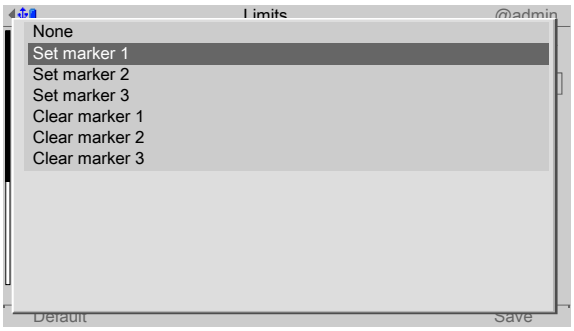
4. Using the cursor, select appropriate lines.
5. Use the keyboard to enter and confirm the desired values (in this case: see example 1).
6. Press the [Default] soft key to return to the factory settings, if required.

Set action

Markers can be set for all limits (in this case, see Example 2):

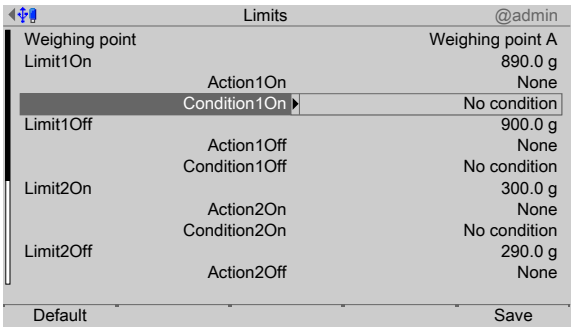


7. Mark and confirm the action line of the corresponding limit.
   ▷ A selection window opens.

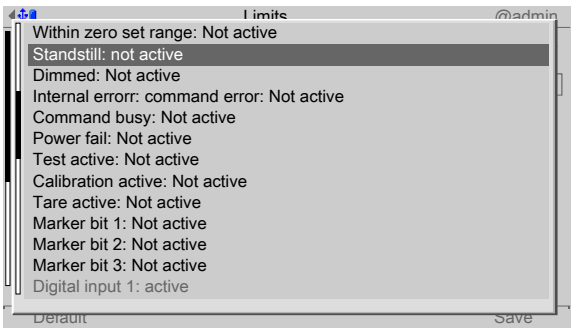


8. Select and confirm the appropriate line to set the marker for Limit 1 (in this case, Marker 1 is set when 900 g is exceeded).
9. If applicable, set other markers.

Set condition

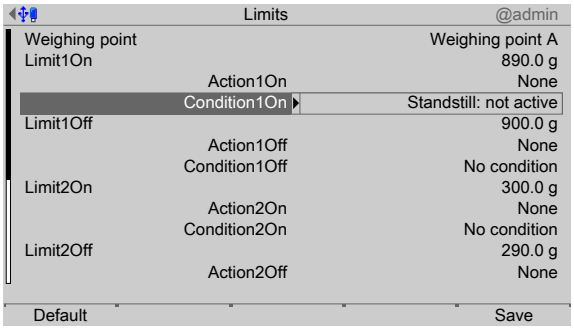


10. Highlight and confirm the condition line of the appropriate limit using the cursor.
    ▷ A selection window opens.



11. Select and confirm the appropriate line.
12. If applicable, select additional conditions for the other limits.

Saving settings



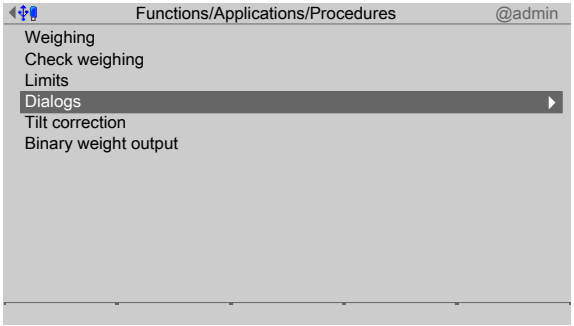
13. Finally, press the [Save] soft key to save the settings.

5.4.9 Configuring dialogs

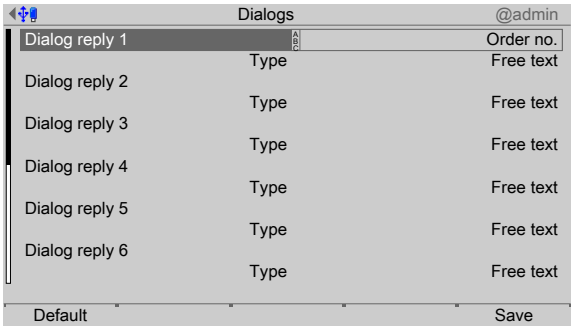
Dialogs consist of messages that appear on screen after pressing the START key and require the corresponding input and confirmation. The dialog can then be printed out, if the printout is configured accordingly, see Chapter 5.4.11.

10 dialog messages can be configured.

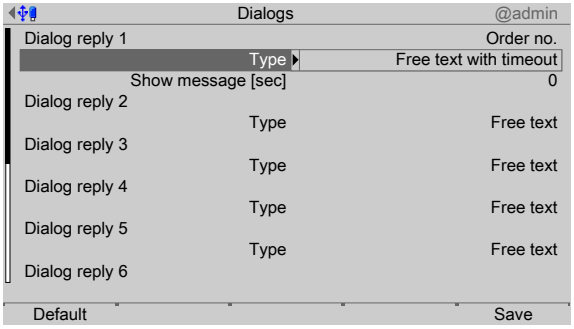
If no dialog messages have been entered, no message is displayed/no input is expected.



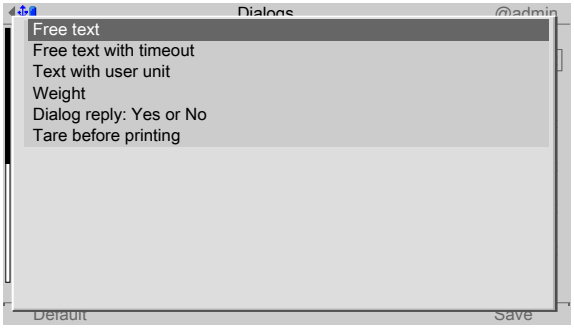
1. Select and confirm [Dialogs] using the cursor.



2. Select the relevant line using the cursor.
3. Use the keypad to enter and confirm the dialog message.



4. Select and confirm the line "Type" using the cursor.
5. For example, if the "Free text with timeout" type is selected, another line appears.
6. Use the keypad to enter and confirm the display duration of the message.
   ▷ A selection window is displayed.



7. Select and confirm the appropriate line.

   [Free text without timeout]

   The dialog message appears and can only be hidden by the operator.

   [Free text with timeout]

   The dialog message is displayed for a defined period and then disappears without any action by the operator.

   [Text with user-defined unit]

   The dialog message appears with the user-defined unit (e.g.: pcs, °C, etc.) and can only be hidden by the operator.

   [Weight]

   The current weight value of the corresponding weighing point is displayed and can only be hidden by the operator.

   [Reply from dialog: Yes or No]

   The dialog message appears and can only be hidden by the operator.

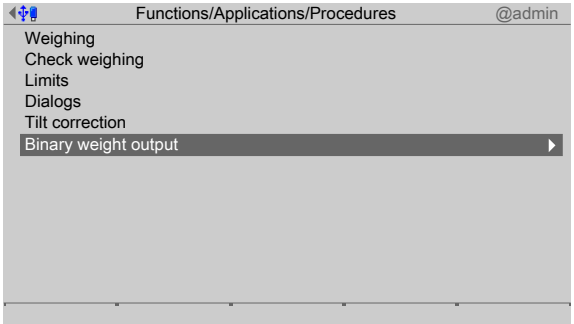
   [Tare before printing]

   The dialog message appears and can only be hidden by the operator.
8. Finally, press the [Save] soft key to save the settings.

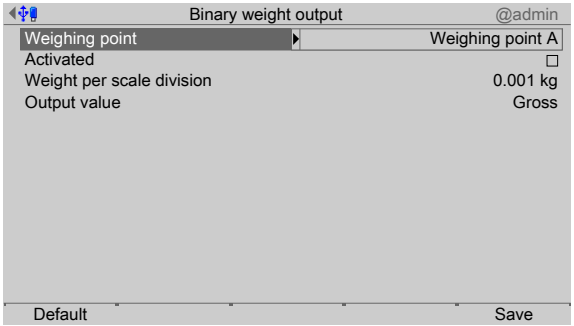
5.4.10 Configuring binary weight output

With binary weight output, the current gross weight output of a weighing point will be given as a 12 bit binary weight (max. 4095).

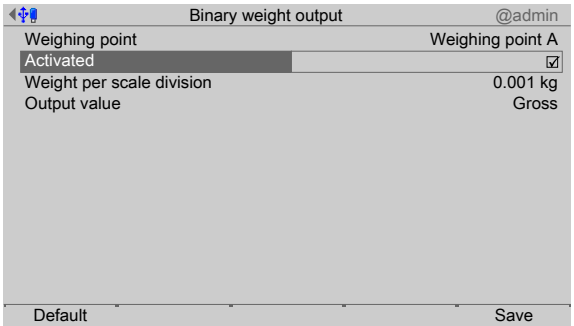
This allows 12 digital outputs to be connected. The outputs are configured via fixed SPM addresses, see Chapter 8.



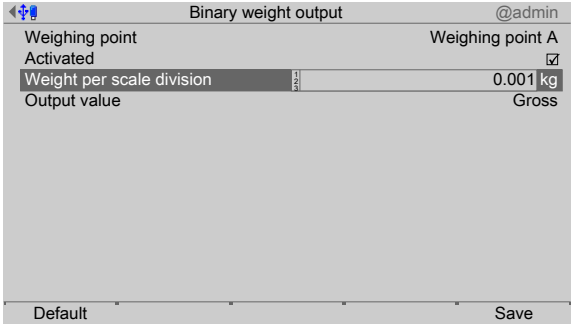
1. Select and confirm [Binary weight output] using the cursor.



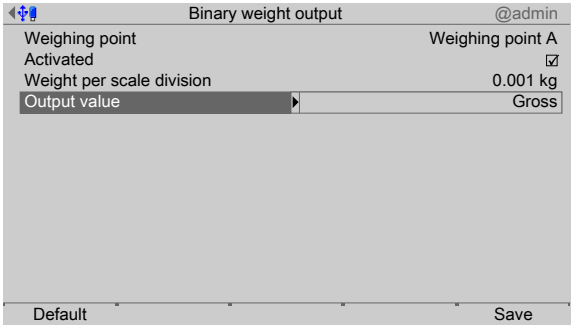
2. Select and confirm [Weighing point] using the cursor.



3. Check ☑ the box to activate the binary weight output for the corresponding weighing point.



4. Input the weight per scale division. This value corresponds to the weight to which the binary output will be scaled.

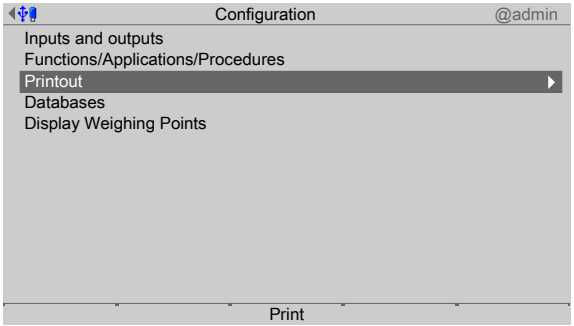


5. Select and confirm [Output value] using the cursor.
   ▷ A selection window opens.

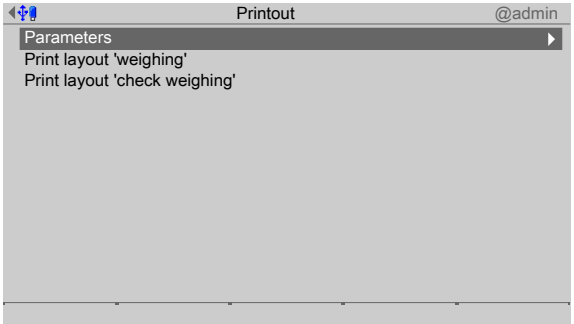
6. Select and confirm the appropriate line.
7. Finally, press the [Save] softkey to save the settings.

5.4.11 Configuring printout

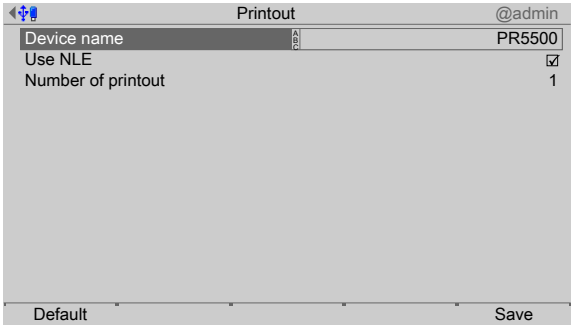
This function is required to configure the weighing and checkweighing log.



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



2. Select and confirm [Parameters] using the cursor.
   ▷ A selection window is displayed.



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

   [Device name]

   Input: Max. 20 characters via keypad

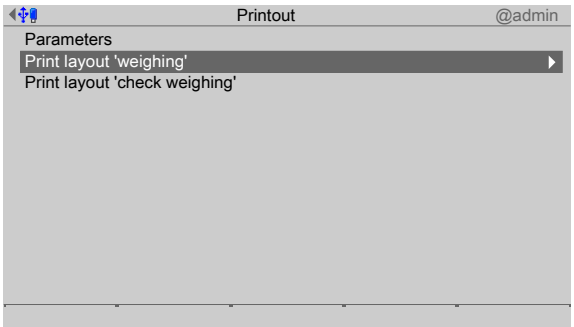
   [Use NLE]

   Check the ☑ box to use NLE (NiceLabelExpress) for the design of printouts, see also Chapter 10.3.3.

   [Number of printout]

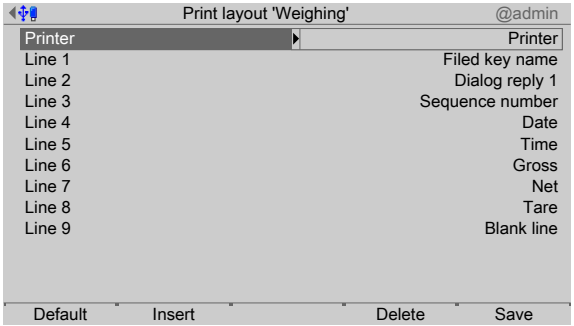
   Input: Figures via keyboard

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



5. Select and confirm [Print layout "weighing"] using the cursor.

   ▷ A selection window is displayed.



6. Press the [Insert] soft key to insert a new line below the highlighted line. Up to 99 lines can be defined.
7. Press the [Delete] soft key to delete the highlighted line.
8. Select and confirm the individual settings using the cursor.

   [Printer]

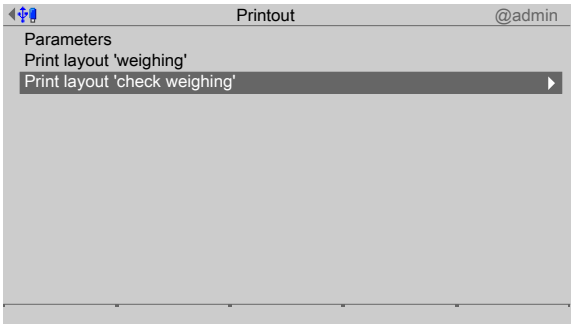
   Selection: none, printer, ticket printer, printer 2

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

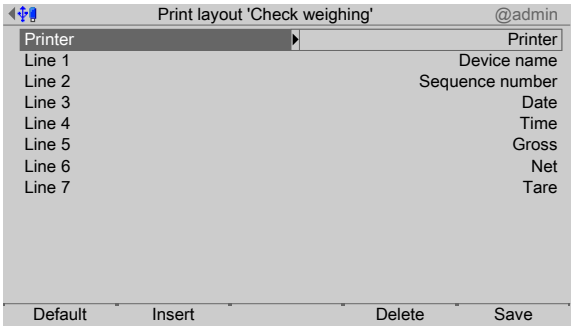
[Line 1–99]

Selections: Blank line, -------, Form feed, Device name, Weighing point, Sequence number, Date, Time, Gross, Net, Tare, Header, Weighing mode; Dialog reply 1–10, Free number 1–3, Entered weight, Entered string, Edited int, Edited real, Field key name, Field 1–6, User name

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



10. Select and confirm [Print layout "check weighing"] using the cursor.
    ▷ A selection window is displayed.



11. Press the [Insert] soft key to insert a new line below the highlighted line. Up to 99 lines can be defined.
12. Press the [Delete] soft key to delete the highlighted line.
13. Select and confirm the individual settings using the cursor.

[Printer]

Selection: none, printer, ticket printer, printer 2

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

[Line 1–99]

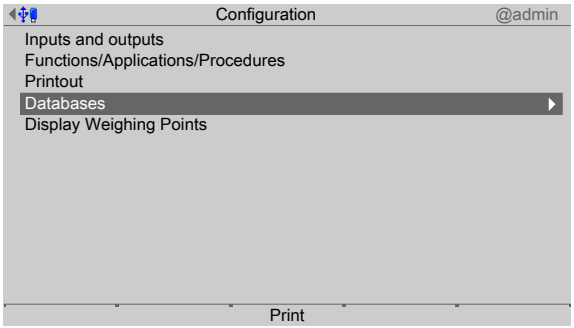
Selections: Blank line, -------, Form feed, Device name, Weighing point, Sequence number, Date, Time, Gross, Net, Tare, Header, Weighing mode; Dialog reply 1–10, Free number 1–3, Entered weight, Entered string, Edited int, Edited real, Setpoint min., Setpoint, Setpoint max., Out of range, Field key name, Field 1–6, User name

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

5.4.12 Configuring databases

The following databases are available in this application:

- Tare specifications, see Chapter 5.4.12.1
- Predefined texts for the terminal function, see Chapter 5.4.12.2
- Application database, see Chapter 5.4.12.3



▶ Select and confirm [Databases] using the cursor.

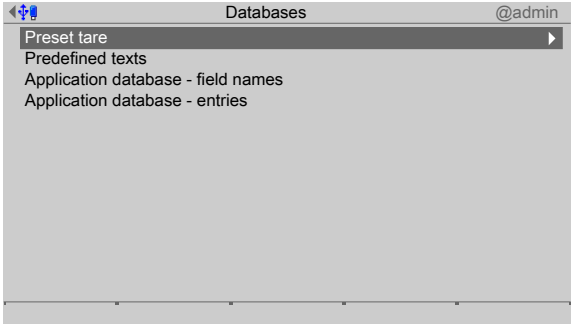
5.4.12.1 Creating/Changing/Deleting preset tares

Preset tares can be saved in this database and assigned to each weighing point.

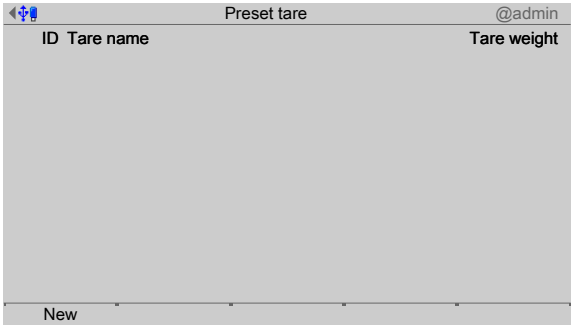
If an ID already exists, you can use [Change] to modify the associated names and weights.

The tare name is freely selectable and can appear several times. The tare weight unit can be selected. If the scale and the tare are using different units, the preset tare value will be converted to the scale unit during taring.

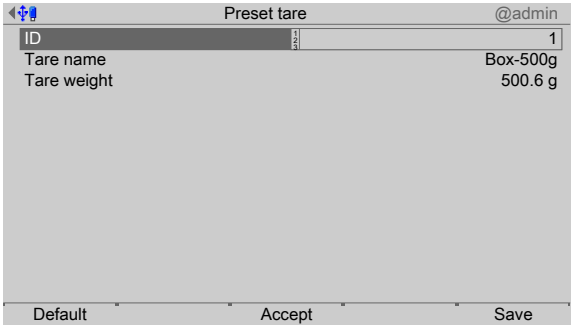
A preset tare value may not be greater than the largest Max of a scale.



1. Select and confirm [Preset tare] using the cursor.



2. Press the [New] soft key to create a new record.
   ▷ A selection window is displayed.



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

   [ID]

   Input: Automatic numbering or manual numbering via the keyboard from 1–999

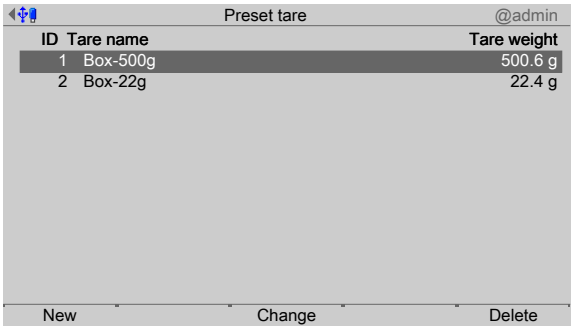
   [Tare name]

   Input: Max. 20 characters via keypad

   [Tare weight]

   Position the appropriate weight and press the [Accept] soft key.

4. Finally, press the [Save] soft key to save the parameters in the database.

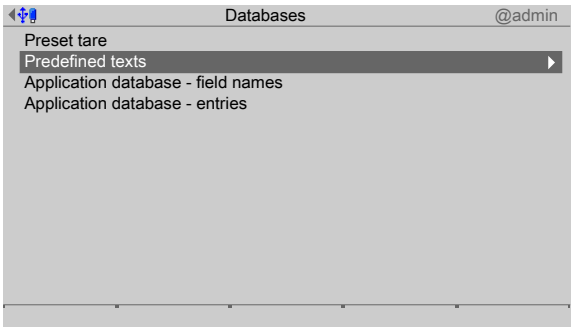


5. If applicable, press the [Change] soft key to change the highlighted record.
6. If applicable, press the [Delete] soft key to delete the highlighted record.

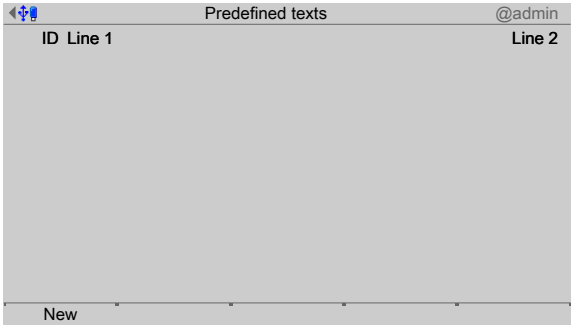
5.4.12.2 Creating predefined texts

Predefined texts can be saved in this database. These texts are required for the terminal function. The predefined texts can be displayed via fieldbus or OPC. At least one text must be entered for line 1, see also Chapter 6.5.

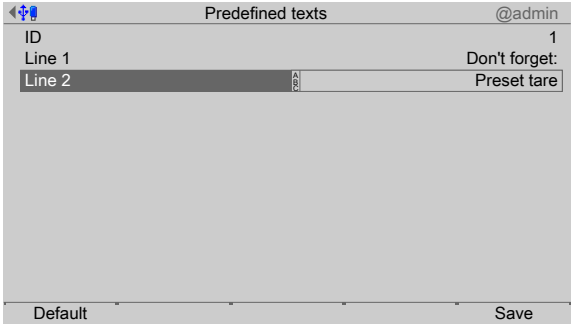
If an ID already exists, you can use [Change] to modify the associated texts.



1. Select and confirm [Predefined texts] using the cursor.



2. Press the [New] soft key to create a new record.
   ▷ A selection window is displayed.



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

   [ID]

   Input: Automatic numbering or manual numbering via the keyboard from 1–999

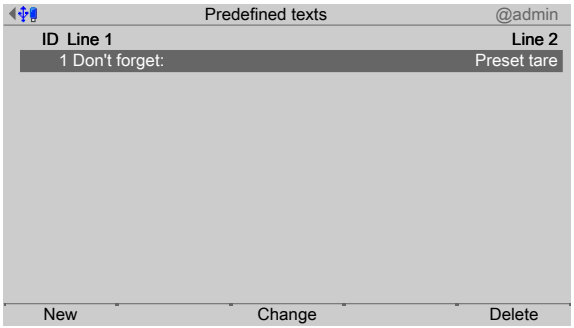
   [Line 1]

   Input: Max. 20 characters via keypad

   [Line 2]

   Input: Max. 20 characters via keypad.

4. Finally, press the [Save] soft key to save the parameters in the database.

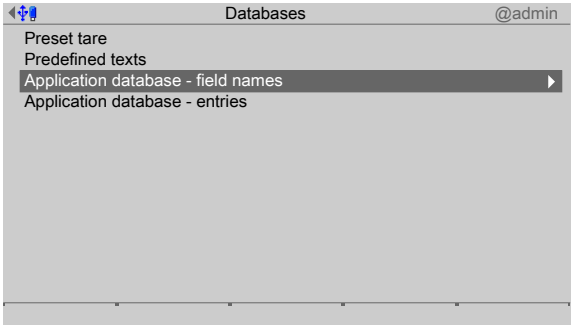


5. If applicable, press the [Change] soft key to change the highlighted record.
6. If applicable, press the [Delete] soft key to delete the highlighted record.

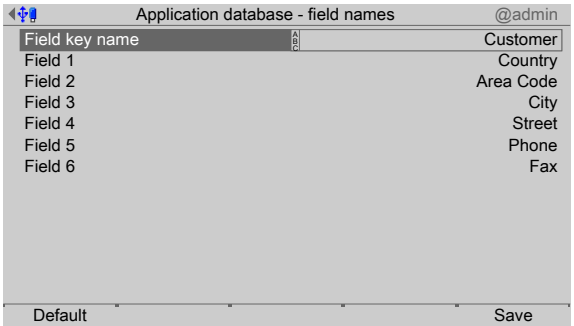
5.4.12.3 Application database

Only one application database can be created in each case (e.g.: customer database **or** materials database **or** recipe database).

Defining field names



1. Select and confirm [Application database - Field names] using the cursor.



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

   [Field key name]

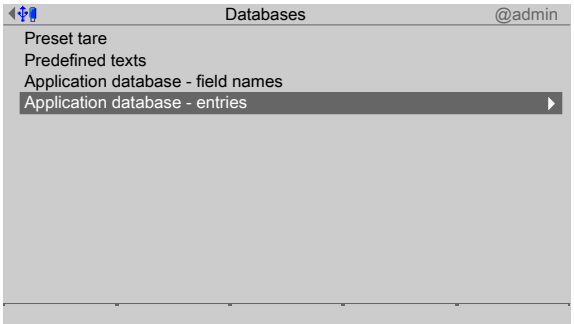
   Entering the database name: Max. 20 characters via keyboard (in this case: Customer)

   [Field name 1–6]

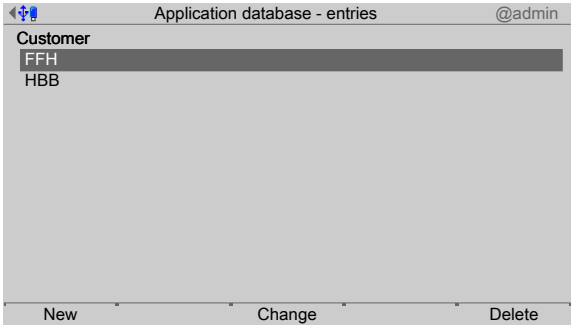
   Input: Max. 20 characters via keypad

3. Finally, press the [Save] soft key to save the parameters in the database.

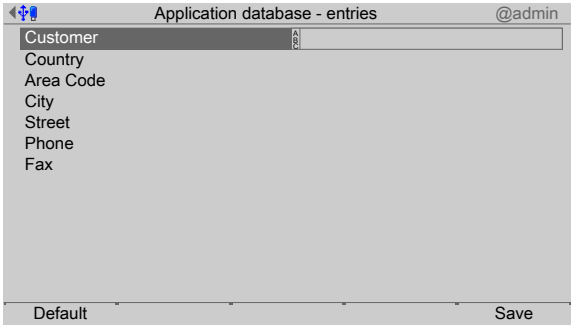
Changing/Deleting/Creating database entries



4. Select and confirm [Application database - Entries] using the cursor.



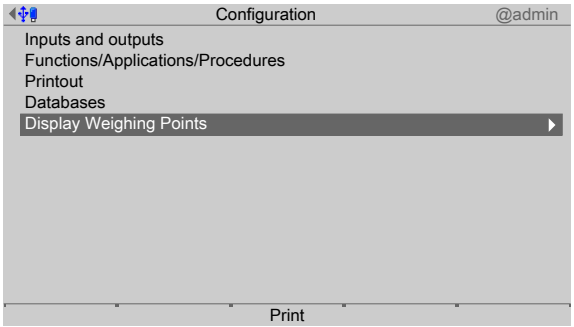
5. Press the [New] soft key to create a new database entry.
6. If applicable, press the [Change] soft key to change the highlighted record.
7. If applicable, press the [Delete] soft key to delete the highlighted record.



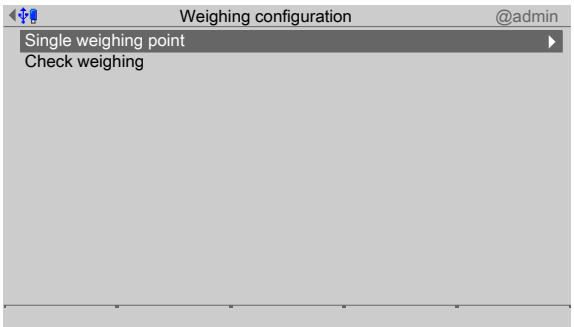
8. Use the cursor to select the individual lines, enter max. 20 characters using the keyboard and confirm.
9. Finally, press the [Save] soft key to save the parameters in the database.

5.4.13 Displaying weighing points

This function is required to configure the production display.



1. Select and confirm [Display weighing points] using the cursor.
   ▷ A selection window is displayed.



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

   [Single weighing point]

   Each weighing point is shown individually.

   Selections: Gross, Net, Tare, Limit 1–3, Analog out 1+2, Field key name, Field 1–6, Blank line

   [Check weighing]

   Each weighing point is shown individually.

   Selection: Gross, Net, Tare, Limit 1–3, Analog out 1+2, Field key name, Field 1–6, Blank line

5.4.13.1 Example: Check weighing

1. Press the [Line +] soft key to add a line. A maximum of 8 lines are possible.

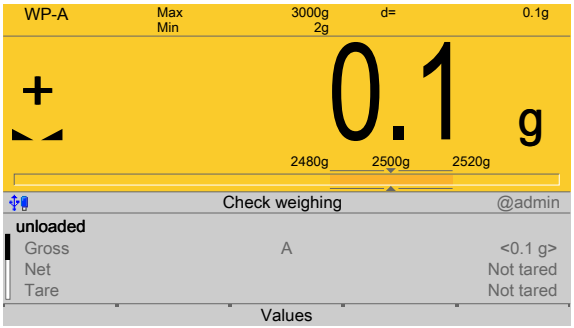
   If more lines are defined than there is space available (depending on the selected size), you can scroll through the lines on the display.

2. If applicable, press the [Line -] soft key to delete a line.
3. Press the [Size -] or [Size +] soft key to reduce or increase the size of the weight display (5 increments). The default setting is 4 (3 lines can be displayed simultaneously).

   Setting 1 produces the smallest weight display: 5 lines can be displayed simultaneously.

   Setting 5 produces the largest weight display: only one line can be displayed.

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



Here is an example of a configured scale display.

5.5 Switching off the device

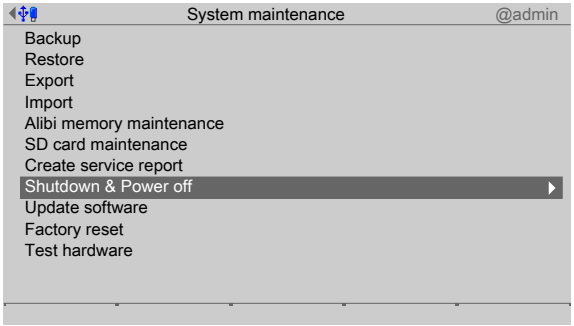
This function is required to disconnect the device from the power immediately, e.g., to install an option card. The rechargeable battery is immediately deactivated.

Note:

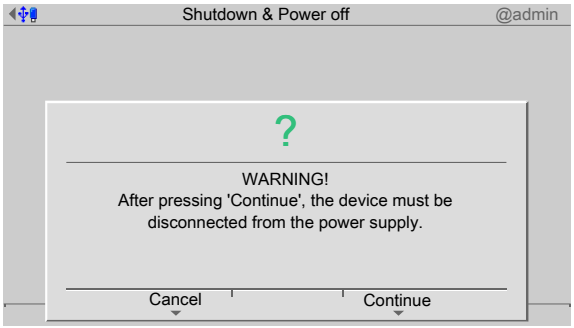
With a menu-driven shutdown, not all the content of the SD-RAM will be saved to a NAND flash memory.

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

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



1. In the operating menu, select and confirm [System maintenance] - [Shutdown & Power off].
   ▷ A prompt window opens.



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

6 Application

6.1 General notes

Operation takes place via the application menu, see also Chapter 4.

The following functions are available:

- For weighing, see Chapter 6.3
- For check weighing, see Chapter 6.4
- For terminal function, see Chapter 6.5

6.2 Alibi memory

The Alibi memory requires a license number, which must be entered into the device under [System setup] - [License settings].

Note:

It is not possible to write the values of the user-defined weighing point into the Alibi memory!

A data set is created for each weight value. This means that 3 sets are saved with identical sequence number, if gross weight, net weight, and tare are saved at a particular time.

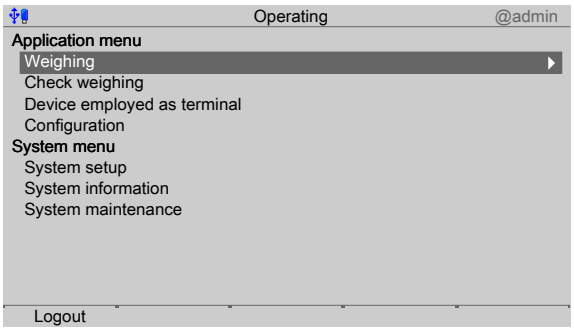
The gross weight is saved with all weighing operations.

The following functions are possible:

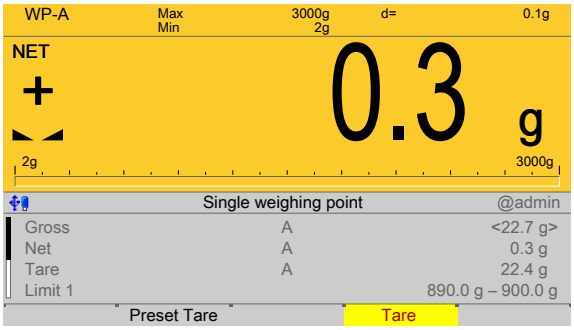
- For searching the Alibi memory via website, see the PR 5500 operating instructions.
- For browsing the Alibi memory using the [System information] - [Browse Alibi memory], please see PR 5500 operating instructions.
- For deleting the Alibi memory using the [System setup] - [Alibi memory], please see PR 5500 operating instructions.

6.3 Weighing

The configuration of the scale display is performed in the [Configuration] - [Display Weighing Points] menu, see Chapter 5.4.6.



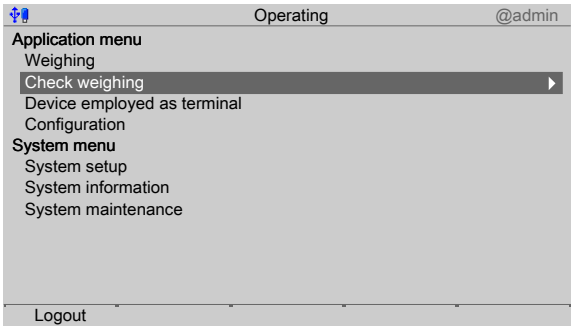
1. Select and confirm [Weighing] using the cursor.
   ▷ The scale display appears (in this case, single weighing point).



2. If applicable, press the [Preset tare] soft key to select the appropriate preset tare, see Chapter 5.4.6 and Chapter 5.4.12.1.
3. Perform the weighing process.
4. Press the START key (with show dialogs before printing) or the key to initiate printing.
   ▷ Depending on the configuration, the values are written to the Alibi memory (see PR 5500 operating instructions) and/or printed out, see Chapter 5.4.6, 5.4.9, 5.4.11 and 10.3.

6.4 Checkweighing

The configuration of the scale display is performed in the [Configuration] - [Display Weighing Points] menu, see Chapter 5.4.13.

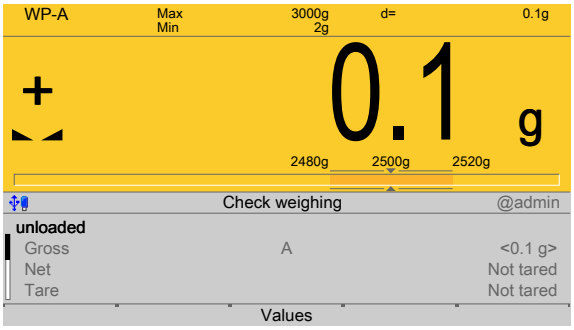


1. Select and confirm [Checkweighing] using the cursor.

   Checkweighing requirements

   - Prior to positioning the weight, the scale is in the “unloaded” state, i.e. < min. weight.
   - After positioning the weight, the scale is in the “loaded” state, i.e. > min. weight and has achieved a standstill.

   ▷ The checkweigher display appears.



2. If applicable, press the [Values] soft key to change the set points and tolerances.
3. Perform the checkweighing process.
   ▷ Depending on the configuration, the values are written to the Alibi memory (see PR 5500 operating instructions) and/or printed out, see Chapter 5.4.7, 5.4.9, 5.4.11 and 10.3.

6.5 Terminal function

6.5.1 General

The terminal function (selection in the application menu: menu item "Device employed as terminal"), can be used to remotely control the display via the communication network. The operator's keystrokes can be read back.

To simplify the remote control, texts, numbers and weight values can be edited on the device. Only the final result needs to be outputted.

All texts can also be saved locally in the device and can be retrieved using a text number.

The terminal function can be canceled at any time with the **EXIT** key or "termfun" = -1 (even if a dialog is open). A question appears.

6.5.2 Control unit

Terminal functions are controlled by two variables:

- termfun
- termstat

These variables can be read and written via DDE/OPC (see Chapter 8) or via fieldbus (see Chapter 7).

termfun	specifies the function which is to be executed (MD 94 for WP A, see Chapter 8 or fieldbus address 225 - write).
0	no function
1...	Execute function
-1	Cancel function, equivalent to the **EXIT** key
termstat	returns to the execution status (MD 95for WP A, see Chapter 8 or fieldbus address 219 - read)
0	Terminal idle
1, ...	Function ended
-1	Terminal busy
-2	General error
-3	Unknown text number (database)

The functions obtain your input texts for "Line 1" (the top display line) and for "Line 2" (the bottom display line) from the variables "dsp1" or "dsp2".

If the text number N * 256 is added to the function number (in "termfun"), "dsp1" and "dsp2" are taken from the table of predefined texts.

The general procedure between the communication master (PC or fieldbus master) and the communication slave (device) is described in the following table.

Master	Slave
	After initialization, the variables "termfun" and "termstat" are set to 0. The device is ready to execute a function.
Writes text to the variables "dsp1" and "dsp2".	Has no effect.
Writes the function number (e.g. 2) to "termfun". Waits until the status variable "termstat" is > 0.	Sets the "termstat" status to -1 (busy). The predefined function (in this case: No 2) is executed: - Displays the text of "dsp1" in line 1. - Displays the text of "dsp2" in line 2 and allows "dsp2" to be edited by the operator in line 2.
	User presses the **OK** key to complete the editing.
	Writes input to "dsp2". Sets "termstat" to 1 (OK, dialog is closed). Waits until "termfun" has been reset to "0".
Reads "termstat' = 1 Reads input text from "dsp2"	Has no effect.
Writes function "0" to "termfun".	Sets "termstat" to "0" (idle) and is then ready for a new function. The 2-line text display is empty once again.

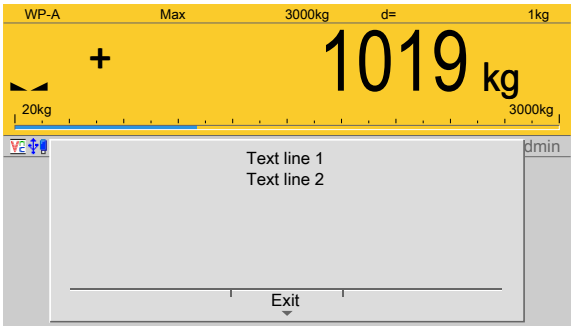
6.5.3 Predefined functions

- Display function, see Chapter 6.5.3.1
- Input functions, see Chapter 6.5.3.2
- Message functions, see Chapter 6.5.3.3

In addition to the basic terminal functionality, it is possible to enter a value or a text locally on the device or to output messages using predefined functions.

This is controlled by setting the "Function type" parameter to "termfun".

6.5.3.1 Display function



"termfun" = 1: text display

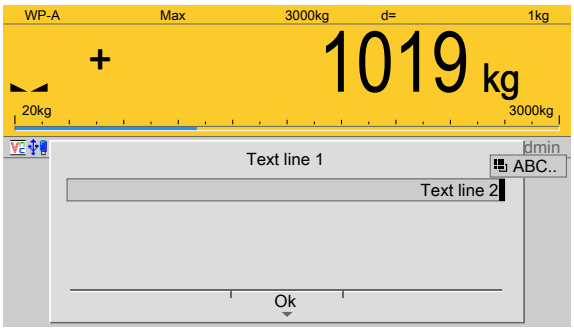
Texts in line 1 and line 2 are constantly updated. The content of memory cell "dsp1" is copied to line 1, and that of memory cell "dsp2" to line 2. The function can be terminated via "termfun" = -1 or with the **EXIT** key.

termstat = 2 after pressing the [Exit] softkey or pressing the **EXIT** key.

6.5.3.2 Input functions

The text content of memory cell "dsp1" is displayed in the top line. In the case of numerical input, the text content of memory cell "dsp2" is displayed after the number as a unit.

Spaces before the first character and after the last character are truncated.

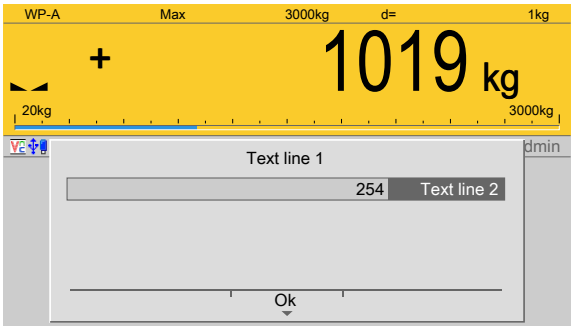


"termfun" = 2: text input

Text input: "dsp2" is displayed in line 2 and can be edited by the operator.

termstat = 1 after clicking on [OK].

termstat = 2 after pressing the **EXIT** key.

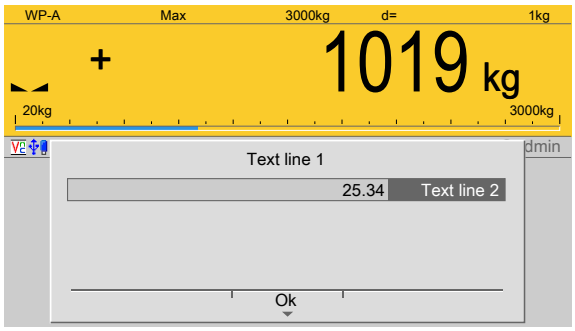


"termfun" = 3: entering a number of the "Integer" data type

The value of memory cell "editint" is displayed in line 2 and can be edited by the operator.

termstat = 1 after clicking on [OK].

termstat = 2 after pressing the **EXIT** key.

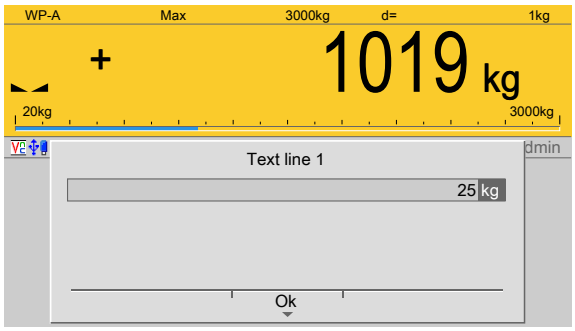


"termfun" = 4: entering a number of the "Real" data type (floating point)

The value of memory cell "editreal" is displayed in line 2 and can be edited by the operator.

termstat = 1 after clicking on [OK].

termstat = 2 after pressing the **EXIT** key.



"termfun" = 5: entering a weight value

The value of memory cell "editwgt" is displayed in line 2 in the weight format of the active weighing point, and can be edited by the operator.

termstat = 1 after clicking on [OK].

termstat = 2 after pressing the **EXIT** key.

6.5.3.3 Message functions

The text content of memory cell "dsp1" is displayed in the top line. The soft key labels are predefined, but can be translated with the "PoEdit" PC program. The message function prompts the user to respond by pressing a soft key. The reply appears as a return value for the message function in "termstat" after one of the following keys has been pressed:

- [OK] = 1
- Exit = 2

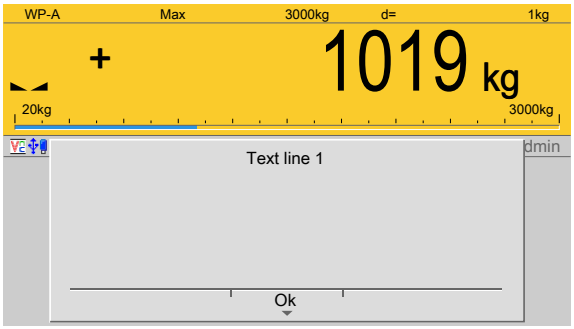
  termstat = 2, if the **EXIT** key has been pressed, or an exit has been executed by termfun = -1.
- Softkey2 = 3
- Softkey3 = 4
- Softkey4 = 5

Note:

It should be noted that "Softkey2", for example, does not refer to the position of the soft key, but the number of soft keys present.

With "Softkey2", therefore, two soft keys are displayed, e.g. [OK] and [No].

termstat = 3 after pressing the [No] soft key.

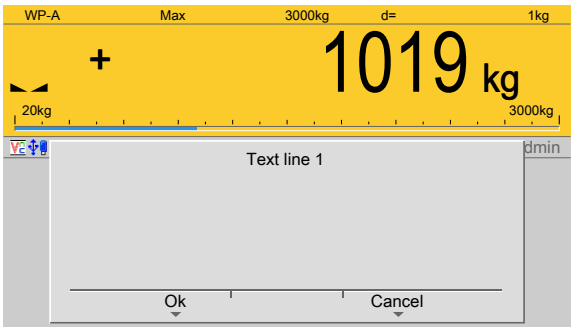


"termfun" = 10

Function displays text from line 1.

termstat = 1 after pressing the [OK] soft key.

termstat = 2 after pressing the **EXIT** key.



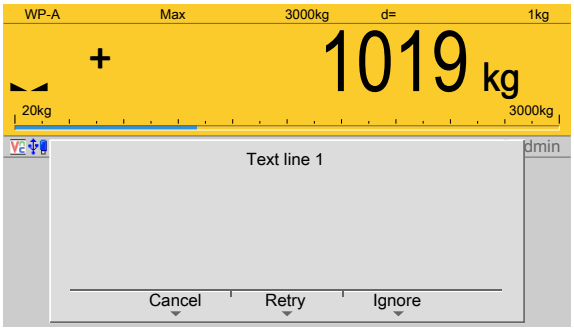
"termfun" = 11

Function displays text from line 1.

termstat = 1 after pressing the [OK] soft key.

termstat = 2 after pressing the **EXIT** key.

termstat = 3 after pressing the [Cancel] soft key.

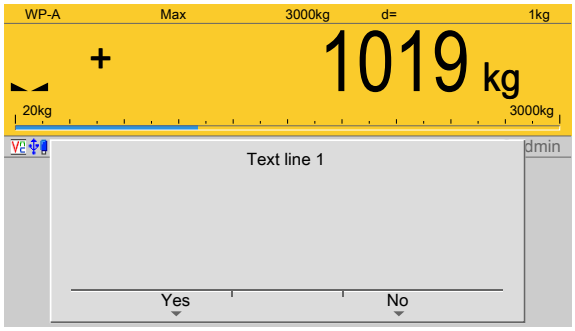


"termfun" = 12

Function displays text from line 1.

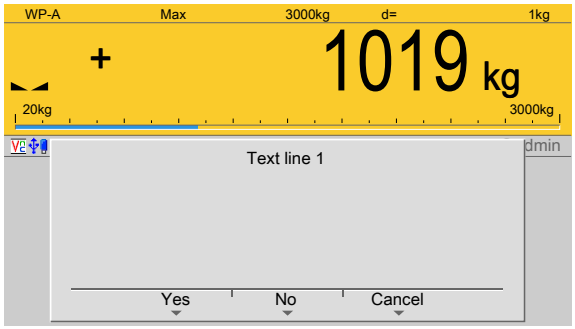
termstat = 2 after pressing the **EXIT** key.

termstat = 3 after pressing the [Cancel] soft key.
termstat = 4 after pressing the [Retry] soft key.
termstat = 5 after pressing the [Ignore] soft key.



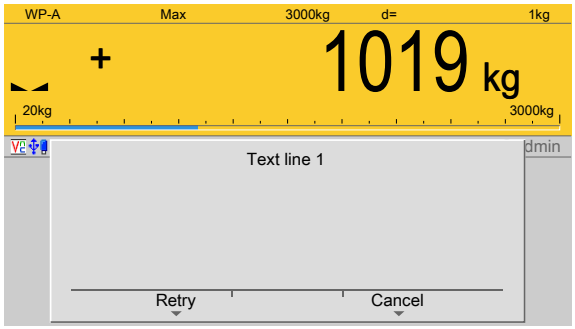
"termfun" = 13

Function displays text from line 1.
termstat = 2 after pressing the **EXIT** key.
termstat = 3 after pressing the [Yes] soft key.
termstat = 4 after pressing the [No] soft key.



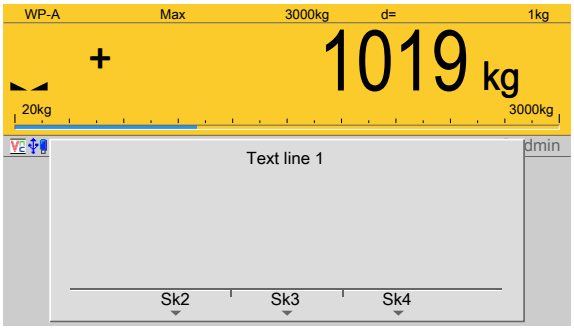
"termfun" = 14

Function displays text from line 1.
termstat = 2 after pressing the **EXIT** key.
termstat = 3 after pressing the [Yes] soft key.
termstat = 4 after pressing the [No] soft key.
termstat = 5 after pressing the [Cancel] soft key.



"termfun" = 15

Function displays text from line 1.
termstat = 2 after pressing the **EXIT** key.
termstat = 3 after pressing the [Retry] soft key.
termstat = 4 after pressing the [Cancel] soft key.



"termfun" = 16

"dsp2" supplies the information for the soft keys.

"dsp2" is 20 characters long.

Soft key 2 (Sk2)	Soft key 3 (Sk3)	Soft key 4 (Sk4)
Characters 1–6	Characters 8–13	Characters 15–20

termstat = 2 after pressing the **EXIT** key.

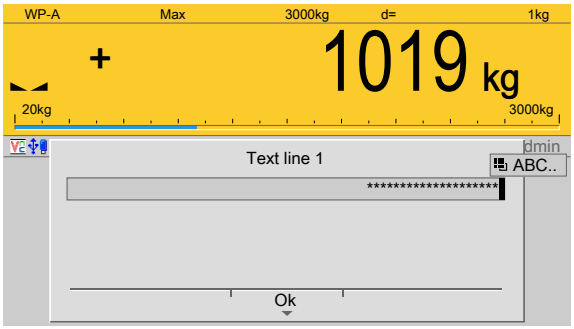
termstat = 3 after pressing the [Sk2] soft key.

termstat = 4 after pressing the [Sk3] soft key.

termstat = 5 after pressing the [Sk4] soft key.

Hidden inputs

(as with inputs, characters are shown by *)



"termfun" = 20

"dsp2" is displayed in line 2 and can be edited by the operator.

"termfun" = 21

The value of memory cell "editint" is displayed in line 2 and can be edited by the operator.

termstat = 1 after pressing the [OK] soft key.

termstat = 2 after pressing the **EXIT** key.

6.5.4 Predefined functions with predefined texts

With the predefined functions in the previous Chapter (6.5.3), the texts for line 1 must be transmitted to "dsp1" and those for line 2 to "dsp2".

Alternatively, the texts can also be stored in the device's "Predefined texts" database and therefore no longer need to be transmitted.

The texts in the database have an ID of 1–999, which addresses the two display texts. Only a combination of this number and the function number is transmitted.

If the text ID N * 256 is added to the function number (in "termfun"), "dsp1" and "dsp2" are taken from the database table of predefined texts.

Example:

Function type 1 (the text in line 1 and line 2 is constantly updated) and Text ID 2 (from the predefined texts in the database)

"termfun" = function type + text ID * 256

"termfun" = 1 + 2 * 256

"termfun" = 513

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.

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 5500.

Concept definition

Term/Abbreviation	Description
Master	Field bus master, usually an SPS
Slave	Field bus device
MOSI	Master Out Slave In = data is written from the SPS via the field bus to the device.
MISO	Master In Slave Out = data is returned from the device via the field bus to the SPS.

7.2 Scale protocol

7.2.1 General notes

The protocol and the functions of the firmware are described in the operating instructions PR 5500.

The additional functions of this application are described below.

7.2.2 Function numbers

Function numbers are written to MOSI by the master (SPS) and reflected in MISO by the PR 5500.

- Function number 24...29: Limit value (read/write), see Chapter 7.2.2.1
- Function number 31, 34...36: fixed values (read/write), see Chapter 7.2.2.2
- Function number 45...49: terminal function: "dsp1" (read/write), see Chapter 7.2.2.3
- Function number 50...54: terminal function: "dsp2" (read/write), see Chapter 7.2.2.4
- Function number 130...134: dialog message 1 (read/write), see Chapter 7.2.2.5
- Function number 135...139: dialog message 2 (read/write), see Chapter 7.2.2.6
- Function number 141...145: dialog message 3 (read/write), see Chapter 7.2.2.7
- Function number 146...150: dialog message 4 (read/write), see Chapter 7.2.2.8
- Function number 151...155: dialog message 5 (read/write), see Chapter 7.2.2.9
- Function number 156...160: dialog message 6 (read/write), see Chapter 7.2.2.10
- Function number 161...165: dialog message 7 (read/write), see Chapter 7.2.2.11

- Function number 166...170: dialog message 8 (read/write), see Chapter 7.2.2.12
- Function number 171...175: dialog message 9 (read/write), see Chapter 7.2.2.13
- Function number 176...180: dialog message 10 (read/write), see Chapter 7.2.2.14
- Function number 190, 191: Outputs (write), see Chapter 7.2.2.15
- Function number 192...195: free SPM (read/write), see Chapter 7.2.2.16
- Function number 205...207: report values (read/write), see Chapter 7.2.2.17
- Function number 208...210: internal Alibi values (read), see Chapter 7.2.2.18
- Function number 211...213: external Alibi values (read), see Chapter 7.2.2.19
- Function number 214...218: inputs (read), see Chapter 7.2.2.20
- Function number 119: terminal (read), see Chapter 7.2.2.21
- Function number 220...222: terminal (read/write), see Chapter 7.2.2.22
- Function number 224: report (write), see Chapter 7.2.2.23
- Function number 225: terminal (write), see Chapter 7.2.2.24
- Function number 226: Alibi status (write), see Chapter 7.2.2.25

7.2.2.1 Function number 24–29: Weight data (Read/Write)

Function number 24	Limit value 1 on
Function number 25	Limit value 1 off
Function number 26	Limit value 2 on
Function number 27	Limit value 2 off
Function number 28	Limit value 3 on
Function number 29	Limit value 3 off

7.2.2.2 Function number 31, 34–36: Fixed values (Read/Write)

Function number 31	Fixed value for preset tare, see also **SetFixTare**, **GetFixTare**.
Function number 34	Fixed value for set point with negative tolerance
Function number 35	Fixed value for set point
Function number 36	Fixed value for set point with positive tolerance

7.2.2.3 Function number 45–49: Terminal function: "dsp1" (Read/Write)

Function number 45	Text line 1; [Characters 1–4]
Function number 46	Text line 1; [Characters 5–8]
Function number 47	Text line 1; [Characters 9–12]
Function number 48	Text line 1; [Characters 13–16]
Function number 49	Text line 1; [Characters 17–20]

7.2.2.4 Function number 50–54: Terminal function: "dsp2" (Read/Write)

Function number 50	Text line 2; [Characters 1–4]
Function number 51	Text line 2; [Characters 5–8]
Function number 52	Text line 2; [Characters 9–12]
Function number 53	Text line 2; [Characters 13–16]
Function number 54	Text line 2; [Characters 17–20]

7.2.2.5 Function number 130–134: Dialog message 1 (Read/Write)

Function number 130	Text 1; [Characters 1–4]
Function number 131	Text 1; [Characters 5–8]
Function number 132	Text 1; [Characters 9–12]
Function number 133	Text 1; [Characters 13–16]
Function number 134	Text 1; [Characters 17–20]

7.2.2.6 Function number 135–139: Dialog message 2 (Read/Write)

Function number 135	Text 2; [Characters 1–4]
Function number 136	Text 2; [Characters 5–8]
Function number 137	Text 2; [Characters 9–12]
Function number 138	Text 2; [Characters 13–16]
Function number 139	Text 2; [Characters 17–20]

7.2.2.7 Function number 141–145: Dialog message 3 (Read/Write)

Function number 141	Text 3; [Characters 1–4]
Function number 142	Text 3; [Characters 5–8]
Function number 143	Text 3; [Characters 9–12]
Function number 144	Text 3; [Characters 13–16]
Function number 145	Text 3; [Characters 17–20]

7.2.2.8 Function number 146–150: Dialog message 4 (Read/Write)

Function number 146	Text 4; [Characters 1–4]
Function number 147	Text 4; [Characters 5–8]
Function number 148	Text 4; [Characters 9–12]
Function number 149	Text 4; [Characters 13–16]
Function number 150	Text 4; [Characters 17–20]

7.2.2.9 Function number 151–155: Dialog message 5 (Read/Write)

Function number 151	Text 5; [Characters 1–4]
Function number 152	Text 5; [Characters 5–8]
Function number 153	Text 5; [Characters 9–12]
Function number 154	Text 5; [Characters 13–16]
Function number 155	Text 5; [Characters 17–20]

7.2.2.10 Function number 156–160: Dialog message 6 (Read/Write)

Function number 156	Text 6; [Characters 1–4]
Function number 157	Text 6; [Characters 5–8]
Function number 158	Text 6; [Characters 9–12]
Function number 159	Text 6; [Characters 13–16]
Function number 160	Text 6; [Characters 17–20]

7.2.2.11 Function number 161–165: Dialog message 7 (Read/Write)

Function number 161	Text 7; [Characters 1–4]
Function number 162	Text 7; [Characters 5–8]
Function number 163	Text 7; [Characters 9–12]
Function number 164	Text 7; [Characters 13–16]
Function number 165	Text 7; [Characters 17–20]

7.2.2.12 Function number 166–170: Dialog message 8 (Read/Write)

Function number 166	Text 8; [Characters 1–4]
Function number 167	Text 8; [Characters 5–8]
Function number 168	Text 8; [Characters 9–12]
Function number 169	Text 8; [Characters 13–16]
Function number 170	Text 8; [Characters 17–20]

7.2.2.13 Function number 171–175: Dialog message 9 (Read/Write)

Function number 171	Text 9; [Characters 1–4]
Function number 172	Text 9; [Characters 5–8]
Function number 173	Text 9; [Characters 9–12]
Function number 174	Text 9; [Characters 13–16]
Function number 175	Text 9; [Characters 17–20]

7.2.2.14 Function number 176–180: Dialog message 10 (Read/Write)

Function number 176	Text 10; [Characters 1–4]
Function number 177	Text 10; [Characters 5–8]
Function number 178	Text 10; [Characters 9–12]
Function number 179	Text 10; [Characters 13–16]
Function number 180	Text 10; [Characters 17–20]

7.2.2.15 Function number 190–191: Outputs (Write)

Function number 190	Analog output option-1; 0–20,000
Function number 191	Analog output option-2; 0–20,000

7.2.2.16 Function number 192–195: Free SPM (Read/Write)

Function number 192	1st DWORD, see Chapter 8
Function number 193	2nd DWORD, see Chapter 8
Function number 194	3rd DWORD, see Chapter 8
Function number 195	4th DWORD, see Chapter 8

Note:

The function numbers always refer to the current weighing point.

7.2.2.17 Function number 205–207: Report values (Read/Write)

Function number 205	Free number 1 for printout “Num_1”
Function number 206	Free number 2 for printout “Num_2”
Function number 207	Free number 3 for printout “Num_3”

7.2.2.18 Function number 208–210: Internal Alibi values (Read)

Function number 208	Alibi sequence number
Function number 209	Alibi date
Function number 210	Alibi time

7.2.2.19 Function number 211–213: External Alibi values (Read)

Function number 211	Printed gross weight value
Function number 212	Printed net weight value
Function number 213	Printed tare weight value

7.2.2.20 Function number 214–218: Inputs (Read)

Function number 214	Analog input option-1
Function number 215	Analog input option-2
Function number 216	Digital input option-1
Function number 217	Digital input option-2
Function number 218	Internal digital inputs

7.2.2.21 Function number 219: Terminal (Read)

Function number 219	Terminal status "termstat" "termstat" is included in the (MISO) Byte 3 reading window. Values for "termstart", e.g.: D100 for weighing point A, see Chapter 8.

7.2.2.22 Function number 220–222: Terminal (Read/Write)

Function number 220	Terminal function "editint": numerical input of integers for printout
Function number 221	Terminal function "editreal": Entering floating point numbers
Function number 222	Terminal function "editwgt": Input of weight value

7.2.2.23 Function number 224: Report (Write)

Function number 224	Variable "repofun": Remotely activate a print order. Write the value for "repofun" in accordance with Chapter 8 (e.g. D100 for Weighing point A A) in the (MOSI) Byte 0...3 writing window.

7.2.2.24 Function number 225: Terminal (Write)

Function number 225	Variable "termfun": Activate terminal function. Write the value for "termfun" in accordance with Chapter 6.5 in the (MOSI) Byte 0...3 writing window.

7.2.2.25 Function number 226: Alibi status (Read)

Function number 226	MISO Byte 3 reading window contains Alibi status, see Chapter 8.8.

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.

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	±1.18E-38 bis 3.4E38 (with approx. 7 significant digits)
LREAL	long real number	±1.18E-308 bis 3.4E308 (with approx. 16 significant digits)
TIME	time duration	1 ms to $\pm 2^{47}$ ms
DATE	date (only)	1.1.1900 to 31.12.2099
TIME_OF_DAY	time of day (only)	00:00:00.00 to 23:59:59.99

Data type	Description	Value range
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 8.7).

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...18	BOOL	R	Output limit 1...3
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 ±¼ 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)

SPM address	Data type	R/W	Function
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
X64	BOOL	R/W	Read/write marker bit 1
X65	BOOL	R/W	Read/write marker bit 2
X66	BOOL	R/W	Read/write marker bit 3
X72	BOOL	R/W	Switch D11 to net weight.
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 5500 operating instructions.
B20	BYTE	R	Higher byte of product code (0x59)
B21	BYTE	R	Lower byte of product code (0x00)

SPM address	Data type	R/W	Function
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
D11	DINT	R	Current gross/net weight selected with X72
D12	DINT	R	Gross value with magnifier 100 (centi d)
D13	DINT	R	Tare value with magnifier 100 (centi d)
D14	DINT	R	Max weight (FSD = Full Scale Deflection)
D15	DINT	R	Min weight
D16	DINT	R	Report: Gross weight
D17	DINT	R	Report: Net weight
D18	DINT	R	Report: Tare weight
D19	DINT	R	Report: Sequence number
B80	BYTE	R	Alibi status, see Chapter 8.8.
D21	DINT	R	Report: Date
D22	DINT	R	Report: Time
D24	DINT	R/W	Limit 1 on
D25	DINT	R/W	Limit 1 off
D26	DINT	R/W	Limit 2 on
D27	DINT	R/W	Limit 2 off
D28	DINT	R/W	Limit 3 on
D29	DINT	R/W	Limit 3 off
D31	DINT	R/W	Preset tare memory (X118, X119)

SPM address	Data type	R/W	Function
B128	**BYTE**		**Indicator status 1**
X1024	BOOL	R	The application is ready.
X1025	BOOL	R	Weighing or check weighing application is active.
X1026	BOOL	R/W	Dialog window is active.
X1027	BOOL	R/W	Start printing. This corresponds to pressing the Print key.
X1028	BOOL	R/W	It is not possible to exit weighing, check weighing or terminal function because the lock is active.
B129	**BYTE**		**Indicator status 2**
X1033	BOOL	R	Weighing point is "W&M."
X1034	BOOL	R	The weighing point is a user-defined scale or a liquid counter.
X1036	BOOL	R	This WP is selected and is visible on the display.
B130	**BYTE**		**Indicator status: Bar graph of statuses**
X1040	BOOL	R	0...-Tolerance
X1041	BOOL	R	-Tolerance...+Tolerance
X1042	BOOL	R	+Tolerance...Max
X1043	BOOL	R	Outside tolerance
D33...37	**DINT**		**Terminal function "dsp1"** (line 1)
B132...135	BYTE [20]	R/W	Part 1
B136...139	BYTE [20]	R/W	Part 2
B140...143	BYTE [20]	R/W	Part 3
B144...147	BYTE [20]	R/W	Part 4
B148...151	BYTE [20]	R/W	Part 5
D38...42	**DINT**		**Terminal function "dsp2"** (line 2)
B152...155	BYTE [20]	R/W	Part 1
B156...159	BYTE [20]	R/W	Part 2
B160...163	BYTE [20]	R/W	Part 3
B164...167	BYTE [20]	R/W	Part 4
B168...171	BYTE [20]	R/W	Part 5
D43...47	**DINT**		**Dialog text 1**
B172...175	BYTE [20]	R/W	Part 1
B176...179	BYTE [20]	R/W	Part 2
B180...183	BYTE [20]	R/W	Part 3
B184...187	BYTE [20]	R/W	Part 4
B188...191	BYTE [20]	R/W	Part 5
D48...52	**DINT**		**Dialog text 2**
B192...195	BYTE [20]	R/W	Part 1
B196...199	BYTE [20]	R/W	Part 2
B200...203	BYTE [20]	R/W	Part 3
B204...207	BYTE [20]	R/W	Part 4
B208...211	BYTE [20]	R/W	Part 5

SPM address	Data type	R/W	Function
D53...57	**DINT**		**Dialog text 3**
B212...215	BYTE [20]	R/W	Part 1
B216...219	BYTE [20]	R/W	Part 2
B220...223	BYTE [20]	R/W	Part 3
B224...227	BYTE [20]	R/W	Part 4
B228...231	BYTE [20]	R/W	Part 5
D58...62	**DINT**		**Dialog text 4**
B232...235	BYTE [20]	R/W	Part 1
B236...239	BYTE [20]	R/W	Part 2
B240...243	BYTE [20]	R/W	Part 3
B244...247	BYTE [20]	R/W	Part 4
B248...251	BYTE [20]	R/W	Part 5
D63...67	**DINT**		**Dialog text 5**
B252...255	BYTE [20]	R/W	Part 1
B256...259	BYTE [20]	R/W	Part 2
B260...263	BYTE [20]	R/W	Part 3
B264...267	BYTE [20]	R/W	Part 4
B268...271	BYTE [20]	R/W	Part 5
D68...72	**DINT**		**Dialog text 6**
B272...275	BYTE [20]	R/W	Part 1
B276...279	BYTE [20]	R/W	Part 2
B280...283	BYTE [20]	R/W	Part 3
B284...287	BYTE [20]	R/W	Part 4
B288...291	BYTE [20]	R/W	Part 5
D73...77	**DINT**		**Dialog text 7**
B292...295	BYTE [20]	R/W	Part 1
B296...299	BYTE [20]	R/W	Part 2
B300...303	BYTE [20]	R/W	Part 3
B304...307	BYTE [20]	R/W	Part 4
B308...311	BYTE [20]	R/W	Part 5
D78...82	**DINT**		**Dialog text 8**
B312...315	BYTE [20]	R/W	Part 1
B316...319	BYTE [20]	R/W	Part 2
B320...323	BYTE [20]	R/W	Part 3
B324...327	BYTE [20]	R/W	Part 4
B328...331	BYTE [20]	R/W	Part 5
D83...87	**DINT**		**Dialog text 9**
B332...335	BYTE [20]	R/W	Part 1
B336...339	BYTE [20]	R/W	Part 2
B340...343	BYTE [20]	R/W	Part 3
B344...347	BYTE [20]	R/W	Part 4
B348...351	BYTE [20]	R/W	Part 5

SPM address	Data type	R/W	Function
D88...92	**DINT**		**Dialog text 10**
B352...355	BYTE [20]	R/W	Part 1
B356...359	BYTE [20]	R/W	Part 2
B360...363	BYTE [20]	R/W	Part 3
B364...367	BYTE [20]	R/W	Part 4
B368...371	BYTE [20]	R/W	Part 5
D94	DINT	R/W	Terminal function: Variable "termfun" Values for "termfun" in accordance with Chapter 6.5.
D95	DINT	R/W	Terminal status: Variable "termstat" Values for "termstat" in accordance with Chapter 6.5.
D96	DINT	R/W	Free number 1 for printout "Num_1," see Chapter 10.3.
D97	DINT	R/W	Free number 2 for printout "Num_2," see Chapter 10.3.
D98	DINT	R/W	Free number 3 for printout "Num_3," see Chapter 10.3.
D99	DINT	R/W	Terminal function "editint": Input of integers
D100	DINT	R/W	Variable "repofun": Value> 0 triggers the print order remotely for the current application (weighing or check weighing) with the number of printouts according to the configuration.
D101	DINT	R	Variable "repostat": Request print status remotely (-1 = Error, 0 = OK) or value> 0 triggers the print order remotely for the current application (weighing or check weighing) with the number of printouts = value.
D103	DINT	R/W	Terminal function "editreal": Input of floating point numbers
D104	DINT	R/W	Terminal function "editwgt": Input of weight value
X3472	BOOL	R	Tare status for printout: Scale tared/not tared
B440	BYTE [12]	R/W	Terminal function "edit_wgt_w": Weight value
D114	DINT	R/W	Check weighing: Set point min.
D115	DINT	R/W	Check weighing: Set point
D116	DINT	R/W	Check weighing: Set point max.
X3748	BOOL	R	Binary weight output, Bit 12 (MSB)
X3749	BOOL	R	Binary weight output, Bit 11
X3750	BOOL	R	Binary weight output, Bit 10
X3751	BOOL	R	Binary weight output, Bit 9
X3752	BOOL	R	Binary weight output, Bit 8
X3753	BOOL	R	Binary weight output, Bit 7
X3754	BOOL	R	Binary weight output, Bit 6

SPM address	Data type	R/W	Function
X3755	BOOL	R	Binary weight output, Bit 5
X3756	BOOL	R	Binary weight output, Bit 4
X3757	BOOL	R	Binary weight output, Bit 3
X3758	BOOL	R	Binary weight output, Bit 2
X3759	BOOL	R	Binary weight output, Bit 1 (LSB)

Note:

Freely assignable SPM addresses D124...D127, see Chapter 8.7.

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 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)

8.6 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

SPM address	Data type	R/W	Function
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
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

SPM address	Data type	R/W	Function
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

8.7 Freely assigned ranges

Weighing point A

%ML	%MD	%MW	%MB	%MX							
				0	1	2	3	4	5	6	7
62	124	248	496	3968	3969	3970	3971	3972	3973	3974	3975
			497	3976	3977	3978	3979	3980	3981	3982	3983
		249	498	3984	3985	3986	3987	3988	3989	3990	3991
			499	3992	3993	3994	3995	3996	3997	3998	3999
	125	250	500	4000	4001	4002	4003	4004	4005	4006	4007
			501	4008	4009	4010	4011	4012	4013	4014	4015
		251	502	4016	4017	4018	4019	4020	4021	4022	4023
			503	4024	4025	4026	4027	4028	4029	4030	4031
63	126	252	504	4032	4033	4034	4035	4036	4037	4038	4039
			505	4040	4041	4042	4043	4044	4045	4046	4047
		253	506	4048	4049	4050	4051	4052	4053	4054	4055
			507	4056	4057	4058	4059	4060	4061	4062	4063
	127	254	508	4064	4065	4066	4067	4068	4069	4070	4071
			509	4072	4073	4074	4075	4076	4077	4078	4079
		255	510	4080	4081	4082	4083	4084	4085	4086	4087
			511	4088	4089	4090	4091	4092	4093	4094	4095

8.8 Status of the Alibi memory

Value	Function
0	No error
1	License for Alibi memory has not been entered.
4	Some of the weights had errors, e.g. overload.
5	Gross or net had no standstill.
6	Some data has been modified before storing.
7	Not enough old records to remove.
8	Alibi memory is full and [Tidy up records] is disabled.
9	Alibi memory server has error.
10	Alibi memory has error.

9 Tilt correction

9.1 General

This function is needed in order to eliminate reproducible external influences that might adversely affect accurate weighing (e.g.: system components that cause tilting movements).

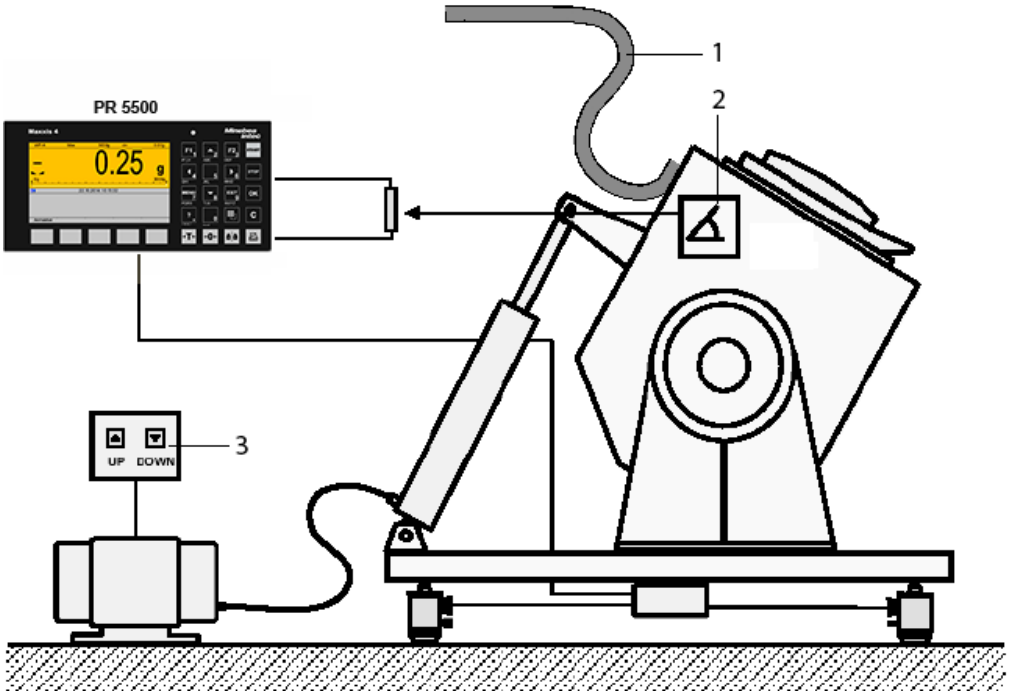
The tilting movement is detected by a rotary angle sensor and sent to the scale by means of an analog signal (range 0–10 V, 0–20 mA).

A calibration must be performed over the entire range of the tilting movement to detect the systematic errors. During calibration, the analog values for each angle are automatically written to a correction table, together with the associated weight values. The table can contain up to 99 values.

The following is required for working with the "tilt correction" function:

- Analog input of PR 5500/07 for connecting the rotary angle sensor
- Valid license

Example:

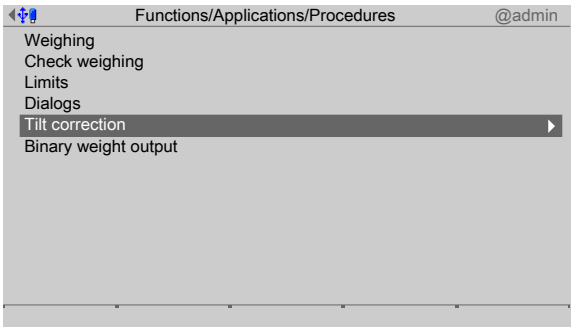


No.	Description
1	Power supply
2	Rotary angle sensor
3	Tilt control

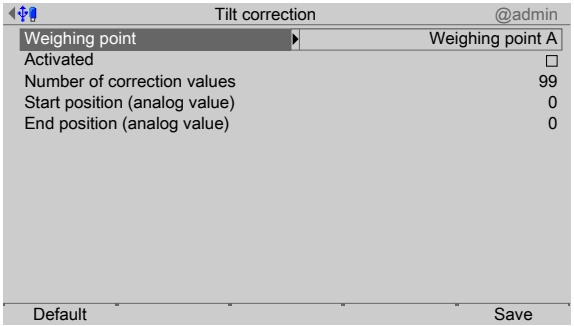
9.2 Performing tilt correction

Note:

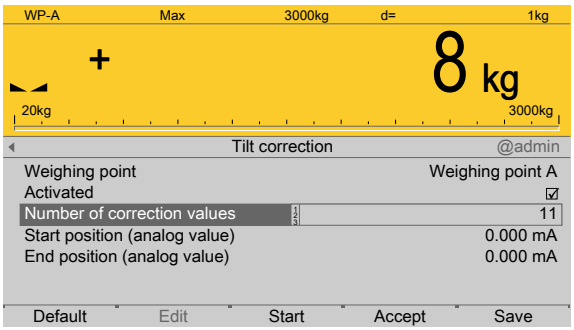
Tilt correction can only be performed if the "Supervisor" or "Administrator" user is logged in.



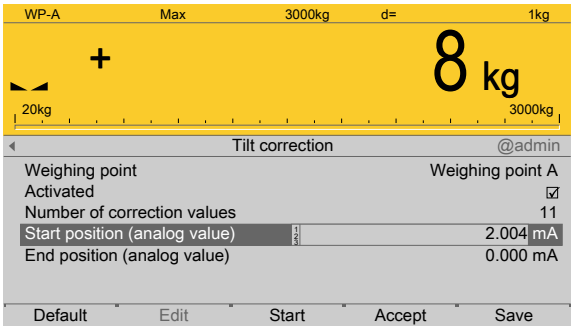
1. Select and confirm [Tilt correction] using the cursor.
   ▷ A selection window is displayed.



2. Confirm weighing point.
3. Check the ☑ box to activate the correction. The weight display bar graph then appears to make configuration easier.



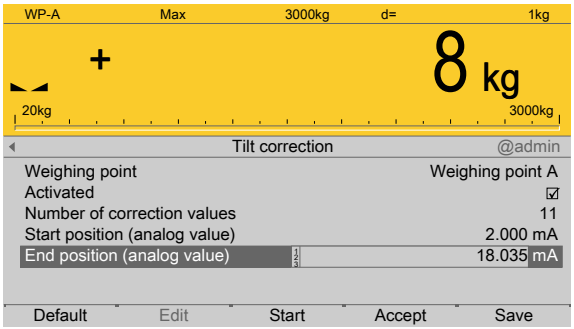
4. Use the keyboard to enter the number of correction values (in this case: 11).



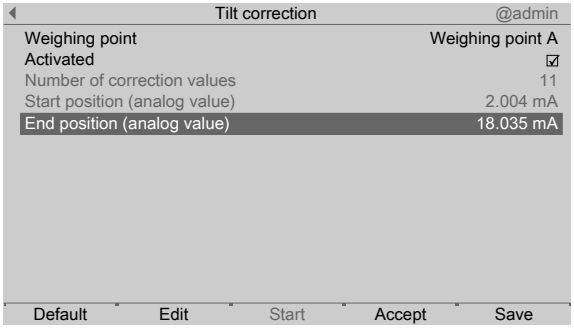
Note:

The positions must be entered with an empty vessel.

5. Move the vessel to the start position (max. tendency to tilt on one side).
6. Press the [Accept] soft key to save the start position.



7. Move the vessel to the end position (max. tendency to tilt on the other side).
8. Press the [Accept] soft key to save the end position.



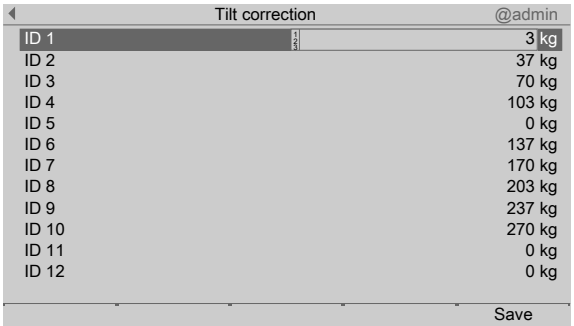
9. Return the vessel to the start position.
10. Press the [Start] soft key to start the calibration.
11. Now move the vessel to the end position so slowly that the standstill indicator remains activated, in order to be able to record the weight values. If applicable, reduce the measurement time or adjust the digital filter.

Note:

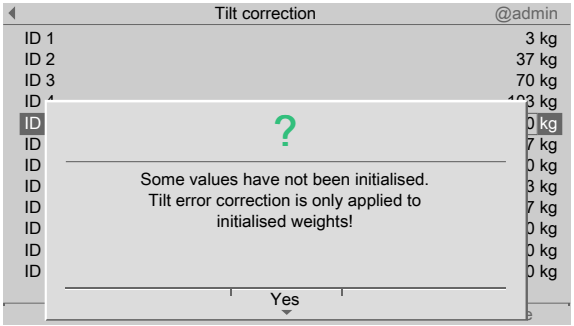
Start and end positions can also be entered manually if they are known.

If the calibration process was canceled or not all the values were initialized or recorded in the table, because no standstill was achieved, a message will be displayed briefly.

12. If applicable, press the [Delete] soft key to delete the correction table.
13. Press the [Edit] soft key to change the corresponding values.
    ▷ The correction table is displayed.



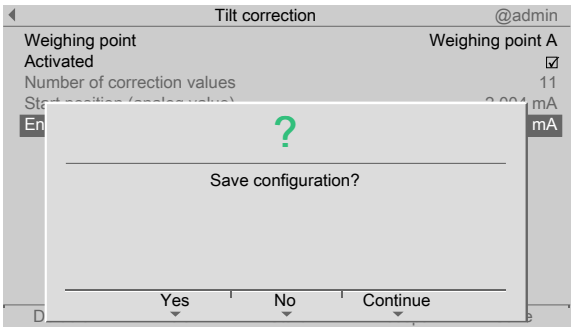
14. Select the relevant values, make plausible changes using the keyboard and confirm.
15. Finally, press the [Save] soft key to save the settings.
    ▷ If applicable, a prompt window is displayed.



16. Press the [Yes] soft key.
17. Finally, press the [Save] soft key to save the settings.

    or

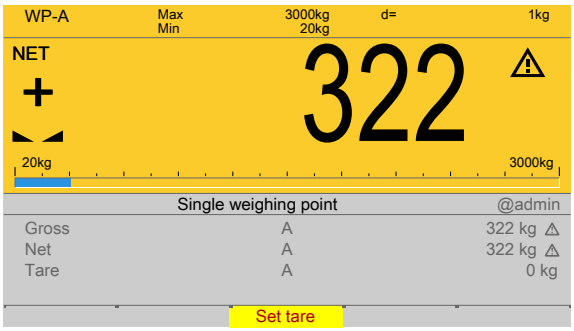
18. press the **ESC/EXIT** key to exit the menu.
    ▷ A prompt window is displayed.



19. Press the [Yes] soft key to save the settings.

Note:

If the approved angular range of the rotary encoder is exceeded, no correction is made. Only the measured weight values are displayed.



20. E. g., select and confirm [Weighing] in the Application menu using the cursor.
21. Perform the weighing operation.
    ▷ The weight value is displayed without weight unit and with warning symbol, i. e.: Tilt correction has been performed during this weighing operation.

10 Printouts

10.1 General notes

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

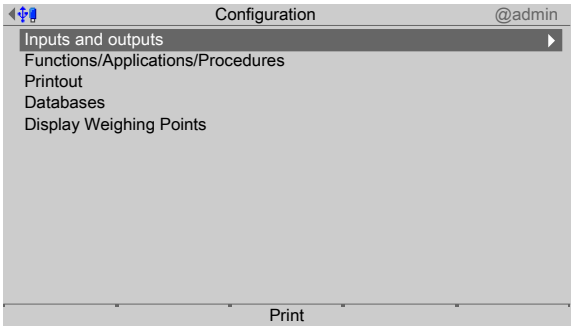
- Device configuration data, see PR 5500 operating instructions
- Basic configuration data, see Chapter 10.2
- Tickets and labels NLE (NiceLabelExpress), see Chapter 10.3.2, 10.3.3
- Tickets, see Chapter 10.3

10.2 Basic-Configuration data

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

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

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



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

10.3 Tickets

10.3.1 General notes

The configuration for tickets is performed in the [Configuration] - [Printout] - [Print format x] menu, see Chapter 5.4.11.

To start printing, the application must be started.

A printout can be initiated by the following signals:

- Press the START or key
- Activating the digital input
- Signal via fieldbus (repofun)
- Signal via DDE/OPC (repofun)

If the weight value is within an inadmissible range (concerns mainly legal-for-trade devices), no printout is generated. If the weight value is permissible, the ticket is printed as configured.

The data for printing can also be read via DDE/OPC communication or fieldbus communication. Refer to the relevant chapters for further details.

10.3.2 Tickets and labels without NLE (NiceLabelExpress)

Example:

```
Customer                              HBB
Order number                     23456789
Sequence number                         6
Date                           2012-10-22
Time                             16:23:54
Gross                   A     <2516.7 g>
Net                     A     <2516.7 g>
Tare                    A        <0.0 g>
```

10.3.3 Tickets and labels with NLE (NiceLabelExpress)

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

- for weighing: "WGT.LBL"
- For check weighing: "CHECK.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.

Variables for NLE	Data formats	Description Parameter content	Weighing	Check weighing
dates	STR10	Date	✗	✗
time	STR10	Time	✗	✗
seqnum	DINT	Sequence number	✗	✗
wp_id	STR2	Weighing point "A"	✗	✗
gross	WEIGHT	Gross weight	✗	✗
net	WEIGHT	Net weight	✗	✗
tare	WEIGHT	Tare weight	✗	✗
actual	WEIGHT	If tared: net, otherwise gross	✗	✗

Variables for NLE	Data formats	Description Parameter content	Weighing	Check weighing
mode	STR20	Text tgross or tnet, corresponding to actual	✗	✗
scale	STR20	Identification name of the device	✗	✗
text1...10	STR20	Free text via communication or terminal function	✗	✗
editstr	STR20	Text to be edited via communication or terminal function	✗	✗
editint	DINT	Integer to be edited via communication or terminal function	✗	✗
editreal	REAL	Float to be edited via communication or terminal function	✗	✗
editwgt	WEIGHT	Weight to be edited via communication or terminal function	✗	✗
wp_id	STR1	Scale ID	✗	✗
term	STR20	Terminal name	✗	✗
IdGrp	STR21	Application database: Field key name, e.g.: Customer name	✗	✗
Id1	STR21	Application database: Field name 1, e.g.: Place of delivery	✗	✗
Id2	STR21	Application database: Field name 2, e.g.: Area Code	✗	✗
Id3	STR21	Application database: Field name 3, e.g.: Town	✗	✗
Id4	STR21	Application database: Field name 4, e.g.: Street	✗	✗
Id5	STR21	Application database: Field name 5, e.g.: Phone	✗	✗
Id6	STR21	Application database: Field name 6, e.g.: Fax	✗	✗
num1	DINT	Free number to be set via communication	✗	✗
num2	DINT	Free number to be set via communication	✗	✗
num3	DINT	Free number to be set via communication	✗	✗
setpmin	REAL	Check weighing: Set point min.		✗
setp	REAL	Check weighing: Set point		✗
setpmax	REAL	Check weighing: Set point max.		✗
tterm	STR20	Prompt text, terminal name	✗	✗
thead	STR30	Heading for printout	✗	✗

Variables for NLE	Data formats	Description Parameter content	Weighing	Check weighing
tseq	STR20	Prompt text, sequence number	✗	✗
tdate	STR20	Prompt text, date	✗	✗
ttime	STR20	Prompt text, time	✗	✗
tgross	STR20	Prompt text, gross	✗	✗
tnet	STR20	Prompt text, net	✗	✗
ttare	STR20	Prompt text, tare	✗	✗
twp	STR20	Prompt text, scale ID	✗	✗
tmode	STR20	Prompt text, text tgross or tnet, corresponding to actual	✗	✗
ttext1...10	STR20	Prompt text, free text 1...10	✗	✗
tnum1	STR20	Prompt text, free number 1	✗	✗
tnum2	STR20	Prompt text, free number 2	✗	✗
tnum3	STR20	Prompt text, free number 3	✗	✗
tactual	STR20	Prompt text, actual	✗	✗
twgt	STR20	Prompt text for weight to be edited	✗	✗
twgtA	STR20	Prompt text for weight WP A to be edited	✗	✗
tstr	STR20	Prompt text for text to be edited	✗	✗
tint	STR20	Prompt text for integer to be edited	✗	✗
treal	STR20	Prompt text for float to be edited	✗	✗

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www.minebea-intec.com

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