Compact scale / terminal eS10

Operating instructions

as of program version 1.09

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BIZERBA

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Contents

Page

1 About these instructions 5

1.1 Content 5
1.2 Safe-keeping 5
1.3 Target group 5
1.4 Symbols used 5
1.4.1 How notes and information are depicted 5
1.4.2 Explanation of warnings 6

2 About the device 7

2.1 Device types 7
2.2 Scope of delivery 7
2.3 Overall view of device 7
2.3.1 Device configuration 8
2.4 Identification plates 9
2.4.1 Position of identification plates 10
2.5 Intended use 10
2.6 Protective mark locations 10
2.6.1 Markings and labels 10
2.6.2 Safety plaques 10
2.7 Sight window for internal safety mark 11
2.8 Notes on verification 11
2.9 Metrologically approved data storage 11
2.10 Regulations of approval for weighing data memory 12
2.11 Operating conditions 12
2.12 Software 13
2.13 Load receptor (optional) 13
2.14 Warranty 13
2.15 Disposal/Environmental protection 14

3 Safety instructions 15

3.1 Requirements for operating personnel 15
3.2 Supply circuit disconnect 15
3.2.1 Removable power cable (optional) 15
3.3 System-related sources of hazards 16
3.3.1 Mains supply 16

4 Installation 17
4.1 Transport and storage 17
4.2 Installation and assembly 17
4.3 Installation requirements 18
4.4 Leveling 18
4.5 Check the electric connection 19
4.6 Battery (option) 20
4.7 Removable power cable (optional) 21
4.7.1 Connect power cable 22

5 Operation 24
5.1 Display and operating field 24
5.2 Switch device on / reset 26
5.3 Switching device off 26
5.4 Function assignment of key F1 26
5.5 Functions of menu key F2 27
5.6 Change the tens digit for input of numbers 28
5.7 Display metrological data 29
5.8 Call up logbook 31
5.9 Call up metrologically approved data storage 33
5.10 Call up tendency control 34
5.10.1 Working with tendency control 36
5.10.2 Enter target value and tolerance limits 36
5.11 Battery pack operation (optional) 38

5.12 Weighing operation 40
5.12.1 Weight display 40
5.12.2 Zero setting of scale 40
5.12.3 Net weighing with tare balance 40
5.12.4 Deleting tare 41
5.12.5 Counting operation 41
5.12.6 Weight display with increased resolution (not metrologically approved) 43
5.12.7 Total display 43
5.12.8 Net weighing with fixed tare value 44
5.12.9 Display tare value 44
5.12.10 Display gross weight 44
5.12.11 Display supply / battery voltage 45
5.12.12 Display tendency control 45

5.13 Recording operation 45
5.13.1 Item recording, adding 46
5.13.2 Total recording 48

6 PC/EDP and printer interface 50

6.1 PC/EDP interface 50
6.1.1 PC/EDP standard dialog 50
6.1.2 PC/EDP – continuous sending of data 55
6.1.3 PC/EDP interface parameters 56

6.2 Printer interface 61
6.2.1 Printer interface parameters 61

7 IXNET dialogs 66

7.1 The dialog frame of the transport protocol 66

7.2 Data dialog IXNET interface 67
7.2.1 Device functions 68

8 Ethernet interface 74

8.1 Performance of Ethernet interface 74

8.2 Ethernet interface has priority 74

8.3 Ethernet interface parameters 74

9 Service menu 77

9.1 General parameters 77

9.2 Scale parameter 80

9.3 Scale calibration menu 85
9.4 Switch settings hardware seal 87
9.5 Hardware seal settings 87

10 Examples of operating procedures 88
10.1 Weighing, recording, totaling 88
10.2 Counting, recording, totaling 90

11 Troubleshooting 92
11.1 Bring-in service 92
11.2 Fault descriptions 93

12 Maintenance 95
12.1 Cleaning 95
12.1.1 Display and operating unit 95
12.1.2 Stainless steel surfaces 95

13 Technical data 97
13.1 Dimensions 97
13.2 Housing 97
13.3 Display and operating unit 97
13.4 Surrounding temperature range 97
13.5 Power supply 98
13.6 Protection class 98
13.7 Interfaces 98
13.7.1 Parallel inputs and outputs 98
13.8 Connections 99

Appendix

CE declaration of conformity

1 About these instructions

Read these instructions before switching on the device. These instructions include basic information on how to operate the device and how to avoid dangers.

These instructions do not distinguish between standard equipment and options. Please, contact your Bizerba specialist regarding available variants.

Our products undergo continuous further development and are subject to different country-specific regulations. Examples of pictures and graphics included in these instructions may vary from the version you have received.

1.1 Content

These instructions describe the operation of the compact scale / terminal eS10, in the following referred to as device. These instructions contain information subject to verification.

1.2 Safe-keeping

This technical document is an essential component of the device. It must be stored close to the device and easily accessible for everybody.

If the device is resold, these complete instructions must be provided with it.

1.3 Target group

The device may only be operated by trained personnel. The operator must be familiar with the contents of these instructions. Installation, maintenance and repair works must be performed by Bizerba authorized specialists only.

1.4 Symbols used

The following symbols can be found in the manual:

⇨	Text with arrow prompts you to carry out an action.
①	Position number in figure.
<OK>	Text inside a < > refers to a key or soft key.
"Display"	Text inside a " " refers to display text.

Prerequirements are displayed with a gray background.

1.4.1 How notes and information are depicted

Notes and information are depicted as follows:

Observance of these notes is mandatory.

Additional information for better understanding.

1.4.2 Explanation of warnings

The signal word above the symbol indicates the risk level.

DANGER

Source of danger with high risk of imminent danger to persons!

This may lead to life threatening injuries and serious health damage.

– Measurements for prevention of danger are specified.

WARNING

Source of danger with medium risk of possible danger to persons!

This may lead to serious injuries, health damage or serious damage to property.

– Measurements for prevention of danger are specified.

CAUTION

Source of danger with low risk of possible danger to persons!

This may lead to injuries or damage to property.

– Measurements for prevention of danger are specified.

CAUTION

Source of danger, improper use!

Damage to property can result.

– Measurements for prevention of danger are specified.

2 About the device

2.1 Device types

The device can be supplied with or w/o load receptor.

Compact scale eS10	The device is a non-automatic, electromechanical scale with automatic display and operating unit.
Terminal eS10	The device is an industrial terminal w/o load receptor.

2.2 Scope of delivery

– Industrial terminal (remote, table top display, column or wall-mounted)
– Operating instructions
– Optional load receptor (various protection classes possible)

2.3 Overall view of device

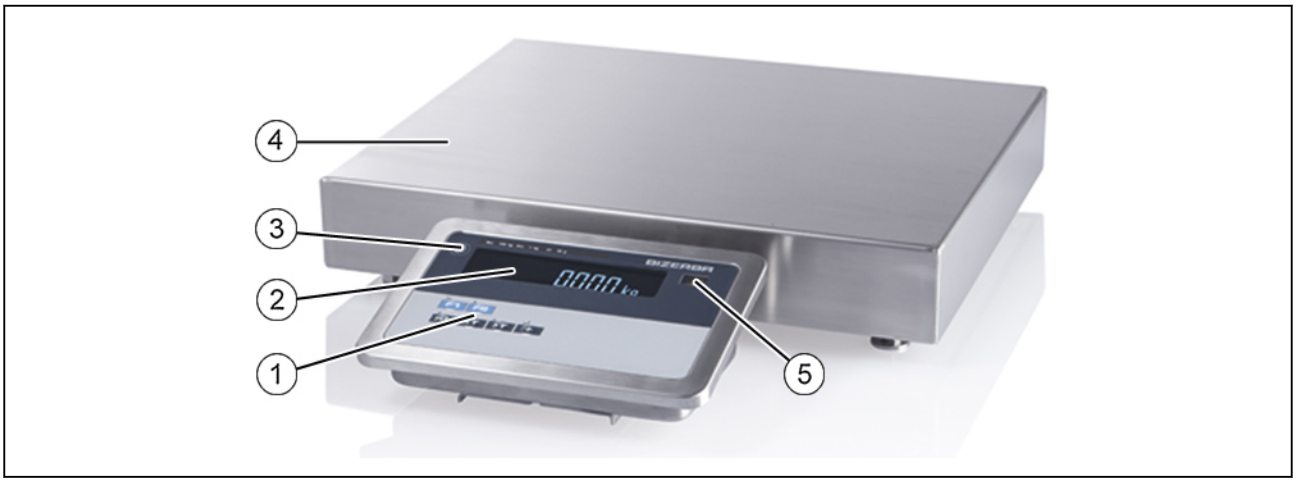


Fig. 1: Table-top installation

(1) Operation field
(2) 7-segment display
(3) Standby / reset key
(4) Load receptors
(5) Viewing window for control mark

2

2.3.1 Device configuration

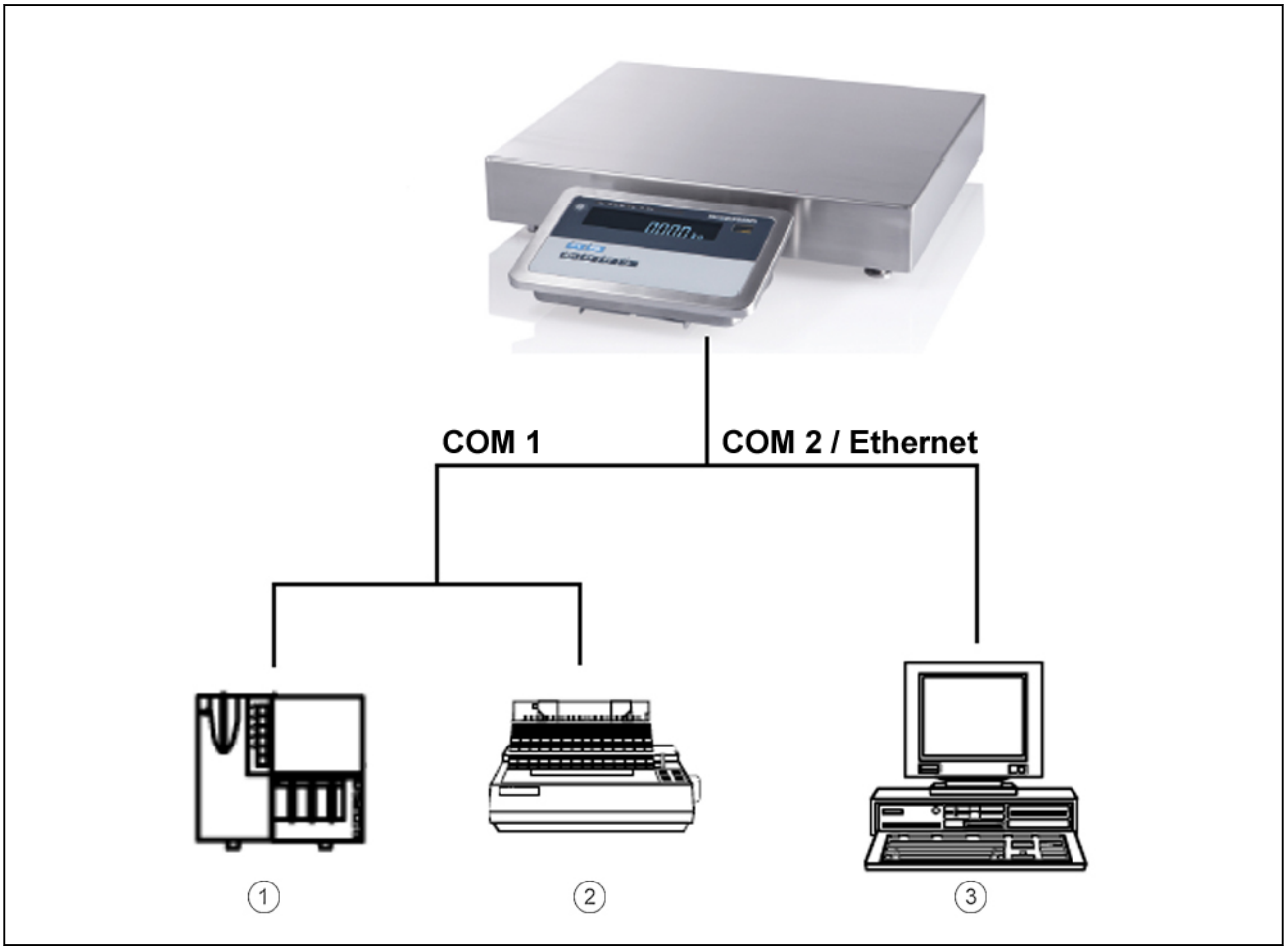


Fig. 2: Device configuration

① GLP 58

② CITIZEN / EPSON or compatible printer

③ PC/EDP

COM1 = printer

COM2 = EDP

Ethernet = EDP

2.4 Identification plates

Main identification plate of a non-automatic scale
The main identification plate may differ depending on device and country of installation.

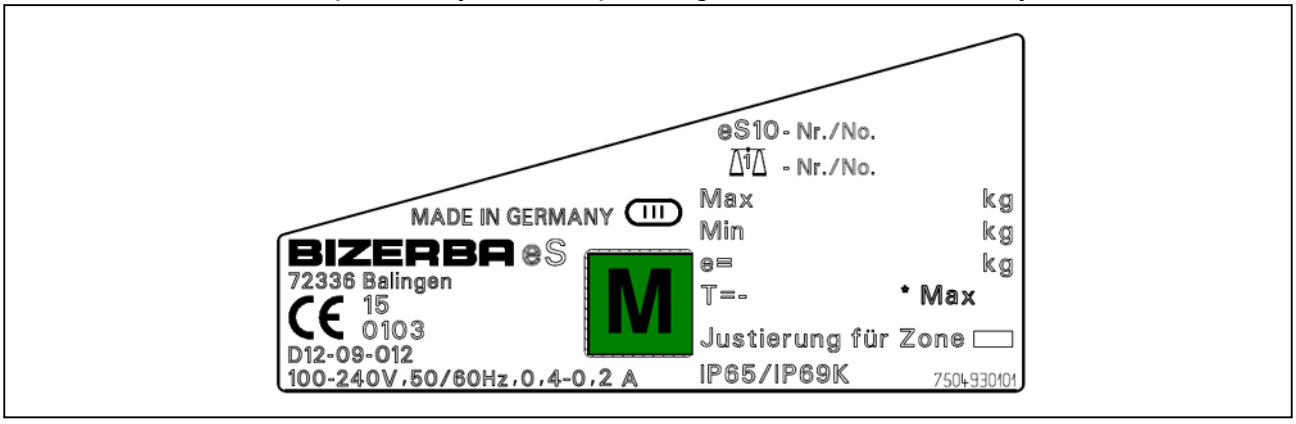


Fig. 3: Main identification plate of a non-automatic scale

Explanation of individual inscriptions:

Bizerba	Manufacturer
eS	Type Designation
15	Year of manufacture (2-digit)
0103	Field for notified body during conformity valuation (initial verification) by Bizerba
D12-09-012	No. of EC type approval
100-240V, 50/60Hz	Electrical data
Made in Germany	Country of manufacture
(III)	Scale accuracy class III
eS10 - Nr.	Device number
- Nr.	Device number of the connected load receptor
Max Min e T	Weighing range and verification value
Justierung für Zone	There are gravity zones in Germany, Austria, Great Britain, Italy and Hungary
IP 65/69K	Protection type

Identification plate with max, min and e
The identification plate may differ in design depending on the weighing range.

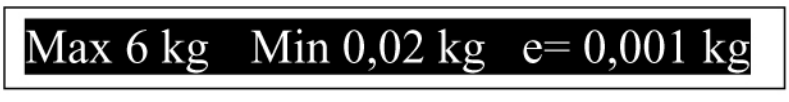


Fig. 4: Identification plate with max, min and e

2

2.4.1 Position of identification plates

The main identification plate in accordance with OIML R76-1 is located on the right side of the housing. The metrological information is located on an additional plate which is near the window close to the display.

① Main identification plate in accordance with OIML R76-1

② Identification plate with max, min and e

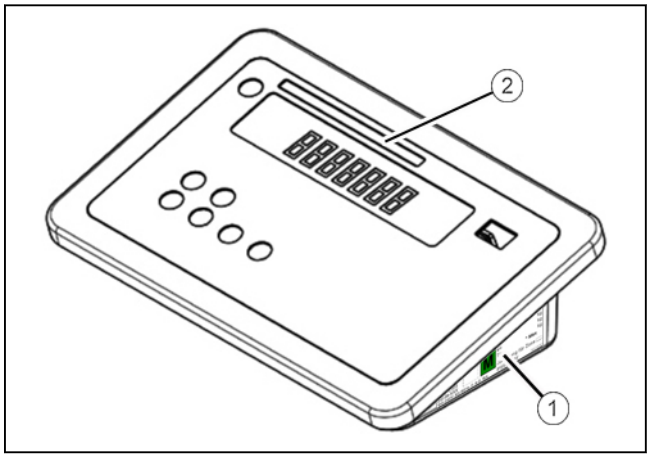


Fig. 5: Position of identification plates

2.5 Intended use

The device is intended to be used as a compact scale / terminal in an industrial environment.

– The device may only be used in industrial or commercial fields.
– The device may not be used in potentially explosive areas.
– The device must only be transported using appropriate means of transportation and if it was secured accordingly.
– No unauthorized constructional modifications must be applied to the device.
– The device may only be used for verifiable transactions if the software is operating correctly and is in a secure state. The software IDs must be correctly displayed and checked by the operator daily. The internal safety mark must not be damaged.

2.6 Protective mark locations

2.6.1 Markings and labels

All markings and labels that are required according to the valid EC directives are located on the identification plate. The symbol for conformity evaluation (initial verification) is affixed to the measuring device.

2.6.2 Safety plaques

The scale adjustment data are protected by a safety clip under the lead seal. The connector for the load receptor is also located under the sealing cover. The fixing screw of the lead seal is secured against removal by a yellow seal mark.

For load receptors with analog load cells, the cable connection cabinet is also provided with a seal mark.

2.7 Sight window for internal safety mark

The safety mark is visible through the sight window. The safety mark is located on the protective cover of the load receptor connection. In order to see the safety mark in the dark housing, there is a lamp inside the sight window. The sight window is located at the front of the device, see page 7.

2.8 Notes on verification

Verification information for EC countries
The identification plate of the scale includes the symbol of the conformity valuation (initial verification). This type of scale can be commissioned and used in-situ, providing that it is not connected to an additional set-up (e.g. printer).

Scales that are connected on site to an additional device must have their first verification carried out either by the responsible verification office or by a Bizerba verification engineer. Scales as well as the additional device must be tested and verified. If the scale with add. device meets the verification-related requirements, it can be used in operations that are subject to verification. In the case of extensions at a later date, once the scales have already been put into operation, the relevant verification office must be informed.

Scales and additional devices not bearing the EC mark may not be used in transactions subject to verification.

Scales that are verified to a certain verification zone (gravitational acceleration) (data on the identification plate) may not be used in other verification zones without being reverified.

According to statutory regulations, the user of a scale must ensure that it is used for its intended purpose. This includes observation of the verification guidelines, in particular amendments, supplements and additions.

Re-verification information
Re-verification of a scale is executed according to the respective statutory country regulations. The verification validity period in Germany, for example, is generally 2 years for scales. Whilst that applying to price labeling scales is 1 year. The verification validity period begins when the scales are put into circulation (installation and commissioning). For details, see identification plate.

Re-verifications must be carried out by the operator of the scale according to the legal requirements.

Verification information for non-EU countries
The statutory regulations of the specific countries must be observed.

2.9 Metrologically approved data storage

The verifiable data memory serves to save verifiable measuring data. The recorded weighing results are saved (non-volatile) with a consecutive number.

2

2.10 Regulations of approval for weighing data memory

The points listed below are prescribed by the EC type test certificate; these must be absolutely observed by the user. The following conditions must be fulfilled in relation to the long-term storage of weighing results:

– Weighing results must be stored together with an identification, so that each weighing process of each weighing result can be easily assigned and verified if this should be necessary. These identifications must also be specified for documents that have been created with additional devices.
– If taring was performed, tare and gross values have to be stored.
– Contracting parties must be able to verify the stored weighing results.

Business documents that are created by an additional device not subject to statutory metrological inspection in accordance with the preliminary comment to Appendix 1 of directive 2009/23/EC, must contain the following information:

– Identification for each weighing conveyor.
– When used in Germany, an additional note is required stating that, based on the identification information, the weighing results can be compared to the stored weighing results in compliance with the guidelines.

2.11 Operating conditions

Please contact us or our customer service departments if you have any doubts concerning the practical application of these conditions.

Protection type, temperature and air humidity
The permitted values and the protection type can be found on the device identification plate and in the Technical data.

Air convection
In order to prevent unacceptable heating, there must be free air convection around the device.

Supply voltage
The permitted values can be found on the device identification plate and in the Technical data.

Written permission for changes
Modifications to the devices require our prior written consent.

Repairs on the device may only be performed by the manufacturer or authorized specialist workshops.

2.12 Software

The device has a software download.

A software must only be loaded if approved by the owner of the measuring device.

2.13 Load receptor (optional)

Free-standing, unfixed and mobile scales are equipped with a level. After each change of location check if the load receptor is horizontally aligned.

Load receptors may only be loaded up to the maximum approved load. The maximum load can be found on the type plate of the load receptor.

2.14 Warranty

Installation, putting into operation as well as initial instruction regarding operation is carried out by Bizerba Customer Service, Bizerba specialists or companies commissioned by Bizerba.

Warranty for defects shall not exist in particular if and insofar as the defects occurred to the delivered goods or to assets of the ordering party are attributable to the following reasons:

– Non-observance of operating conditions
– Non-adherence to the technical documentation
– Defective electrical installation by the customer
– Structural modifications to the equipment
– Incorrect programming and operation
– Missing backup
– Natural wear and tear
– Wrong cleaning agent

The warranty will lapse if defects/damage that occur are caused by persons not authorized by Bizerba. The warranty will lapse if any spare parts or operating material other than original Bizerba ones are used. If you have any questions on warranty, spare parts or operating material, please contact your Bizerba consultant.

If you reset or program devices, check the new setting by means of a test run and test printout. This helps to avoid incorrect results.

Check that the Bizerba products are handled correctly and repeat training if necessary.

2

2.15 Disposal/Environmental protection

The legal disposal/environmental protection terms of the respective countries apply.

Only valid for Germany!
Batteries are fitted in this device which are subject to the Battery Ordinance on the return and disposal of used batteries and accumulators.

This ordinance requires you, as the end user, to return the device to the manufacturer or dealer, at the end of its proper use, for the purposes of recycling and correct disposal.

If your device contains a rechargeable battery, you are required by the Battery Ordinance to return the used battery to the dealer or to a public return point provided for this purpose.

3 Safety instructions

The safety instructions must be observed throughout the installation, operation, cleaning and maintenance procedures.

3.1 Requirements for operating personnel

The device must only be operated by personnel trained in the operation of this equipment. The operating personnel must be familiar with the safety features of the device and must have read and understood the safety instructions included in these operating instructions.

Only qualified trade personnel or Bizerba service technicians may open the device components.

Even though this equipment includes all required safety devices, disregard the safety instructions could result in injuries to the operating personnel or damage to property.

The minimum age of the operating personnel by German law is 14. Different requirements may apply in your country.

3.2 Supply circuit disconnect

Mains supply with power plugs
The device comes standard with power plugs. The power plugs are the supply circuit disconnect. Note the following requirements:

– To de-energize the device, you must disconnect the mains plug.
– Please, note that devices with battery pack are still internally supplied with approx. 12 V.
– Customer provided power sockets must be easily accessible.
– The distance between the mains power sockets and the device must be shorter than 3.6 m (12 ft).

Mains supply without power plugs
The user of the system is responsible for the safety relevant execution of the mains supply and the supply circuit disconnect in accordance with national regulations.

3.2.1 Removable power cable (optional)

The device can be optionally supplied with a removable power cable.

DANGER

Electrical voltage on the plug-in connector with mains plug inserted!

Danger to life from electric shock.

– Do not apply voltage to or separate removable power cable.

3.3 System-related sources of hazards

DANGER **Electrical voltage in device with power plug inserted!**

Danger to life due to electrical shock.

– Pull power plug before working inside the device.
– Work inside the device must be performed by qualified personnel only.

3.3.1 Mains supply

WARNING **Incorrect supply voltage!**

Fire hazard!

Destruction of electric components.

– Compare the data of the supply voltage with the specifications on the device identification plate.
– Do not connect the device to the electric mains if the data of the supply voltage do not match the connection values of the device.

4 Installation

4.1 Transport and storage

Always transport and store the device in its original packaging. If the device was stored in an area with low temperatures before being unpacked, the device could condensate in a room with normal temperatures after being unpacked.

Switch on device only after it has reached room temperature and no longer condensates. In order to accelerate this process, remove load platter, if necessary.

4.2 Installation and assembly

Carefully unpack load receptor at place of installation. Pay particular attention to connecting cables.

Do not lift device on load platter (upper platter), always lift on base frame (lower platter).

Install the device so that it is easily accessible for operation, maintenance and cleaning.

Additional assembly of weighing conveyors or roller conveyors on the load receptor only after consultation with Bizerba.

For other manufacturers' equipment included in our scope of supply, the respective manufacturer's regulations take preference if they deviate from our conditions.

Parts which have been moved must not be electrically charged. Driven weighing conveyors or roller conveyors must comply with Machinery Directive 2006/42/EC.

DANGER

Formation of condensed water in the device!

The consequences can be:

- **Life threatening injuries due to electric shock**
- **Damage to property**
- Bring the device to room temperature before first switching it on.
- Avoid large temperature fluctuations.
- Do not exceed the maximum permissible ambient temperature.

4.3 Installation requirements

The following requirements must be complied with for the setup of the device:

4

– Installation surface must be level
– Freedom from vibrations, oscillations and drafts, as well as the driest possible installation must be guaranteed for our equipment.
– Set up devices based on operation, work flow and maintenance aspects.
– For systems subject to legal control the operating personnel must have a clear view from weighing terminal to load receptor. The identification plate must be clearly visible.

The weighing system is not suitable for the following surrounding areas:

– Explosive risk areas
– Areas with shocks and vibrations
– Temperatures outside of the interval from -10°C to +40°C

4.4 Leveling

To compensate for any small irregularities in the floor space, the scale can be leveled at the foot screws using a spirit level.

After each change of location, the scale must be re-leveled.

By adjusting the foot screws the device must be leveled in a way that the air bubble of the spirit level is within the circle mark.

(1) Position the spirit level
(2) Foot screws

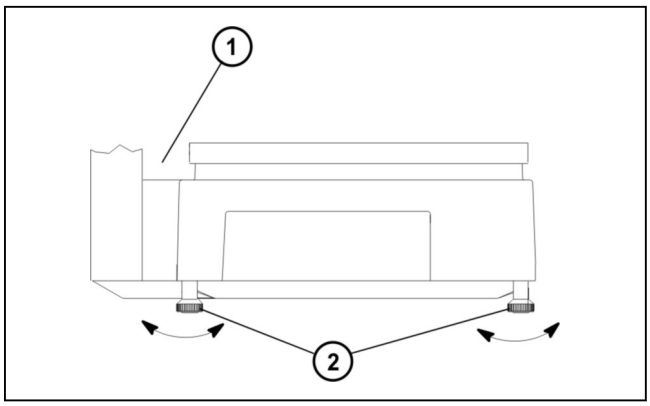


Fig. 6: Foot screws

➪ Turn the foot screws (2) until the air bubble (3) is located in the center of the spirit level (1).

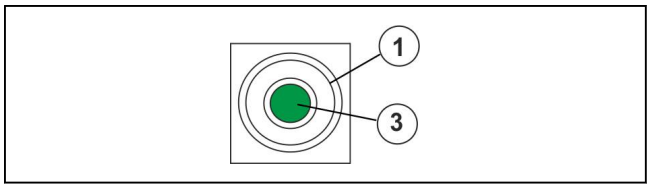


Fig. 7: Device is leveled correctly.

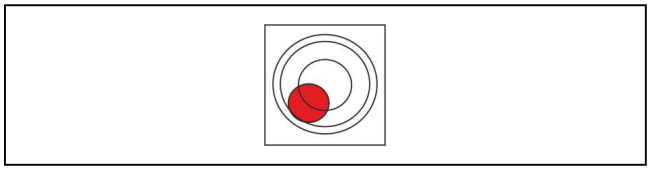


Fig. 8: Device is not leveled correctly.

4.5 Check the electric connection

Installation of power supply provided by customer
The installation of the power supply for connecting to our equipment must be carried out in accordance with the international specifications and the regulations derived from them. These essentially include the recommendations of at least one of the following commissions:

– International Electro-technical Commission (IEC)
– European Committee for Electro-technical Standardization (CENELEC)
– German Association for Electrical, Electronic and Information Technologies (VDE)

In case of a strongly contaminated network interference suppressing measures need to be taken, e. g:

– Provide separate power line to our devices.
– Include a capacitive decoupled isolation transformer or some other interference suppressing device into the feeding lines to our devices.

The provided network cable must be suitable for the local supply voltage.

– It must show no external damage.
– It must not get in contact with liquids.
– It must comply with the requirements of the Safety Extra Low Voltage as per EC Directive.

Removable power cables must not be damaged on both ends of the plug-in connections.

– Both ends of the plug-in connections must be connected according to the coding.
– The connections must be firmly screwed to each other.

Check if the power supply data of the identification plate matches the power supply data of the power connection prior to connecting the device.

4

WARNING **Incorrect supply voltage!**

Destruction of electric components, fire hazard.

– Compare the data of the supply voltage with the specifications on the device identification plate.
– Do not connect device to power supply system if the data of the supply voltage does not match the values of the device.

4.6 Battery (option)

The devices are available with and without batteries. The device can be operated without a mains power supply if a battery is installed.

The installation or removal of the battery may only be carried out by our customer services and/or a company or person assigned by us.

The battery pack must be fully charged prior to first start-up. In order to fully charge the battery pack, the device must be operated with mains supply for about 11 hours.

WARNING **Incorrect handling of lithium ion battery pack!**

The consequences can be:

– **Risk of explosion**
– **Leaking of corrosive solutions**
– **Escaping of harmful vapors**
– **Severe bodily injuries and damage to property**
– Do not short-circuit, reverse polarity of, open or solder the lithium ion battery pack.
– Keep away from heat and corrosive liquids.
– Please follow manufacturer's instructions when disposing of used batteries.

WARNING **Risk of explosion due to incorrect lithium ion battery pack!**

This may result in serious injuries and damage to property.

– Always use the prescribed battery type for the lithium ion battery pack.
– Please follow manufacturer's instructions when disposing of used batteries.

4.7 Removable power cable (optional)

Devices with battery pack will be supplied with a removable power cable. In order for the screwable plug-in connection to comply with the specified IP protection class of the terminal, the following requirements must be met:

– In battery operation the protective cap must be firmly screwed to the device plug-in connector.
– In mains operation the cable plug-in connector must be firmly screwed to the device plug-in connector.

Removable power cables must not be damaged on both ends of the plug-in connections. Both ends of the plug-in connections must be connected according to the coding.

Device plug-in connector (housing variant: table top display)

The device plug-in connector for the power cable is located on the right side of the device between housing and load receptor.

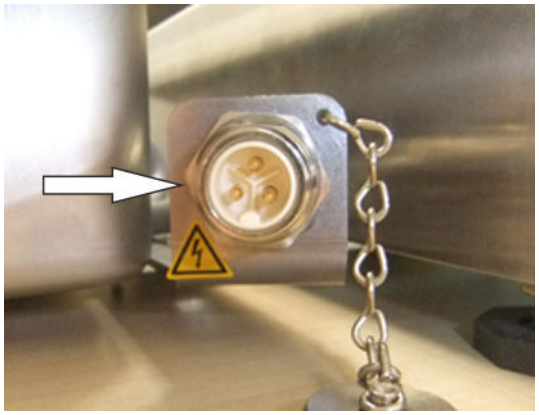


Fig. 9: Device plug-in connector

Device plug-in connector (housing variant: column, wall-mounted, remote)

The device plug-in connector for the power cable is located on the back of the device.

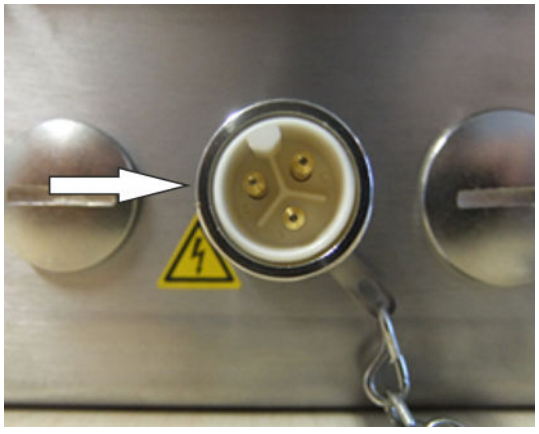


Fig. 10: Device plug-in connector

4

Protective cap

The protective cap (1) must be mounted to the device plug-in connector if no power cable is connected to the device.

Fig. 11: Firmly screwed together protective cap

4.7.1 Connect power cable

DANGER

Electrical voltage on the plug-in connector with mains plug inserted!

Danger to life due to electrical shock.

– Do not apply voltage to or separate removable power cable.

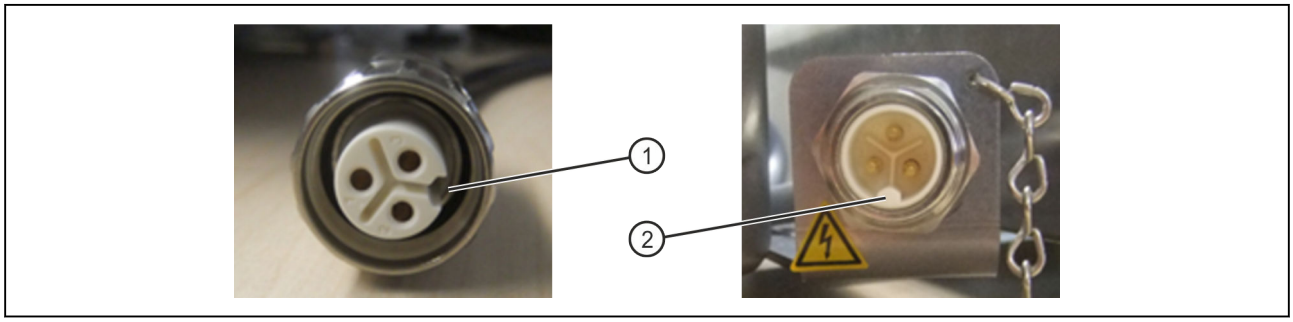


Fig. 12: Cable plug-in connector

(1) Coding of cable plug-in connector

(2) Coding of device plug-in connector

➪ Attach cable plug-in connector to device plug-in connector according to coding.

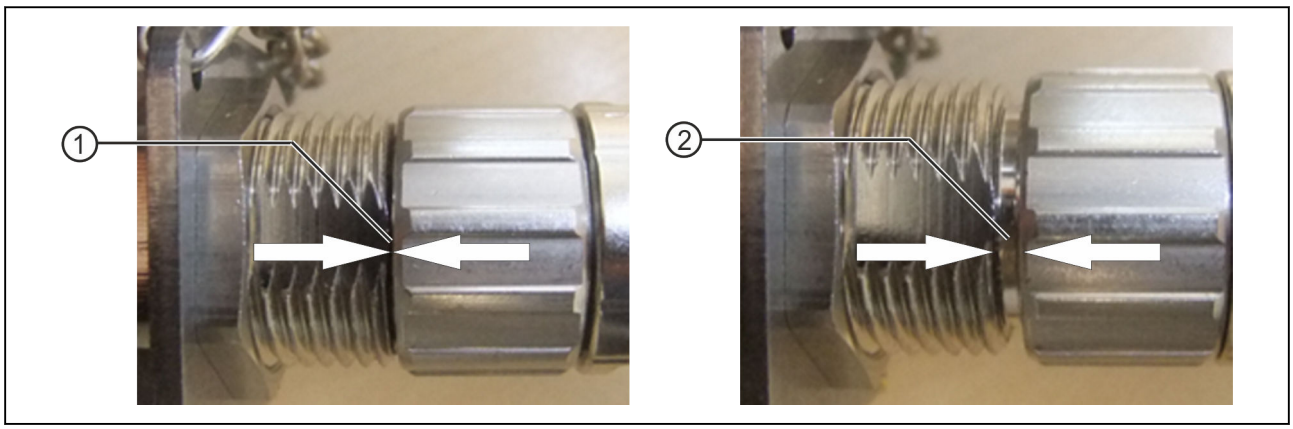


Fig. 13: Screw connection

① Secure screw connection

② Unsecure screw connection

➪ Firmly screw together screw connection between cable plug-in connector and device plug-in connector.

In order to ensure a secure connection there must be no gap between the connecting pieces.

5 Operation

5.1 Display and operating field

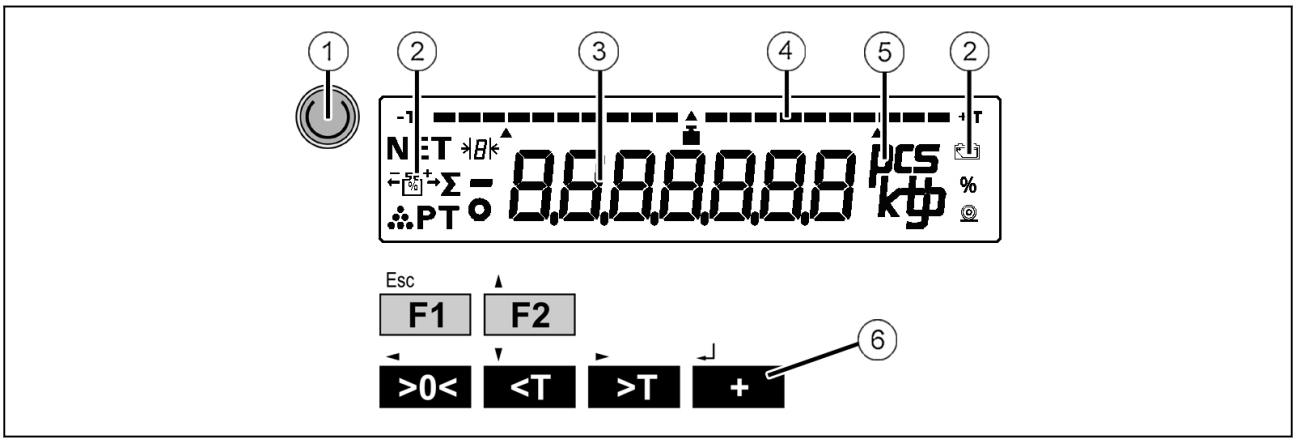


Fig. 14: Display and operating unit

(1) Standby/reset key

(2) Status symbols

(3) Weight, tare and application values

(4) Bar segments

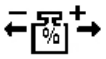
(5) Unit of measured value (g, kg, t, lb, pcs)

(6) Control panel

Key functions

Key	Function in weighing operation	Menu functions
	Briefly press key: Save data and restart. Press and hold key for more than 3 s: Standby mode.	
Esc F1	Configurable function key, see page 26.	Return to weighing mode. <ESC> key.
Mode F2	After a restart: Select menu, see page 27.	In Menus, scroll **upwards** or increase value.
>0<	Zero setting	To the **left** to change decade to be edited.
<T	Deleting tare	In Menus, scroll **downwards** or reduce value.
>T	Taring	To the **right** to change decade to be edited.
+	Confirm entry. <Enter> key.	

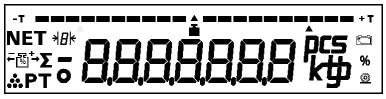
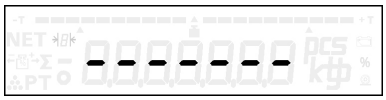
Special characters in the display

NET	This symbol signalizes that the displayed measured value is a net value. Taring was performed.
	**Operating mode tendency control** In this operating mode the weight is determined in reference to a specified target weight. The absolute or relative difference as compared to the target weight will be displayed.
Σ	**Operating mode totals** In this operating mode the weight values of several items from the total memory are displayed.
	**Operating mode number of pieces** In this operating mode the number of pieces of several products to be weighed is established and displayed after the piece weight was weighed.
PT	**Display tare value** This symbol signalizes that the display shows a tare value. T: Weighed value (tare balancing) PT: Manual tare value (EDP)
	**Battery operation** This symbol shows the battery pack operation in scales with integrated battery pack. If the battery pack power falls below 50%, the symbol flashes.
	**Registration** This symbol shows that a recording process is running (data transfer to printer or EDP interface).
pcs kg	**Unit symbol** This field shows the unit of the measured value (g, kg, t, lb, pcs).
	**Symbol for approved or non-approved operation** For scales subject to legal control only: In approved operation this symbol must not flash. If the symbol flashes, metrologically relevant data is not protected.
	Multi-range scale: effective range is "1", "2" or "3".

5

5.2 Switch device on / reset

Plug in power pack The scale is supplied via the network.

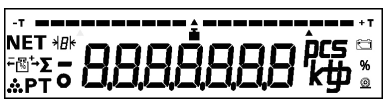
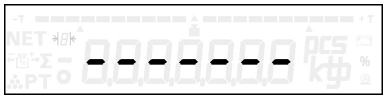
Key	Display presentation	Process description
		All display segments will be activated.
		The program number is briefly displayed.
		Middle segments are briefly displayed.
		The device automatically switches to weighing mode. The scale is ready for operation.
		Press key to save inputs or to restart the device.

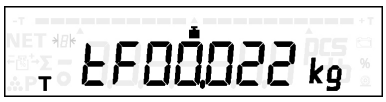
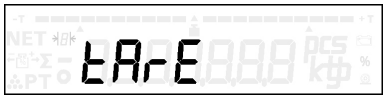
5.3 Switching device off

After a brief warm-up period, the maximum weighing accuracy is reached. It is recommended to leave the weighing terminal connected to the mains voltage during the entire day. This will ensure a constant operating temperature and maximum weighing accuracy.

Key	Process description
	Press and hold key for more than 3 s. The device changes to stand-by mode.
	Unplug to separate device from power supply.

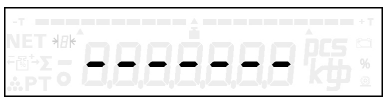
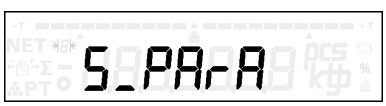
5.4 Function assignment of key F1

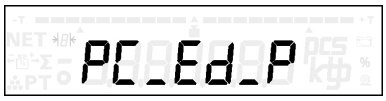
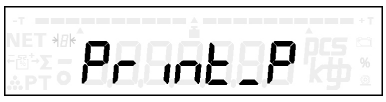
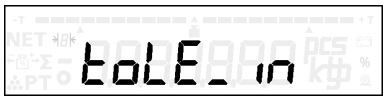
Key	Display presentation	Process description
		All display segments will be activated.
Esc F1		Press and hold **F1** while middle segments are being displayed. The function selection appears.

Key	Display presentation	Process description
Esc F1		Counting operation With selection **F2** call up reference quantity. Possible selection: 5 / 10 / 15 / 20 / 25 / 50 / 75 / 100 / 125
Esc F1		Fine division
Esc F1		Total display
Esc F1		Call-up: Fixed tare value Change fixed tare value: Place weight on scale and confirm with **>T**.
Esc F1		Display: Tare value
Esc F1		Display: Gross value
Esc F1		Display of supply / battery voltage in volts
Esc F1		Tolerance check
		Incl. saving: Press key.

5.5 Functions of menu key F2

In order to select a function under <F2> proceed as follows:

Key	Display presentation	Process description
		Restart device. All display segments will be activated.
Mode F2		Press and hold **F2** while middle segments are being displayed. The menu selection appears.
Mode F2		Service parameters, see page 29

Key	Display presentation	Process description
▲ Mode F2		Ethernet interface parameters, see page 74
▲ Mode F2		Total display, see page 43
▲ Mode F2		PC/EDP interface parameters, see page 50
▲ Mode F2		Printer interface, see page 61
▲ Mode F2		Tolerance control, see page 34
▲ Mode F2		General parameters, see page 77
↵ +		Confirm selection of desired function with ↵ +.

5.6 Change the tens digit for input of numbers

In order to change from a 1-digital to a 10-digital decade in case of two-digital menu numbers, proceed as follows:

Key	Display presentation	Process description
▲ Mode F2		Example: PC/EDP interface parameter is called up.
↵ +		The first parameter is displayed.
↵ +		The tens digit is selected. A bar above the tens digit marks the selection.
▼ <T or ▲ Mode F2		Select desired parameter number.
► >T or ◄ >0<		The ones digit is selected. A bar above the ones digit marks the selection.

Key	Display presentation	Process description
<T or Mode F2		Select desired parameter number.
+		Confirm input with +.

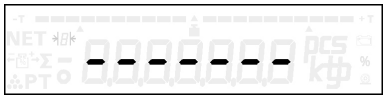
5

5.7 Display metrological data

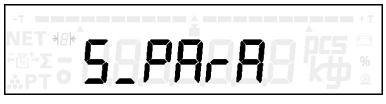
The verification status displays if there were verification relevant parameter changes. Furthermore, the identification of the connected load cell will be displayed.

Key	Display presentation	Process description
		Weight symbol flashing: Calibration switch is not secured. Weight symbol static: Calibration switch is in secured status.

Display metrological data

Key	Display presentation	Process description
		Restart device. Press and hold Mode F2 while middle segments are being displayed. The menu selection appears.
Mode F2		Select service parameter menus and confirm with +.
<T		Select verification status and confirm with +.

Call up service parameters

Key	Display presentation	Process description
		A service parameter menu is called up.
+		Select scale parameters.

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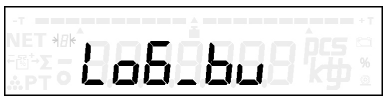
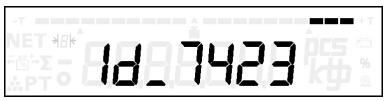
Key	Display presentation	Process description
▲ Mode F2		Start calibration.
▲ Mode F2		Call up metrologically approved data storage ("alibi memory"), see page 33.
▲ Mode F2		Select verification status.
▲ Mode F2		Call up logbook, see page 31.
Esc F1		Return to weighing mode.

Display verification status of digital weighing systems

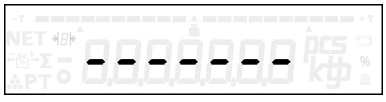
Key	Display presentation	Process description
		Slide switch ("H1" = non-approved, "H0" = approved)
▲ Mode F2		Software ID of fixed software. The fixed software cannot be changed in secured status.
▲ Mode F2		Version number of fixed software
▲ Mode F2		Program version of program section which is not subject to legal control.
▲ Mode F2		g factor in g/kg
▲ Mode F2		Classification of weighing system Maximum of 20 digits (e. g. "US18 C7/US_15 C/3M1_15")
▲ Mode F2		Classification of weighing system (continued)
▲ Mode F2		Classification of weighing system (continued)

Key	Display presentation	Process description
▲ Mode F2		Year of manufacture of weighing system
▲ Mode F2		Consecutive number of weighing system
Esc F1		Return to weighing mode

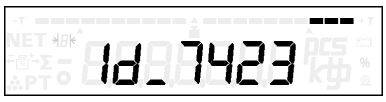
Display verification status of analog weighing systems

Key	Display presentation	Process description
		Slide switch ("H1" = non-approved, "H0" = approved)
▲ Mode F2		Software ID of fixed software The fixed software cannot be changed in secured status.
▲ Mode F2		Version number of fixed software
▲ Mode F2		Version number of section of application which is not subject to legal control
▲ Mode F2		g factor in g/kg
Esc F1		Return to weighing mode

5.8 Call up logbook

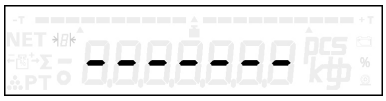
Key	Display presentation	Process description
		Restart device. Press and hold ▲ Mode F2 while middle segments are being displayed. The menu selection appears.
▲ Mode F2		The total function is displayed.

5

Key	Display presentation	Process description
▼ <T		Confirm service parameter selection with ↵ +.
▼ <T		Confirm logbook function selection with ↵ +.
		The current logbook entry is displayed.
▲ Mode F2		The department number is displayed.
▲ Mode F2		The component number is displayed. The following display variants are available: – "C_01": if digital load receptor ADW501 – "C_02": if loadable scale software which is subject to legal control (RX62N)
▲ Mode F2		Software ID of entered component.
▲ Mode F2		Software version number of entered component. The following display variants are available: – "U_XXX": if digital load receptor ADW501 – "E_XXX": if loadable scale software which is subject to legal control (RX62N)
▲ Mode F2		Program version of program section which is not subject to legal control.
▲ Mode F2		The date of the program version is shown in format "YYMMDD".
▲ Mode F2		The time of the program version is shown in format "HHMM".
▲ Mode F2		Call up next logbook entry with ↵ +.
▲ Mode F2		Return to weighing mode with ↵ +.

5.9 Call up metrologically approved data storage

In the metrologically approved data storage ("alibi memory") you can enter a desired number with a maximum of 6 digits in a search mask and afterwards check the data record.

Key	Display presentation	Process description
		Restart device. Press and hold Mode F2 while middle segments are being displayed. The menu selection appears.
Mode F2		The total function is displayed.
<T		Press key <T as often as needed until this display comes up. Confirm service parameter selection with ↵ +.
<T		Press key <T as often as needed until this display comes up. Confirm selection of metrologically approved data storage with ↵ +.
		Display of consecutive number of last entry in the data storage.
↵ +		Consecutive number of last entry selected.
Mode F2		Display: Scale number 01
Mode F2		Display: Gross weight
Mode F2		Display: Tare weight
Mode F2		With ↵ + call up search mask for manual input or with Esc F1 back to weighing mode.
↵ +		Display of search mask.
↵ +		The 100,000s decade is active.

Key	Display presentation	Process description
>0<	000000	Ones decade is active.
▲ Mode F2	000001	Increase ones decade by one. With + confirm search number.

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Consecutive number not found

Key	Display presentation	Process description
+	Err_nr	The entered number was not found. Return to weighing mode with Esc F1.

Input of consecutive number with +.

Change of decades with >0< or >T.

Start search with +.

Overview of 6-digital number

① 1s digit

② 100s digit

③ 100,000s digit

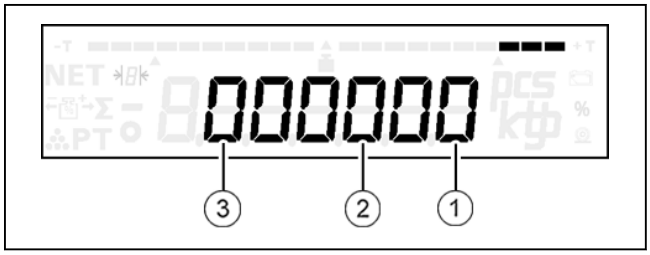


Fig. 15: Overview

5.10 Call up tendency control

In many weighing applications, the factor of interest is not the absolute weight of the product but the deviation of this weight from a target value. Such applications are for example the weight control of equal weight packages or the process control of parts in a production process.

The device offers several functions to perform such testing in a rational manner. The results of such control weighing are shown by means of two display options:

– **Bar graph (display bar)**
The bar graph in the upper part of the display provides further information. By means of the length of the illustrated bar the bar graph shows in which tolerance range the weight of the product is. In order to do so, the tolerance range between target value and upper and lower limit value is always standardized so that it equals the bar length of the bar graph.

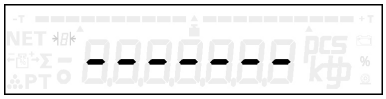
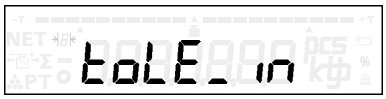
– **Weight value (numeric display)**

The exact weight value is provided by the numeric display which also runs in this operating mode.
The following display options are possible:

– absolute weight value
– Difference of current weight value from target value

You can select this display type in the general parameter menu step 11. The default setting of devices coming from the factory is the display of absolute values.

In operating mode tendency control three control cables can be activated. For the assignment of individual control cables see page 98. You can activate the associated control cables in the general parameter menu step 10.

Key	Display presentation	Process description
		Restart device. Press and hold Mode F2 while middle segments are being displayed. The menu selection appears.
Mode F2		Confirm tendency control selection with +.
		Tendency control is switched off.
+		The ones digit is selected.
Mode F2		Weighed
Mode F2		% ± tolerance of target value. Possible values: 1% / 2.5% / 5% / 7.5% / 10%
Mode F2		Manual input
+		Confirm selection of desired function with +.

5.10.1 Working with tendency control

In order to work with tolerance control the following requirements are necessary:

1. Input of desired operating mode for tendency control
   – Tolerance weighed (step 50/1)
   – %± tolerance (step 50/2)
   – Tolerance manual input (step 50/3)
2. Input of values for target weight and upper and lower tolerance limit.
   Upper and lower tolerance limit must not be symmetrically to the target value.
3. Assignment of <F1> key with function tolerance check, see page 26.

Afterwards, the tendency control can be started via key <F1>.

Example

The following operating data for the tendency control was manually entered:

Target value: 1.000 kg

Lower limit value: 0.980 kg

Upper limit value: 1.020 kg

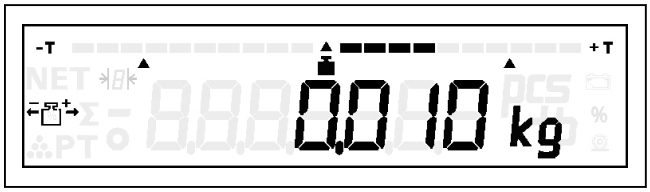


Fig. 16: Weighing against zero

This display means that the current weight value is 10 g above the target value.

Since the measured value is located in the middle between target value and upper tolerance limit, the bar scale reaches approx. until the middle between indicator of the target value (middle triangle under bar graph) and indicator of upper limit value (right triangle).

If the measured value is above the upper tolerance limit, by about 1022 g, the display of the bar graph passes the associated indicator (right triangle). Same applies when target value and lower limit value are not reached.

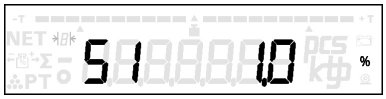
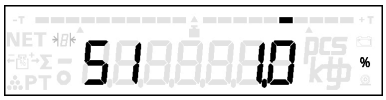
5.10.2 Enter target value and tolerance limits

Tolerance weighed
Display only if 50 = 1

Key	Display presentation	Process description
		Tolerance weighed.
▲ Mode F2		Current target value is displayed. Change target value weighed with ↵ + or call up next parameter with ▲ Mode F2.
↵ +		Change value: Place new target weight on scale and confirm with ↵ +.

Key	Display presentation	Process description
↵ +		Current upper tolerance limit is displayed. Change upper tolerance limit with ↵ + or call up next parameter with ▲ Mode F2.
▲ Mode F2		Current lower tolerance limit is displayed. Change lower tolerance limit with ↵ + or call up next parameter with ▲ Mode F2.
▲ Mode F2		Save setting with ⏻ or cancel with Esc F1.

Call up % ± tolerance
Display only if 50 = 2

Key	Display presentation	Process description
		% ± tolerance of target value is selected.
▲ Mode F2		Current % deviation from target value is displayed. Change % deviation with ↵ + or call up next parameter with ▲ Mode F2.
↵ +		Change value: % table is selected.
▲ Mode F2		Every time you press ▲ Mode F2, the % deviation from the target value changes: "±1.0", "±2.5", "±5.0", "±7.5", "±10.0", "±1.0", … Confirm new % deviation with ↵ +.
↵ +		Current target value is displayed. Change target value weighed with ↵ + or call up next parameter with ▲ Mode F2.
↵ +		Change value: Place new target value on scale and adopt with ↵ +.
↵ +		Save setting with ⏻ or cancel with Esc F1.

5

Manual tolerance input
Display only if 50 = 3

Key	Display presentation	Process description
		Tolerance control manual input
Mode F2		Current target value is displayed. Change target value manual input with + or call up next parameter with Mode F2.
+		Change value: Manual input of new target weight. Decade of 10 is selected. Value input with Mode F2 or with <T. Decade change with >T or >0<. Confirm new target value with +.
Mode F2		Current upper tolerance limit is displayed. Change upper tolerance limit with + or call up next parameter with Mode F2.
+		Change value: Manual input of new upper tolerance limit. Decade of 10 is selected. Confirm new upper tolerance limit with +.
+		Current lower tolerance limit is displayed. Change lower tolerance limit with + or call up next parameter with Mode F2. Change value: Same procedure as for upper tolerance limit. Confirm input with +.
+		Save setting with ⏻ or cancel with Esc F1.

5.11 Battery pack operation (optional)

The device can be optionally equipped with a battery pack for network-independent operation.

Operation with battery pack
If the battery is fully charged, the scale can work in battery mode for up to 20 hours. If not fully charged, operating time is reduced.

The charging time of an empty battery is about 11 hours. The battery pack discharges even while not in use for a longer period of time if the scale is not connected to the power supply. Therefore, connect the scale to the power supply whenever possible. An overcharging of the battery pack is automatically prevented due to an integrated charging connection. The charging connection prevents harmful deep discharge.

The accumulator's life span decreases if the accumulator is constantly operated in run down condition. Recharge battery pack after each use.

In order to obtain a long battery pack operating time, the device is switched off under the following conditions:

– After pressing key for about 3 s.
– Automatically after expiration of a specific time w/o operating and weighing functions. The default setting is 15 minutes. The time can be changed in the service menu (general parameters) step 04.

Press any key to switch the device on again.

Operation with power supply
Plug in power pack The scale is supplied via power supply, and the batteries are charged at the same time. In case of a power failure the scale automatically switches to battery operation. As soon as power is back on, the scale automatically switches back to power supply.

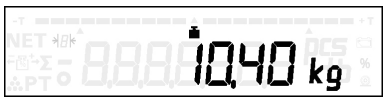
Symbol displays

Battery pack symbol		Operating mode	Explanation
	off	Operation with power supply	
	always on	Operation with battery pack	Charging of batteries is OK
	slowly flashing		battery charging about 50%
	quickly flashing		Battery pack must be charged. Depending on the age of the battery pack, ambient temperature and method of operation it is possible to continue operations for about 10 - 60 minutes.

5.12 Weighing operation

5.12.1 Weight display

After switching the device on, the weight display appears.

Key	Display presentation	Process description
		The current weight is continuously displayed.

Single division scale: The weight value is displayed in the entire weighing range in display steps of the same division.

5.12.2 Zero setting of scale

Key	Display presentation	Process description
		Requirement: The scale is in no-motion condition and within the zero setting range of ±2% of the maximum weighing range.
>0<		

5.12.3 Net weighing with tare balance

Taring with weighed tare value.

Key	Display presentation	Process description
		Requirements: The scale is in equilibrium. Weight value is within weighing range.
► >T		

If F1 is assigned with the relevant function, net weighing with fixed tare value is also possible, see page 44.

5.12.4 Deleting tare

Key	Display presentation	Description on how to proceed
		Display of net weight.
<T		Display of gross weight.

5.12.5 Counting operation

Key <F1> is assigned with "Cnt" and a reference number such as 10 is preselected, see page 26.

The device also serves as:

– **Reference weight scale**
Reference weight = weight of reference weight mass / number of reference parts

– **Quantity scale**
Number of pieces = weight of mass to be counted / reference weight

In order to calculate the reference weight accurately, the following lower limit applies to the reference mass:

Reference weight mass ≥ weighing range / 600

This equals 200 x the internal fine division. An internal division step is the 120,000th part of the weighing range.

Example

Weighing range:	30 kg
Scale interval:	10 g
Fine division:	0.25 g
Lower limit of reference weight mass:	50 g

Weighing range	scale interval subject to metrological approval	1d (internal)	200d	Minimum reference weight at...	
[kg]	Display interval [g]	max. 120 000d [g]	min. reference mass [g] 1)	Reference number 10 [g]	Reference number 20 [g]
≤ 10.00	≤ 2	–	≤ 18	–	–
≤ 15.00	≤ 5	≤ 0.125	≤ 25	≤ 2.5	≤ 1.25
≤ 30.00	≤ 10	≤ 0.25	≤ 50	≤ 5	≤ 2.5

5

Weighing range	scale interval subject to metrological approval	1d (internal)	200d	Minimum reference weight at...	
[kg]	Display interval [g]	max. 120 000d [g]	min. reference mass [g] 1)	Reference number 10 [g]	Reference number 20 [g]
≤ 40.00	≤ 10	≤ 0.33	≤ 66.6	≤ 6.67	≤ 3.33
≤ 60.00	≤ 20	≤ 0.5	≤ 100	≤ 10.0	≤ 5.0
≤ 120.00	≤ 20	≤ 1.0	≤ 200	≤ 20.0	≤ 10.0
≤ 150.00	≤ 50	≤ 1.25	≤ 250	≤ 25.0	≤ 12.5
≤ 300.00	≤ 100	≤ 2.5	≤ 500	≤ 50	≤ 25

1) The minimum reference mass must be placed on the scale, otherwise there is no calculation of number of pieces.

Start counting process

Key	Display presentation	Process description
		
Esc F1		Calculation of reference weight with preselected reference number. Number of pieces = reference number
		Continuous display of number of pieces according to load of scale.

Cancel counting process

Key	Display presentation	Process description
Esc F1		Return to weighing operation w/o deleting of reference weight.

End counting process

Key	Display presentation	Process description
⏻		Return to weighing mode with deleting of reference weight.

5.12.6 Weight display with increased resolution (not metrologically approved)

Key <F1> is assigned with "FEin", see page 26.

Key	Display presentation	Process description
Esc F1		Call up weight display with increased resolution. The weight display is performed with 10 times higher resolution. After pressing key <F1> or after expiration of the control time of 5 s return to normal weight display (only in approved operation).

In operating mode "weight display with increased resolution" the recording functions are blocked.

5.12.7 Total display

Key <F1> is assigned with "SuM", see page 26. Or menu "SuMMEn" is called up via restart, see page 27.

Key	Display presentation	Process description
▲ Mode F2		Display of number of pieces total.
▲ Mode F2		Display: Total of gross weight
▲ Mode F2		Display: Total of tare weight
▲ Mode F2		Display: Total of net weight
▲ Mode F2		Display: Total item counter
▲ Mode F2		Display: Print Clear Print all total memories with ↵ + and delete. End function: ▲ Mode F2

5

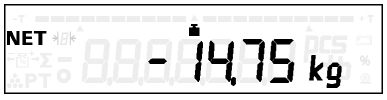
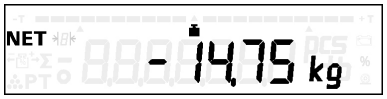
5.12.8 Net weighing with fixed tare value

Key <F1> is assigned with "tF", see page 26.

Key	Display presentation	Process description
		Example: The fixed tare memory is assigned with 5.48 kg.
Esc F1		Taring via call-up of fixed tare value.

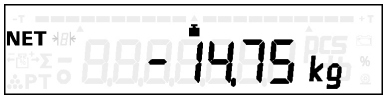
5.12.9 Display tare value

Key <F1> is assigned with "tArE", see page 26.

Key	Display presentation	Process description
		Subtractive weighing
Esc F1		Display of tare value.
Esc F1		Return to weighing mode.

5.12.10 Display gross weight

Key <F1> is assigned with "GroSS", see page 26.

Key	Display presentation	Process description
Esc F1		Display of gross weight.
Esc F1		Return to weighing mode.

5.12.11 Display supply / battery voltage

Key <F1> is assigned with "U in", see page 26.

Key	Display presentation	Process description
Esc F1		Display of supply / battery voltage in volts
Esc F1		Return to weighing mode.

5.12.12 Display tendency control

Key <F1> is assigned with "toLE_CH", see page 26.

Key	Display presentation	Process description
Esc F1		Display of tendency control.
Esc F1		Return to weighing mode.

5.13 Recording operation

For the formation of totals, weighed items are recorded in a memory with net weight, tare weight and gross weight and number of pieces. Weight values without tare functions are simultaneously totaled to form gross and net weight.

The recording process with acquisition of the weight value, PC/EDP dialog and printout, is marked in the display by the recording icon. For each dimension kg and lb there are separate total memories available.

***Total memory**

– Net weight, number of pieces, item counter
– consecutive number with counting of each item recording

The consecutive number is reset at 999999!

Differences between *gross weight and *net weight + *tare weight can appear due to:

– Net weighing with tare balance, taring (fine division) with weighed tare value.
– Subtractive weighing

If equipped with a serial interface and relevant parameter setting the data is sent to a connected PC/EDP or output from the connected printer.

5.13.1 Item recording, adding

Key	Display presentation	Process description
+	NET -14,75 kg	Registration process The weight value is added to the memory *kg. Consecutive number and item counter are increased.

5

Print image CITIZEN or EPSON or compatible

Maximum possible data.

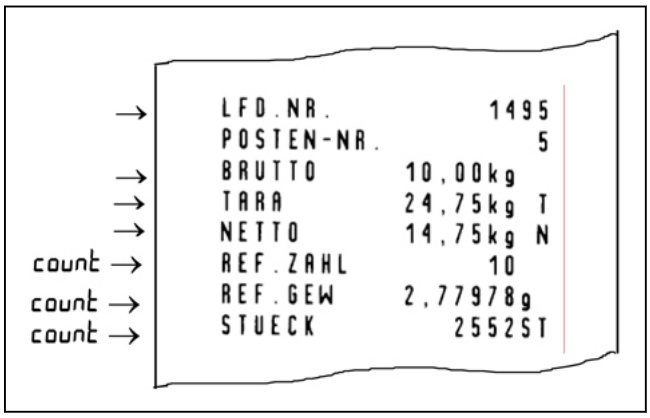
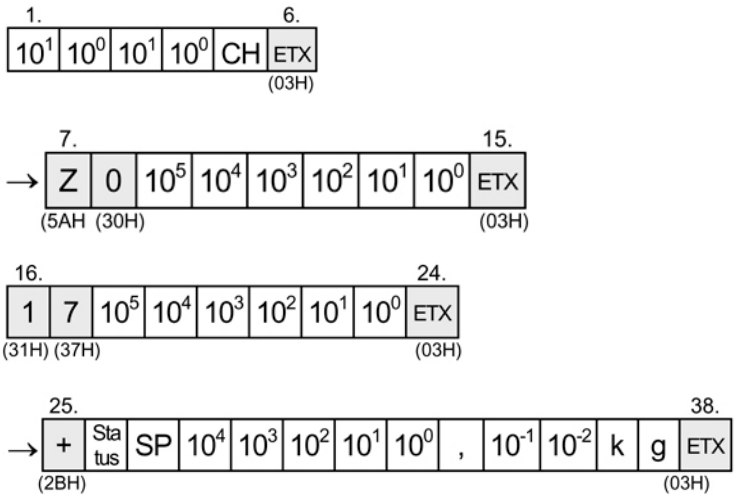


Fig. 17: print image

Data record with data groups

Maximum possible data.

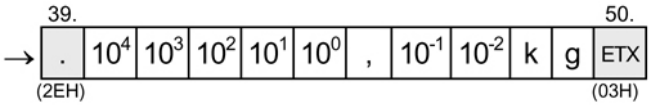


Data record head

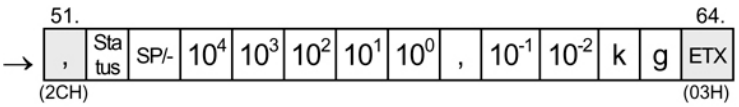
Consecutive number

Item counter with counting as from 1

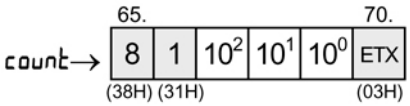
Gross weight



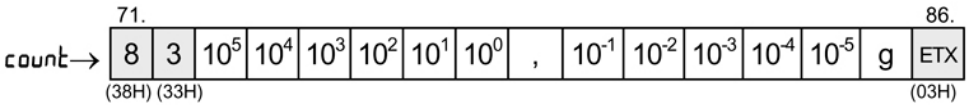
Tare weight



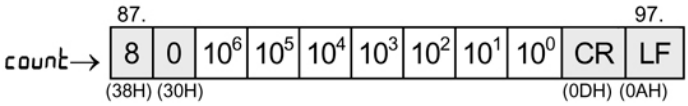
Net weight



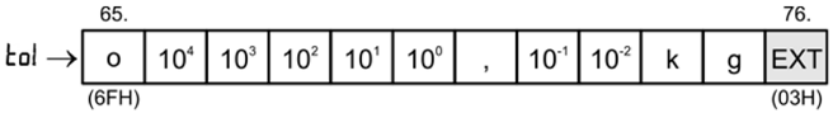
Reference number



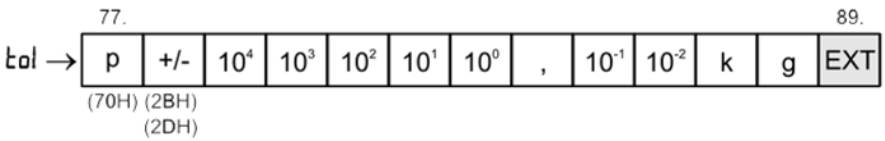
Reference weight



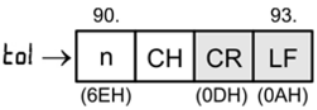
Quantity



Target value



Deviation +/-



Result +/-

Values of character CH:

3DH (=):	Good weight
3CH (<):	Under weight
3EH (>):	Overweight

With activated dimension lb the item recording is also done in dimension lb and the weight value is added to memory *lb.

For operating modes and parameter settings for printer and PC/EDP see page 50.

Factory settings for print and send data are marked with an arrow. With active counting function, data marked "count" and with an arrow are added.

5.13.2 Total recording

A total recording is only possible after a total display was activated, see page 43.

Key	Display presentation	Process description
+		Registration process All total memories are set to 0 (number of pieces, weight, item counter). Return to weighing mode.

Print image CITIZEN or EPSON or compatible

Maximum possible data.

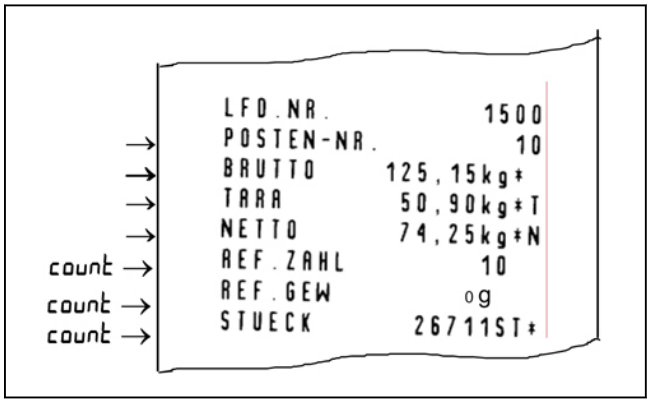
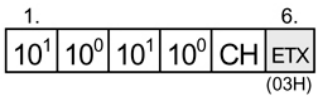


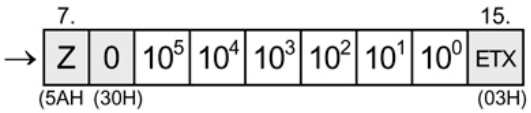
Fig. 18: print image

Data record with data groups

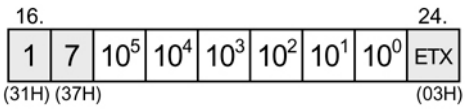
Maximum possible data.



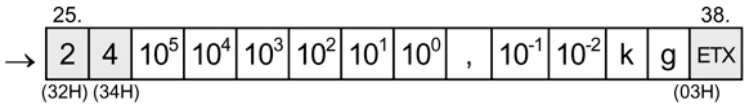
Data record head



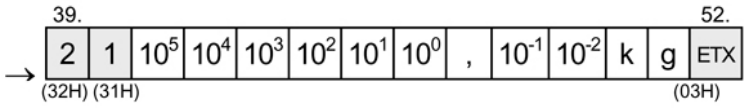
Consecutive number



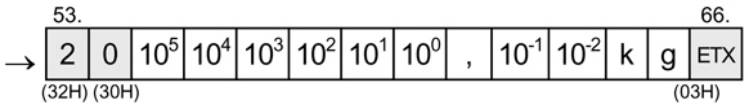
Item counter with counting as from 1



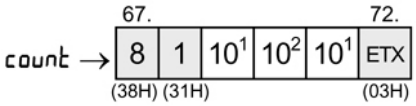
Gross weight



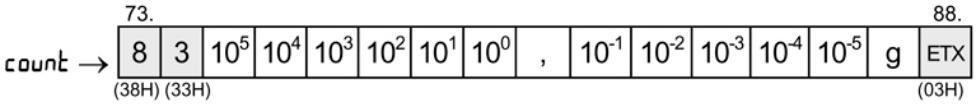
Tare weight



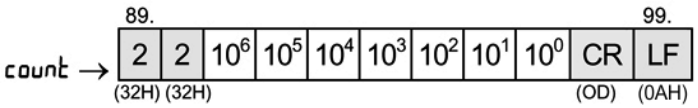
Net weight



Reference number



Reference weight



Quantity

With activated dimension lb the item recording is also done in dimension lb and the memory content of *lb will be deleted.

For operating modes and parameter settings for printer and PC/EDP see page 50.

Factory settings for print and send data are marked with an arrow. With active counting function, data marked "count" and with an arrow are added.

6 PC/EDP and printer interface

The device can be optionally equipped with one or two serial interfaces RS 232 for connection of PC/EDP or printer. The serial interface works w/o control and signal cables.

Interface parameters baud rate, parity and data bit are separate for PC/EDP or printer. Separate data records can be selected for the PC/EDP output as also for the printer.

6.1 PC/EDP interface

The PC/EDP interface allows a bidirectional data exchange from the scale to external devices. The data is transferred asynchronously in ASCII code.

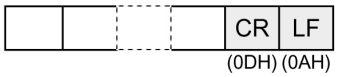
The control of the data transfer is ensured by parity supplement. The dialog frame is created by control characters.

The specified characters in the data formats and dialog frames are ASCII characters. Identifier, sequential identifiers, function commands and control characters have a gray background and the hex values are additionally shown in brackets.

6.1.1 PC/EDP standard dialog

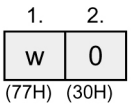
The dialog frame is operated w/o control characters for receive request, start characters and w/o positive or negative acknowledgment. Separators and logic acknowledgments can be set in the parameter menu, see page 56.

Standard dialog frame

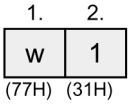


Data record with 2 end characters

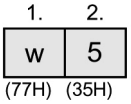
Logic acknowledgments



Acknowledgment good, command is executed.



Acknowledgment negative, command not executable.



Acknowledgment good, command will be executed after scale is in no-motion condition. A good or negative acknowledgment or function result follows.

Logic acknowledgments can be selected or deselected in the EDP parameter menu (step 74).

Data set header

① **Record no.**
02 = Item recording, adding +
03 = Total*
07 = Item recording, non-adding
08 = Independent of recording

② **System no.**
Parameter menu step 75

③ **Scale no.**
1 = Scale 1

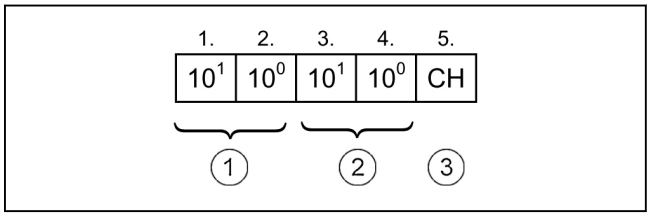


Fig. 19: Data record head 5 byte

6

Data output formats: Weight values
The data bits of the status character provide information about the status of the scale.

Data bit	Functions	Hex	20	21	22	23	24	25	28	29	2A	2B
		ASCII	SP	!	"	#	$	%	(	)	*	+
D0 = 1	In equilibrium			X		X		X		X		X
D1 = 1	In underload				X	X					X	X
D2 = 1	In overload						X	X				
D3 = 1	In the zero point range								X	X	X	X
D4 = 0	Fixed											
D5 = 1	Fixed		X	X	X	X	X	X	X	X	X	X
D6 = 0	Fixed											
D7	Parity bit											

If the scale gross is under zero and is still within zero setting range, the data bits are D1=1 (underload) and D3=1 (zero setting range). Scale can be set to zero.

Depending on decimal point and number of display digits the characters before the highest ranking decade are sent with space SP.

If the dimension consists of a character, a space SP is set on the last digit. The position of the decimal point in the data group depends on the connected scale according to the service menu setting.

The minimum transmission rate for continuous sending of data is 9600 bit/s.

Sign:

SP (20H) = positive value

– (2DH) = negative value

Scale: Underload or overload:

Is marked in the status byte. All decades including g and kg are marked X (58H).

6

1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.
+	Status	SP	10^4	10^3	10^2	10^1	10^0	,	10^{-1}	10^{-2}	k	g

(2BH)

Gross weight

1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.
+	Status	SP	SP	SP	1	0	,	4	7	5	k	g

(2BH)

Example:

Gross weight 10.475 kg;

Scale 15 kg/0.005 kg

1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.
+	Status	SP	SP	SP	SP	2	5	,	8	0	k	g

(2BH)

Example:

Gross weight 25.8 kg;

Scale 30 kg/0.01 kg

1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.
,	Status	SP	10^4	10^3	10^2	10^1	10^0	,	10^{-1}	10^{-2}	k	g

(2CH)

Net weight

Additive weighing of weighed tare weight

1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.
,	Status	-	10^4	10^3	10^2	10^1	10^0	,	10^{-1}	10^{-2}	k	g

(2CH)

Net weight

Subtractive weighing of weighed tare weight

Tare values

1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
SP	10^4	10^3	10^2	10^1	10^0	,	10^{-1}	10^{-2}	k	g

(2OH)

Taring not active

1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
.	10^4	10^3	10^2	10^1	10^0	,	10^{-1}	10^{-2}	k	g

(2EH)

Tare weight weighed

1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
/	10^4	10^3	10^2	10^1	10^0	,	10^{-1}	10^{-2}	k	g

(2FH)

Tare weight manual tare (EDP)

Counting values

1.	2.	3.	4.	5.	6.	7.	8.	9.
8	0	10^6	10^5	10^4	10^3	10^2	10^1	10^0
(38H)	(30H)							

Quantity

1.	2.	3.	4.	5.	6.
8	1	10^2	10^1	10^0	ETX
(38H)	(31H)				(03H)

Reference number

1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.
8	3	10^5	10^4	10^3	10^2	10^1	10^0	,	10^{-1}	10^{-2}	10^{-3}	10^{-4}	10^{-5}	g
(38H)	(33H)													

Reference weight for kg

1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.
8	3	10^2	10^1	10^0	,	10^{-1}	10^{-2}	10^{-3}	10^4	10^{-5}	10^{-6}	10^{-7}	10^8	l	b
(38H)	(33H)														

Reference weight for lb

Total values

Identifier = 2 (32H)

1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.
2	0	10^5	10^4	10^3	10^2	10^1	10^0	,	10^{-1}	10^{-2}	k	g
(32H)	(30H)											

* Net weight

1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.
2	1	10^5	10^4	10^3	10^2	10^1	10^0	,	10^{-1}	10^{-2}	k	g
(32H)	(31H)											

* Tare weight

1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.
2	4	10^5	10^4	10^3	10^2	10^1	10^0	,	10^{-1}	10^{-2}	k	g
(32H)	(34H)											

* Gross weight

1.	2.	3.	4.	5.	6.	7.	8.	9.
2	2	10^6	10^5	10^4	10^3	10^2	10^2	10^1
(32H)	(32H)							

* Quantity

1.	2.	3.	4.	5.	6.	7.	8.
1	7	10^5	10^4	10^3	10^2	10^1	10^0
(31H)	(37H)						

For item recording adding: Item counter is set to 1 with total recording.

1.	2.	3.	4.	5.	6.	7.	8.
Z	0	10^5	10^4	10^3	10^2	10^1	10^0
(5AH)	(30H)						

Consecutive item number

Tendency control values +/-

1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
o	10^4	10^3	10^2	10^1	10^0	,	10^{-1}	10^{-2}	k	g
(6FH)										

Target value

1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
p	+/-	10^4	10^3	10^2	10^1	10^0	,	10^{-1}	10^{-2}	k	g
(70H)	(2BH) (2DH)										

Deviation +/-

1.	2.
n	CH
(6EH)	

Result +/-

Values of character CH:

- 3DH (=): Good weight
- 3CH (<): Under weight
- 3EH (>): Overweight

Data input formats

Function commands

1.	2.
q	SP
(71H)	(20H)

Test (restart)

1.	2.
q	!
(71H)	(21H)

Zero setting

1.	2.
q	"
(71H)	(22H)

taring

1.	2.
q	#
(71H)	(23H)

Deleting tare

1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
q	S	10^4	10^3	10^2	10^1	10^0	,	10^{-1}	10^{-2}	k	g
(71H)	(53H)										

Tare with preset value

1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
#	4	10^4	10^3	10^2	10^1	10^0	,	10^{-1}	10^{-2}	k	g
(23H)	(34H)										

Target value preset

1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
#	5	10^4	10^3	10^2	10^1	10^0	,	10^{-1}	10^{-2}	k	g
(23H)	(35H)										

Tolerance minus

1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
#	6	10^4	10^3	10^2	10^1	10^0	,	10^{-1}	10^{-2}	k	g
(23H)	(36H)										

Tolerance plus

1.	2.
#	7
(23H)	(37H)

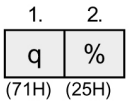
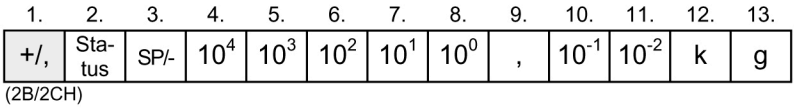
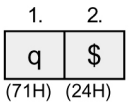
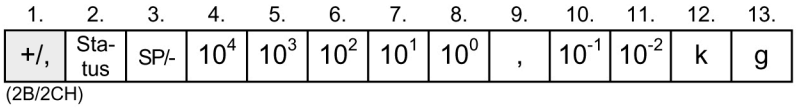
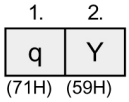
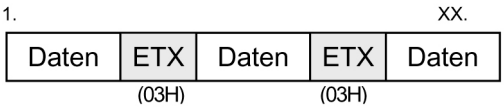
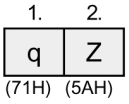
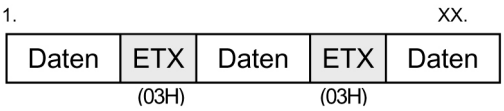
Start function

1.	2.
#	8
(23H)	(38H)

End function

Transferred data remains even after a power failure. Function can be restarted with #7.

Function commands with response telegram

	Weight value output without scale equilibrium
	Response telegram: Current gross/net weight
	Weight value output with scale equilibrium
	Response telegram: Gross/net weight **after** no-motion condition
	Item recording, adding
	Response telegram: Data record with data groups as per parameter selection
	Item recording non-adding.
	Response telegram: Data record with data groups as per parameter selection

6.1.2 PC/EDP – continuous sending of data

For connection to external equipment or other Bizerba weighing terminals the device can be set in 2 operating modes to continuous sending of data w/o data record head in the grid of 200 ms.

Continuous sending of gross/net weight with display resolution (dd resolution)
Parameter menu step 70 = 20

1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.
+/,	Sta-tus	SP/-	10^4	10^3	10^2	10^1	10^0	,	10^{-1}	10^{-2}	k	g	CR	LF
(2B/2CH)													(0DH)	(0AH)

Gross/net weight
Time grid approx. 200 ms

6

With fine display an additional decimal place is given. This setting only makes sense for non-approved scales.

Possible identifications
+ (2BH): Gross weight

, (2CH): Net weight

6.1.3 PC/EDP interface parameters

Menu call-up only via restart, see page 27.

Save data in EEPROM: Press ⏻ key.

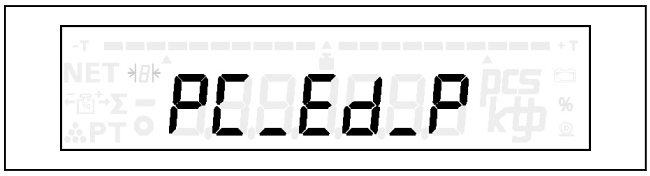


Fig. 20: Display: "PC_Ed_P"

Selection	Subselection	Display	Explanation
▲ Mode F2 or ▼ <T	↵ +	70 00	**PC/EDP interface**
	▲ Mode F2 ▼ <T	00	off
	Setting changes with each keystroke.	20	Continuous sending of weight (dd resolution)
		23	Standard dialog Ethernet interface has priority, see page 74.
		24	IXNET dialog Ethernet interface has priority, see page 74.

Selection	Subselection	Display	Explanation
Mode F2 or <T	↵ +	71 9600	**Baud rate**
	Mode F2 <T	115_	115200 bit/s
	Setting changes with each keystroke.	57600	57600 bit/s
		38400	38400 bit/s
		19200	19200 bit/s
		9600	9600 bit/s
		4800	4800 bit/s
Mode F2 or <T	↵ +	72 E7	**Parity and data bit**
	Mode F2 <T	E7	even parity, 7 data bits
	Setting changes with each keystroke.	o7	odd parity, 7 data bits
		n7	no parity, 7 data bits
		E8	even parity, 8 data bits
		o8	odd parity, 8 data bits
		n8	no parity, 8 data bits
Mode F2 or <T	↵ +	73 03	**Separator 03H (hex) ETX**
	Mode F2 <T	00	off
	Setting changes with each keystroke.	01	01 H (Hex)
			to
		1F	1 FH
		20	CR and LF
Mode F2 or <T	↵ +	74 00	**Logic acknowledgments (only data dialog standard)**
	Mode F2 <T	0	off
	Mode F2 <T	1	on
Mode F2 or <T	↵ +	75 00	**System number**
	Mode F2 <T	00	
	Setting changes with each keystroke.		to
		99	

6

Selection	Subselection	Display	Explanation
Mode F2 or <T	+	76 0	**Data set header**
	Mode F2 <T	76 0	off
	Mode F2 <T	76 1	on
Mode F2 or <T	+	77	**Item recording +**
	Mode F2 <T	59 0	Consecutive number off
	Mode F2 <T	59 1	Consecutive number on
Mode F2 or +	Mode F2 <T	91 0	Item counter off (counting as from 1)
	Mode F2 <T	91 1	Item counter on (counting as from 1)
Mode F2 or +	Mode F2 <T	53 0	Gross weight off
	Mode F2 <T	53 1	Gross weight on
Mode F2 or +	Mode F2 <T	52 0	Tare weight off
	Mode F2 <T	52 1	Tare weight on
Mode F2 or +	Mode F2 <T	51 0	Net weight off
	Mode F2 <T	51 1	Net weight on
Mode F2 or +	Mode F2 <T	65 0	Reference number off
	Mode F2 <T	65 1	Reference number on
Mode F2 or +	Mode F2 <T	64 0	Reference weight off
	Mode F2 <T	64 1	Reference weight on

Selection	Subselection	Display	Explanation
▲ Mode F2	▲ Mode F2 ▼ <T	63 0	Number of pieces off
or ↵ +	▲ Mode F2 ▼ <T	63 1	Number of pieces on
▲ Mode F2	▲ Mode F2 ▼ <T	69 0	+/- target value off
or ↵ +	▲ Mode F2 ▼ <T	69 1	+/- target value on
▲ Mode F2	▲ Mode F2 ▼ <T	70 0	+/- deviation from target value off
or ↵ +	▲ Mode F2 ▼ <T	70 1	+/- deviation from target value on
▲ Mode F2	▲ Mode F2 ▼ <T	68 0	+/- result off
or ↵ +	▲ Mode F2 ▼ <T	68 1	+/- result on
▲ Mode F2	▲ Mode F2 ▼ <T	01 0	Text block 1 off
or ↵ +	▲ Mode F2 ▼ <T	01 1	Text block 1 on. Output only with data dialog IX-NET.
			to
▲ Mode F2	Setting changes with each keystroke.	10 0	Text block 10 off
or ↵ +		10 1	Text block 10 on. Output only with data dialog IXNET.
▲ Mode F2	↵ +	78	**Total recording**
or ▼ <T	▲ Mode F2 ▼ <T	59 0	Consecutive number off
	▲ Mode F2 ▼ <T	59 1	Consecutive number on
▲ Mode F2	▲ Mode F2 ▼ <T	60 0	Item counter off (counting as from 1)
or ▼ <T	▲ Mode F2 ▼ <T	60 1	Item counter on (counting as from 1)

6

Selection	Subselection		Display	Explanation
▲ Mode F2 or ▼ <T		▲ Mode F2 ▼ <T	57 0	* Gross weight off
		▲ Mode F2 ▼ <T	57 1	* Gross weight on
▲ Mode F2 or ▼ <T		▲ Mode F2 ▼ <T	56 0	* Tare weight off
		▲ Mode F2 ▼ <T	56 1	* Tare weight on
▲ Mode F2 or ▼ <T		▲ Mode F2 ▼ <T	55 0	* Net weight off
		▲ Mode F2 ▼ <T	55 1	* Net weight on
▲ Mode F2 or ▼ <T		▲ Mode F2 ▼ <T	65 0	Reference number off
		▲ Mode F2 ▼ <T	65 1	Reference number on
▲ Mode F2 or ▼ <T		▲ Mode F2 ▼ <T	64 0	Reference weight off
		▲ Mode F2 ▼ <T	64 1	Reference weight on
▲ Mode F2 or ▼ <T		▲ Mode F2 ▼ <T	58 0	Number of pieces off
		▲ Mode F2 ▼ <T	58 1	Number of pieces on
▲ Mode F2 or ▼ <T		▲ Mode F2 ▼ <T	01 0	Text block 1 off
		▲ Mode F2 ▼ <T	01 1	Text block 1 on. Output only with data dialog IX-NET.
				to
▲ Mode F2 or ▼ <T	Setting changes with each keystroke.		10 0	Text block 10 off
			10 1	Text block 10 on. Output only with data dialog IXNET.

Selection	Subselection	Display	Explanation
Mode F2 or <T	+	79 01	**Start character** 01 SOH
	Mode F2 <T	00	off
	Setting changes with each keystroke.	01	01 (Hex)
			to
		1F	1F (Hex)

6.2 Printer interface

The selected data can also be output from a printer. Printer status messages "switched on", "ready for operation" and "paper available" are ignored by the device.

6.2.1 Printer interface parameters

Menu call-up only via restart, see page 27.

Save data in EEPROM: Press key.

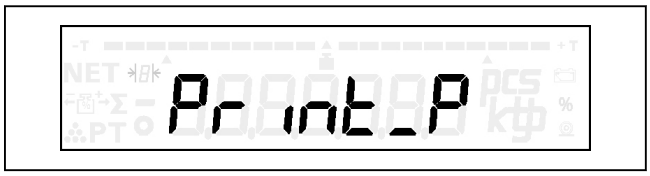


Fig. 21: Display: "Pr int_P"

Selection	Subselection	Display	Explanation
Mode F2 or <T	+	60 0	**printer**
	Mode F2 <T	0	off
	Setting changes with each keystroke.	1	Free selection
		2	EPSON TM-88II/T88III, 9600 bit/s parity: odd, data bits: 8 (baud rate, parity, data bit fixed)
		3	GLP 58, 9600 bit/s parity: none, data bits: 8 (baud rate, parity, data bit fixed)
		4	EPSON LX300, 9600 bit/s parity: no, data bits: 8 (baud rate, parity, data bit fixed)
		5	Only for GLP 58 with printer for receipt operation (baud rate, parity, data bit fixed)

6

Selection	Subselection	Display	Explanation
Mode F2 or <T	+	61 9600	**Baud rate**
	Mode F2 <T	115_	115200 bit/s
	Setting changes with each keystroke.	57600	57600 bit/s
		38400	38400 bit/s
		19200	19200 bit/s
		9600	9600 bit/s
		4800	4800 bit/s
Mode F2 or <T	+	62 o7	**Parity and data bit**
	Mode F2 <T	E7	even parity, 7 data bits
	Setting changes with each keystroke.	o7	odd parity, 7 data bits
		n7	no parity, 7 data bits
		E8	even parity, 8 data bits
		o8	odd parity, 8 data bits
		n8	no parity, 8 data bits
Mode F2 or <T	+	63	**Item recording +**
	Mode F2 <T	59 0	Consecutive number off
	Mode F2 <T	59 1	Consecutive number on
Mode F2 or <T	Mode F2 <T	91 0	Item counter off (counting as from 1)
	Mode F2 <T	91 1	Item counter on (counting as from 1)
Mode F2 or <T	Mode F2 <T	53 0	Gross weight off
	Mode F2 <T	53 1	Gross weight on
Mode F2 or <T	Mode F2 <T	52 0	Tare weight off
	Mode F2 <T	52 1	Tare weight on

Selection	Subselection		Display	Explanation
▲ Mode F2 or ▼ <T		▲ Mode F2 ▼ <T	51 0	Net weight off
		▲ Mode F2 ▼ <T	51 1	Net weight on
▲ Mode F2 or ▼ <T		▲ Mode F2 ▼ <T	65 0	Reference number off
		▲ Mode F2 ▼ <T	65 1	Reference number on
▲ Mode F2 or ▼ <T		▲ Mode F2 ▼ <T	64 0	Reference weight off
		▲ Mode F2 ▼ <T	64 1	Reference weight on
▲ Mode F2 or ▼ <T		▲ Mode F2 ▼ <T	63 0	Number of pieces off
		▲ Mode F2 ▼ <T	63 1	Number of pieces on
▲ Mode F2 or ▼ <T		▲ Mode F2 ▼ <T	69 0	+/- target value off
		▲ Mode F2 ▼ <T	69 1	+/- target value on
▲ Mode F2 or ▼ <T		▲ Mode F2 ▼ <T	70 0	+/- deviation from target value off
		▲ Mode F2 ▼ <T	70 1	+/- deviation from target value on
▲ Mode F2 or ▼ <T		▲ Mode F2 ▼ <T	68 0	+/- result off
		▲ Mode F2 ▼ <T	68 1	+/- result on
▲ Mode F2 or ▼ <T		▲ Mode F2 ▼ <T	01 0	Text block 1 off
		▲ Mode F2 ▼ <T	01 1	Text block 1 on
▲ Mode F2 or ▼ <T		▲ Mode F2 ▼ <T	02 0	Text block 2 off
		▲ Mode F2 ▼ <T	02 1	Text block 2 on

Selection	Subselection	Display	Explanation
Mode F2 or <T	+	64	**Additional space**
	Mode F2 <T	0	off
	Setting changes with each keystroke.	1	Number of additional blank lines after item recording adding
			to
		9	Number of additional blank lines after item recording adding
Mode F2 or <T	+	65	**Total recording**
	Mode F2 <T	59 0	Consecutive number off
	Mode F2 <T	59 1	Consecutive number on
Mode F2 or <T	Mode F2 <T	60 0	Item counter off (counting as from 1)
	Mode F2 <T	60 1	Item counter on (counting as from 1)
Mode F2 or <T	Mode F2 <T	57 0	* Gross weight off
	Mode F2 <T	57 1	* Gross weight on
Mode F2 or <T	Mode F2 <T	56 0	* Tare weight off
	Mode F2 <T	56 1	* Tare weight on
Mode F2 or <T	Mode F2 <T	55 0	* Net weight off
	Mode F2 <T	55 1	* Net weight on
Mode F2 or <T	Mode F2 <T	65 0	Reference number off
	Mode F2 <T	65 1	Reference number on
Mode F2 or <T	Mode F2 <T	64 0	Reference weight off
	Mode F2 <T	64 1	Reference weight on

Selection	Subselection	Display	Explanation
Mode F2 or <T	Mode F2 <T	58 0	Number of pieces off
	Mode F2 <T	58 1	Number of pieces on
Mode F2 or <T	Mode F2 <T	01 0	Text block 1 off
	Mode F2 <T	01 1	Text block 1 on
Mode F2 or <T	Mode F2 <T	02 0	Text block 2 off
	Mode F2 <T	02 1	Text block 2 on
Mode F2 or <T	↵ +	66	**Additional space**
	Mode F2 <T	0	off
	Setting changes with each keystroke.	1	Number of additional blank lines after item recording
			to
		9	Number of additional blank lines after item recording

7 IXNET dialogs

7.1 The dialog frame of the transport protocol

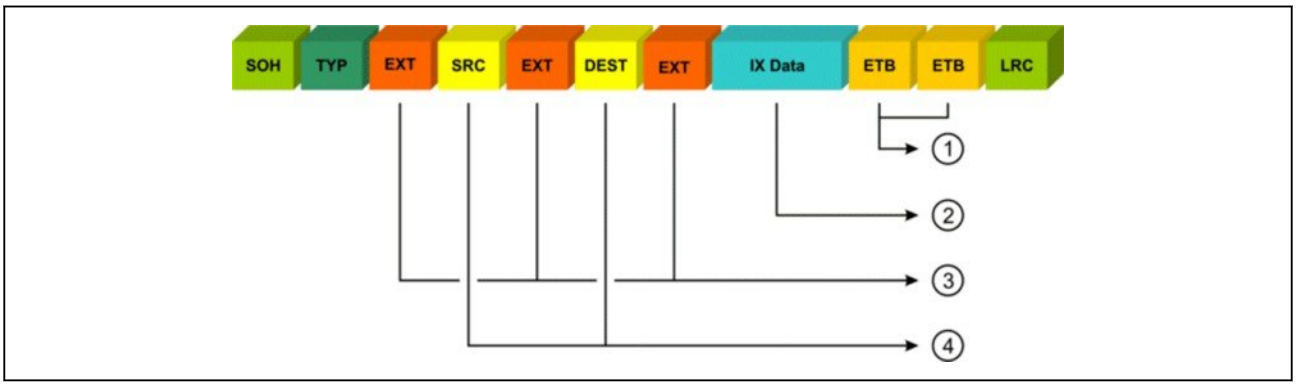


Fig. 22: Dialog context IX/Data

(1) End character (...2 byte)

(2) User data (max. 1024 bytes): Readable user data in Ix-Net format

(3) Separator (3x1)

(4) SRC = Source ID (254)
DEST = Destination ID (1-3 bytes)

Start character, end characters and LRC are used in the physical transmission layer in order to guarantee a safe data transfer. These characters form the external frame of a data record. They include no text.

Example of a typical configuration:

```
<SOH>0<ETX>254<ETX>001<ETX>I?LV01|RX01|LX02<CR><LF>
```

Start character:	0x01	<SOH>		(cannot be changed)
TYPE:	0x30		0	(cannot be changed)
Separators:	0x03	<ETX>		(can be changed via step 73)
SCR:	0x32, 0x35, 0x34		254	(cannot be changed)
Separators:	0x03	<ETX>		(can be changed via step 73)
DEST:	0x30, 0x30, 0x31		001	(cannot be changed)
Separators:	0x03	<ETX>		(can be changed via step 73)
IXData:	0x49, 0x3F, 0x4C, 0x56, 0x30, 0x31, 0x7C, 0x52, 0x58, 0x30, 0x31, 0x7C, 0x4C, 0x58, 0x30, 0x32			I?LV01|RX01|LX02
End character:	0x0D	<CR>		(cannot be changed)
End character:	0x0A	<LF>		(cannot be changed)
LRC:	deactivated			

7.2 Data dialog IXNET interface

Default settings in PC/EDP parameter menu

Step 70	24
Step 71	9600
Step 72	n8
Step 73	03
Step 74	1

Possible commands

GV05 Machine information

GX01 Reset

GX02 Zero setting

GX05 Tare

GX06 Deleting tare

RX01 Weight request without stability evaluation

RX02 Weight request with stability evaluation

RX03 Item recording, non-adding

RX04 Item recording, adding

RX07 Total recording

GV02 Data blocks (additional character blocks)
Non-volatile storage of 10 sets with 50 characters each possible.

GD02 Tare with value definition

CD08 Tolerance value target

CD02 Tolerance value minus

CD03 Tolerance value plus

CV06 Tolerance value group command, compare LV01 or GV01

CX01 Start tolerance control

CX02 End tolerance control

GW04 Storage number, not executable as single command

GT02 Text block (additional character), not executable as single command

7.2.1 Device functions

Device reset (reboot)

Restart the system.

Command	Response
I!GX01	I!LW00|1

Zero setting of scale

Command	Response
I!GX02	I!LW00|2 or I!LV00|LW01| Error number |LW02|2|LX02

Possible errors

3002	Weighing function not executable
3030	Scale outside zero setting range

Tare

Tare

Command	Response
I!GX05	I!LW00|5 or I!LV00|LW01| Error number |LW02|5|LX02

Possible errors

3002	Weighing function not executable
3031	Taring not possible.

Deleting tare

Command	Response
I!GX06	I!LW00|6 or I!LV00|LW01| Error number |LW02|6|LX02

Possible errors

3002 Weighing function not executable

Requesting device ID and device information

In order to receive general information of the device, the GV05 command can be run as follows:

Command	Response
I?GV05|LX02	I!GV05|GT12|BIZERBA eS10|GT13|602.82.410.06|GL19|24022014|GT08|34|GV06|GW01|1|GW09|1|kg;-3;12000|GD0A|kg;-3;1|LX02|LX02

GV05 device information

Fixed return values
- GT12: Device family
- GT13: Device software version
- GL19: Device release date (format: ddmmyy)
- GT08: System number

Subordinate commands from GV06:
- GW01: Scale number
- GW09: Active scale
- GD09: Weighing range
- GD0A: Digital increment of scale

Text block (additional characters) (weighing module)

Read text block

Command	Response
I?GV02|GW04|1|LX02	I!GV02|GW04|1|GT02|ABC|LX02

Write text block

Command	Response
I!GV02|GW04|1|GT02|ABC|LX02	I!LW00|1538

Command	Description
GV02	Read/write text block
GW04	Storage number of text block
GT02	Text block

GV02 data block (additional character set)
10 sets with 50 characters each stored -non-volatile.

Possible errors

24355	Incorrect block number
24360	Text too long

Weight request

Command	Response	Description
I?RX01	I!LV01|<Subcmd>|LX02	Weight request without stability evaluation
I?RX02	I!LV01|<Subcmd>|LX02	Weight request with stability evaluation

Registration

Command	Response	Description
I?RX03	I!LV01|<Subcmd>|LX02	Item recording non-adding (#)
I?RX04	I!LV01|<Subcmd>|LX02	Item recording adding (+)

Response data record of recording
The <Subcmd> subcommands of the registration command can be set. The following types are supported:

GD01	Net weight
GD02	Tare
GD07	Gross weight
GL15	Consecutive number (verifiable memory number)
GL0A	Item counter with start value 1
GT08	System number
GW01	Scale number 1
GW06	Record number
GV02	Data block 1-10 (additional character set)

Possible errors

3001	Weight value outside weighing range
3002	Weighing function not executable

Weight status GT0A

Example `21010000`: Tare weighed, no motion, overload, outside zero setting range

digit	Function	Description
1	Tare identification	Definition of tare 1 = tare not active 2 = weighed tare 3 = tare preset, manual value (EDP)
2	No motion	0 = unstable 1 = stable
3	Underload	0 = no underload 1 = underload
4	Overload	0 = no overload 1 = overload
5	Zero setting range	0 = outside zero setting range 1 = in zero setting range
6	Not assigned	0
7	Not assigned	0
8	Not assigned	0

Total recording

Command	Response	Description
`I!RX07`	`I!GV01|<Subcmd>|LX02` (on EDP channel)	Total recording

The following return values can be configured in step 78, PC/EDP parameter menu:

`GL15`	Consecutive number
`GL0A`	Item counter
`GD1D`	Total of gross weight
`GD1E`	Total of tare weight
`GD1F`	Total of net weight
`GW06`	Record number
`GV02`	Data block 1-10 (additional character set)

Tare with value definition

Command	Response	Description
I!GD02|kg;-3;50	I!LW00|770 or I!LV00|LW01| Error number |LW02|770|LX02	

7

Possible errors

3031	Tare value incorrect
3036	Transmitted weight value has incorrect dimension

Writing tolerance control value

Command	Response	Description
I!CV06|CD02|kg;-3;800|CD08|kg;-3;1000|CD03| kg;-3;1200|LX02	I!LW00|9734 or I!LV00|LW01| Error number |LW02|9734|LX02	

Reading tolerance control values

Command	Response	Description
I?CV06|LX02	I!CV06|CD02|kg;-3;400|CD08|kg;-3;500|CD03|kg;-3;600| LX02	

CD02	Tolerance minus
CD08	Target value
CD03	Tolerance plus

Possible errors

3036	Transmitted weight value has incorrect dimension
24871	Tolerance parameter values are not correct

Start tolerance control

Command	Response	Description
I!CX01	I!LW00|8193	

Stopping tolerance control

Command	Response	Description
I!CX02	I!LW00|8194	

8 Ethernet interface

The device can be optionally equipped with an Ethernet interface for connection of PC/ EDP. Transmission rates of 10 MBit/s and 100 MBit/s are supported in the IPv4 address space.

8.1 Performance of Ethernet interface

The device may be operated with a nominal load of 16.8% at a maximum of 25,000 packages per second. Exceeding the maximum possible nominal load ends the connection with the network. After 30 s the device attempts to re-establish the connection between scale and PC.

8.2 Ethernet interface has priority

The device cannot use several EDP interfaces at the same time. When Ethernet interface and serial interface are activated at the same time, the Ethernet interface has priority.

EtHEr	PC_Ed_P	Dialog	Active interface
80 00	70 00	–	–
80 01	70 00	–	–
80 01	70 23	Default	ETHERNET
80 01	70 24	IXNET	ETHERNET
80 00	70 23	Default	RS232
80 00	70 24	IXNET	RS232

8.3 Ethernet interface parameters

Menu call-up only via restart, see page 27.

Save data in EEPROM: Press ⏻ key.

Fig. 23: Display: "EtHEr"

For operation "communication via serial interface" adjust step 80 = 00.

Selection	Subselection	Display	Explanation
▲ Mode F2 or ▼ <T	↵ +	80 00	**Ethernet interface**
	▲ Mode F2 ▼ <T	00	off (communication via serial interface)
	▲ Mode F2 ▼ <T	01	UDP with fixed IP address
	▲ Mode F2 ▼ <T	02	TCP/IP server with fixed address (1 client maximum)
	▲ Mode F2 ▼ <T	03	UDP with DHCP
	▲ Mode F2 ▼ <T	04	TCP/IP server with DHCP (1 client maximum)
▲ Mode F2 or ▼ <T	↵ +	811 000	1st block of device's IP address Example: 192.168.0.101 Step 811: 192 Step 812: 168 Step 813: 000 Step 814: 101
	▲ Mode F2 ▼ <T	812 000 813 000 814 000	2nd - 4th block of device's IP address
▲ Mode F2 or ▼ <T	↵ +	821 000	1st block of IP address of connecting partner
	▲ Mode F2 ▼ <T	822 000 823 000 824 000	2nd - 4th block of IP address of connecting partner
▲ Mode F2 or ▼ <T	↵ +	831 000	1st block of subnet mask
	▲ Mode F2 ▼ <T	832 000 833 000 834 000	2nd - 4th block of subnet mask
▲ Mode F2 or ▼ <T	↵ +	841 000	1st block of IP address of Gateway server
	▲ Mode F2 ▼ <T	842 000 843 000 844 000	2nd - 4th block of IP address of Gateway server

8

Selection	Subselection	Display	Explanation
▲ Mode F2 or ▼ <T	↵ + / ▲ Mode F2 ▼ <T	8501365	port number (5-digit) Example: 8501365 = port 01365
▲ Mode F2 or ▼ <T	↵ + / ▲ Mode F2 ▼ <T	861 00 862 00 863 00 864 00 865 00 866 00	display of MAC address
▲ Mode F2 or ▼ <T	↵ + / ▲ Mode F2 ▼ <T	871 00	display of Ethernet status[1)]
▲ Mode F2 or ▼ <T	↵ + / ▲ Mode F2 ▼ <T	872 00	host name of scale for DNS server: eS10-XX (XX = variable digits 0 - 9)

8

1) Display of Ethernet status

00: Ethernet not active

03: Connection active (UDP/TCP/IP fixed IP address)

04: No DHCP received (old IP address will be loaded)

05: DHCP received (UDP/TCP/IP with DHCP)

07: No connection parameter found at UDP

39: UDP timeout

40: LAN controller active

50: Re-initialization after network load is too high

51: Data volume too high, connection ended

71: IP address already assigned or invalid. Connection ended.

88: Cable reinserted, re-initialization

89: LAN connection interrupted, restart required

90: After scale start cable inserted for the first time

91: No connection (no cable inserted)

99: LAN controller not active

9 Service menu

With the service menu you can set parameters for different tasks and requirements:

– Weighing settings
– Functions and applications
– Connection of different peripheral devices
– Functions for start-up, test and analysis

9.1 General parameters

Menu call-up only via restart, see page 27.

Save data in EEPROM: Press ⏻ key.

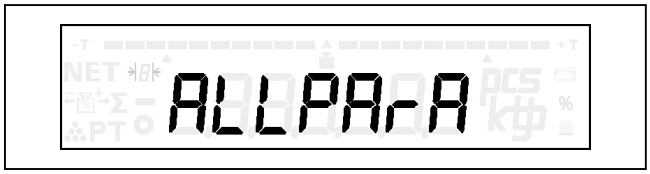


Fig. 24: Display: "ALLPArA"

Selection	Subselection	Display	Explanation
▲ Mode F2 or ▼ <T	↵ +	01 0	**Country setting for national special features**
	▲ Mode F2 ▼ <T	0	EC (standard)
	Setting changes with each keystroke.	1	Great Britain
		3	USA
▲ Mode F2 or ▼ <T	↵ +	02 0	**Language setting**
	▲ Mode F2 ▼ <T	0	German
	Setting changes with each keystroke.	1	English
		2	French
▲ Mode F2 or ▼ <T	↵ +	03 0	**Zero setting after power on**
	▲ Mode F2 ▼ <T	0	Function not active
	▲ Mode F2 ▼ <T	1	Function active
▲ Mode F2 or ▼ <T	↵ +	04 00	**Battery pack switch-off time**
	▲ Mode F2 ▼ <T	15	Time in minutes after which the device automatic switches off. 0 = Function not active

Selection	Subselection	Display	Explanation
Mode F2 or <T	+	05 0	**Weight change required for new recording**
	Mode F2 <T	0	Function not active
	Mode F2 <T	1	Function active
Mode F2 or <T	+	06 0	**Reference weight filter**
	Mode F2 <T	0	0.5 s
	Setting changes with each keystroke.	1	1.0 s
		to	
		9	25 s
Mode F2 or <T	+	07 0	**Auto recording** Requirement for this is: The scale is in equilibrium and within tolerance limits.
	Mode F2 <T	0	Function not active
	Mode F2 <T	1	Auto recording for tolerance control
Mode F2 or <T	+	08 0	**Software update**
	Mode F2 <T	0	Operating mode weighing operation
	Mode F2 <T	1	Operating mode software update
Mode F2 or <T	+	09 0	**Load factory data (EDP/Printer/General settings)**
	Mode F2 <T	0	Function not active
	Mode F2 <T	1	Factory data is loaded
Mode F2 or <T	+	10 0	**Parallel inputs and outputs**
	Mode F2 <T	0	Control cable not active
	Mode F2 <T	1	Control cable active

9

Selection	Subselection	Display	Explanation
Mode F2 or <T	↵ +	11 0	**± operating mode of tendency control**
	Mode F2 <T	0	Weighing as from zero. Display of difference as compared to target value.
	Mode F2 <T	1	Weighing against zero. Display of absolute weight value
Mode F2 or <T		n000000	Internal standardized measured value for service purposes.
		L100000	Internal linearized measured value for service purposes.
	↵ +	14 0	**Lock keyboard**
	Mode F2 <T	0	Recording free, F1 function free
	Setting changes with each keystroke.	1	Recording locked.
		2	F1 function locked.
		3	Recording locked. F1 function locked.
Mode F2 or <T	↵ +	15 0	**F1 function Autostart**
	Mode F2 <T	0	No Autostart
	Setting changes with each keystroke.	1	Load tolerance control during start
		2	Load fine display during start (not legal for trade)
Mode F2 or <T	↵ +	16 0	**F2 menu**
	Mode F2 <T	0	F2 menu locked. Call-up via restart only.
	Mode F2 <T	1	F2 menu free.
Mode F2 or <T	↵ +	17 0	**Recording only if weight is within tolerance limits. Only with tolerance control**.
	Mode F2 <T	0	Function off.
	Mode F2 <T	1	Function on.

Selection	Subselection	Display	Explanation
▲ Mode F2 or ▼ <T	↵ +	33 1	**Digital filter**
	▲ Mode F2 ▼ <T	0	No-motion environment, brief weighing time
	Setting changes with each keystroke.	1	No-motion environment, medium weighing time
		to	
		9	Environment in motion, long weighing time
▲ Mode F2 or ▼ <T	↵ +	34 15	**Time to establish no-motion of weight**
	▲ Mode F2 ▼ <T		Time = value x 30 ms Minimum input = 8
▲ Mode F2 or ▼ <T	↵ +	36 1	**taring** Only with key on the device.
	▲ Mode F2 ▼ <T	1	100% released
	▲ Mode F2 ▼ <T	0	0% released
▲ Mode F2 or ▼ <T	↵ +	38	**Portion control**
	▲ Mode F2 ▼ <T	1	Function active
	▲ Mode F2 ▼ <T	0	Function not active
▲ Mode F2 or ▼ <T	↵ +	39	**Minimal weight change for another recording** Requirement for this is: Step 5 is active (= 1).
	▲ Mode F2 ▼ <T	0001	0.001 kg
	Setting changes with each keystroke.	to	
		0098	0.098 kg

9

9.2 Scale parameter

Slide switch to calibrated. Scale data cannot be changed.

Change scale parameters: You must first remove the verification seal to invalidate the verification of the scale.

Menu call-up only via restart, see page 27.

Call-up: "S_PArA" ↵ + "SCALE_P" ↵ +

Save data in EEPROM: Press ⏻ key.

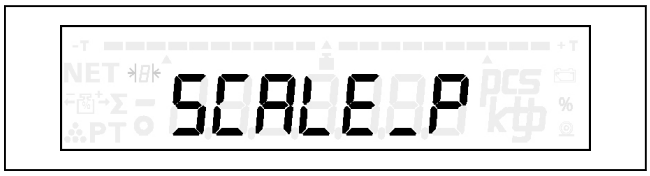


Fig. 25: Display: "SCALE_P"

Selection	Subselection	Display	Explanation
▲ Mode F2 or ▼ <T	↵ +	22 3 22 6 22 10 22 12 22 15 22 30 22 60 22 120 22 150 22 300 22 500 22 600 22 1000 22 1200 22 1500 22 2000 22 3000 22 4000 22 5000 22 6000 22 7500 2210000 2220000 2230000	**Weighing range in kg, coarse interval**
	▲ Mode F2 ▼ <T Setting changes with each keystroke.		
▲ Mode F2 or ▼ <T	↵ +	23 1 23 2 23 5 23 10 23 20 23 50 23 100 23 200 23 400 23 500 23 1000 23 2000 23 5000 2310000	**Display interval in g, coarse interval**
	▲ Mode F2 ▼ <T Setting changes with each keystroke.		

Selection	Subselection	Display	Explanation
Mode F2 or <T	+	24 1	**Selection multi-interval / multi-range scale**
	Mode F2 <T	24 1	Single division scale
	Setting changes with each keystroke.	24 2	Dual division scale
		24 3	Triple division scale
		24 4	Dual-range scale
		24 5	Triple-range scale
Mode F2 or <T	+	25 3 25 6 25 10 25 12 25 15 25 30 25 60 25 120 25 150 25 300 25 500 25 600 25 1000 25 1200 25 1500 25 2000 25 3000 25 4000 25 5000 25 6000 25 7500 2510000 2520000 2530000	**Weighing range in kg, small interval**
	Mode F2 <T		
	Setting changes with each keystroke.		
Mode F2 or <T	+	26 1 26 2 26 5 26 10 26 20 26 50 26 100 26 200 26 400 26 500 26 1000 26 2000 26 5000 2610000	**Display interval in g, small interval**
	Mode F2 <T		
	Setting changes with each keystroke.		

9

Selection	Subselection	Display	Explanation
Mode F2 or <T	+	27 3	**Weighing range in kg, medium interval**
	Mode F2 <T	27 6	
	Setting changes with each keystroke.	27 10	
		27 12	
		27 15	
		27 30	
		27 60	
		27 120	
		27 150	
		27 300	
		27 500	
		27 600	
		27 1000	
		27 1200	
		27 1500	
		27 2000	
		27 3000	
		27 4000	
		27 5000	
		27 6000	
		27 7500	
		2710000	
		2720000	
		2730000	
Mode F2 or <T	+	28 1	**Display interval in g, medium interval**
	Mode F2 <T	28 2	
	Setting changes with each keystroke.	28 5	
		28 10	
		28 20	
		28 50	
		28 100	
		28 200	
		28 400	
		28 500	
		28 1000	
		28 2000	
		28 5000	
		2810000	
Mode F2 or <T	+	29 1	**Dimension**
	Mode F2 <T	29 0	g
	Setting changes with each keystroke.	29 1	kg
		29 2	t
		29 3	lb

9

Selection	Subselection	Display	Explanation
Mode F2 or <T	↵ +	30 1	**Minimum load capacity**
	Mode F2 <T	30 0	Minimum load 20 e
	Setting changes with each keystroke.	30 1	Minimum load 5 e for non-automatic weighing instruments of class III for the determination of transportation rates.
Mode F2 or <T	↵ +	31 000	**Positive g factor, g/kg**
	Mode F2 <T		Input 010 equals 0.10 g/kg
Mode F2 or <T	↵ +	32 000	**Negative g factor, g/kg**
	Mode F2 <T		Input 050 equals -0.50 g/kg
Mode F2 or <T	↵ +	33 1	**Digital filter**
	Mode F2 <T	33 0	No-motion environment, brief weighing time
	Setting changes with each keystroke.	33 1	No-motion environment, medium weighing time
		to	
		33 9	Environment in motion, long weighing time
Mode F2 or <T	↵ +	34 15	**Time to establish no-motion of weight**
	Mode F2 <T		Time = value x 30 ms Minimum input = 8
Mode F2 or <T	↵ +	35 05	**Permissible deviation of measured value for stable weight**
	Mode F2 <T		Permissible deviation = value x 3 dd Minimum input = 5

Special case dual interval scale 3/1. 5kg 1/0.5 g:

Step 22 = 3

Step 23 = 1

Step 24 = 2

Step 25 is preset with 1_5

Step 26 is preset with 0_5

Special case single division scale 30000/10 g:

The device expects the input of the weighing range (steps 22, 25, 27) in dimension [kg] or [lb]. The device expects the input of the digital increment (steps 23, 26, 28) in dimension [g] or [mlb].

If scales have a weighing range in dimension [g] but not [kg], select the digital increment by **factor 1000 higher**.

Example: Desired setting is 30000 g with scale interval 10 g.

Input: Step 22 = `30000`, step 23 = `10000`, step 29 = `0`.

9.3 Scale calibration menu

Slide switch to calibrated. No calibration possible.

The calibration process must be carried out with particular care.

You must first remove the verification seal to invalidate the verification of the scale.

Menu call-up only via restart, see page 27.

Save data in EEPROM: Press ⏻ key.

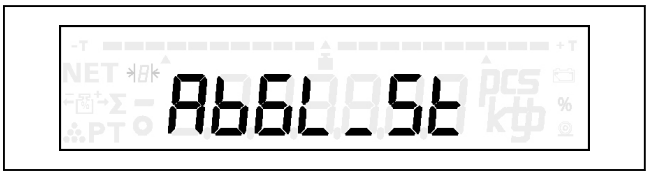
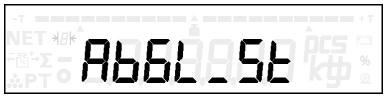


Fig. 26: Display: "AbGL_St"

Key	Display presentation	Process description
▲ Mode F2		Call up service parameters and confirm with ↵ +.
▲ Mode F2		Select calibration start and confirm with ↵ +.
		Calibration point 0 preload. Apply preload.
↵ +		Display of measured value for calibration point 0.
↵ +		First calibration point at 15 kg weighing range. Example: 3 kg

Key	Display presentation	Process description
↵ +		Display of measured value for calibration point 1.
↵ +		2 calibration points (0 and 1) were recorded. The calibration can be saved with ⏻ or further calibration points can be recorded. Second calibration point at 15 kg weighing range. Example: 6 kg
↵ +		Display of measured value for calibration point 2.
↵ +		Third calibration point at 15 kg weighing range. Example: 9 kg
↵ +		Display of measured value for calibration point 3.
↵ +		Fourth calibration point at 15 kg weighing range. Example: 12 kg
↵ +		Display of measured value for calibration point 4.
↵ +		Fifth calibration point at 15 kg weighing range. Example: 15 kg
↵ +		Display of measured value for calibration point 5.
↵ +		Sixth calibration point at 15 kg weighing range. Example: 15 kg
↵ +		Display of measured value for calibration point 6.
↵ +		Seventh calibration point at 15 kg weighing range. Example: 15 kg
↵ +		Display of measured value for calibration point 7.

After acknowledgment of calibration point 7 the device restarts. The scale calibration is completed.

This is how you change the suggested load ranges: Select position with >0< and >T, change digit with Mode F2 and <T.

You can end the calibration after at least 2 calibration points with ⏻.

9.4 Switch settings hardware seal

The hardware seal (slide switch) is located under the protective cover.

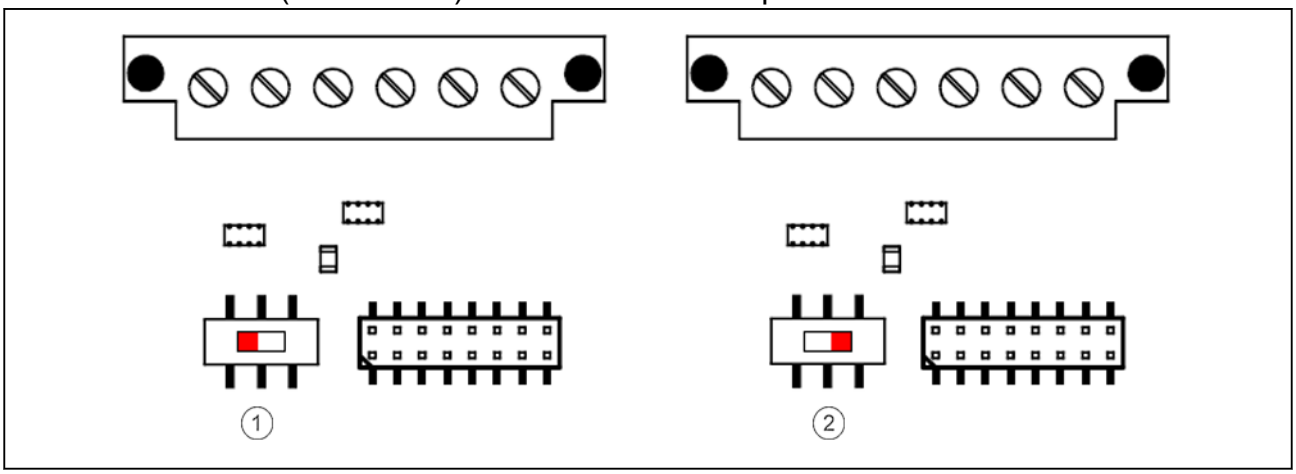


Fig. 27: Switch settings hardware seal

① Slide switch left = non-approved

② Slide switch right = approved

9.5 Hardware seal settings

Status of hardware seal	Slide switch	Changes		flashes	Display
		Scales parameters	Calibration		
metrologically approved	right	No	No	No	Stnd H0
not metrologically approved	left	Yes	Yes	Yes	Stnd H1

Call-up of service parameters, see page 27.

Call-up of metrology status, see page 27.

10 Examples of operating procedures

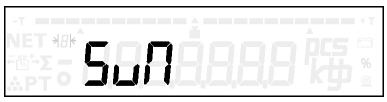
Practical examples of weighing, counting and operating procedures with recording and totaling as well as required parameter settings.

10.1 Weighing, recording, totaling

Recording of single and total weights with data output to PC/EDP and a printer.

Parameter settings

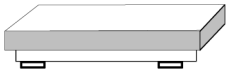
Esc
F1



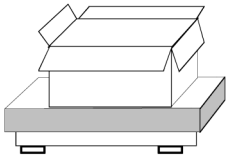
Added weighing, recording, totaling

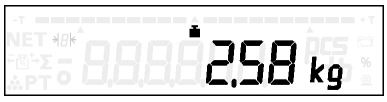
Goods dispatch: Package parts in a carton.

Operating procedures



Scale is unloaded, set to 0 >0< and total memory is deleted.

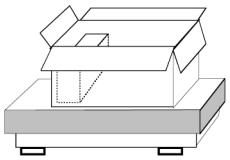


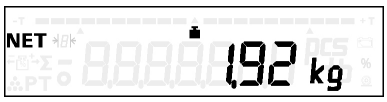


Place carton on scale.

>T

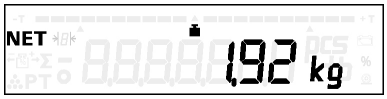
Tare scale to 0.





Fill parts of first item into carton.

+



Recording of first item with data output to PC/EDP or printer.

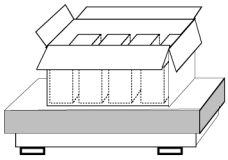
>T

Possibly add additional packaging material and tare scale to 0.

+ Recording

>T Tare

Fill additional parts/items into carton.



NET 3.88 kg

Fill parts of item x into carton.

+

NET 3.88 kg

Recording of item x with data output to PC/EDP or printer.

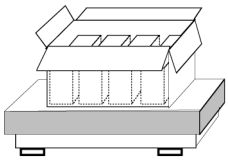
Display of total, see page 43.

Subtractive weighing, recording, totaling
Goods receiving: Remove parts from a carton.

Operating procedures

NET 0.00 kg

Scale is unloaded, set to 0 >0< and total memory is deleted.



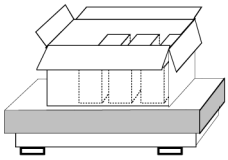
NET 22.84 kg

Place carton with content on scale.

>T

NET 0.00 kg

Tare scale to 0.



NET - 1.92 kg

Remove first item from carton.

+

NET - 1.92 kg

Recording of first item with data output to PC/EDP or printer.

>T

NET 0.00 kg

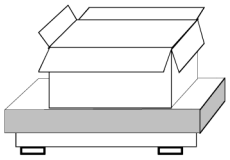
Possibly remove additional packaging material and tare scale to 0.

+ Recording

>T Tare

Remove additional parts/items from carton.

10



NET -2.58 kg

Remove (last) item x from carton.

+

NET -2.58 kg

Recording of (last) item x with data output to PC/EDP or printer.

10.2 Counting, recording, totaling

Recording of single weight/number of pieces and total quantity/number of pieces with data output to PC/EDP or a printer.

Added weighing counting, recording, totaling
Parameter settings

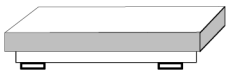
10

Esc
F1

CnT 10

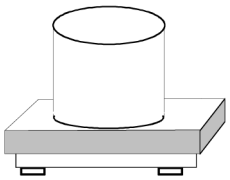
Counting function with reference number 10

Operating procedures



0.00 kg

Scale is unloaded, set to 0 >0< and total memory is deleted.



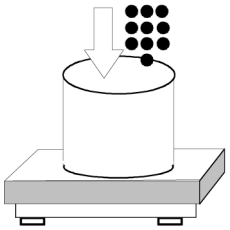
2.58 kg

Place carton on scale.

>T

NET 0.00 kg

Tare scale to 0.



NET 0.15 kg

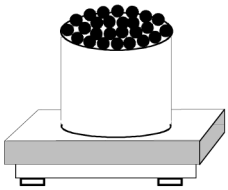
Fill 10 reference parts into carton.

F1

10

Start counting with calculation of reference weight.

Number of pieces = reference number

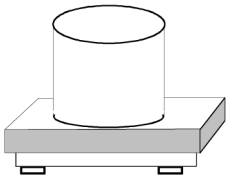


Fill target number of pieces into carton, first item.

+

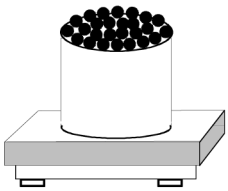
Recording of first item with data output to PC/EDP or printer.

Scale is unloaded.



Place empty carton on scale if number of pieces does not equal 0. Press >T.

Process additional items.



Fill target number of pieces into carton, item x.

Display of total, see page 43.

11 Troubleshooting

If you cannot correct an error by yourself, you should contact the Bizerba service. When contacting the Bizerba service, please, provide the following information:

– Device type (see identification plate)
– Device number (see identification plate)
– Program version of software
– Fault description

This will make service so much easier.

Shut down equipment immediately in the event of recurring faults, damage of any type, and suspicion of risk of injury.

Please inform the next customer service agent.

DANGER

Electrical voltage in device with power plug inserted!

Danger to life due to electrical shock.

– Pull power plug before working inside the device.
– Work inside the device must be performed by qualified personnel only.

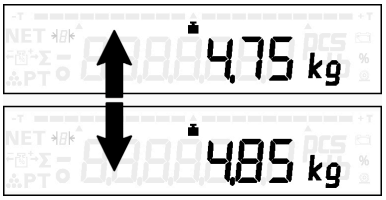
11.1 Bring-in service

Bizerba provides various service concepts for this device. Usually, "Bring-in service" is available for this device. In case of service, proceed as follows:

– Take down device type and device number (to be found on the device's identification plate).
– Contact your Bizerba technical consultant or the Bizerba Service.
– Sort out with the person of contact if "Bring-in service" is available for your device. Devices for which "Bring-In service" is available are normally labeled with a sticker:

– If required, the load receptor has to be sent in together with the terminal.
– The person of contact will inform you on where to send the device.
– Original packaging must be used for shipment. If you are no longer in possession of the original packaging, you might request it from Bizerba.

11.2 Fault descriptions

Fault	Cause	Elimination
	No power supply or connector not plugged in.	Check and insert power cable. Press standby/reset key.
	Scale is in underload below zero point. Preload is missing or load platter is stuck.	Fit load platter correctly. Remove objects touching the load platter. Remove objects from beneath load platter. Set scale to zero.
	Scale is in overload range above maximum load. Weighing range is exceeded.	Remove objects from load plate. Level scale. Switch device off and on.
Printer will not print.	Receipt or label paper incorrectly inserted.	Correctly insert receipt or label paper. Note coated side.
Weight value display constantly changes 	Load platter is incorrectly positioned or objects are touching the load platter. Soiling on or beneath the load platter. Scale is not leveled. Erratic environment due to draft or vibrations. Product unstable.	Clean load plate, position correctly and remove objects. Level scale. Switch device off and on. Change the location of the scale. Parameter settings to be adjusted by Bizerba customer service.
Incorrect weight display 	Product incorrectly placed on scale or external contact.	Place product correctly. Remove external contact.
"Er20851"	Connection to digital load receptor has been disconnected.	Check cable connection of load receptor.
"Er22692" "Er22699"	CPU authentication failed.	Switch device off and on.
"Er22693"	Calibration data in the device does not match connected load cell.	Connect load cell used to calibrate the device. Calibrate device with new load cell.
"Er22694"	CPU timeout.	Switch device off and on.

Fault	Cause	Elimination
"Er22695"	The weighing range and the set interval exceed the permissible number of verification scale intervals.	Example: Max. 6 kg e = 0,001 kg equals 6000 verification scale intervals. Max. 10000 verification scale intervals for analog load cell. Max. 7500 verification scale intervals for digital weighing system.
"Er22696"	Authentication of digital load cell failed.	Switch device off and on.
"Er22697"	The data in the metrologically approved data storage could not be read.	Switch device off and on.
"Err Cnt"	Minimum weight for reference weight establishment is not reached.	Place higher weight or more pieces on the scale.

12 Maintenance

12.1 Cleaning

Cover device when building is cleaned.

For cleaning, it is not permitted to use:
– Sharp, hard or pointed objects
– Water or steam jet devices
– Compressed air
– Cleaning agents that are hazardous to health or that contain solvents

12.1.1 Display and operating unit

Clean with a soft, lint-free, damp cloth. Do not use abrasive agents. The cleaning agent must be compatible with foodstuffs.

12.1.2 Stainless steel surfaces

Devices made of stainless steel are extremely weather resistant and therefore suitable for most environmental conditions. However, stainless steel can corrode as well (rust). If rust appears on the surface, this is surface rust and does not come from the material itself. This rust is a result e.g. of contact corrosion for example.

Maintenance information for stainless steel
Bizerba only uses high-quality stainless steels. To avoid the formation of rust on high-quality steel parts the device should not be treated to substances containing chloride (e. g. cleaning agents or disinfectants) and should not be exposed to a chloride atmosphere. If this cannot be avoided, immediately rub steel parts with cleaning oil. This is absolutely necessary to prevent rust formation.

Cleaning oil: e. g. Bizerba service oil (material number 94008900022). The cleaning oil complies with the German Food and Commodities Act (LBMG, §5, para. 1, sentence 1), fulfils the requirements of the "guidelines of sec. 21 CFR 178.3570 of FDA regulations" and has an H1 approval according to USDA.

Cleaning agents for stainless steel surfaces

– All stainless steel cleaning materials are permitted. Before applying, make sure you read the package instructions.
– Halogen-free (i.e. without chloride and fluoride ions), hydrochloric and hydrofluoric acid-free cleaning agents are also permitted.
– Completely remove cleaning agent after cleaning.

Type of stain	Cleaning agent to use
Lime-scale	Acidic cleaners, e. g. phosphoric acid, nitric acid. Wear protective gloves.
Surface rust	Acidic cleaners, e. g. phosphoric acid, nitric acid. Wear protective gloves.
Grease and oil stains	Alkaline cleaners. Wear protective gloves.
Spray paint	Solvent cleaner or organic solvent,e. g. turpentine, nitro dilution. Observe accident prevention.
Lime-scale or sprays of cement mortar	Rubber scrapers, wooden spatulas. No metal scrapers or knives.

Do not use the following cleaning agents:

– Materials and agents made of unalloyed steel
– Nonwoven fabrics containing abrasives
– Cleaning agents that contain salt or hydrofluoric acid
– Chrome-, silver-, and brass cleaning agents

13 Technical data

13.1 Dimensions

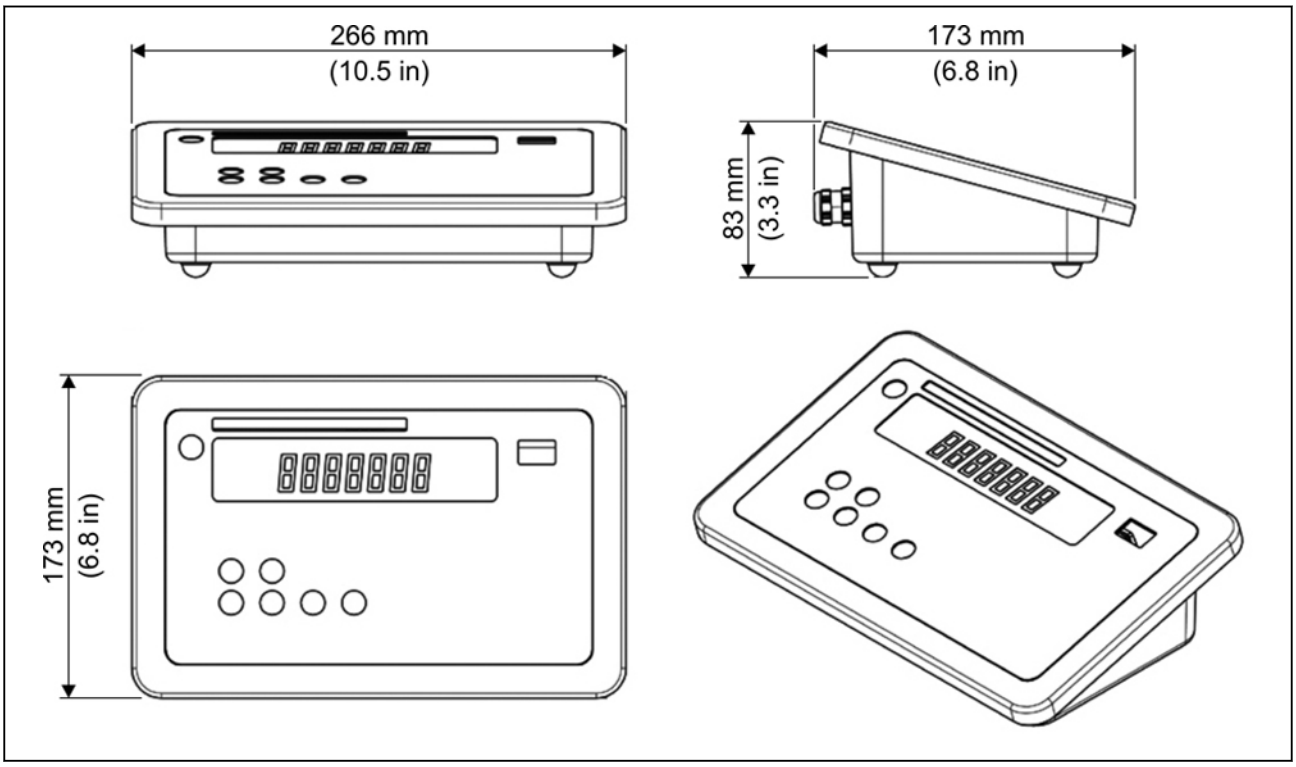


Fig. 28: Dimensions

13.2 Housing

Version: Stainless steel

Housing versions: Remote, table top display, stand, wall mounting

13.3 Display and operating unit

Keyboard: Membrane keyboard

Display: LCD display; 154 x 35 mm; monochrome display

13.4 Surrounding temperature range

Operation: -10°C up to +40°C

Storage: -20°C up to +60°C

13.5 Power supply

Supply voltage: Default:
100 – 240 V AC, 50 – 60 Hz, 0.4 – 0.2 A
Optional batter pack:
220 – 240 V AC, 50 – 60 Hz, 0.2 A
100 – 120 V AC, 50 – 60 Hz, 0.4 A

Battery pack (optional): 10.8 V / 4.4 Ah (operating time: 20 h)

Device fuse: T 1.6 A

13.6 Protection class

Terminal: IP65/IP69K

Standard load cell: IP54

Stainless steel load cell: IP68/IP69K

13.7 Interfaces

– RS232
– PIO
– Outputs with open collector (open collector switch)
– Ethernet

13.7.1 Parallel inputs and outputs

The connection of parallel inputs and outputs includes 4 outputs and 3 inputs. This is a 16-pin connection.

All information refers to ±0 V, grounded.

Outputs
Open collector outputs; max. 24 V, 30 mA

Pin No.	Name	Function
3	Channel 1 output	Lower tolerance limit
5	Channel 2 output	Target value
7	Channel 3 output	Upper tolerance limit
9	Channel 4 output	Scale in no-motion condition

Voltage range for logic `1`: +4.6 V – +5.8 V

Voltage range for logic `0`: ±0 V – +0.5 V

Inputs
maximum 5.8 V; 1 active

Pin No.	Name	Function
10	Channel 5 input	taring
12	Channel 6 input	Deleting tare
14	Channel 7 input	Item recording, adding

16-pin connection	Name	Function	Wire color
1	GND		white (WH)
2	Channel 1 input	NC[1)]	brown (BN)
3	Channel 1 output	lower tolerance limit	green (GN)
4	Channel 2 input	NC[1)]	yellow (YE)
5	Channel 2 output	Target value	gray (GY)
6	Channel 3 input	NC[1)]	pink (PK)
7	Channel 3 output	upper tolerance limit	blue (BU)
8	Channel 4 input	NC[1)]	red (RD)
9	Channel 4 output	Scale in no-motion condition	black (BK)
10	Channel 5 input	Taring[2)]	purple (VT)
11	Channel 5 output	NC[1)]	gray-pink (GY-PK)
12	Channel 6 input	Delete tare[2)]	red-blue (RD-BU)
13	Channel 6 output	NC[1)]	white-green (WH-GN)
14	Channel 7 input	Item recording, adding[2)]	brown-green (BN-GN)
15	Channel 7 output	NC[1)]	white-yellow (WH-YE)
16	GND		brown-yellow (BN-YE)
NC[1)] = not connected [2)] = Unused inputs must be grounded.			

13.8 Connections

The following connections are possible:
– 1 x load receptor
– 1 x PIO (4 outputs, 3 inputs)
– 2 x serial interfaces
– 1 x Ethernet (100 MBit/s IPv4)

Appendix

CE declaration of conformity

Hauptverwaltung Balingen
P.O. Box 10 01 64, 72301 Balingen
Wilhelm-Kraut-Straße 65
72336 Balingen, Germany

BIZERBA

CE Declaration of conformity

We herewith declare that the design of the non-automatic scales indicated hereafter

Designation:	Industrial scales
Type:	eS… (eS10)
EC type approval no.	D12-09-012[1)]
Test Center:	0102 (PTB)[1)]

conforms to the assembly described in the type approval as well as the valid requirements in the following EC guidelines:

Non-Automatic Weighing Instruments Directive (NAWI)	2009/23/EC
Electromagnetic Compatibility Directive (EMC)	2004/108/EC
EC Low Voltage Guideline	2006/95/EC

Harmonized standards and technical specifications applied:

Metrology:	DIN EN 45501; 1992 (OIML recommendation R 76-1, version 2006)[1)]
EMC:	DIN EN 61000-6-2/2006-03 and amendment 1/2011-06; DIN EN 55011 class A/2011-04
Safety:	DIN EN 60950-1/201101

The basis for the declaration of conformity is the contract documents (Bizerba purchase order documents). Any modifications made to the above equipment without the prior permission of Bizerba will render this declaration invalid.

[1)] This only applies to affixed metrology identification.

Date: 19.05.2014

Signature of manufacturer: i. V.

Title of signatory: Dr. Winfried Bücken
Director Industry Solutions Technology
Bizerba GmbH & Co. KG