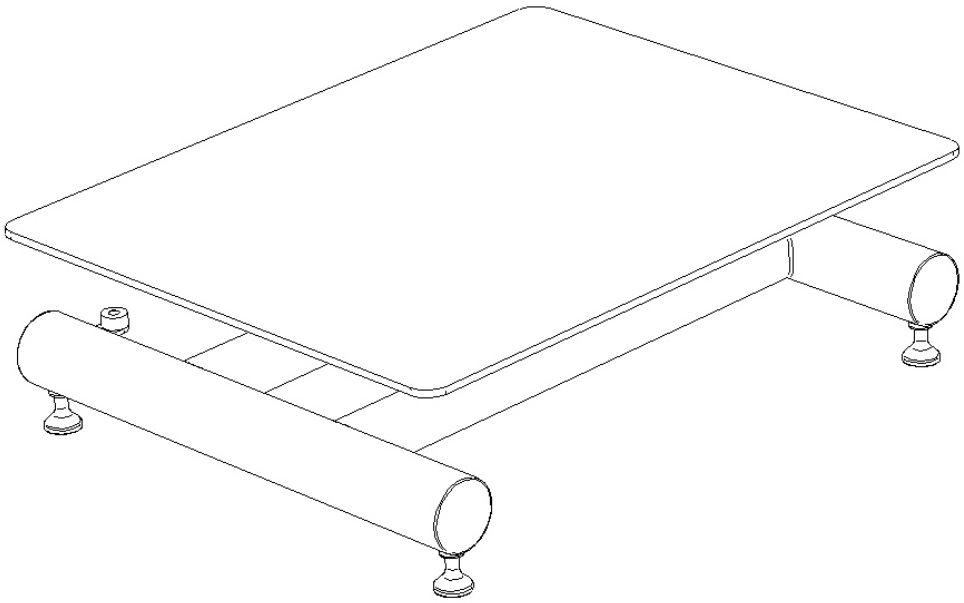
Hygienically Constructed Load Sensor for Industrial Applications

iL Professional SPM H

Assembly instructions

38.032.430.000 en



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Original documentation

Contents

1 About the manual

This manual doesn't distinguish standard equipment and options. Contact your Bizerba consultant to obtain information about available options.

Our products are continually evolving and are subject to different country-specific regulations. Pictorial and graphical examples in the operating manual may differ from the delivered version.

1.1 Retention

This manual is part of the instrument and must be retained in the latter's immediate vicinity easily accessible for everyone.

The complete manual must be delivered with the instrument when the latter is resold.

1.2 Accompanying documents

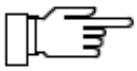
- Supplement with cleaning instructions for the load sensor's stainless-steel version
- Operating manual for respective evaluation device

1.3 Symbols used

The following descriptions or symbols are used for especially important information in the manual:

Symbol	Meaning
⇨	Text with arrow prompts you to take an action.
①	Position number in figures.

Notices



It's mandatory for you to obey these notices.

Information

This information is intended for better proficiency.

2 About the instrument

The load sensor is standardly delivered with attached evaluation device. If a connection cable longer than 2.5 m is necessary, it should be extended using an intermediate junction box. Cables up to a maximum of 300 m long are possible.

2.1 Model overview

- Load-sensor size 335 mm x 260 mm in stainless steel with electropolished surfaces, PW15AH load cell
- Load-sensor size 500 mm x 400 mm or 600 mm x 450 mm, both stainless steel with electropolished surfaces, PCBC3 load cell.
- The load sensor comprises the following components:

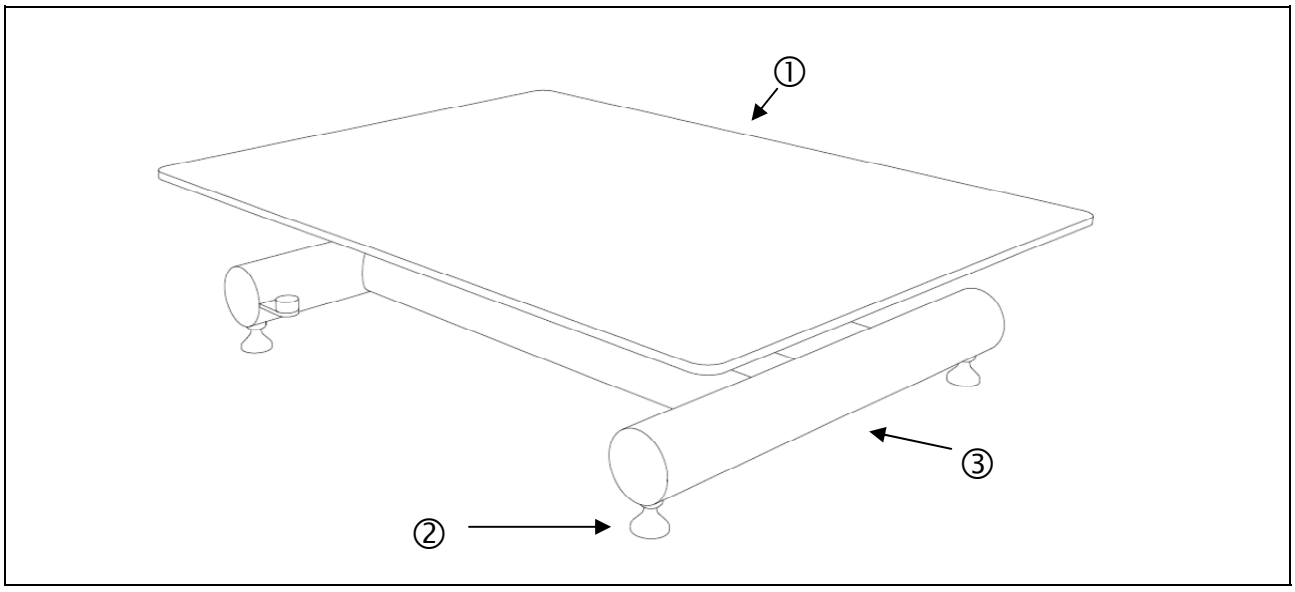


Fig. 1: Overview

① Load plate

② Adjustable foot

③ Base frame

- The spirit level for levelling the load sensor is visible.

2.2 Option

We offer a comprehensive range of accessories for the instrument. Contact your Bizerba consultant for further information.

2.3 Intended use

The load sensor has been ergonomically constructed and certified (EHEDG certificate no. 27/2011) in compliance with the European Hygienic Engineering Design Group's (EHEDG) hygiene-appropriate design criteria.

The electropolished hygienic version (IP69K) is suitable for use in wet areas. Its construction type enables simple cleaning (e. g. with a high-pressure cleaner).

Ex ib version load sensors are suitable for operation in zone 1 & 21 explosion-prone areas. Take note then that all attachment parts and the evaluation device must also be approved for the explosion-prone area.

2.4 Conditions at the set-up site

- Level set-up surface.
- A shock- and vibration-free, as well as the driest, most draught-free possible set-up must be guaranteed.
- The devices should be arranged from operational, work-flow, and maintenance perspectives.
- The weigher must have an unimpeded line of sight from the evaluation device to the weighing point for custody-transfer devices.

2.5 Calibration details

Recalibration is described in the respective evaluation device's operating manual. As the operator, you are obligated to register the evaluation device with the load sensor for the current recalibration deadline according to current national provisions for recalibration.

2.6 Standards and directives

The load sensor represents a non-automatic scale (NSW) of accuracy class III according to EC Weighing Instruments Directive 2009/23/EC. Weighing accuracy depends on the attached evaluation device.

3 Explosion protection

Option

iL Professional SPM H Ex is for explosion-prone zones 1 or 21;

iL Professional SPM H Z2 is for explosion-prone zones 2 or 22.

They have no potential mechanical, electrical, or electrostatic ignition sources. Therefore ATEX Directive 94/9/EC concerning explosion protection doesn't apply. Among other things, special explosion-protection labelling and the declaration of conformity are omitted. However all of the European standards' safety requirements are met.

For instance electrostatic charges can be safely conducted from people through the stainless steel load plates over the cable shield to the attached device's earthed housing.

Model iL50 Professional SPM 30 H is only obtainable with the explosion-protected version of WZ PW15AH.

WZ model	Manufacturer	ATEX approval
PCB	Flintec	Zones 1 + 21 + 2 + 22
PW15AH	HBM	Zones 1 + 21 + 2 + 22

3.1 iL Professional SPM H Exb specifications

Ⓔx II2G Ex ib IIC T6 Ⓔx II2D Ex ib IIIC T80°C IP65
according to EN 13463-1, EN 60079-0, EN 60079-11, EN 61241-11

Load cell PCB from Fa. Flintec
Ui = 30V; Pi = 4W; Li = 0; Ci = 0
EG Type Approval BVS 09 ATEX E 086 E from
DEKRA EXAM, Dinnendahlstraße 9, D-44809 Bochum; ID-no. 0158

Wägezelle PW15AH from Fa. HBM
Ui = 22V; Ii = 469mA; Pi = 1,25W; Li = 1,8µH; Ci = 500pF
EG Type Approvals
PTB 01 ATEX 2208 from PTB,
Bundesallee 100, D-38116 Braunschweig; Kenn-Nr. 0102; and
DMT 03 ATEX E 033 from
DEKRA EXAM, Dinnendahlstraße 9, D-44809 Bochum; ID-no. 0158

3.2 iL Professional SPM H Z2 specifications

Ⓔx II3G Ex nAC IIC T6 Ⓔx II2D Ex tC T80°C IP65
according to EN 13463-1, EN 60079-0, EN 60079-15, EN 61241-1

4 Installation

The load sensor is located in a cardboard box with an evaluation device. Additional accessory devices such as a tripod for an evaluation device are included.

A connector cable already connects the load sensor by default to the respective evaluation device. The load sensor must be connected acc. to the connection images when large distances separate the former from the evaluation device.

- ⇨ Bring the load sensor to the set-up site.
- ⇨ Take out the load sensor together with the evaluation device.
  Pay attention to the connecting cables in the process.

4.1 Setting up the load sensor

A shock- and vibration-free, as well as the driest, most draught-free possible set-up must be guaranteed.

The devices should be arranged from operational, work-flow, and maintenance perspectives.

The weigher must have an unimpeded line of sight from the evaluation device to the weighing point for custody-transfer devices.

- ⇨ Check graphical and static documentation (e.g. with covers, integrated transport systems, or similar) before setting up and connecting the load sensor.
- ⇨ Carefully unpack the evaluation device and other devices at the set-up site paying attention to the connecting cables in the process.
- ⇨ Grab the load sensor by the base frame and carefully take it from the cardboard box.
- ⇨ Take off plastic band.

Authorized specialists use a special measurement line to connect the load cell on the evaluation device in load sensors with a connection cable longer than 2.5 m. The specialists obey the operating manual, connection diagrams, and relevant DIN/VDE regulations.

Only our sales offices' and customer service centres' trained employees, or companies authorized by us may conduct set-up, connection, and initial start-up.

Strictly observe current operation conditions for Bizerba devices prior to set-up. These are contained in the evaluation device's operating manual or are available as separate description no. 000.98.5.000x.

4.1.1 Levelling the load sensor

➪ Turn the adjustable feet, ④, until the air bubble is located in the centre of the spirit level on the base plate. The foot is fixed by the sealing ring; independent turning out of position is prevented.

➪ Check whether all four foot screws are resting evenly.

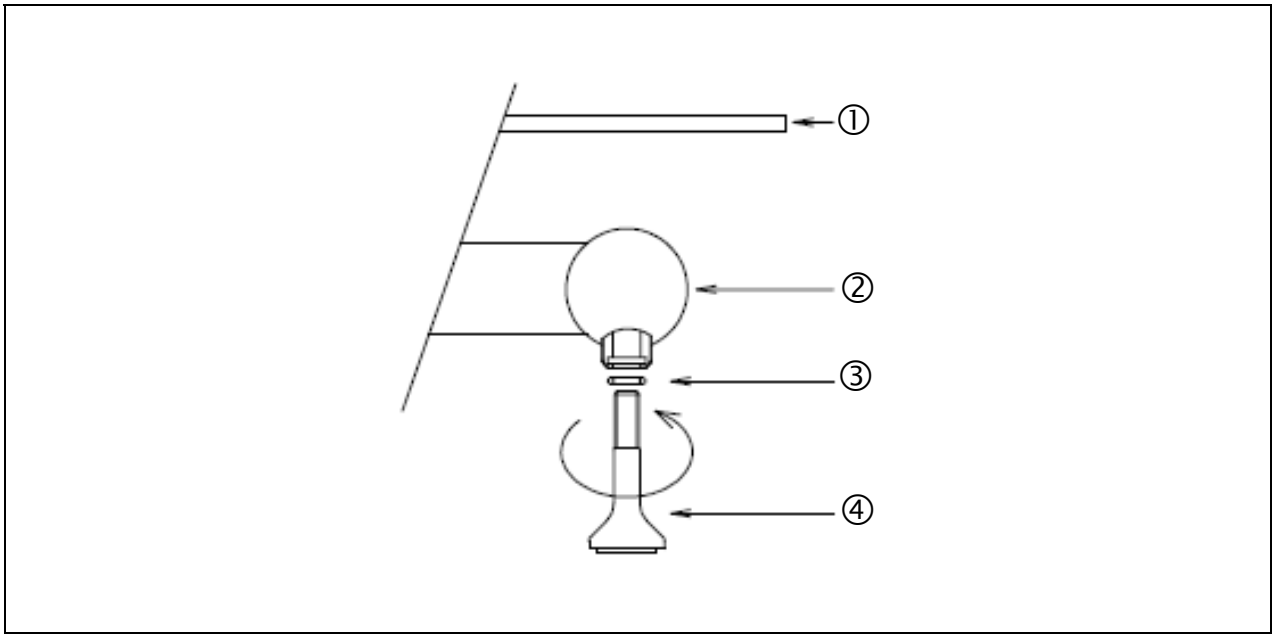


Fig. 2: iL50 Professional SPM 30 and iL150 Professional SPM 300 H foot

① Load plate

② Base frame

③ O-Ring

④ Adjustable foot

➪ Non-slip rubber is glued onto the bottoms of the load sensor's four feet. A sealing ring (O-ring) sits in a groove in the base frame's four welded-on, threaded sleeves. The O-ring prevents water and contaminants from penetrating into the threaded sleeve.

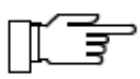
Note

The foot screw has a 10 mm adjustment range.

4.1.2 Initial start-up

➪ Connect evaluation devices according to the service documentation and bring into operation.

➪ Load the scale to the maximum load and with test weights and unload several times.



A rubber mat, or alternately a plastic film should be used to protect the electropolished load plate's surface during initial start-up.

5 Adjustment (Bizerba Service only)

Adjustment relates only to the load sensor in relation to sensitivity, invariability, and corner testing. An adjustment is required mostly before official recalibration or after repair.

5.1 Preparations

➪ Check weighing-related function elements.

Weighing-related function elements:

- Load application into the load cell
- Measurement line
- Load-cell cable
- Functionally reliable assembly

5.2 iL50 Professional SPM 30H: setting overload stop

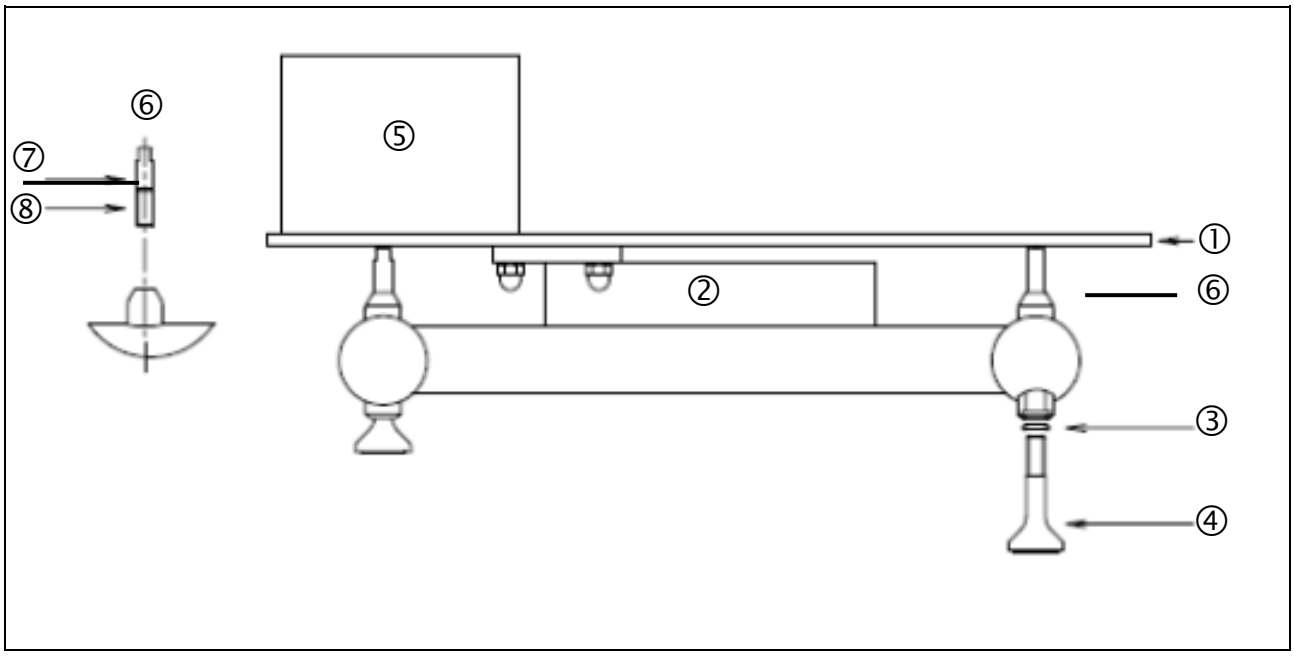
The overload stop is set at the factory and secured with adhesive.

➪ Load the scale with the test load.
➪ Use thread-lock or silicone to fasten the overload stop.
➪ Set the overload stop,⑥ to touch the load plate, ①.
➪ Turn backwards about ¼ turn.
➪ Remove excess silicone. Silicone's drying time is about one hour. Wait about thirty minutes for thread lock.

The test load should be applied 'uniformly' on the end of the load plate to adjust the overload stops' distance.

Test mass

2 kg	with 3 kg scale range
4 kg	with 6 kg scale range
10 kg	with 15 kg scale range
20 kg	with 30 kg scale range



① Load plate
② Load cell
③ O-ring
④ Adjustable foot
⑤ Test mass
⑥ Overload stop
⑦ Silicone
⑧ Loctite 2701 screw lock

5.3 Check sensitivity and invariability

Only begin the check 20 min after switching on the evaluation device (the evaluation device's warm-up time).

⇨ Place a mass greater than the minimum load onto the load plate.

⇨ Reproducibility deviation may not exceed about 0.4 increments of normal resolution.

⇨ Investigate and eliminate the causes of larger deviations:

- Check weighing-related functional parts.
- Are functional parts rubbing against one another?
- Are deadlocks detectable?
- Force bypasses?
- Causes can also lie in the evaluation device. Test with simulator.
- Repeat test.

5.4 Error limits

The following error limits must be complied with during the load sensor's loading test:

Load	Calibration error limits	Operational error limits
<500 e	0.5 e	1.0 e
500 e to 2000 e	1.0 e	2.0 e
>2000 e	1.5 e	3.0 e

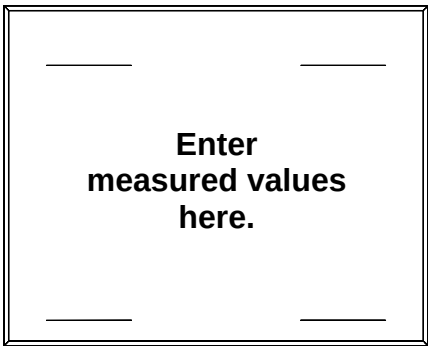
Position possible pre-load in the middle of the bridge.

5.5 Corner test

➪ Place counterweights for any fixed pre-load in the centre of the load plate.

➪ Position test masses, about ⅓ of the greatest load, one after another on the load plate's four corners flush with the load plate's edge.

➪ Note the measured values.



With a larger calibration-error-limits deviation, replace the load cell.

5.6 Final testing

To be tested:

- Zero point
- Weighing range (lowest to highest load)
- Pre-load
- Tare range

With custody scales, the error limits of each country's calibration procedure must be complied with.

6 Maintenance

6.1 Maintenance by the customer

Maintenance intervals are determined by, among other things, customers' requirements for cleanliness and hygiene.

Custody scales must be taken out of service in the following cases:

- The scale's weighing result lies outside of the operational error limit. Therefore load the scale at regular intervals with known test masses, about ⅓ of the rated load, and compare with the displayed value.
- The recalibration deadline has been exceeded. The next recalibration deadline is visible on the calibration seal or the calibration mark on the evaluation device.

Bizerba recommends a maintenance contract.

6.2 Maintenance by Bizerba Service

Maintenance by Bizerba Service is required in the following cases:

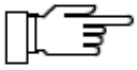
- Subsequent installation or dismantling of structures on the load plate.
- Following damage
- Prior to an official recalibration

Bizerba Service conducts the following activities:

- General cleaning
- Visual check of the load sensor inside and outside; corrosion damage is repaired.
- Visual inspection of the network, measurement, and data lines; damaged lines are replaced.
- Functional inspection of weighing-related components; corroded or damaged parts are replaced.
- Stops and lift locks are checked.
- Functional inspection of the evaluation device: key and operating functions, display.
- Final testing according to the data in the 'Adjustment' section.
- Handover to the customer. If necessary, register the scale for recalibration.

6.3 Cleaning

The open construction makes simple, quick, hygienic cleaning possible.



- We recommend bringing the load sensor into a 45° angle for simpler cleaning! Secure the load sensor against toppling over.

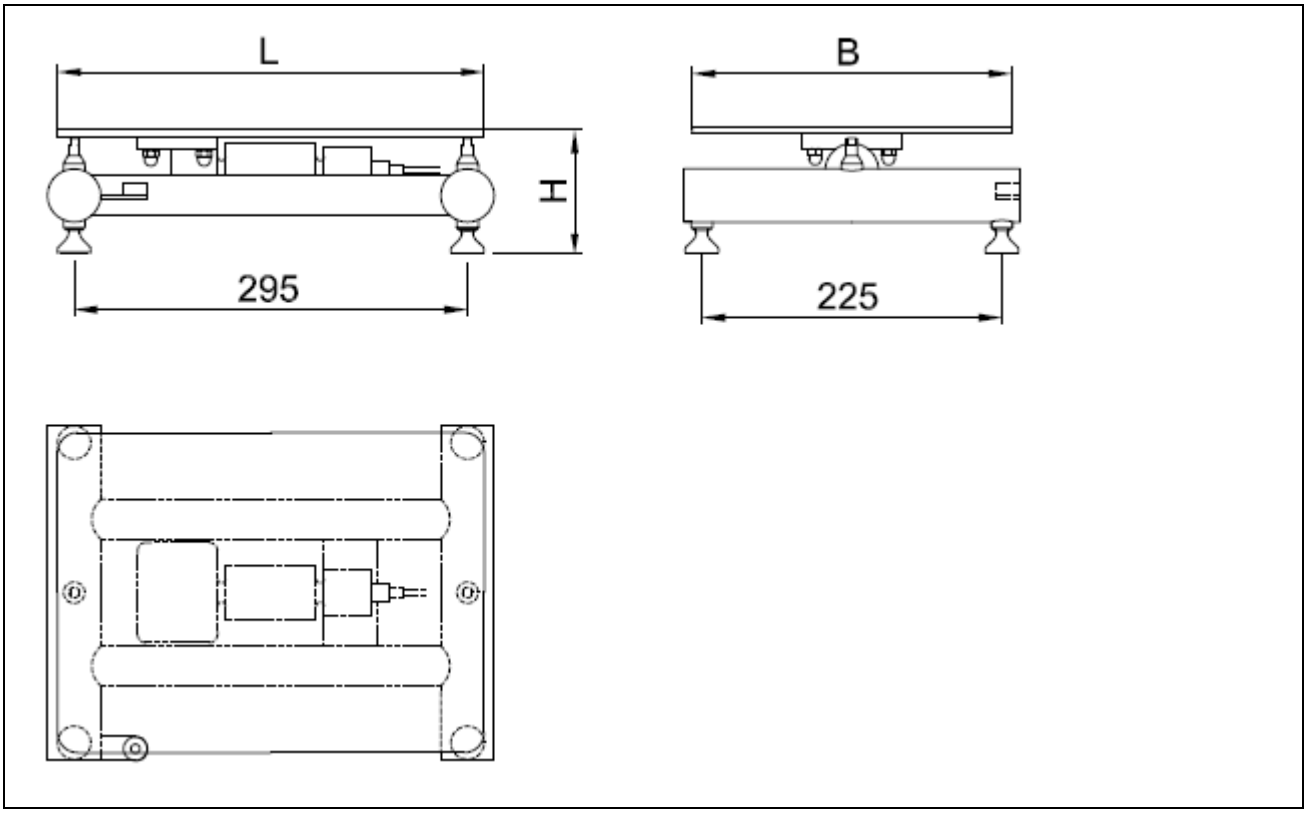
The load sensor's surfaces are electropolished. The load cell is an electronic sensor. It should be treated gently! Gentle treatment increases the scale's service life.

The load plate can be wiped off with a damp cleaning cloth to clean the model iL Professional SPM load sensor.

- Use of aggressive cleaning agents should be refrained from.
- When using high-pressure cleaning, please keep cleaning time short and apply in a targeted manner.
- The recommended cleaning temperature for the load cells is + 50 °C.

7 Technical data

7.1 Model iL50 Professional SPM 30 H dimensions



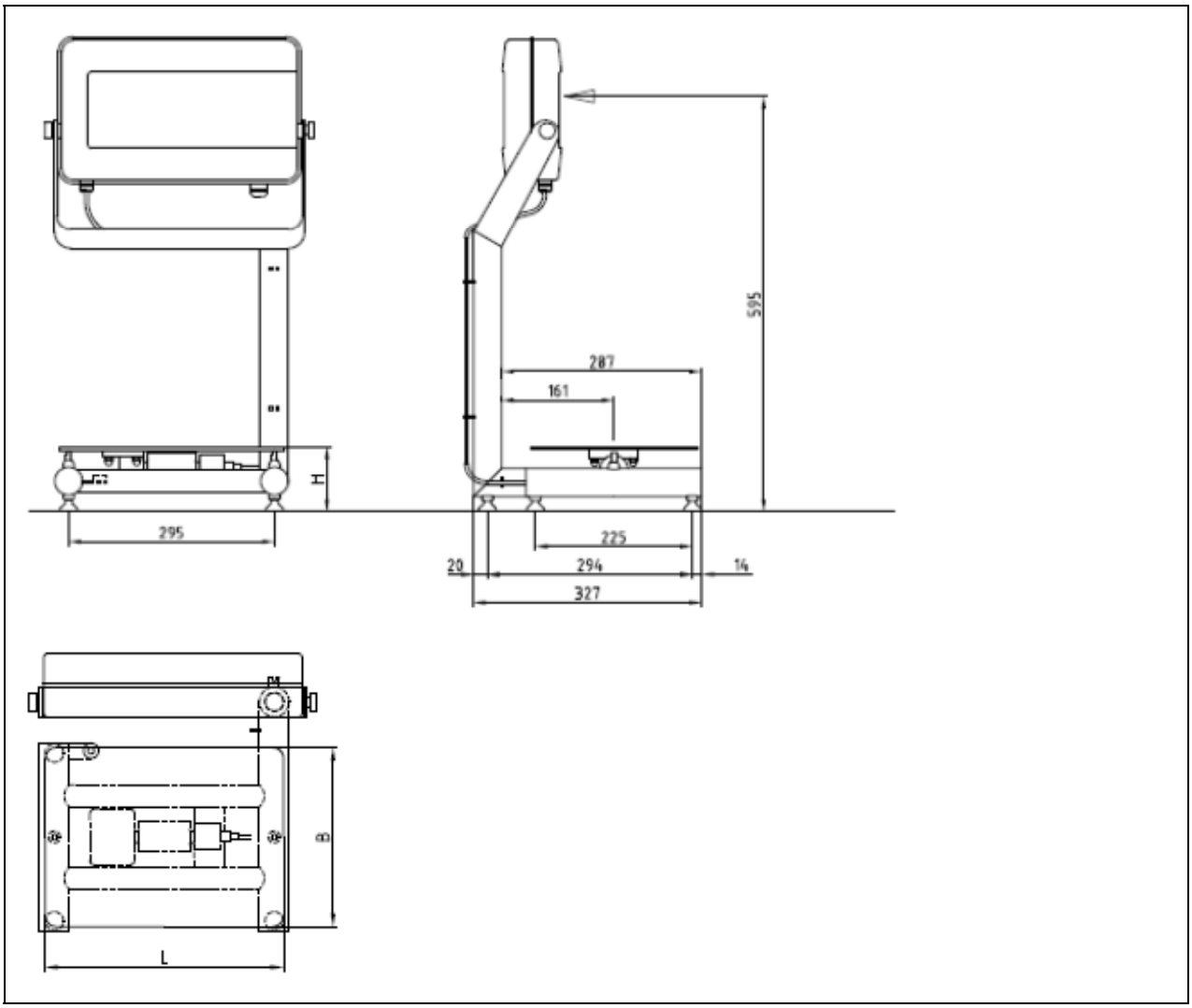
Dimensions in mm

Model	L mm	W mm	H mm	Empty mass kg	Measurement-cable length m
iL 50 Professional SPM 30 H1	320	240	103mm +10/-0mm	6,3	3,0
iL 50 Professional SPM 30 H2	400	240		7,0	
iL 50 Professional SPM 30 H3	335	260		6,7	

Mass without weighing terminal

SP = single point
M = modular
30 = max. weighing range
H = hygienic design
S = tripod design
1 = 320 mm x 240 mm load plate
2 = 400 mm x 240 mm load plate
3 = 335 mm x 260 mm load plate

Model iL50 Professional SPM 30 HS



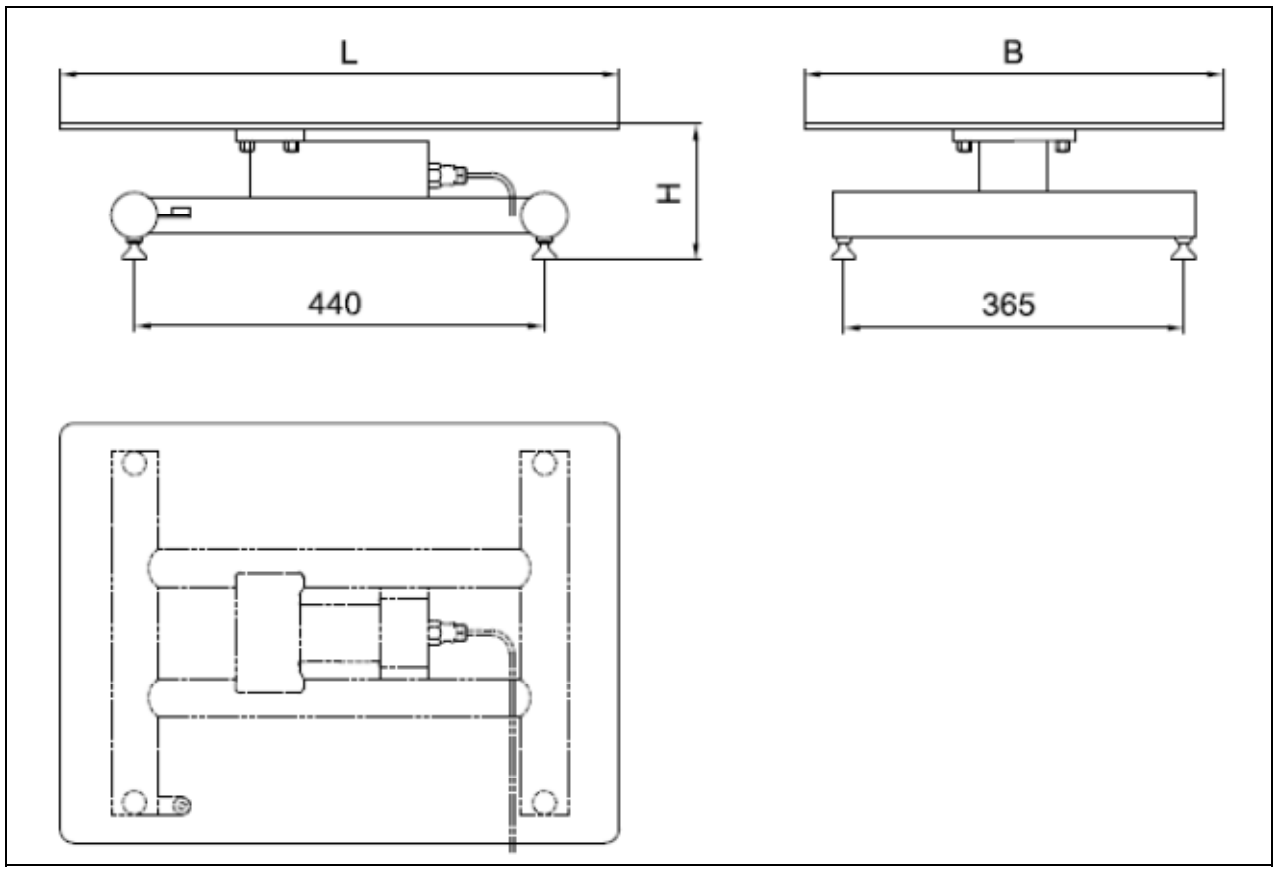
Dimensions in mm

Model	L mm	W mm	H mm	Empty mass kg	Measurement-cable length m
iL 50 Professional SPM 30 HS1	320	240	103mm +10/-0mm	8.5	1,5
iL 50 Professional SPM 30 HS2	400	240		9.5	
iL 50 Professional SPM 30 HS3	335	260		9.2	

Mass without weighing terminal

SP = single point
M = Modular
30 = max. weighing range
H = hygienic design
S = tripod design
1 = 320 mm x 240 mm load plate
2 = 400 mm x 240 mm load plate
3 = 335 mm x 260 mm load plate

7.2 Model iL150 Professional SPM 300 H dimensions



Dimensions in mm

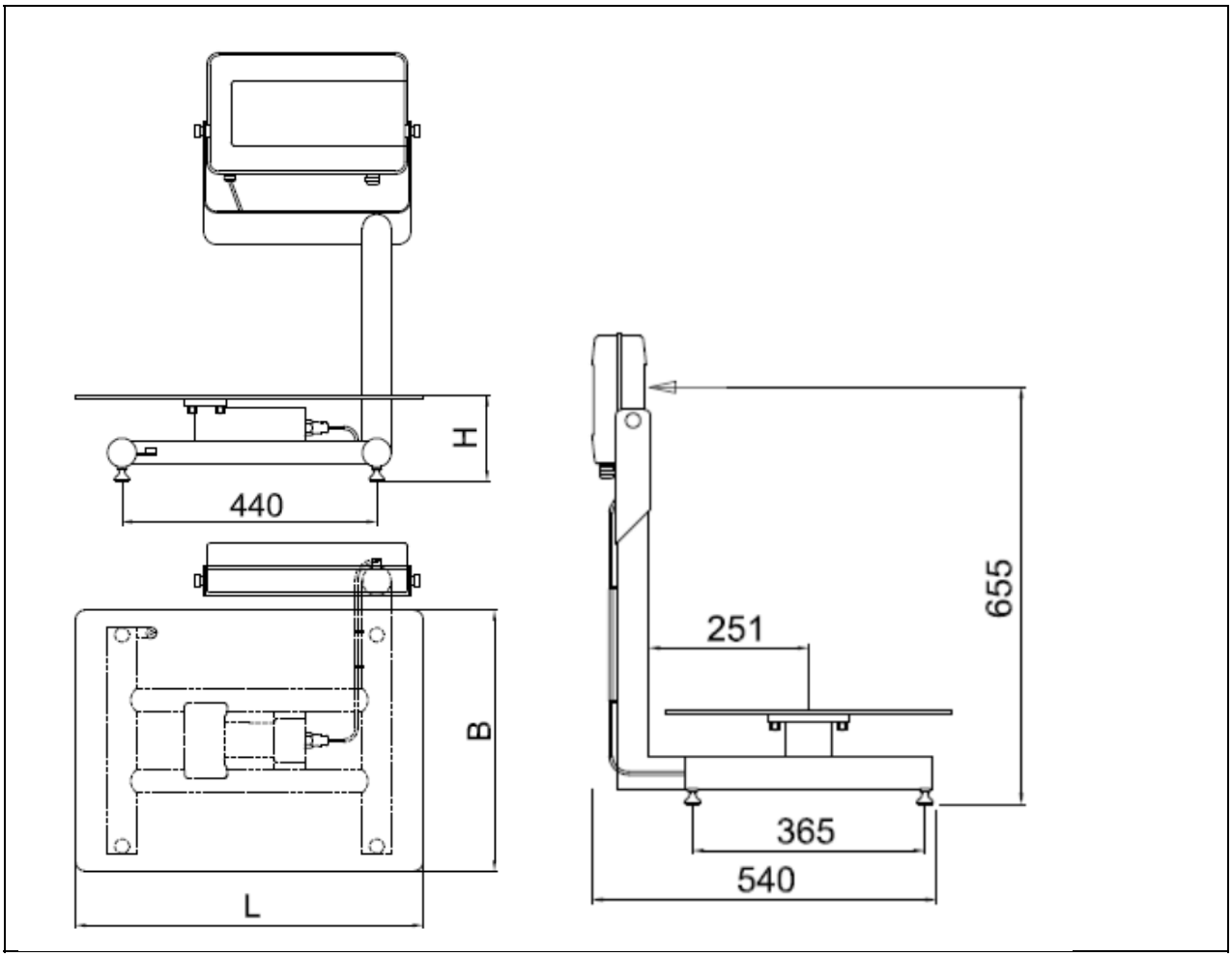
Model	L mm	W mm	H mm	Empty mass kg	Measurement-cable length [m]
iL 150 Professional SPM 300 H1	500	400	146 mm +10/-0 mm	18,0	3.0
iL 150 Professional SPM 300 H2	600	450		23.0	

Mass without weighing terminal

SP = single point
M = modular
300 = max. weighing range
H = hygienic design

S = tripod design
1 = 500 mm x 400 mm load plate
2 = 600 mm x 450 mm load plate

Model iL150 Professional SPM 300 HS



Dimensions in mm

Model	L mm	W mm	H mm	Empty mass kg	Measurement-cable length [m]
iL 150 Professional SPM 300 HS1	500	400	146 mm +10/-0 mm	20,0	1.5
iL 150 Professional SPM 300 HS2	600	450		25.0	

Mass without weighing terminal

SP = single point
M = modular
300 = max. weighing range
H = hygienic design

S = tripod design
1 = 500 mm x 400 mm load plate
2 = 600 mm x 450 mm load plate

Measuring element for attachment to Bizerba evaluation device.	1 single-point load cell Stainless-steel load-cell body
Protection class acc. DIN/VDE 0470	IP 68/IP69K
Ambient temperature	Operation: -10 °C to 40 °C Storage: -50 °C to 85 °C

An EX ib load-cell design is available for use in explosion zones in connection with an explosion-protected evaluation device. The current manufacturer's instructions apply.

8 Briefing confirmation

Company:

Person briefing: _____

Employee briefed: _____

Briefing date: _____

The aforementioned employee confirms by his signature that he has received a briefing on dealing with the load sensor.

The briefing's main contents:

1. Operation
2. Maintenance
3. Cleaning

_____
City, date

_____
The employee's signature

Weighing terminal iS10/iS20

Operating instructions

as from program version 1.05

38019417004 en-US

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Table of Contents

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 for information on available variants.

Bizerba 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 industrial terminals iS10 and iS20, called device in the following. 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. When reselling this device, the technical documentation of the device must be attached in its entirety.

1.3 Target group

The device may only be operated by trained personnel. The operator must be familiar with the contents of these instructions. Providing no alternative agreement has been made, installation, maintenance and repair works must be performed by Bizerba authorized specialists only.

You may also perform the installation yourself if the device is offered by Bizerba in a Bizerba online shop and if you have acquired it directly at a Bizerba online shop operated by Bizerba.

1.4 Symbols used

The following symbols can be found in the manual:

- Requirements are displayed with a gray background.

⇨	Text with arrow prompts you to carry out an action.
①	Item number in figure.
<OK>	Text within <...> refers to a key or softkey.
"Display"	Text within "..." indicates the display text.
`I?GV05|LX02`	Interface commands, program code.

1.4.1 Explanation of instructions and information

Instructions and information are illustrated as follows:

☞	These instructions must be strictly observed.

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 or 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.

NOTICE

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 is available in many different versions.

Weighing terminal iS10:	The device is an industrial terminal w/o interfaces.
Weighing terminal iS20:	The device is an industrial terminal with additional interfaces and LEDs.

2.2 Scope of delivery

– Industrial terminal (remote, table top display, column or wall-mounted)
– Operating instructions

2.3 Device view

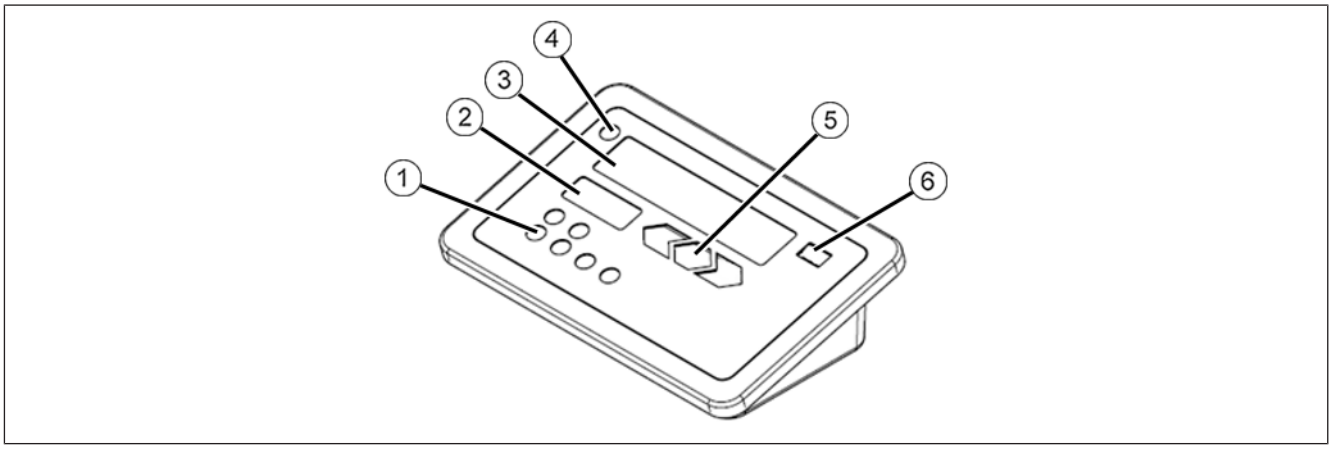


Fig. 1: Table-top mounting

① Control panel
② Identification plate (max, min, e)
③ 7-segment display
④ Standby/reset key
⑤ LED display (only with iS20)
⑥ Viewing window for control mark

2.3.1 Device configuration

The interfaces mentioned in the following are only available on weighing terminal iS20. Weighing terminal iS10 has no interfaces.

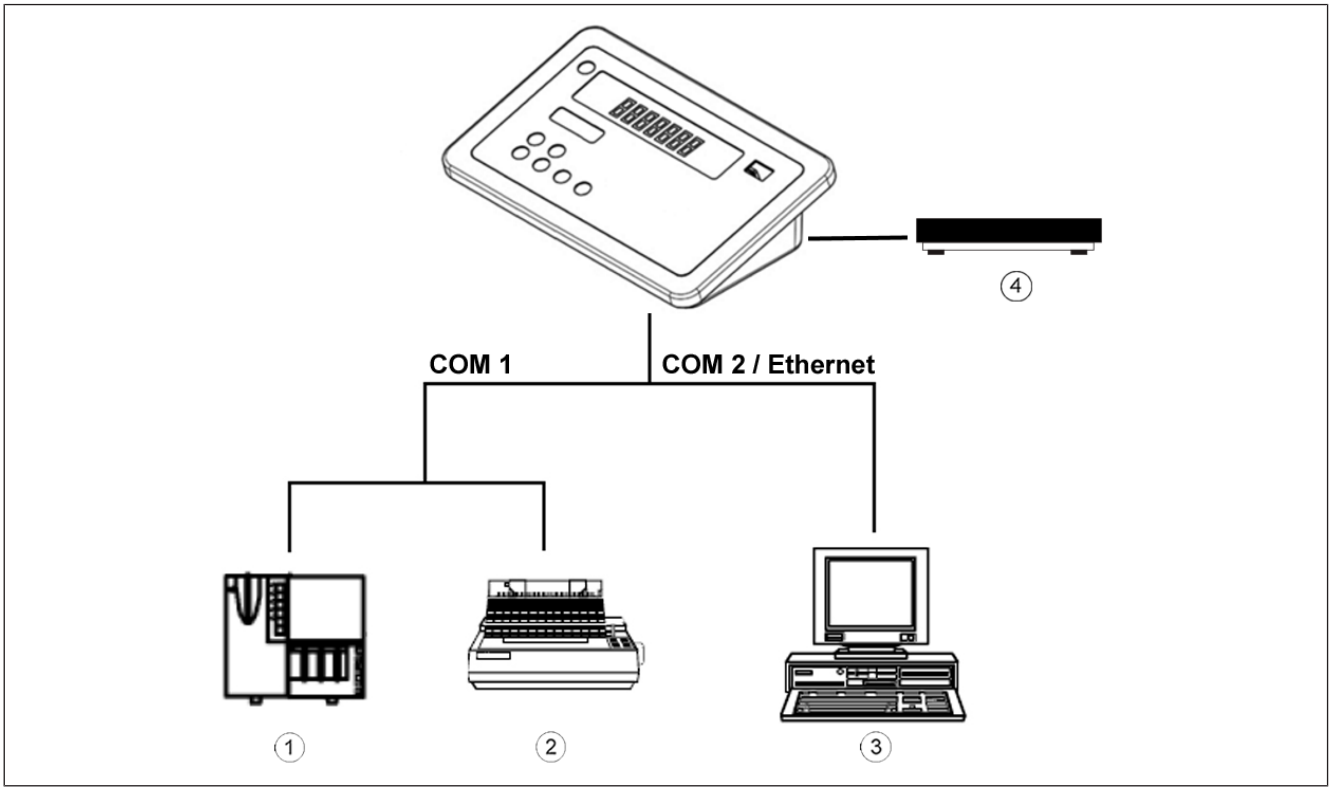


Fig. 2: Device configuration

1. GLP 58
2. CITIZEN / EPSON or compatible printer
3. PC/EDP
4. Load receptors

COM1 = printer
COM2 = EDP
Ethernet = EDP

2.4 Identification plates

Main identification plate

The main identification plate may differ depending on device and country of installation.

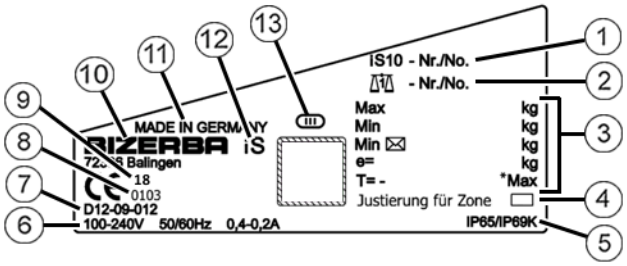


Fig. 3: Main identification plate (example)

① Device number
② Device number of the connected load receptor
③ Weighing range and verification value
④ Zone (DEU, AUT, GBR, ITA, HUN)
⑤ Protection type
⑥ Electrical data
⑦ No. of EC type approval
⑧ Field for notified body during conformity valuation by Bizerba
⑨ Year of manufacture (2-digit)
⑩ Manufacturer
⑪ Country of manufacture
⑫ Type Designation
⑬ Accuracy class of the scale

Identification plate with max, min and e

The identification plate may differ in design depending on the weighing range.

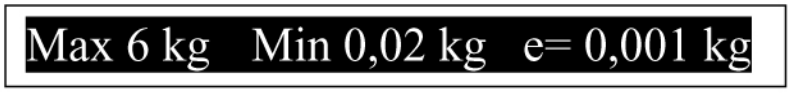


Fig. 4: Identification plate with max, min and e

2.4.1 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 inserted 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

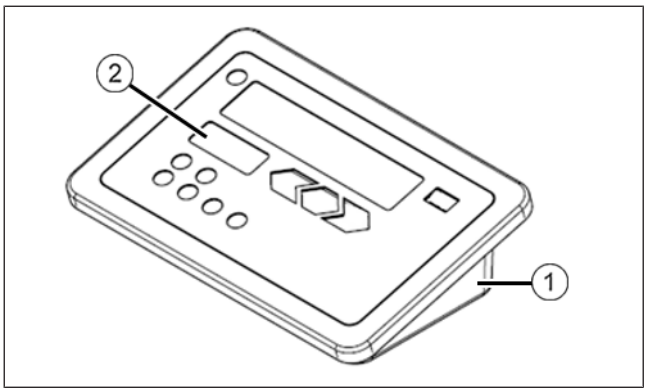


Fig. 5: Position of identification plates

2.5 Intended use

This device is intended to be used as weighing terminal in an industrial environment.

- This device must not be used outdoors.
- The device may only be used in industrial or commercial fields.
- The device must only be transported using appropriate means of transportation and if it was secured accordingly.
- The device may not be used in hazardous areas.
- 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 control mark must not be damaged.

2.6 Protective mark locations

2.6.1 Markings and labels

The identification plate includes all descriptive markings which are required in accordance with applicable EU guidelines. 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 Viewing 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 on the front side of the device.

2.8 Verification information

Metrological notes for EU countries

The identification plate of the scale has a CE mark followed by the metrology mark (M + year two-digital; framed) and the number of the notified body. Such a scale can be started up and operated on-site provided that it is not connected to an auxiliary device which is subject to metrological approval.

Scales which are connected on site to an auxiliary device which is subject to metrological approval must undergo a conformity assessment or metrological approval. Only then, legal for trade use is permissible.

Scales without metrology mark or control marks may not be used in legal for trade applications.

Scales calibrated for a certain gravity zone (specified on the scale) must not be used in other zones.

As per legal requirements, the scale user must ensure that the scale is used for its intended purpose. This includes the observance of legal requirements, especially in case of changes, amendments and extensions.

Notes on verification

The verification of a scale is executed according to the respective statutory country regulations. The verification validity starts as soon as the device is put on the market.

When conformity assessment is carried out by Bizerba the scale is sealed by means of control marks with marking "Gesichert BIZERBA" on the control marking locations. Verifications must be carried out by the operator of the scale according to the legal requirements.

Note related to scales subject to legal control for use in Germany:

If new or refurbished devices [...] are used, they need to be registered at the notified authority according to state law, at latest six weeks after setting into operation.

The verification validity period for non-automatic weighing instruments (up to 3 tons) is currently 2 years in Germany.

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.

2.10 Regulations of approval for weighing data memory

The points listed below are prescribed by the EU type examination which must be 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, it might be necessary to store tare and net values.
– 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 2014/31/EU, must contain the following information:

– Identification of each scale
– 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 Bizerba or the responsible customer service departments if you have any doubts concerning the practical application of these conditions.

Protection type, temperature and air humidity

For permissible values and protection type, please refer to the technical data.

Air convection

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

Electrical connection values

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 prior written consent of Bizerba.

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

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 a test printout. This helps to avoid incorrect results.

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

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.

2.14.1 Different warranty conditions for products acquired at the Bizerba online shop

At the Bizerba online shop only products are available, for which the installation and set-up can be performed by the customer himself.

You may also perform the installation and start-up yourself if the device is offered by Bizerba in a Bizerba online shop and if you have acquired it directly at a Bizerba online shop operated by Bizerba. Warranty will lapse if defects or damages that occur are caused through improper installation, start-up or instructions.

The other conditions of defects warranty apply unchanged.

2.15 Disposal of battery packs/batteries

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.

2.16 Disposal of the device

To ensure that the device is recycled environmentally friendly, return device to the manufacturer or the dealer after intended use has expired. Of course, Bizerba and its distributors will take back devices which are no longer in operation free of charge. Please contact your specialist in this case.

The application of these disposal regulations are based upon legal regulations of the respective country.

This device is an electronic device as per definition of the WEEE Directive.

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 Protective conductor

This device has protection class 1. The device must be connected to the protective conductor.

⚠ DANGER

Operation without protective conductor!

Danger to life due to electric shock when touching the device.

– Only switch device on if protective conductor is connected to the ground.

3.3 Supply circuit disconnect

Mains supply with power plugs

When the device is supplied 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.

3.3.1 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.

3.4 System-related sources of hazards

3.4.1 Mains supply

⚠ 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.
– Only connect device to power supply system if the data of the supply voltage matches the 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 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.

⚠ 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.
- Only connect device to power supply system if the data of the supply voltage matches the values of the device.

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.

4.3 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!
Risk of explosion.
Leaking of corrosive solutions.
Escaping of harmful vapors.
Severe 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!
Risk of severe 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.

4.4 Removable power cable (optional)

The option "Removable power cable" has not been approved and cannot be ordered for devices with UL approval.

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 type 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.

The connections must be firmly screwed to each other.

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.

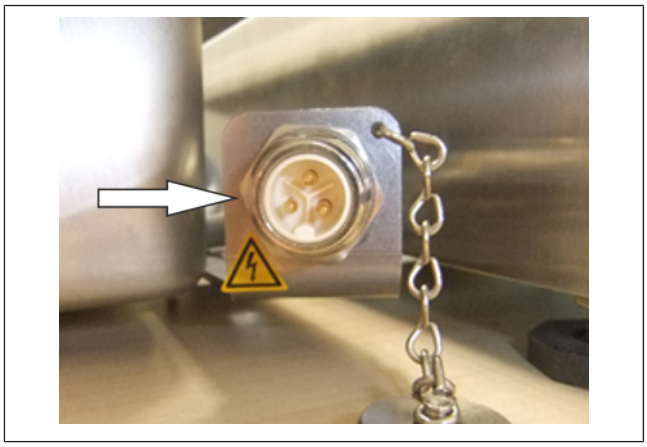


Fig. 6: Device plug-in connector

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.

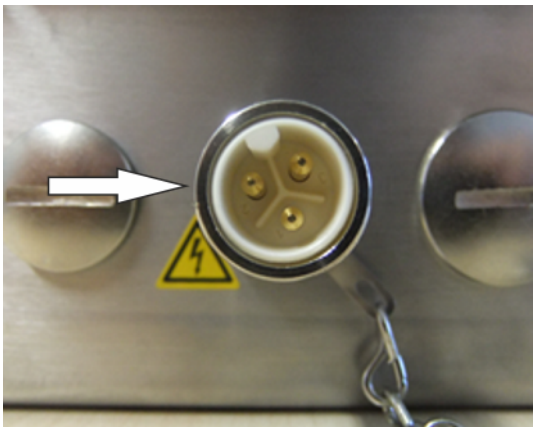


Fig. 7: Device plug-in connector

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. 8: Firmly screwed together protective cap

4.4.1 Connect 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.

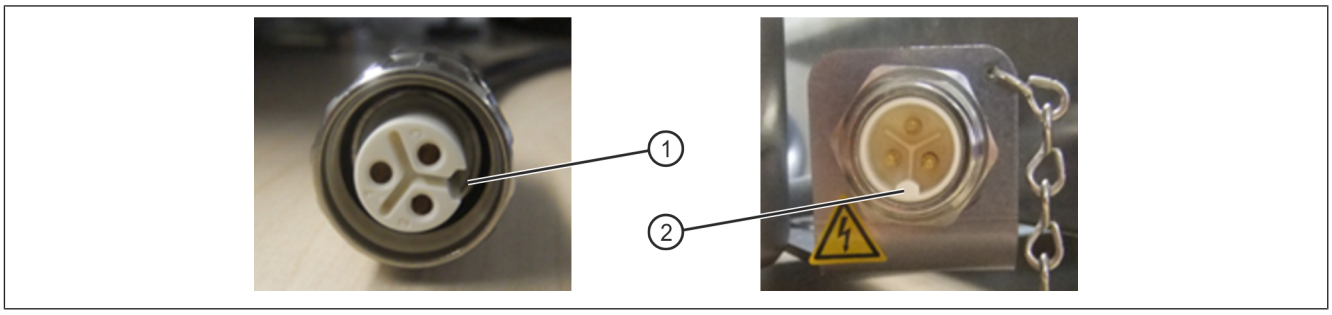


Fig. 9: Cable plug-in connector

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.

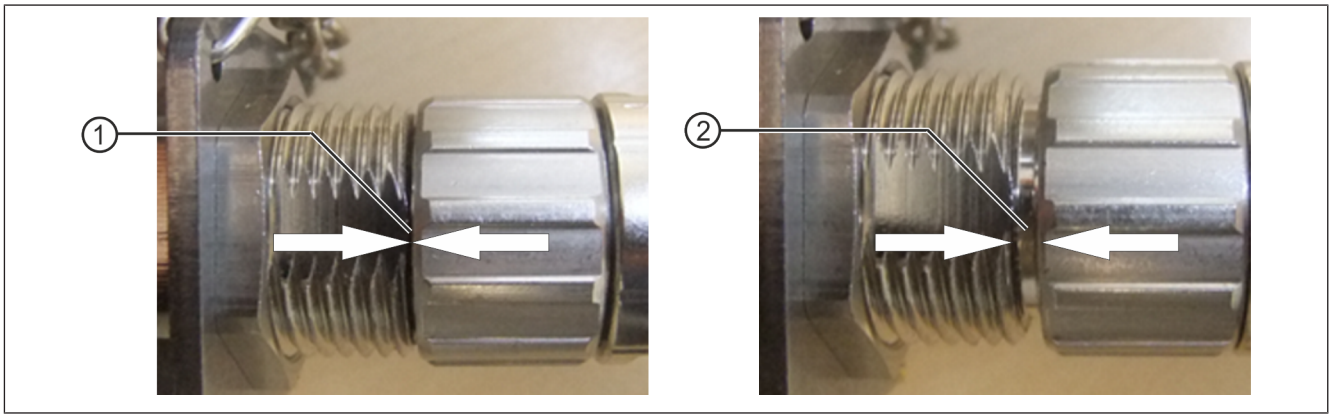


Fig. 10: Screw connection

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.

4.5 Built-in version

The built-in version is intended for installation in control panels or control cabinet doors.

4.5.1 Hole pattern

This hole patterns shows the dimensions for the column version. For the table top version rotate the hole pattern by 180°.

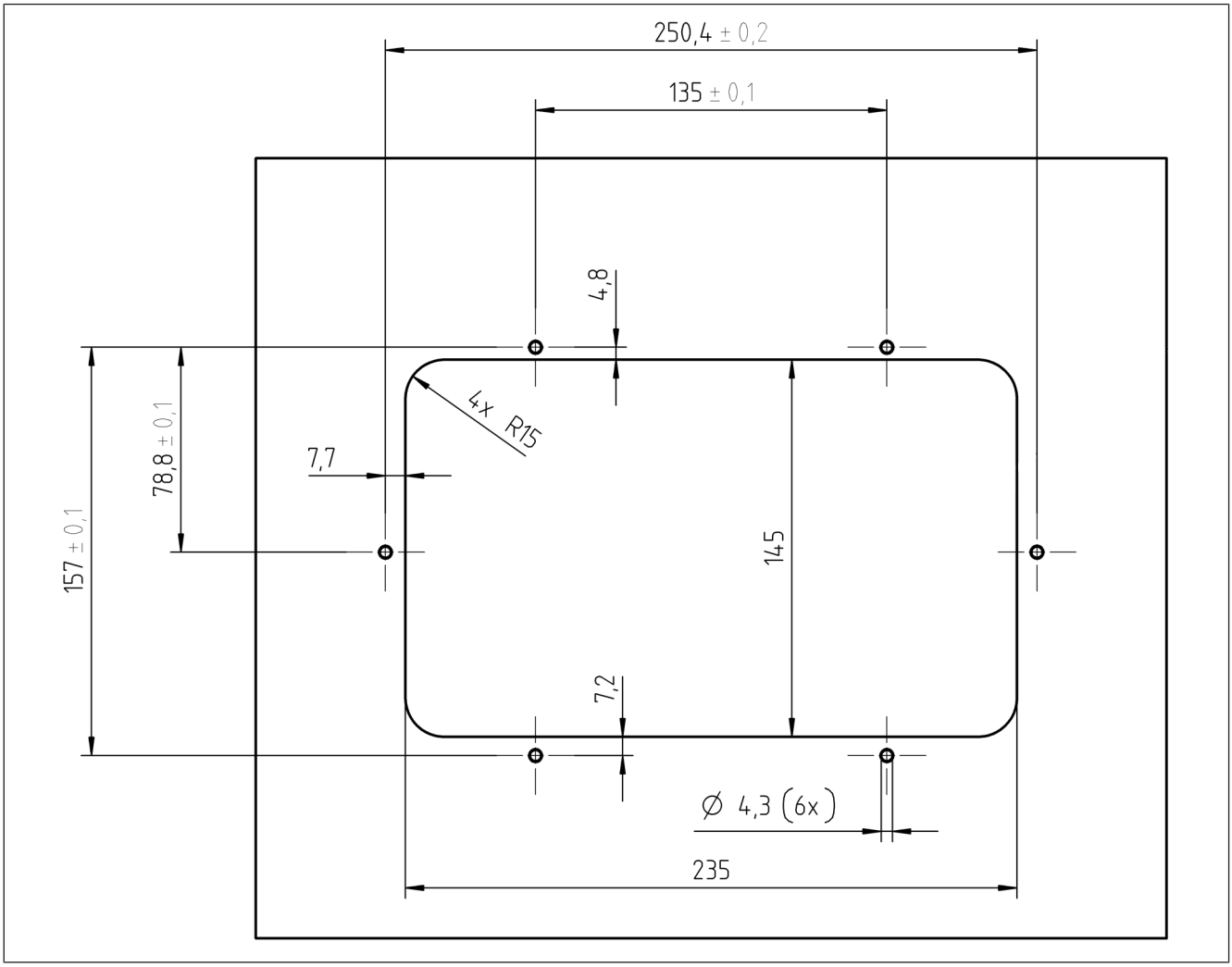


Fig. 11: Hole pattern

4.5.2 Mounting the built-in version

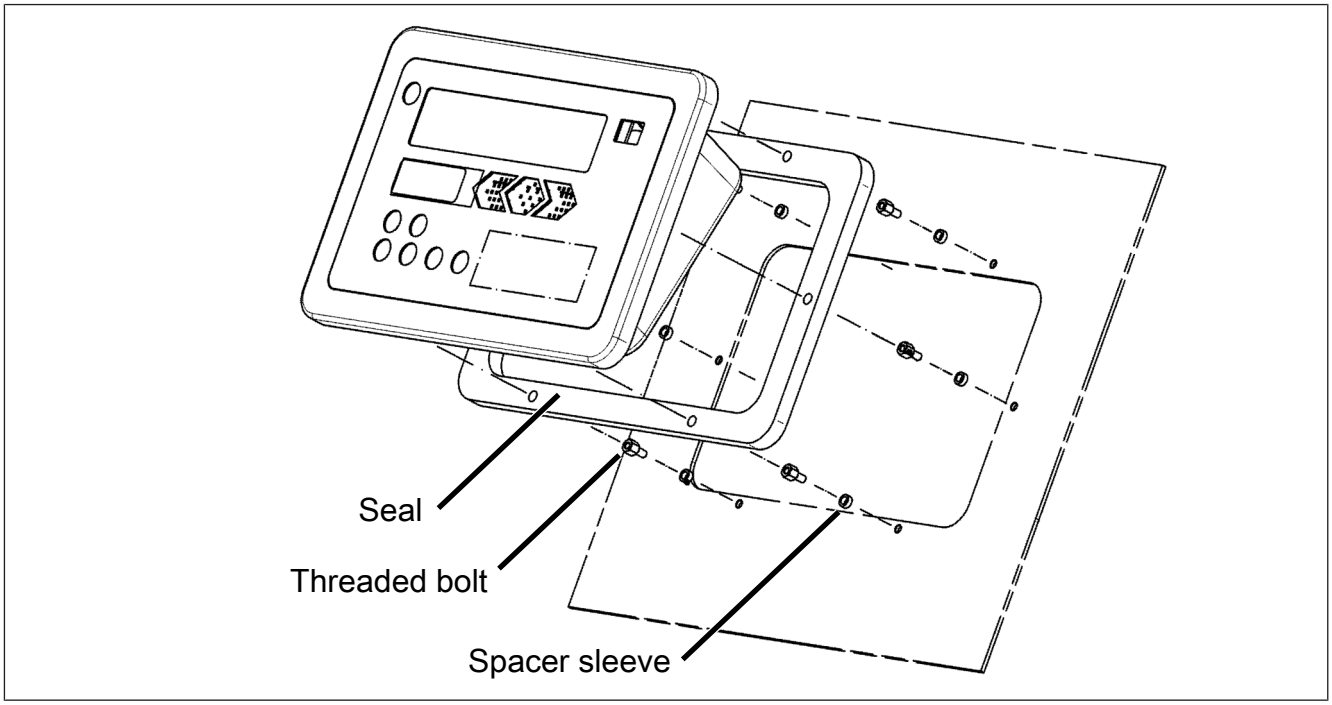


Fig. 12: Mounting

- The control panel or control cabinet is provided with a cut-out for installation.
- The control panel or control cabinet is provided with bore holes for mounting the device.

⇨ Remove six nuts from device's cover screw connection.
⇨ Screw threaded bolts onto screw ends.
⇨ Mount distance sleeves.
⇨ Apply seal.
⇨ Insert device into cut-out located at the front of the control panel.
⇨ Screw six nuts onto threaded bolts. Torque: 2 Nm.

5 Operation

5.1 Display and operating field

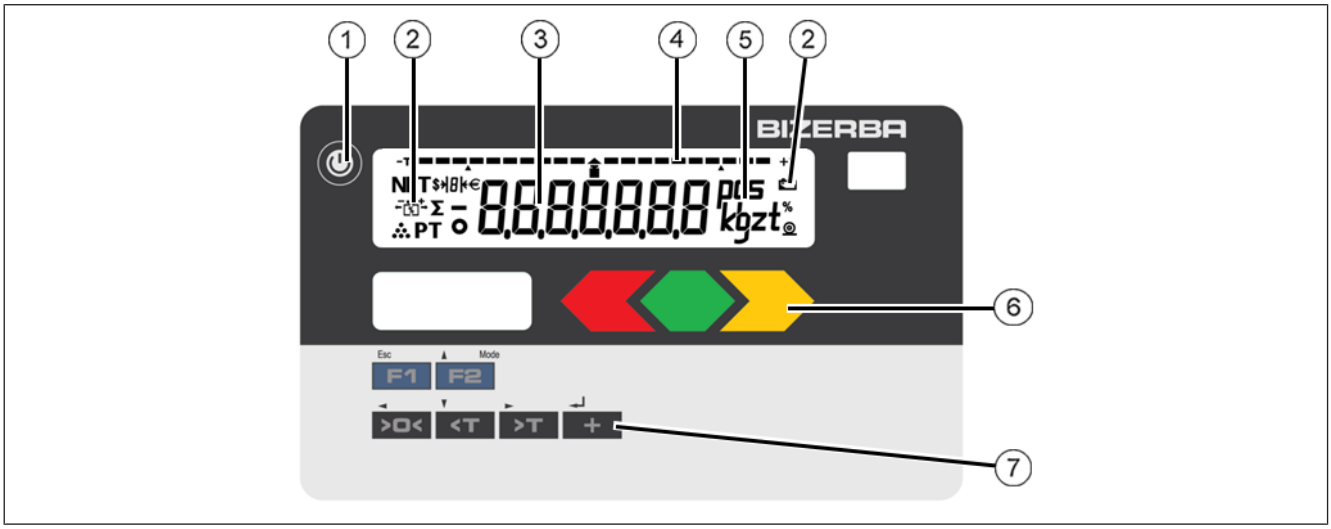


Fig. 13: Display and operating unit

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, oz, pcs)

⑥ LED display (only with iS20)

Tolerance control:

- left LED lights up red: Under weight
- LED in the middle lights up green: Good weight
- right LED lights up yellow: Overweight

Recording:

- all LEDs light up green: Registration process running

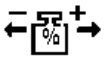
⑦ Control panel

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 [▶ 27].	Return to weighing mode. <ESC> key.
▲ Mode F2	After a restart: Select menu [▶ 28].	In Menus, scroll **upwards** or increase value.

Key	Function in weighing operation	Menu functions
	Zero setting	To the **left** to change the place value to be edited.
	Deleting tare	In Menus, scroll **downwards** or reduce value.
	taring	To the **right** to change the place value to be edited.
	Function in weighing operation: Item recording adding. Menu functions: Confirm input, <Enter> key.	

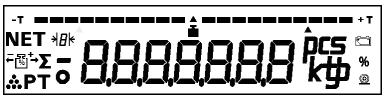
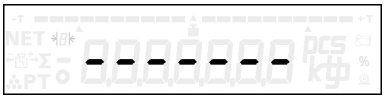
Special characters in the display

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 kgzt	**Unit symbol** This field shows the unit of the measured value (g, kg, t, lb, oz, 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.

→0←	Multi-range scale: effective range is "1", "2" or "3". Only with country setting Canada: Display of exact zero "0".

5.2 Switch device on / reset

Connect mains plug. The scale is supplied via the network.

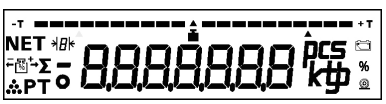
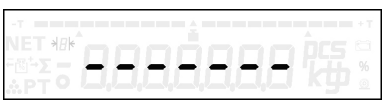
Key	Display presentation	Process description
		All display segments will be activated. Only iS20: All LEDs light up briefly.
		The program number is briefly displayed.
		Middle segments are briefly displayed.
		The device automatically switches to weighing mode. The scale is ready for operation.
		Press key to save inputs or to restart the device.

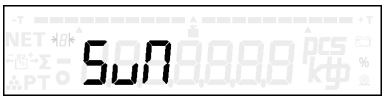
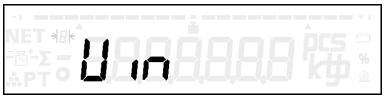
5.3 Switch off device

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.

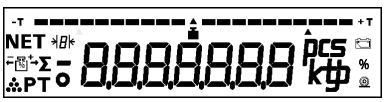
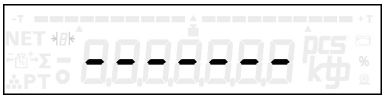
5.4 Function assignment of key F1

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 [▶ 30]

Key	Display presentation	Process description
▲ Mode F2		Ethernet interface parameters [▶ 72]
▲ Mode F2		Total display [▶ 43]
▲ Mode F2		PC/EDP interface parameters [▶ 50]
▲ Mode F2		Printer interface [▶ 60]
▲ Mode F2		Tolerance control [▶ 35]
▲ Mode F2		General parameters [▶ 75]
↵ +		Confirm selection of desired function with ↵ +.

5.6 Change the tens (place value) for input of numbers

In order to change the place value of two-digit menu numbers from ones to tens, 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' place is selected. A bar above the tens' place identifies the selected place value.
▼ <T or ▲ Mode F2		Select desired parameter number.
► >T or ◄ >0<		The ones' place is selected. A bar above the ones' place identifies the selected place value.

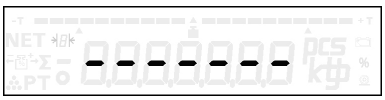
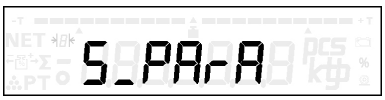
Key	Display presentation	Process description
▼ <T or ▲ Mode F2		Select desired parameter number.
↵ +		Confirm input using ↵ +.

5.7 Display metrological data

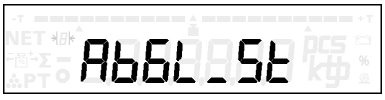
The verification status displays if there were verification relevant parameter changes. Furthermore, the identification of the connected load cell will be displayed.

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.
▲ Mode F2		Start calibration.

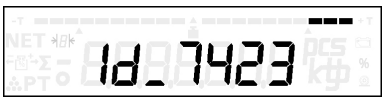
Key	Display presentation	Process description
▲ Mode F2		Call up metrologically approved data storage ("alibi memory") [▶ 34].
▲ Mode F2		Select verification status.
▲ Mode F2		Call up logbook [▶ 32].
Esc F1		Return to weighing mode.

Display verification status of digital weighing systems

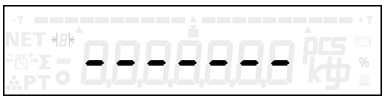
Key	Display presentation	Process description
		Slide switch ("H1" = non-approved, "H0" = approved)
▲ Mode F2		Software ID of fixed software. The fixed software cannot be changed in secured status.
▲ Mode F2		Version number of fixed software
▲ Mode F2		Program version of program section which is not subject 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)
▲ Mode F2		Year of manufacture of weighing system

Key	Display presentation	Process description
▲ 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

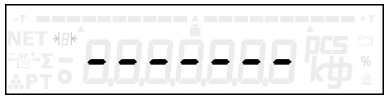
Key	Display presentation	Process description
		Restart device. Press and hold ▲ Mode F2 while middle segments are being displayed. The menu selection appears.
▲ Mode F2		The total function is displayed.
▼ <T		Confirm service parameter selection with ↵ +.

Key	Display presentation	Process description
<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 software download is displayed in format "YYMMDD".
▲ Mode F2		The time of the software download is displayed 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

- Only for iS20.

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		Use ⌟ + to call up the search mask for manual input or Esc F1 to return to weighing mode.
⌟ +		Display of search mask.
⌟ +		The hundred thousands' place is active.

Key	Display presentation	Process description
>0<	000000	Ones' place is active.
▲ Mode F2	000001	Increase ones' place value by one. Use + to confirm search number.

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 place value using >0< or >T.

Start search with +.

The 6-digit number at a glance

① ones' place

② hundreds' place

③ hundred thousands' place

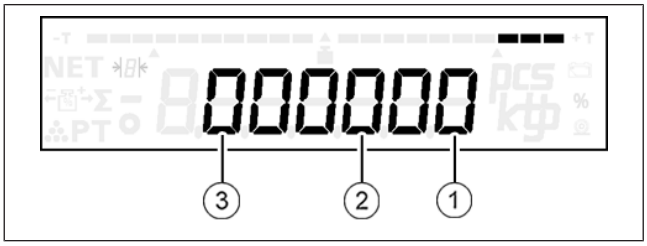


Fig. 14: At a glance

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 provides different functions for tolerance control [▶ 37]. The results of the tolerance control are displayed by means of:

– **Only for iS20: LED display (red/green/yellow)**

  The color LEDs below the display indicate if the weighing good exceeds the tolerance limits:

  – green: Weight within tolerance range
  – red: Weight below lower tolerance limit
  – Yellow: Weight above upper tolerance limit

– **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.

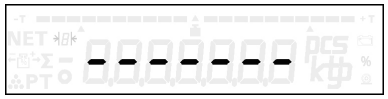
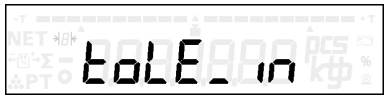
  The following display options are possible:

  – 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 [▷ 96]. 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' place 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 [▶ 27].

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

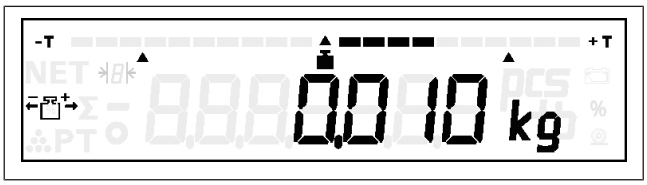


Fig. 15: Weighing against zero

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).

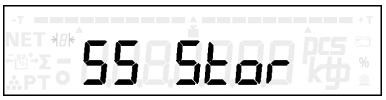
If the measured value is above the upper tolerance limit, by about 1022 g, the display of the bar graph passes the associated indicator (right triangle). Same applies when target value and lower limit value are not reached.

5.10.2 Enter target value and tolerance limits

Tolerance weighed

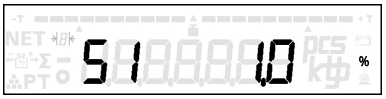
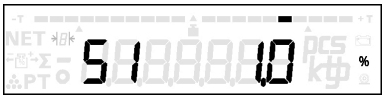
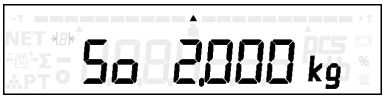
Display only if 50 = 1

Key	Display presentation	Process description
	50 1	Tolerance weighed.
▲ Mode F2	So 0.000 kg	Current target value is displayed. Change target value weighed with + or call up next parameter with ▲ Mode F2.
↵ +	So 2.000 kg	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 using + or call up next parameter using Mode F2.
Mode F2		Current lower tolerance limit is displayed. Change lower tolerance limit using + or call up next parameter using Mode F2.
Mode F2		Save settings using ⏻ or cancel using Esc F1.

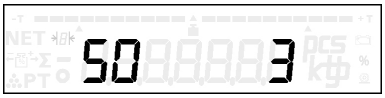
Call up % ± tolerance

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 settings using ⏻ or cancel using Esc F1.

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. The tens' place is selected. Value input using Mode F2 or <T. Change place value using >T or >0<. Confirm new target value using +.
Mode F2		Current upper tolerance limit is displayed. Change upper tolerance limit using + or call up next parameter using Mode F2.
+		Change value: Manual input of new upper tolerance limit. The tens' place is selected. Confirm new upper tolerance limit using +.
+		Current lower tolerance limit is displayed. Change lower tolerance limit using + or call up next parameter using Mode F2. Change value: Same procedure as for upper tolerance limit. Confirm input using +.
+		Save settings using ⏻ or cancel using 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 for this is: 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 [▷ 44].

5.12.4 Deleting tare

Key	Display presentation	Process description
		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 e.g. 10 is pre-selected [▷ 27].

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.

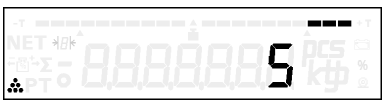
Example

Weighing Range:	30 kg
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
≤ 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		Reference number is loaded.
Esc F1		Selection of reference number with Esc F1 or Confirm reference number with +
+		Calculation of reference weight with preselected reference number. Number of pieces = reference number

Key	Display presentation	Process description
		Continuous display of number of pieces according to load of scale.

Cancel counting process

Key	Display presentation	Process description
Esc F1		Return to weighing mode 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" [▶ 27].

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" [▶ 27].
- Or menu "SuMMEn" is called up via restart [▶ 28].

Key	Display presentation	Process description
▲ Mode F2		Display of number of pieces total.
▲ Mode F2		Display: Total of gross weight

Key	Display presentation	Process description
▲ 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

5.12.8 Net weighing with fixed tare value

- Key <F1> is assigned with "tF" [▶ 27].

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.

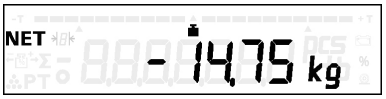
5.12.9 Display tare value

- Key <F1> is assigned with "tArE" [▶ 27].

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

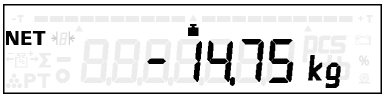
5.12.10 Display gross weight

- Key <F1> is assigned with "GroSS" [▶ 27].

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

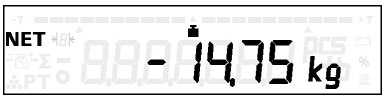
5.12.11 Display supply / battery voltage

- Key <F1> is assigned with "U in" [▶ 27].

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" [▶ 27].

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.

– Subtract 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.

Print image CITIZEN or EPSON or compatible

Maximum possible data.

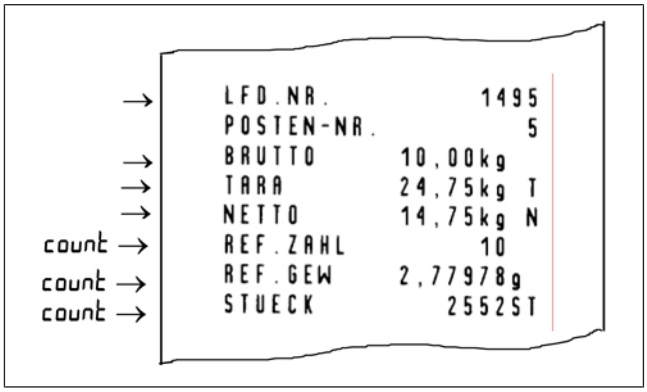
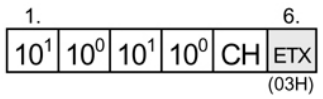


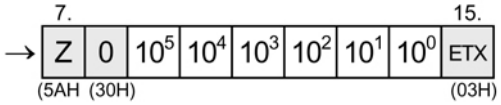
Fig. 16: Print image

Data record with data groups

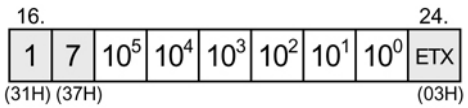
Maximum possible data.



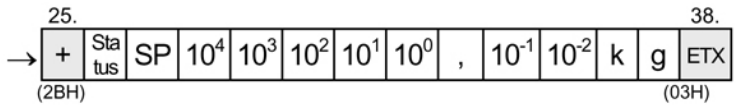
Data set header



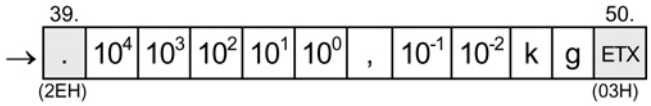
Consecutive number



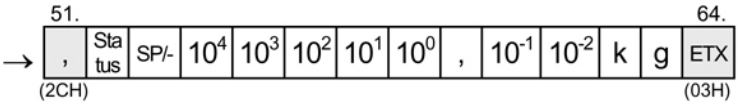
Item counter with counting as from 1



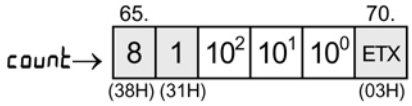
Gross weight



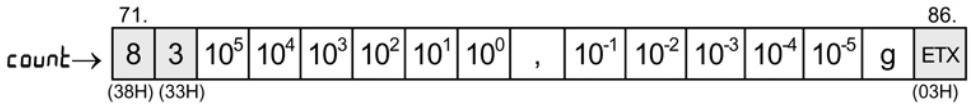
Tare weight



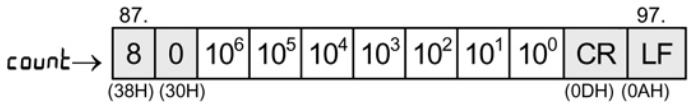
Net weight



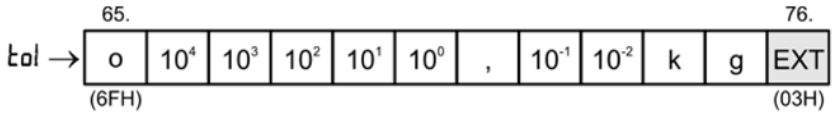
Reference number



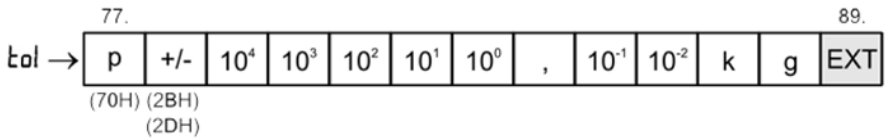
Reference weight



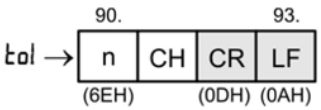
Quantity



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 [▶ 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 [▶ 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.

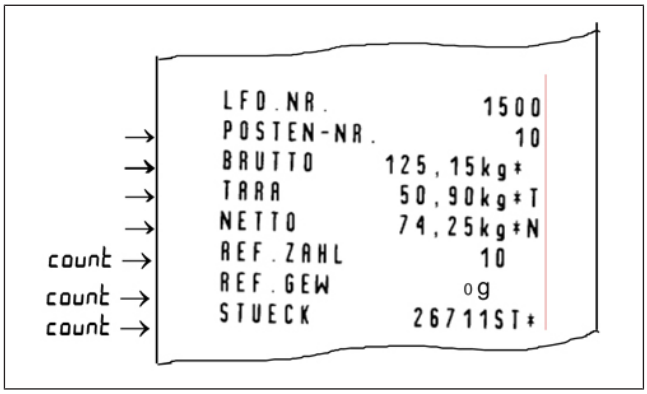
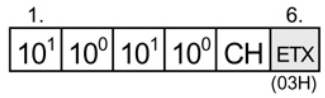


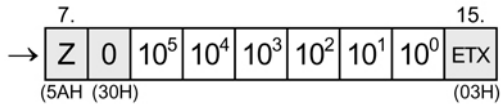
Fig. 17: Print image

Data record with data groups

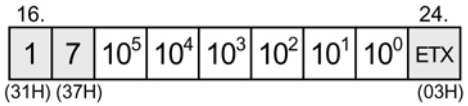
Maximum possible data.



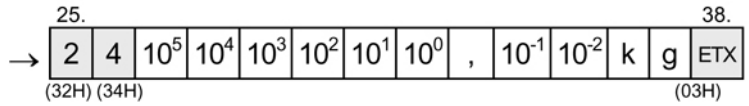
Data set header



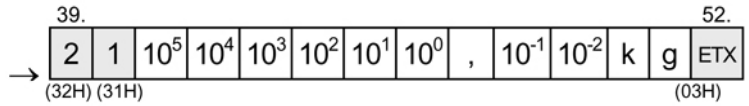
Consecutive number



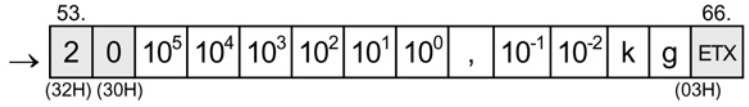
Item counter with counting as from 1



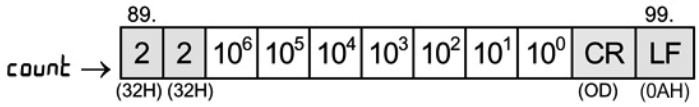
Gross weight



Tare weight



Net 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 [▷ 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

- Only for iS20.

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.

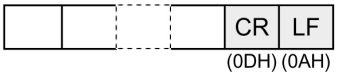
The control of the data transfer is ensured by parity supplement. The dialog frame is created by control characters.

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

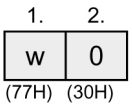
The dialog frame is operated w/o control characters for receive request, start characters and w/o positive or negative acknowledgment. Separators and logic acknowledgments can be set in the parameter menu [▷ 55].

Standard dialog frame

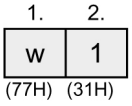


Data record with 2 end characters

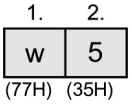
Logic acknowledgments



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

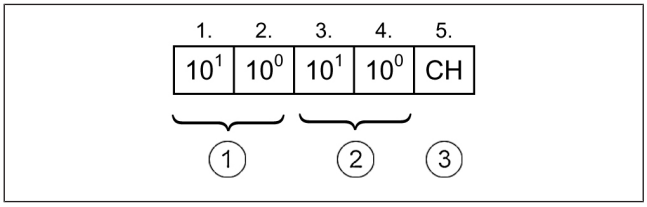


Fig. 18: Data record head 5 byte

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 place value are sent with space SP.

If the dimension consists of a single character, the last digit is a space SP. The position of the decimal point in the data group depends on the connected scale and the corresponding 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 place values including g and kg are marked by X(58H).

1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.
+	Sta-tus	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.
+	Sta-tus	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.
+	Sta-tus	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.
,	Sta-tus	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.
,	Sta-tus	-	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

1.	2.
q	%
(71H)	(25H)

Weight value output without scale equilibrium

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

Response telegram:
Current gross/net weight

1.	2.
q	$
(71H)	(24H)

Weight value output with scale equilibrium

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

Response telegram:

Gross/net weight **after** no-motion condition

1.	2.
q	Y
(71H)	(59H)

Item recording, adding

1.				XX.
Daten	ETX	Daten	ETX	Daten
	(03H)		(03H)	

Response telegram:

Data record with data groups as per parameter selection

1.	2.
q	Z
(71H)	(5AH)

Item recording non-adding.

1.				XX.
Daten	ETX	Daten	ETX	Daten
	(03H)		(03H)	

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

Possible identifications

\+ (2BH): Gross weight

, (2CH): Net weight

6.1.3 PC/EDP interface parameters

Menu call-up only via restart [▶ 28].

➪ **Save data in EEPROM:** Press ⏻ key.

Fig. 19: Display: "PC_Ed_P"

Change the tens digit for input of numbers [▶ 29].

Selection	Sub-selection	Display	Explanation
Mode F2 or <T	+	70 00	**PC/EDP interface**
	Mode F2 <T	00	off
		20	Continuous sending of weight (dd resolution)
		21	MP8.4 protocol (protocol length 16 Bytes)
		23	Standard dialog
		24	IxNet dialog
		25	IxNet dialog "WinCIS" (not verifiable)
Mode F2 or <T	+	701 232	**EDP output**
	Mode F2 <T	232	Output via RS232
	Setting changes at each keystroke.	EtH	Output via Ethernet
Mode F2 or <T	+	71 9600	**Baud rate**
	Mode F2 <T	115_	115200 bit/s
	Setting changes at 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 at 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

Selection	Sub-selection	Display	Explanation
Mode F2 or <T	+	73 03	**Separator 03H (hex) ETX**
	Mode F2 <T	00	off
	Setting changes at 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
		1	on
Mode F2 or <T	+	75 00	**System number**
	Mode F2 <T	00	
	Setting changes at each keystroke.		to
		99	
Mode F2 or <T	+	76 0	**Data set header**
	Mode F2 <T	76 0	off
		76 1	on
Mode F2 or <T	+	77	**Item recording +**
	Mode F2 <T	59 0	Consecutive number off
		59 1	Consecutive number on
Mode F2 or +	Mode F2 <T	91 0	Item counter off (counting as from 1)
		91 1	Item counter on (counting as from 1)
Mode F2 or +	Mode F2 <T	53 0	Gross weight off
		53 1	Gross weight on
Mode F2 or +	Mode F2 <T	52 0	Tare weight off
		52 1	Tare weight on

Selection	Sub-selection			Display	Explanation
▲ Mode F2 or ↵ +		▲ Mode F2	▼ <T	51 0	Net weight off
				51 1	Net weight on
▲ Mode F2 or ↵ +		▲ Mode F2	▼ <T	65 0	Reference number off
				65 1	Reference number on
▲ Mode F2 or ↵ +		▲ Mode F2	▼ <T	64 0	Reference weight off
				64 1	Reference weight on
▲ Mode F2 or ↵ +		▲ Mode F2	▼ <T	63 0	Number of pieces off
				63 1	Number of pieces on
▲ Mode F2 or ↵ +		▲ Mode F2	▼ <T	69 0	+/- target value off
				69 1	+/- target value on
▲ Mode F2 or ↵ +		▲ Mode F2	▼ <T	70 0	+/- deviation from target value off
				70 1	+/- deviation from target value on
▲ Mode F2 or ↵ +		▲ Mode F2	▼ <T	68 0	+/- result off
				68 1	+/- result on
▲ Mode F2 or ↵ +		▲ Mode F2	▼ <T	01 0	Text block 1 off
				01 1	Text block 1 on. Output only with data dialog IxNet.
					to
▲ Mode F2 or ↵ +	Setting changes at each keystroke.			10 0	Text block 10 off
				10 1	Text block 10 on. Output only with data dialog IxNet.

Selection	Sub-selection			Display	Explanation
▲ Mode F2 or ▼ <T	↵ +			78	**Total recording**
		▲ Mode F2	▼ <T	59 0	Consecutive number off
				59 1	Consecutive number on
▲ Mode F2 or ▼ <T		▲ Mode F2	▼ <T	60 0	Item counter off (counting as from 1)
				60 1	Item counter on (counting as from 1)
▲ Mode F2 or ▼ <T		▲ Mode F2	▼ <T	57 0	* Gross weight off
				57 1	* Gross weight on
▲ Mode F2 or ▼ <T		▲ Mode F2	▼ <T	56 0	* Tare weight off
				56 1	* Tare weight on
▲ Mode F2 or ▼ <T		▲ Mode F2	▼ <T	55 0	* Net weight off
				55 1	* Net weight on
▲ Mode F2 or ▼ <T		▲ Mode F2	▼ <T	58 0	Number of pieces off
				58 1	Number of pieces on
▲ Mode F2 or ▼ <T		▲ Mode F2	▼ <T	01 0	Text block 1 off
				01 1	Text block 1 on. Output only with data dialog IxNet.
					to
▲ Mode F2 or ▼ <T	Setting changes at each keystroke.			10 0	Text block 10 off
				10 1	Text block 10 on. Output only with data dialog IxNet.

Selection	Sub-selection	Display	Explanation
Mode F2 or <T	+	79 01	**Start character** 01 SOH (only for standard dialog)
	Mode F2 <T	00	off
	Setting changes at each keystroke.	01	01 (Hex)
			to
		1F	1F (Hex)
Mode F2 or <T	+	791 1	Dialog w9 during switch-on.
	Mode F2 <T	0	off
		1	on

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 [▷ 28].

➪ **Save data in EEPROM:** Press ⏻ key.

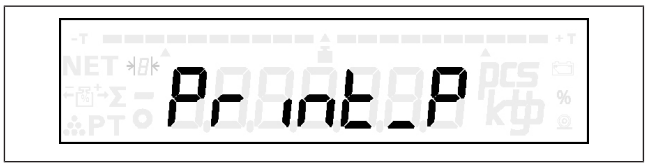


Fig. 20: Display: "Pr int_P"

Change the tens digit for input of numbers [▷ 29].

Selection	Sub-selection	Display	Explanation
Mode F2 or <T	+	60 0	**printer**
	Mode F2 <T	0	off
	Setting changes at 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 as label printer (baud rate, parity, data bit fixed)
		4	EPSON LX300, 9600 bit/s parity: no, data bits: 8 (baud rate, parity, data bit fixed)
		5	GLP 58 as ticket printer (baud rate, parity, data bit fixed)
Mode F2 or <T	+	61 9600	**Baud rate**
	Mode F2 <T	115_	115200 bit/s
	Setting changes at 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 at 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
		59 1	Consecutive number on

Selection	Sub-selection		Display	Explanation
▲ Mode F2 or ▼ <T	▲ Mode F2	▼ <T	91 0	Item counter off (counting as from 1)
			91 1	Item counter on (counting as from 1)
▲ Mode F2 or ▼ <T	▲ Mode F2	▼ <T	53 0	Gross weight off
			53 1	Gross weight on
▲ Mode F2 or ▼ <T	▲ Mode F2	▼ <T	52 0	Tare weight off
			52 1	Tare weight on
▲ Mode F2 or ▼ <T	▲ Mode F2	▼ <T	51 0	Net weight off
			51 1	Net weight on
▲ Mode F2 or ▼ <T	▲ Mode F2	▼ <T	65 0	Reference number off
			65 1	Reference number on
▲ Mode F2 or ▼ <T	▲ Mode F2	▼ <T	64 0	Reference weight off
			64 1	Reference weight on
▲ Mode F2 or ▼ <T	▲ Mode F2	▼ <T	63 0	Number of pieces off
			63 1	Number of pieces on
▲ Mode F2 or ▼ <T	▲ Mode F2	▼ <T	69 0	+/- target value off
			69 1	+/- target value on
▲ Mode F2 or ▼ <T	▲ Mode F2	▼ <T	70 0	+/- deviation from target value off
			70 1	+/- deviation from target value on

Selection	Sub-selection	Display	Explanation
Mode F2 or <T	Mode F2 <T	68 0	+/- result off
		68 1	+/- result on
Mode F2 or <T	Mode F2 <T	01 0	Text block 1 off
		01 1	Text block 1 on
Mode F2 or <T	Mode F2 <T	02 0	Text block 2 off
		02 1	Text block 2 on
Mode F2 or <T	↵ +	64	**Additional space**
	Mode F2 <T	0	off
	Setting changes at 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
		59 1	Consecutive number on
Mode F2 or <T	Mode F2 <T	60 0	Item counter off (counting as from 1)
		60 1	Item counter on (counting as from 1)
Mode F2 or <T	Mode F2 <T	57 0	* Gross weight off
		57 1	* Gross weight on
Mode F2 or <T	Mode F2 <T	56 0	* Tare weight off
		56 1	* Tare weight on

Selection	Sub-selection	Display	Explanation
Mode F2 or <T	Mode F2 <T	55 0	* Net weight off
		55 1	* Net weight on
Mode F2 or <T	Mode F2 <T	58 0	Number of pieces off
		58 1	Number of pieces on
Mode F2 or <T	Mode F2 <T	01 0	Text block 1 off
		01 1	Text block 1 on
Mode F2 or <T	Mode F2 <T	02 0	Text block 2 off
		02 1	Text block 2 on
Mode F2 or <T	↵ +	66	**Additional space**
	Mode F2 <T	0	off
	Setting changes at each keystroke.	1	Number of additional blank lines after item recording
			to
		9	Number of additional blank lines after item recording

7 IxNet dialogs

- Only for iS20.

7.1 The dialog frame of the transport protocol

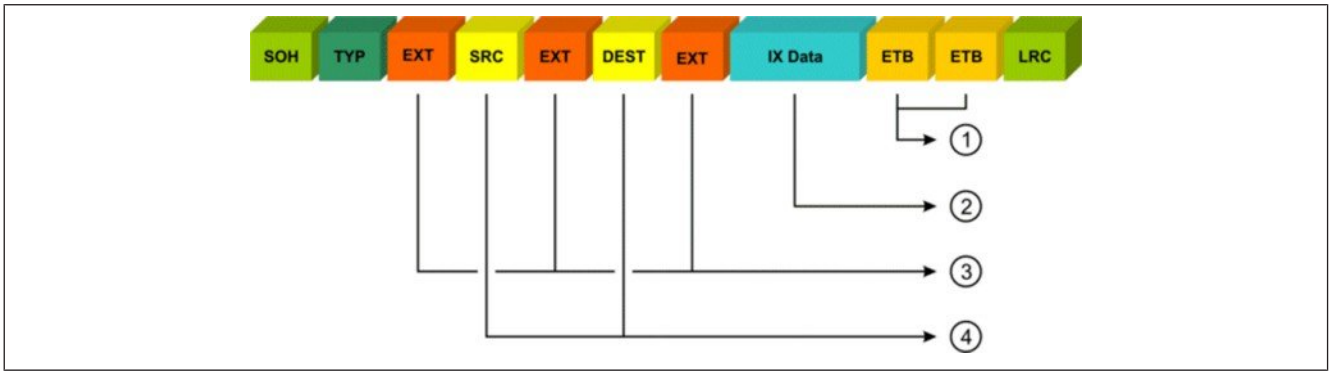


Fig. 21: Dialog frame IxNet data

① End character (...2 byte)

② User data (max. 1024 bytes): Readable user data in IxNet 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)
Separator:	0x03	<ETX>		(can be changed via step 73)
SCR:	0x32, 0x35, 0x34		254	(cannot be changed)
Separator:	0x03	<ETX>		(can be changed via step 73)
DEST:	0x30, 0x30, 0x31		001	(cannot be changed)
Separator:	0x03	<ETX>		(can be changed via step 73)
IxNet-Data:	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	taring
GX06	Deleting tare
RX01	Weight request without scale equilibrium
RX02	Weight request with scale equilibrium
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

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

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

Taring

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.

Delete tare

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

Possible errors

3002	Weighing function not executable

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 scale equilibrium

Command	Response	Description
I?RX02	I!LV01|<Subcmd>|LX02	Weight request with scale equilibrium

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	Meaning
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

digit	Function	Meaning
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`	

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

- Only for iS20.

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 parameters

Menu call-up only via restart [▶ 28].

➪ **Save data in EEPROM:** Press ⏻ key.

Fig. 22: Display: "EtHEr"

Change the tens digit for input of numbers [▶ 29].

Additionally required settings

➪ Setting transmission protocol: Step `70.` [▶ 55]

➪ Selecting active interface: Step `701.`

Selection	Subselection	Display	Explanation
▲ Mode F2	↵ +	`80 00`	**Ethernet interface**
or ▼ <T	▲ Mode F2 ▼ <T	`00`	off (communication via serial interface)
		`01`	UDP with fixed IP address
		`02`	TCP/IP server with fixed address (1 client maximum)
		`03`	UDP with DHCP
		`04`	TCP/IP server with DHCP (1 client maximum)
		`05`	TCP/IP client with fixed address
		`06`	TCP/IP client with DHCP

Selection	Subselection	Display	Explanation
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
Mode F2 or <T	↵ +	8501365	port number (5-digit) Example: 8501365 = port 01365
	Mode F2 <T		
Mode F2 or <T	↵ +	861 00 862 00 863 00 864 00 865 00 866 00	display of MAC address
	Mode F2 <T		
Mode F2 or <T	↵ +	871 00	display of Ethernet status[1)]
	Mode F2 <T		

Selection	Subselection	Display	Explanation
▲ Mode F2 or ▼ <T	↵ + ▲ Mode F2 ▼ <T	872 00	host name of scale for DNS server: iS10-XX (XX = variable digits 0 - 9)

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 [▶ 28].

➪ **Save data in EEPROM:** Press ⏻ key.

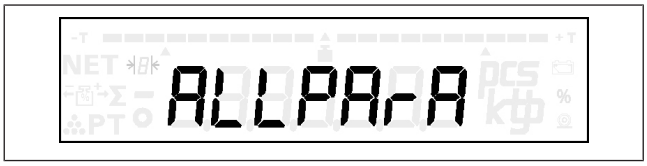


Fig. 23: Display: "ALLPArA"

Change the tens digit for input of numbers [▶ 29].

Selection	Sub-selection	Display	Explanation
▲ Mode F2 or ▼ <T	↵ +	01 0	**Country setting for national special features**
	▲ Mode F2 ▼ <T	0	EC (standard)
	Setting changes at each keystroke.	1	England
		3	USA . In metrologically approved mode this setting can not be changed.
		4	Canada. In metrologically approved mode this setting can not be changed.
▲ Mode F2 or ▼ <T	↵ +	02 0	**Language setting for printout**
	▲ Mode F2 ▼ <T	0	German
	Setting changes at each keystroke.	1	English
		2	French
▲ Mode F2 or ▼ <T	↵ +	03 0	**Switch-on zero setting** The switch-on zero setting range is ±10% of the weighing range.
	▲ Mode F2 ▼ <T	0	Function not active
		1	Function active

Selection	Sub-selection	Display	Explanation
▲ 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
▲ Mode F2 or ▼ <T	↵ +	05 0	**Weight change required for new recording**
	▲ Mode F2 ▼ <T	0	Function not active
	Setting changes at each keystroke.	1	Relative deviation from latest registered value (input via step 39)
		2	Relative deviation from latest registered value (input via step 39) and Absolute deviation from zero cross-over (input via step 40)
▲ Mode F2 or ▼ <T	↵ +	06 0	**Reference weight filter**
	▲ Mode F2 ▼ <T	0	0.5 s
	Setting changes at each keystroke.	1	1.0 s
		to	
		9	25 s
▲ Mode F2 or ▼ <T	↵ +	07 0	**Auto recording** Requirement: The scale is in equilibrium and within tolerance limits. In step 39 set the minimal weight change for automatic recording.
	▲ Mode F2 ▼ <T	0	Function not active
		1	Auto recording for tolerance control
▲ Mode F2 or ▼ <T	↵ +	08 0	**Software update**
	▲ Mode F2 ▼ <T	0	Operating mode weighing operation
		1	Operating mode software update
▲ Mode F2 or ▼ <T	↵ +	09 0	**Load factory data** (EDP/Printer/General settings/Battery status)
	▲ Mode F2 ▼ <T	0	Function not active
		1	Factory data is loaded

Selection	Sub-selection	Display	Explanation
Mode F2 or <T	+	10 0	**Parallel inputs and outputs**
	Mode F2 <T	0	Control cable and LED not active
	Setting changes at each keystroke.	1	Control cable active
		2	LED active
		3	Control cable and LED active
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.
		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.
Mode F2 or <T		In 000	**Diagnosis for control cables Input** (Taring, clear tare and item recording adding)
		000	Inputs not active
		111	Inputs active
Mode F2 or <T	+	oU 0000	**Diagnosis for control cables Output** (lower tolerance limit, target value, upper tolerance limit, standstill)
	Mode F2 <T	0000	Outputs not active
		1111	Outputs active
Mode F2 or <T	+	12 0	**Taring after recording**
	Mode F2 <T	0	Function not active
	Setting changes at each keystroke.	1	Function active
Mode F2 or <T	+	13 0	**Operating mode of output**
	Mode F2 <T	0	Control cable and LED permanently active
	Setting changes at each keystroke.	1	Control cable only active in no motion
		2	LED only active in no motion
		3	Control cable and LED only active in no motion

Selection	Sub-selection	Display	Explanation
Mode F2 or <T	+	14 0	**Lock keyboard**
	Mode F2 <T	0	Recording free, F1 function free
	Setting changes at 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 at 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.
		1	F2 menu free.
Mode F2 or <T	+	17 0	**Registration**
	Mode F2 <T	0	Recording without checking tolerance limits.
		1	Recording only if weight is within tolerance limits.
		2	Recording without checking tolerance limits. iS20: all LEDs light up green.
		3	Recording only if weight is within tolerance limits. iS20: all LEDs light up green.
Mode F2	+	18 0	**Tare Autostart**
	Mode F2 <T	0	Function off.
	Setting changes at each keystroke.	1	Last tare value loaded during start.
Mode F2 or <T	+	33 1	**Digital filter**
	Mode F2 <T	0	No-motion environment, brief weighing time
	Setting changes at each keystroke.	1	No-motion environment, medium weighing time
		to	
		9	Environment in motion, long weighing time

Selection	Sub-selection	Display	Explanation
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	**Tare** Only with key on the device.
	Mode F2 <T	1	100% released
		0	0% released
Mode F2 or <T	+	38	**Portion control**
	Mode F2 <T	1	Function active
		0	Function not active
Mode F2 or <T	+	39	**Minimal weight change for another recording** Requirement: Step 5 is active (= 1).
	Mode F2 <T	0001	0.001 kg
	Setting changes at each keystroke.	to	
		0098	0.098 kg
Mode F2 or <T	+	40	**Minimal weight change of zero cross-over for another recording** Requirement: Step 5 is active (= 2).
	Mode F2 <T	0001	0.001 kg
	Setting changes at each keystroke.	to	
		0098	0.098 kg

9.2 Scale parameters

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.

Fig. 24: Display: "JUP OFF"

Menu call-up only via restart [▶ 28].

➪ Call-up: "S_PArA" + "SCALE_P" +

➪ **Save data in EEPROM:** Press ⏻ key.

Fig. 25: Display: "SCALE_P"

Change the tens digit for input of numbers [▶ 29].

Selection	Subselection	Display	Explanation
Mode F2 or <T	↵ + Mode F2 <T Setting changes at each keystroke.	22 3 22 6 22 10 22 12 22 15 22 30 22 40 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**
		22 MorE	**Individual weighing range.** The symbol "P" identifies this weighing range.  Edit individual ↵ + : weighing range
			Edit weighing range. The symbol "°" indicates that the editing mode is active. Weighing ranges with up to five digits can be set.  <0> / >T : Select place value Mode F2 / <T : Modify value ↵ + : Confirm value

Selection	Subselection	Display	Explanation
Mode F2 or <T	↵ + Mode F2 <T Setting changes at each keystroke.	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 2320000 2350000	**Display interval in g, coarse interval**
Mode F2 or <T	↵ +	24 1	**Selection multi-interval / multi-range scale**
	Mode F2 <T	24 1	Single division scale
	Setting changes at each keystroke.	24 2	Dual interval scale
		24 3	Triple interval scale
		24 4	Dual range scale with tare deletion (not for Canada)
		24 5	Triple range scale with tare deletion (not for Canada)
		24 6	Dual range scale without tare deletion (not for Canada)
		24 7	Triple range scale without tare deletion (not for Canada)

Selection	Subselection	Display	Explanation
Mode F2 or <T	↵ + Mode F2 <T Setting changes at each keystroke.	25 3 25 6 25 10 25 12 25 15 25 30 25 40 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**
		25 MorE	**Individual weighing range.** The symbol "P" identifies this weighing range.  ↵ +: Edit weighing range
			Edit individual weighing range. The symbol "°" indicates that the editing mode is active. Weighing ranges with up to five digits can be set.  >0< / >T: Select place value Mode F2 / <T: Modify value ↵ +: Confirm value

Selection	Subselection	Display	Explanation
Mode F2 or <T	↵ + Mode F2 <T Setting changes at each keystroke.	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 2620000 2650000	**Display interval in g, small interval**

Selection	Subselection	Display	Explanation
Mode F2 or <T	↵ + Mode F2 / <T Setting changes at each keystroke.	27 3 27 6 27 10 27 12 27 15 27 30 27 40 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	**Weighing range in kg, medium interval**
		27 MorE	**Individual weighing range.** The symbol "P" identifies this weighing range.  ↵ +: Edit weighing range
			Edit individual weighing range. The symbol "°" indicates that the editing mode is active. Weighing ranges with up to five digits can be set.  <0> / >T: Select place value Mode F2 / <T: Modify value ↵ +: Confirm value

Selection	Subselection	Display	Explanation
Mode F2 or <T	+	28 1 28 2 28 5 28 10 28 20 28 50 28 100 28 200 28 400 28 500 28 1000 28 2000 28 5000 2810000	**Display interval in g, medium interval**
	Mode F2 <T		
	Setting changes at each keystroke.		
Mode F2 or <T	+	29 1	**Dimension**
	Mode F2 <T	29 0	g
	Setting changes at each keystroke.	29 1	kg
		29 2	t
		29 3	lb
		29 4	oz
Mode F2 or <T	+	30 1	**Minimum load capacity**
	Mode F2 <T	30 0	Minimum load 20 e
	Setting changes at each keystroke.	30 1	Minimum load 5 e for non-automatic weighing instruments of class III for the determination of transportation rates.
		30 2	No minimum load
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

Selection	Subselection	Display	Explanation
Mode F2 or <T	+	33 1	**Digital filter**
	Mode F2 <T	33 0	No-motion environment, brief weighing time
	Setting changes at 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 3/1.5 kg 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.

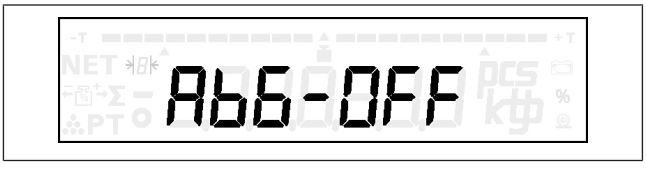


Fig. 26: Display: "AbG-OFF"

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 [▸ 28].

⇨ **Save data in EEPROM:** Press ⏻ key.

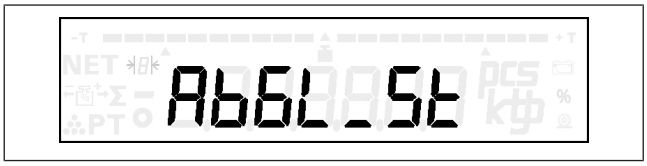
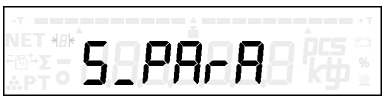
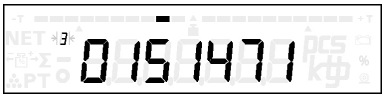


Fig. 27: Display: "AbGL_St"

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
↵ +		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

Key	Display presentation	Process description
↵ +	4 0168605	Display of measured value for calibration point 4.
↵ +	5 C_ 15,000 kg	Fifth calibration point at 15 kg weighing range. Example: 15 kg
↵ +	5 0185728	Display of measured value for calibration point 5.
↵ +	6 C_ 15,000 kg	Sixth calibration point at 15 kg weighing range. Example: 15 kg
↵ +	6 0121707	Display of measured value for calibration point 6.
↵ +	7 C_ 15,000 kg	Seventh calibration point at 15 kg weighing range. Example: 15 kg
↵ +	7 0121707	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 of hardware seal

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

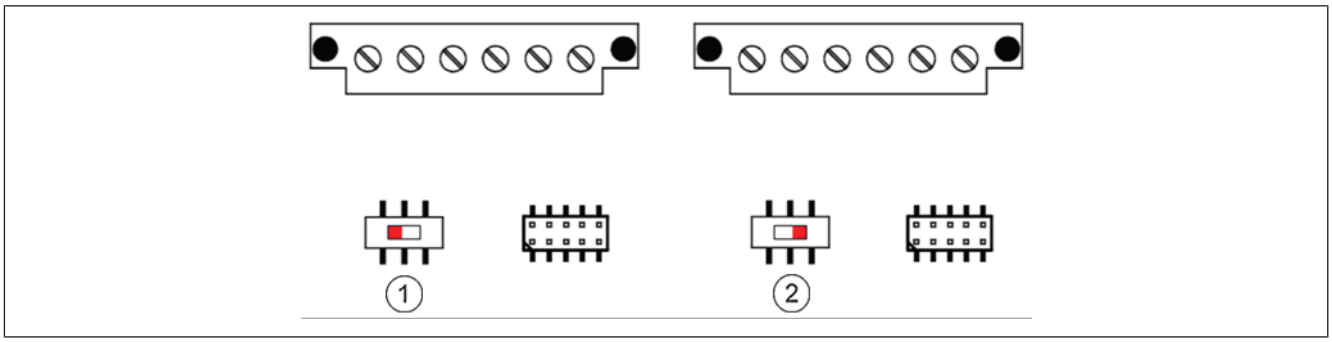


Fig. 28: Switch settings of hardware seal

① Slide switch on left hand side = not verified

② Slide switch on right hand side = verified

9.5 Hardware seal settings

Status of hardware seal	Slide switch	Changes		flashes	Display
		Scale parameters	Calibration		
metrologically approved	right	No	No	No	
not metrologically approved	left	Yes	Yes	Yes	

Call-up of service parameters [▷ 28].

Call-up of metrology status [▷ 28].

10 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.

10.1 Periodic faults

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.

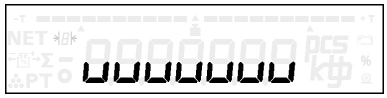
10.2 Bring-in service

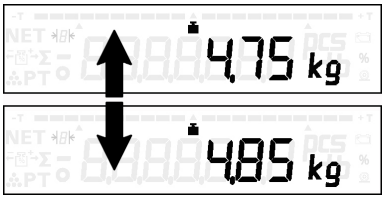
Bizerba provides various service concepts for this device. Usually, "Bring-in service" is available for this device. In case of service, proceed as follows:

– 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.

10.3 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.

Fault	Cause	Elimination
	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 plate. 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.
"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.

Fault	Cause	Elimination
"Err Cnt"	Minimum weight for reference weight determination is not reached.	Place higher weight or more pieces on the scale.
"Err toL"	Tolerance control has not been activated or invalid parameter.	Activate tolerance control in step 50. Target value, upper and lower tolerance limit.

11 Maintenance

11.1 Cleaning

Cover device when building is cleaned.

The following must not be used for cleaning:

- Sharp, hard or pointed objects
- Water or steam jet devices
- Compressed air
- Cleaning agents containing chlorine
- Cleaning agents that are hazardous to health or that contain solvents

11.1.1 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.

11.1.2 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, rub the steel parts with cleaning oil immediately. This is absolutely necessary to prevent rust formation.

Cleaning oil: e.g. Bizerba machine oil (order no. 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

- Any stainless steel cleaner is permitted. Make sure to read the instructions for use before using the device.
- 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.

Type of stain	Cleaning agent to use
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

12 Technical data

12.1 Dimensions

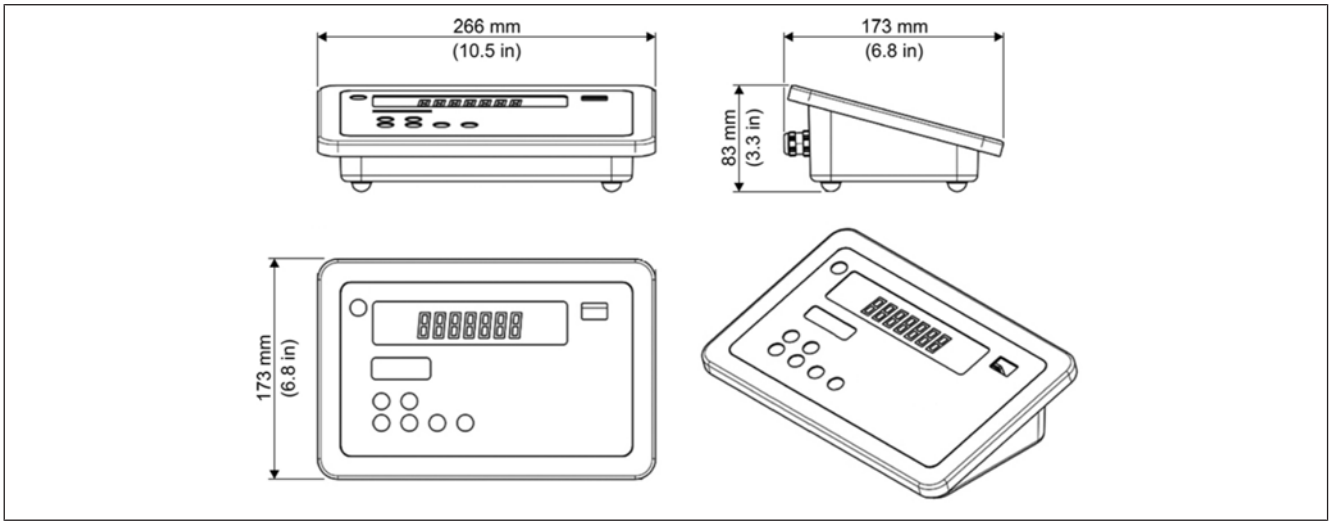


Fig. 29: Dimensions

12.2 Housing

Version:	Stainless steel
Housing versions:	Remote, table top display, stand, wall mounting, built-in variant

12.3 Display and operating unit

Keyboard:	Membrane keyboard
Display:	LCD display; 154 x 35 mm; monochrome display

12.4 Ambient conditions

Operation:	-10°C to +40°C
Storage:	-20°C to +60°C

12.5 Power supply

Mains voltage:	Standard: 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

12.6 Protection type

Protection type as per EN 60529

- Weighing terminal: IP65/IP69K
- Standard load cell: IP54
- Stainless steel load cell: IP68/IP69K
- Built-in version: IP65

12.7 Interfaces

Only for iS20.

- RS232
- PIO
- Outputs with open collector (open collector switch)
- ETHERNET

12.7.1 Parallel inputs and outputs

Only for iS20.

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, 50 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

Inputs

- Power supply external: 24 V at a maximum
- Voltage range for logic `1`: +2.4 V – +24 V
- Voltage range for logic `0`: ±0 V – +1.4 V

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.

12.8 Connectors

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)

13 Attachment

Bizerba SE & Co. KG
Wilhelm-Kraut-Straße 65
72336 Balingen, Germany

BIZERBA

CE

EU declaration of conformity

Device type:	Non-automatic electromechanical weighing instrument with or without lever system
Model:	iS10, iS20
Manufacturer:	Bizerba SE & Co. KG, Wilhelm-Kraut-Str. 65, 72336 Balingen, Germany.

This declaration of conformity is issued under the sole responsibility of the manufacturer.

Object of the declaration:	Type: iS1…, iS2…
	Accuracy classes: (III), (IIII). See identification plate.

The object of the declaration described above is in conformity with the relevant Union harmonization legislation:

Non-automatic weighing instruments:	2014/31/EU; Official Journal of the EU issued on 3/29/2014 L96 pp. 107-148
EMC:	2014/30/EU; Official Journal of the EU issued on 3/29/2014 L96 pp. 79-106
Low voltage:	2014/35/EU; Official Journal of the EU issued on 3/29/2014 L96 pp. 357-374
RoHS:	2011/65/EU; Official Journal of the EU issued on 7/1/2011 L174 pp. 88-110

Applied relevant harmonized standards and technical specifications to which conformity is declared:

Metrology:	EN 45501:2015
EMC:	EN 61000-6-2:2005 + CENELEC-Cor.:2005; EN 61000-6-4:2007 + A1:2011
Electrical safety:	EN 60950-1

The notified body Physikalisch-Technische Bundesanstalt (PTB), number 0102, performed the EU type examination and issued the certificate: D12-09-012[1)].

The notified body Eich- und Beschusswesen Baden-Wuerttemberg, number 0103, audited the QM system from Bizerba according to the procedure described in attachment II No. 2, module D (conformity with the type based on a quality assurance in the production process) and authorizes company Bizerba with certificate no. 4051.BIZ to attach metrology marking on the non-automatic weighing equipment manufactured by Bizerba and to perform the conformity assessment.

[1)] This is applicable if the metrology marking is attached and if the conformity assessment has been carried out by Bizerba (module D) or in connection with a conformity certificate issued by a notified body (module F).

Bizerba SE & Co. KG
Wilhelm-Kraut-Straße 65
72336 Balingen, Germany

The basis for the declaration of conformity are 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.

City:	72336 Balingen, Germany
Date:	7/27/2017
Signature of manufacturer:	p.p. 
Title of signatory:	Thomas Schoen Director Global Industry Products Bizerba SE & Co. KG