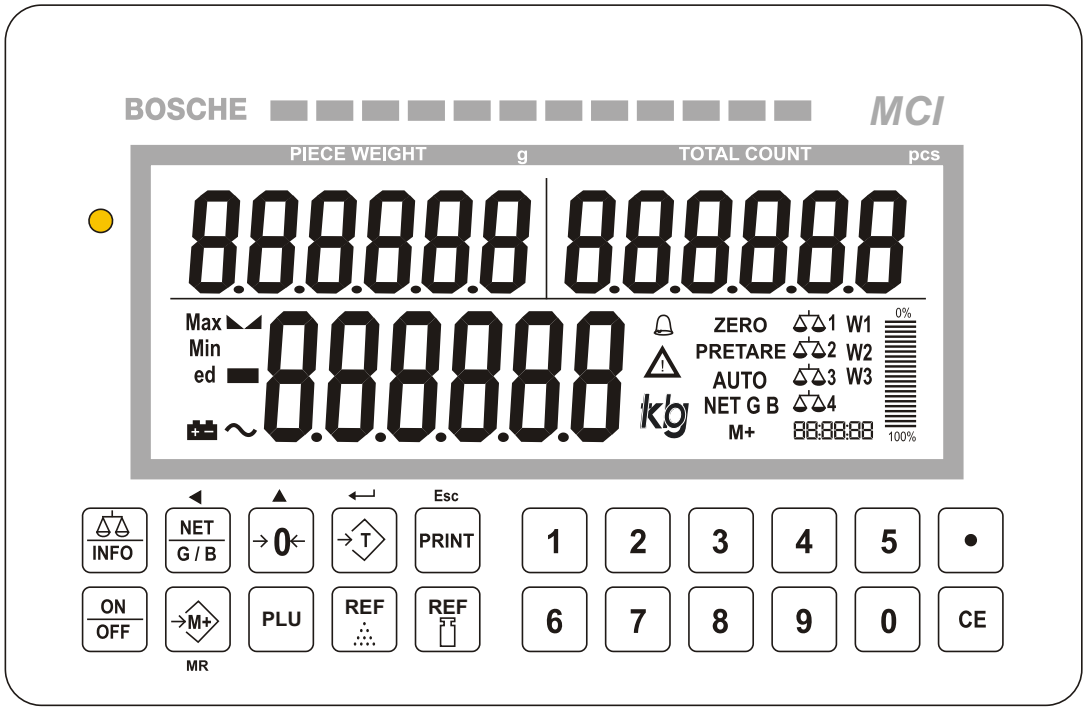
BOSCHE

Weighing Terminal
MCI



Operating manual

- Translation of the original -

(keep for future use)

Software-Version 4.0

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Bosche GmbH & Co. KG

Reselager Rieden 3
D-49401 Damme

Phone +49 5491 999 689 0
Fax +49 5491 999 689 9
Email info@bosche.eu
Web www.bosche.eu

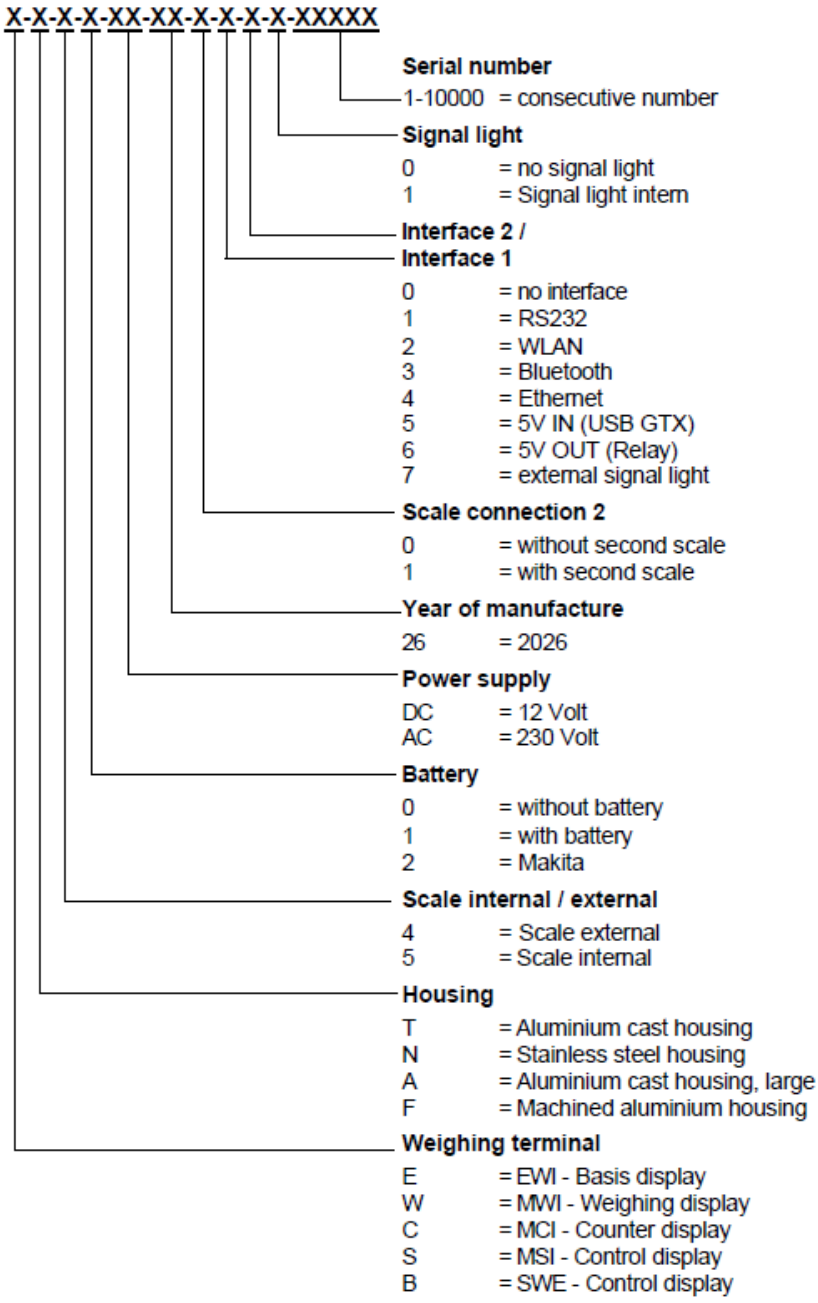
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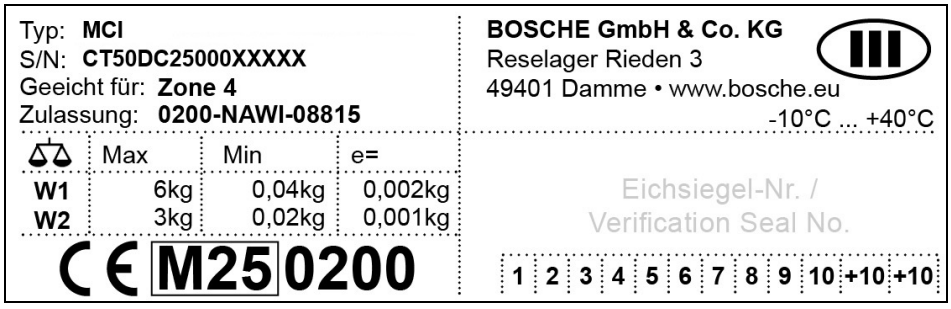
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Type key



Type plate example with verification data
See description in chapter 2.3 ‘Type plate for verified scales’



Type plate example without verification data



Foreword

These operating instructions provide you with detailed information about the Weighing Terminal MCI.

These instructions contain safety instructions to guarantee safe use.

The manufacturer strives to improve their products on an ongoing basis. They reserve the right to carry out any and all modifications and improvements that they consider to be necessary. However, this means that there is no obligation to carry out retrospective modifications in this connection.



Danger
Before using the MCI, you must have read and understood the operating instructions and the safety regulations that they contain.



Note
Errors and omissions in the documentation reserved. If necessary, please inform the Bosche GmbH & Co. KG of any errors in the documentation. We would also be grateful for any suggestions for improvements that you may have.

The manufacturer's contact data is listed on the reverse of the title page. If you have any queries or problems, please contact the manufacturer without delay.



Note
If you have any questions for Bosche GmbH & Co. KG, please have the serial number to hand.

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1 Safety

This chapter warns against possible risks when handling the device. The information for detection of risks contained in this chapter is intended to allow a safe and correct operation.



It is important to read and adhere to this operating manual and particularly this chapter prior to operating this device.

1.1 For your safety

1.1.1 General

In addition to safety information, the operating manual includes:

- A general product description
- Information about installation and connection of the device
- Instructions to operate the device
- Maintenance and care instructions
- Troubleshooting and remedy instructions
- Technical data

Always keep this operating manual and additional documents for your personnel at hand in the direct vicinity of the device.

Always adhere to all information, notes, instructions and explanations contained in this manual! Avoid accidents caused by incorrect operations! Also adhere strictly to the valid legal regulations in addition to the safety instructions specified in this manual.

Prior to commissioning/start-up read the safety information/instructions and familiarise yourself with dangerous areas.

The device is constructed according to the current state of art and the valid safety regulations. However, there are risks in the event of incorrect operation or non-observance of the safety regulations:

- Danger to limb and life of operators, third parties and animals staying in the vicinity of the device.
- Danger to the device and other assets of the owner/user
- Danger to the efficient operation of the device.

1.1.2 Safety symbols in this manual

The following symbols are used on all important positions in this manual. Particularly observe these notes and treat very carefully.



Danger
This note indicates the danger of injuries and/or danger to life, if specific behaviour rules are not observed.
When this symbol appears in the operating manual, please take all required safety measures.



Attention
This note warns against damage to assets as well as financial disadvantages and responsibility under criminal law (e.g. loss of the warranty, cases of third party risks, etc.).



Note
Important notes and information about efficient, economic and environmental friendly handling are specified here.

1.2 Intended use

The Weighing Terminal MCI in combination with suitable load cells, is only used for checkweighing, i.e. to determine whether the weight of the product is within preset limits (low/high).

The Weighing Terminal MCI is used as a "non-automatic weighing instruments".

Any further use is considered as not in accordance with the intended use. The manufacturer does not assume any liability for resulting damage.

The intended use also includes:

- Observance of all notes, information, instructions contained in the documentation as well as in all manuals supplied by the manufacturer.
- Adherence of the maintenance and service conditions and intervals prescribed by the manufacturer and
- Observance of technical data.

Adhere to the attendant accident prevention regulations as well as other generally approved technical safety rules.



Note
Always specify the serial number of your display for all questions, orders or jobs. This will facilitate the communication with the manufacturer and prevents error during editing your request.

1.3 Inappropriate use

- Use in explosive environments (ATEX zones).
- Modification or opening of the device.

1.4 Obligations of the owner/user

The owner/user obligates himself to only instruct people to work on the device, who:

- Are familiar with the basic rules concerning safety and accident prevention and are trained in the operation of this device and
- have read and understood the operating manual, the safety chapter as well as the warning notes.

1.5 Obligations of the operator

All people instructed to operate the device obligate themselves:

- to always ensure the safety of other people,
- to read the operating manual, the safety chapter and the warning notes and
- to only operate the device when they are familiarised with its functions.

1.6 Description of the dangers

1.6.1 Danger of injury

- Always switch off the device for care and maintenance work.
- Never insert any pointed objects into the electric contacts.
- Do not change the contacts.
- Stop device operation if the device or the connection line is damaged or malfunctions.

1.6.2 Danger of damage

- Only connect the device to suitable load cells (see chapter 3.7 “Interface”).
- Never use pointed objects to actuate the device keys.
- Observe the ESD precautions (see "Electrostatic discharge").

Electrostatic discharge

Attention
ESD poses a danger to electronics. Their function can be disturbed, damaged or completely destroyed by electrical discharges.



ESD = **E**lectro **S**tatic **D**ischarge

General

Electrostatic discharge is not a danger to humans themselves, but to very sensitive electronic components. Humans can cause dangerous voltages through friction or contact charging.

Therefore, the following precautions should be taken.

- All materials used must be conductive and earthed at the same potential. This is how existing electrical charges are discharged into the ground in a targeted manner.
- Access only in ESD protective clothing, i.e. safety shoes, work smock, etc.

1.7 Liability and warranty

The BOSCHE company offers a restricted warranty for components, which became faulty due to strain or material faults. The warranty starts with the date of delivery. The BOSCHE company retains the right to repair or replace components. Repair work executed during the warranty period will not extend the period of warranty. The warranty becomes null and void:

- In the event of incorrect use / use other than the intended use or incorrect installation
- Incorrect electric connection
- Use of an incorrect or non-licensed analogue / digital converter
- Non-observance of the specifications in the operating manual
- Conversion, modification or opening of the device
- Unintentional or mechanical damage and damage caused by media, liquids, natural wear.

1.8 Testing equipment monitoring

Quality assurance requires regular inspections of the technical measuring features of the scales used in connection with the scales and a possible available test weight.

The owner/user can define a suitable interval as well as the scope of these inspections. In this connection, you must take into consideration the frequency of use and the sensitivity of the application. In most cases, a two-year test frequency is appropriate.

2 Description

2.1 General

The Weighing Terminal MCI has three menu levels for settings.

The quick menu is used for simplified input of parameters (operator).

The function menu serves to create and retrieve values that can be changed at any time (e.g. operators, setup technicians, or service technicians).

The menu protected by a password contains all adjustable parameters technically relevant for weighing and the possibility to calibrate the scales.

All menus are described in detail in this manual.

2.2 Verification

According to EU Directive 2014/31/EU, scales must be verified if they are used in the following cases:

- In commercial transactions where the price of a product is determined by weight.
- In the production of pharmaceuticals in pharmacies as well as in medical and pharmaceutical laboratory analyses.
- For official purposes.
- In the production of pre-packaged goods.
- In the healing arts.

Each verified scale is marked with the conformity mark (calibration seal), confirming accuracy within the permissible calibration tolerance.
The scope of EU verification applies to all EU (European Union) member states.

This operating manual refers to German laws and regulations. If the scale is operated abroad, this must be done in accordance with the national laws/ regulations.



Attention
If verification is lost during operation of the scales / the weighing terminal, for example, if parameters are changed, the verification counter is increased. Verification will become null and void immediately.

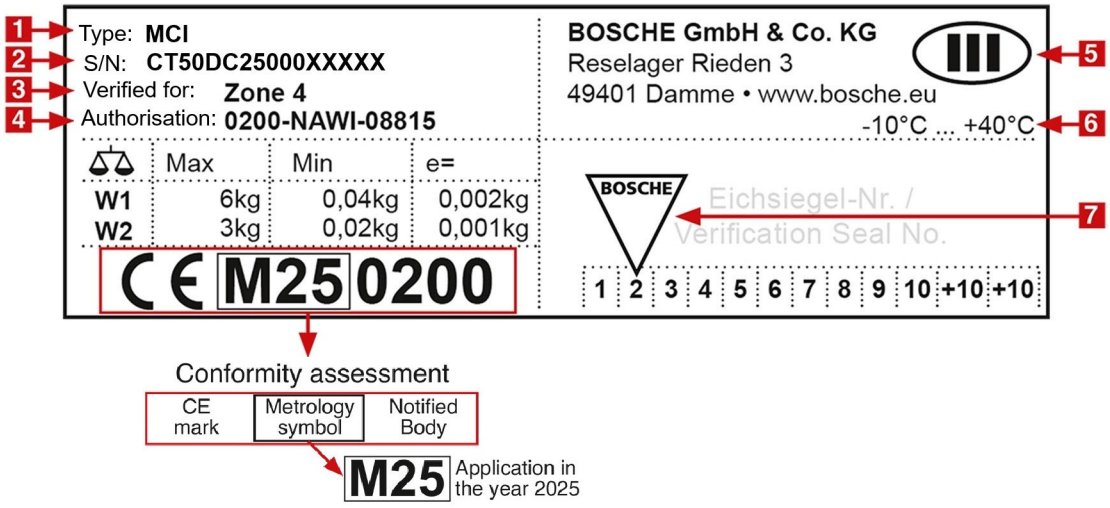
This is the symbol used in this manual for “Verification invalid”.





Note
The owner/user of the scales must request verification from the responsible verification authorities in time (10 weeks before the expiry date).

2.3 Type plate for verified scales



1 Type of scale

2 Serial number of the scale

3 Gravitation zone

4 Number of the type authorisation

5 Accuracy class / verification class

6 Nominal temperature range

7 Safety mark with the status of the verification counter (in the example, the verification counter is at 2)

W1 Weighing range 1 with adjusted values

W2 Weighing range 2 with adjusted values (only for dual-range scales)

Max Maximum load

Min Minimum weight (20d)

e = Verified value - legally authorised division step of the scale

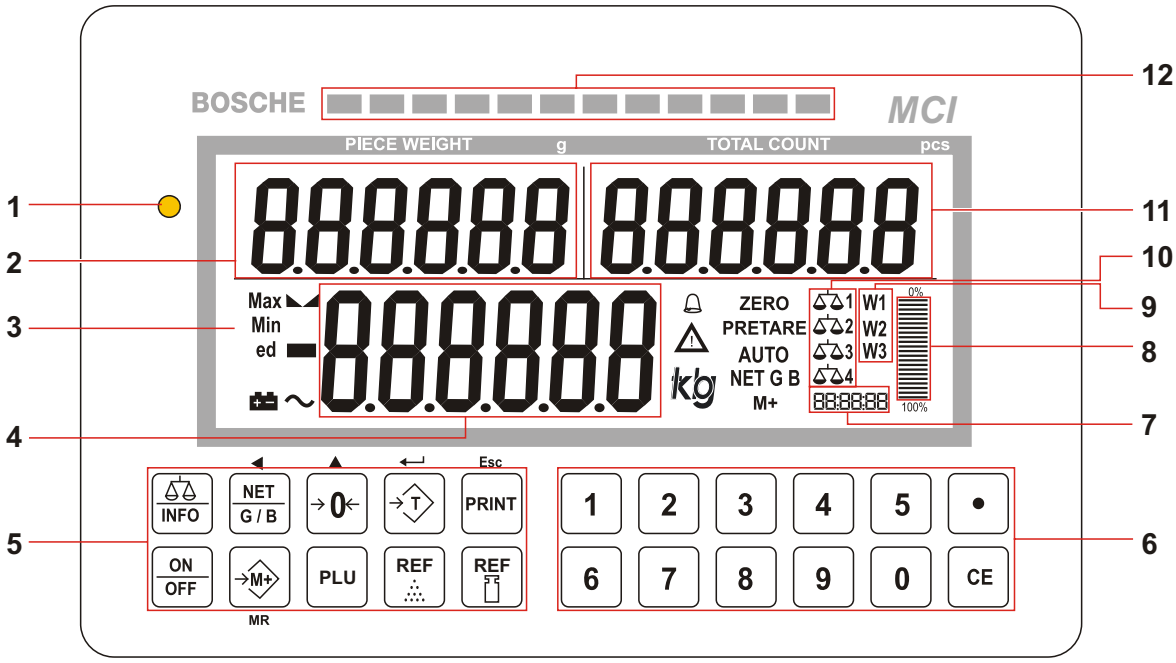
Notified Body - The number of the conformity assessment body that certifies the correctness of the conformity assessment (EC verification) to be carried out by the manufacturer for non-automatic weighing instruments.

Products bearing this marking comply with Directive 2014/31/EU regarding the placing of non-automatic weighing instruments on the market. The company Bosche uses the number 0200.

2.4 Construction of the weighing terminal

The Weighing Terminal MCI is a counting indicator and is used to display counting results obtained in combination with suitable load cells.
Up to 4 load cells / 2 weighing platforms can be connected.
After reaching a stable weight value, the weight value is shown on the display.

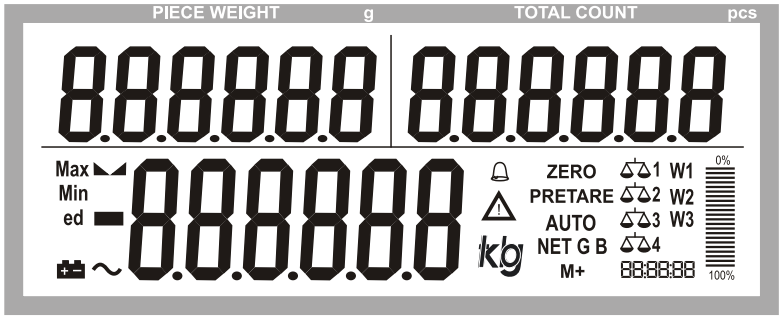
An optional integrable signal light visual support when counting products.



Item	Designation
1	Voltage indicator (lights up during the charging process if a battery is fitted.
2	Preset or determined piece weight in g when the selected unit is kg.
3	Weighing value display with adjustable backlight.
4	Current weight (actual weight).
5	Control panels for the various functions of the unit.
6	Numeric keys (numeric keypad) for entering tare, target weights, etc.
7	Date/Time
8	Progress indicator in per cent (%)
9	Active weighing range (W2 or W3 for multi-range scales and multi-interval scales).

Item	Designation
10	Active scale (the device can manage 2 scales)
11	Current piece count (pcs).
12	Optional: Signal light (red: Weight too high, green: Admissible weight, yellow: Weight too low)

2.4.1 Display overview



Max	Status indication: the weight on the scale above the selected limit value.	**AUTO**	Automatic summation is active
Min	Status indication: the weight on the scale below the selected limit value.	**NET**	Net weighing is displayed.
ed	e: Verifiable division d: non-verifiable division	**G**	Gross weighing is displayed. (If language ‘English’ has been selected).
⚠	10-fold resolution is displayed.	**B**	Bruttowägung is displayed. (If language ‘German’ has been selected).
~	Unstable value	**TARE**	Weighing with tare value
◣◢	Stability indicator lights up when a weight is stable.	**PRETARE**	Hand tare weighing (Pretara)
ZERO	Zero message	0% 100%	Percent weighing
🔔	Acoustic signal for checkweighing is active.	**kg**	Active weight unit [kg, g, t, lb (Libs)]
+ −	Battery charging status.	W1 W2 W3	Active weighing range (W2 or W3 for multi-range scales / multi-interval scales).
M+	Accumulation memory active	⚖1	Active scale
		00.00.00	Date or time

2.4.2 Legend for the weighing value display

A	B	C	D	E	F	G	H	I	J	K	L	M
A	b	C	d	E	F	G		I	J	H	L	n
		c					h	i				

N	O	P	Q	R	S	T	U	V	W	X	Y	Z
n	0	P	q	r	S	t	U	u	"	H	y	2
	o											

0	1	2	3	4	5	6	7	8	9
0	1	2	3	4	5	6	7	8	9

2.4.3 Keyboard overview

	Operating level		Functional level
INFO	Opens the "Quick menu" for quick settings		Opens the function menu when the key is pressed during the self-test of the scale.
NET / G / B	Switch between gross and net weight.	◀	Move the activated digit to the left when setting the parameter values or move from other features.
→0←	Zeroing. Sets the zero point for all subsequent weighing operations. Zero is displayed.	▲	Increases the activated digit when setting the parameter values or other functions.
→T←	Tares the scale and stores the weight as a tare value, which is subtracted from the total weight at net display.	↵	ENTER Accepts input when setting parameters or other functions.
PRINT	Print the weighing results, via the RS232 interface to a printer or PC.	Esc	Leaving the functional level.
ON / OFF	Switch the device ON / OFF.		
→M+	Summing: The key adds the displayed weight into the accumulation memory.	MR	Retrieval of the sum of the saved individual weighings and the total weight.
PLU	Press short: Display of the scale parameters (division=e, minimum load, capacity). Press and hold for two seconds: Display of increased resolution for approx. 10 seconds.		
REF	Entering the reference piece count		
REF	Entering the reference weight		

Value inputs

0 … 9	Numeric keys for enter parameters (tare weights, etc.)
•	Decimal point / decimal separator
CE	Clear input value. It‘s used as a clear key when setting values for parameters or other functions.

2.5 Operating

Note
The operation of the weighing terminal (weighing, parameter settings, menu explanations, etc.) is described in chapter 4 "Operation".

2.6 Equipment

Note
All equipment features are described in chapter 9 "Technical data".

3 Transport, installation, connection

3.1 Control

When the display is delivered, check the packaging, the device and possible accessories for visible damage.

3.2 Packaging and disposal

Keep all parts of the original packaging for a possible return.



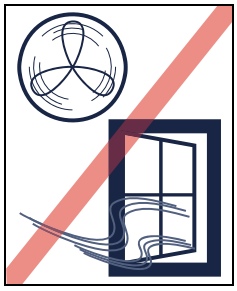
Note
Only use the original packaging if the display is returned.
Prior to the transport, disconnect/fasten all loose/moving parts of the device. Secure the parts against slipping/damage.

Dispose of the packaging and the display according to the national and/or local regulations by law valid on the installation site. Separately dispose of a defective battery according to the national and local regulations on environmental protection and recycling.

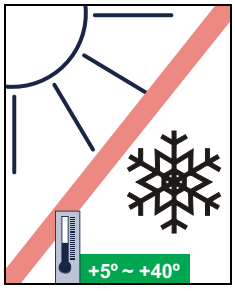
Do not treat this product as standard waste. Please dispose of via a waste management company.

3.3 Installation and connection

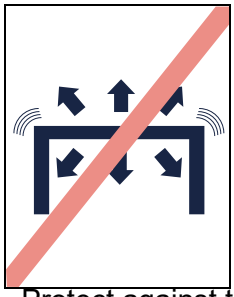
Keep the device clean and do not expose it to an environment influencing the display accuracy.



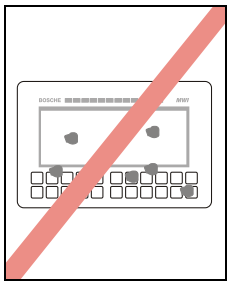
Protect against draught!



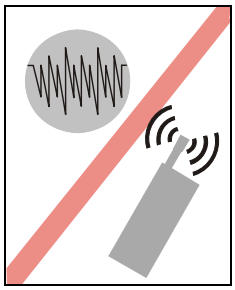
Protect against heat, sun and frost!



Protect against tilting a and vibration!



Keep the unit clean



Avoid unstable voltage sources!



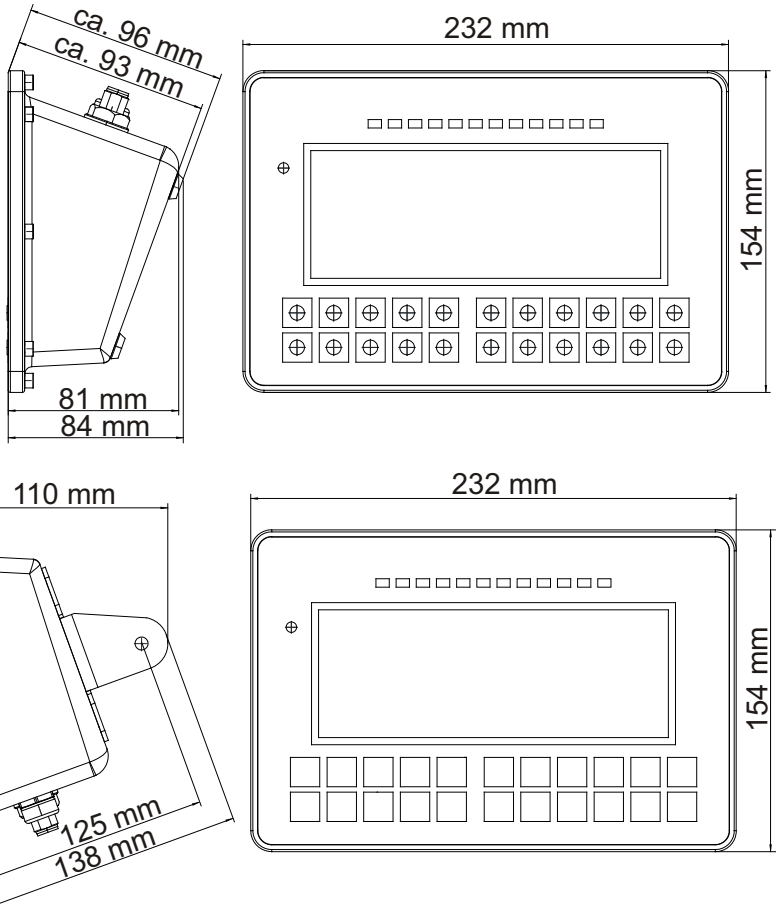
Avoid humidity!

Install the unit using the table/wall bracket included in the scope of delivery according to the installation instructions.

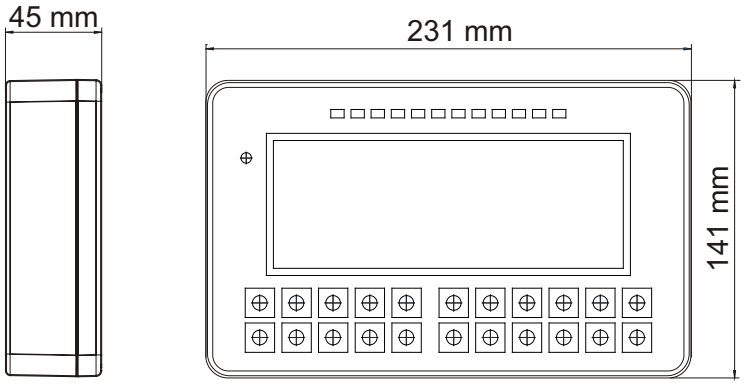
Note
Ensure that a 230 V AC voltage supply is available on the installation site (unless operation with rechargeable batteries is intended).

3.4 Device variants

3.4.1 MCI-N in stainless steel housing

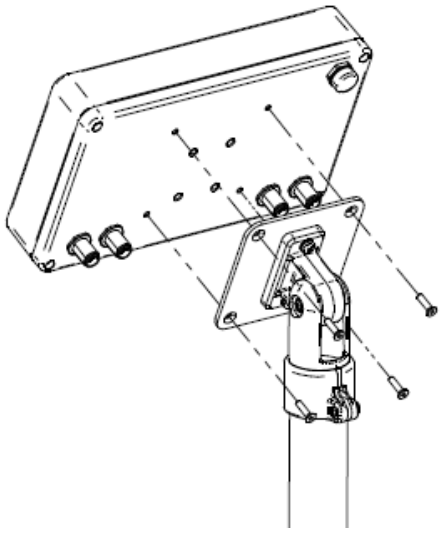


3.4.2 MCI-T in aluminium housing

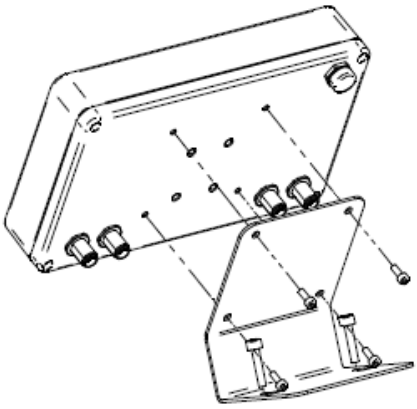


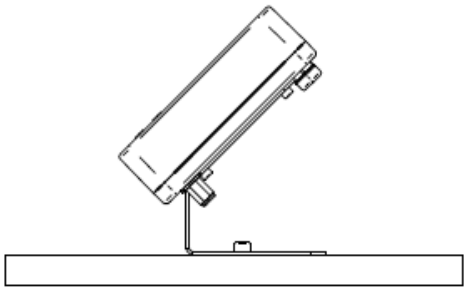
3.5 Mounting options

Indicator stand

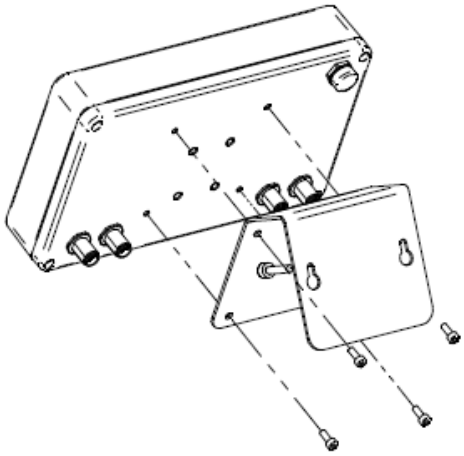


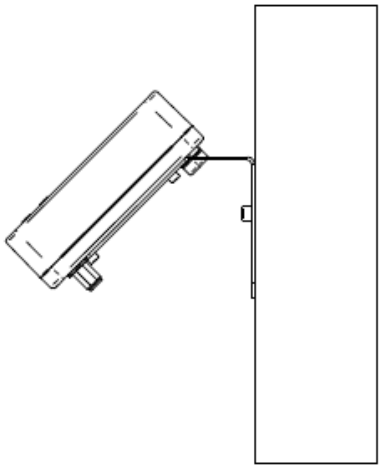
Desk mounting





Wall mounting



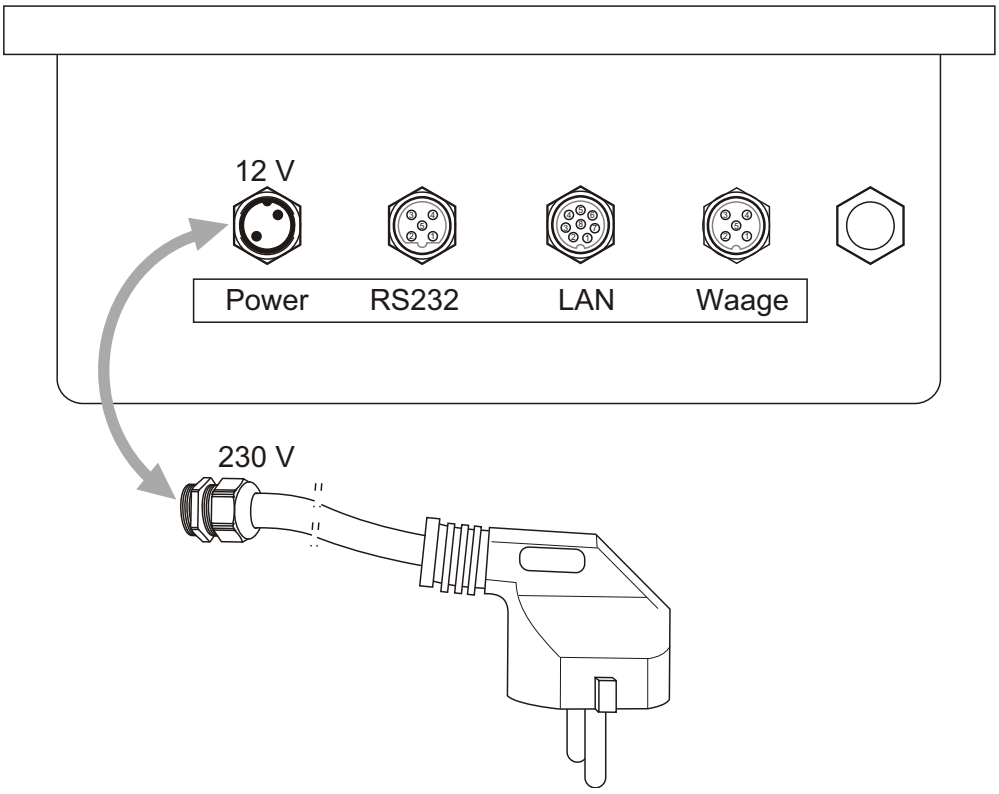


3.6 System configuration

In weighing systems, one or more load cells are connected for evaluating the measuring signal. Several load cells of a scale are connected in parallel in a junction box to deliver a common output signal.

Load cells can be connected in parallel only if they have the same characteristic value, the same nominal load and the same internal resistance.

Attention
A maximum of 4 load cells at 350 Ohm can be connected to the weighing terminal.



Note
The illustration above shows an exemplary configuration.

Attention
A warm-up time of 15 minutes stabilises the measured values after switching on. Place the products in the middle of the scale and should not exceed the platform surface
Remove the products from the platform after weighing.
Don‘t exceed the maximum load of the scale.

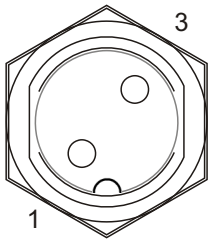
3.7 Connections

3.7.1 Power supply

Pin assignment socket (A-coded):

1. +V
3. GND

Voltage range: 12 - 24 VDC

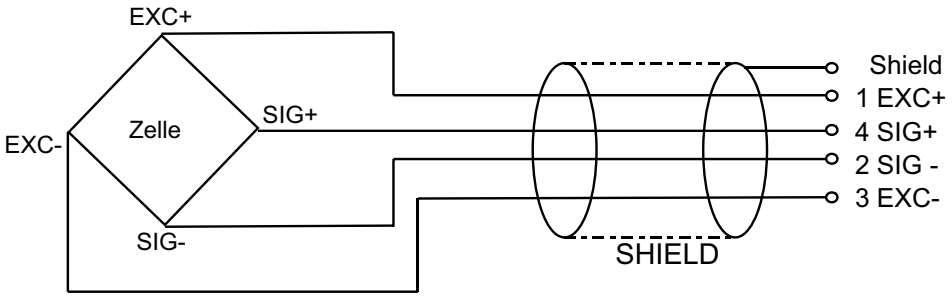


3.7.2 Load cell

The weighing terminals of the MCI series offer different options to connect load cells / weighing platforms (weighing bridges) to the transmitter.

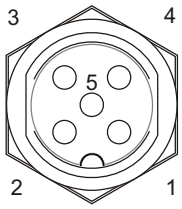
Connecting a 4-wire load cell

5-pin socket connection of 4-wire load cells



Pin assignment socket (A-coded):

1. EXC +
2. SIG –
3. EXC -
4. SIG +



Attention
With certified systems the weighing terminal and the digitization unit have an encrypted value. This value is unique and cannot be reproduced, it serves as a calibration protection. This protection ensures that only the weighing terminal, which is rated by the Office of Weights and Measures works together with digitizing unit reviewed by Office of Weights and Measures.

Note
In case of damage to the weighing terminal, the verification seal is broken and a replacement device can be connected. Recalibration is then mandatory.
For further questions please contact the Bosche customer service.

3.8 Interfaces

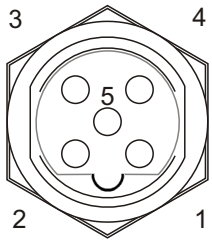
3.8.1 RS 232

The weighing terminal is connected via this interface (COM 1) to a PC or a printer, it prints the weighing results along with the selected weighing unit.

5-pin socket connection for interface RS232

Pin assignment socket (B-coded):

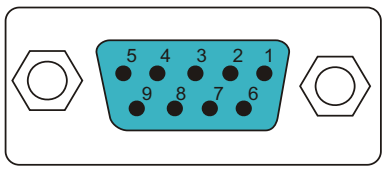
1. NX
2. TxD (Transmitted Data from PC)
3. NC
4. RxD (Received Data from PC)
5. GND (Ground)



9-pin Sub-D plug for serial interface RS 232

Pin assignment:

2. RXD (Data input)
3. TXD (Data output)
5. GND (Ground)



3.8.2 LAN- interface

The LAN interface is used to exchange and query data in a network.

Pin assignment:

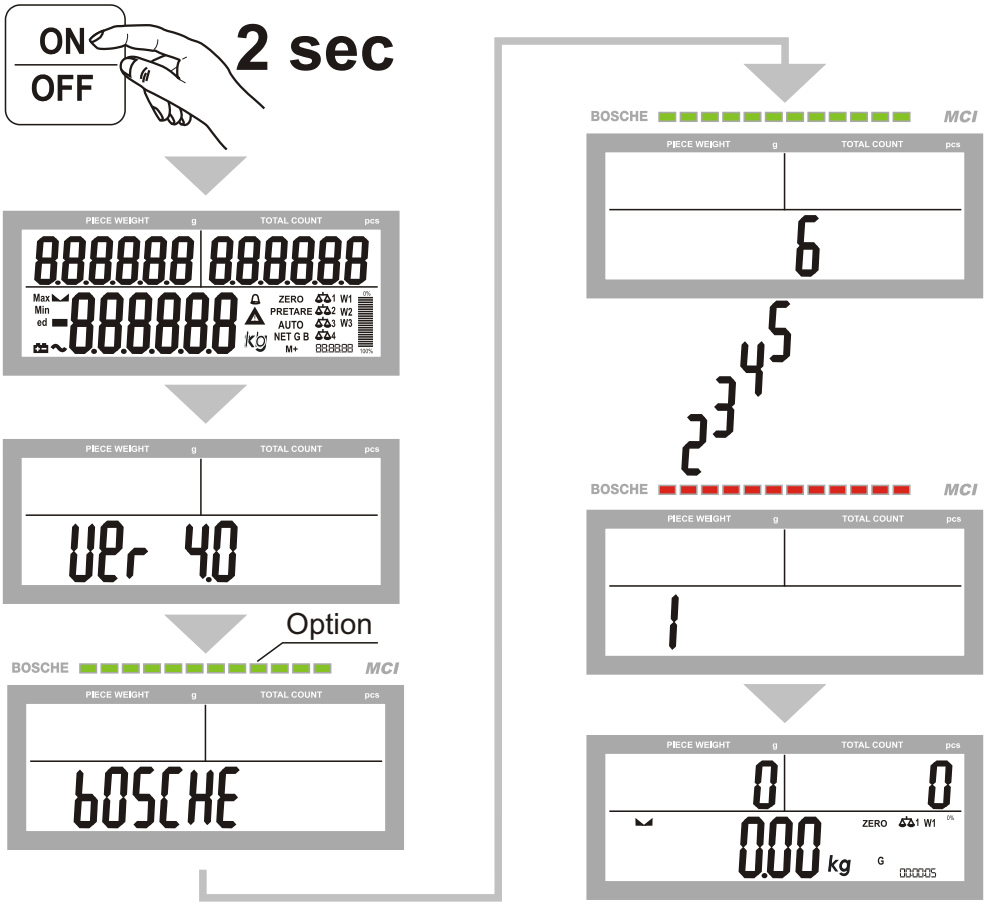
1. NC
2. NC
3. NC
4. TX -
5. RX+
6. TX+
7. NC
8. RX-



4 Operation

Note
The basic functions of the weighing terminal are similar or identical used for all applications.
The signal light shown in some pictures can be integrated as an option. The standard version of this weighing terminal does not have a signal light.

4.1 Turn on



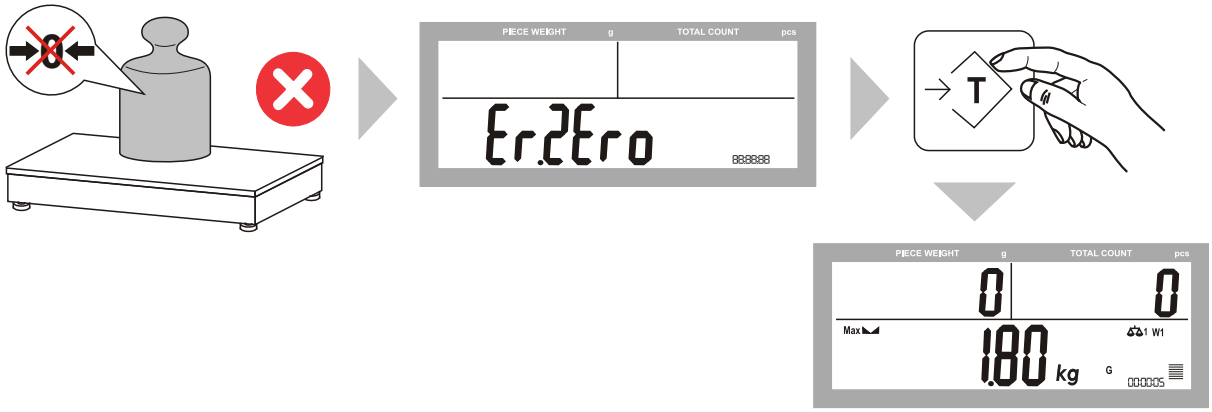
4.2 Power zero limits

Legal for trade: Initial zero setting 20 % of the weighing range.

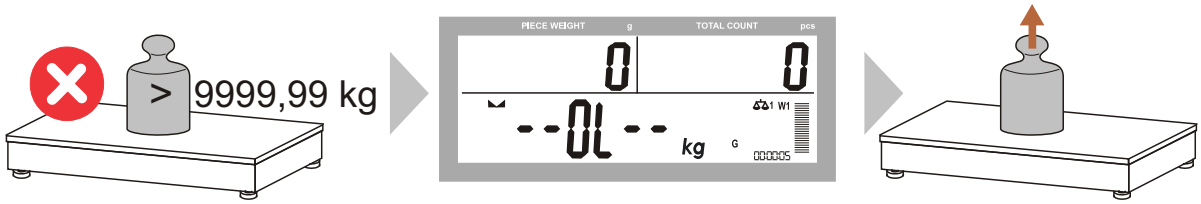
Not legal for trade: Initial zero setting +/- 100 % of the weighing range.

Note
At noncertified scales the initial zero can be set later in the menu.

If the scale is switched on outside the zero limits, the weight value actually contained on the scale is displayed after you have confirmed with the Tare key the error message.



If the load is on the scale exceeds the weighing range, the following message appears on the display.



4.3 Turn off



If you are in the menu, the scale is turned off without that any changes made are saved.

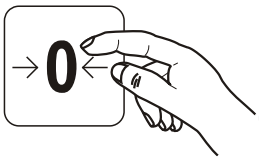
In addition, a voltage tester is connected to indicate a low battery voltage by the battery symbol. At too low battery voltage, the voltage tester ensures that the display turns off itself to protect the battery.

4.4 Auto off

The indicator has an automatic shut off. The time of shutdown can be set between 1 to 99 minutes. The automatic shut-off is active if no change in weight on the platform or weighing bridge is registered by the indicator during the specified period. By default, the auto power is off and must first be activated in the Quick Menu. An overview and detailed explanations of the Quick Menu see chapter 4 “Operation“.

4.5 Resetting the scale to zero

Press the Zeroing key to correct small deviations from the zero point, e.g. due to contamination of the scale.



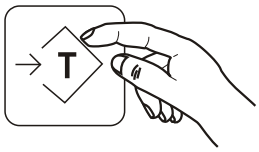
Zero range (legal for trade) + / - 2% of the weighing range

Zero range (not legal for trade): selectable + / - 0, 2, 4, 10, 20, 50, 100% of the weighing range. If zeroing is not possible, appears in the display:



If the scale cannot be reset to "zero" with an applied weight, this range has been exceeded or the scale is unstable.

Then the scale can be set by Tare key to "zero" and continues to work in the net mode.



4.6 Zero tracking

The zero point correction automatically corrects minor deviations of the Zero indicator. The zero range can be adjusted between:

0.25d / 0.5d / 1d / 2d / 3d / 4d

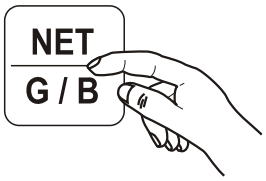
The zero tracking must be turned on in the menu.

The zero tracking:

- is active only after the initial zero.
- is both positive and negative active.
- works up to the set limit additively.
- function will be deactivated when the set limit is exceeded.
- is activated again after the load has been removed.

4.7 Gross - / net change

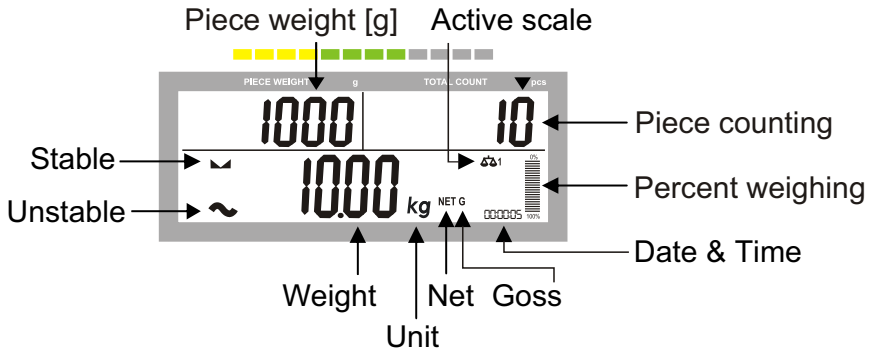
Press this key to change at tared scale between the gross / net weight.



In addition, a "G" (English language) for gross or a “B“ (German language) or "NET" for net will appear on the screen after the selected unit.

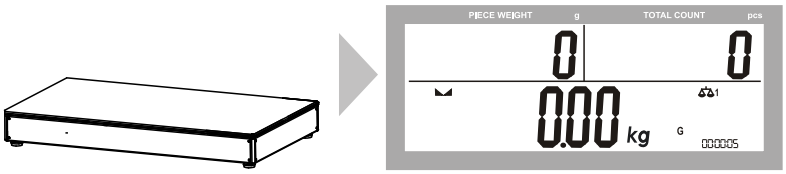
4.8 Weighing

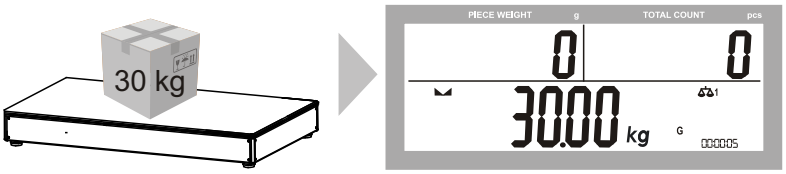
Display weighing



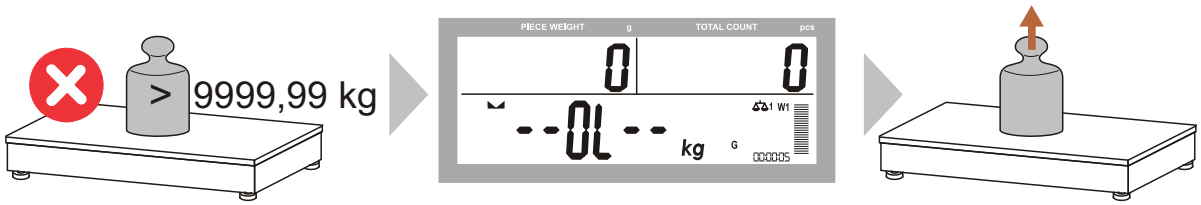
4.8.1 Simple weighing

After switching on, the self-test and initialization of the scale, "zero" is shown.





If the weight of the weighing sample will exceed the set weighing range the following message is displayed:



Please remove the load from the platform / weighing bridge immediately to avoid damage.

4.8.2 Weighing in multi- range / multi- interval mode

To use the weighing terminal as multirange or multi-interval scale, the appropriate settings must be made in the password protected menu.

Attention
Changes in the password-protected menu of a calibrated scale lead to the expiry of the verification.

For multi-range scales each area is treated as a single range.

Attention
Switching between the division steps during the load of the scale is permitted only with increasing weight value.

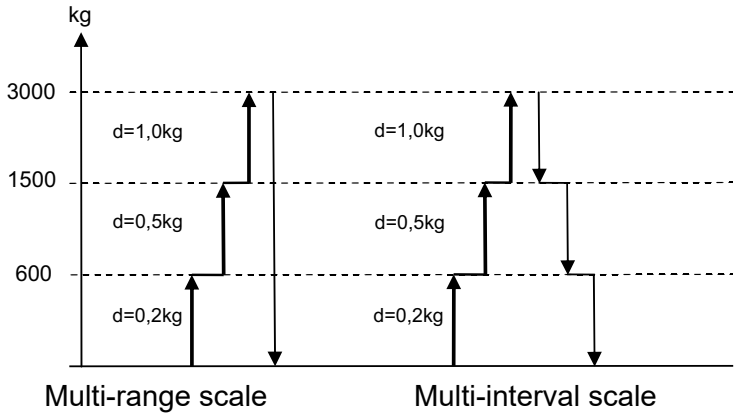
When unloading the scale, the last reached division step is retained until the zero point is reached.

Attention
Inadmissible is also changing to a lower range after tare.

A multi-interval scale has a measuring range, which is sub-divided into several sections with different division steps. The measuring range is automatically determined at decreasing and increasing load by the load.

A multi-interval scale features due to their division measuring ranges higher flexibility in comparison with multi-range scales. Switching to a lower division range by Tare or by using a predetermined preload value is possible.

The diagram below illustrates the principle of multi-range and multi-interval scales.



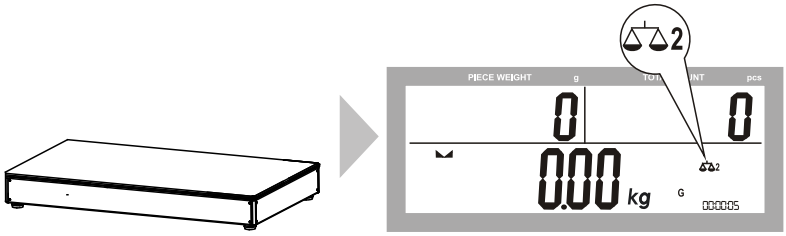
Note
The information is identical to those of simple weighing (see chap.4.8.1).

4.8.3 Weighing with reference scale

When a reference scale is connected it can be changed between the connected scales by pressing this button.



The active scale is shown at the bottom of the display.



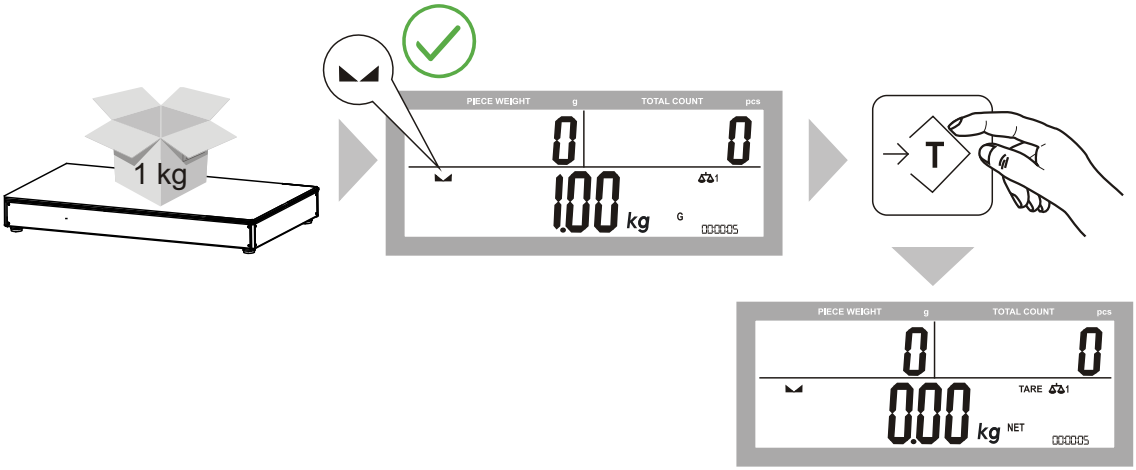
When a reference scale is connected, additionally, the determined piece weight on the reference scale is accepted with the bulk scale. If this feature is not desired, it can be deactivated in the Quick menu under "reference scale".

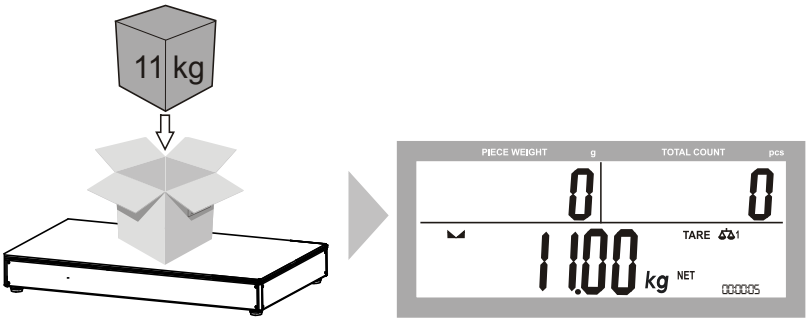
4.9 Tare weighing

4.9.1 Determination of tare by weighing

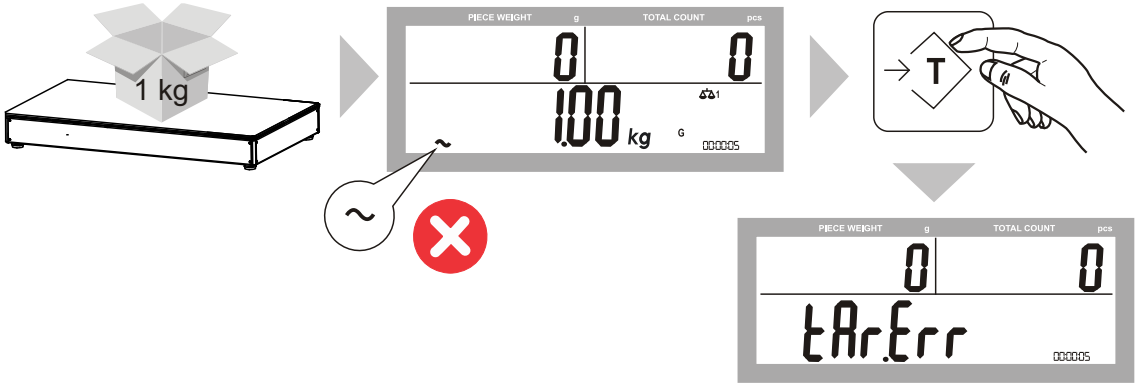
The weight of each weighing container can be removed by pressing, so that the net weight is displayed.

Tare (with stable weight):

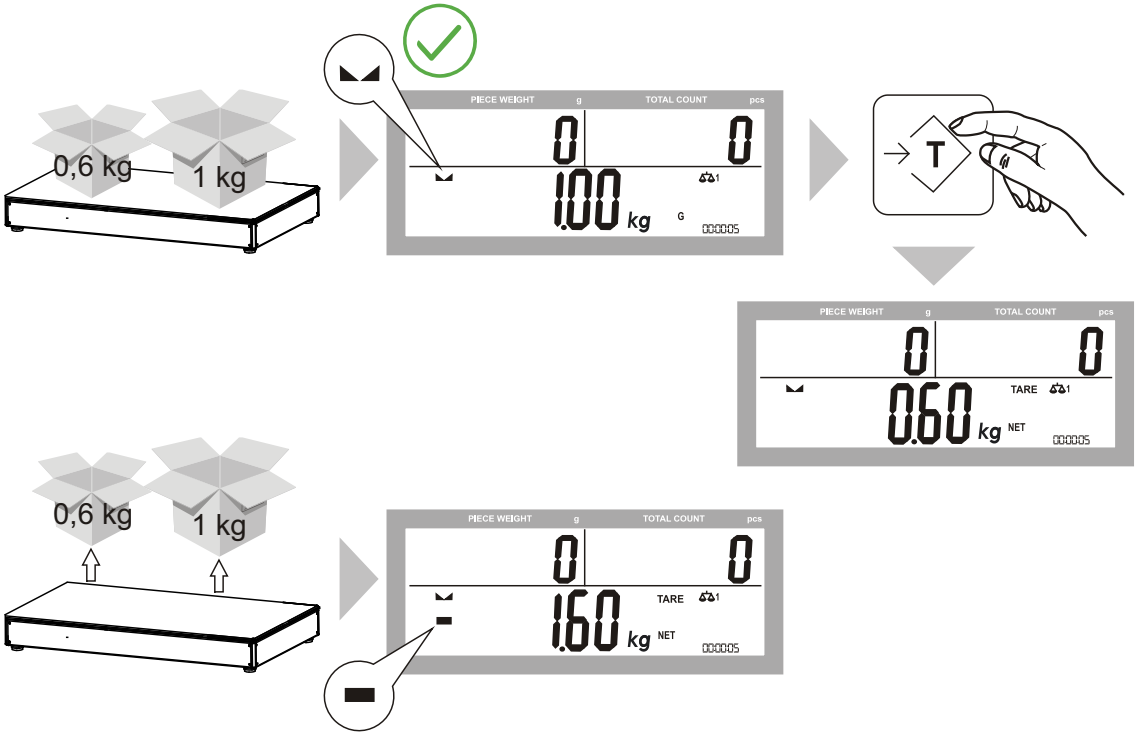




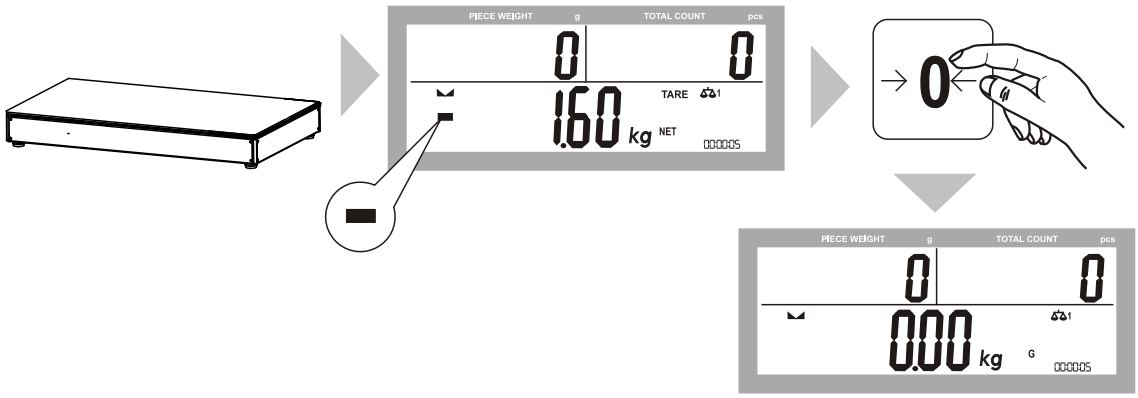
Incorrect taring (with unstable weight):



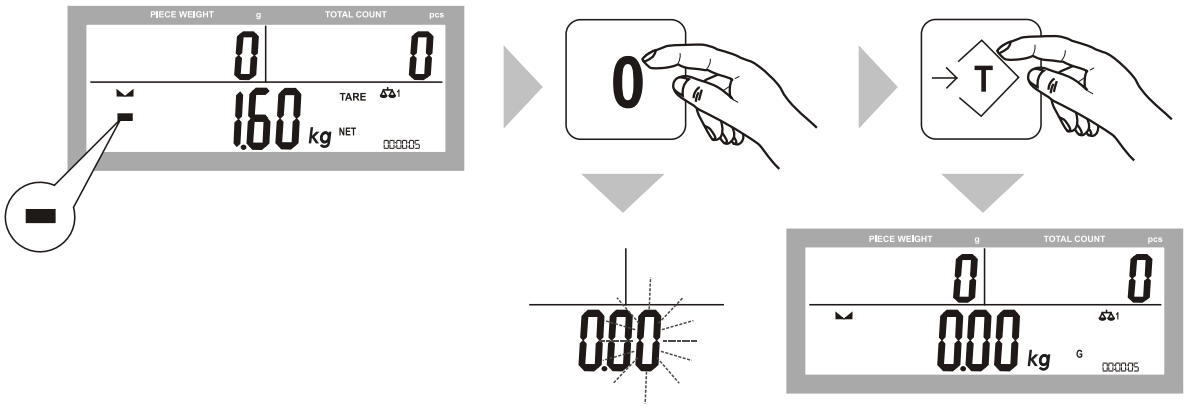
Second tare (e.g. when weighing in several components):



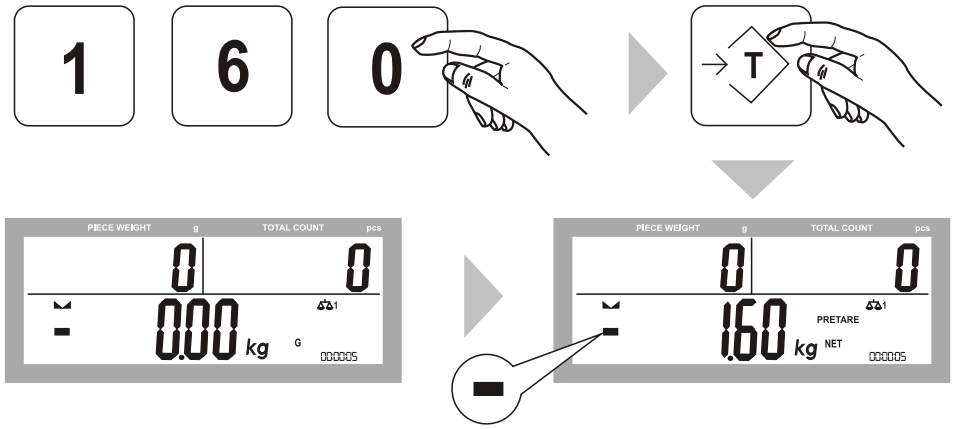
Clear tare



Clear tare by manual input:



4.9.2 Numeric input of tare



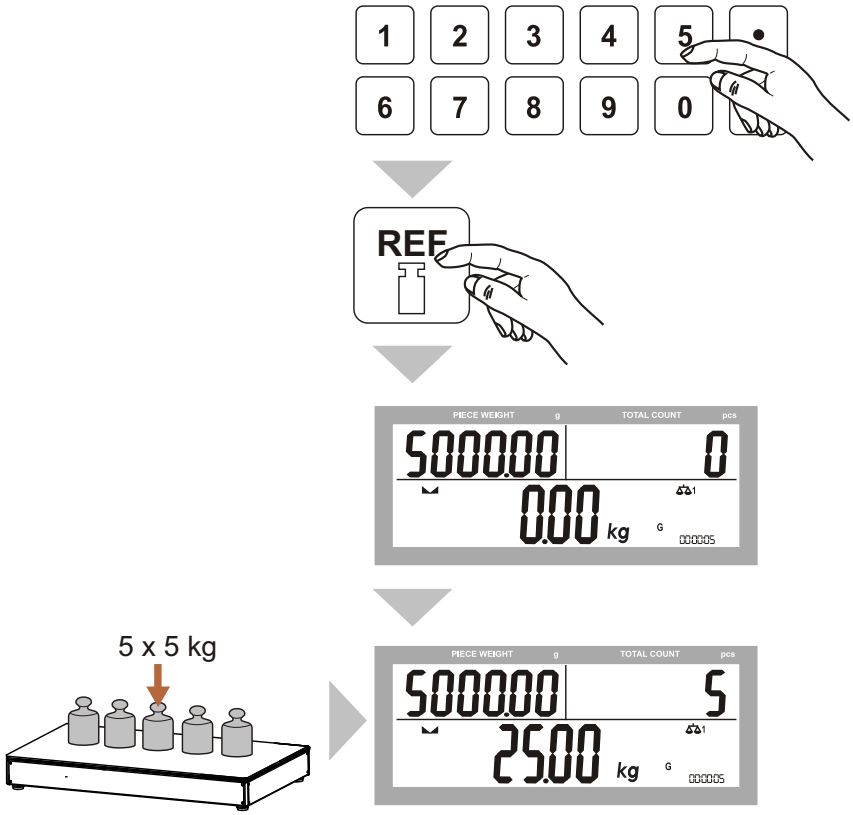
4.10 Piece counting

Note
If you are using a container, first tare its weight. Leave the container on the weighing platform.

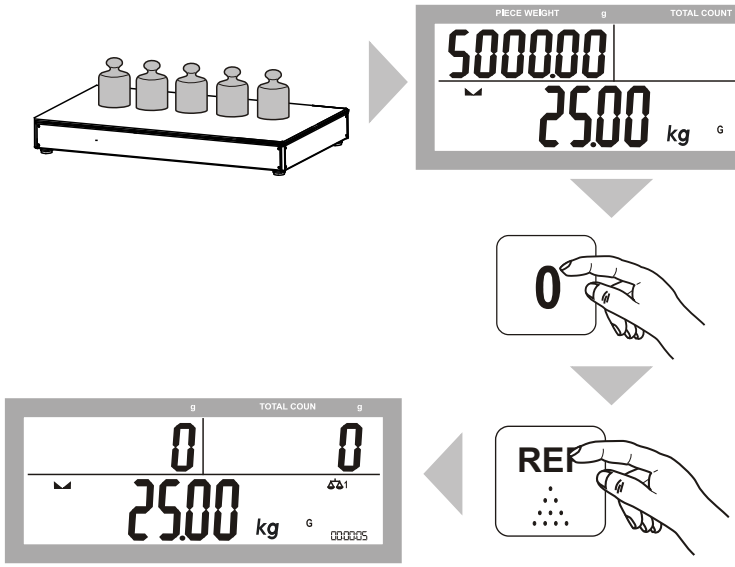
To count the items placed on the weighing platform, you have the following two options:

- Entering the piece weight.
- Entering the number of items placed on the weighing platform (the piece weight is determined by the scale).

4.10.1 Entering the piece weight

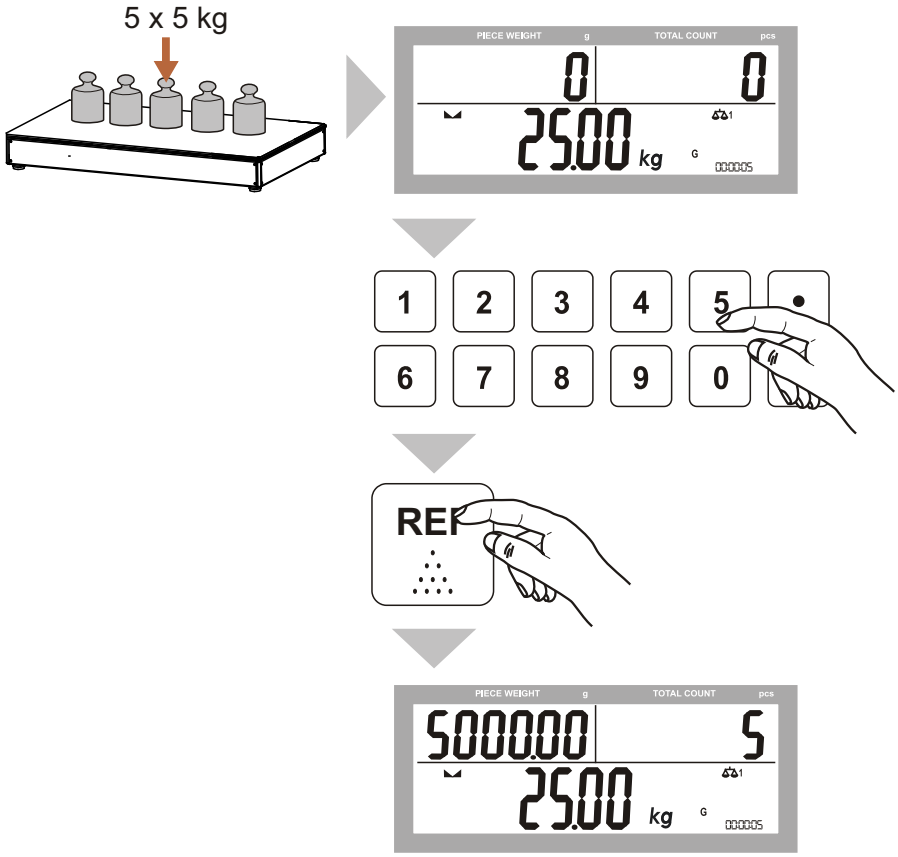


4.10.2 Clear unit weight



4.10.3 Entering the number of pieces

Note
It is recommended to use as large a reference quantity as possible. The scale determines the average piece weight and stores it as a reference value. Since individual pieces rarely have exactly the same weight, the larger the reference quantity, the more accurate the reference weight will be.



4.11 Accumulation memory

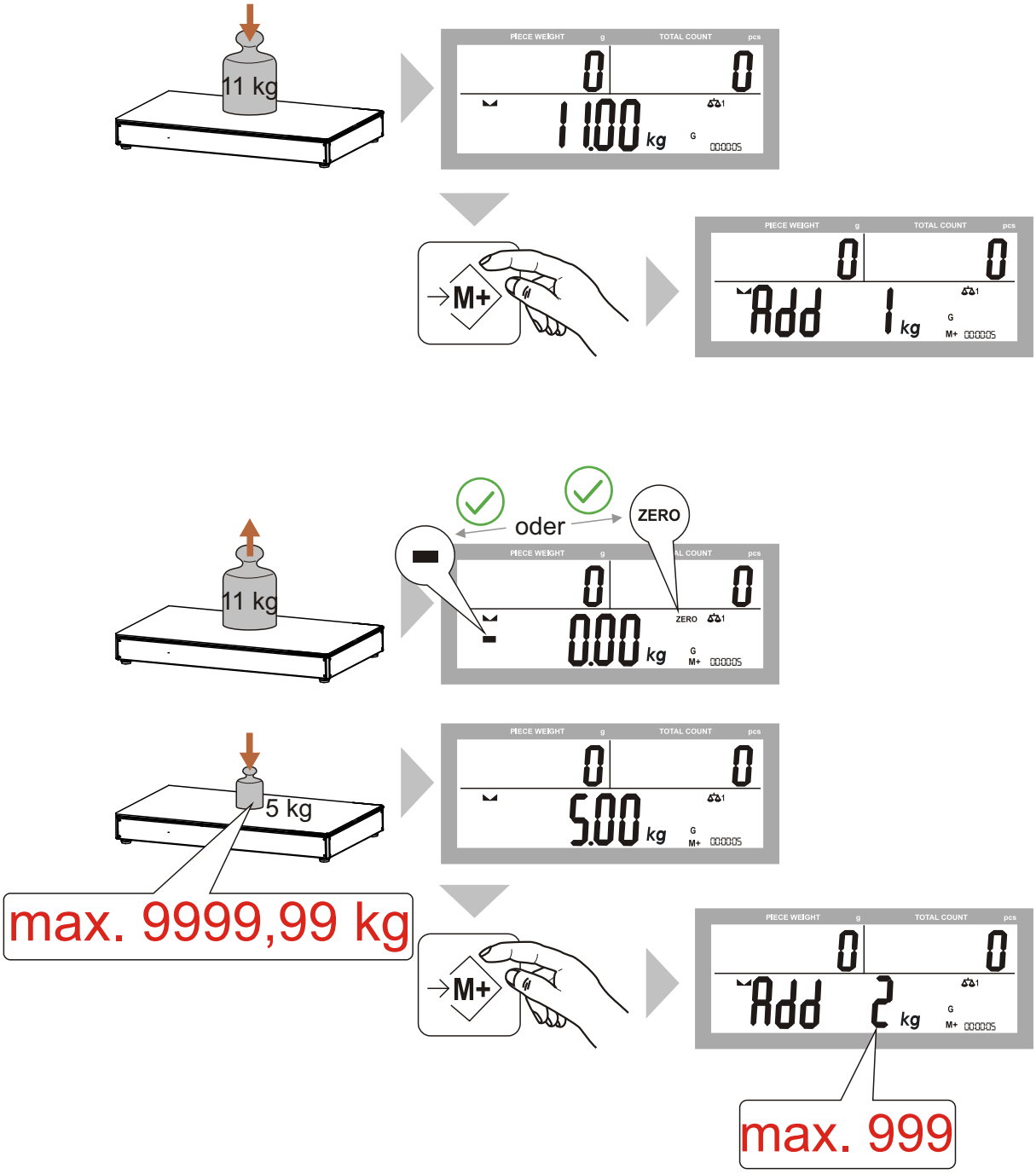
The display provides several weight accumulation functions. The saved weights are not deleted when the scale is switched off.

Note
Up to 999 values (counts) or a total weight of up to 999999 can be saved in the accumulation memory.

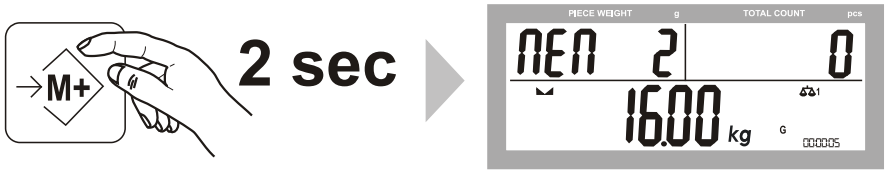
Note
The scale must return to zero (0) or to a negative value before another weight can be added to the memory. For applications subject to legal metrological control, only a stable weight value can be stored. In the event of a power failure, all stored values will be lost.

4.11.1 Manual summation

Note
For manual accumulation to function, COM mode PR2 must be selected.

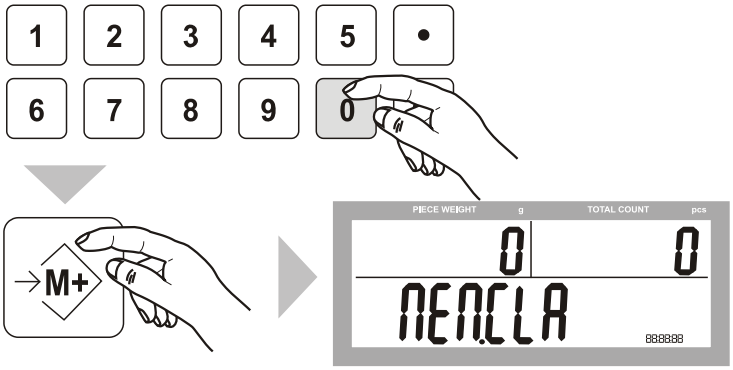


4.11.2 Show accumulation memory



Note
Pressing the 'Print' key prints the results and automatically clears the accumulation memory.

4.11.3 Clear accumulation memory



„Memory Clear“

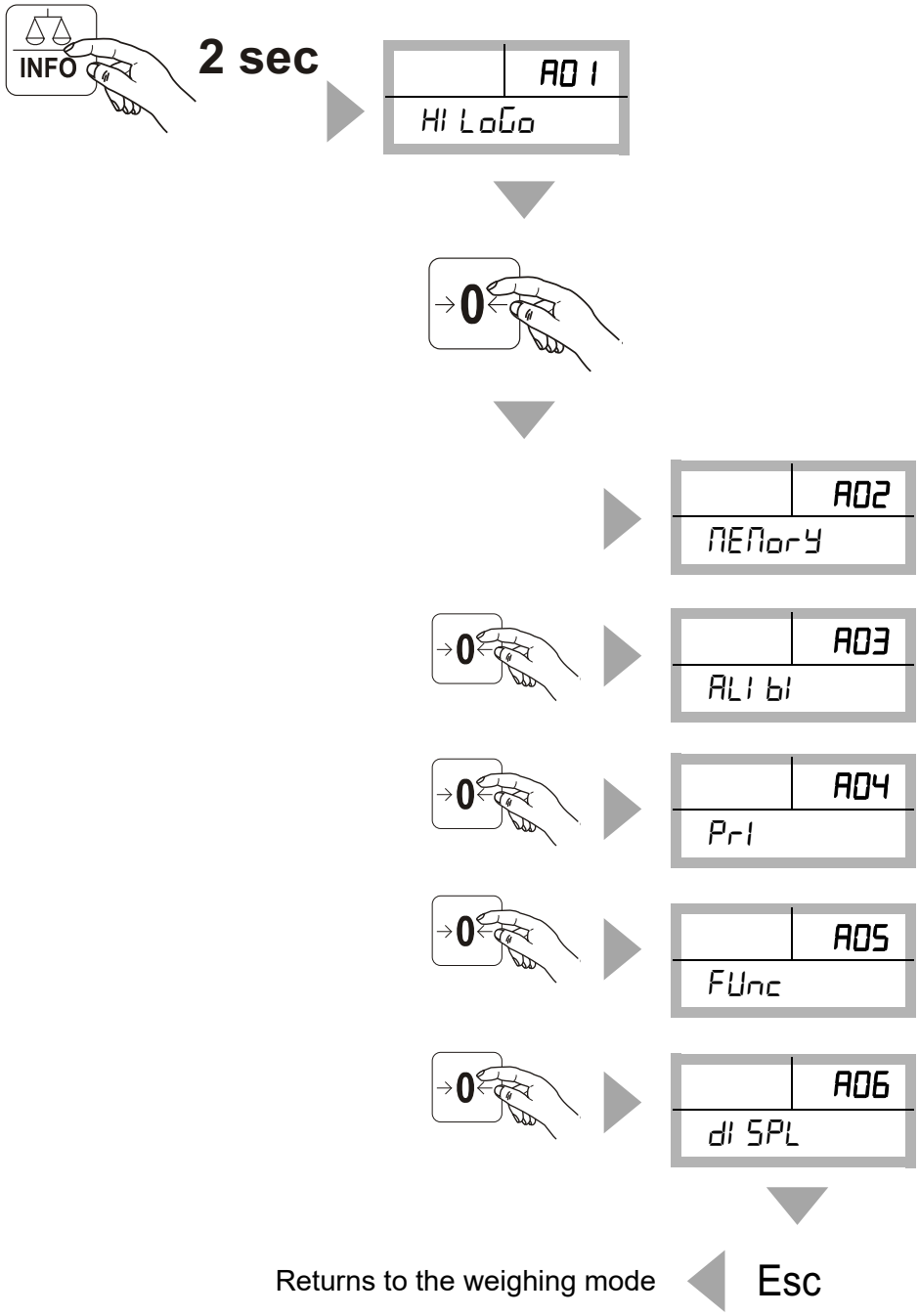
4.12 Quick menu

4.12.1 Navigation in the quick menu

Navigation		
NET / G / B	◀	Move the active number to the left <LEFT>
→0←	▲	Change of the parameter <UP>
→T←	↵	Saving the settings <ENTER>
PRINT	Esc	Leaving the functional level (ESCAPE)

4.12.2 Quick menu - overview (HiLoGo)

Note
The scale must be in weighing mode.



4.12.3 Quick menu - short description

Note
The Quick menu is used for simplified input or reading out of parameters and parameterization of the display. In the Quick Menu parameters to operate at checkweighing, the alibi memory, the printer and backlight and automatic shutdown can be set.

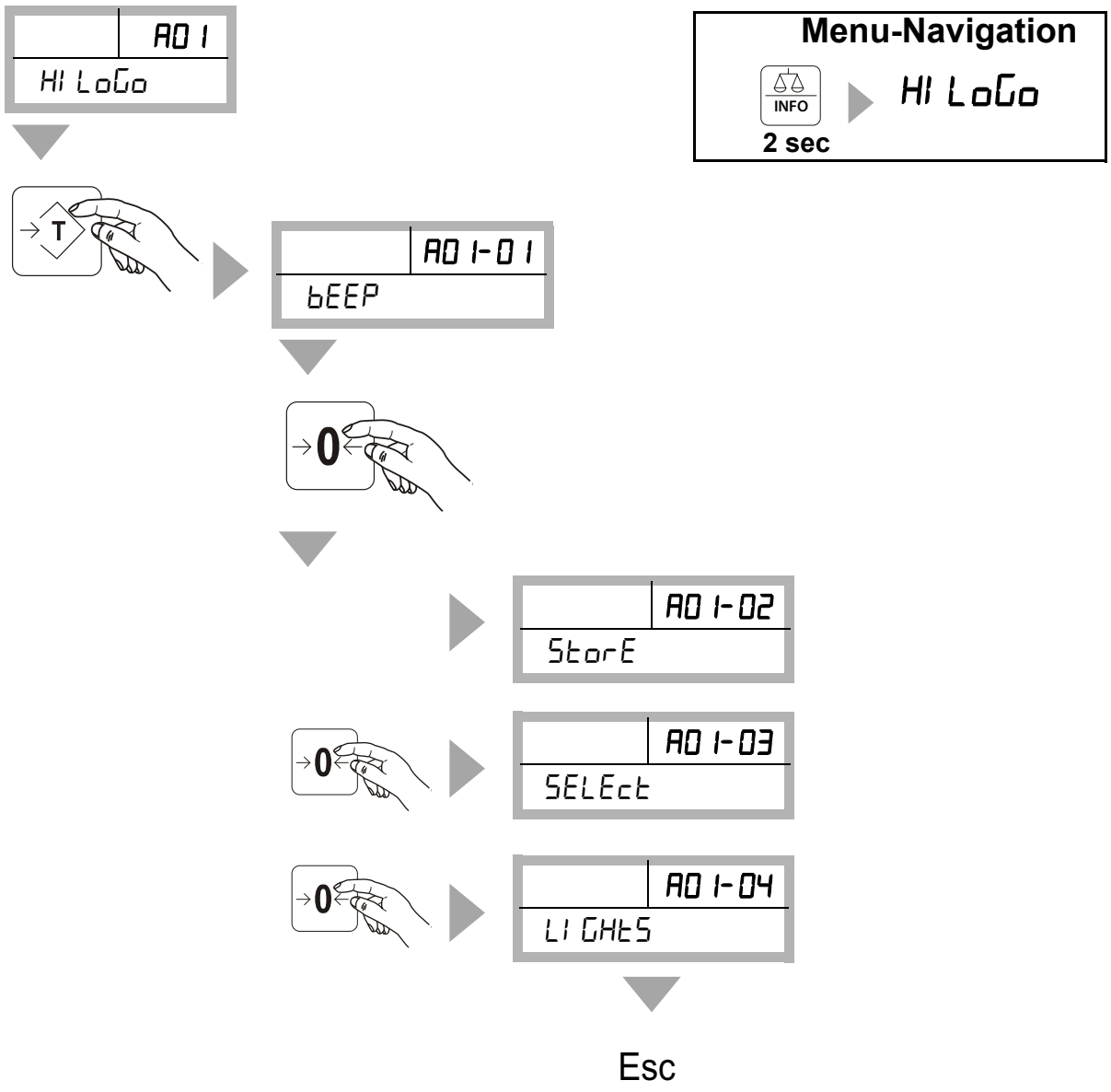
Note
The scale must be in weighing mode to access the quick menu. Press and hold the <INFO> key for two seconds.

Menu	Submenu	Option	Function
A01 HI LoGo Set limit values	A01-01 bEEP (Setting the acoustic signal for checkweigh-ing.)	oFF	Acoustic signal is deactivated.
		BE OH	Acoustic signal: Weigh within the selected limits.
		BE Lo	Acoustic signal: Weigh below the selected limits.
		BE HI	Acoustic signal: Weigh above selected limits.
		BEHI Lo	Acoustic signal: Weigh below / above the selected limits.
	A01-02 StorE Saving the limit values (HLG-Mode)	oFF	„HI“ and „Lo“- limit values must be set again after a power reset.
		on	„HI“ and „Lo“- limit values are saved.
	A01-03 SELECt Selection of weight or piece count check	CNt	Piece count check
		WEI	Weight check
	A01-04 LIGHtS Brightness	„10" --> Enter the value (0, 5, 10, 15, 20....100, off) using the <UP> key. oFF = The signal light is deactivated.	Settings for the brightness of the signal light LEDs. Brightness 0 - 100 %
A02 MEMorY Accumula-tion memory	A02-00 HI LOGO		No function on the MCI indica-tor.

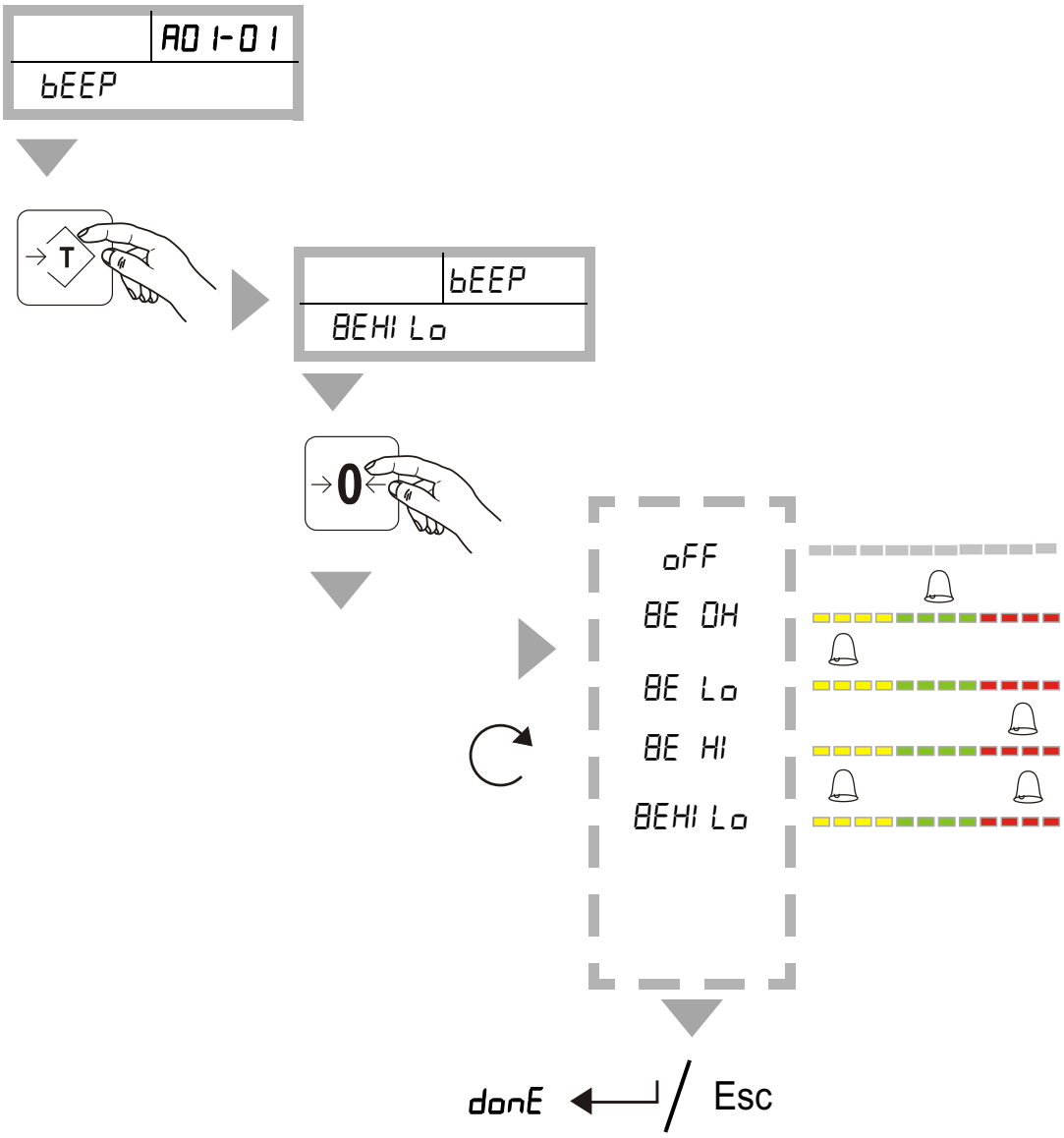
Menu	Submenu	Option	Function
A03 ALI bI	A06-01 Ed. 0 (Edit Alibi Number)	„000000“ flashes --> Enter the value using the <UP> and <LEFT> keys.	Enter the alibi number to request saved alibi values for calibrated scales.
	A03-01 GEt. LSt (Get Last Alibi Number)	„0“	The number of values saved in the accumulation memory.
A04 Pr 1	A04-01 I nFo Set the print parameters (print protocol, print output).	nUMbEr	on oFF Consecutive ticket number (for totals weighing in Pr2 or STC mode).
		ALI bI	on oFF If the alibi memory is switched on, the alibi number is also printed.
		dAtE	on oFF Date
		tI ME	on oFF Time
		Gro55	on oFF Gross
		NEtto	on oFF Net
		tArE	on oFF Tare
		t. Gro55	on oFF Total gross (Mode Pr2 or STC)
		t. NEtto	on oFF Total net (Mode Pr2 or STC)
		t. tArE	on oFF Total tare (Mode Pr2 or STC).
		ScL. nMb	on oFF Print scale number

Menu	Submenu	Option	Function
A04 Pr 1	A04-01 InFo	CoUntS	on oFF Number of pieces
		U.WEi	on oFF Piece weight
		t.CoUnt	on oFF Total number of pieces
	A04-02 CoPY (Number of prints)	Value 0 - 4	Number of (print) copies to be printed.
A05 FUnc Function	A05-00 APP.cnt	rEF.ScL Reference scale selection	rF.cH 1 Channel 1 rEF.oFF Function disabled
	A05-01 ScL.nUb	„0000“ flashes --> Enter the value using the <UP> and <LEFT> keys or the numeric keypad.	Enter the scale number.
A06 diSPL Display	A06-01 LIGHt (Backlight)	bL AU	10/20/30/40/50/60/70/80/90/ 100/110/120 --> Set the value with <UP>. Automatic activation / switch-off of the background lighting after N seconds. The background lighting is automatically activated when the weight changes or a key is pressed.
		bL oFF	Background lighting always on.
		bL on	Background lighting always off.
	A06-02 AU oFF (Automatic shut-off)	„000000“ flashes --> Time (minutes) using <UP> and <LEFT> and confirm with <ENTER>. 0 - 99 Value „00“ = no shut-off	Automatic shut-off of the scales, if no key is actuated and the weight does not change.

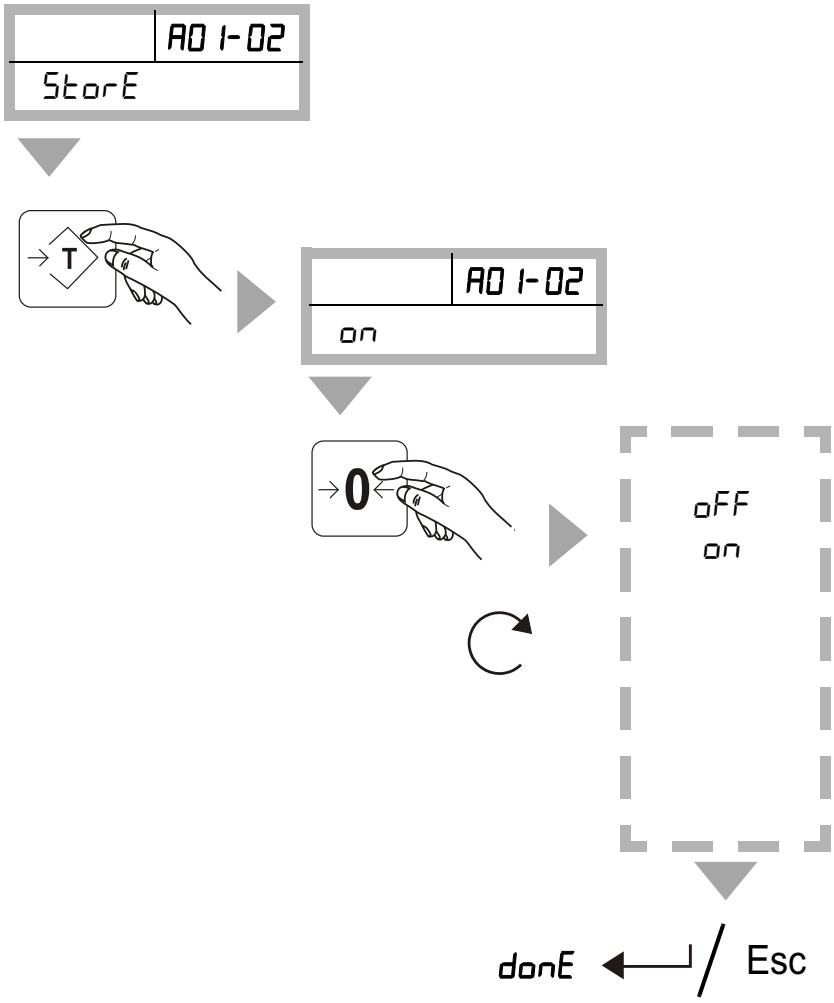
4.12.4 Quick menu A01 - overview HILoGo (set limit values)



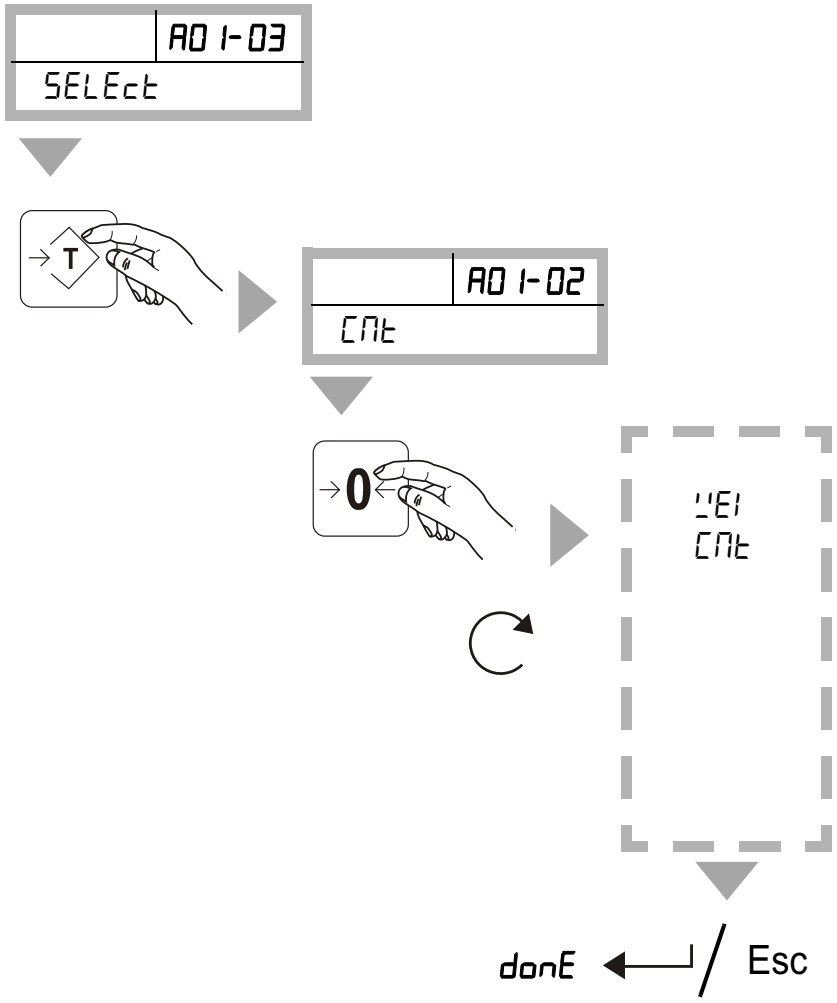
Quick menu A01-01 - BEEP (set acoustic signal)



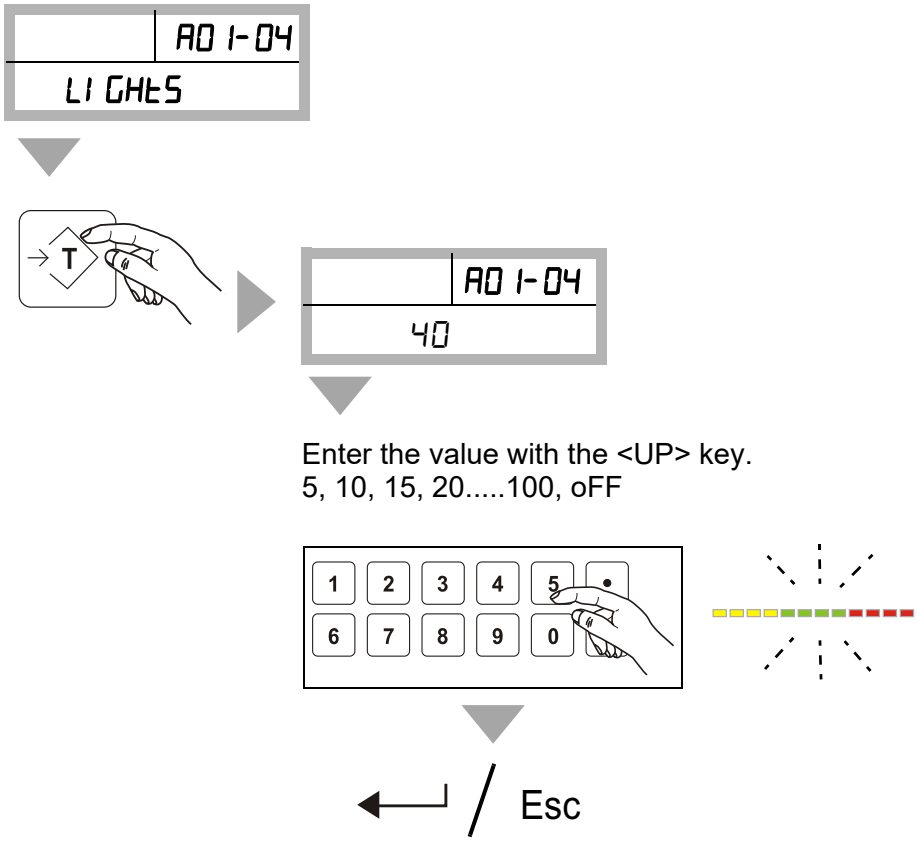
Quick menu A01-02 - STORE (storage of limit values))



Quick menu A01-03 - SELECT (weight / piece count check selection)



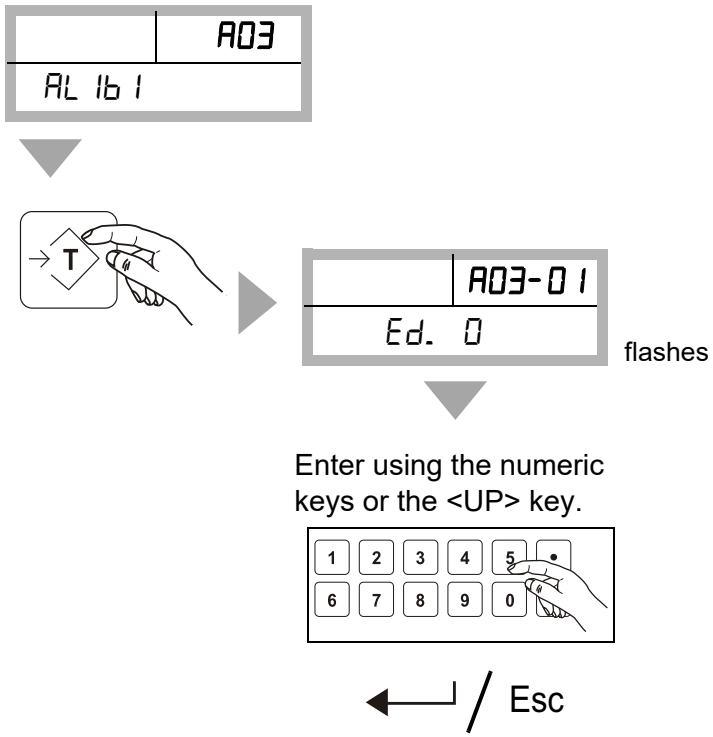
Quick menu A01-04 - LIGHTS (signal light brightness adjustment)



4.12.5 Quick menu A02 - MEMORY (accumulation memory)

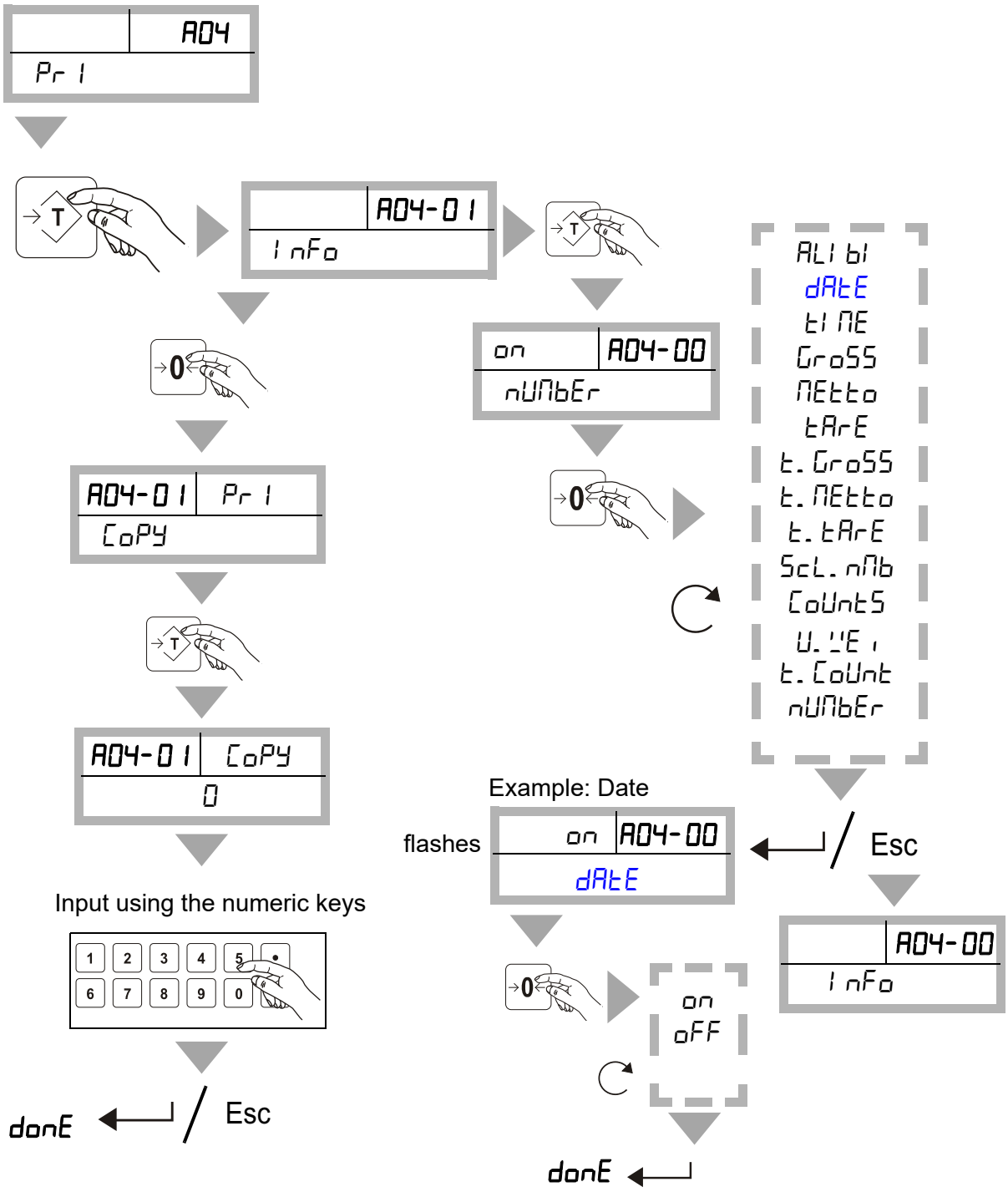
Note
The memory menu has no function on the MCI indicator.

4.12.6 Quick menu A03 - ALIBI (request the alibi number)

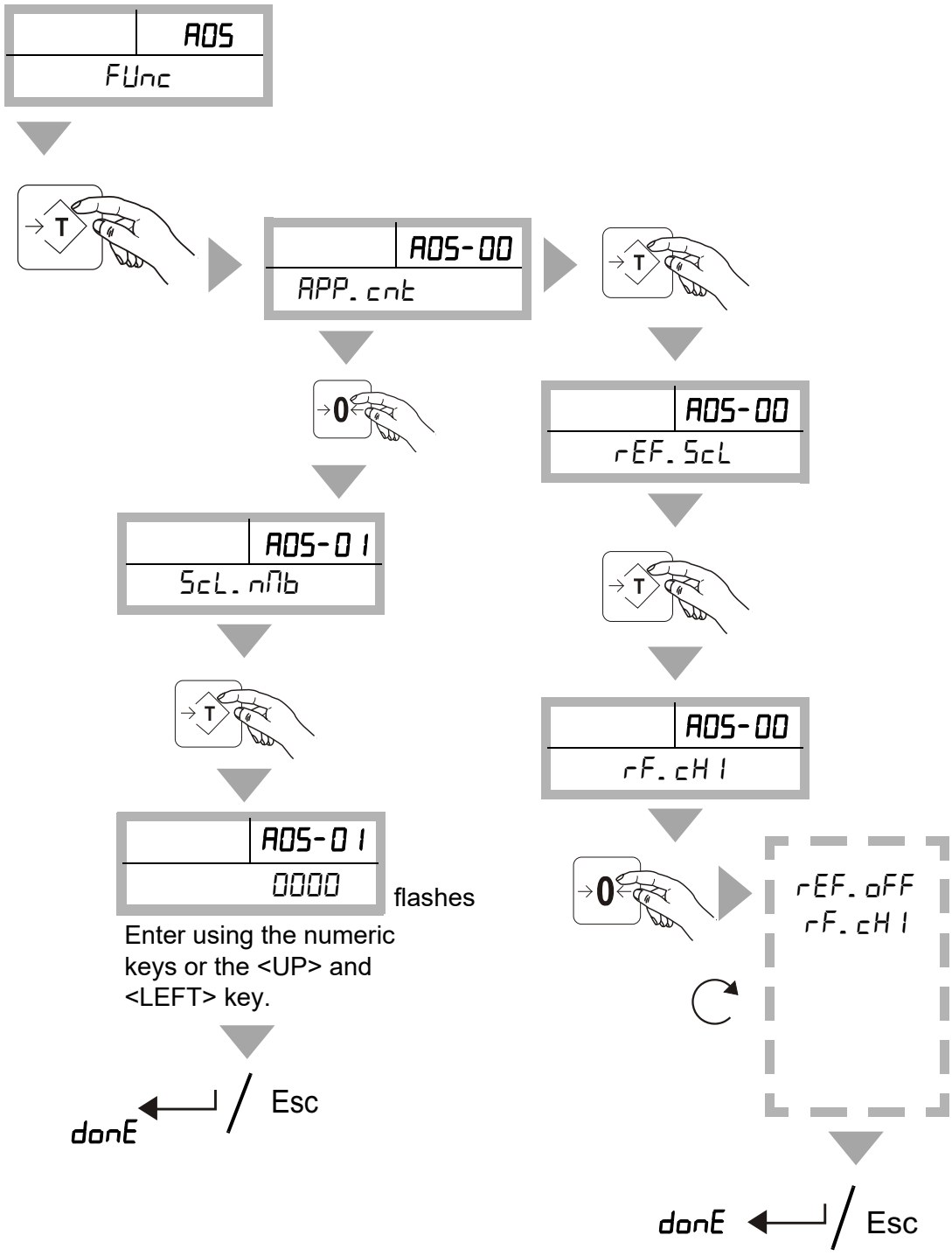


4.12.7 Quick menu A04 - PRI (print settings)

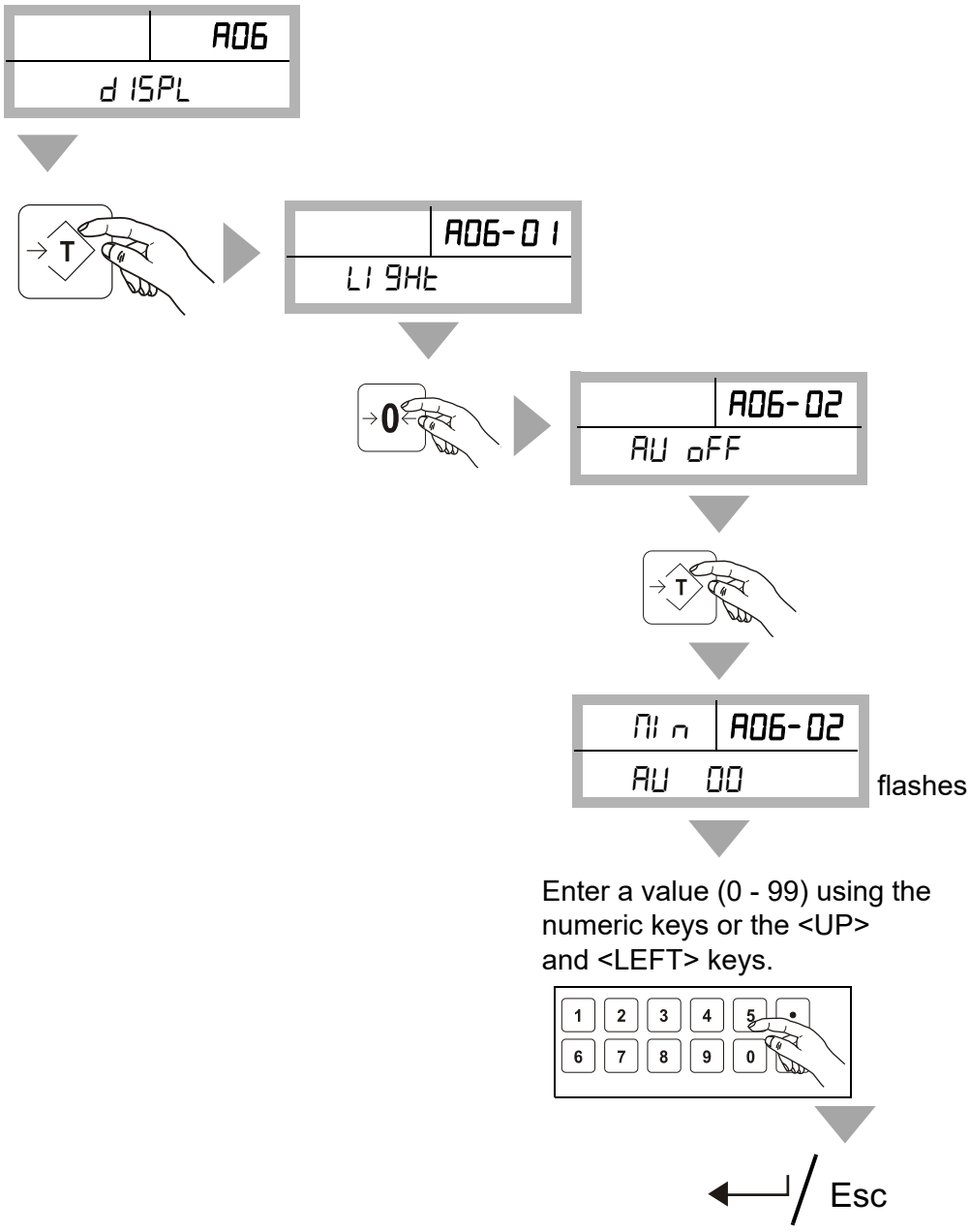
Note
If parameters such as the date and time have been turned off on the menu, this cannot be printed, even then, if the parameters for date and time have been set to ON. The printout of subtotals is not possible.

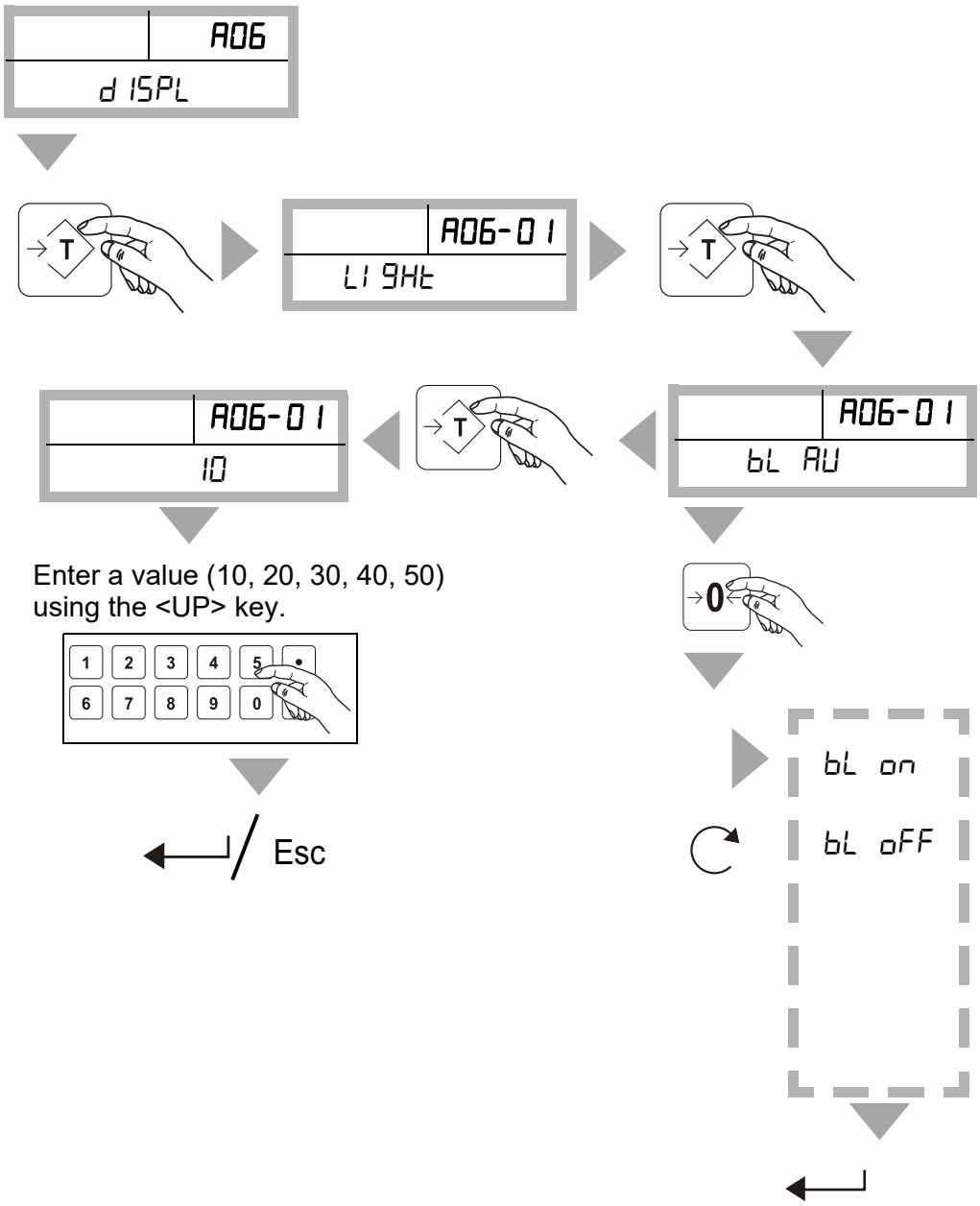


4.12.8 Quick menu A05 - FUNC (functions)



4.12.9 Quick menu A06 - DISPL (display)




A06
d ISPL
T
A06-01
LI 9HE
T
A06-01
bL AU
0
bL on
bL oFF
T
A06-01
10
Enter a value (10, 20, 30, 40, 50)
using the <UP> key.
1 2 3 4 5 .
6 7 8 9 0
Esc

4.13 Checkweighing

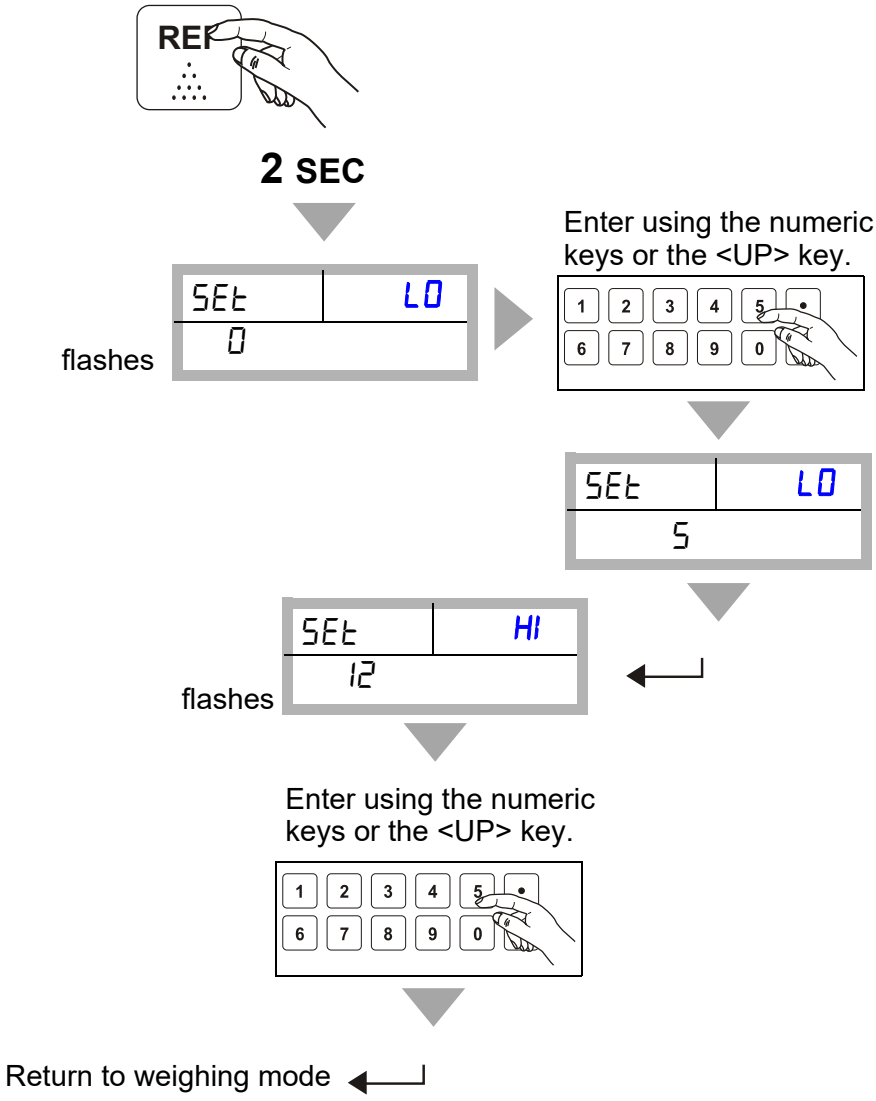
With the checkweighing you can specifically check weights or piece counts. At the checkweighing a beep sounds (adjustable) when the weight or piece count on the scale reaches or exceeds a saved limit.

4.13.1 Setting limit values (max./min.)

Note
Weight or piece count check must be selected in the quick menu *AD 1-03 SELECt*!

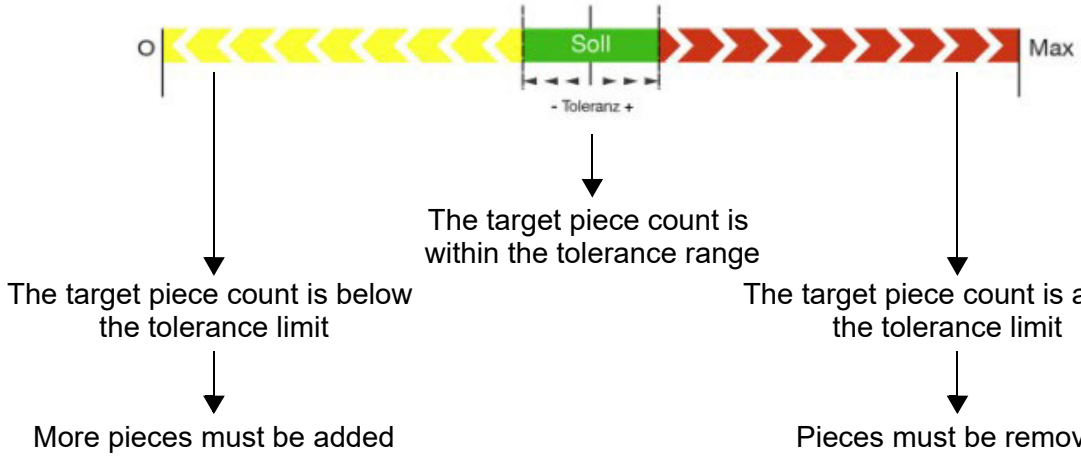
Note
The set limits (max. / min.) are saved permanently and are also available after a power failure, if the storage of the limit values is set to *on* in menu *AD 1-02 StorE*.

Enable checkweighing

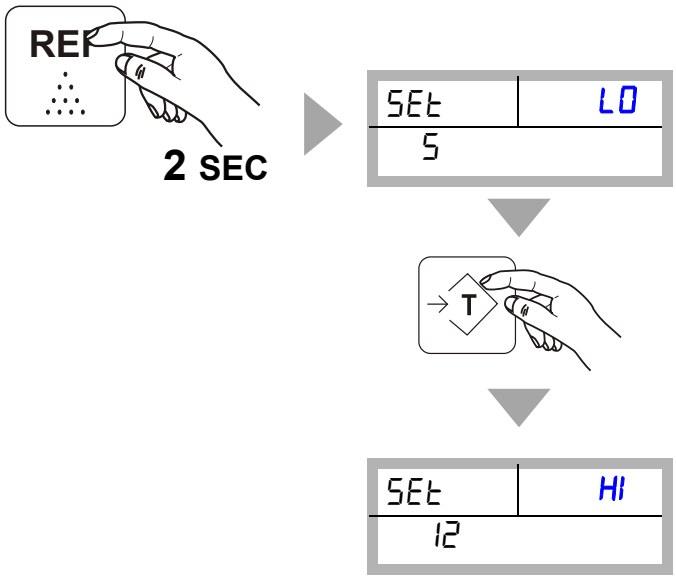


4.13.2 Checkweighing (signal light)

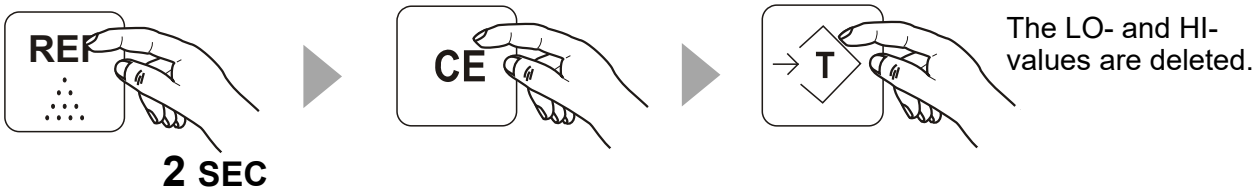
Reaching the target value is indicated by an acoustic or visual signal if the acoustic signal setting and the signal light are activated in the quick menu.



4.13.3 Check the limit values



4.13.4 Clear the limit values

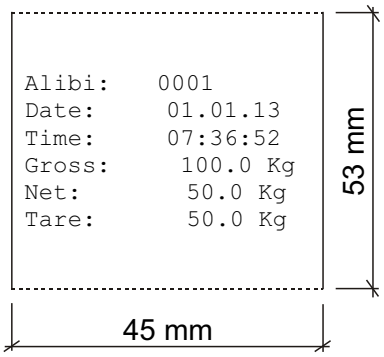


4.14 Printout

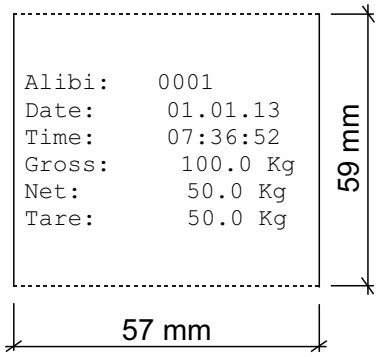
Before a printer can be put into operation, the appropriate parameter settings in the function menu (see chapter 5.2.2 COM-Mode) and in the quick menu (see chapter 4.12.7 “Quick Menu A04 - Pri “) must be made.

4.14.1 Standard printout for “Printer 1“ – “Printer 6“

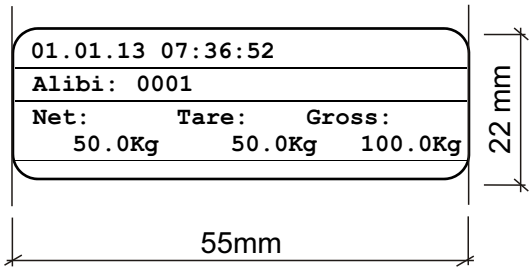
Printer 1



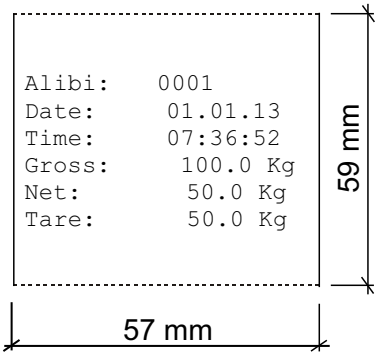
Printer 2



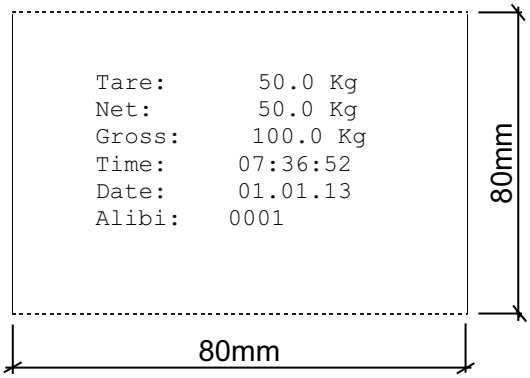
Printer 3



Printer 4



Printer 5



Printer 6 (identisch Printer 3)

5 Function menu (advanced functions)

5.1 Navigation in the function menu

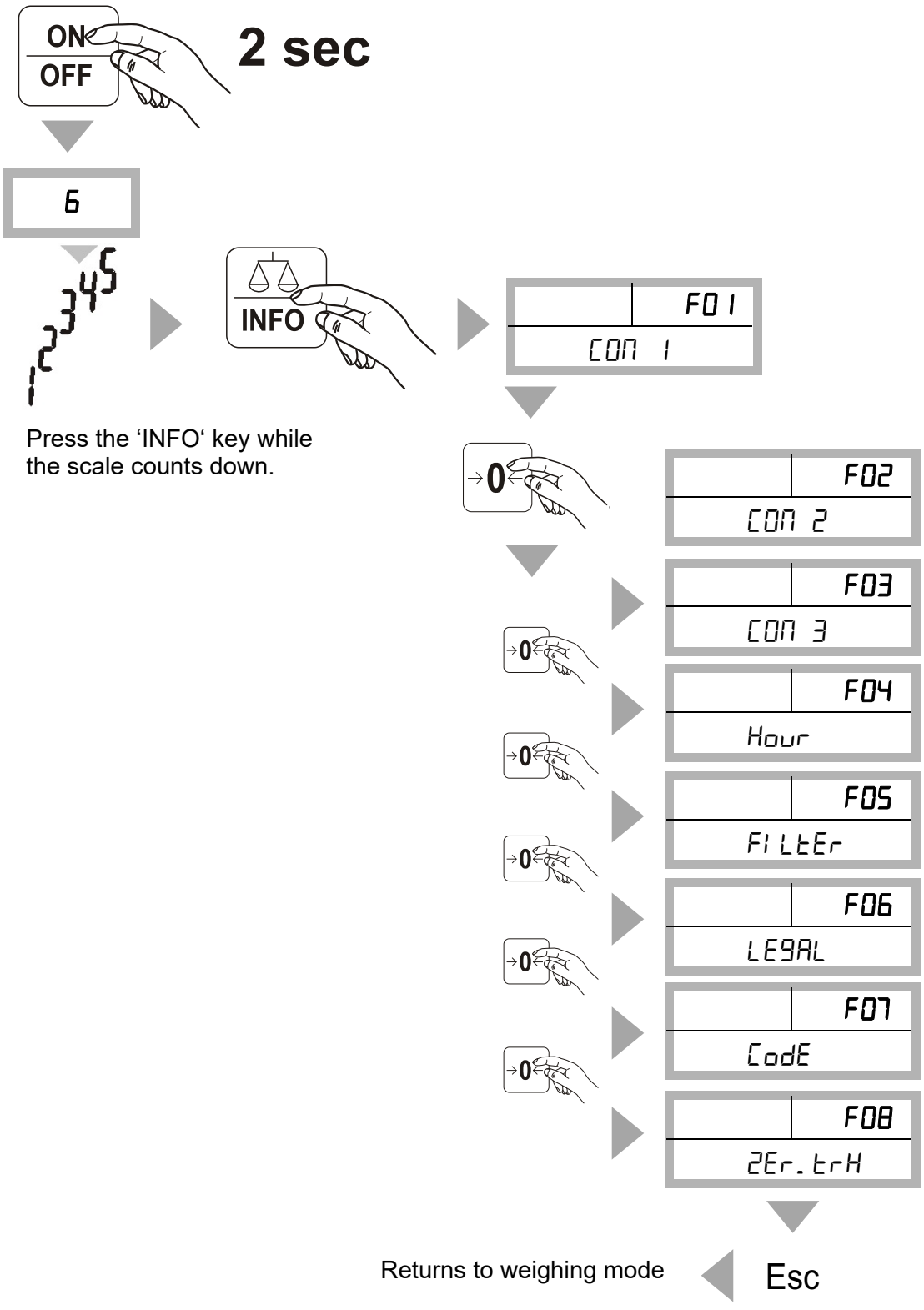
Navigation	
NET / G / B ◀	Move the active number to the left <LEFT>
→0← ▲	Change of the parameter <UP>
→T← ↵	Saving the settings <ENTER>
PRINT Esc	Leaving the functional level (ESCAPE)

Note
If you do not wish to save the modified parameters, press the **Esc** (PRINT) key repeatedly to exit the menu. The weighing terminal will switch off.

Note
For parameter changes to take effect, they must be saved by pressing the **Enter** key.

5.2 Function menu - overview

To access the function menu, proceed as follows:



5.2.1 Function menu - short description

Menu	Submenu	Option	Function
F01 CON 1 F02 CON 2 F03 CON 3 Setting the specifications of the interfaces.	F01-01 F02-01 F03-01 ModE Transmission mode selection	oFF	No data are transmitted
		CONt	Continuous transmission. Do not use for connected printer!
		St 1	Automatic printout when the weight is stable. Scale zero required, i.e. the weight must be removed from the scale.
		St2 (only for non-verified scales)	Automatic printout when the weight is stable. Zero crossing not required.
		StC	Automatic printout when the weight is stable and store in the accumulation- and alibi memory. Zero crossing required, i.e. the weight must be removed from the scale.
		Pr 1	Transmission by Print key (the weight is stable). Zero crossing required, i.e. the weight must be removed from the scale.
		Pr2	Transmission by M+ key (the weight is stable) and store in the accumulation- and alibi memory. Zero crossing required, i.e. the weight must be removed from the scale.
		ASH	Ask-Mode, bi-direction, more details in the communication protocol (please request if required). Do not use for connected printer!
		HEArtb (only for non-verified scales)	Sends data cyclically (T1) via the COM port.

Menu	Submenu	Option	Function
F01 CON 1	F01-01 ModE	1 ot (only for non-verified scales)	Data is transmitted via the COM port once the scale has remained stable for the configured time (T2).
	F01 -02 F02 -02 F03 -02 oUtP Peripheral devices (Selection of the attached printer or device)	PC	PC
		Print 1	Citizen CBM
		Print 2	HPP-250
		Print 3	LP-50
		Print 4	HPP-250 for pallet trucks HLS.
		Print 5	HP083
		Print 6	LP-50 for HLS pallet truck
		QrC.dSP	QR code display
		rMtdSP	Remote display: RD50, RD100, RD150 and RD195. The piece weight is displayed.
		LIGHtS	Status lamp SL 3
		rMcnt	Remote display: RD50, RD100 and RD150. Displaying the number of pieces
		UAr.Prt (only for non-verified scales)	User-configurable protocol.
	F01 -03 F02-03 F03-03 BAUd Baud rate	1200 2400 4800 9600 14400 19200 28800 38400 56000 57600 115200	Data transmission speed (Baud rate).

Menu	Submenu	Option	Function
F01 CON 1	F01-04 F02-04 F03-04 PArt Parity	8n1	8 data bits, no parity (default)
		7E1	7 data bits, even-parity
		7o1	7 data bits, odd-parity
	F01-05 F02-05 F03-05 n_rSt Network reset	no YES	Network reset no/yes
	F01-07 F02-07 F03-06 brIdgE	OFF br 1.1-2 br 1.1-3 br 1.2-3	Only for non-verified scales! Signal forwarding between the COM ports.
	F01-08 F02-08 F03-08 Iot-t1	Time setting (T1) for COM mode = HEArtb (oder COM-Mode = Iot)	
		Hour	00 flashes, enter the value.
		Min	00 flashes, enter the value.
		SEc	00 flashes, enter the value.
	F01-09 F02-09 F03-09 Iot-t2	Time setting (T1) for COM mode = Iot	
		Min	00 flashes, enter the value.
F03 CON 3	F03-07 HBEE Adapter-Modul (WLAN-/ Ethernet- or Bluetooth-Modul)	POuuEr	On OFF Ein / Aus
		rESEt	HArd SOFt Netzwerk-Reset

Menu	Submenu	Option	Function
F04 Hour	F04-01 tIME	00 flashes	HH:MM:SS (time) No automatic changing of winter and summer time!
	F04 -02 dAtE Date	00 flashes	DD:MM:YYYY (Date)
	F04-07 Sho_ Display	Sh. ALL	Display date and time changes (interval: 30 seconds).
		Sh. oFF	Display is switched off.
		Sh. tIME	Display of the time
		Sh. dAtE	Display of the date.
F05 FILtEr Filter	F05 -01 ProFIL Profil	0. 6	Profil 0 (Fast filter) Profil 1 (Animal filter) Profil 2 (Dynamic filter) Profil 3 (Fast filter with individual settings) Profil 4 (Dynamic filter with individual settings) Profil 5 (Fine filter, Default for verified scales) Profil 6 (Fine filter 2)
	F05-02 SPS Sampling rate	6 12 25 50 100 200	Sampling rate-values
	F05 -03 _nd Delay	0. 99	Delay values for filling the filter (default 0).
	F05 -04 Att Damping	0. 10	Damping values (default: 2).

Menu	Submenu	Option	Function
F06 LEGAL	F06 -01 ALI bI Alibi memory	ALb. 5''	AL. oFF AL. on Alibi memory on oFF.
		ALb. 5H''	Ed. 0 flashes Entry of the alibi number.
	F06-02 tAc Electronic verification counter		(Verification) counter status is displayed.
F07 CodE	"- - - -"	Password entry (Password 0000)	Change-over to the "Menu protected by a password".
F08 2Er. trH	F08-01 0. 25d 0. 5d 1d 2d 3d 4d oFF	Automatic zero-setting range	oFF (default)

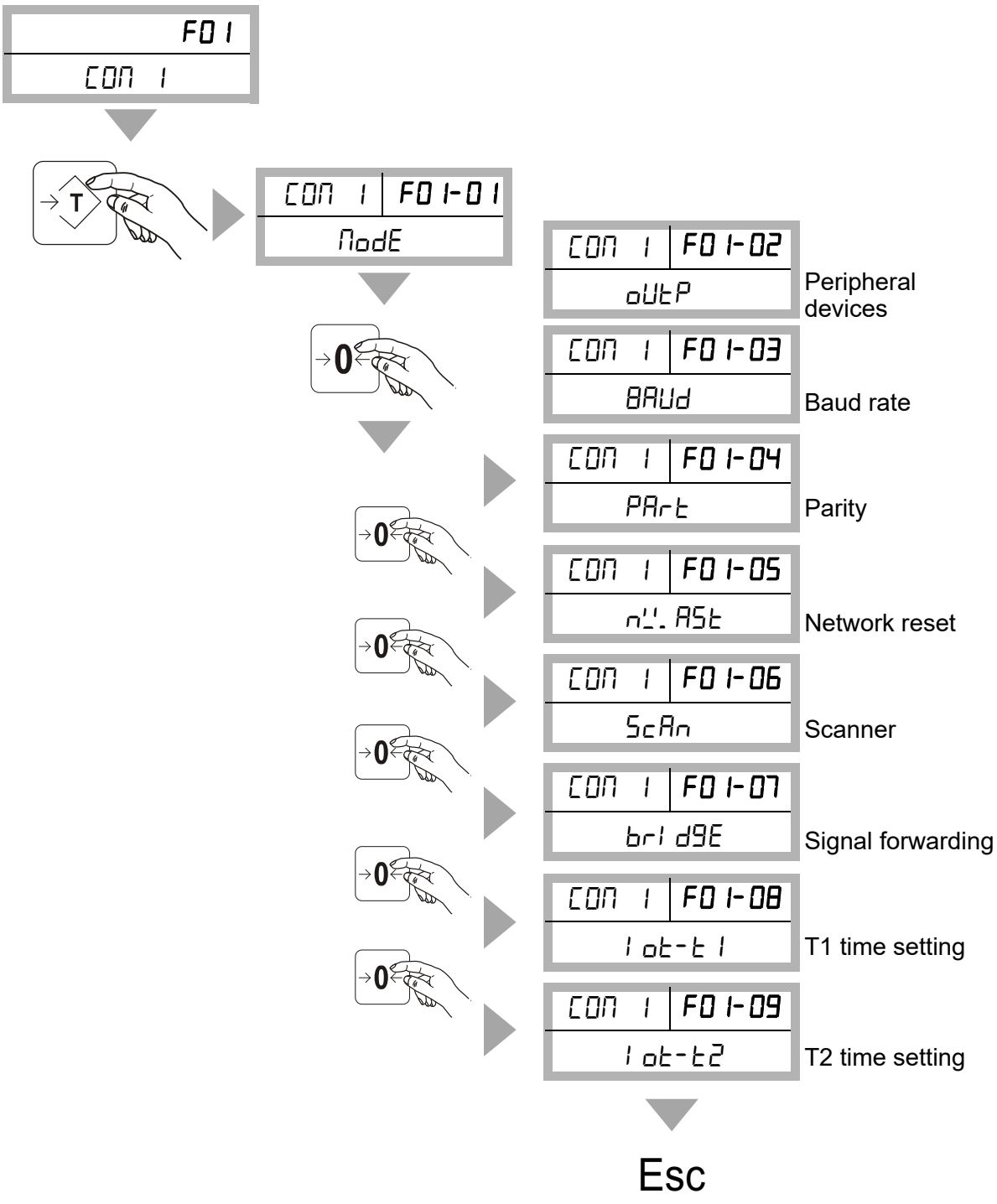
Attention
Once the verification counter is increased, the verification becomes null and void.

This is the symbol used in this manual for "Verification invalid".

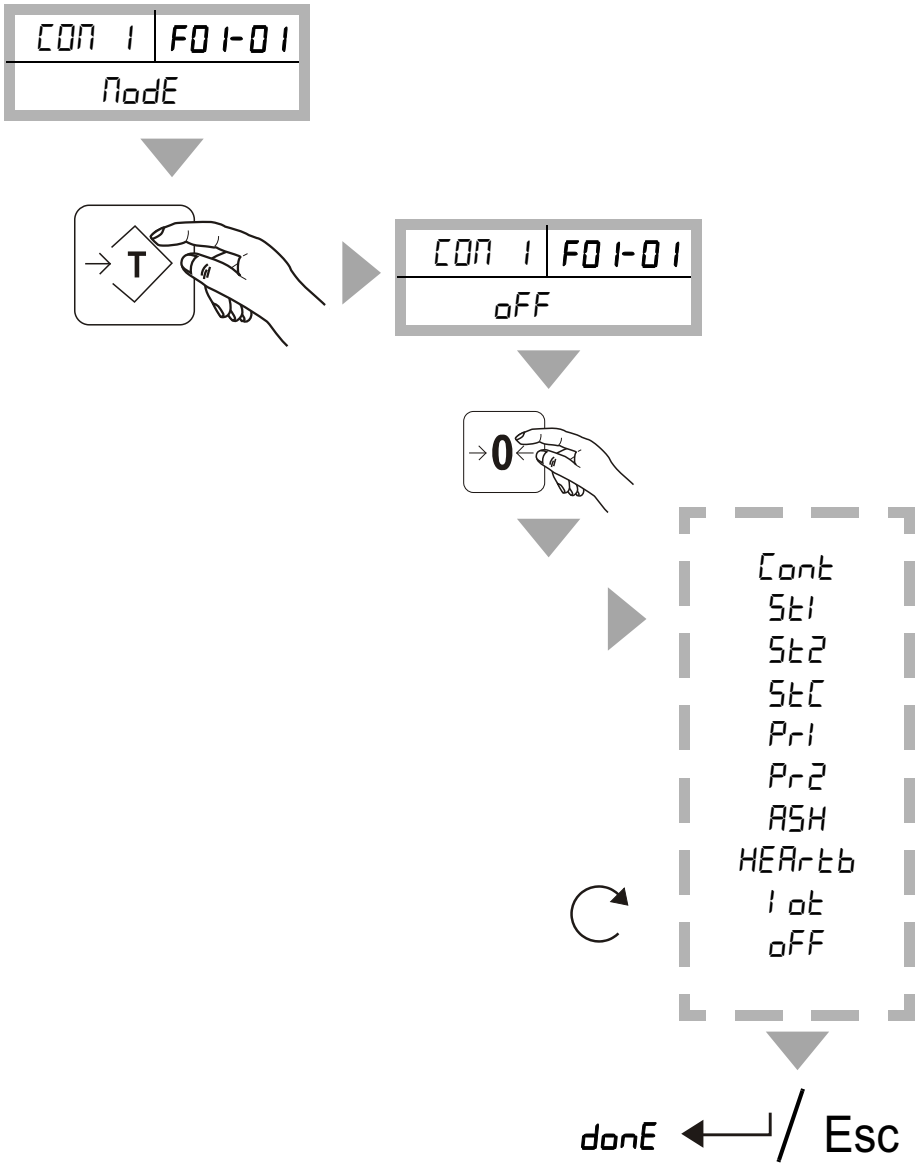


5.2.2 Function menu F01 - overview COM1

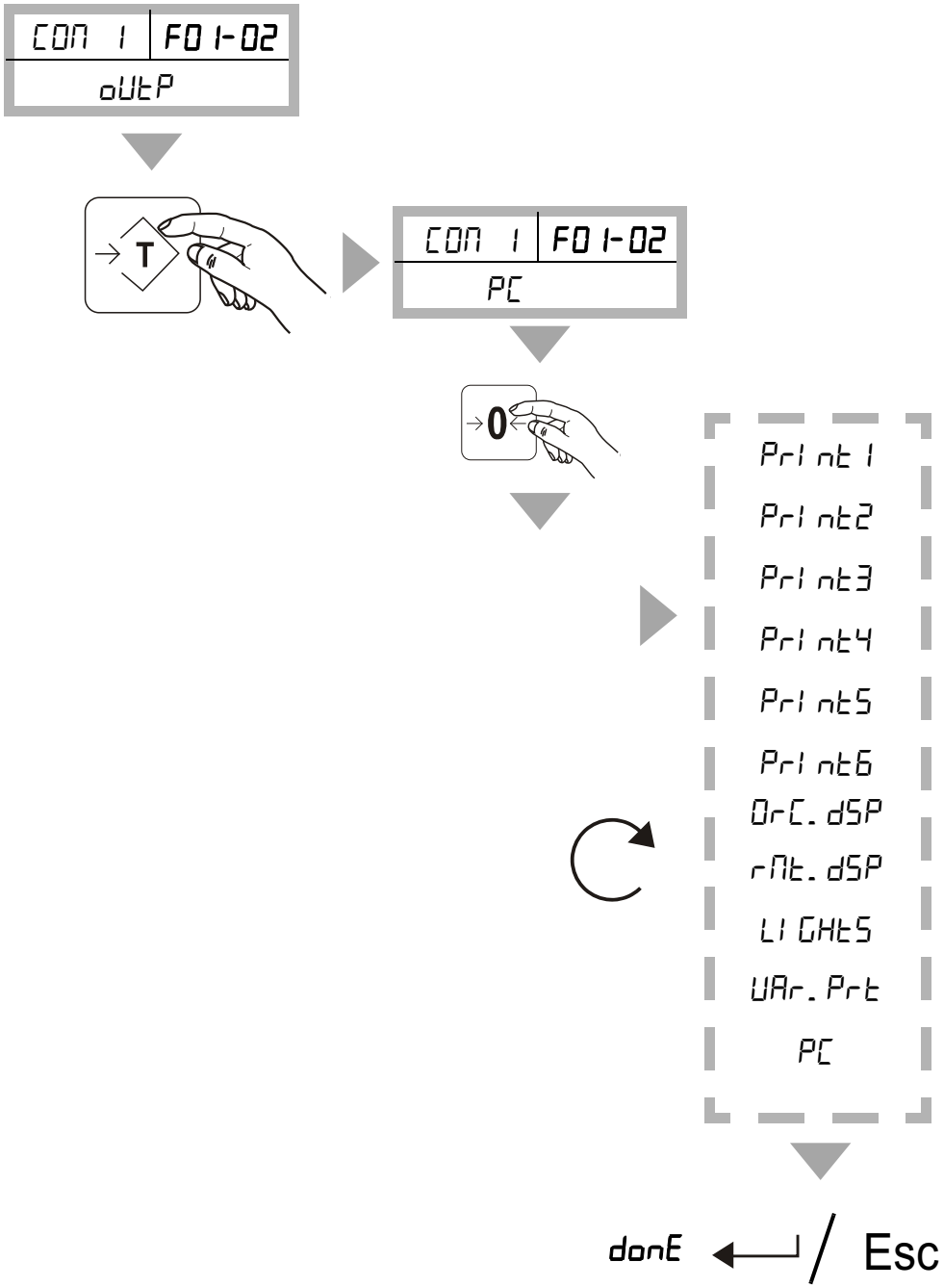
Note
This manual only describes the settings of interface COM1.
The settings for the COM2 and COM 3 interface must be carried out identically.



Function menu F01-01 - MODE (selection of the transmission mode)



Function menu F01-02 - OUTP (peripheral devices)



Selection of the attached printer or device

The indicator transmits the data to different peripheral devices. The peripheral devices must be addressed with specific data formats to interpret or print the received data (from the display) correctly.

Note
The transferred protocols are described only briefly. For further information on communication and design of data format, refer to the communication protocol for the indicator. The protocol must be ordered separately and is not part of this manual.

The following peripherals can be selected (see also overview of function menu OUtP on the previous page).

PC **PC: Data transmitted to computer**

Data format:
CHN:A;RAW:+0; ;US;GS;GRO:+100.0;NET:+ 0.0;
TAR:+0.0;UW:+0;CNT:+0;<CR><LF>

Print 1 **Print 1: Data transmitted to printer favourite**

Data format:
Date:01.04.22<CR><LF>
Time:14:28:05<CR><LF>
Gross:11.5 Kg<CR><LF>
Net:11.5 Kg<CR><LF>
Tara: 0.0 Kg<CR><LF>
<CR><LF>
<CR><LF>
<CR><LF>
<CR><LF>
<CR><LF>
<CR><LF>
<CR><LF>

Print2 **Print 2: Data transmitted to printer HPP- 250**

Data format:
<ESC>_@<ESC>_{1<ESC>_R<STX>_<ESC>_32<LF>
<ESC>_ <STX>_<ESC>_!1Tare: 0.0 Kg<CR><LF>
Net:0.0 Kg<CR><LF>
Gross:0.5 Kg<CR><LF>
Time:14.29:27<CR><LF>
Date:01.04.22<CR><LF>
<CR><LF>
<CR><LF>
<CR><LF>

Print3 **Print 2: Data transmitted to printer LP- 50**

Data format:
N<CR><LF>
A0,1,0,0,1,1,B,"01.04.22 14:39:04"<CR><LF>
LO0,26,380,3<CR><LF>
A0,33,0,0,1,1,B,"Net: Tare: Gross:"<CR><LF>
A0,58,0,0,1,1,B," 0.0Kg 0.0Kg 0.5Kg "<CR><LF>
LO0,83,380,3<CR><LF>
P1<CR><LF>

Print4 **Print 4: Data transmitted to printer HLS**

Data format:
<CAN>_<CAN>_<CAN>_<CAN>_<CAN>_<CAN>_<CAN>_<CAN>_<CAN>_<
CAN>_<CAN>_<CAN>_<CAN>_<CAN>_<CAN>_<CAN>_<CAN>_<CAN>_<C
AN>_<CAN>_<ESC>_@<ESC>_{1<ESC>_R<STX>_<ESC>_32<LF>
<ESC>_ <STX>_<ESC>_!1Tare: 0.0 Kg<CR><LF>
Net:0.0 Kg<CR><LF>
Gross:0.5 Kg<CR><LF>
Time:14.41:17<CR><LF>
Date:01.04.22<CR><LF>
<CR><LF>
<CR><LF>
<CR><LF>

Print5 **Print 5: Data transmitted to printer TPS 143**

Data format:
<ESC>_@<ESC>_{0<ESC>_R<STX>_<ESC>_32<LF>
<ESC>_ <STX>_<ESC>_!1Tare: 0.0 Kg<CR><LF>
Net:0.0 Kg<CR><LF>
Gross:0.5 Kg<CR><LF>
Time:14.42:58<CR><LF>
Date:01.04.22<CR><LF>
<CR><LF>
<CR><LF>
<CR><LF>
<CR><LF>
<CR><LF>
<CR><LF>
<CR><LF>
<CR><LF>
<CR><LF>
<CR><LF>
<CR><LF>
<CR><LF>
<CR><LF>

PrInt6 **Print 6: Data transmitted to printer HLS**

Data format:
<CAN>_<CAN>_<CAN>_<CAN>_<CAN>_<CAN>_<CAN>_<CAN>_<CAN>_<CAN>_<CAN>_<CAN>_<CAN>_<CAN>_<CAN>_<CAN>_<CAN>_<CAN>_<CAN>_j1<CR><LF>
N<CR><LF>
A0,1,0,0,1,1,B,"Nr.: 000000 01.00.00 01:47:22"<CR><LF>
LO0,26,380,3<CR><LF>
A0,1,0,0,1,1,B,"Alibi: 000000"<CR><LF>
LO0,26,380,3A0,33,0,0,1,1,B,"Net: Tare: Gross:"<CR><LF>
A0,58,0,0,1,1,B," 1952kg 0kg 1952kg"<CR><LF>
LO0,83,380,3<CR><LF>
P1<CR><LF>

QrC.dSP **Data transmission to the QR code display**

Note: The data for the QR code display is also configured via the VAR protocol!
Data format:
%%VAR_START%%{"src": "MWM","aid": "%%VAR_ALB_ID%%","weightInG": %%VAR_GROSS_GR%%,"status": "%%VAR_STATE_LFT%%","snr": "ET42DC25010896"}%%VAR_END% (Description: The QR code contains the following information:
- Data source
- Alibi number
- Weight in grams (g)
- Status
-Serial number

rMtdSP **rmtdsp: Data transmitted to large display**

Data format:
ST,GS,+ 0.0Kg<CR><LF>

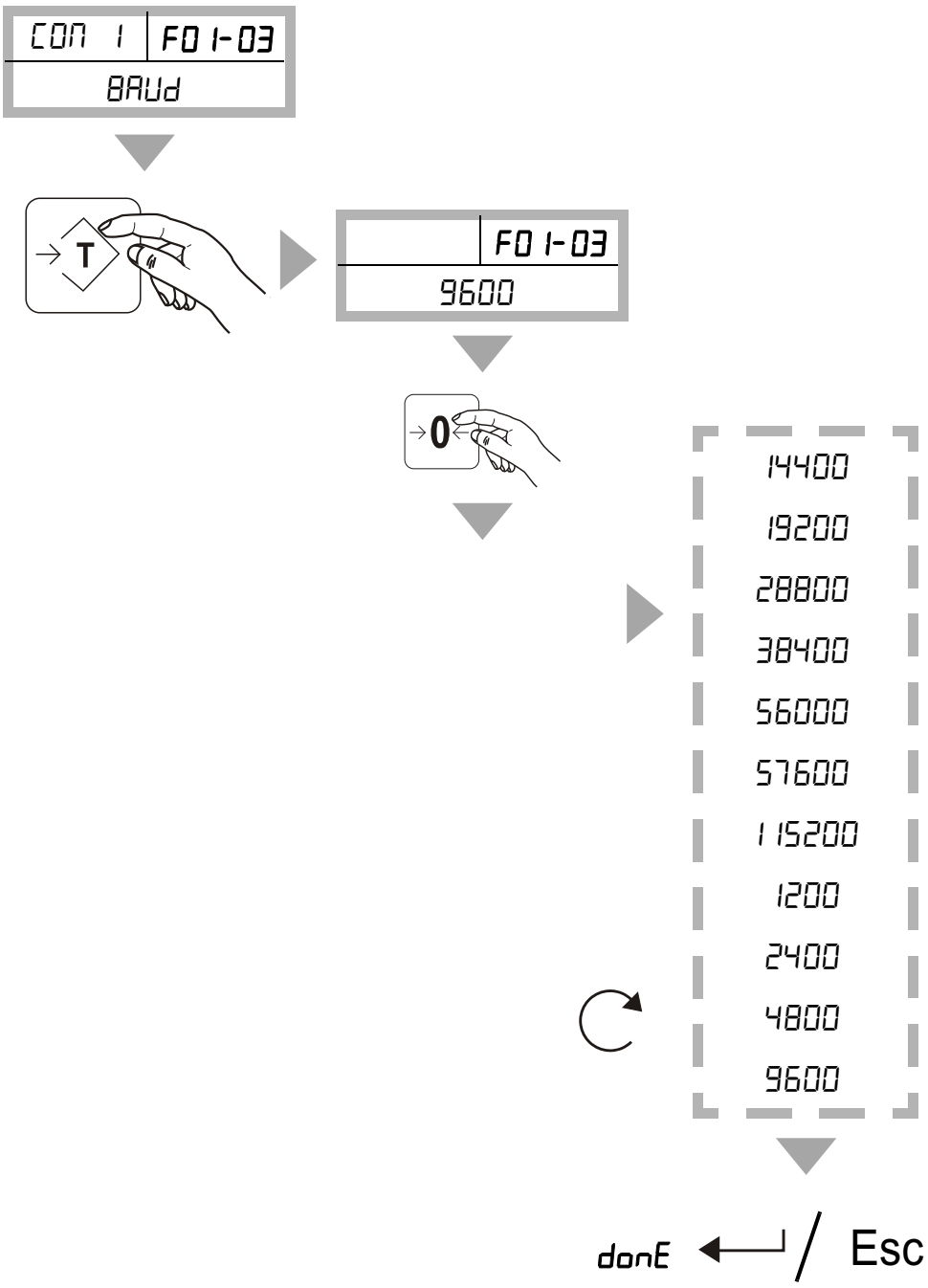
LIGHtS **Lights: Data transmitted to status lamp SL 3**

Data format:
Signal lamp Off: PC <CR><LF
Signal lamp Yellow: PCL <CR><LF
Signal lamp Green: PCG <CR><LF
Signal lamp Red: PCH <CR><LF>

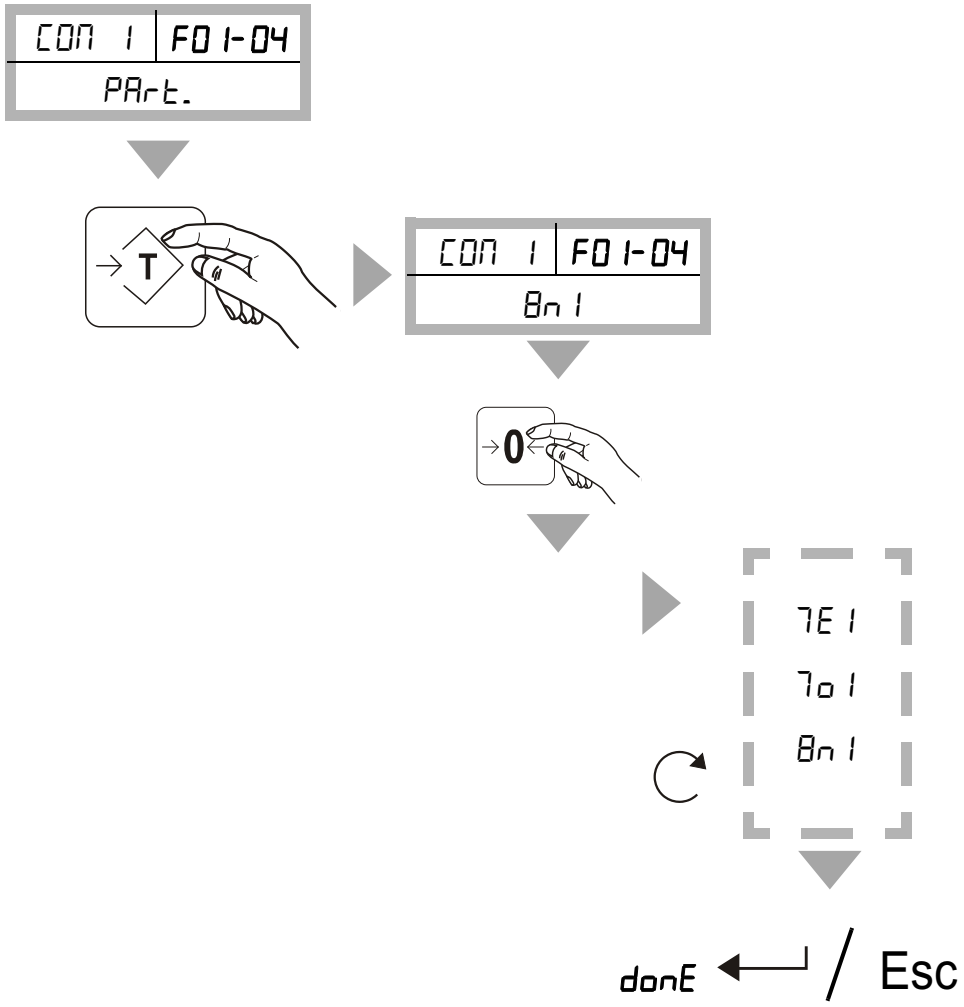
UAr.Prt **Data transmission to a configurable user protocol**

Data format:
%%VAR_START%%{"weight":"%%VAR_GROSS_A%%"}%%VAR_END%% (Description: The text "weight" is transmitted followed by a colon and the gross weight).

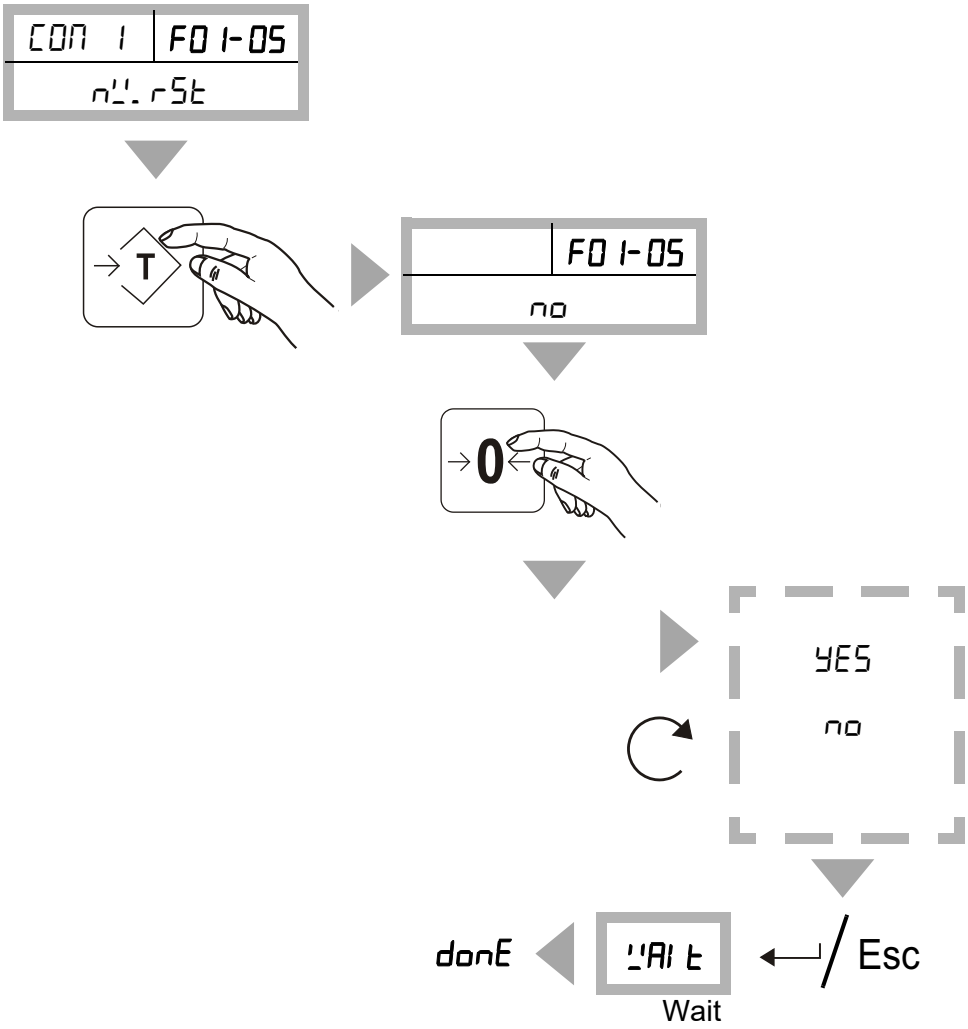
Function menu F01-03 - BAUD (baud rate)



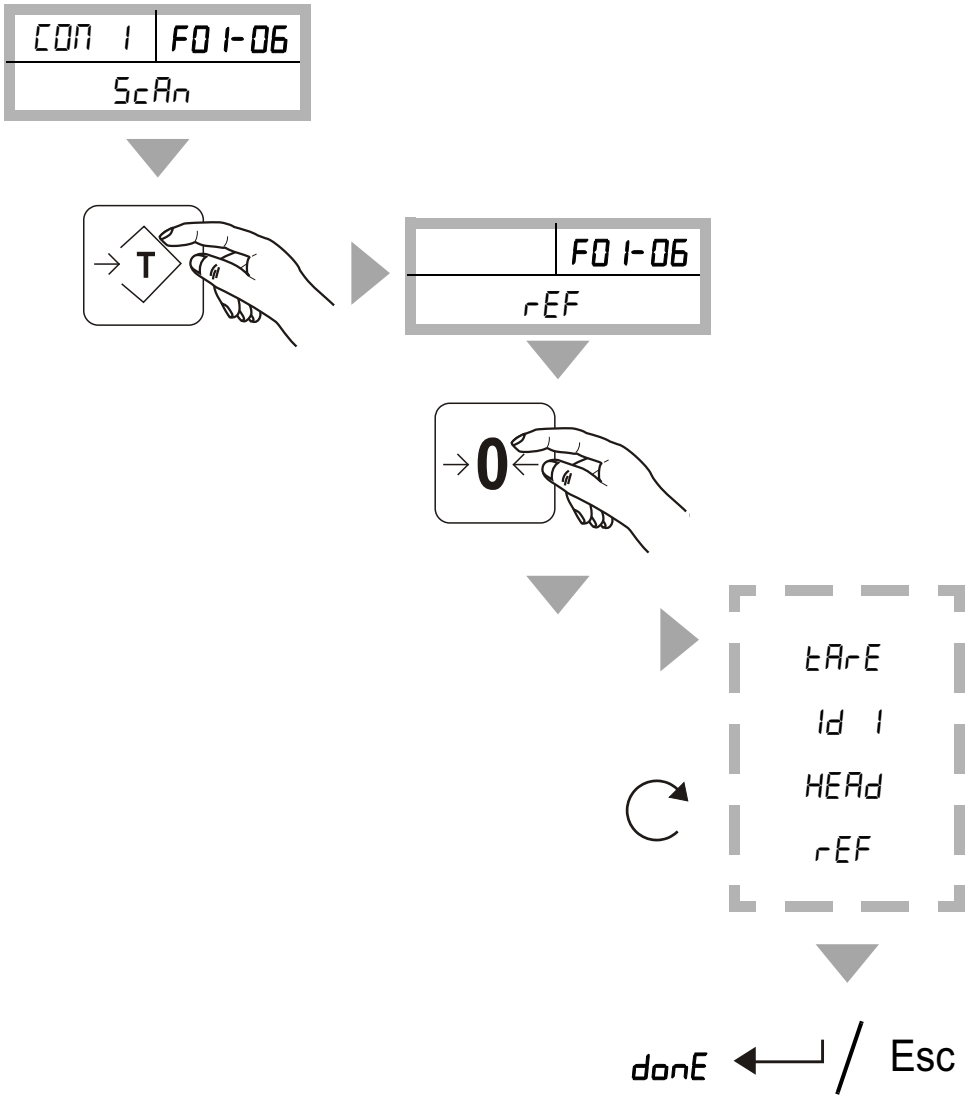
Function menu F01-04 - PART (parity)



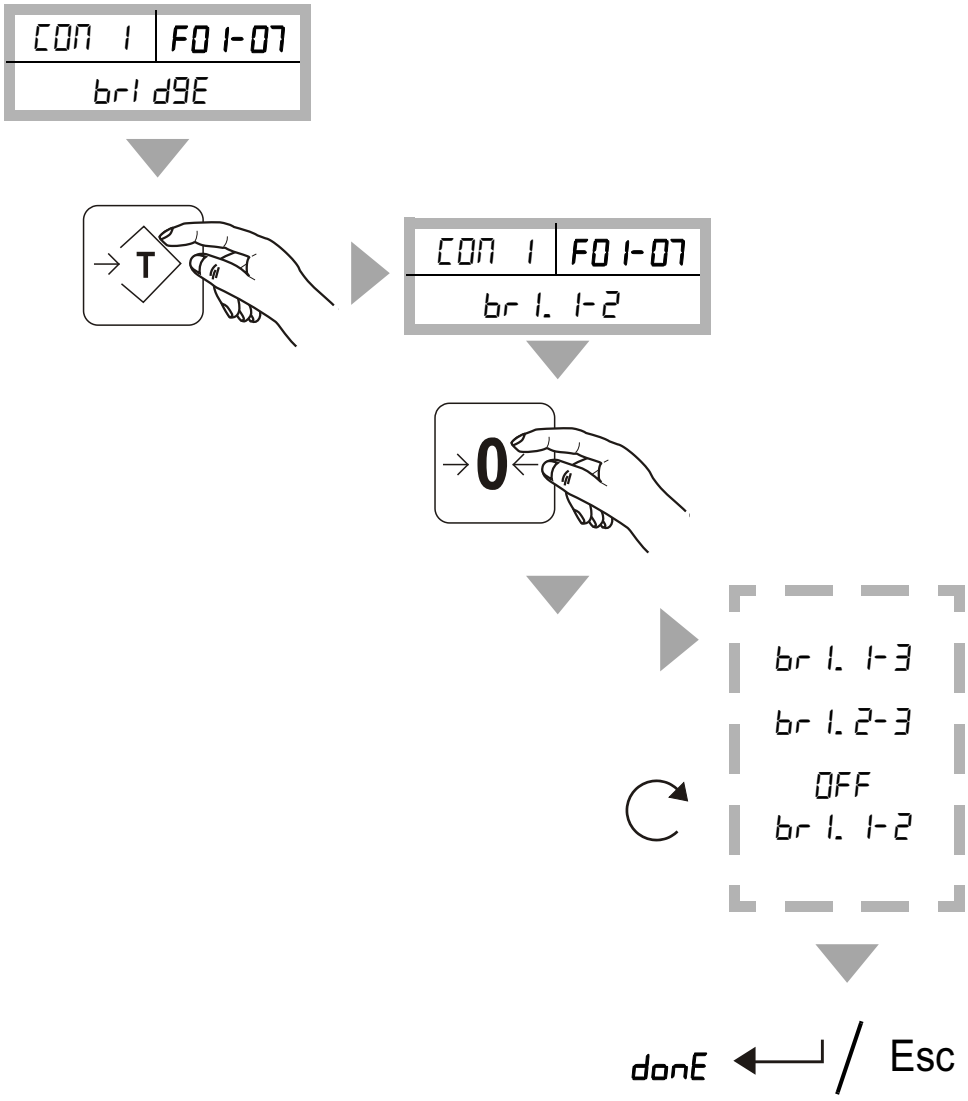
Function menu F01-05 - NWRST (network reset)



Function menu F01-06 - SCAN (scanner data input)

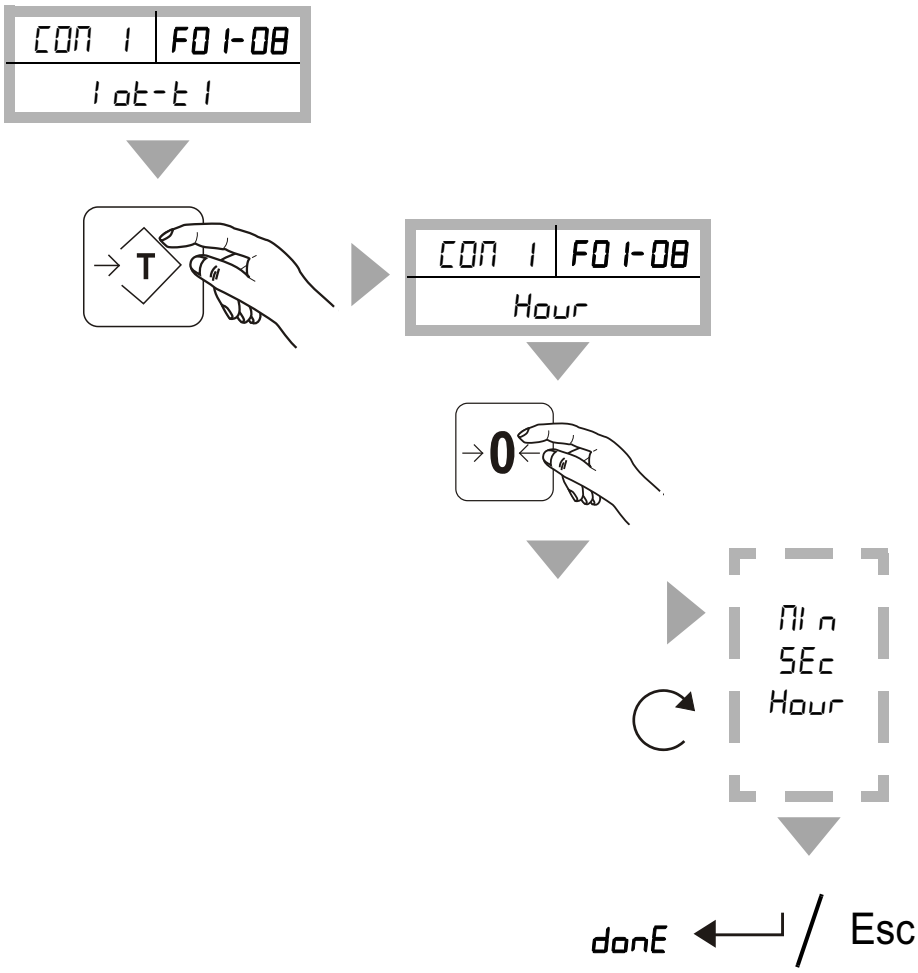


Function menu F01-07 - BRIDGE (signal forwarding)



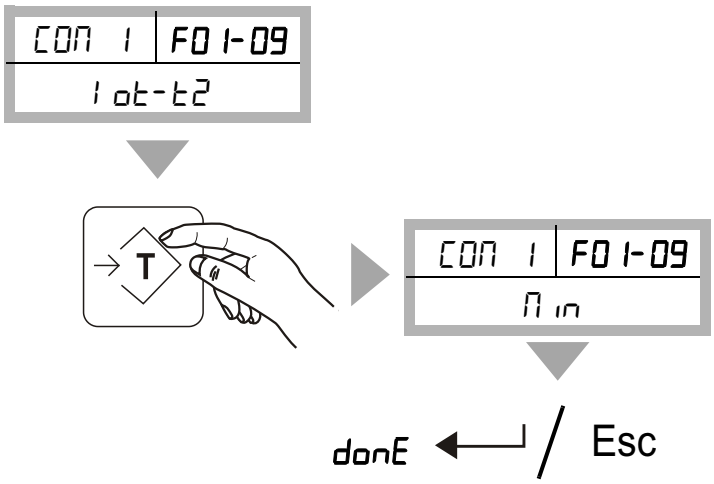
Function menu F01-08 - IOT T1 (time settings T1)

Note
Time setting (T1) for COM mode = HEArtb (oder COM-Mode = Iot). The scale transmits data cyclically via the COM port at the configured time interval T1.



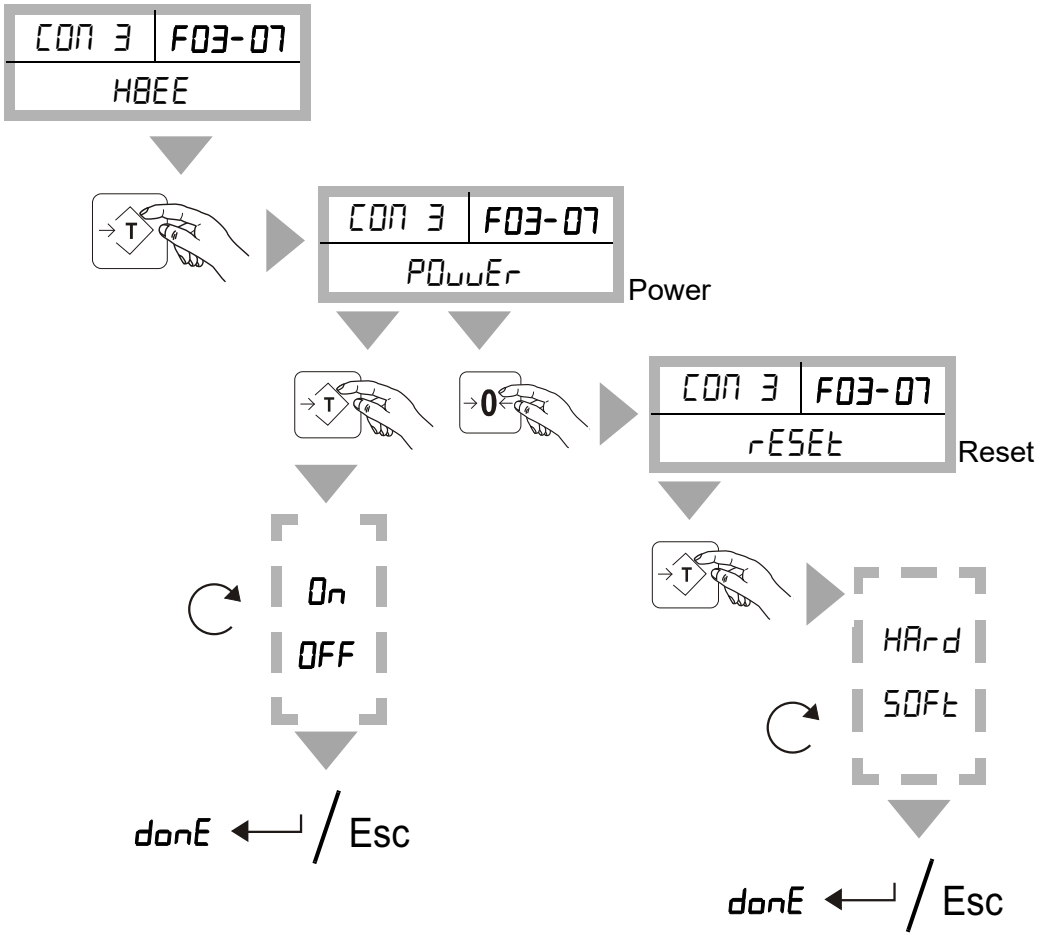
Function menu F01-07 - IOT T2 (time settings T2)

Note
Time setting (T2) for COM mode = IoT.
A new weight must remain stable on the scale for at least X minutes (T2). The data is then transmitted via the COM port.



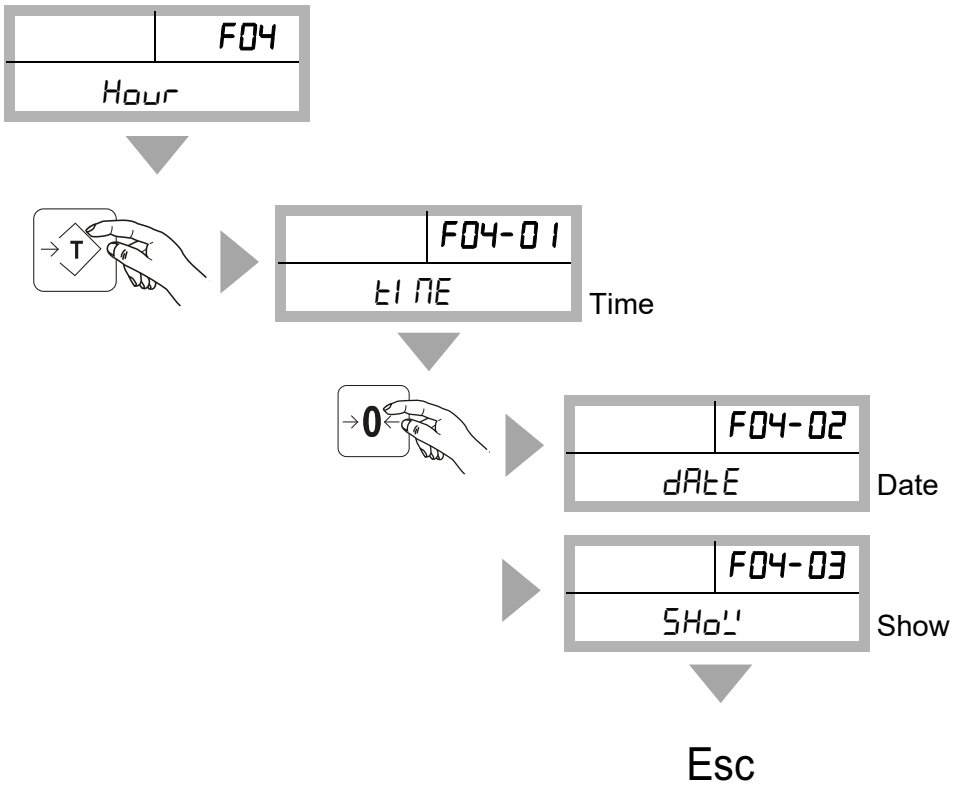
5.2.3 Function menu F03-07 - XBEE (radio transmission)

Note
This menu is only available under COM3!

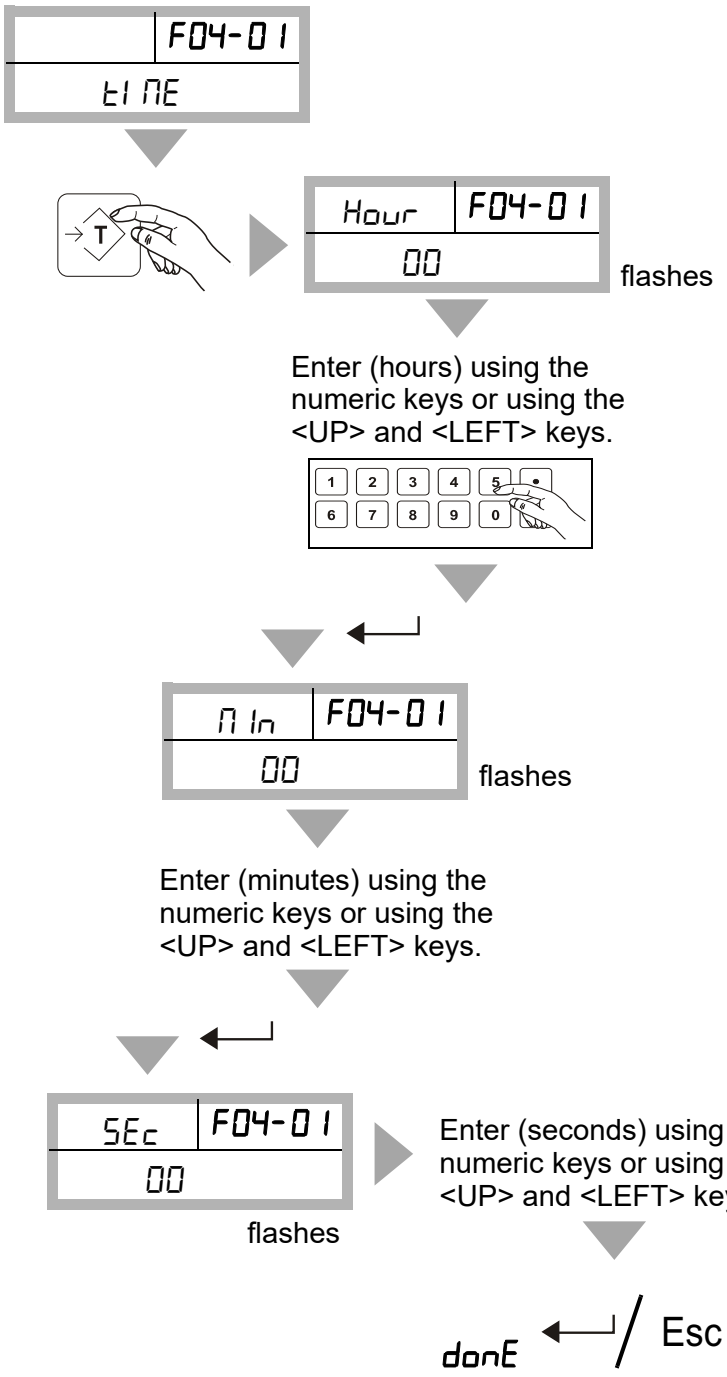


5.2.4 Function menu F04 - overview HOUR (date /time)

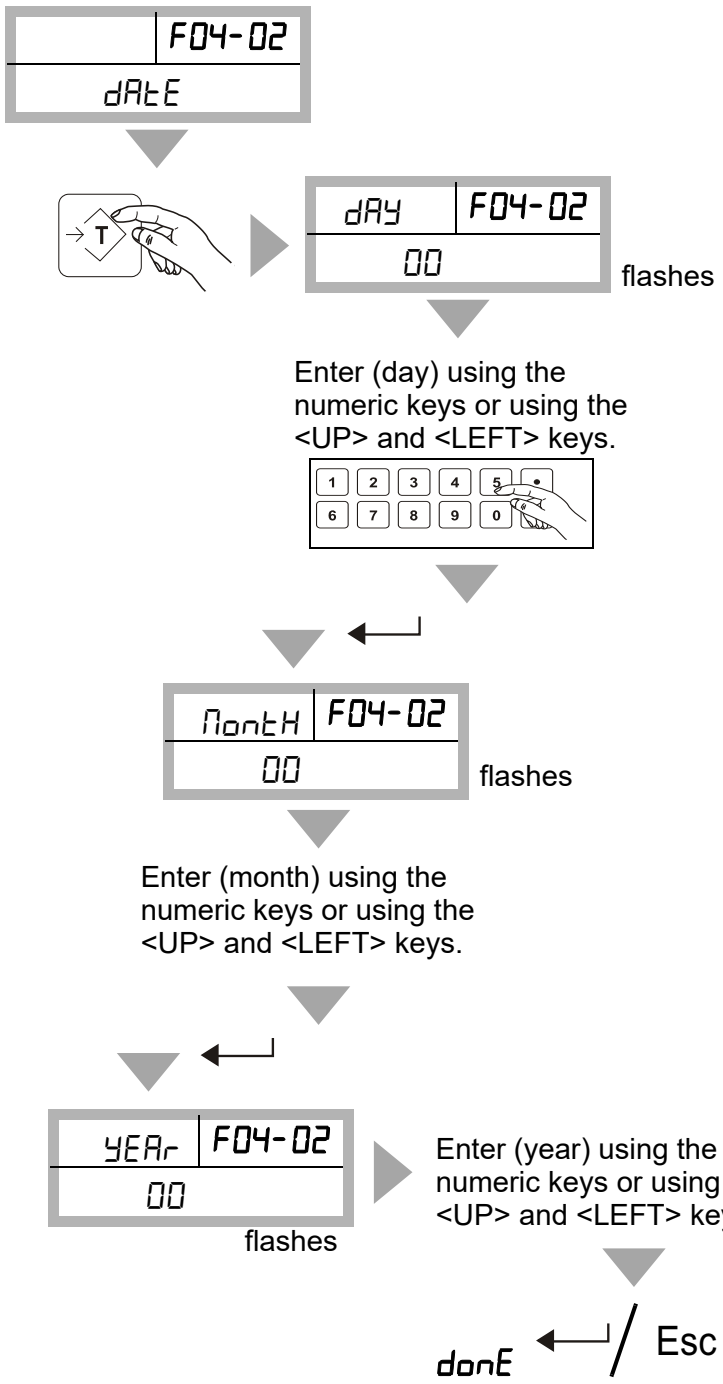
Note
No automatic changing of winter and summer time.



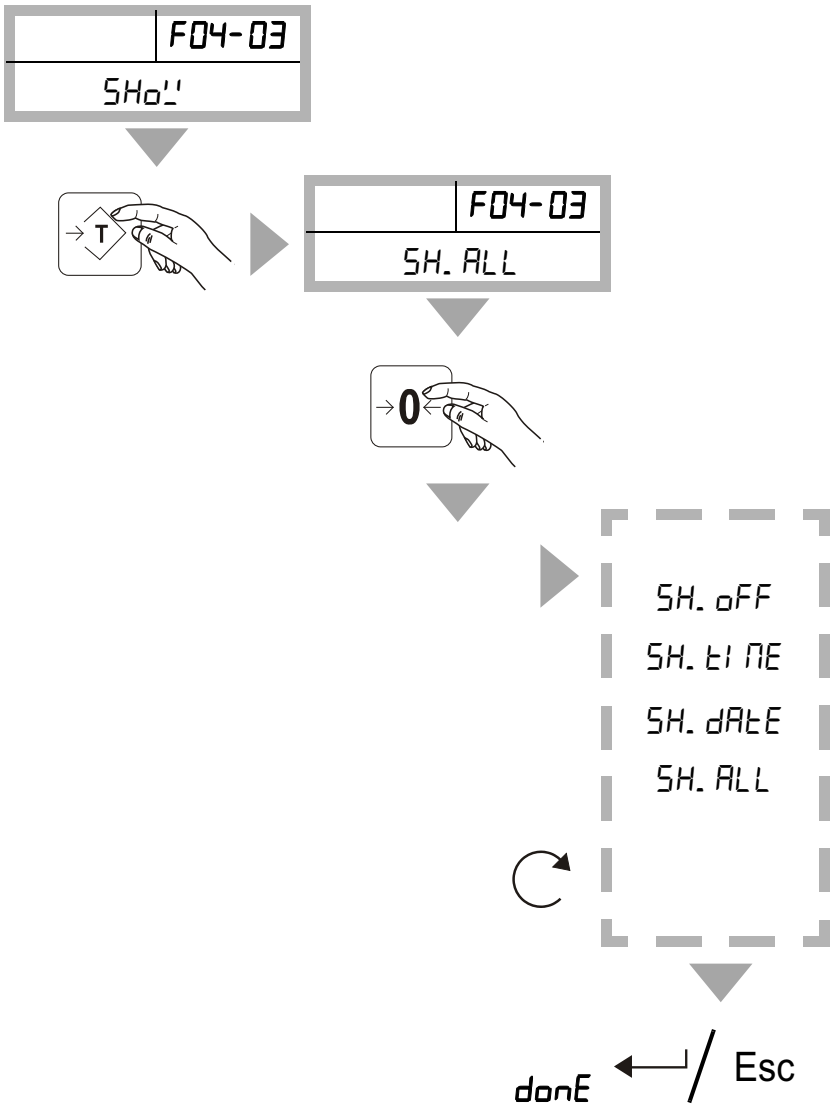
Function menu F04-01 HOUR (Time)



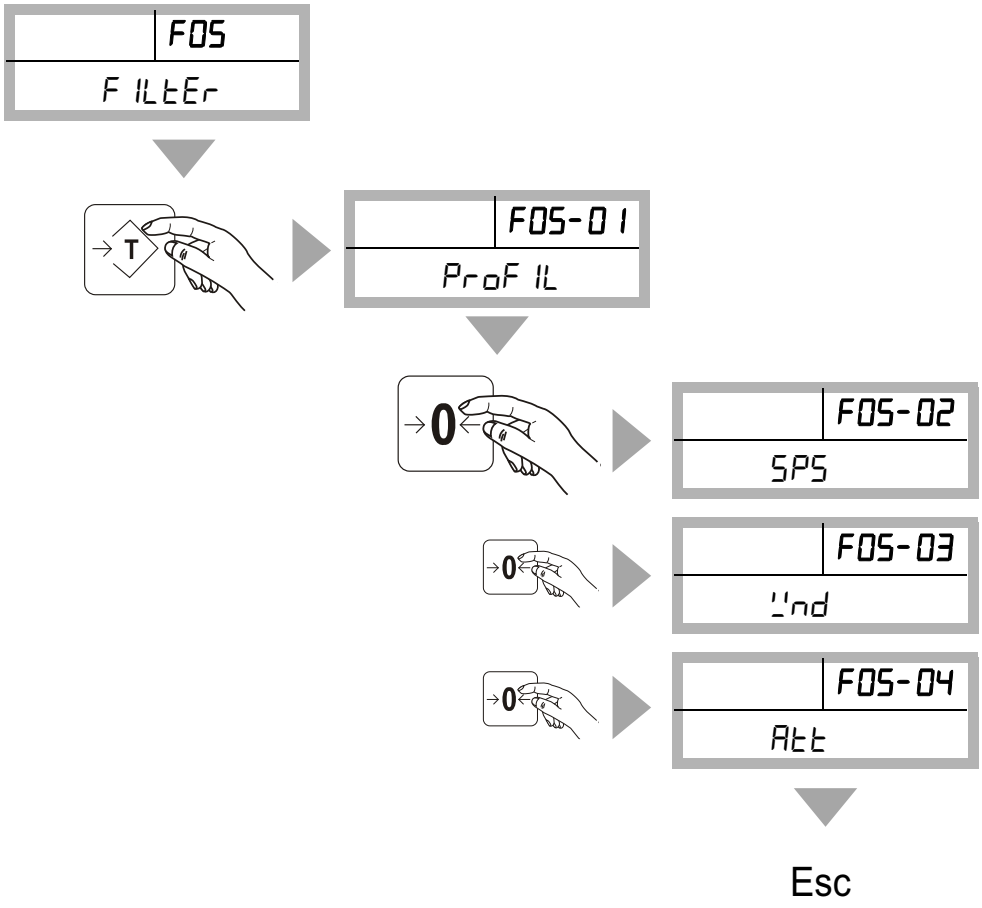
Function menu F04 - 02 DATE (Date)



Function menu F04 - 03 SHOW (show date/time on the display)



5.2.5 Function menu F05 - overview filter



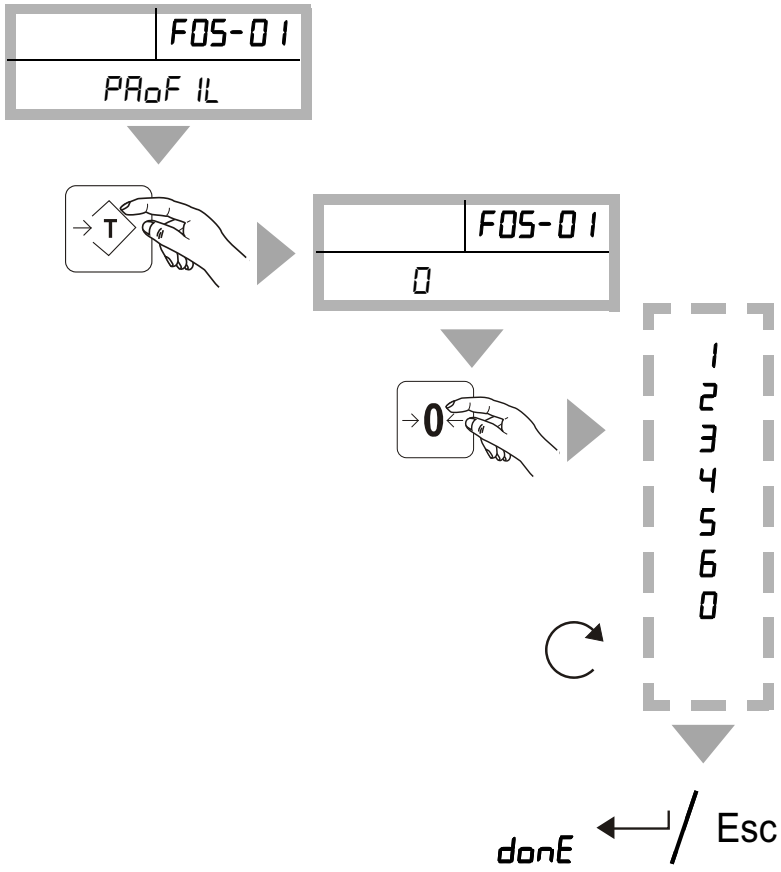
It is possible to set the internal measuring rate of the AD converter here. This parameter directly influences further settings of the weighing operation.

With increased measuring rates, the scales operates faster but looses stability.

Lower measuring rates improve stability but reduce the speed. We recommend using lower measuring rates in an environment with a lot of motion.

You can also select from existing profiles. These profiles cover most applications.

Function menu F05-01 - PROFIL (e.g. animal weighing)



Profil 0: Fast filter (fast weighing) provides optimal settings for quick weighing results.

Profil 1: Animal filter provides optimal settings for all dynamic weighing applications (animal weighing – perfectly tuned for maximum stability).

Profil 2: Dynamic filter (standard) provides optimal settings for all static weighing applications (perfect balance between speed and stability).

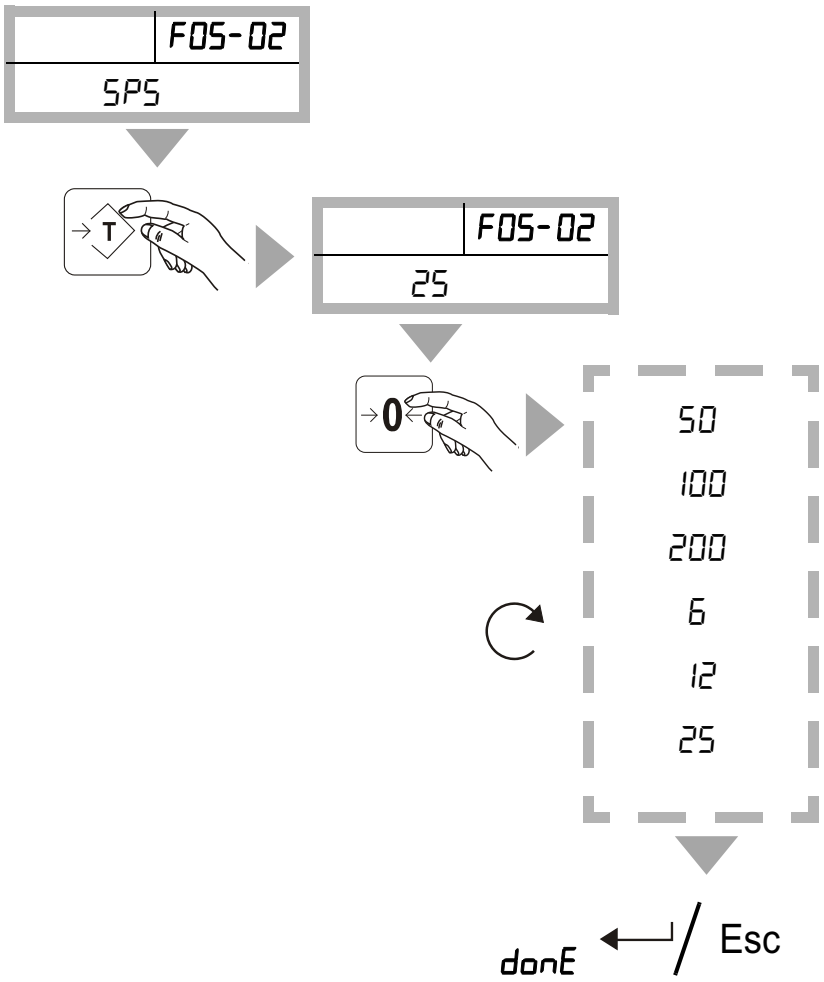
Profil 3: Fast filter (same as profile 0) allows custom filter settings (not available for verified scales).

Profil 4: Dynamic filter (same as profile 2) allows custom filter settings (not available for verified scales).

Profil 5: Fine filter provides optimal settings for fast, unstable weight readings (perfectly tuned for reliable weighing results). (Standard filter profile for verified scales).

Profil 6: Fine filter 2 (same as profile 5) provides more stable weight readings, e.g. for larger scales.

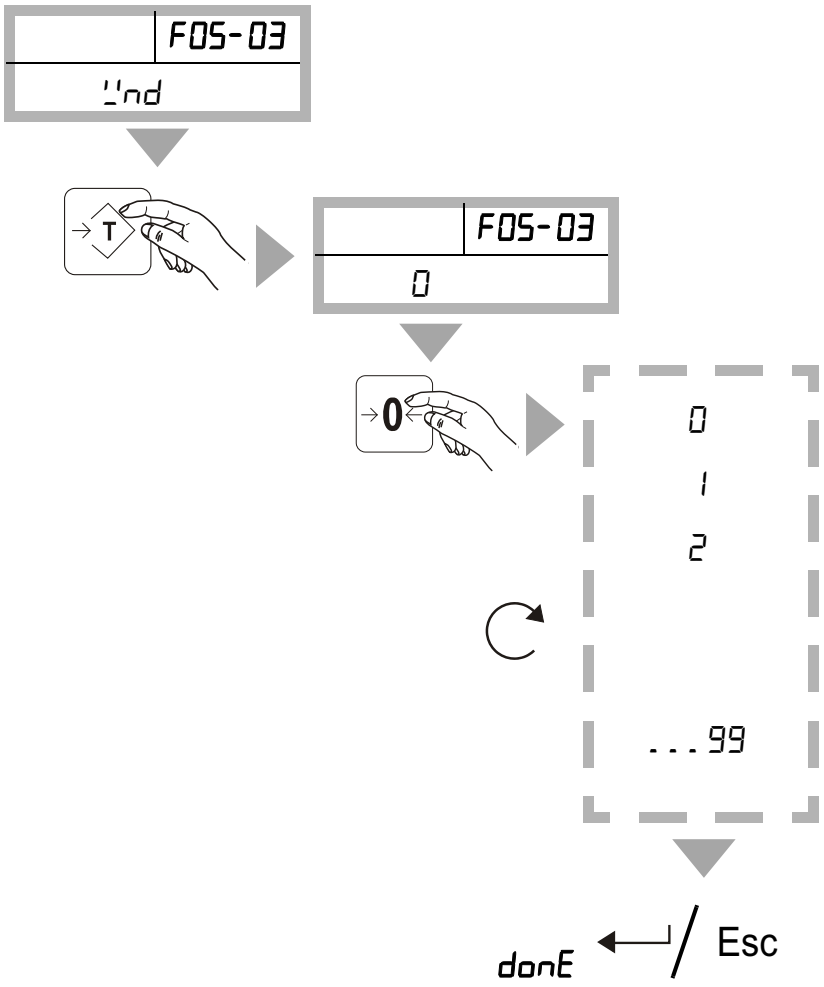
Function menu F05-02 - SPS (sampling rate)



The internal speed can be adjusted here.

We recommend using a measuring rate of 6, 12 or 25. Higher measuring rates result in smallest changes to the stability of the determined measured value.

Function menu F05-03 - WND (delays)

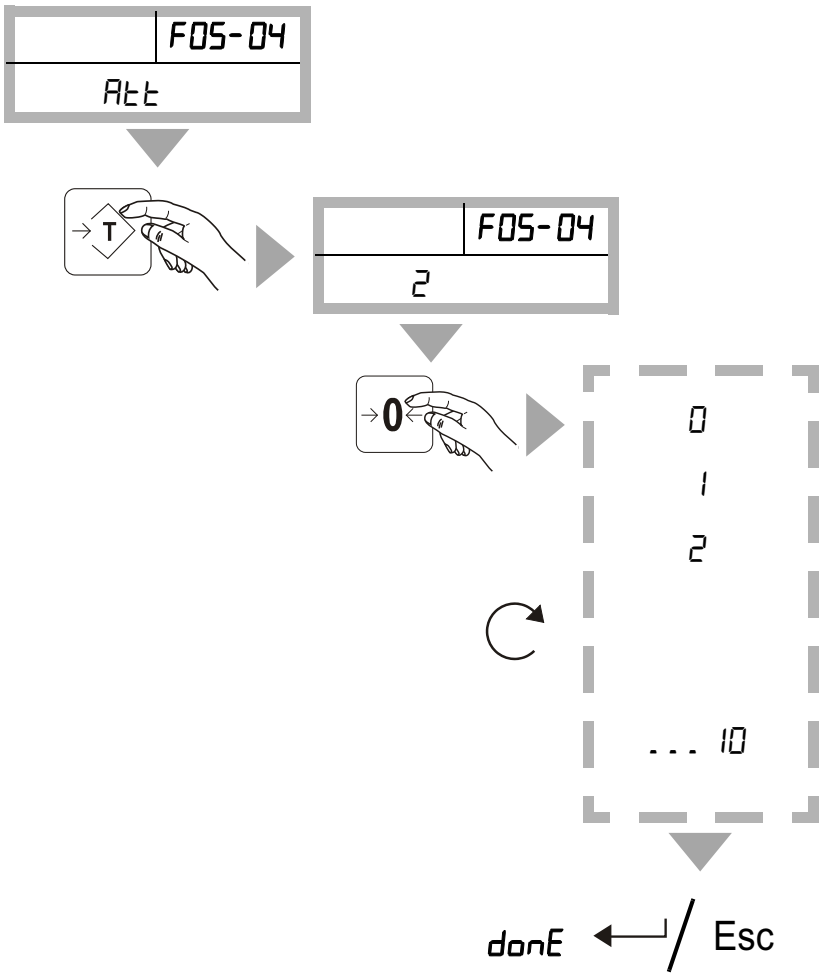


In this menu the number of required measured values in the internal filter is determined before the resulting measured value is put out.

A high value requires a lot of measured values and results in delays. However, the stability of the put out measured values is improved.

A small value increases the speed but influences the measured value stability negatively.

Function menu F05-04 - ATT (damping)



The filter tries to predict the next weighing value based on several factors. The speed and the delta of the measured values are also considered.

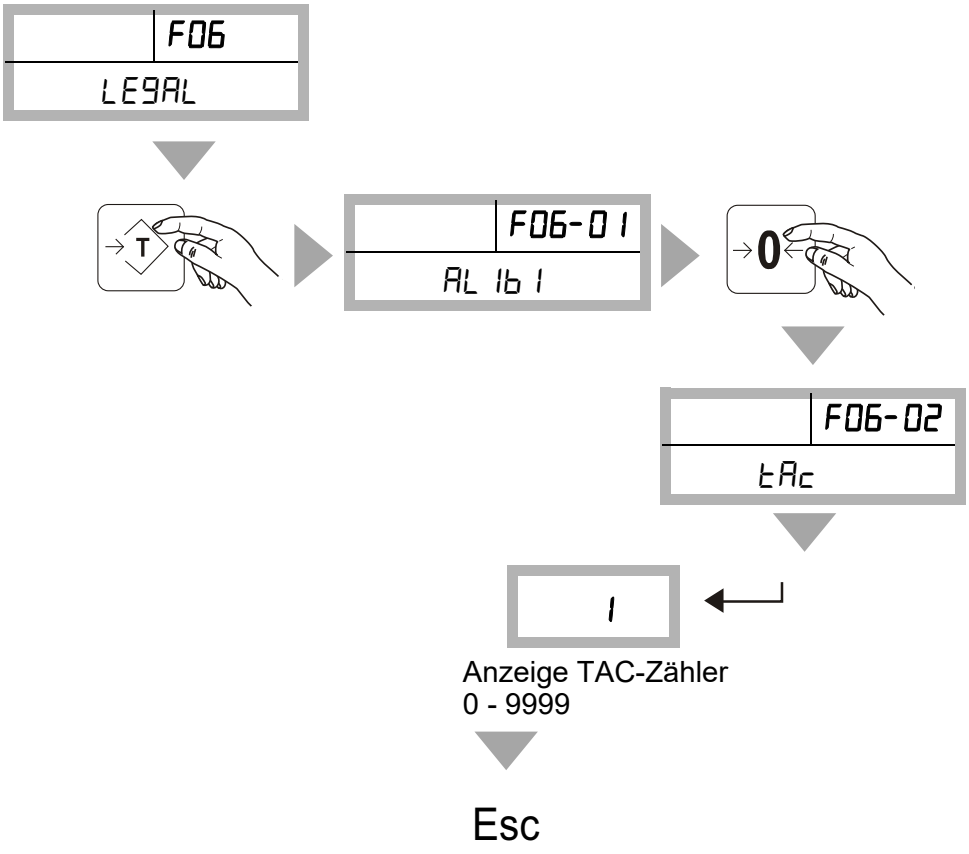
An attenuation value of ATT = 0 requires more steps to put out a filtered value.

An attenuation value of ATT = 10 requires less steps to put out a filtered value.

A high attenuation value offers intermediate values less stable but a higher speed.

5.2.6 Function menu F06 - overview Legal

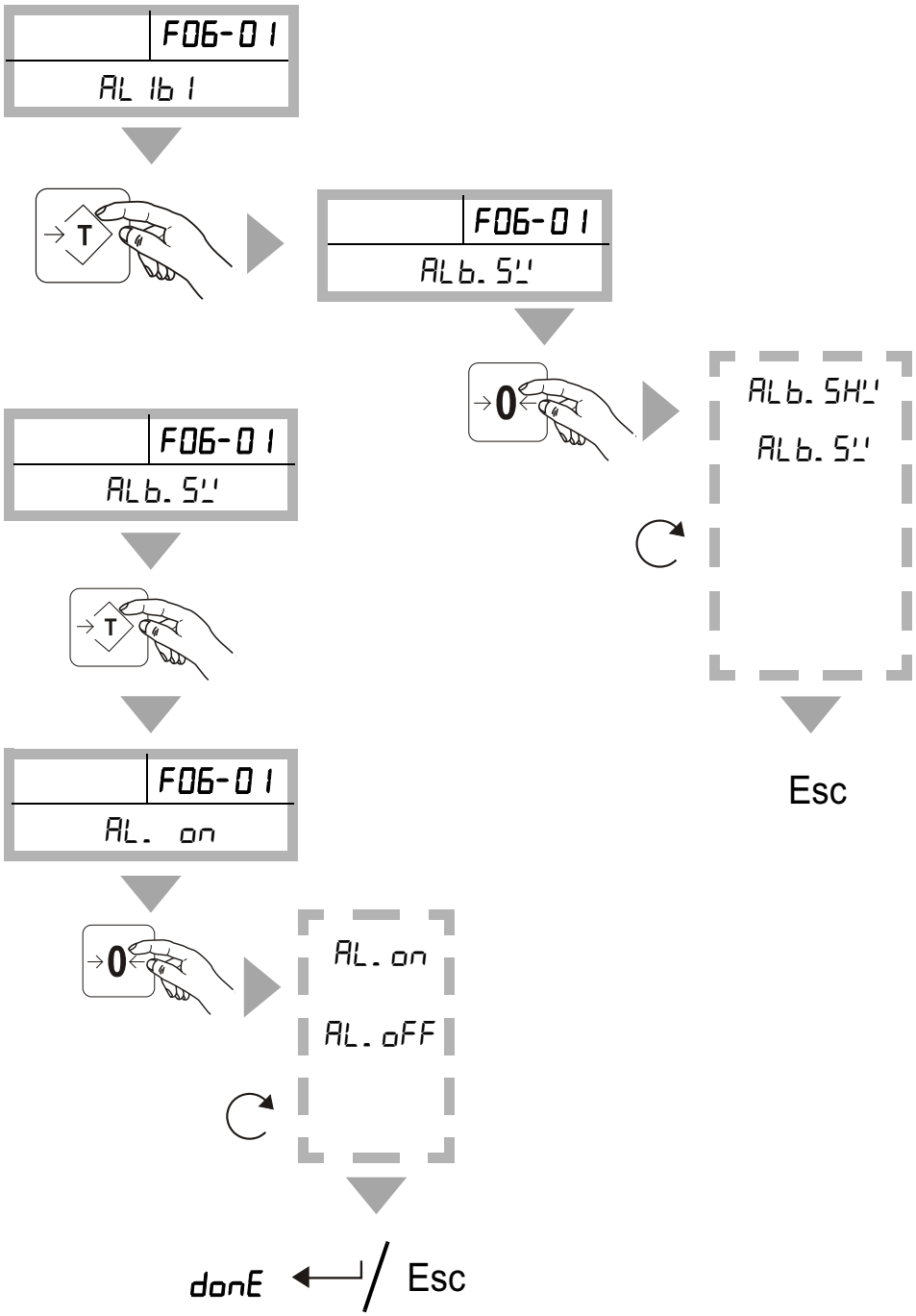
Note
In the menu item "Legal" the alibi memory can be activated or deactivated, when needed.
On legal-for-trade scales, the alibi memory is by default always active and cannot be disabled. The query of the saved alibi values for market surveillance (Bureau of Standards) is located in this menu item. Another way to display saved alibi values is located in the Quick Menu.

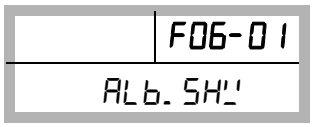


Attention
Once the verification counter is increased, the verification becomes null and void.

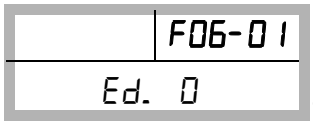
M

Function menu F06-01 - ALIBI (Alibi memory on/off)



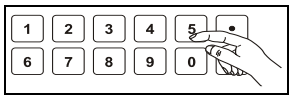


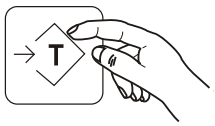


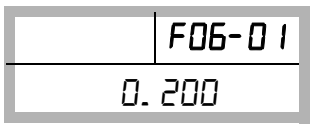


flashes

Enter using the numeric keys or the <UP> and <LEFT> keys.

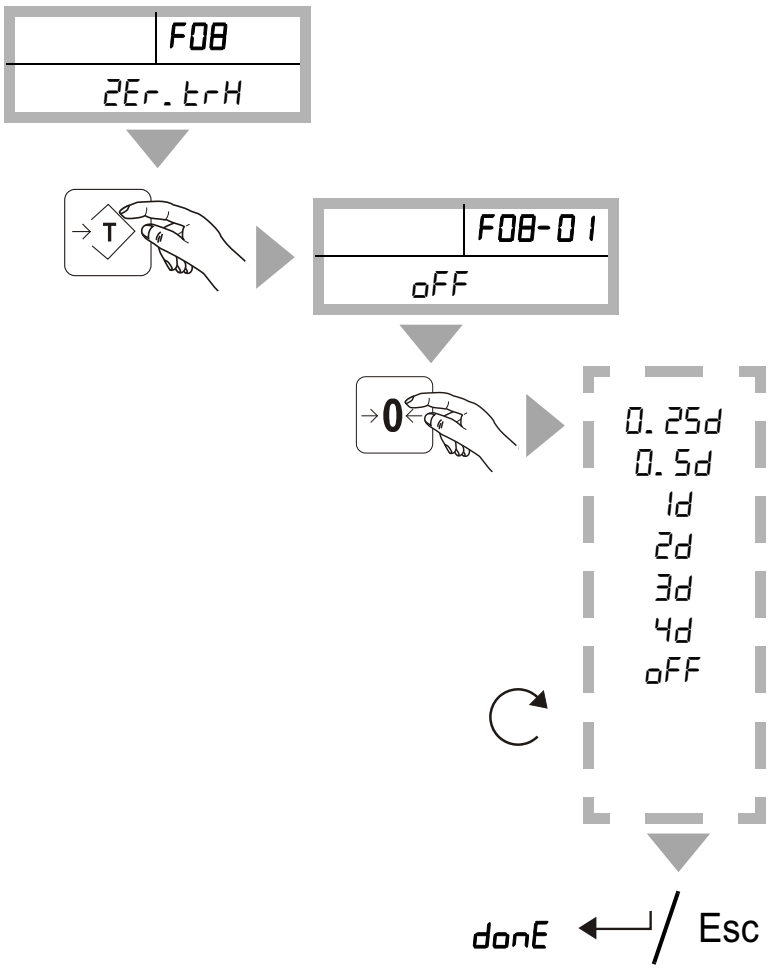






Display alibi value

5.2.7 Function menu F08 - overview automatic zero-setting range



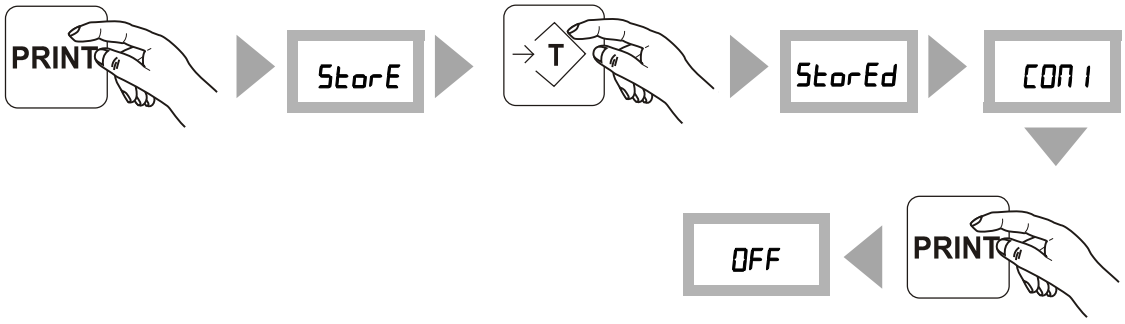
6 Password protected menu (advanced functions)

6.1 Navigation in the protected menu

Navigation	
NET / G / B	◀ Move the active number to the left <LEFT>
→0←	▲ Change of the parameter<UP>
→T	↵ Saving the settings <ENTER>
PRINT	Esc Leaving the functional level (ESCAPE)

In the password-protected menu all verification relevant and technical parameters of the scale are adjusted.

Changing the parameters may cause the scale to no longer operate according to its technical specifications. For the modified parameters to take effect, the changes must be saved when exiting the menu as follows:



Saving the changes also increases the electronic verification counter by 1. For verified scales, the verification becomes null and void at this point. The scale is therefore no longer verified.

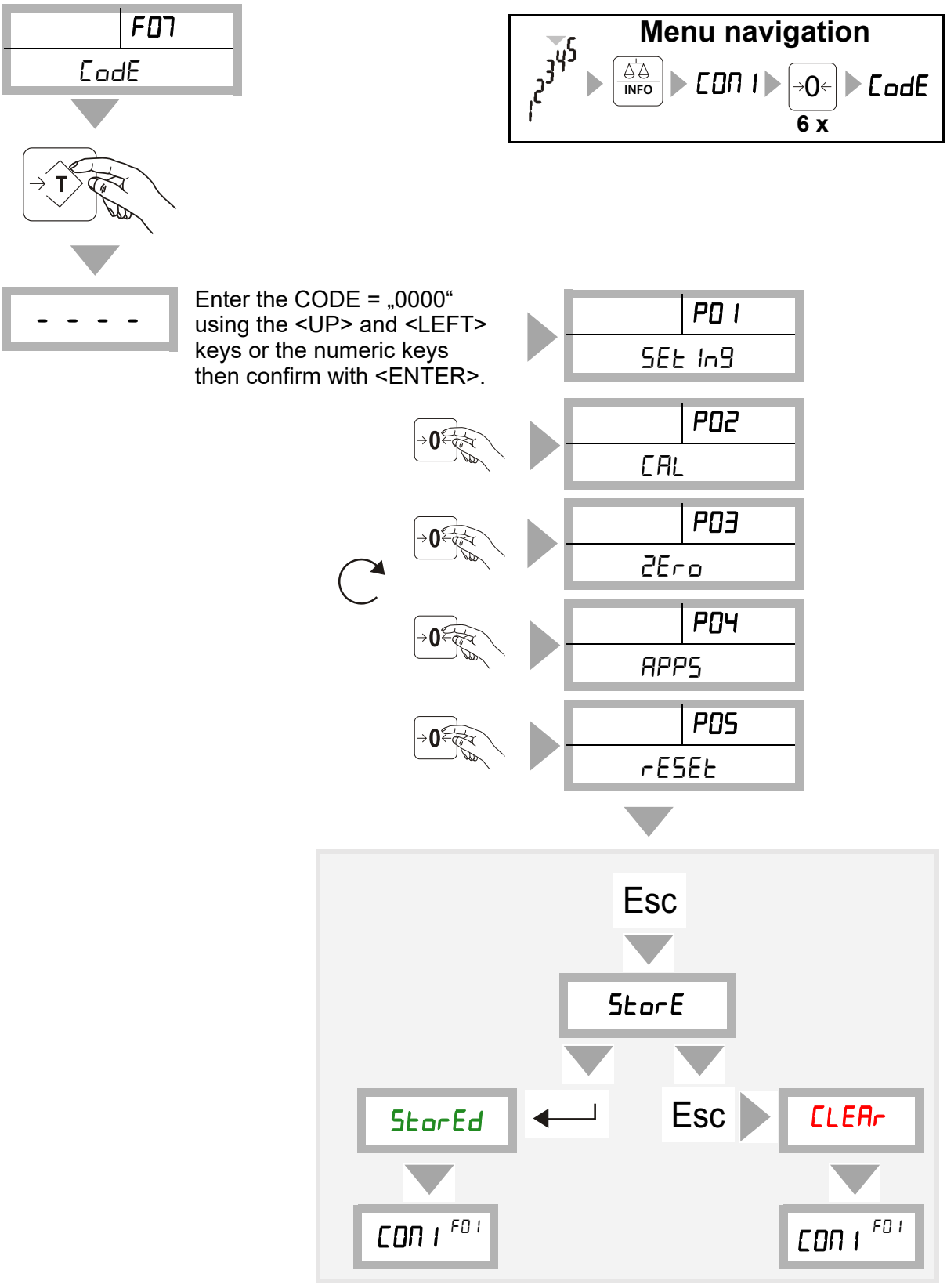
Attention
Once the verification counter is increased, the verification becomes null and void.



Note
Please contact our technical support before changes (see chap.8.3 “Customer Service“).

If you are not sure, you leave the menu by pressing repeatedly **Esc** (PRINT). The indicator is switched off.

6.2 Password protected menu - overview



6.2.1 Password protected menu - short description

Menu	Submenu	Option	Function
P01 SEtin9	P01-01 dEc 1 Decimal place	0; 0.0; 0.00; 0.000; 0.0000; 0.00000	Setting of the desired number of digits after the decimal point.
	P01-02 1nC Increment size	1nc. St 1	Increments for the displayed weight (resolution). 1; 2; 5; 10; 20; 50; 100; 200
	P01-03 CAP Setting the capacity	CAPMAX „00.0000“ flashes -->Enter the value using the <UP> and <LEFT> keys.	Setting of the maximum capacity.
		CAP. rn 1 (is not displayed if rnIn = oFF) „00.0000“ flashes--> Enter the value using the <UP> and <LEFT> keys	Capacity weighing range 1
		CAP. rn2 (is not displayed if rnIn = oFF) „00.0000“ flashes --> Enter the value using the <UP> and <LEFT> keys.	Capacity weighing range 2
	P01-04 CHAn Active channels	on oFF	on/off
	P01-05 oLP Overload control	on oFF	On/Off
	P01-06 ULP Underload control	on oFF	On/Off
	P01-07 PAir	on oFF	On/Off

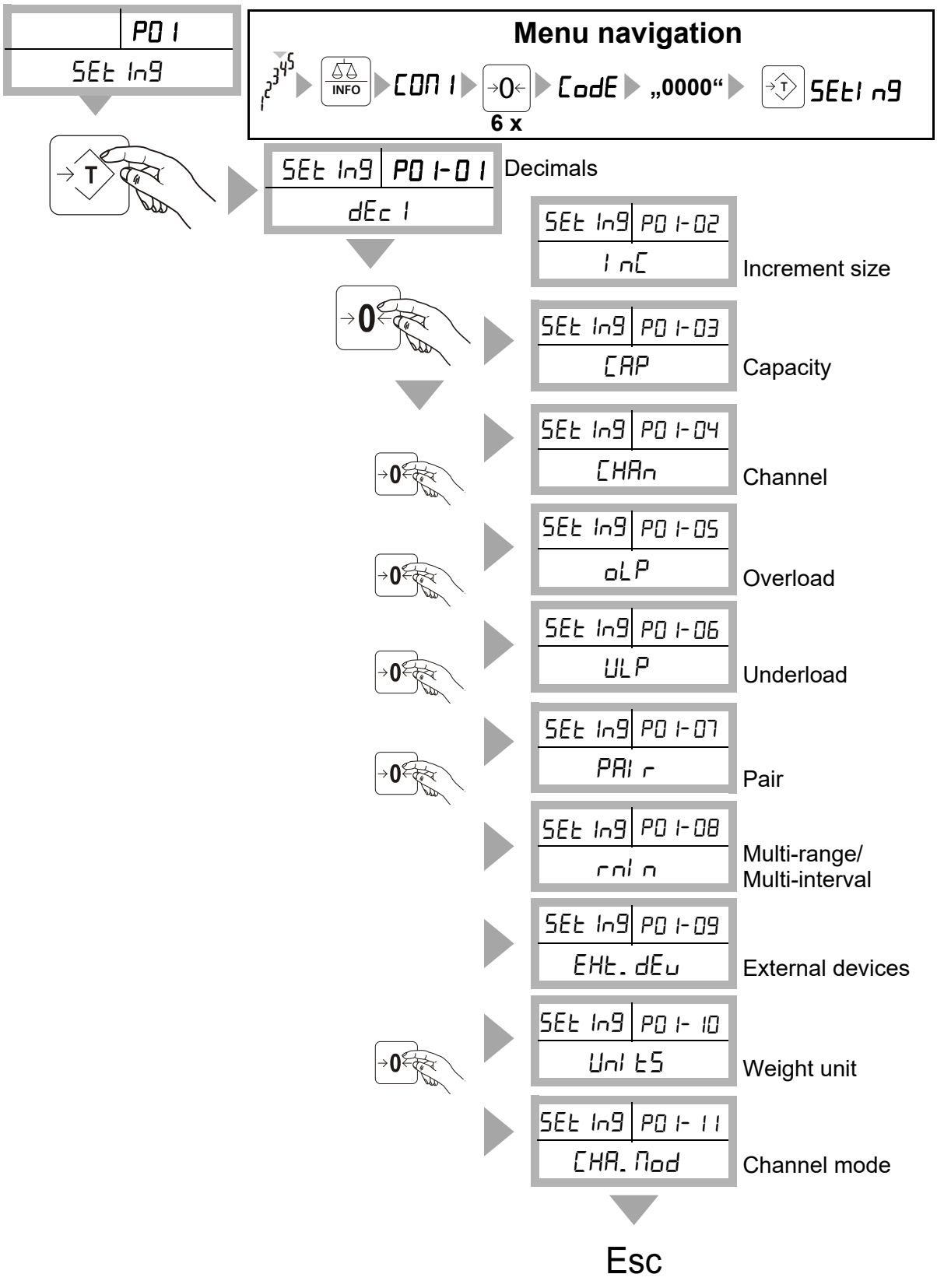
Menu	Submenu	Option	Function
P07 SEtinG	P01-08 rnIn Multi-range/ Multi-interval	oFF rn92 rn93 Int2 Int3	Normal weighing Multi-range scale Multi-intervall scale
	P01-09 EHt.dEu External devices	oFF Gyro1.5 Gyro2.0	Normal weighing Tilt sensor (only for mobile applications)
	P01-10 UnitS Weight unit	SEL 0	No weight unit.
		SEL 1	g (gram)
		SEL 2	kg (kilogram)
		SEL 3	t (ton)
	P01-11 CHA.Mod Channel mode	SInGLE MULtI	Operating mode for multi-channel operation. Single (default)
P02 CAL	P02-01 SPAn Two-point calibration (zero point, load point).	rAW	“67442“ (example) Display of the current raw measured value of the A/D converter.
		2Ero	UnLoAd Zero-point calibration
		LoAd	000000 flashes Calibration of the load.
	P02-02 LInEAr Linear Calibration	StEPS	1–6 Number of calibration points.
		rAW	“67442“ (example) Display of the current raw measured value of the A/D converter.
		2Ero	UnLoAd Zero-point calibration.
		LoAd	Calibration of the load.

Menu	Submenu	Option	Function
P02 CAL	P02-03 nU-U Theoretical calibration	FI ELd	SEnS "3.0000" mV/V flashes --> Enter the value. (Setting the sensitivity of the load cells used). If there are several load cells, the average value must be entered. tCAP " 1000.0" kg flashes --> Enter the value. (Setting the maximum load of the load cells used). Enter the sum of all connected load cells, considering the decimal places "dEcI " (P07-01). Example: 4 load cells á 1000 kg = 4000 kg (dEcI = 0.0) --> 4000.0 St.2rP --> UnLoAd Set zero point
	P02-04 GrAUtY	G.F iELd	OFF "9.8 1300" flashes --> Set the gravity value. Adjustment of the gravity factor to correct the weight value on the site of scales use.
		G.FctrY	"9.8 1300" flashes --> Set the gravity value. Adjustment of the gravity factor to correct the weight value at the scale calibration site. (Default: 9.8130)

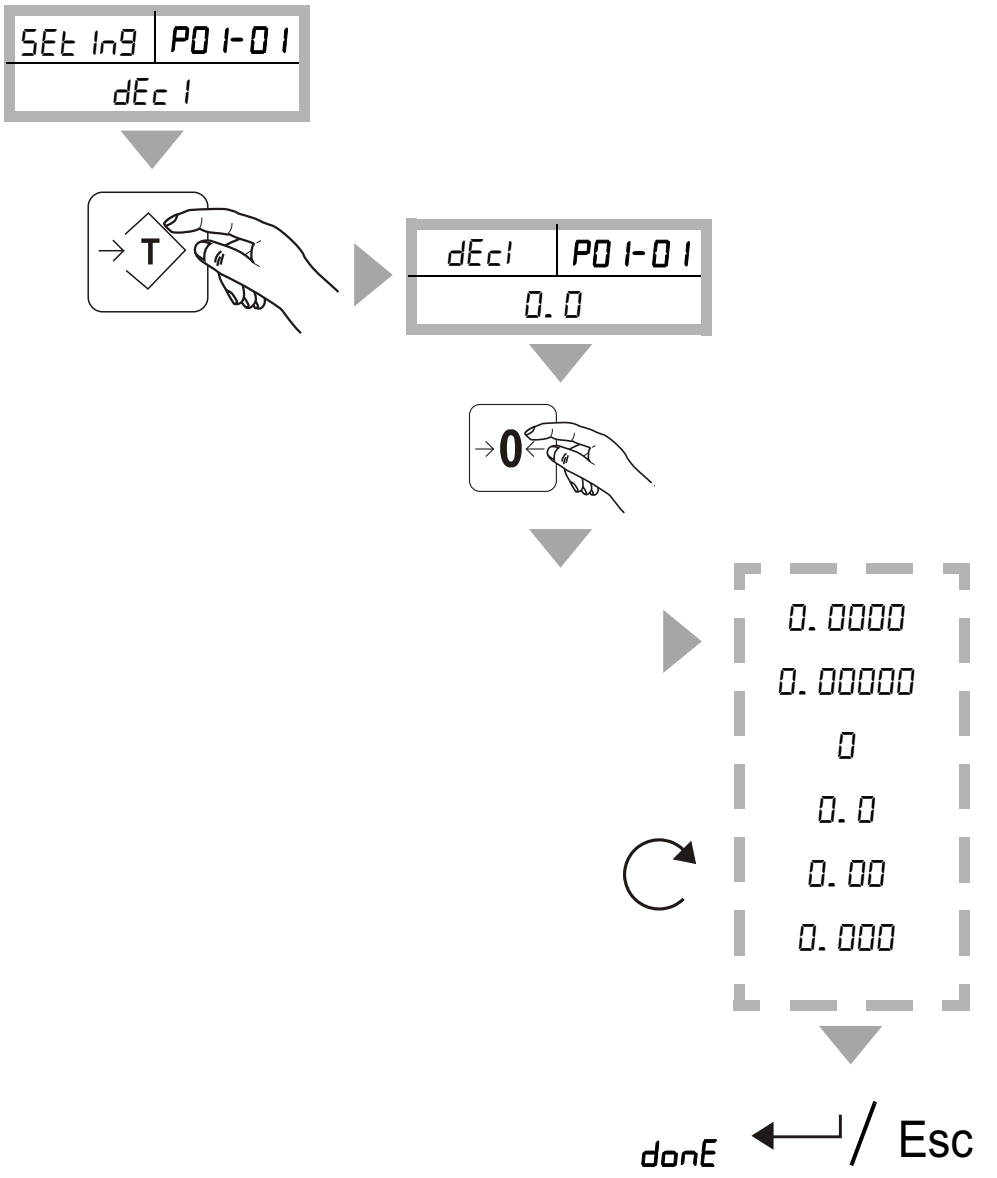
Menu	Submenu	Option	Function
P02 CAL	P02-05 CAL.SEL Selection of the active calibration method.	SP.CAL	Two-point calibration
		Ln.CAL	Calibration with several points (linear calibration)
		FIELD	Calibration with adapted cell values.
		FtorY	Factory-calibration.
P03 2Ero	P03-01 AU.2Ero Automatic zero-setting range	OFF; 0,25d; 0,5d; 1d; 2d; 3d; 4d	Off (default)
	P03-02 rn.2Ero Manual zero-setting range	0; 2; 4; 10; 20; 50; 100	Percentage of the capacity (default 2%). Zero of the scale by pressing the →0← key.
	P03-03 on.2Ero Power-on zero-setting range	0; 2; 4; 10; 20; 50; 100	Percentage of the capacity (default 20%) at power-on.
	P03-04 St.2Ero Set Zero	UnLoAd	Set calibration zero point retrospectively.
P04 APPS	P04-01 cnt.u'o	on oFF	Piece weight optimization.
	P04-02 cnt.to l	000000 flashes	Enter tolerance in %.
	P04-03 LEVEL	Not displayed if P01-09 EHtdEu = oFF is selected in the password-protected menu!.	Calibration tilt sensor.
		CAL.ALL CAL.H CAL.Y	Both axes x-axis y-axis

Menu	Submenu	Option	Function
P 10 rESEt	P05-01 rES.2.CL	no YES	Reset to calibration settings.
	P05-02 rES.2.Ft	no YES	Reset to factory settings.
	P05-03 SEt.CAL	no YES	Save calibration settings

6.2.2 Password protected menu P01 - overview settings

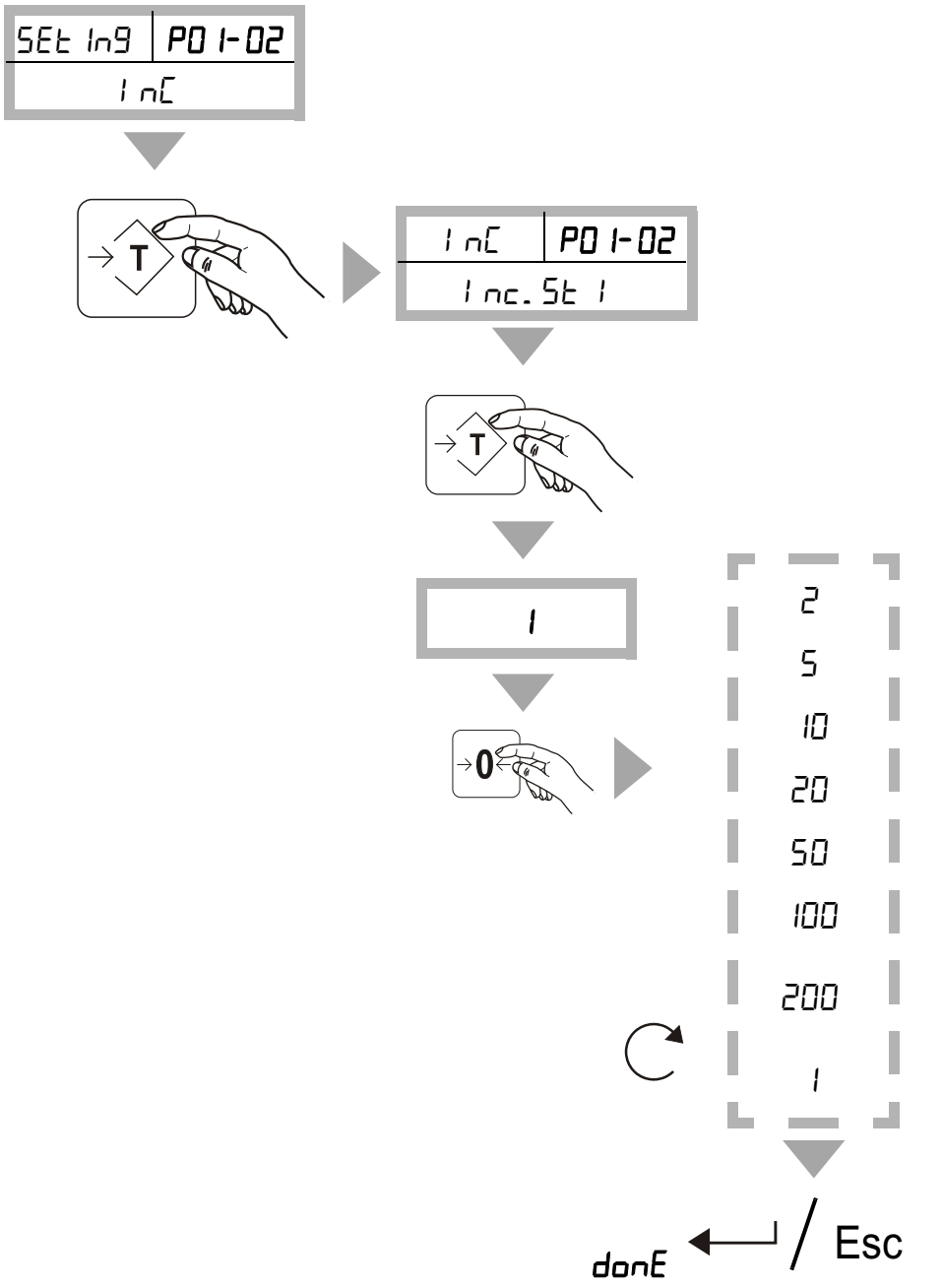


Password protected menu P07-01 - DECI (decimal places)



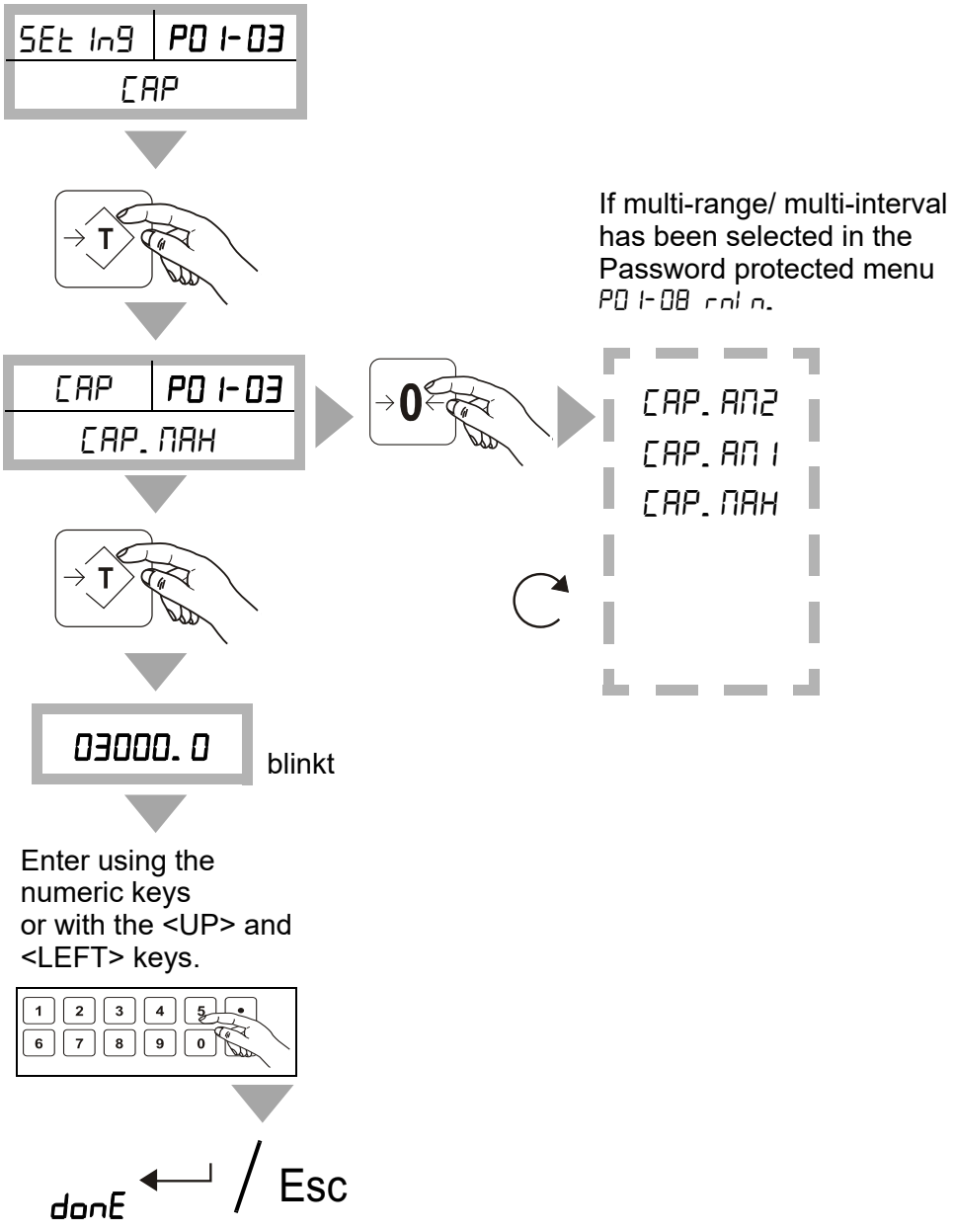
Save/delete see Sektion 6.2

Password protected menu P01-02 - INC (increment size)



Save/delete see Sektion 6.2

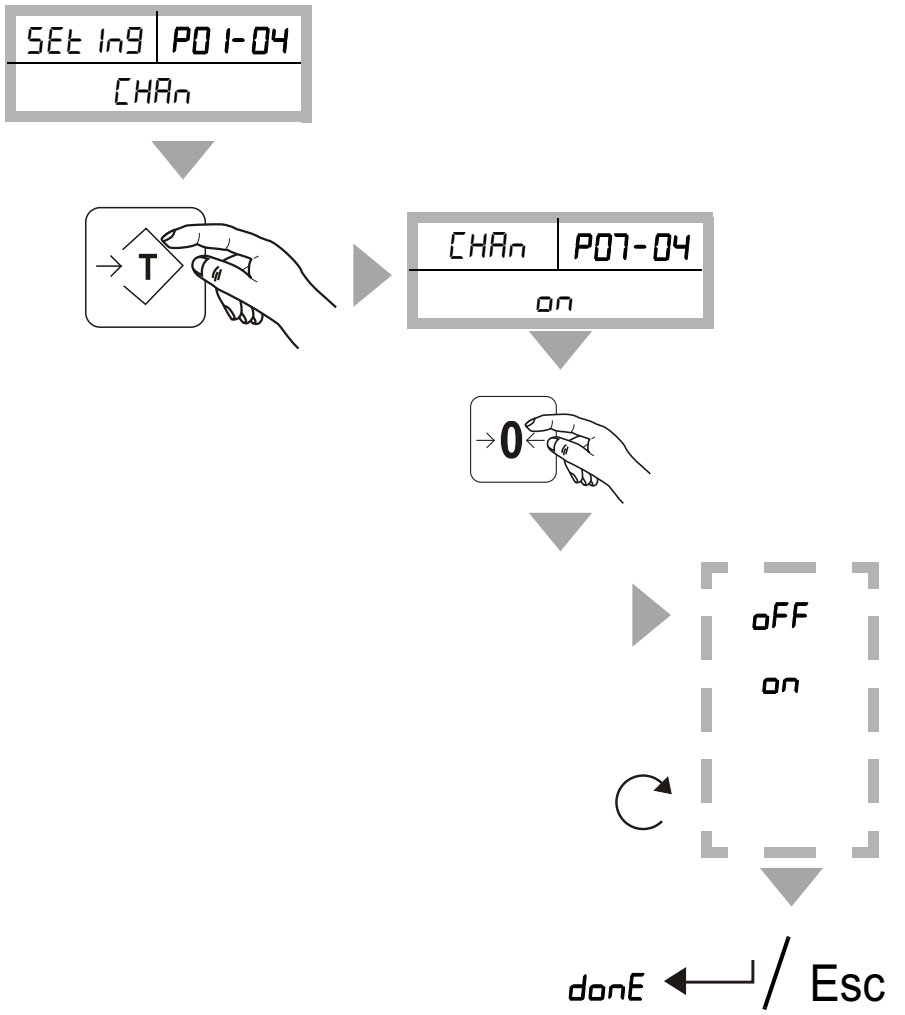
Password protected menu P01-03 - CAP (capacity)



Save/delete see Sektion 6.2

Password protected menu P01-04 - CHAN (active channel)

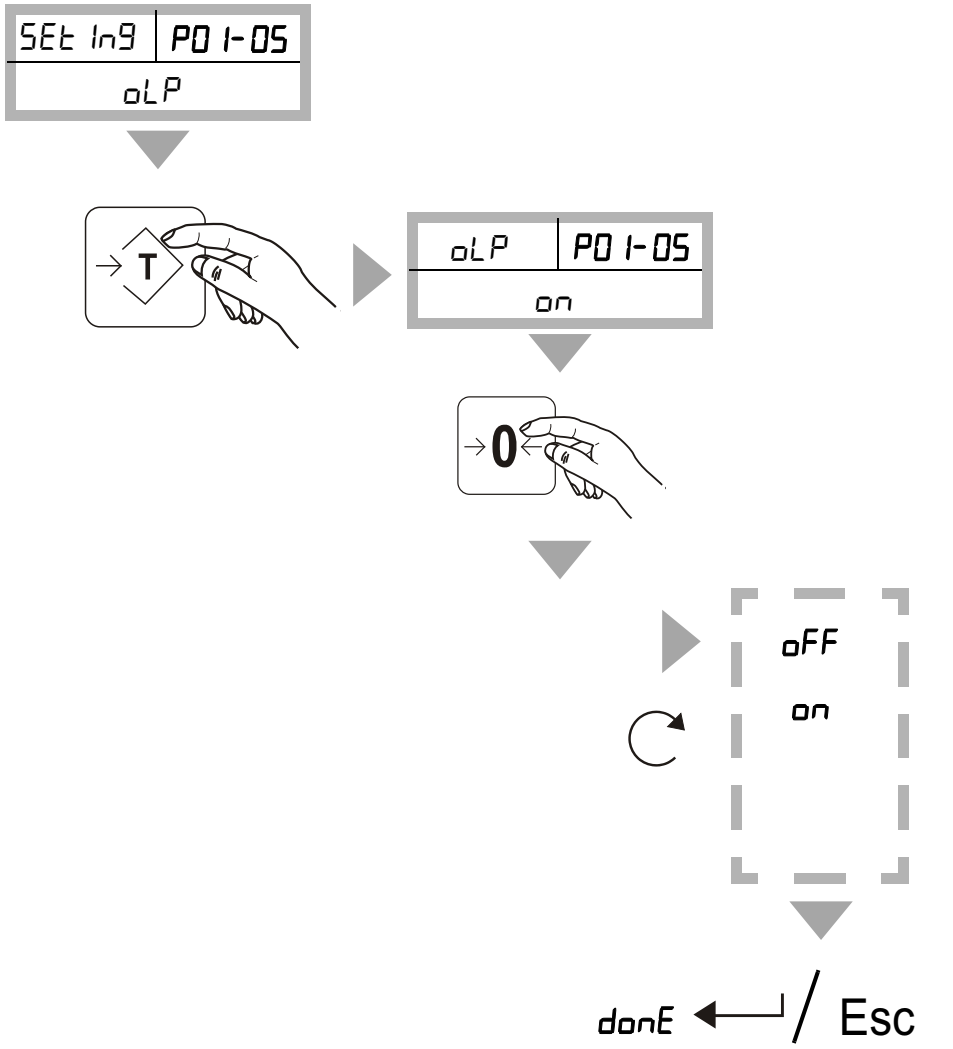
Note
The channel selection option is only available for reference weighing systems.
By default, only channel A is active.



Save/delete see Sektion 6.2

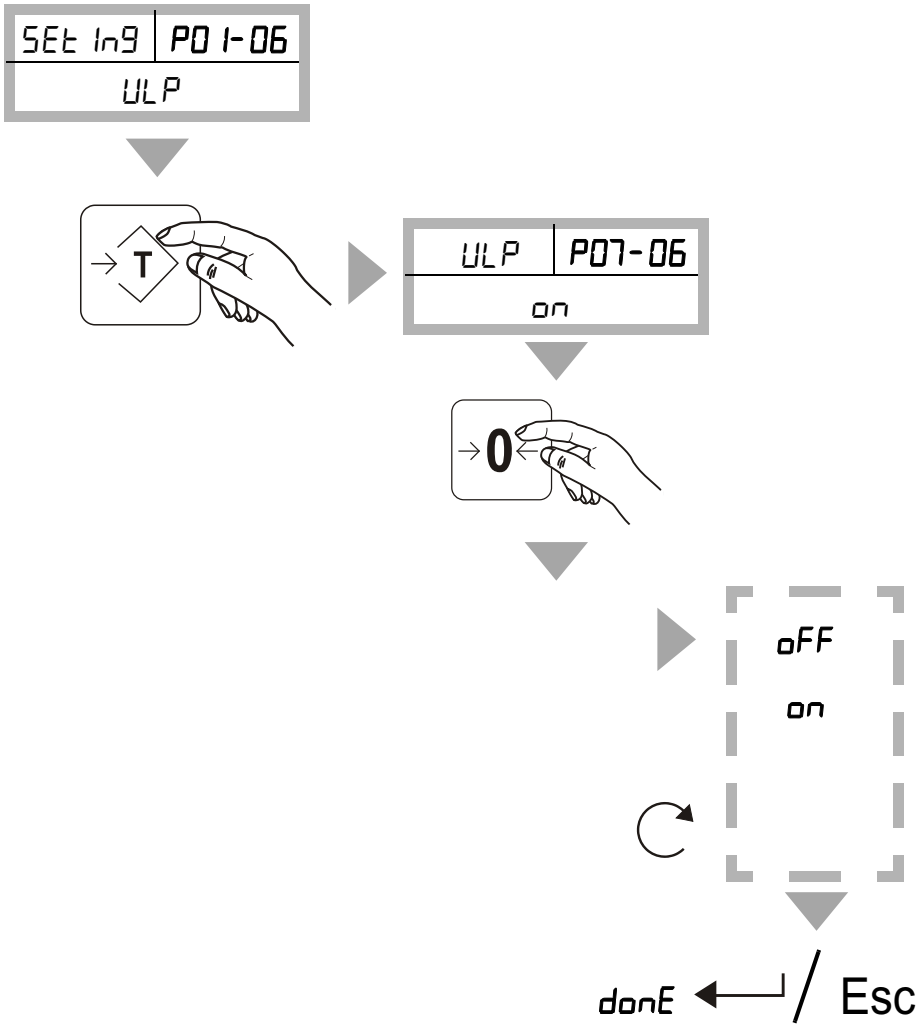
Password protected menu P01-05 - OLP (overload control on/off)

Note
This parameter cannot be changed for verified systems.



Save/delete see Sektion 6.2

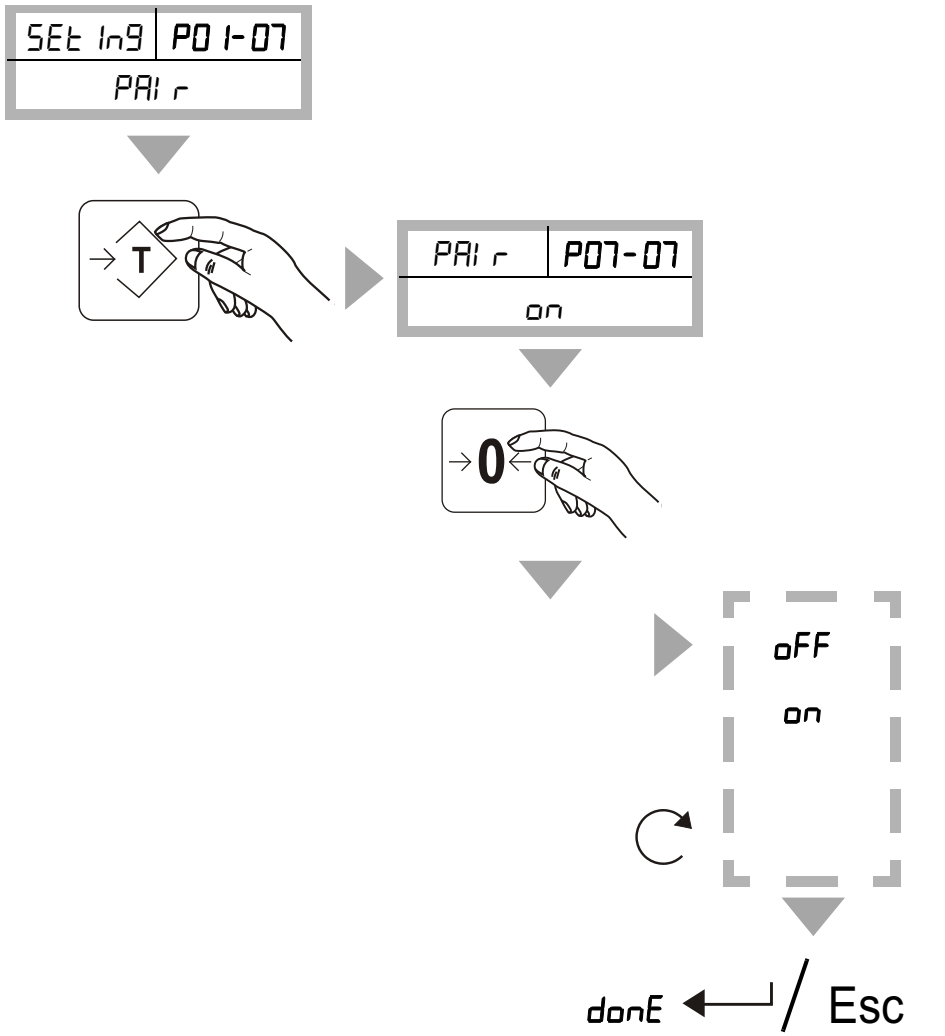
Password protected menu P01-06 - ULP (underload control on/off)



Save/delete see Sektion 6.2

Password protected menu P01-07 - PAIR (scale pairing)

Note
This function should only be performed by BOSCHE employees or qualified personnel authorized by BOSCHE.

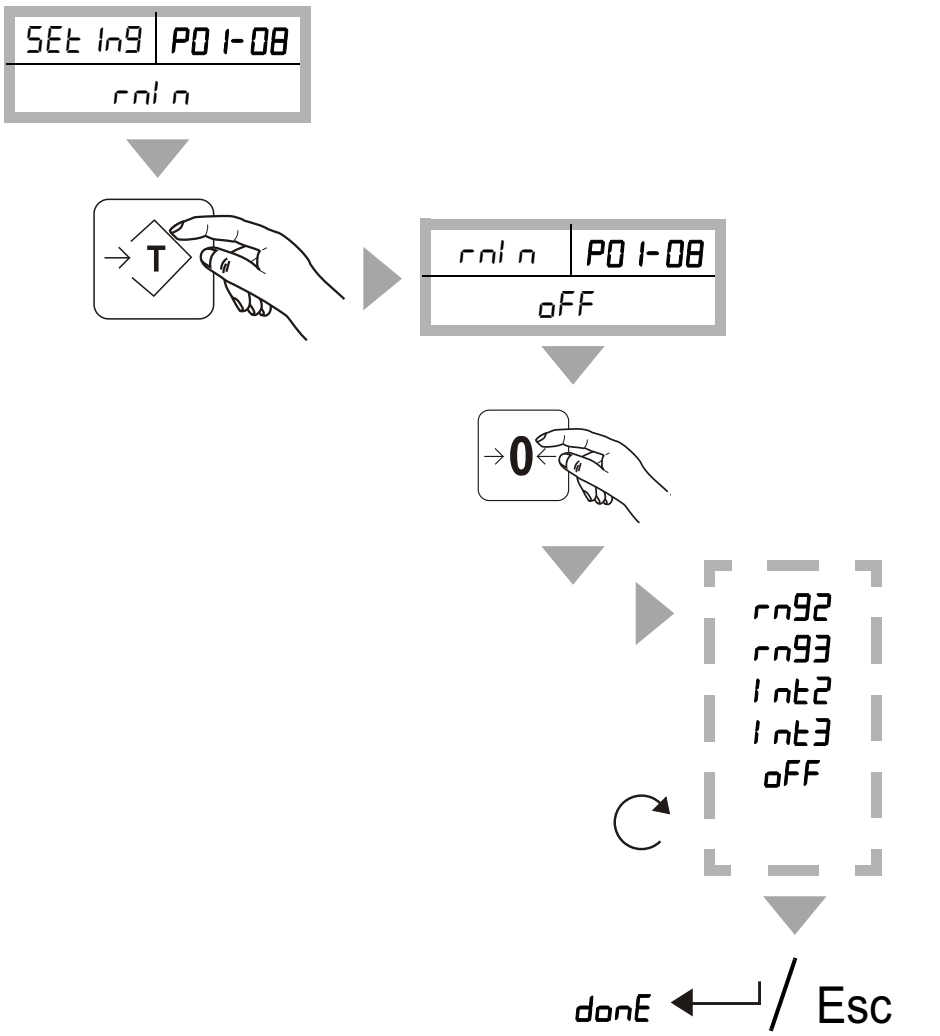


Save/delete see Sektion 6.2

Password protected menu P01-08 - RNIN (setting multi-range/multi-interval)

A multi-range scale consists of several distinct weighing ranges (e.g. 0–3 kg, 3–6 kg, 6–15 kg). Each range is assigned its own verification scale interval (e).

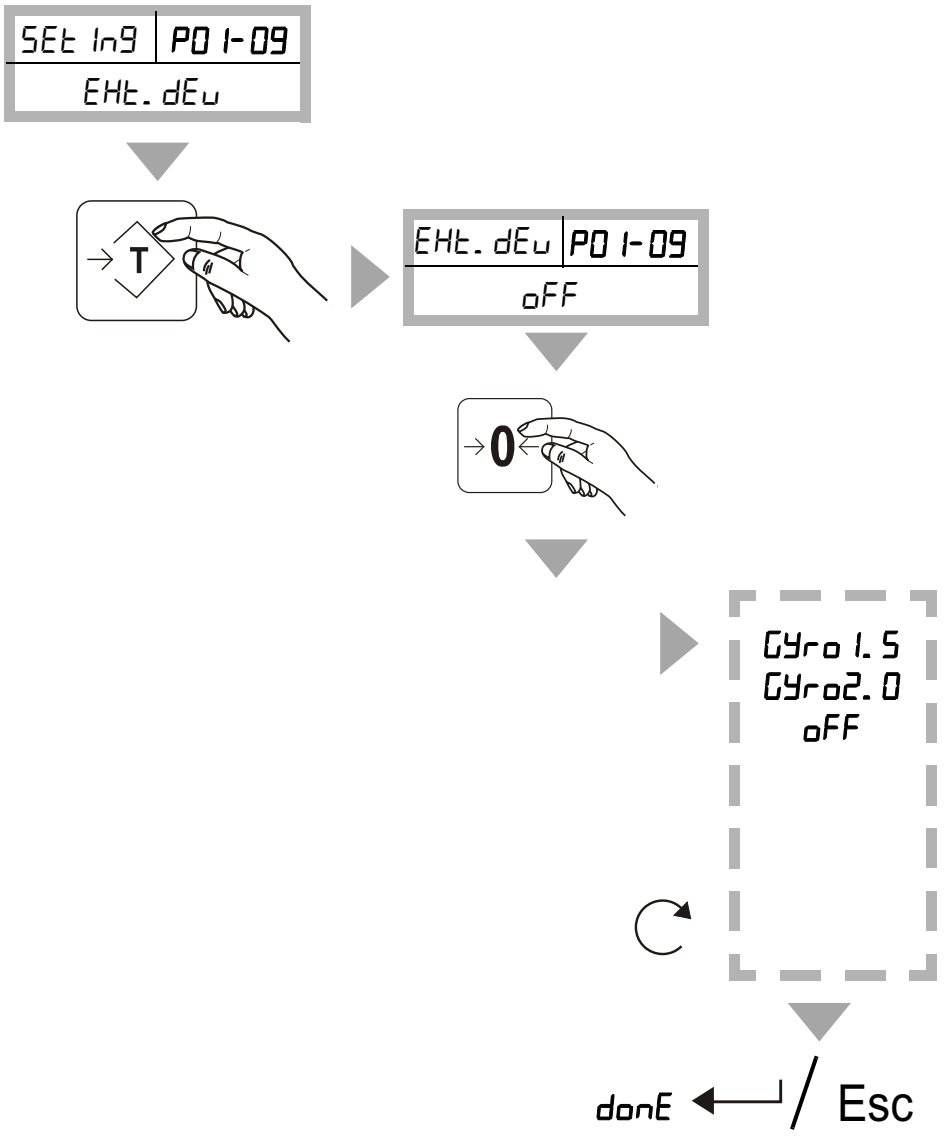
A multi-interval scale has one continuous weighing range, while the scale interval changes automatically. The scale automatically adjusts its resolution.



Save/delete see Sektion 6.2

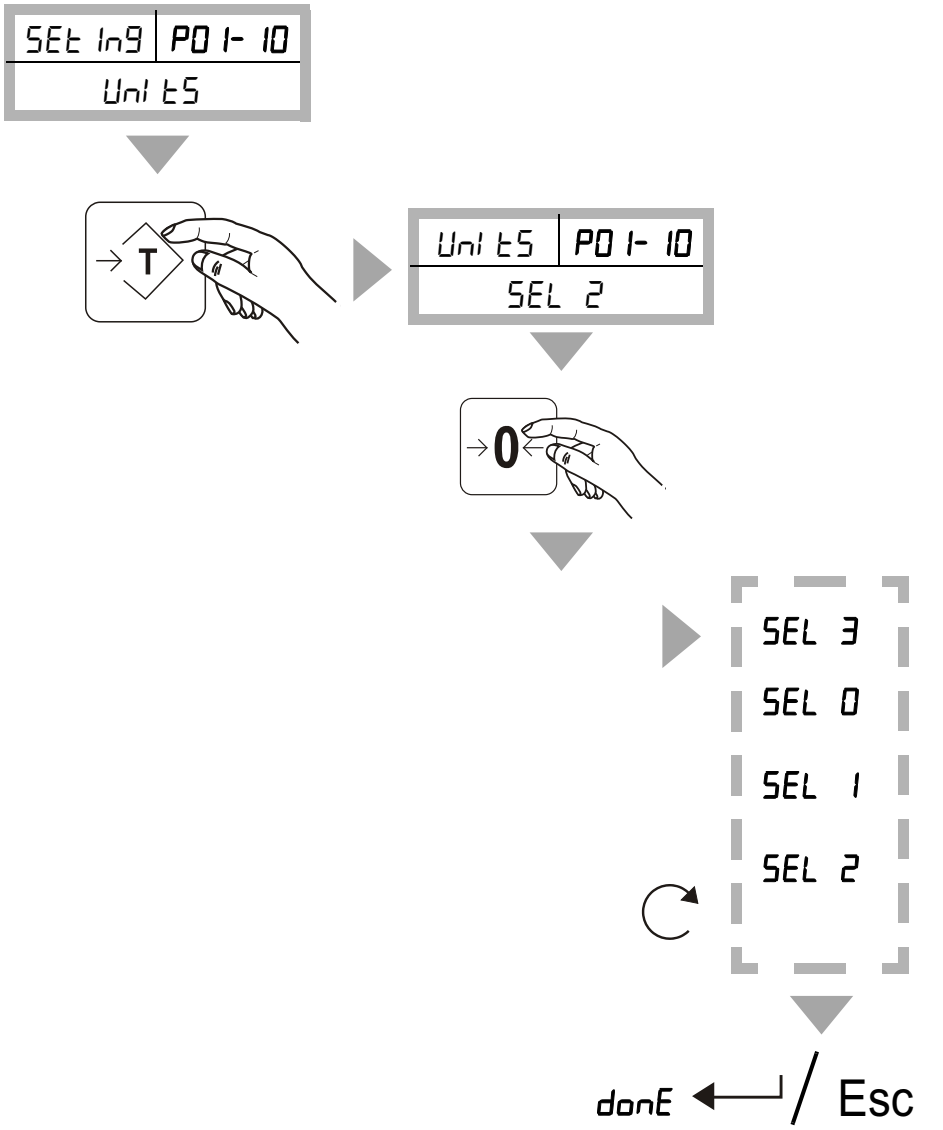
rn92: Multi-Range with two weighing ranges
rn93: Multi-Range with three weighing ranges
Int2: Multi-Interval with two intervals
Int3: Multi-Intervall with three intervals

Password protected menu P01-09 - EXT.DEV (activation of the tilt sensor, if available)



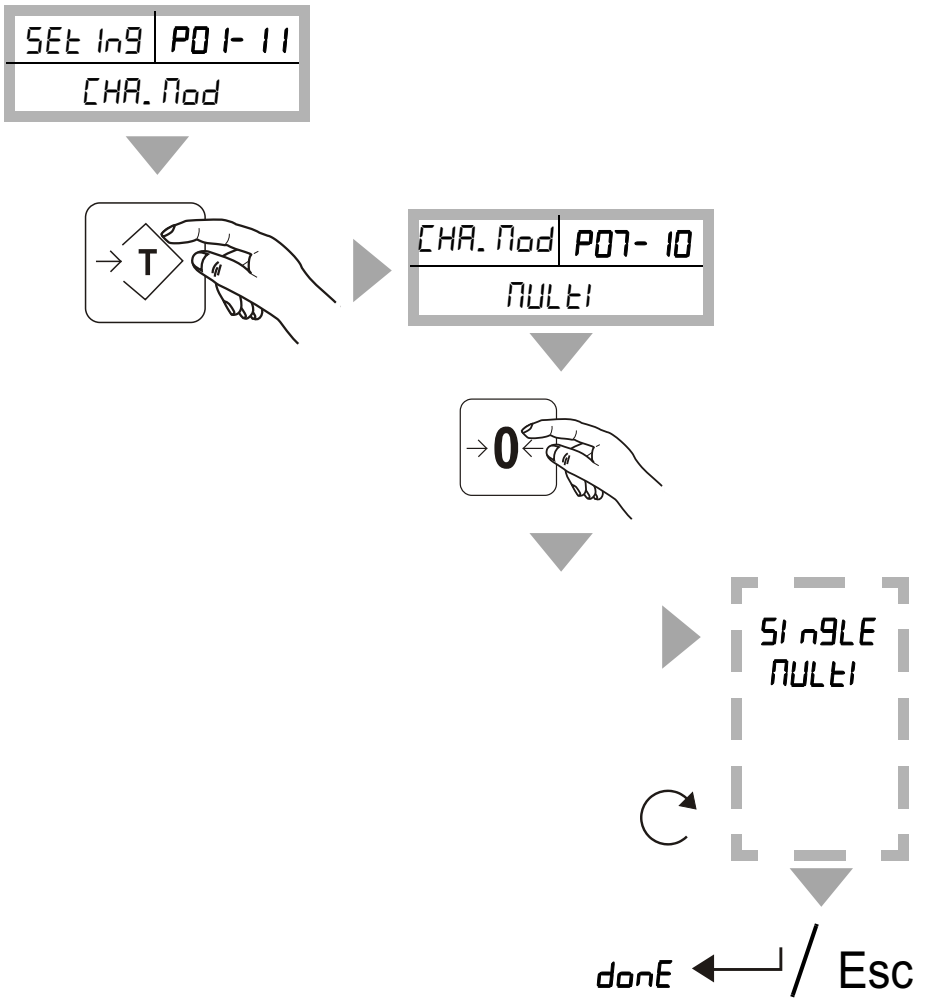
Save/delete see Sektion 6.2

Password protected menu P01-10 - UNITS (weight unit)



Save/delete see Sektion 6.2

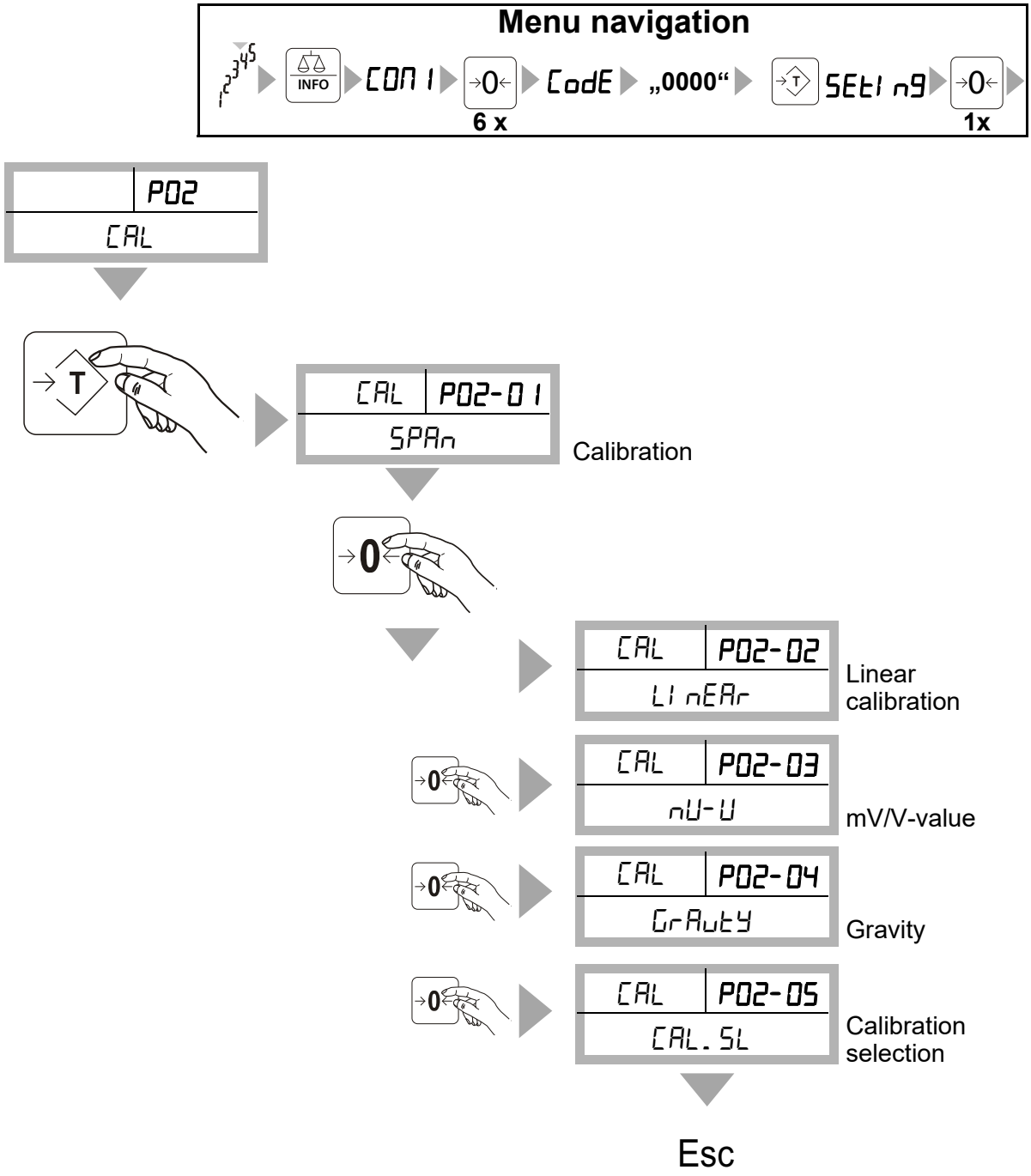
Password protected menu P01-11 - CHA.MOD (channel mode)



Save/delete see Sektion 6.2

6.2.3 Password protected menu P02 - overview CAL

Note
Acclimatisation of the weighing system to the environment (min.10 minutes) is necessary for successful calibration. Make sure there are no objects on the weighing plate.

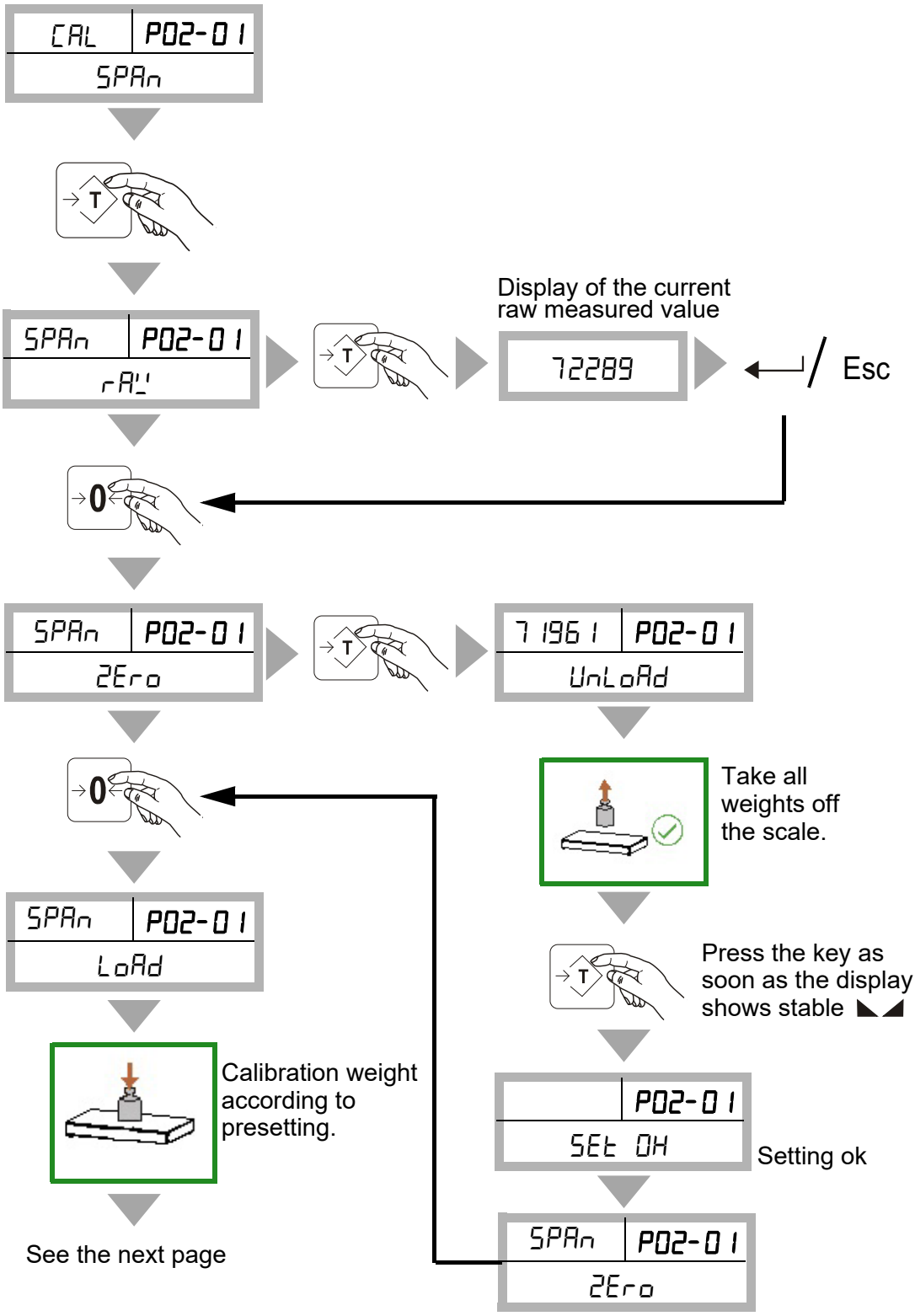


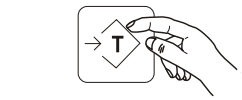
If the calibration was not successful, the error message ."Error" is displayed. Repeat the entire process as a failure may have prevented a successful calibration. After calibration, the scale should be checked for correct calibration and linearity. Repeat the process if necessary, and make sure that the scale is stable before you load a weight.

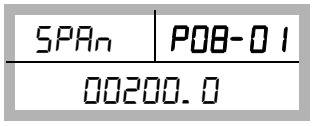
If you want to discard the calibration, press:



Password protected menu P02-01 - SPAN (calibration with reference weight)

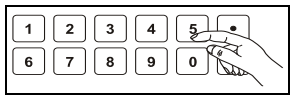






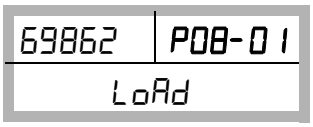
flashes

Enter the calibration weight
(min. 50 % of the max. weight)

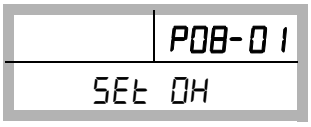


(000000-999999)

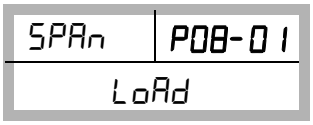








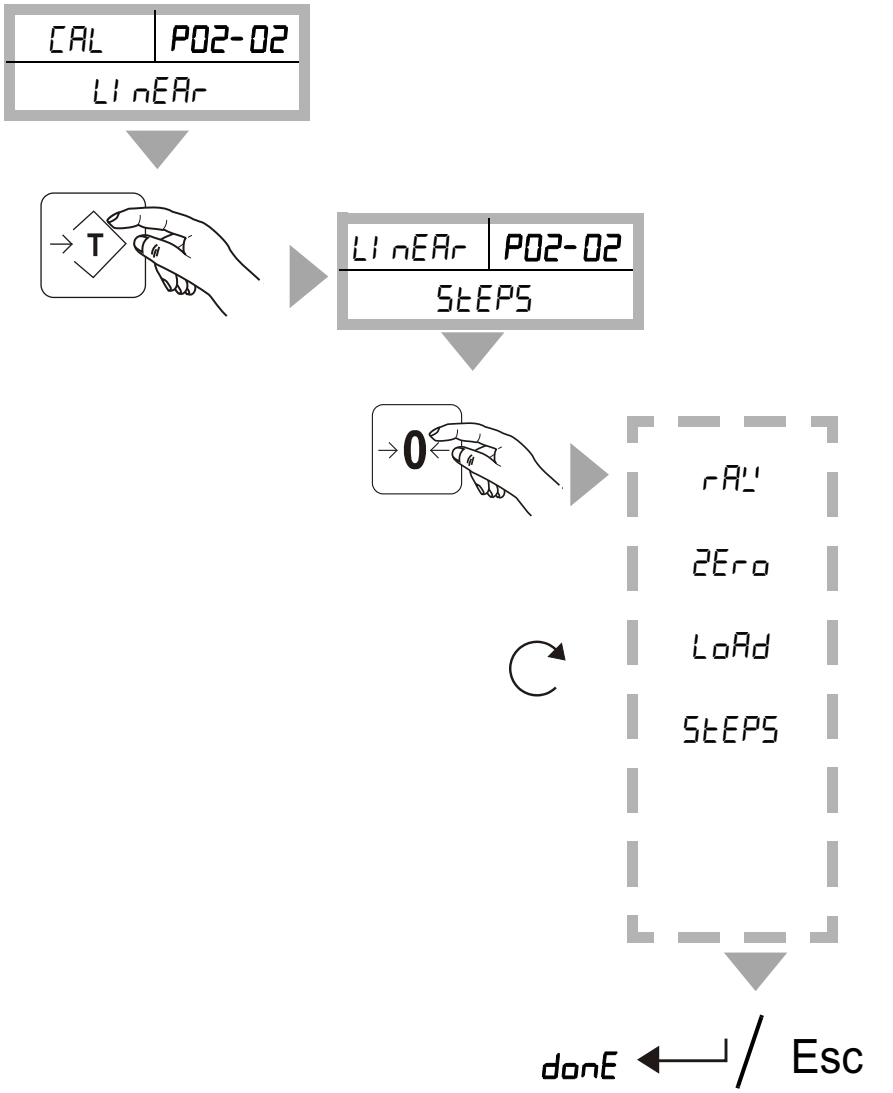
Setting ok



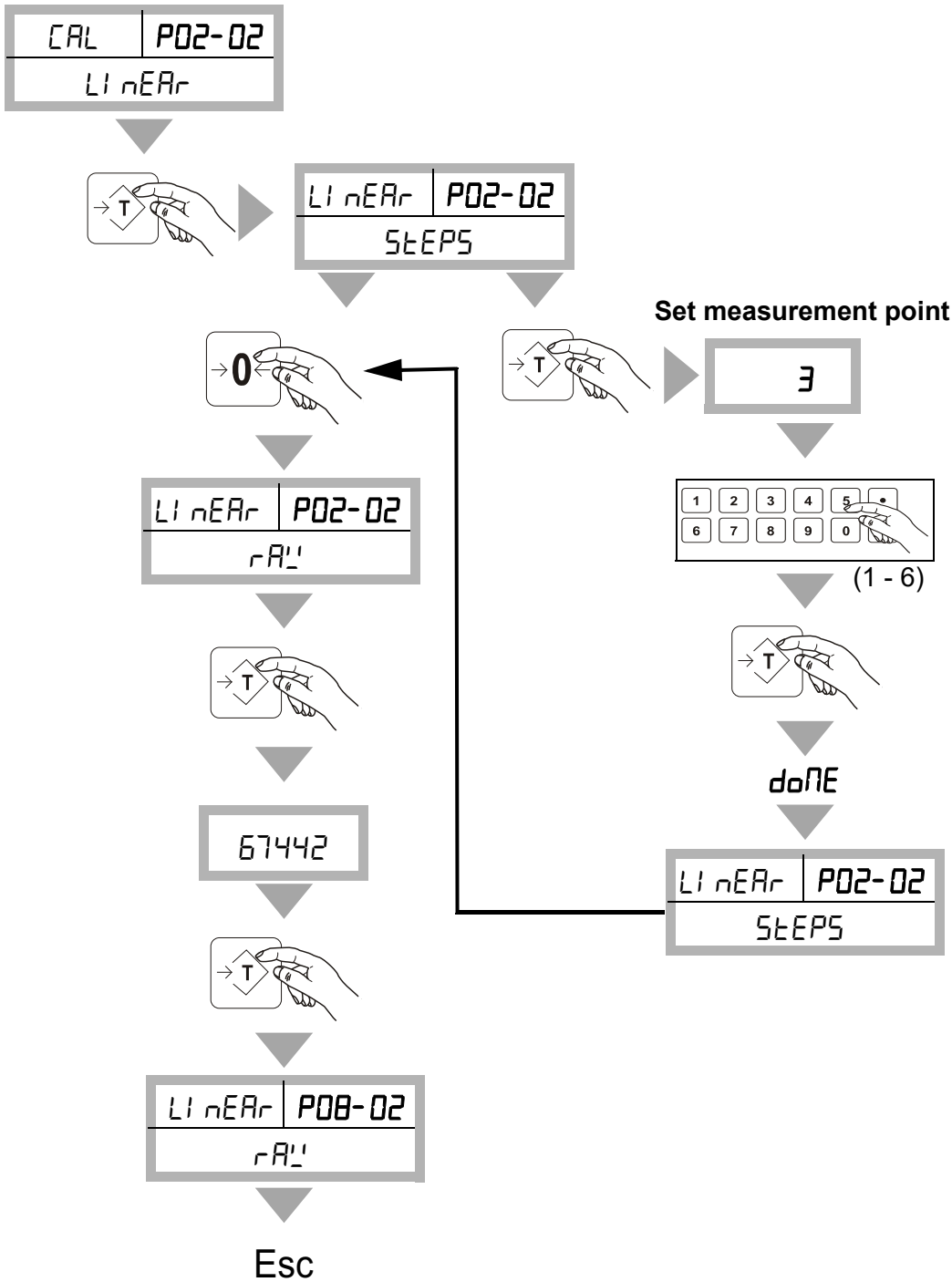
Esc

Save/delete see Sektion 6.2

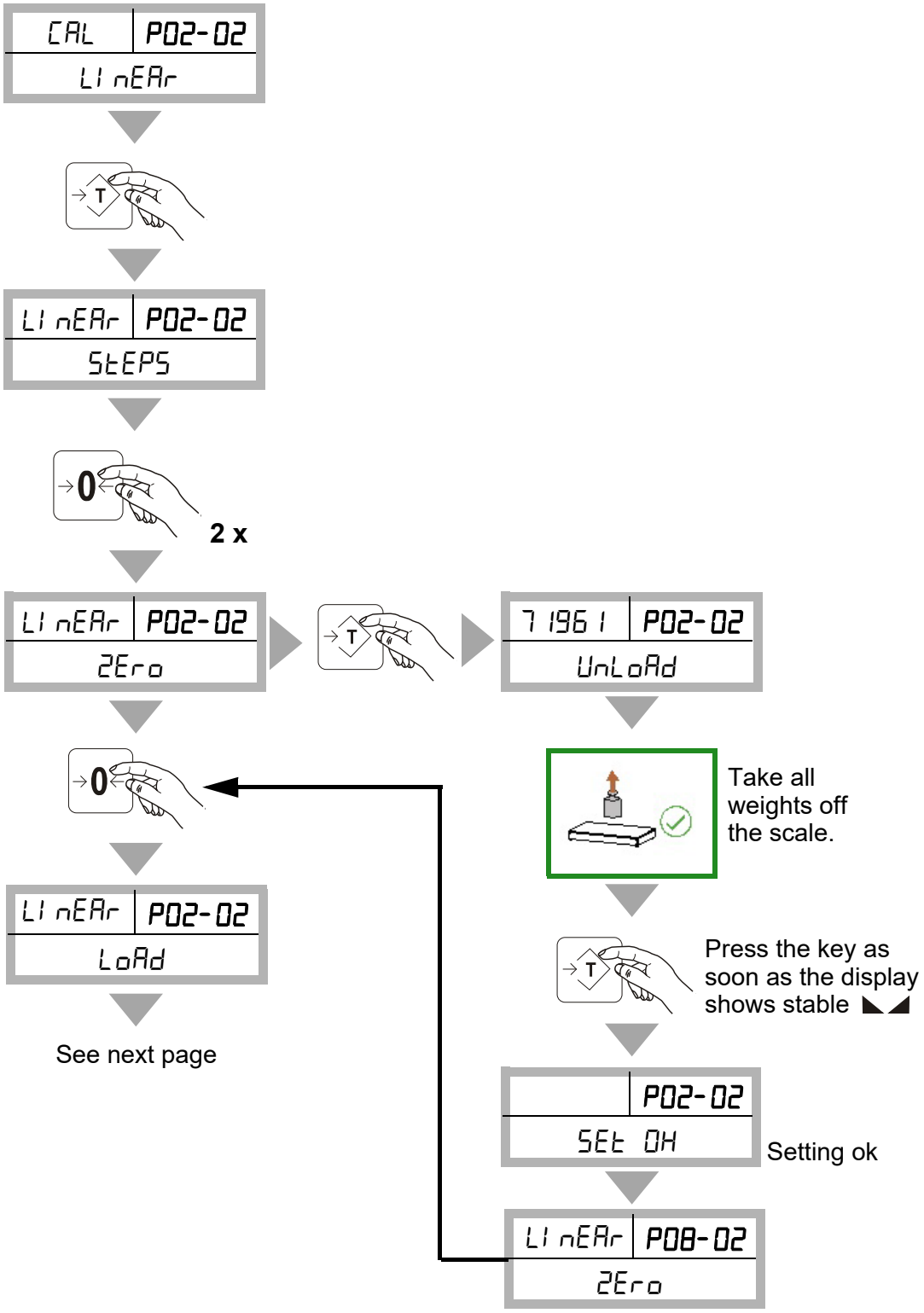
Password protected menu P02-02 - Linear (linear calibration)

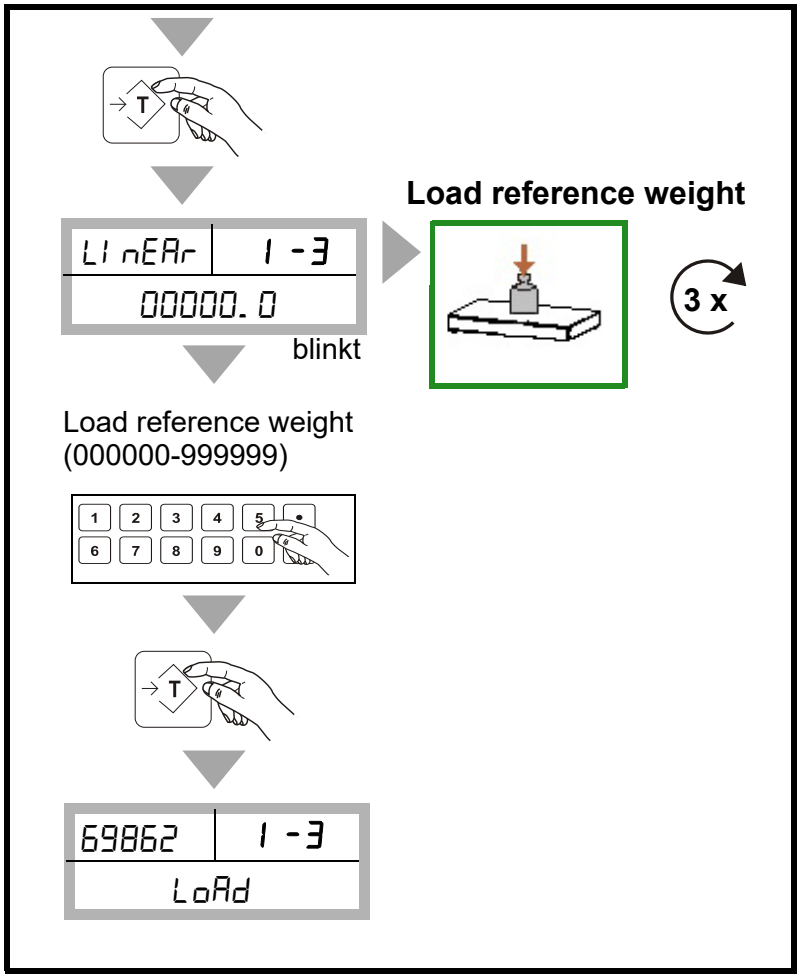


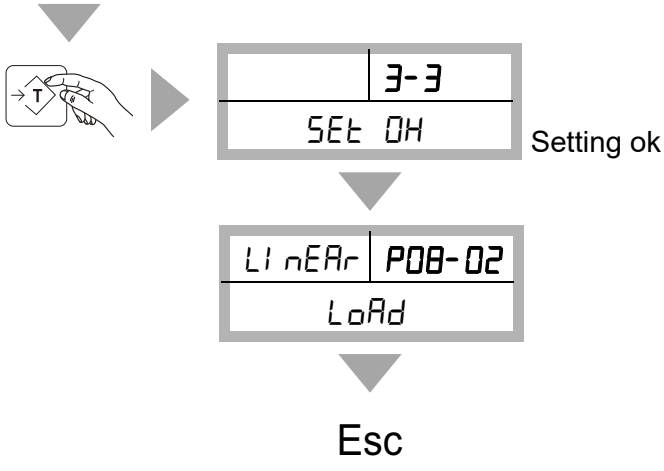
Save/delete see Sektion 6.2



See next page


CAL P02-02
LInEAr
T
LInEAr P02-02
StEPS
0
2 x
LInEAr P02-02
ZEro
T
7 1961 P02-02
UnLoAd
Take all weights off the scale.
T
Press the key as soon as the display shows stable
P02-02
SEt OH
Setting ok
LInEAr P08-02
ZEro
0
LInEAr P02-02
LoAd
See next page

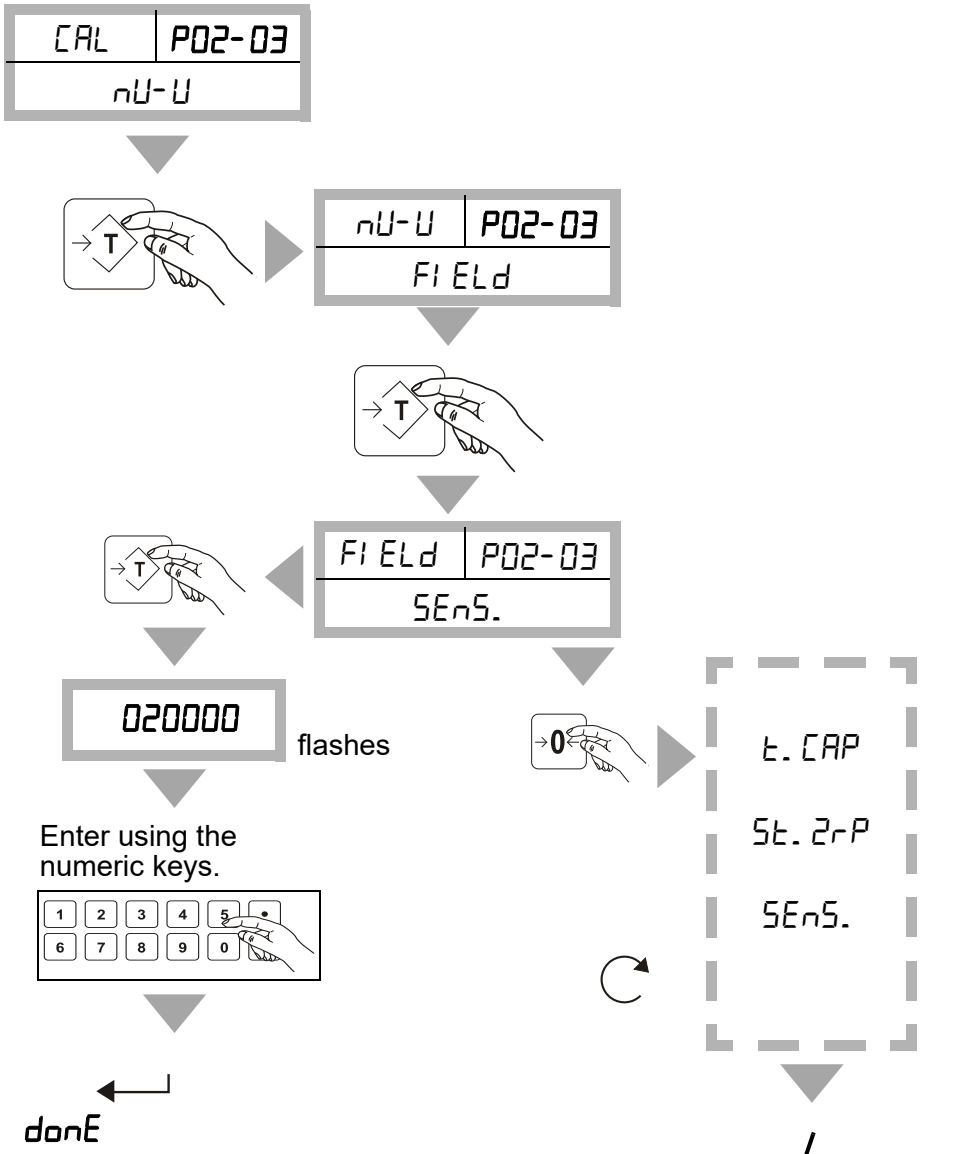




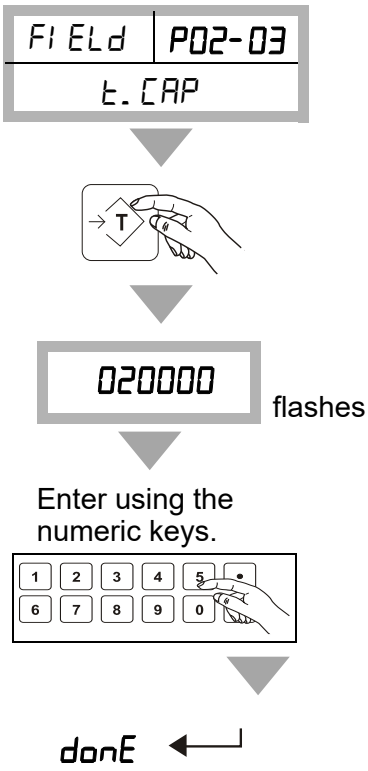
Esc

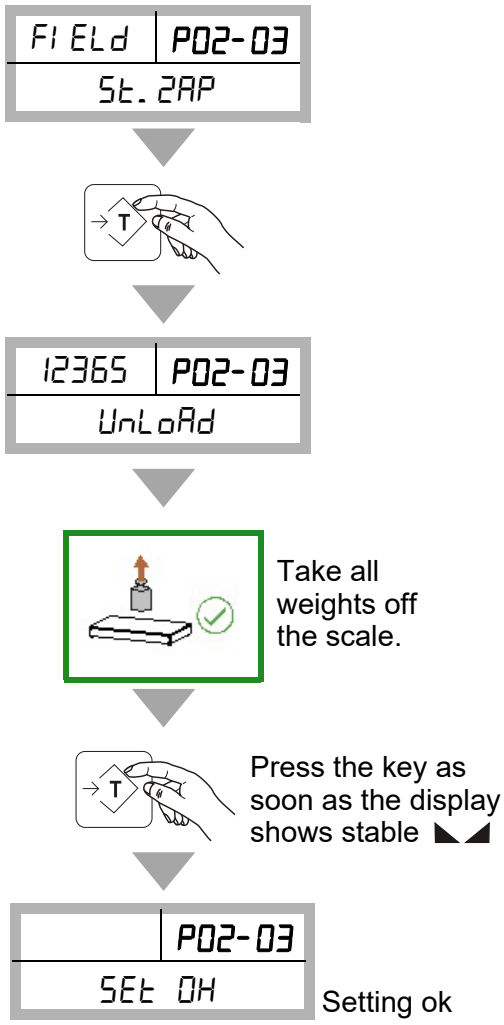
Save/delete see Sektion 6.2

Function menu P02-03 - mV-V (theoretical calibration with mV/V value of the load cells)

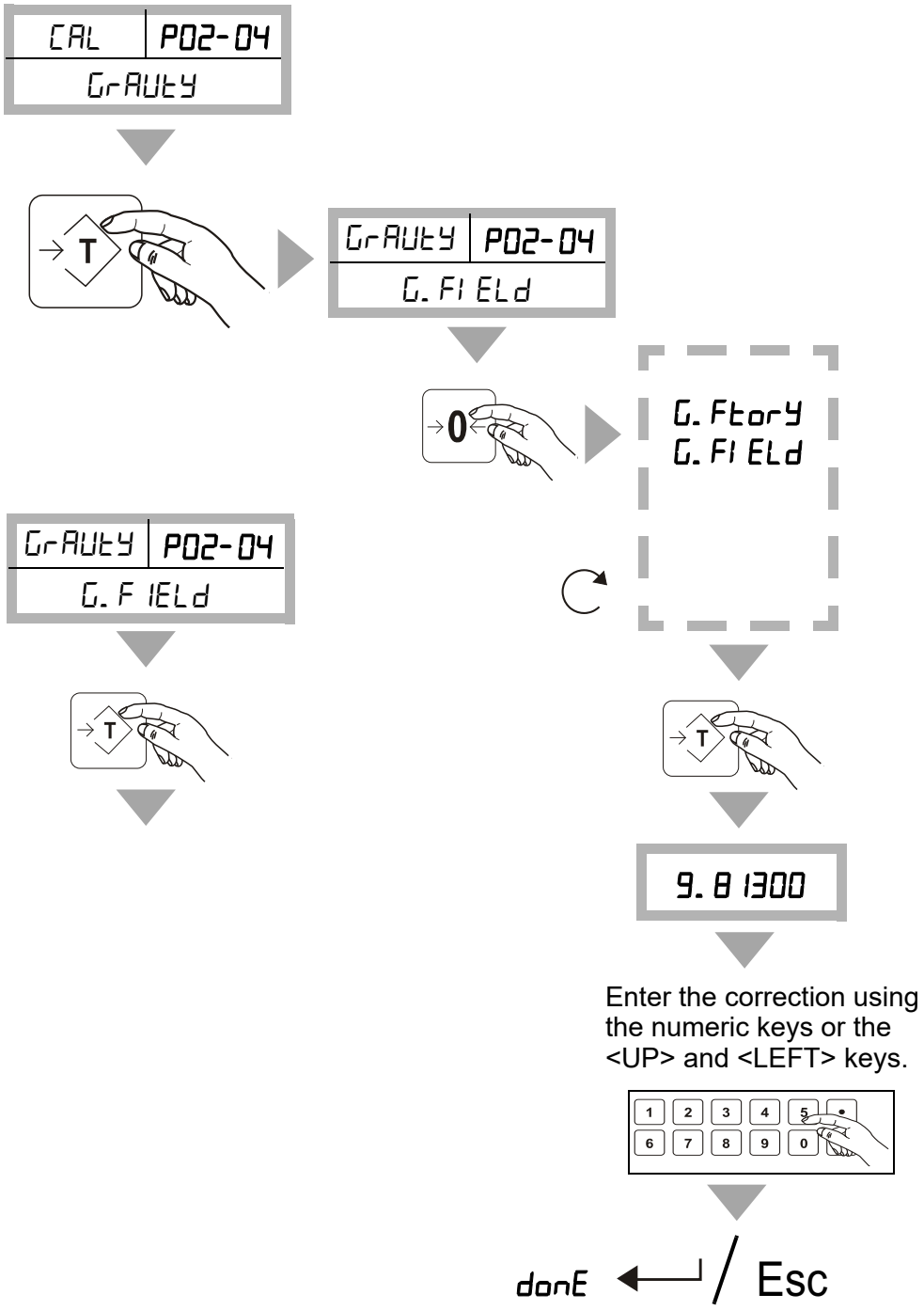


Save/delete see Sektion 6.2


FIELd P02-03
t.CAP
020000
flashes
Enter using the numeric keys.
donE


FIELd P02-03
St.2AP
12365 P02-03
UnLoAd
Take all weights off the scale.
Press the key as soon as the display shows stable
P02-03
SEt OH
Setting ok

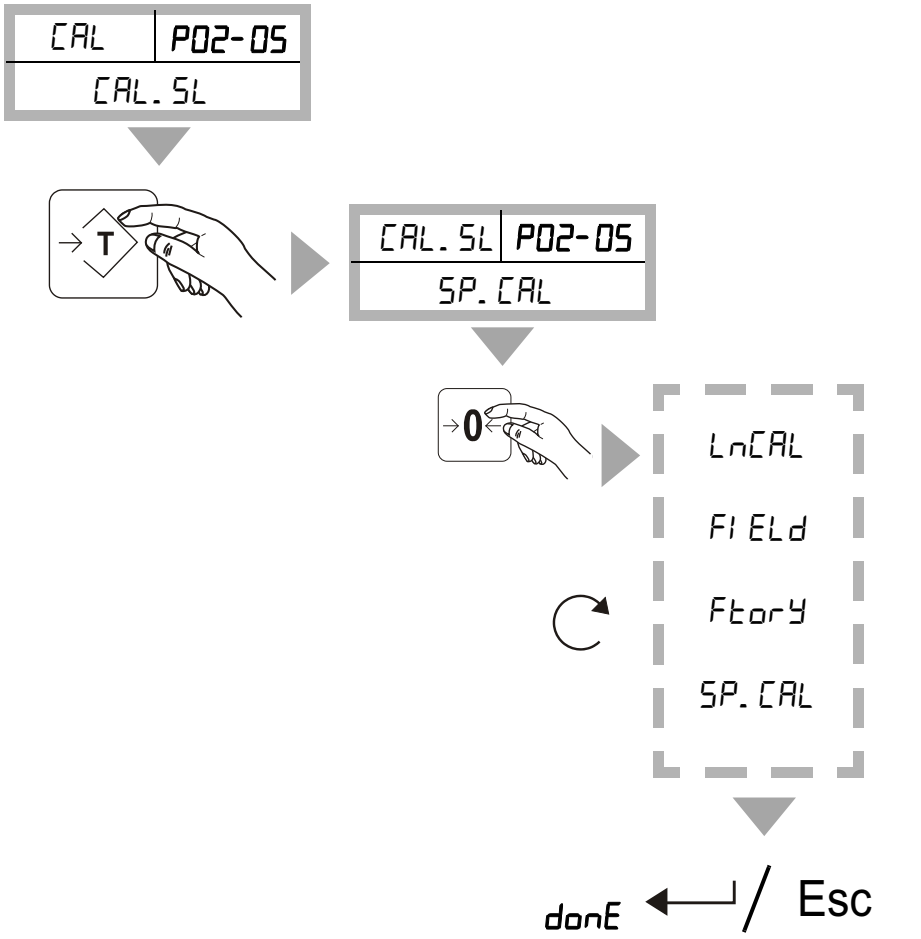
Password protected menu P02-04 - GRAVTY (correction)



Save/delete see Sektion 6.2

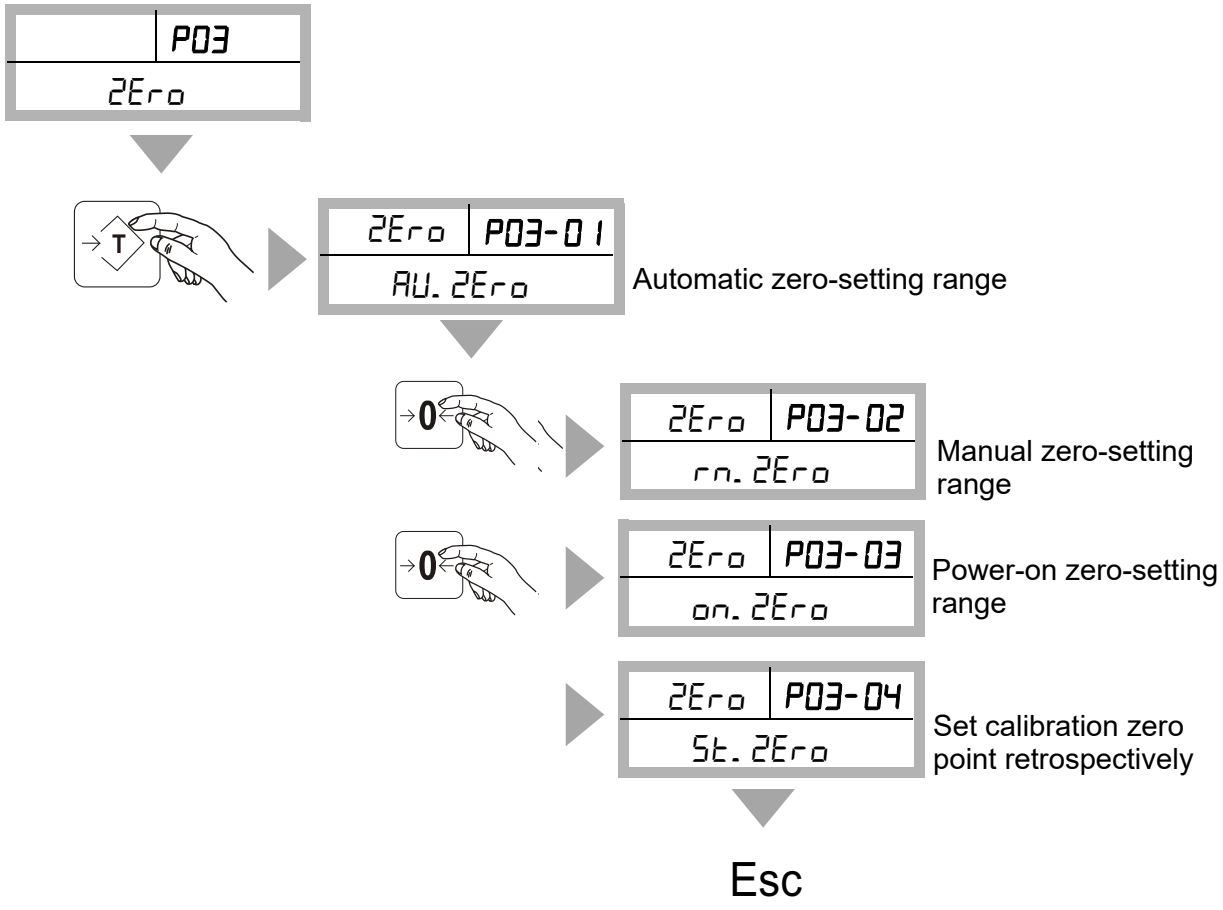
G. FtorY --> Location of scale calibration
G. FI ELd --> Location of scale use

Password protected menu P02-05 - CALSL (calibration selection)



Save/delete see Sektion 6.2

6.2.4 Password protected menu P03 - overview ZERO (zero menu)

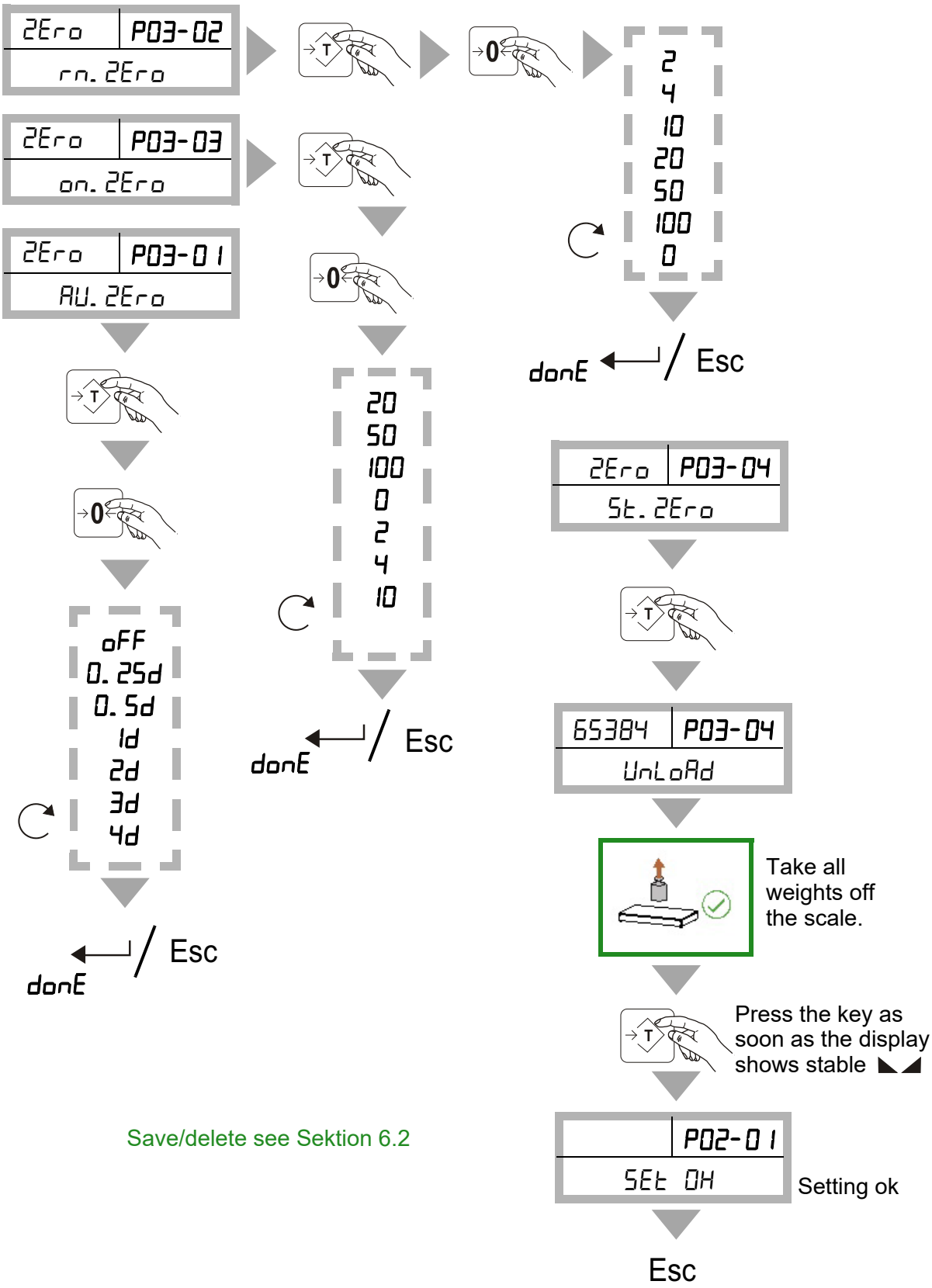


Automatic zero-setting range: The scale automatically compensates for small deviations from zero.

Manual zero-setting range: Activated by the operator by pressing the "Zero" key (±2% of the weighing range).

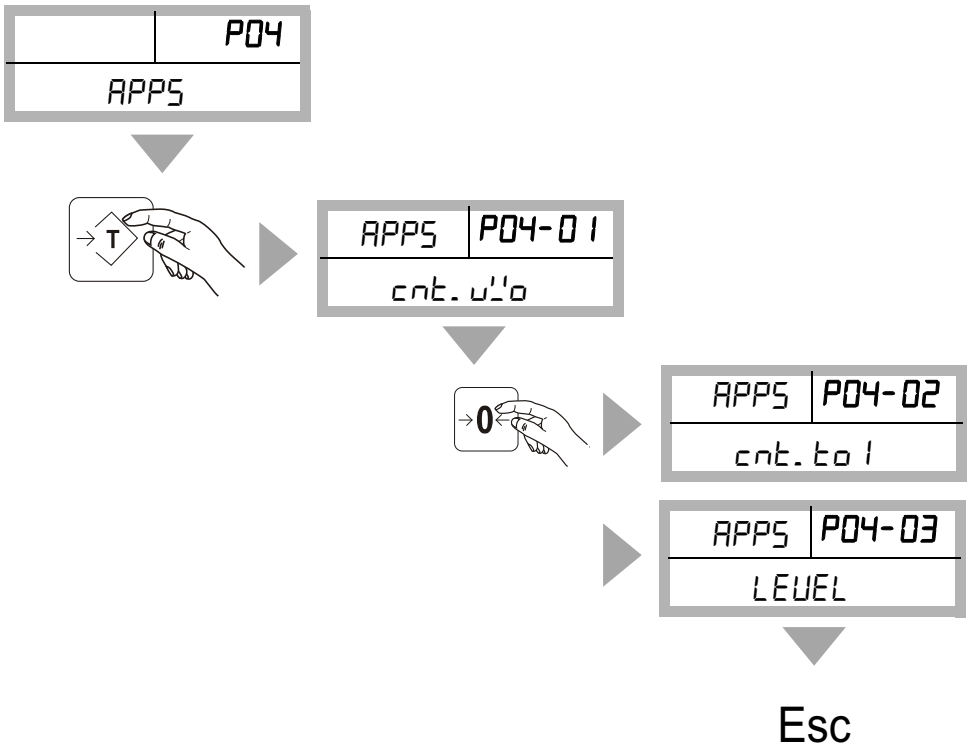
Power-on zero-setting range: The scale automatically zeros itself when powered on.

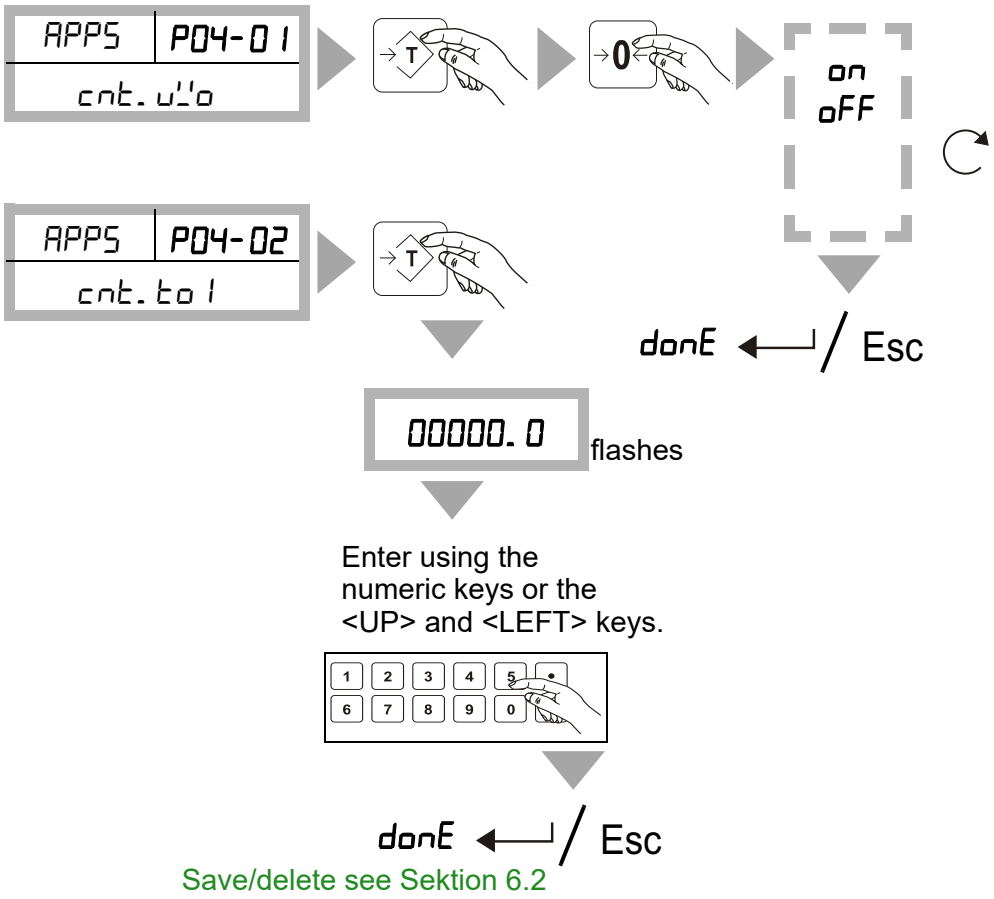
Set zero point: A calibration zero point can be set afterwards.

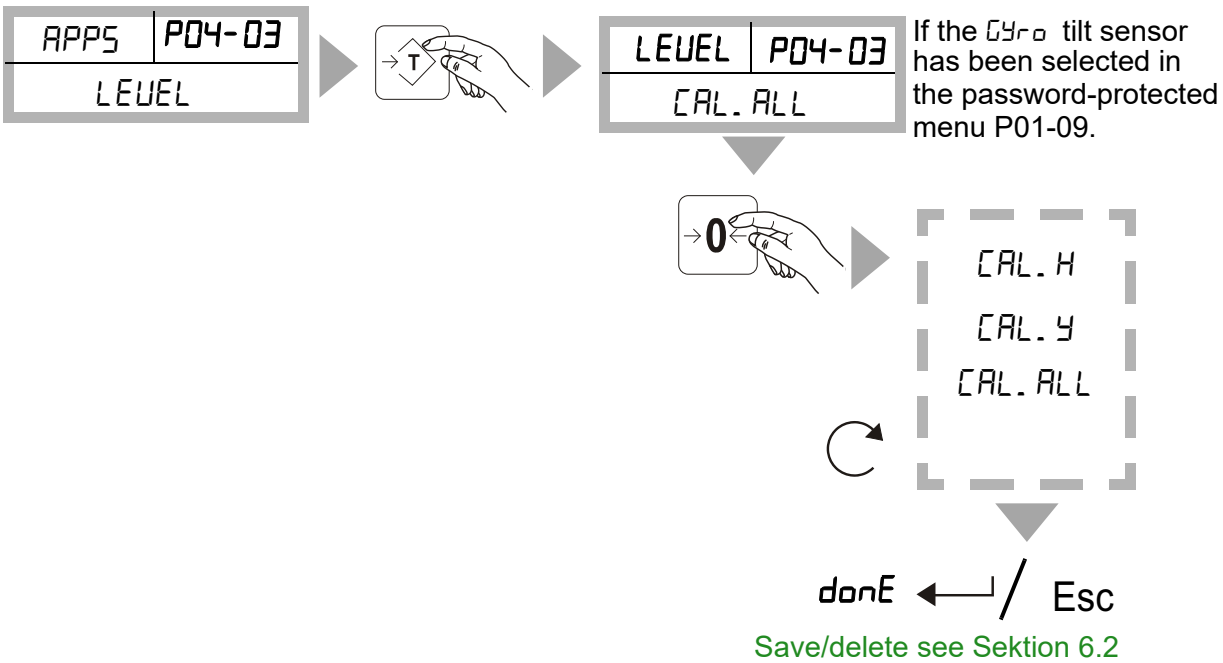


Save/delete see Sektion 6.2

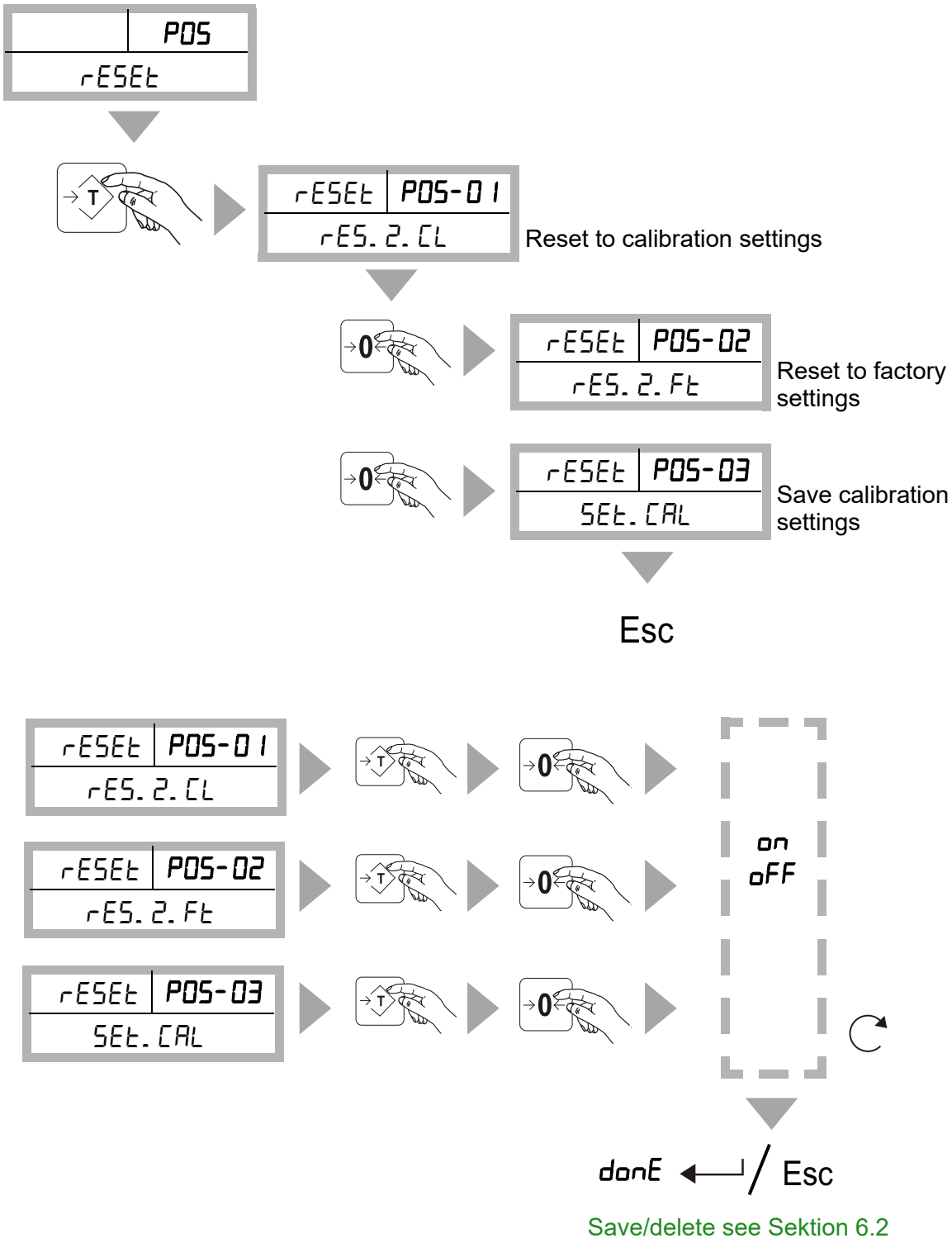
6.2.5 Password protected menu P03 - APPS (tilt sensor)




APPS P04-01
cnt.uLo
T
0
on
oFF
APPS P04-02
cnt.to l
T
donE Esc
00000.0
flashes
Enter using the
numeric keys or the
<UP> and <LEFT> keys.
1 2 3 4 5 .
6 7 8 9 0
donE Esc
Save/delete see Sektion 6.2


APPS P04-03
LEVEL
T
LEVEL P04-03
CAL.ALL
If the Gyro tilt sensor
has been selected in
the password-protected
menu P01-09.
0
CAL.H
CAL.Y
CAL.ALL
donE Esc
Save/delete see Sektion 6.2

6.2.6 Password protected menu P05 - RESET



Save/delete see Sektion 6.2

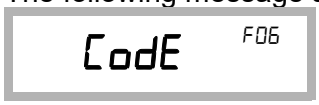
6.3 Application example for a calibration

Hinweis
For verified scales, the “Pairing“ setting (PAIr P01-07) must be oFF.

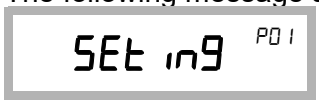
- Ensure that no load is on the scales.
- Switch on the scales using the “<ON/OFF>” key.
- Press the INFO key while the scales counts down.
  - The message appears on the display:



- Press the →0← key 6 x.
  - The following message appears on the display:



- Press the →T← key.
  - The following message appears on the display „- - - - “.
- Enter the code “0000” using the numeric keypad.
- Confirm the code using the →T← key.
  - The following message appears on the display:



- Press the →0← key.
  - The message (CAL/calibration) appears on the display:

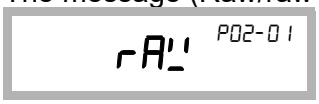


- Press the →T← key.
  - You enter the submenu.
  - The message (SPAN/two-point calibration) appears on the display:

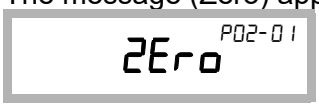


- Press the →T← key.

- The message (Raw/raw measured value) appears on the display:



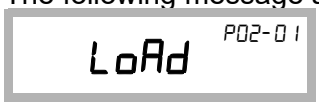
- Press the →T key.
  - The current raw measured value of the A/D converter appears on the display.
- Press the PRINT key.
  - Returns to the rAW menu.
- Press the →0← key.
  - You enter the next submenu.
  - The message (Zero) appears on the display:



- Press the →T key.
  - The message appears on the display:



- Press the →T key when the displayed value is stable.
  - The zero point is calibrated, the value is accepted.
  - The message "SAVE" and "donE" briefly appears on the display.
  - Returns to the 2Ero menu.
- Press the →0← key.
  - You enter the next submenu.
- The following message appears on the display:

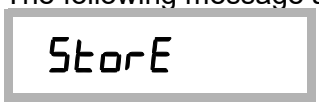


- Press the →T key.
  - 00.200 --> flashes
- Enter a value for the calibration weight using the numeric keypad.
- Press the →T key.
- Set the calibration weight (according presetting) on the scale.
- Press the →T key when the displayed value is stable.

- The message “SEt oH” briefly appears on the display.
- Returns to the „LoAd“ menu.
- The calibration is completed.

• Press the PRINT key 3 x to exit the calibration.

- The following message appears on the display:



Note
Please note that the value of the electronic verification counter is increased by one.

Should the value be stored?

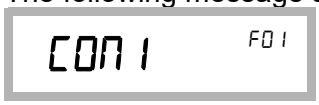
• Press the key →T.

- The message “StorEd“ briefly appears on the display.

Should the value not be stored?

• Press the key PRINT.

- The message “CLEAr“ briefly appears on the display.
- The following message appears on the display:



• Press the key PRINT.

- The scale is switched off.

7 Menu overview

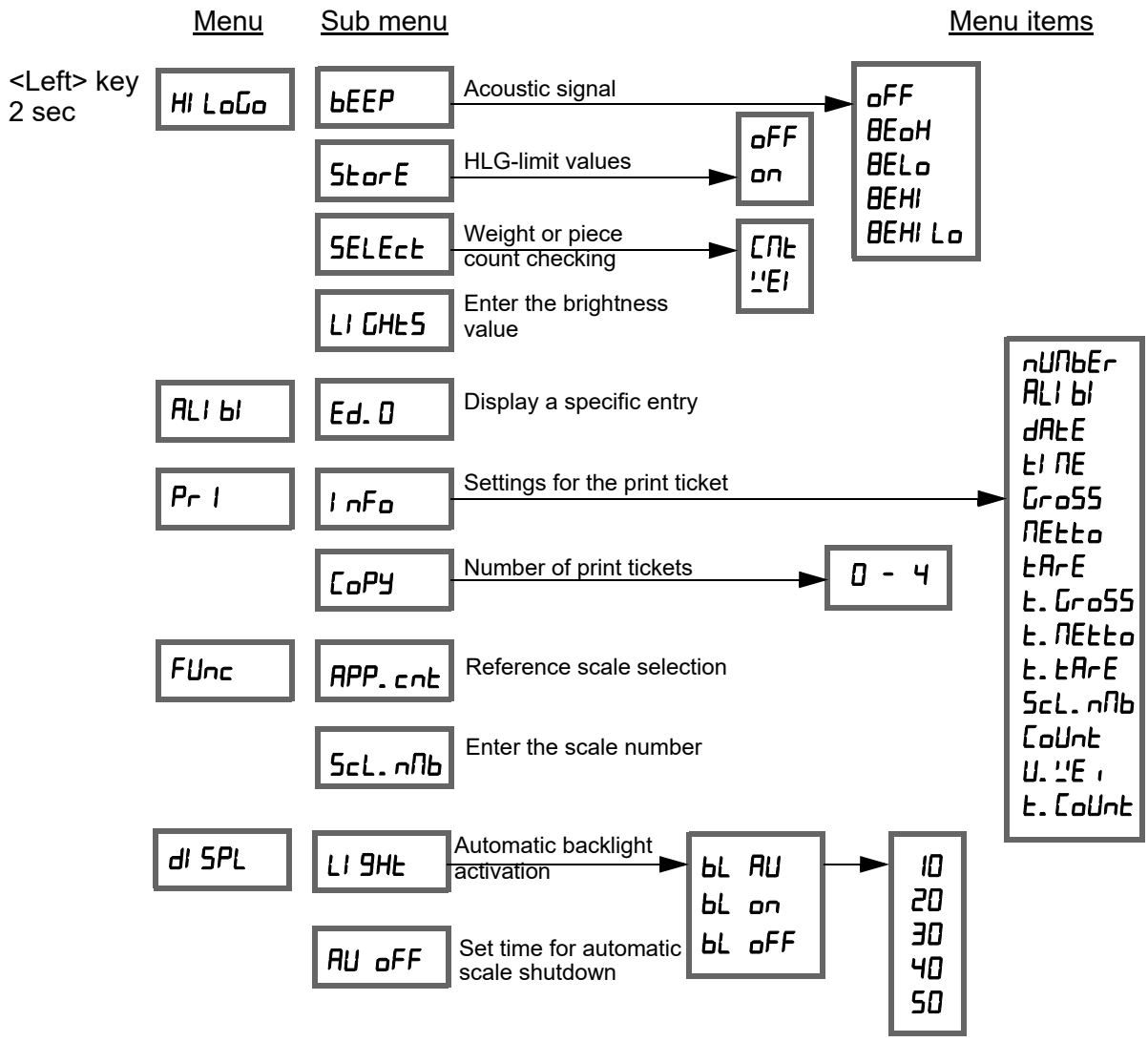
7.1 Navigation in the menu

- A menu or subroutine is left by pressing the key <ESC>.
- The <UP> key is used to navigate between the individual menu points and modify editable numbers.
- The <LEFT> key serves to move the input cursor to the left by one digit.

7.2 Menu overview (graphical representation)

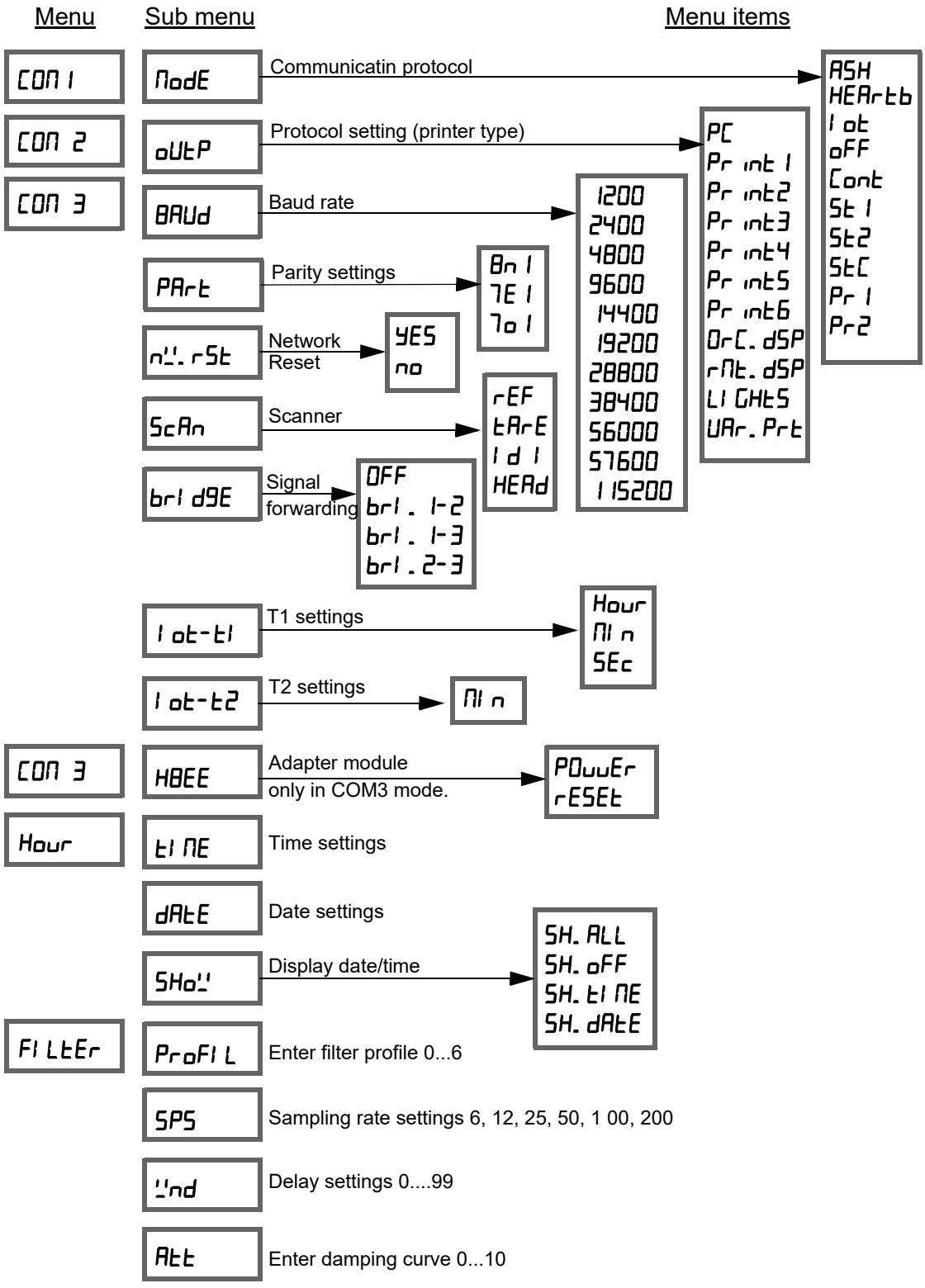
Quick selection menu (HiLoGo-menu)

Hinweis
The scale must be in weighing mode.



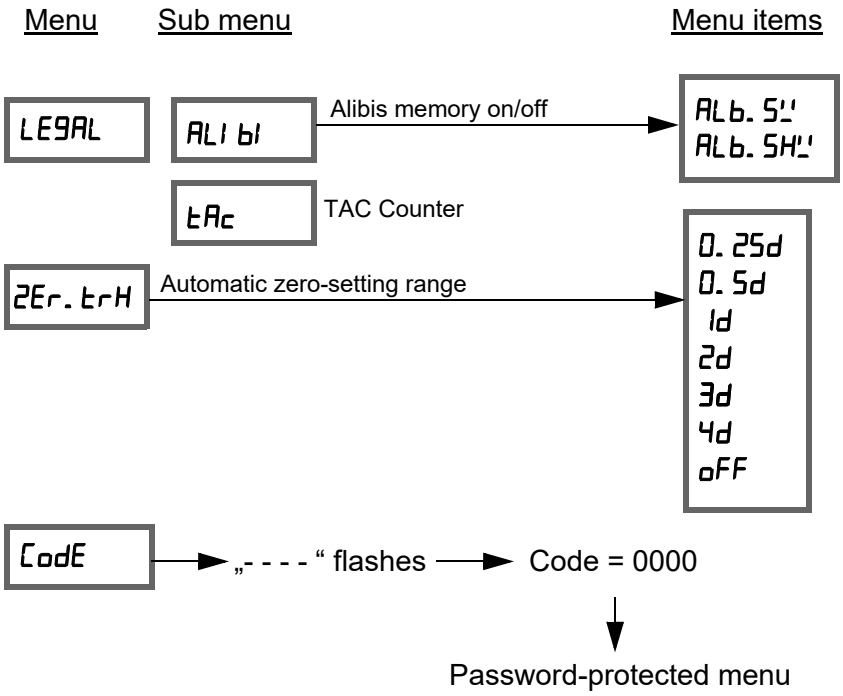
Function menu

Turn on the scale and press the <Enter> key during the countdown.

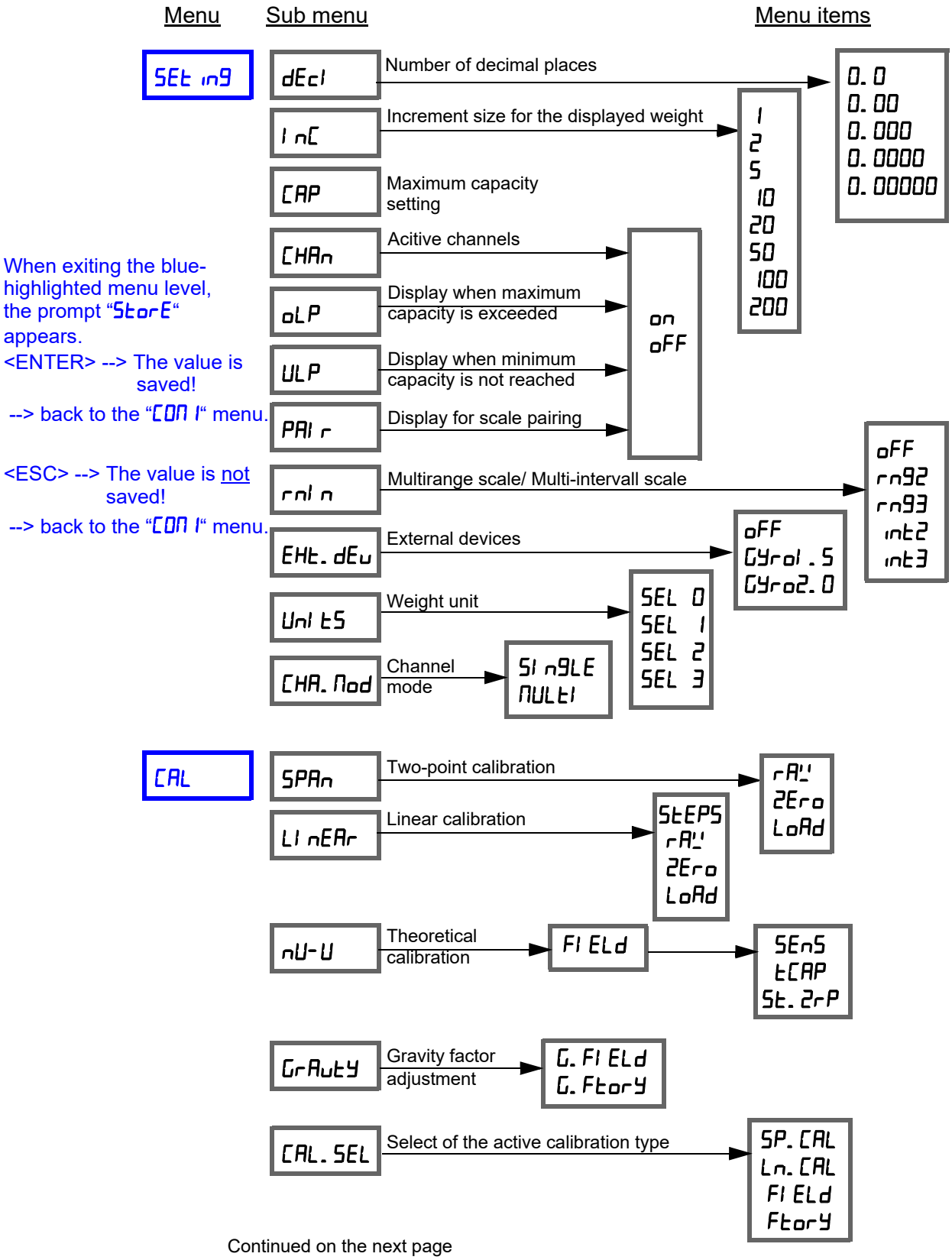


Continued on the next page

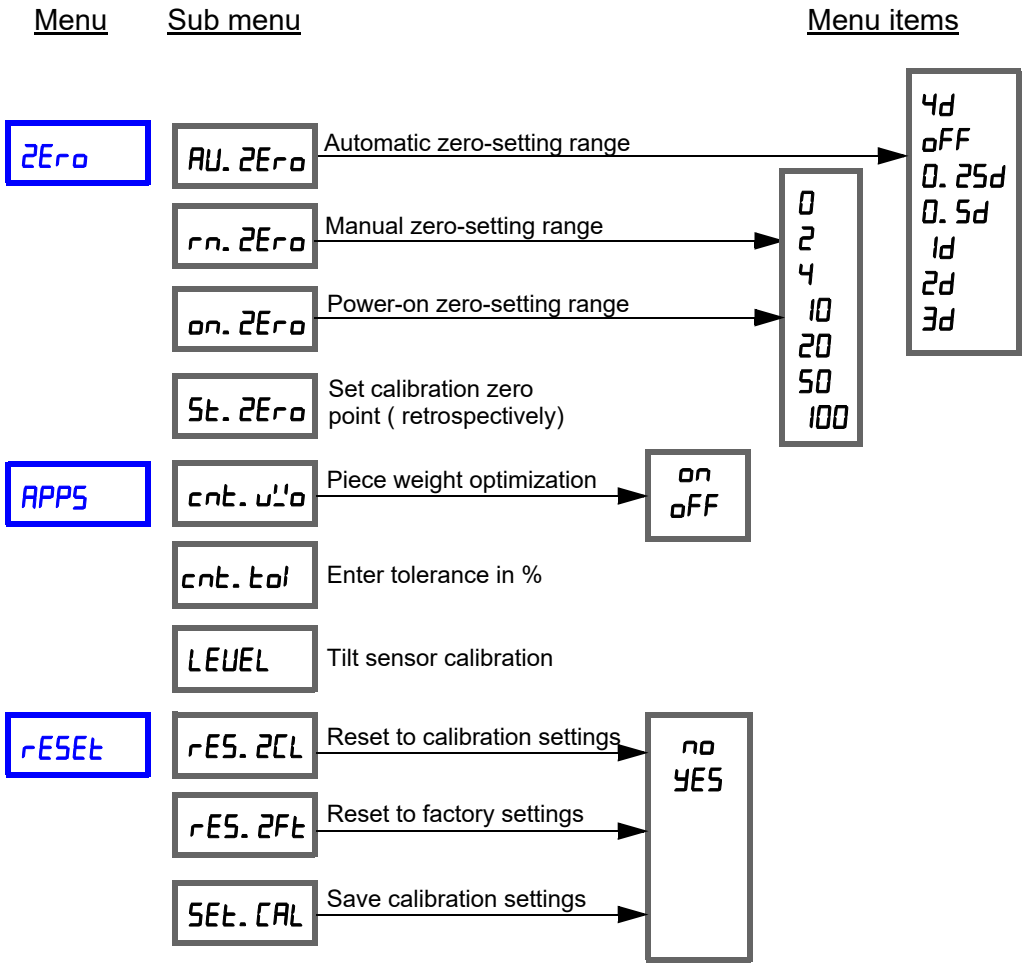
Function menu



Password-protected menu



Continued on the next page


Menu
Sub menu
Menu items
2Ero
AU. 2Ero
Automatic zero-setting range
rn. 2Ero
Manual zero-setting range
on. 2Ero
Power-on zero-setting range
St. 2Ero
Set calibration zero point (retrospectively)
APPS
cnt. uEo
Piece weight optimization
cnt. tol
Enter tolerance in %
LEUEL
Tilt sensor calibration
rESEt
rES. 2CL
Reset to calibration settings
rES. 2Ft
Reset to factory settings
SEt. CAL
Save calibration settings
0
2
4
10
20
50
100
4d
oFF
0. 25d
0. 5d
1d
2d
3d
on
oFF
no
YES

8 Troubleshooting

8.1 In the event of a malfunction

We recommend switching off the scales briefly and disconnecting it from the mains, if a malfunction occurs in the program sequence. Then restart the weighing process.

8.2 Error messages

Error messages	Malfunction	Cause possible	Solution
	No data	Power supply disconnect.	Check power supply.
--OL--	Overload	Scale overloaded.	Take weight from the scale. If the problem persists, please contact your dealer or the company BOSCHE.
--LEVEL--	Tilt sensor active. (only for mobile scales or pallet trucks).	Mobil scale / pallet trucks is more inclined than +/- 2 °.	Align mobile scale / pallet truck.
--Error--	Error while setting the zero calibration or the load.	The scale is unstable. Load cells are not connected properly.	Wait until the scale is stable. Connect load cells correctly.
Err. L iN	Checkweighing is activated and the limit values are not plausible.	**Hi**gh-value < **Lo**w-value.	Confirm the error with 
ZrP. Err	Fault when setting the new zero.	The scale is unstable. The weight is outside the limits rn. ZEro for setting the zero point.	Wait until the scale is stable. Correct weight.
Er. ZEro	Fault when setting the new zero.	The scale is unstable. The weight is outside the limits . ZEro for setting the zero point.	Wait until the scale is stable. Correct weight. Confirm the error with .
tAr. Err	Fault when setting the tare.	The scale is unstable.	Wait until the scale is stable.
HL9. Err	Faults when setting Hi / Lo limits.	**Lo**w-value exceeds **Hi**gh-value. **Hi**gh-value falls below **Lo**w-value.	Correct the **Hi**gh/**Lo**w-limits.
PS'. Err	Password is incorrect.	Incorrect password entry.	Enter the correct password.

Error messages	Malfunction	Cause possible	Solution
ALb. Err	The entered Alibi value does not exist.	Incorrect Alibi value entered.	Enter correct Alibi value.
Err. LE9	Pair-function	Display is paired with the transmitter and cannot be paired again.	Please contact your dealer or the company BOSCHE.
MEM. Err	Error when storing.	Value has already been saved.	First reset the scale to 0.0, to be able to save further values in the accumulation memory.
rn 1. Err	Error when entering the capacity for multi-range and multi-interval instruments.	The specified capacity of range W1 is greater than the capacity of ranges W2 or W3.	Adjust the values of the ranges W1, W2, W3. Values W1<W2<W3.
rn2. Err	Error when entering the capacity for multi-range and multi-interval instruments.	The specified capacity of range W2 is greater than the capacity of ange W3.	Adjust the values of the ranges W1, W2, W3. Values W1<W2<W3.

If any other malfunctions or error messages occur, please switch off the scales and after a short while on again.

If error messages occur again, please contact the Bosche customer service.

8.3 Customer Service Contact Data

Bosche GmbH & Co. KG
Reselager Rieden 3
49401 Damme

Fon +49 5491 999 689 0
Fax +49 5491 999 689 9
E-Mail info@bosche.eu

8.4 Information for the contact to the customer service

Owner/user	Specifications
Name of your company	
Name of a contact person	
Contact data Telephone Fax Email	

Product	Specifications
Model name	
Serial number	
Type key	
Date of purchase	
Name and location of the supplier	

Information about the problem:

Examples for required specifications to support troubleshooting:

- Does the display operate fault-free since its delivery?
- Has the display any contact to water?
- Was there any damage due to a fire?
- Was there a thunderstorm before / during the malfunction?

Note
Please inform us about the entire history of the display.

9 Technical data

9.1 Weighing terminal data

Feature	Value / Unit
Dimensions (B x H x T) Stainless steel housing • Table unit • Wall unit Aluminium housing	 232 x 154 x 90 mm 232 x 154 x 110 mm 231 x 141 x 45 mm
Weight Stainless steel housing Aluminium housing	 1,1 kg 1,3 kg
Power supply (external)	12 - 24 VDC / 230 VAC, 1000 mA via external mains adapter
Battery operating time / Carging time	approx. ca. 15 Std.
Adjustment	Automatic, external
Max. resolution (depending on the weighing cells used)	External 1/30.000 Internal 1/1.000.000
Display	6 digits, LCD illuminated, Digit height 50 mm
Keyboard	22 pressure point keys (10 Function keys + numeric block)
Housing and platform	Stainless steel housing
Interface(s) (2 as an option)	LAN, RS232
Functions	Weighing value display, accumulation memory, presettable weighing with alarm, control signal lights (optional)
Weighing cell sensitivity	1mV/V~3mV/V
Number of weighing cells	Up to 4 with 350 Ohm each
AD converter	24 bits, 1 channel
Zero input range	0mV~5mV
Signal input range	0mV~15mV
Settling time	2 seconds typical
Protection Class	IP 65
Operating temperature	0°C to +40°C
Relative air humidity	max. 80 %, non-condensing

9.2 Scope of delivery

Component	Note
Weighing terminal	
Mains adapter	
Operating manual	
Table/wall holder	Not included for the version with stand

10 Declaration of Conformity

10.1 Declaration of Conformity for verified scales

Bosche GmbH & Co. KG
Reselager Rieden 3
D-49401 Damme
Telefon: 0 54 91 / 999 689 - 0
Telefax: 0 54 91 / 999 689 – 9
E-Mail: info@bosche.eu
Internet: www.bosche.eu

EU-Konformitätserklärung Declaration of conformity • Déclaration de conformité Conformiteitsverklaring • Declaración de conformidad	
Typ / Modell Type /Model • Modèle Model • Tipo / Modelo	**MWI / MCI / LKI / EWI /MSI** für nicht selbsttätige, geeichte Waagen for non-automatic, verified scales, pour balances non automatiques et étalonnées voor niet-automatische, gekalibreerde weegschalen para básculas no automáticas y calibrar
Seriennummer siehe Typenschild. For the serial number, see the nameplate.• Pour le numéro de série, voir la plaque signalétique. Voor het serienummer, zie het typeplaatje. • Para el número de serie, consulte la placa de identificación.	
Hersteller Manufacturer • Fabricant • Fabrikant • Fabrikante	**Bosche GmbH & Co. KG**

Die alleinige Verantwortung für die Ausstellung trägt der Hersteller.
The sole responsibility for the issue carries the manufacturer. • La seule responsibilité de l'exposition porte le fabricant. • De verantwoordelijkheid voor de uitgifte draagt de fabrikant. • El único responsable de la publicación lleva el fabricante.

Der oben genannte Gegenstand der Erklärung erfüllt die einschlägigen Harmonisierungsrechtsvorschriften der Union: The above-mentioned object of the declaration complies with the relevant harmonization legislation of the Union • L'objet de la déclaration susmentionné est conforme à la législation d'harmonisation pertinente de l'Union • Het bovengenoemde voorwerp van de verklaring voldoet aan de relevante harmonisatiewetgeving van de Unie • El objeto de la declaración mencionado anteriormente cumple con la legislación de armonización pertinente de la Unión

2014/35/EU Niederspannungsrichtlinie Low voltage Directive	**EN 62368-1:2025** **EN 61010-1:2020** für / for / pour / voor / para 230/115 VAC
2014/30/EU **EMV-Richtlinie** Elektromagnetische Verträglichkeit EMC Directive	**EN 55032:2015** **EN 61000-4-3:2011** **EN 61000-6-2:2019** **EN 61000-4-4:2012** **EN 61000-6-4:2019** **EN 61000-4-5:2014** **EN 61000-4-2:2009** **EN 61000-4-6:2014**
2011/65/EU RoHS	**EN IEC 63000:2019**
2014/31/EU NAWI	
Bei Varianten mit integriertem WLAN- oder Bluetooth-Modul:	
2014/53/EU – Funkanlagenrichtlinie (RED) einschließlich der delegierten Verordnung (EU) 2022/30 zur Ergänzung der Artikel 3(3)(d) und 3(3)(f)	**EN 18031-1:2024**
2014/53/EU 3.1b	**EN 301 489-1:2017** **EN 301 489-17:2017**
2014/53/EU 3.2	**EN 300 328:2019** (2,4 GHz WLAN/Bluetooth) **EN 301 893:2024** (5 GHz WLAN)

Die notifizierte Stelle FORCE 0200 hat eine Baumusterprüfung durchgeführt und folgende Bescheinigung ausgestellt:
The notified body FORCE 0200 carried out a design type test and issued the certificate:
L'organisme notifié FORCE 0200 effectue un test de type de construction et a publié le certificat suivant:
De aangemelde instantie FORCE 0200 uitgevoerd beproeving en legde de volgende verklaring:
El organismo notificado FORCE 0200 llevó a cabo un ensayo de modelo tipo y emitió el siguiente certificado:

0200-NAWI-08815

Unterzeichnet für und im Namen von Bosche:

Damme, 24.07.2025

Dipl. Ing. Jarmila Bosche, PhD.
Geschäftsführer • Managing Director
Directeur général • Directeur • Director general

10.2 Declaration of Conformity for non-verified scales

Bosche GmbH & Co. KG
Reselager Rieden 3
D-49401 Damme
Telefon: 0 54 91 / 999 689 - 0
Telefax: 0 54 91 / 999 689 - 9
E-Mail: info@bosche.eu
Internet: www.bosche.eu

EU-Konformitätserklärung Declaration of conformity • Déclaration de conformité Conformiteitsverklaring • Declaración de conformidad	
Typ / Modell Type /Model • Modèle Model • Tipo / Modelo	**MWI / MCI / LKI / EWI /MSI** für nicht selbsttätige, ungeeichte Waagen for non-automatic, non-verified scales pour balances non automatiques et non étalonnées voor niet-automatische, niet-gekalibreerde weegschalen para básculas no automáticas y sin calibrar
Seriennummer siehe Typenschild. For the serial number, see the nameplate.• Pour le numéro de série, voir la plaque signalétique. Voor het serienummer, zie het typeplaatje. • Para el número de serie, consulte la placa de identificación.	
Hersteller Manufacturer • Fabricant Fabrikant • Fabrikante	**Bosche GmbH & Co. KG**

Die alleinige Verantwortung für die Ausstellung trägt der Hersteller.
The sole responsibility for the issue carries the manufacturer. • La seule responsibilité de l'exposition porte le fabricant. • De verantwoordelijkheid voor de uitgifte draagt de fabrikant. • El único responsable de la publicación lleva el fabricante.

Der oben genannte Gegenstand der Erklärung erfüllt die einschlägigen Harmonisierungsrechtsvorschriften der Union:
The above-mentioned object of the declaration complies with the relevant harmonization legislation of the Union • L'objet de la déclaration susmentionné est conforme à la législation d'harmonisation pertinente de l'Union • Het bovengenoemde voorwerp van de verklaring voldoet aan de relevante harmonisatiewetgeving van de Unie • El objeto de la declaración mencionado anteriormente cumple con la legislación de armonización pertinente de la Unión

2014/35/EU Niederspannungsrichtlinie Low voltage Directive	**EN 62368-1:2025** **EN 61010-1:2020** für / for / pour / voor / para 230/115 VAC
2014/30/EU EMV-Richtlinie EMC Directive	**EN 55032:2015** **EN 61000-4-3:2011** **EN 61000-6-2:2019** **EN 61000-4-4:2012** **EN 61000-6-4:2019** **EN 61000-4-5:2014** **EN 61000-4-2:2009** **EN 61000-4-6:2014**
2011/65/EU RoHS	**EN IEC 63000:2019**
Bei Varianten mit integriertem WLAN- oder Bluetooth-Modul:	
2014/53/EU – Funkanlagenrichtlinie (RED) einschließlich der delegierten Verordnung (EU) 2022/30 zur Ergänzung der Artikel 3(3)(d) und 3(3)(f)	**EN 18031-1:2024**
2014/53/EU 3.1b	**EN 301 489-1:2017** **EN 301 489-17:2017**
2014/53/EU 3.2	**EN 300 328:2019** (2,4 GHz WLAN/Bluetooth) **EN 301 893:2024** (5 GHz WLAN)

Unterzeichnet für und im Namen von Bosche:

Damme, 24.07.2025

Dipl. Ing. Jarmila Bosche, PhD.
Geschäftsführer • Managing Director
Directeur général • Directeur • Director general

BOSCHE
WEIGHING SYSTEMS

BOSCHE GmbH & Co. KG
Reselager Rieden 3
49401 Damme
Germany

Tel 05491 999 689 0
Fax 05491 999 689 9
www.bosche.eu
info@bosche.eu