RAVAS ProLine 6200

RAVAS
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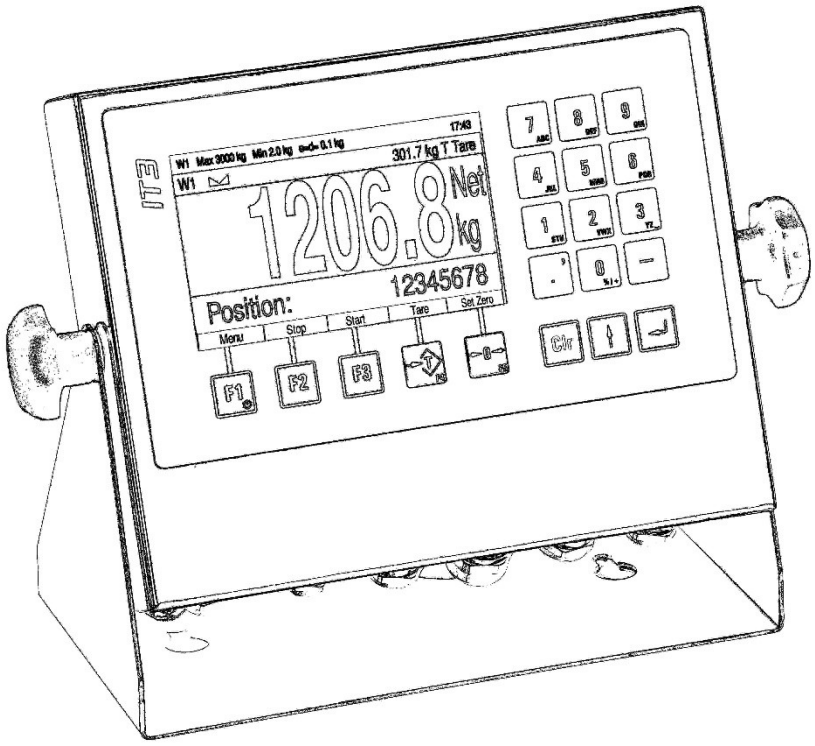

User Manual

Contents

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We would like to inform you about the fact that this RAVAS product is 100 % recyclable on the basis that the parts are processed and disposed off in the right manner.

More information can be found on our website www.ravas.com.

Rev.20220628

1 Introduction

IT3 is a general purpose weighing terminal for use in a variety of applications such as data logging, data capturing, parts counting, set point control and filling.

1.1 Safety Symbols Used In This Manual

Safety relevant information is shown with corresponding symbols as follows:

W A R N I N G
Failure to observe this precaution could result in serious injuries or fatal accidents. Please make absolutely sure that these precautions are observed in order to ensure safe operation of the equipment.

CAUTION
Failure to observe this precaution could result in damage to or destruction of the equipment or bodily harm! Please make absolutely sure that these precautions are observed in order to ensure safe operation of the equipment.

Note: This indicates an advice for the designated use of the equipment and/or additional information to avoid inappropriate handling.

1.2 Safety Advice

W A R N I N G
Disconnect all power to this instrument before opening the housing! Risk of electrical shock!

W A R N I N G
Exercise utmost care when making checks, tests and adjustments that can actuate movable parts such as feeding devices, gates, flaps, conveyors, etc. Make absolutely sure that nobody is within reach of movable parts.
Failure to observe this precaution could result in bodily injury!

W A R N I N G
This unit must not be operated in a potentially explosive atmosphere!
It is the sole responsibility of the user to classify the area of installation and make sure that absolutely no potentially explosive atmosphere can be present at any time!

CAUTION
Input voltage of the instrument must comply with local mains supply!

CAUTION
Disconnect all power to this instrument before cleaning or servicing!

Notes:

- This equipment is suitable for use in up to 5,000 m AMSL.
- This equipment may be installed in outdoor area, with protection against direct weather influence and sunlight.
- When installing the panel-mount version in outdoor area, the housing or switch cabinet must also be suitable for outdoor use.
- The unit has a configurable on/off switch. If this switch is deactivated, the unit is operational immediately after connection to the power supply! Note: The on/off switch does not separate the unit

from the mains supply. To deenergize the unit, pull plug of mains cable and / or disconnect the unit from all power sources!

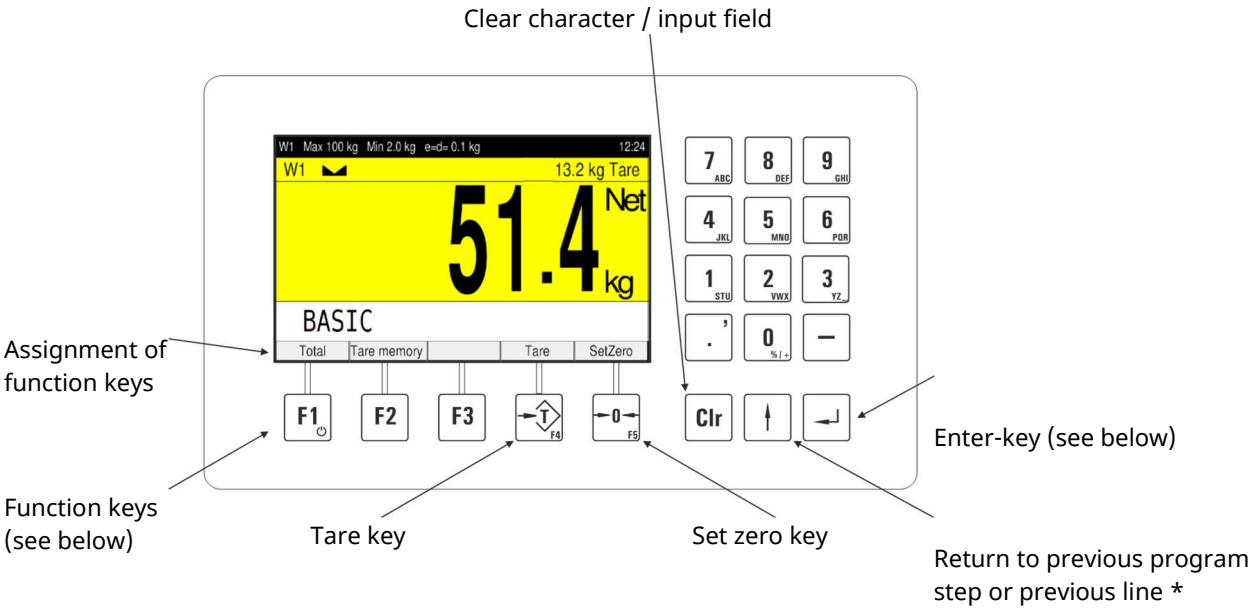
- This unit must be installed, serviced, and operated in strict compliance with all locally applicable safety regulations and the rules for the prevention of accidents!
- This module and its associated equipment must be installed, adjusted and maintained by qualified personnel only!
- Only permit qualified personnel to operate this instrument!
- Keep this manual for future reference!

2 Weight Display And Scale Function Keys

Electronic Marking Plate (only for single-range/single-interval scales)		
Note: The electronic marking plate is blanked when parameter 'Service Mode\Calibration\Adaptation\Onscreen typeplate = N' is set, it is also blanked for certain types of scale platforms.		
Scale No.	W1/W2	No. of scale selected via **F3** function key
Max Load	e.g.: Max 3000 kg	Maximum load (without additive tare), selectable in calibration mode
Min Load	e.g.: Min 20 kg	Permissible minimum load
Division e / d	e.g.: e=d=1 kg	Approved division e and display graduation d (in most cases e = d)
12:24		Display of time

Weight Display		
Scale No. / **No. Of Weighing Range**	W1/W2 W1.1 ... W2.3	No. of scale selected via **F3** function key Partial weighing range for multiple-range scales
No-Motion Symbol	▬	Settled weight (printing / storing possible)
Zero Symbol	**>0<**	Scale in gross zero range (±0.2 d)
Tare Weight	**13.2 kg T**	Display of tare weight
Gross Weight Or Net Weight	e.g. 1250 e.g. 650 Net	Switching from gross weight to net weight with Tare-key
Net Weight Symbol	Net	Scale is tared
Unit	e.g. kg	Weight unit, selectable in calibration mode.

2.1 Function And Input Keys



* Operating modes *BASIC/COUNT*, *TRUCK/ONLINE* and *ONLINE*: switch operating mode.

Confirmation Of Entry / Chosen Function

Every entry or selected function / parameter must be confirmed by pressing an **Enter**-key (even if not explicitly stated in the text). Subsequently, the program is continued in the next step.

Softkeys

The assignment of softkeys is defined in the respective step of the program. The currently valid assignment is shown in the lower display line above the function keys.

Key	Function	Comment
F1	**F1-Key**	Switching on/off (if configured).
	Select	Scrolling forward.
	Setup	Call up Supervisor Mode while version message is displayed.
F2	**Service**	Call up Service Mode while version message is displayed.
F3	**W1** **W2**	Switching the scale display when a second scale base is installed or a reference scale is connected.
	kg / lb /...	Switch weight unit: • additional loadable update required • not permitted for W&M approved applications in the EC
	Net (X)	Show current weight with tenfold resolution while version message is displayed.
T F4	**Tare**	Toggling between currently displayed weight (auto-tare) or clearing tare when scale is tared (repetitive taring is also possible). Function can be disabled in application program.
0 F5	**Zero-key**	Set gross weight to zero (only within range for pushbutton zero, selectable in calibration mode). Function can be disabled by application program.

0 % / +	**No**	Disable option.
1 STU	**Yes**	Enable option.

2.2 Operator Prompting

The following sections describe the operating sequence of the weighing terminal with operator prompts and the requested entries.

The contents of the display is shown in a frame on the left hand side, e.g.:

Password ????	Entry of 4-character password

Prompts or entries that apply only under certain conditions are shown in an extra frame. The condition is shown in bold face in the upper left hand corner of the frame, e.g.:

Wrong password entered:

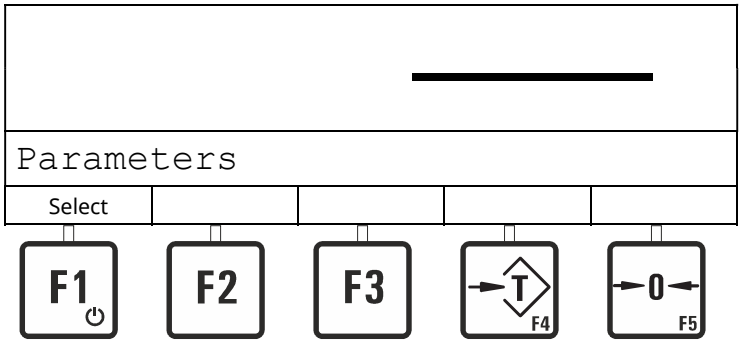
Invalid Password!	Error message: Invalid Password!

and keys

Acknowledge entry, continue in next program step.

Return to previous program step.

2.3 Choose Options / Menus With F1-Key

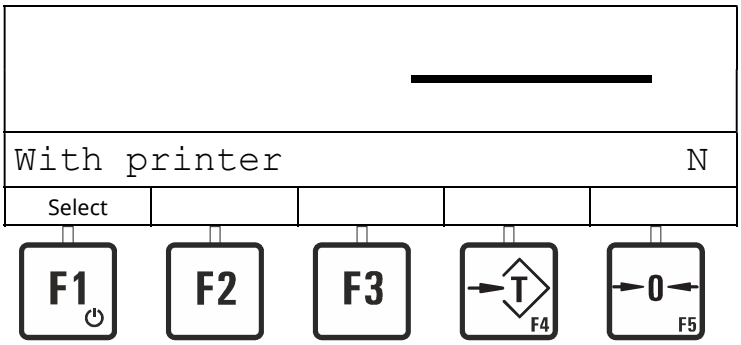


Example:

Parameters	Select F1
Weight Storage	Select F1

etc.

2.4 Yes / No Entries With 1 And 0 Key



Example:

With printer N	0	'N' is shown, function or parameter is disabled / deselected.
With printer Y	1	Choose Y(es) to enable function or select parameter.
With printer Y	↵	Confirm choice.

2.5 Alphanumeric Entries

In the steps of the application program where alphanumeric entries are permitted, pressing the key briefly several times shows the assignments of the key one after the other.

Example:

Key pressed:	5	5	5	5	5	5	5	5
Display:5	M	N	O	m	n	o	5	etc.

To enter the letter 'n' the key 5 must be pressed six times until 'n' appears on the display. If the entry is paused for longer than 0.5 sec, the cursor moves on to the next character. If any other key is pressed, entry continues in the position of the next character immediately.

2.6 Deleting Of Characters

An entry can either be changed by deleting the last character (short keystroke on **Clr**-key) or by clearing the complete entry (**Clr**-key pressed for longer than 0.5 sec). By pressing the **Clr**-key repeatedly, it is possible to delete several characters one after the other.

3 Power Up

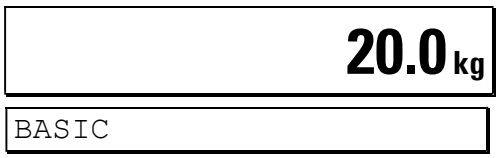
After switching the unit on, several program identifiers are displayed. After that, the program proceeds to the initial step.

System Startup... Please wait	Start of weighing terminal after approx. 40 sec.
IT3 9.99 999999	Display of version, date and time, and currently active operating mode.
BASIC	Initial step of program sequence.
	Switch from initial step to display of version.
IT3 9.99 999999	Display of version, date and time and currently active operating mode.

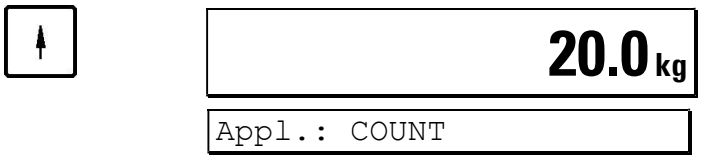
4 Combined Operating Mode *BASIC/COUNT*

The operating mode *BASIC/COUNT* combines the two operating modes *BASIC* and *COUNT* and is intended for mobile weighing at changing locations (e.g. goods in and warehouse). In *BASIC* mode, weights and IDs can be captured and printed, whereas *COUNT* permits the counting of parts for shipping and receiving.

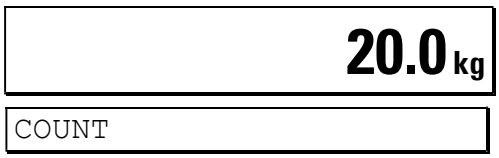
After power up, the mode is active that was selected when the terminal was switched off the last time, switching to the other mode and back is made with the ⏻-key.



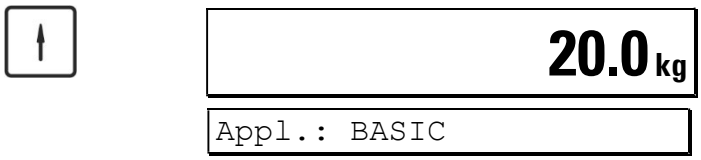
Display in basic step of *BASIC* mode.



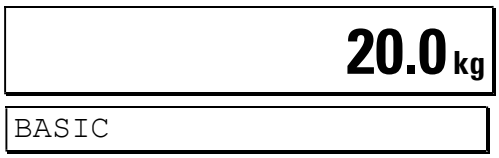
Switch operating mode from *BASIC* to *COUNT*.
Display for approx. 3 sec, after that display program version and return to weight display.



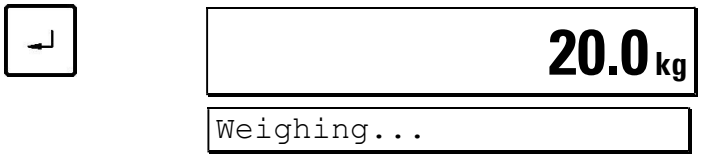
Display in basic step of *COUNT* mode.



Switch operating mode from *COUNT* to *BASIC*.
Display for approx. 3 sec, after that display program version and return to weight display.



Display in basic step of *BASIC* mode.



Continue in first step of chosen operating mode, see chapter 'Operating Mode *BASIC*' or 'Operating Mode *COUNT*,' respectively.

Note:

- The operating mode *BASIC/COUNT* does not support data transmission.
- When the terminal is switched from one operating mode to the other, the totals are cleared.
- Press the **F3**-key to switch from one scale to the other (if a second scale base is installed or a reference scale connected).

Digital inputs and outputs:

Input E0	Input E1 [2]	Output A0	Output A1
Capture / Set to zero [1]	Taring [3]	Function depends on Service Mode settings: 'Assignments of outputs'	

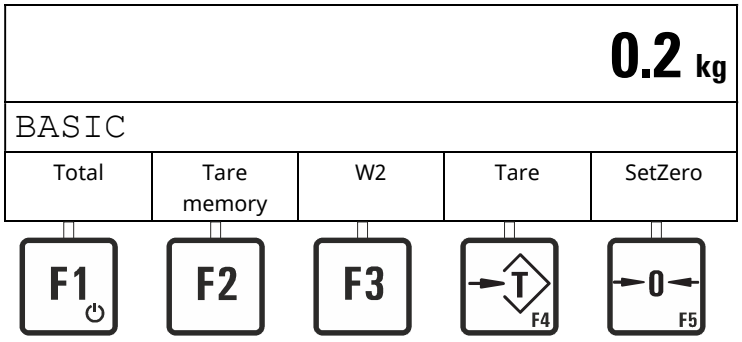
[1]) Function depends on Service Mode settings: 'Assignment of input E0'

[2]) When an incline sensor is connected to input IN0 or IN1 (mobile weighing), these functions are not available.

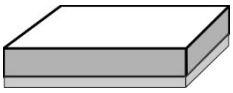
[3]) When two analog scales are connected, the currently displayed scale is tared. An optional serially connected reference scale cannot be tared.

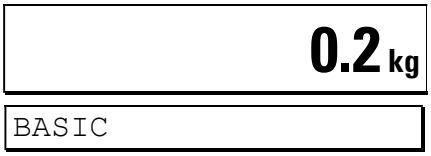
5 Operation Of Scale Functions

The basic step of all operating modes is the display of the continuously updated weight. In this step, the basic scale functions can be called up and displayed.



5.1 Zero Setting

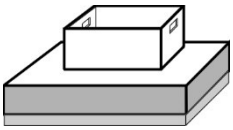


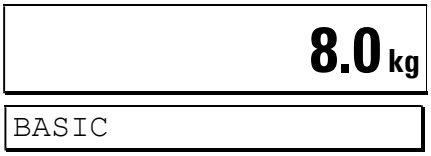


SetZero

Set gross weight to zero (only within selected range for pushbutton zero).

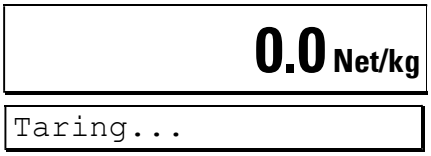
5.2 Taring



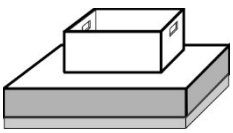


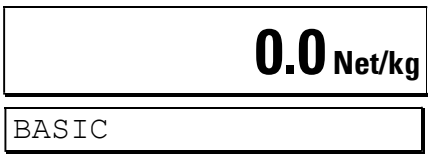
Put container on scale.

Tare



Tare scale
(Net indicates net mode).





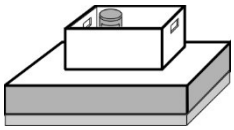
Tare

8.0 kg
BASIC

Clear tare and return to display of gross weight.

Note: Only for 'Tare mode: Gross/Net,' see chapter 'Tare functions.'

5.3 Weighing



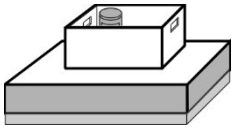
13.0 kg
BASIC

Put items into container.

13.0 kg
Weighing...

Output of weight to printer / host system.

5.4 Show Weight With Tenfold Resolution



13.0 kg
BASIC

Display of gross weight.

13.0 kg
IT3 9.99 999999

Switch from basic step to display of version message.

Net(X)

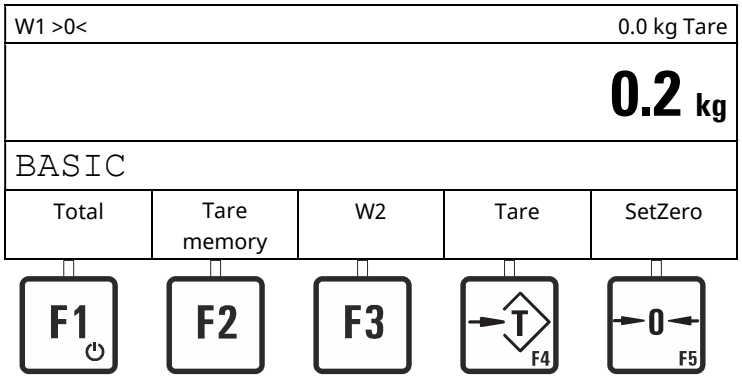
F3

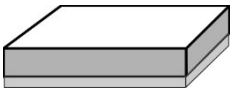
13.0 kg
Net(X) 13.03 kg

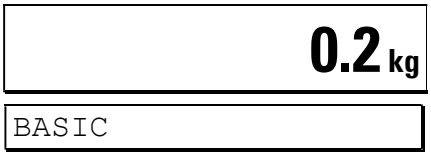
Show current weight with tenfold resolution. After approx. 5 sec, display is automatically cleared.

5.5 Switching Between Scales

Note: Only possible when a scale base is installed or a reference scale is connected via serial interface.



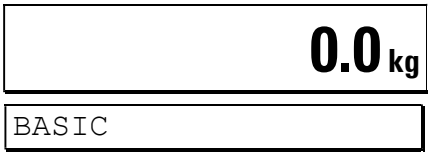




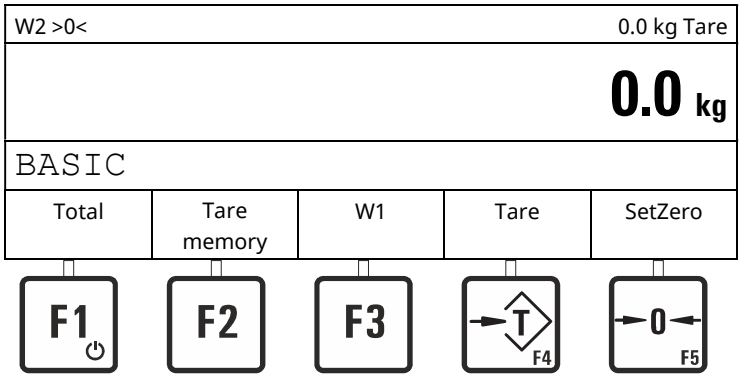
Display of gross weight of scale #1.

W2

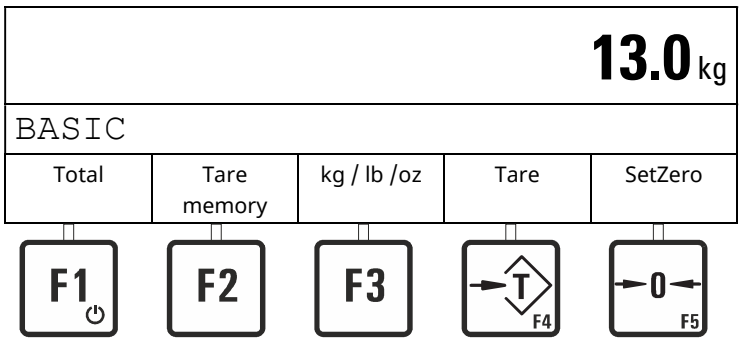
F3

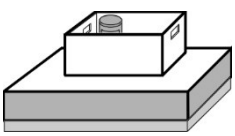


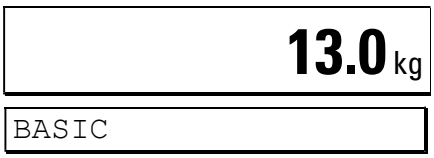
Switching from scale 1 to scale 2 (second scale base or reference scale via SIM).



5.6 Switch Weight Unit







Display of gross weight

kg / lb / oz /...

F3

460 oz

BASIC

Press repeatedly to select unit.

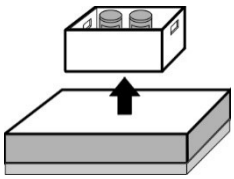
Display of weight in chosen unit.

Note:

- Only possible if only one scale is connected and more than one weight unit is configured.
- Downloadable update required.
- Not permitted for W&M approved applications in the EC.

5.7 Print Ticket

Note: In the operating mode *TRUCK,* a ticket is printed automatically as configured in Service Mode.



0.0 kg

BASIC

Unload scale after weighing of last item.

Total

F1

0.0 kg

Total 6 1250 kg

Call up summing section, display of totals includes number of weighings and total weight.

0.0 kg

Printing...

Release printing.

0.0 kg

Deleting...

Totalizing memory is deleted. Subsequently the scale is ready for a new weighing cycle.

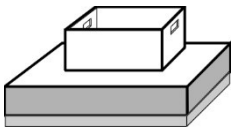
5.8 Tare Functions

In the Service Mode, Group 'General' one of 3 different tare modes can be chosen.

Contact your supplier for details.

5.8.1 Set / Clear Tare (Tare Mode: Gross/Net)

With each actuation of the tare key, the display is switched from gross to net and back. This is the usual tare function which is appropriate for most applications. The description of the operating mode *BASIC* refers to this setting.



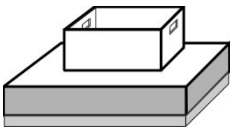
8.0 kg

BASIC

Place container on scale.

Tare

0.0 Net/kg	Tare scale (Net indicates net mode).
Taring...	



0.0 Net/kg	
BASIC	

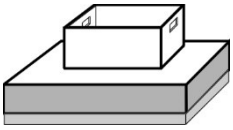
Tare

8.0 kg	Clear tare and return to display of gross weight.
BASIC	

5.8.2 Auto Clear Tare (Tare Mode: Auto Clear)

The loaded scale can be tared only once, and the net display is automatically switched back to gross when the scale returns to the zero range.

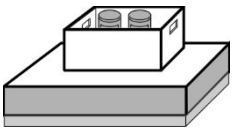
This function is intended for serial weighings with changing tare weight.



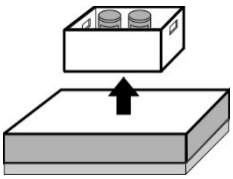
8.0 kg	Place container on scale.
BASIC	

Tare

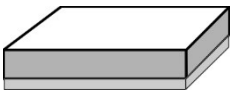
0.0 Net/kg	Tare scale (Net indicates net mode).
Taring...	



13.0 Net/kg	Put item(s) into container.
BASIC	



-8.0 Net/kg	Remove filled container from scale.
BASIC	

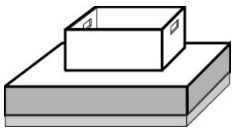


0.0 kg	Tare is cleared automatically.
BASIC	

5.8.3 Repetitive Tare (Tare Mode: Net = 0)

With each actuation of the tare key, the scale is tared anew and the display shows the net weight. If the scale is fully unloaded, tare is automatically cleared and the display is switched back to gross weight.

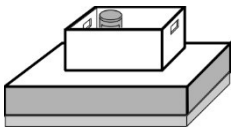
This function is used to subsequently fill several components into one container.



8.0 kg	Place container on scale.
BASIC	

Tare

0.0 Net/kg	Tare scale (Net indicates net mode).
Taring...	

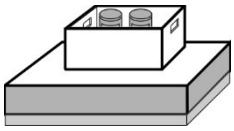


13.0 Net/kg	Put first item into container.
BASIC	

13.0 Net/kg	Output weight on printer and/or transmit to host.
Weighing...	

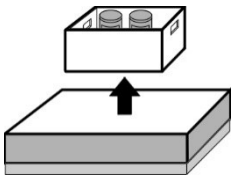
Tare

0.0 Net/kg	Tare scale anew.
Taring...	

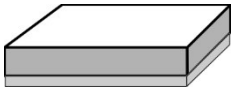


13.0 Net/kg	Put second item into container.
BASIC	

13.0 Net/kg	Output weight on printer and/or transmit to host.
Weighing...	



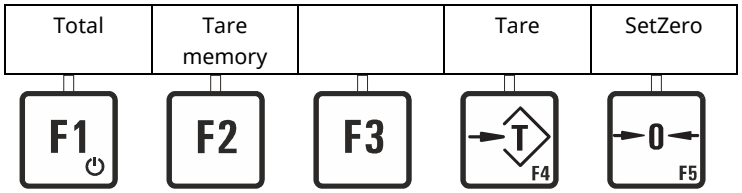
-8.0 Net/kg	Remove filled container from scale.
BASIC	



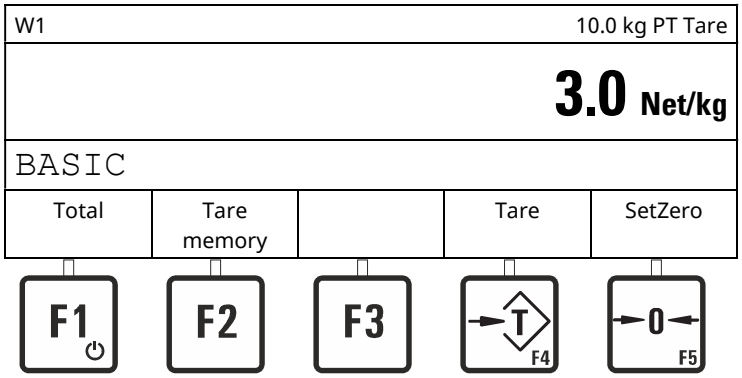
0.0 kg	Tare is automatically cleared.
BASIC	

5.8.4 Entry Of A Known Tare Weight / Preset Tare

W1	0.0 kg Tare
13.0 kg	
BASIC	



0...9 Manual tare (preset tare): After pressing a numeric key, the display proceeds to the step for the entry of the tare weight.



Note: Enter '0' and confirm with tare key **F4** to clear the set tare value. Subsequently the weight display shows the gross weight.

5.8.5 Tare Memory

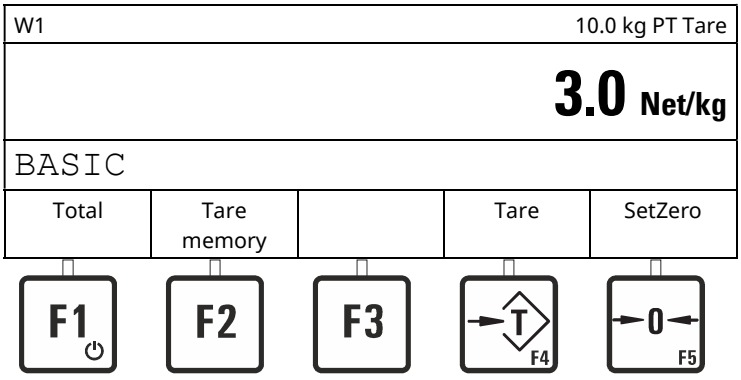
Note: The tare memory is **not** available in the operating modes *COUNT 2*, *TRUCK, ONLINE* and *ONLINE OP*.

Entry of tare value into tare memory:

BASIC		
	Tare memory F2	Press **F2**-key in the initial step of the sequence to display tare weight.
Memory 1 10.00		Display of first tare value.
	Clr	Clear value and enter new one via keyboard.
Memory 1 12.00		
	↵	Continue with next tare value ...
	↑	Return to previous tare value. In step 'Memory 1,' return to basic step.
Memory 2 4.00		... after the ninth value return to basic step.

Calling up a tare value from the tare memory:

BASIC		Basic step of weight display.
	– 9	Call up tare value by entry of hyphen (–) followed by the number of tare memory (1–9).
Taring ...		Tare scale with value from tare memory and return to basic step.



5.9 Power-Save Function

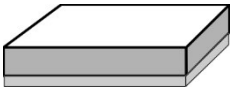
By means of the power-save function, backlighting can be dimmed after time when the terminal is not in use. This function must be enabled in the Service Mode (see Technical Manual IT3 'Entry Of Parameters (General)').

Press any key or load scale to switch on again.

6 Operating Mode *BASIC* (Weigh & Print)

In operating mode *BASIC,* the weighing terminal works as a simple scale with weigh & print function.

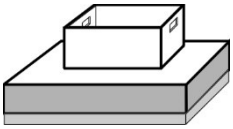
6.1 Weighing Into Container



0.2 kg	
BASIC	

SetZero

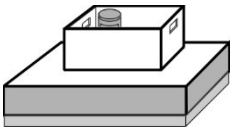
0.0 kg	Set gross weight to zero (only within selected range for pushbutton zero).
Set Zero	



8.0 kg	Place container on scale.
BASIC	

Tare

0.0 Net/kg	Tare scale.
Taring...	



13.0 Net/kg	Put first item into container.
BASIC	

Input fields defined in header section:

13.0 Net/kg	In this example, an input field 'Operator No.' is defined for printout / data transmission.
Operator No. 99	

Input fields defined in cyclical part:

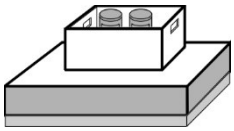
13.0 Net/kg	In this example, an input field 'Article No.' is defined for printout / data transmission.
Article No. 999	

13.0 Net/kg	Capture first weight.
Weighing...	

13.0 Net/kg	Print and/or transmit first weight.
Printing...	

6.2 Weighing Of Further Items

Tare

0.0 Net/kg Taring...	Tare scale.
 13.0 Net/kg BASIC	Put second item into container.

Input fields defined in cyclical part:

13.0 Net/kg Article No. 999	In this example, an input field 'Article No.' is defined for printout / data transmission.
13.0 Net/kg Weighing...	Capture second weight.
13.0 Net/kg Printing...	Print and/or transmit second weight.

Weigh next item.

6.3 Calculate Totals And Terminate Weighing Cycle

Total

13.0 Net/kg Total 2 26 kg	Totalizing: Show number of weighings and total net weight.

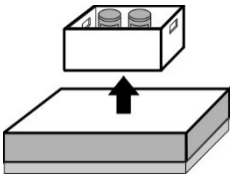
Clear memory or return:

13.0 Net/kg Printing...	Print total (only if field for total defined in print format).
13.0 Net/kg Deleting...	Clear memory

or:

Finish F1	13.0 Net/kg BASIC	Return to basic step without clearing totals.

Input fields defined in totalizing section:

↵	13.0 Net/kg Batch No. 9999	In this example, an input field 'Batch No.' is defined for printout / data transmission.
	-21.0 Net/kg BASIC	Remove filled container from scale.

Next cycle

6.4 Display Of Barcode/QR Code

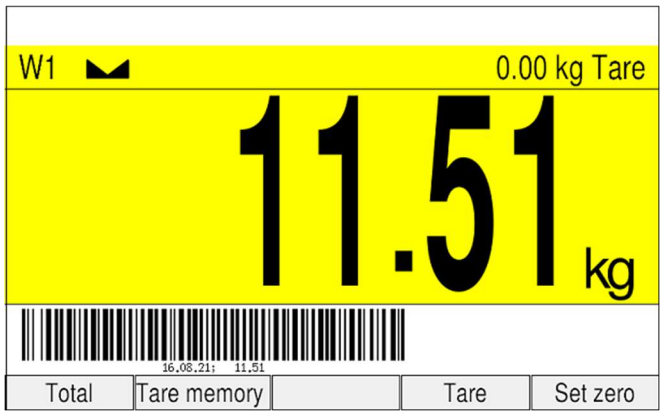
In Service Mode, group 'Application', the display of a barcode (Code 128) or a QR code can be activated in the operating mode *BASIC*. The content of the barcode/QR code is configurable.

By selecting from a list of variables, a maximum of 7 content fields can be configured, e.g. date, time, gross weight, net weight, etc. Depending on the configuration, the weight values can be displayed as purely numerical values or as formatted data with unit sign. Likewise, the semicolon separator between the individual fields of the barcode/QR code can be activated.

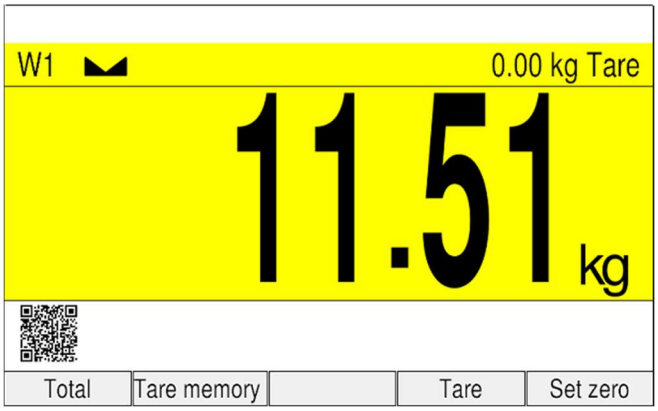
If the barcode/QR code does not contain an ID number, the display is only shown when the scale is settled and only as long as it remains settled. As soon as the scale is in motion, the display is deleted again.

If the ID number has been configured as part of the barcode, then the barcode/QR code is only displayed after a weighing cycle has been triggered by pressing the ENTER key or via the IN0 digital input. The barcode/QR code is displayed unchanged for the duration of an adjustable time (1-30 seconds), then deleted again.

Example: Code 128 for date and net weight



Example: QR code with date, time, gross, tare, net, scale No., ID No.



Note: The display of a barcode or QR code requires an additional firmware update, which may need to be downloaded, if applicable.

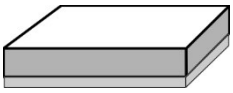
7 Operating Mode *COUNT* (Parts Counting)

Operating mode *COUNT* permits the counting of an unknown number of pieces with identical piece weight, based on weighing a specified number of reference parts and the comparison of their weight with the unknown quantity.

7.1 Counting Into An Empty Container

For this description, it is assumed that serial weighing mode is enabled
(Service Mode setting 'Serial mode? = Y').

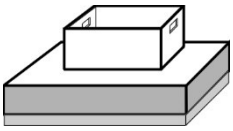
7.1.1 Weigh Reference Parts



0.2 kg	
COUNT	

SetZero

0.0 kg	Set gross weight to zero (only within selected range for pushbutton zero).
Set Zero	



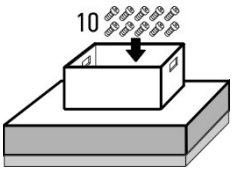
8.0 kg	Place empty container on scale.
COUNT	

Tare

0.0 Net/kg	Tare scale.
Taring...	

0.0 Net/kg	Number of reference parts is displayed.
W1 10 Parts weighing	

0.0 Net/kg	Confirm number of reference parts.
W1 Pc.Wgt(g) 0.0	

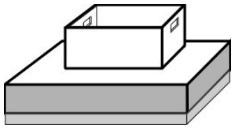


1.0 Net/kg	Put number of reference parts in container.
W1 Pc.Wgt(g) 100.0	

1.0 Net/kg	Average piece weight of reference parts is displayed.
W1 Pc.Wgt(g) 100.0	

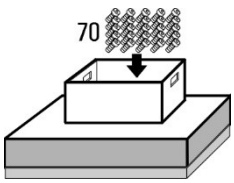
↵	10 Net/Pcs Piece weight 100.0 g	Number of parts and piece weight is displayed.

7.1.2 Entry Of Reference Weight



	0.0 Net/kg COUNT	
↵	0.0 Net/kg W1 10 Parts weighing	Number of reference parts is displayed.
Input F1	0.0 Net/kg W1 Pc.Wgt(g) 100.0	If available, the reference weight captured last is displayed.
0 to 9	0.0 Net/kg W1 Pc.Wgt(g) 100.0	Entry of reference weight via keyboard.
↵	0 Net/Pcs Piece weight 100.0 g	Number of parts and piece weight is displayed.

7.1.3 Count Pieces



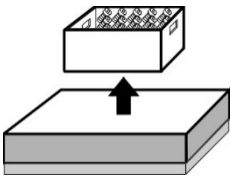
	80 Net/Pcs Piece weight 100.0 g	Add parts for counting to reach desired number. Example: Add further parts (70 in this case in addition to the 10 reference parts) to reach 80.

Input fields defined in header section:

↵	80 Net/Pcs Operator No. 99	In this example, an input field 'Operator No.' is defined for printout / data transmission.

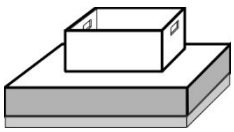
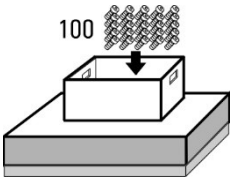
Input fields defined in cyclical part:

↵	80 Net/Pcs Article No. 999	In this example, an input field 'Article No.' is defined for printout / data transmission.

↵	80 Net/Pcs Weighing...	Capture weight and piece count.
	80 Net/Pcs Printing...	Print and/or transmit weight and piece count, if configured.
	-80 Net/Pcs Piece weight 100.0 g	Remove from scale and empty out container, then put again onto platform.

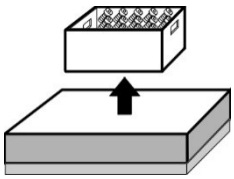
7.1.4 Count Further Parts

Supervisor Mode 'Serial mode = N':

	0.0 Net/kg COUNT	Place empty container on scale.
↵	0.0 Net/kg W1 10 Parts weighing	Number of reference parts is displayed.
↵	1.0 Net/kg W1 Pc.Wgt(g) 100.0	Average piece weight of reference parts is displayed.
↵	0 Net/Pcs Piece weight 100.0 g	
	100 Net/Pcs Piece weight 100.0 g	Put items into container until desired number is reached.

Input fields defined in cyclical part:

↵	100 Net/Pcs Article No. 999	In this example, an input field 'Article No.' is defined for printout / data transmission.

↵	100 Net/Pcs Weighing...	Capture weight and piece count.
	100 Net/Pcs Printing...	Print and/or transmit weight and piece count, if configured.
	-80 Net/Pcs Piece weight 100.0 g	Remove from scale and empty out container, then put again onto platform.

7.1.5 Calculate Totals And Terminate Weighing Cycle

Total F1	-80 Net/Pcs Total 2 180 Pcs	Totalizing: Show number of weighings and total net weight.

Clear memory or return:

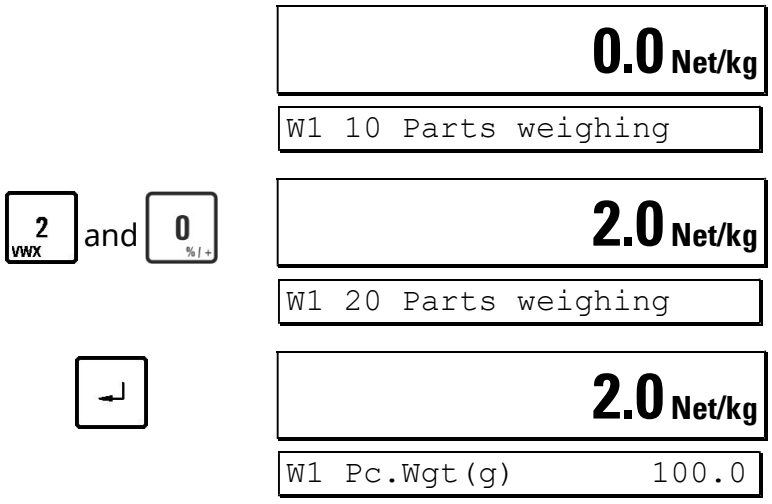
↵	-80 Net/Pcs Printing...	Print totals (only if field for totals defined in print format).
	-80 Net/Pcs Deleting...	Clear totals.
or:		
Finish F1	-80 Net/Pcs Piece weight 100.0 g	Return to basic step without clearing totals.

Input fields defined in totals section:

↵	-80 Net/Pcs Batch No. 9999	In this example, an input field 'Batch No.' is defined for printout / data transmission.
	-80 Net/Pcs Piece weight 100.0 g	Next cycle

7.1.6 Change Number Of Reference Parts

In the cycle described above 10 reference parts were used. The number of reference parts can be changed freely:



Change only possible in this step.

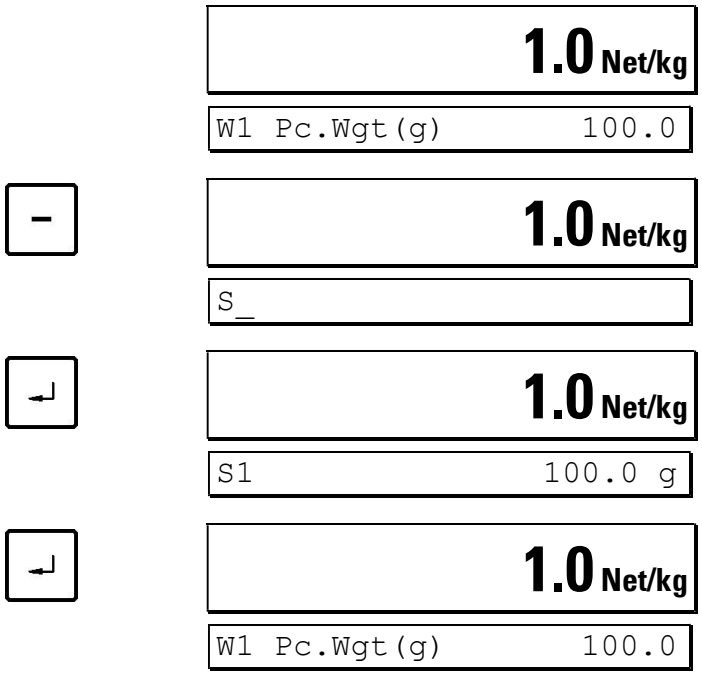
Change number of parts.

Apply new value.

Note: See chapter 'Parameter settings.'

7.1.7 Store Reference Weights

Up to 9 reference weights can be stored.



Display of calculated or manually entered average piece weight.

Enter number of memory (1–9).

Show number of memory and pertaining piece weight.

Return to basic step.

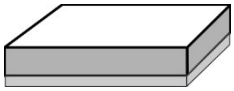
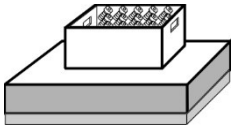
7.1.8 Look Up Reference Weights

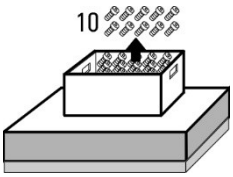
	10 Net/Pcs Piece weight 80.0 g	Initial step of parts counting cycle.
– and 1 STU	10 Net/Pcs S1 100.0 g	Press —key and immediately after key for the number of memory (e.g. 1). The selected memory number S1 and the pertaining piece weight are shown briefly.
	8 Net/Pcs Piece weight 100.0 g	Back to initial step of parts counting cycle.

7.2 Counting From A Filled Container

7.2.1 Weigh Reference Parts

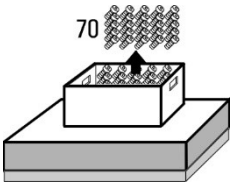
Note: For counting out of a filled container, it is mandatory to enable serial weighing. Setting in Supervisor Mode: 'Serial mode = Y.'

	0.2 kg COUNT	
SetZero 0 F5	0.0 kg Set Zero	Set gross weight to zero (only within selected range for pushbutton zero).
	28.0 kg COUNT	Place filled container on scale.
Tare T F4	0.0 Net/kg Taring...	Tare scale.
↵	0.0 Net/kg W1 10 Parts weighing	Number of reference parts is displayed.



-1.0 Net/kg W1 10 Parts weighing	Take 10 pieces (reference parts) out of container.
-1.0 Net/kg W1 Pc.Wgt(g) 100.0	Average piece weight of reference parts is displayed.
-10 Net/Pcs Piece weight 100.0 g	Number of pieces and piece weight is displayed.

7.2.2 Count Pieces



-80 Net/Pcs Piece weight 100.0 g	Take parts out for counting to reach desired number. Example: Remove further parts (70 in this case in addition to the 10 reference parts) to reach 80.

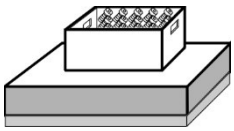
Input fields defined in header section:

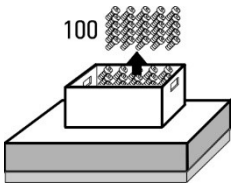
-80 Net/Pcs Operator No. 99	In this example, an input field 'Operator No.' is defined.

Input fields defined in cyclical part:

-80 Net/Pcs Article No. 999	In this example, an input field 'Article No.' is defined.
-80 Net/Pcs Weighing...	Capture weight and piece count.
-80 Net/Pcs Printing...	Print and/or transmit weight and piece count, if configured.
-80 Net/Pcs Piece weight 100.0 g	

7.2.3 Count Further Parts



-80 Net/Pcs Piece weight 100.0 g	Container (from which pieces have already been removed) is still on scale.
Tare  175 Pcs Piece weight 100.0 g	Set scale to gross (tare is cleared).
Tare  0 Net/Pcs Piece weight 100.0 g	Tare scale.
100  -100 Net/Pcs Piece weight 100.0 g	Take out parts from container until desired number is reached.

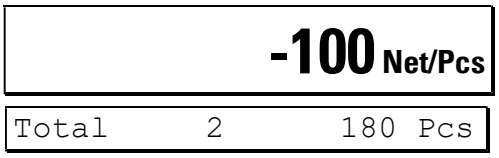
Input fields defined in cyclical part:

 -100 Net/Pcs Article No. 999	In this example, an input field 'Article No.' is defined.
 -100 Net/Pcs Weighing...	Capture weight and piece count.
-100 Net/Pcs Printing...	Print and/or transmit weight and piece count, if configured.
-100 Net/Pcs Piece weight 100.0 g	**Take out further parts or remove container from scale.**

7.2.4 Calculate Totals And Terminate Cycle

Total

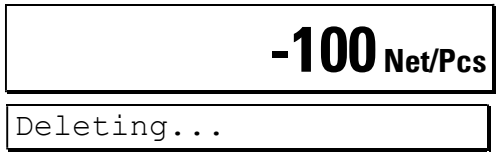
F1



Totalizing: Show number of weighings and total number of pieces.

Clear memory or return:

↵

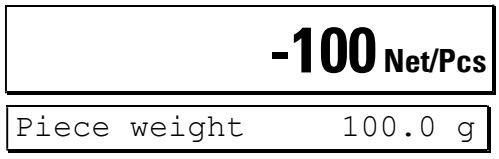


Delete totalizing memory (if configured: print total number of pieces).

or:

Finish

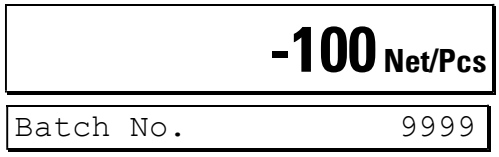
F1



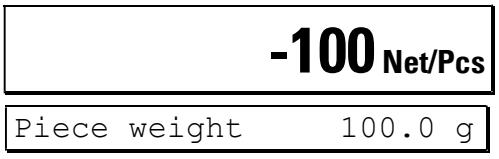
Return to basic step without clearing totals.

Input fields defined in totals section:

↵



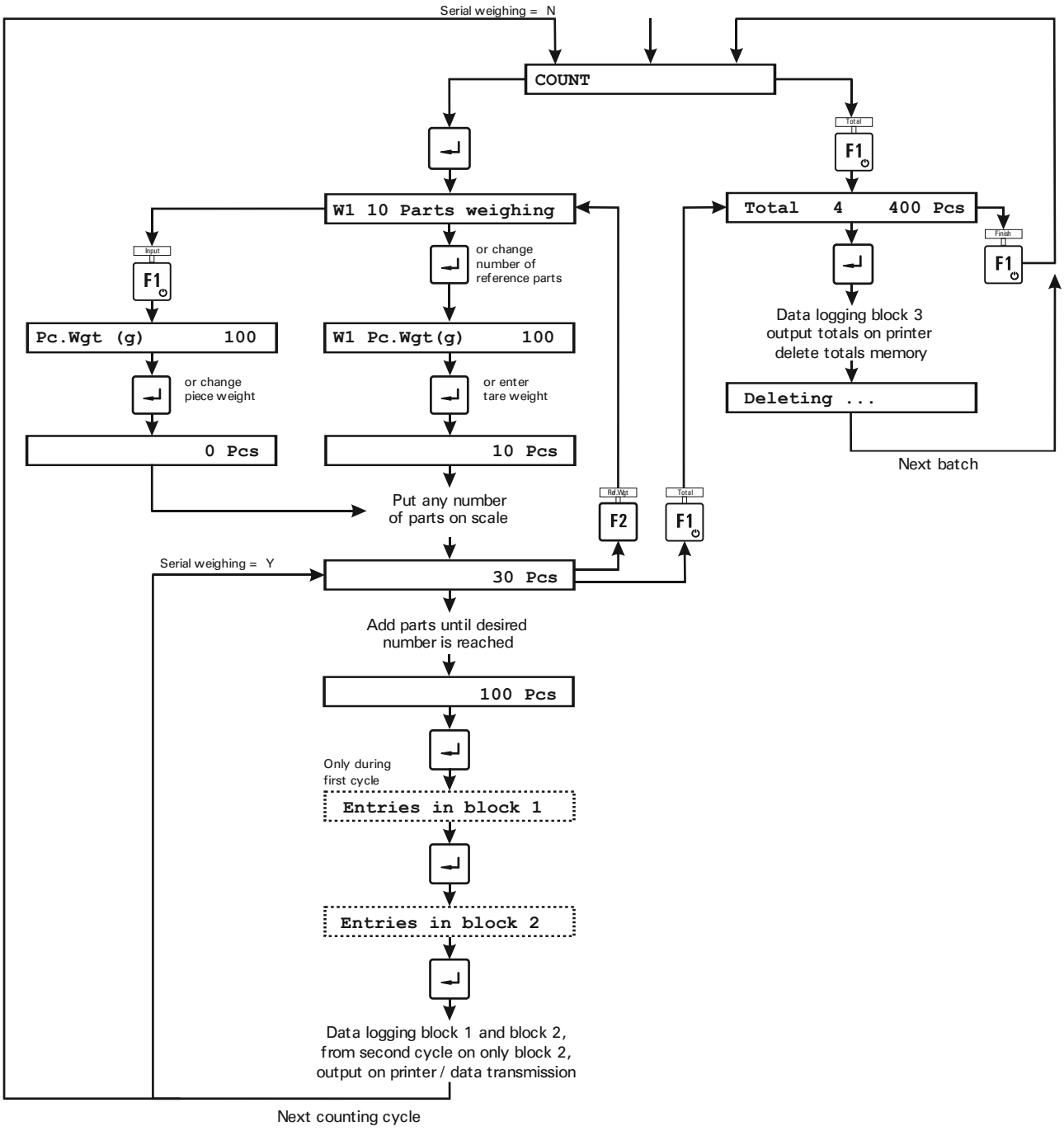
In this example, an input field 'Batch No.' is defined for printout / data transmission.



Next cycle

- For change of reference parts / store reference weights refer to respective chapter.
- See also chapter 'Parameter settings.'

7.3 Principal Program Structure Of Operating Mode *COUNT* With 1 Scale

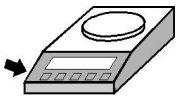


7.4 Counting With Additional Reference Scale

For parts counting with additional reference scale it is helpful to enable serial weighing mode (setting in Supervisor Mode 'Serial mode = Y').

7.4.1 Weigh Reference Parts

Only with scale W2 serially connected:

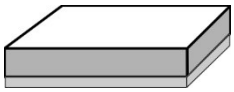


0.0 kg COUNT	Set reference scale manually to zero.

Only with scale W2 connected via internal DADM scale interface:

W2 F3 0.2 kg COUNT	Select scale W2 (reference scale).
SetZero 0 F5 0.0 kg Set Zero	Set gross weight to zero.
↵ 0.0 kg W2 10 Parts weighing	Number of reference parts is displayed.
10 1.0 kg W2 10 Parts weighing	Put number of reference parts (10) on scale W2.
↵ 1.0 kg W2 Pc.Wgt(g) 100.0	Average piece weight of reference parts is displayed.
W1 F3 0 Pcs Piece weight 100.0 g	Display changes to scale W1.

7.4.2 Count Pieces

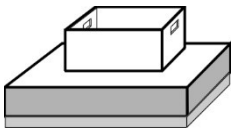


1 Pcs
Piece weight 100.0 g

SetZero

0 Pcs
Piece weight 100.0 g

Set gross weight to zero.



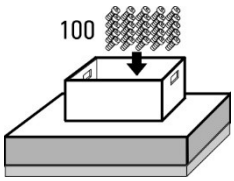
80 Pcs
Piece weight 100.0 g

Place empty container on scale.

Tare

0 Net/Pcs
Piece weight 100.0 g

Tare scale.



100 Net/Pcs
Piece weight 100.0 g

Put parts into container on scale W1, example: 100.

Input fields defined in header section:

100 Net/Pcs
Operator No. 99

In this example, an input field 'Operator No.' is defined.

Input fields defined in cyclical part:

100 Net/Pcs
Article No. 999

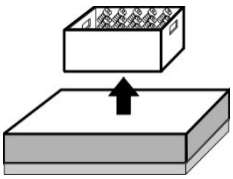
In this example, an input field 'Article No.' is defined.

100 Net/Pcs
Weighing...

Capture weight and piece count.

100 Net/Pcs
Printing...

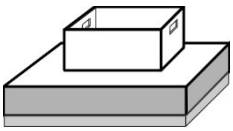
Print and/or transmit weight and piece count, if configured.



-80 Net/Pcs
Piece weight 100.0 g

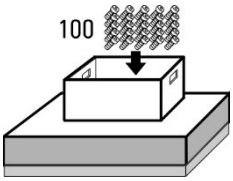
Remove from scale and empty out container, then put again onto platform.

7.4.3 Count Further Parts



0 Net/Pcs
Piece weight 100.0 g

Place empty container on scale.



100 Net/Pcs
Piece weight 100.0 g

Put items into container until desired number is reached, example: 100.

Input fields defined in cyclical part:

100 Net/Pcs
Article No. 999

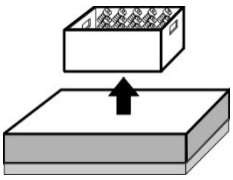
In this example, an input field 'Article No.' is defined.

100 Net/Pcs
Weighing...

Capture weight and piece count.

100 Net/Pcs
Printing...

Print and/or transmit weight and piece count, if configured.



-80 Net/Pcs
Piece weight 100.0 g

Remove from scale and empty out container, then put again onto platform.

7.4.4 Calculate Totals And Terminate Weighing Cycle

Total

-80 Net/Pcs
Total 2 200 Pcs

Totalizing: Show number of weighings and total net weight.

Clear memory or return:

↵	-80 Net/Pcs Printing...	Print totals (only if field for totals defined in print format).
	-80 Net/Pcs Deleting...	Clear totals.
or:		
Finish F1	-80 Net/Pcs Piece weight 100.0 g	Return to basic step without clearing totals.
Input fields defined in totals section:		
↵	-80 Net/Pcs Batch No. 9999	In this example, an input field 'Batch No.' is defined for printout / data transmission.
	-80 Net/Pcs Piece weight 100.0 g	**Next cycle.**

- Change number of reference parts / store reference weights: See corresponding chapter above.

7.4.5 Change Reference Scale

The reference scale can be selected in the step 'Parts weighing':

	0.0 kg W1 10 Parts weighing	Change possible only in this step of the sequence.
W2 F3	0.0 kg W2 10 Parts weighing	Scale W2 as reference scale.
W1 F3	0.0 kg W1 10 Parts weighing	Scale W1 as reference scale.

7.4.6 Change Counting Scale

The counting scale can be selected in the step 'Parts Counting':

Change possible only in this step of the sequence.

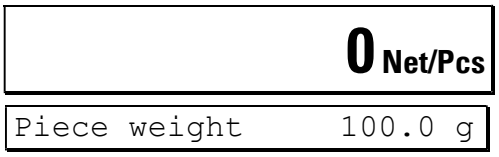
W2

F3

Scale W2 as counting scale.

W1

F3



Scale W1 as counting scale.

7.5 Parameter Settings

- If a different reference weight (different part) is to be weighed, the running weighing cycle must be terminated with the ↑ -key. If the result of following parts counting cycles is not to be added to the totals, the totalizing memory must be cleared first.
- If the tare weight of the container is known, it can be entered manually in the first step of the sequence. After pressing any numeric key, the prompt 'Enter tare' is shown, and the weight can be entered and confirmed with the **Enter**-key.
- In the Supervisor Mode, a value for '1st setpoint' can be entered as threshold for taring. If parameter 'Auto tare (G > S1) = Y' is set in Service Mode, the scale is automatically tared in the step 'Parts weighing' when a container is put on the scale.
- Serial weighing can be enabled with the Supervisor Mode parameter 'Serial mode = Y.' The average piece weight is then stored for the next weighing cycle and capturing of the piece weight is skipped.
- Output of piece count and weights on printer or host system is only possible when:
  - Printer **or** data transmission is enabled in Supervisor Mode;
  - A print format is configured. (Contact your supplier for details).
- Taring or zero setting of a serially connected reference scale is not possible from the weighing terminal.
- Depending on setting of parameter 'Tare mode' the function of the tare key changes (see chapter 'Tare functions':
  - **Gross/Net** With each actuation of the Tare-key the display changes from gross to net and back;
  - **Auto clear** The tare is automatically cleared when the scale returns to the zero range;
  - **Net = 0** the Every time the Tare-key is pressed, the scale is tared anew, when the weight returns to zero range, the tare is cleared and the display is set back to gross mode.

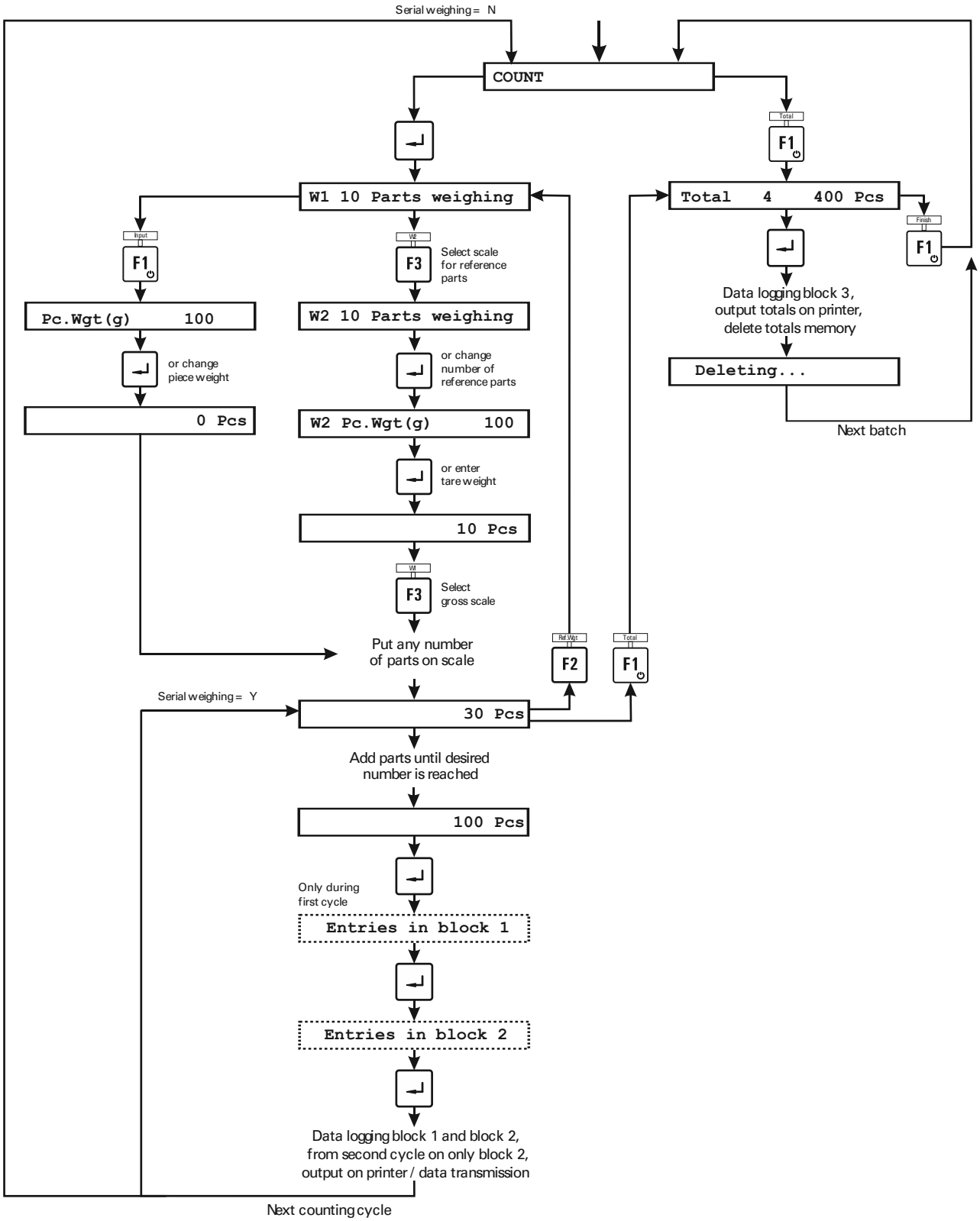
Digital inputs and outputs:

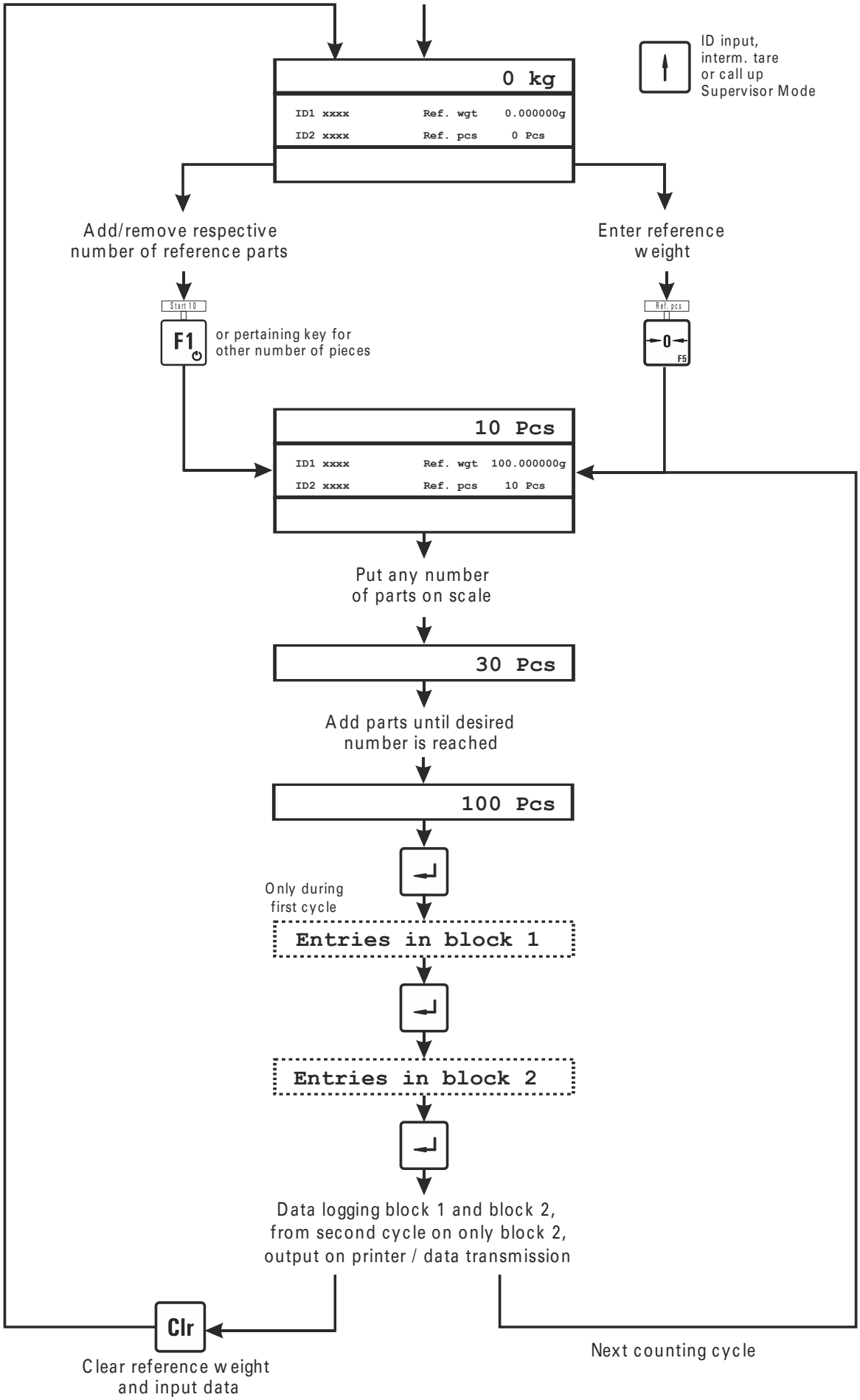
Input E0	Input E1 [1])	Output A0	Output A1
Capture	Taring [2])	Function depends on Service Mode settings: 'Assignments of outputs'	

[1]) When an incline sensor is connected to input IN0 or IN1 (mobile weighing), these functions are not available.

[3]) When two analog scales are connected, the currently displayed scale is tared. A reference scale cannot be tared if it has not been configured in Service Mode (Service Mode/Config./Scale 2 = None).

7.6 Principal Program Structure Of Operating Mode *COUNT* With Reference Scale




0 kg
ID1 xxxx Ref. wgt 0.000000g
ID2 xxxx Ref. pcs 0 Pcs
ID input, interm. tare or call up Supervisor Mode
Add/remove respective number of reference parts
Enter reference weight
Start 10
F1
or pertaining key for other number of pieces
Ref. pcs
0
F5
10 Pcs
ID1 xxxx Ref. wgt 100.000000g
ID2 xxxx Ref. pcs 10 Pcs
Put any number of parts on scale
30 Pcs
Add parts until desired number is reached
100 Pcs
Only during first cycle
Entries in block 1
Entries in block 2
Data logging block 1 and block 2, from second cycle on only block 2, output on printer / data transmission
Clr
Clear reference weight and input data
Next counting cycle

8 Supervisor Mode (Setup)

In the Supervisor Mode, parameters are entered during normal operation. Also the approved data archive (weight storage) and system information can be viewed here.

Call up Supervisor Mode:

BASIC	↑	Switch from first step of sequence to display of version message. (In operating modes *ONLINE* and *ONLINE OP,* first the operating mode must be switched to OFFLINE by pressing the ↑ key.) In operating mode *COUNT 2*, the version message is alternatively accessible via the **F5**-key of the alternative function key assignment. In Supervisor Mode, the *ONLINE* command set is only available in reduced scope (if configured, see Technical Manual IT3).
IT3 9.99 999999		Show version, date and time and currently selected operating mode.
	Setup F1	Call up Supervisor Mode.
Parameters		Basic step in Supervisor Mode.
	Select F1	• Parameters • Weight Storage (long-term data archive) • Software Updates • Software ID • MAC/IP Address • Master Mode

8.1 Entry Of Parameters (Set Date And Time)

Parameters	↵

Password specified for Supervisor Mode:

Password ????	Enter password for Supervisor Mode.
Date 99.99.99	Enter / edit date.
Time 99:99	Enter / edit time.

All operating modes except *ONLINE* and *ONLINE OP*:

Ticket No. 99999	Enter / edit 5-digit ticket No. for printout.
Consec. No. 9999	Enter / edit 4-digit consecutive No. for printout.

All operating modes except *COUNT 2*:

`1st setpoint 0.00`	Enter setpoint S1 (function depending on chosen operating mode): • *BASIC* Threshold S1, either for parallel output or automatic printing after scale has settled • *COUNT* Threshold S1 for digital output • *TRUCK* Threshold S1 for traffic light • *CHECK* Minus tolerance • *FILL 1* Cutoff filling fast • *BASIC/ COUNT* Threshold S1 for digital output In the operating modes *FILL 2*, *ONLINE* and *ONLINE OP*, the setpoint S1 is not used.
`2nd setpoint 0.00`	Enter setpoint S2 (function depending on chosen operating mode): • *BASIC* Threshold S2 for digital output • *COUNT* Threshold S2 for digital output • *FILL 1* Cutoff filling slow • *CHECK* Plus tolerance • *BASIC/ COUNT* Threshold S2 for digital output In the operating modes *TRUCK*, *FILL 2*, *ONLINE* and *ONLINE OP*, the setpoint S2 is not used.

`With printer N`	Enable / disable printer.
0 / N	Without printer.
1 / Y	With printer.

All operating modes except *BASIC/COUNT*, *ONLINE* and *ONLINE OP*:

`Transmission N`	Enable / disable data transmission.
0 / N	Without data transmission.
1 / Y	With data transmission.

Operating mode *COUNT* or *BASIC/COUNT*:

`Serial mode N`	Enable / disable serial mode in operating mode *COUNT*.
0 / N	Serial mode Off (average piece weight is cleared and must be determined for each counting cycle).
1 / Y	Serial mode On (average piece weight is stored for the next counting cycle).

Operating mode *FILL 1* or *FILL 2*:

Dosing: after taring		Select tare / zero setting function: • **after taring:** Scale is tared prior to each cycle. • **after set zero:** Scale is set to zero prior to each cycle (only within selected range of pushbutton zero, only then filling is released). • **finish filling:** Filling is started without taring or zero setting (gross filling, e.g. to finish a partial filling).

Operating mode *FILL 2*:

Preact correction N		Enable / disable preact correction.
	0 / N	Preact correction disabled.
	1 / Y	Preact correction enabled.
Zero range 0.00		Enter zero range for automatic continuation after completed filling cycle and unloading of scale. With zero range = 0, the **Enter**-key must be pressed after the filling. In this case, also the filling / taring function should be set to 'finish filling' or otherwise 'Taring' or 'Zero setting' is active.
Min. tare 0.00		Enter minimum tare for tare check.
Max. tare 0.00		Enter maximum tare for tare check, enter '0' to disable tare check, e.g. for extraction weighing. For 'Dosing after set zero' the tare check must be disabled (Max. tare = 0).

Operating mode *FILL 1* or *FILL 2*:

Start via keyboard N		Enable / disable start of filling cycle via keyboard.
	0 / N	Start of filling cycle only via input E0.
	1 / Y	Start of filling cycle with **Enter**-key or via input E0.
Password 9999		Enter password for access to Supervisor Mode, if no password is specified, Supervisor Mode can be called up without password check.
Brightness 100%		Setting of display brightness (min. = 40 %).
	-10% F2	Decrease brightness by 10 %.
	+10% F3	Increase brightness by 10 %.
Saving...		Data are saved.

Parameters	Return to basic step

8.2 Weight Storage

The W&M approved long-term weight storage (data archive) has a capacity of approx. 1,000,000 records. A record is stored for every completed weighing cycle. The sequence of a weighing transaction is: operating / data entry, entry in data archive, printing and data transmission.

In the archive, each record is stored with date, ident No. and gross and net weight. The ID No. is reset to 0001 with every change of the date if the data archive has been configured to 'Date+Id' (ask your supplier for details). To allow for a later verification of the weighing data, date and identification No. of the weighing have to appear on the printout or must be stored together with the weight on the host computer.

The data archive can be used as an alternative to a log printer when data are processed in an EDP system. The stored weights are read-only and cannot be deleted or changed.

Weight Storage	

With printer = Y(es):

Wgt storage: Display	Select F1	• Display: Show stored weights. • Print: Print stored weights.

8.2.1 Display Of Stored Weights

Search date 99.99.99	Enter date of weighing.
ID-No. 9999999999	Enter ID of record to be looked up.
W1 99.99.99 Id-No. 99 9.9 kg N 9.9 kg	Display of: • Scale • Date • ID • Net weight (N) • Tare weight
Prev F1	Show previous record.
Next F2	Show next record.
	Return to step 'Search date.'

A matching record could no be found in the data archive:

No Record available!	
Prev F1	Back to previous record
Next F2	Proceed to next record

Checksum error detected:

`Error Checksum!`	An error was detected in the checksum of the data archive. **Important note: The stored data are void!**

8.2.2 Print Stored Weights

`From date: 99.99.99`	Enter start date of records to be printed.
`To date: 99.99.99`	Enter end date of records to be printed.
`Printing...`	Print records within selected period.

No record could be found in the data archive for the selected period:

`No Record available!`	Return to step 'From date'

Checksum error detected:

`Error Checksum!`	An error was detected in the checksum of the data archive. **Important note: The stored data are void!**

8.3 Software Updates

All firmware updates can be traced and viewed in the 'Software Updates' menu (logbook). It is read-only and cannot be edited or deleted.

The consecutive No. of the record, the filename as well as date and time of the installation are shown.

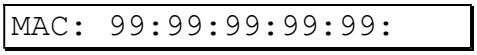
The topmost record is the most recent one.

`Software Updates`	↵	
`1 Update_99999999.9`	Select F1	Page down.
`installed at 9999-99`	Select F1	Page down.
`-99 99:99`		
	↵	Continue with older record.
	↑	Return to more recent record or step 'Software Updates,' respectively.

8.4 Software ID

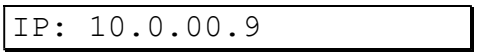
`Software ID`	↵	
`ID:15487782/V4.14.20`		Show ID of operating system and version of approved software.

8.5 MAC/IP Address



Select

Display of MAC address.



Display of IP address.

8.6 Master Mode

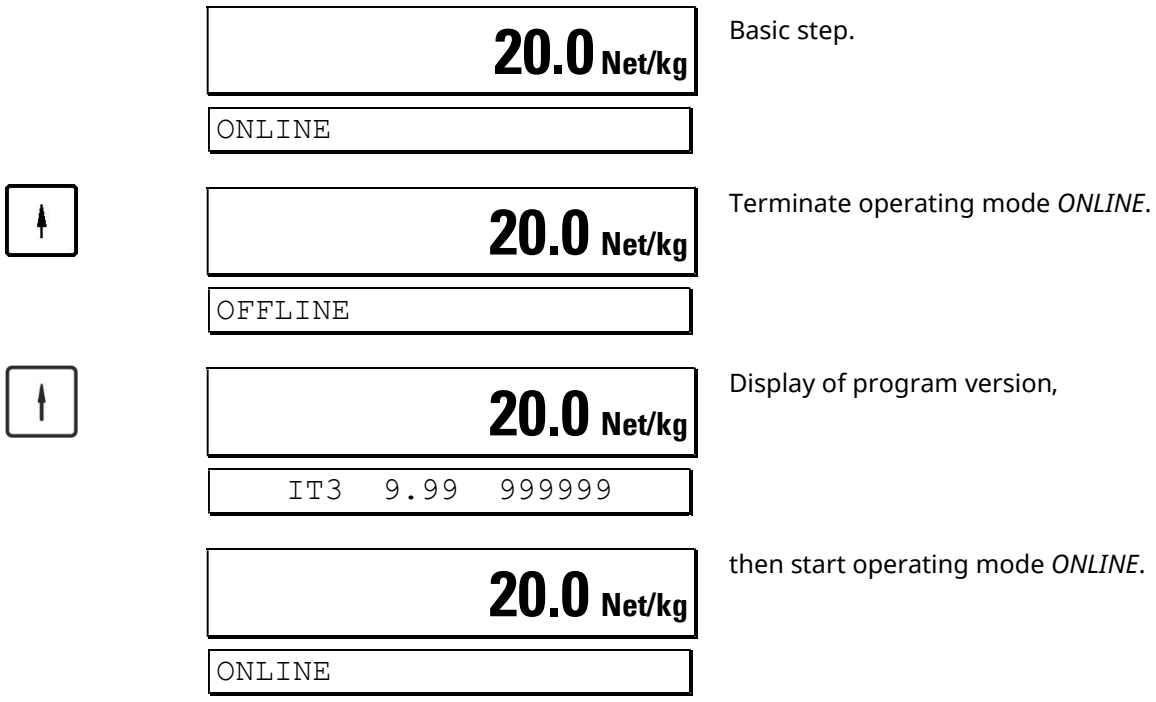
For a description of the Master Mode refer to the respective Calibration Manual:

- Calibration Manual IT1/IT3 for ADM / DADM, order No. ST.2309.1771;
- Calibration Manual IT1/IT3 for DWB, order No. ST.2309.1781;
- Calibration Manual IT1/IT3 for IDN, order No. ST.2309.1776.

9 Operating Mode *ONLINE* (Remote Control From PC)

In the operating mode *ONLINE* the weighing terminal works under remote control from a PC over Ethernet or the optional serial interface.

The text 'ONLINE' in the basic step indicates that this operating mode is active.



Note:

- The **Tare-key F4** and the **switch scale key F3** can be enabled / disabled in the configuration. (Contact your supplier for details).
- To exit the operating mode *ONLINE* press ⏻-key.
- The *OFFLINE* mode corresponds to the operating mode *BASIC*. In *OFFLINE* mode, the *ONLINE* command set is only available in reduced scope (if configured, see Technical Manual IT3).
- *ONLINE* communication is terminated when the Service Mode is called up and restarts automatically when the Service Mode is terminated.
- To return to *ONLINE* mode press ⏻-key once more.
- For a description of the data strings for the PC communication refer to Technical Manual IT3.

10 Transport, Maintenance And Cleaning

10.1 Transport

Notes:

- Transport and storage of electronic components such as boards, EPROMs, etc. must only be made in suitable anti-static ESD bags or cases.
- Storage temperature –25 to +70 °C at 95 % max. relative humidity without condensation.

10.2 Maintenance

CAUTION
This unit and its associated equipment must be maintained by qualified personnel only, who are familiar with the construction and operation of all equipment in the system and the potential hazards involved. Failure to observe these precautions could result in bodily injury!

Disconnect all power to this unit before servicing!

The IT3 terminal is designed to require a minimum of maintenance and service, however, depending on the environmental conditions a visual inspection at regular intervals is recommended. The frequency at which normal maintenance (cleaning and inspection) should be performed, when installed in a clean office environment, should be twice a year. However, if the unit is subject to a dusty or dirty environment the frequency should be increased as required. At these inspections it should be made sure that all connected cables are undamaged and that all connectors are tightly fastened.

Maintenance of scale platforms is required at regular intervals depending on use and environment. The accuracy of scales can be affected by dirt, foreign objects, etc. and appropriate maintenance is strongly recommended. Also recommended is the calibration with certified test weights at regular intervals.

10.3 Cleaning

CAUTION
Disconnect all power to this unit before cleaning!

W A R N I N G
Observe the safety data sheet of the respective cleaning agents! Cleaning agents and chemicals may cause irritation and/or harm to health! Wear suitable protective clothing (e.g. gloves, eye protection)!

CAUTION
Concentrated leaches or acids, solvents, pure alcohol, chloric or saline cleaning agents must not be used.

The keyboard overlay is resistant to acetone, trichloro, alcohol, ether, nitric acid (20 %), hexane, sulphuric acid (20 %) and all-purpose cleaners.

Clean the keyboard and covers with a soft clean cloth that has been dampened with a mild window type cleaner. Do **NOT** use any type of industrial solvent or the finish of the unit may be damaged. Do not spray cleaner directly on the unit.

When cleaning agents are used that contain acids, leaches or alcohol, the device must subsequently be rinsed with clean water to remove any residue.

10.3.1 General Advice

Abrasive cleaners, strong detergents, scouring pads, brushes or steel wool must not be used for the cleaning of the device. Wet cleaning with a lint-free cloth or simple rinsing-off is recommended. Use of solvents and chemicals can affect the surface and make it pale. Also, attached name plates, notices or warning signs may be damaged. Please refer to the respective chapters for further details.

Clean the device at room temperature and avoid extreme conditions such as heat, direct sunlight or temperatures below freezing point. Do not use mechanical tools, e.g. rotating brushes or wipers.

Cleaning of the device should only be made with appropriate intensity to avoid unnecessary wear and tear. Aging and long-term material load caused by environmental influence and handling may have an effect on tightness and condition of the device. Therefore, it is required to inspect all components at regular intervals and replace them if necessary (e.g. brittle gaskets).

10.3.2 Cleaning With Hose Water

The housing variants desk-top/wall-mount and panel-mount meet the requirements of ingress protection following IP6x in accordance with EN 60259 (dust-tight and complete protection against access) and IPx9K in accordance with ISO 20653 (protection against high-pressure/steam-jet cleaning, in particular for road vehicles).

The max. temperature for high-pressure/steam-jet cleaning is 80 °C, the max pressure 90 bar. The min. distance between nozzle and surface of the housing must be kept at 30 cm, and the jet must not be directed to the same spot for an extended period (>3 sec). The flow rate must not exceed 15 l/min. Before cleaning the high-pressure/steam cleaner must be adjusted accordingly. When severe contamination is experienced it is recommended to soak and/or pretreat the affected spots. Inappropriate handling of the cleaning equipment can damage the device!

Direct water jet cleaning of cable glands with or without introduced cables should be made with caution since gaskets and cable jackets could be affected. Avoid direct impact of jet cleaning on gaskets!

10.3.3 Use Of Detergents

Cleaning with special cleaning agents or chemicals is possible, however, it is recommended to use mild commercially available detergents and not aggressive cleaners. Make sure that name plates, signs and safety notices are not damaged. Most detergents can be used for short-term application and can only cause damage if the unit is subjected to them over a longer period of time. The unit should be rinsed off immediately after cleaning with pure water. In case of uncertainty about the proper choice of the detergent, it can be tested on a small area.

Recommended detergents are listed below:

Soap solution, mild household type cleaner, window cleaner, diluted ethanol (5 %).

For stubborn dirt other detergents may be used depending on the material composition.

The device consists of several components with different resistance against detergents and chemicals which must be chosen depending on the material they are to be applied to. The following materials are used in the design of the device:

- Housing: Stainless steel (V2A / 1.4301 / AISI 304)
- Keyboard overlay: Autotex F200
- Display pane: PMMA (polymethyl methacrylate)
- Cable glands: Nickel-plated brass, sealing clamp for cable NBR
- Gasket of lid: EPDM (desk-top/wall-mount version)
  CR (panel-mount version)

11 Error Messages

If an error occurs during calibration or normal operation, error messages are displayed as follows:

Error Message	Possible Cause	Corrective Measure
Calibration Locked	• Jumper for protection of calibration parameters in position 'protected'	• Set calibration jumper to calibration position
Error Calibr. Jumper	• Parameters cannot be saved, jumper in wrong position	• Set jumper to correct position, repeat calibration
ADM not installed	• No ADM installed	• Check ADM
Not available	• No scale selected	• Check parameters in Service Mode
ADM defect **ADM Error**	• No data received from ADM • Short circuit in load cell cable	• Replace ADM • Check cabling
Resolution Error	• Internal resolution too small, must be at least tenfold the displayed resolution	• Select bigger increment size • Use load cell with lower capacity
ADM Over **Out Of Range**	ADM overrange: • Wiring error load cell • Load cell defective • Scale heavily overloaded	 • Check wiring • Check load cell • Unload scale

Error Message	Possible Cause	Corrective Measure
Overload	• Scale in overload	• Unload scale
--------	• Zero setting or taring not possible because scale is in motion	• Settle scale
	• CPU does not receive data from weighing interface	• Check internal and external wiring and cabling
U n d e r l o a d	• Gross weight smaller than –20 d (below zero)	• Load scale • Set parameter 'Underload 20d' to N = disabled
Powerup Out of Range	• Error power up zero. This message appears on power up if the weight on the scale exceeds the power up zero range (+2 %,+10 %) or is below the power up zero range as set in the calibration (–2 %, –10 %) as set in the calibration.	• Unload scale or apply dead load
Powerup Motion	• This message appears on power up if the terminal cannot detect a settled weight within the specified power up zero range (±2 %, ±10 %).	• Settle scale

The following messages can appear on the operator display:

Error Message	Possible Cause	Corrective Measure
Scale error	• General scale error (see error message on weight display)	• See error message on weight display
Error Transmission	• Host switched off or off-line	• Switch on host and start communication program
	• Data cable not connected or damaged	• Check cable and connectors
		• If problem cannot be rectified, disable data transmission in Supervisor Mode
Error Taring	• Gross weight under zero	• Load scale
	• No settled weight detected within 6 sec	• Settle scale
Printer error	• Printer switched off or not ready	• Switch on printer
	• Printer cable damaged or not connected	• Check cable and connectors
		• If problem cannot be rectified, disable printer in Supervisor Mode
Scale in Motion	• Capturing weight: No settled weight detected within 6 sec	• Settle scale
Gross under zero	• Capturing weight: Gross weight under zero	• Load scale
Out of Zero Range	• Zero setting: Weight outside zero setting range	• Load or unload scale to bring into zero range

After switching the terminal on:

Error battery-backed RAM **Check lithium battery** **Press ENTER to continue**	• Loss of data in battery-backed RAM: the memory could not be permanently supplied with power from the lithium battery when switched off	• Check lithium battery, replace if required • Check contacts of battery holder, clean if required