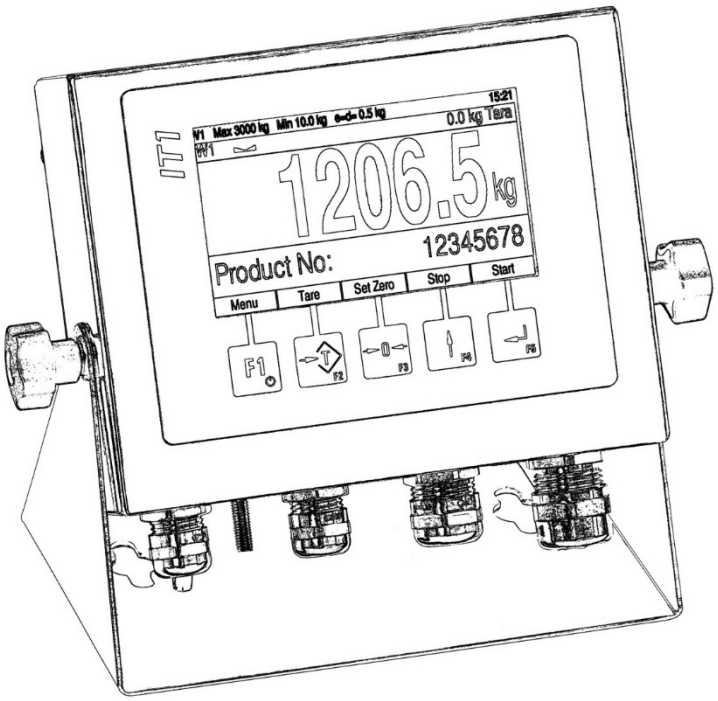
Discover smart weighing

Operation Manual

IT1



Industrial Weighing Terminal

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Rev. 15

Operating Instructions IT1

Date: 7/4/2023

File: IT1_BAE.PDF (Translation of the original documentation)

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15	10

Published By:

Please Note:

While every precaution has been taken in the preparation of this manual, SysTec assumes no responsibility for errors or omissions. Neither is any liability assumed for damages resulting from the use of the information contained herein.

The publisher is grateful for any information and/or advice that may contribute to correct errors or omissions in following editions.

Contents

1 Introduction

IT1 is a universal weighing terminal with additional functions for data logging, data transmission, parts counting 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 (zones, groups, temperature classes). To this effect the assistance of the competent Labor Inspectorate or the Technical Inspection Services may be used.

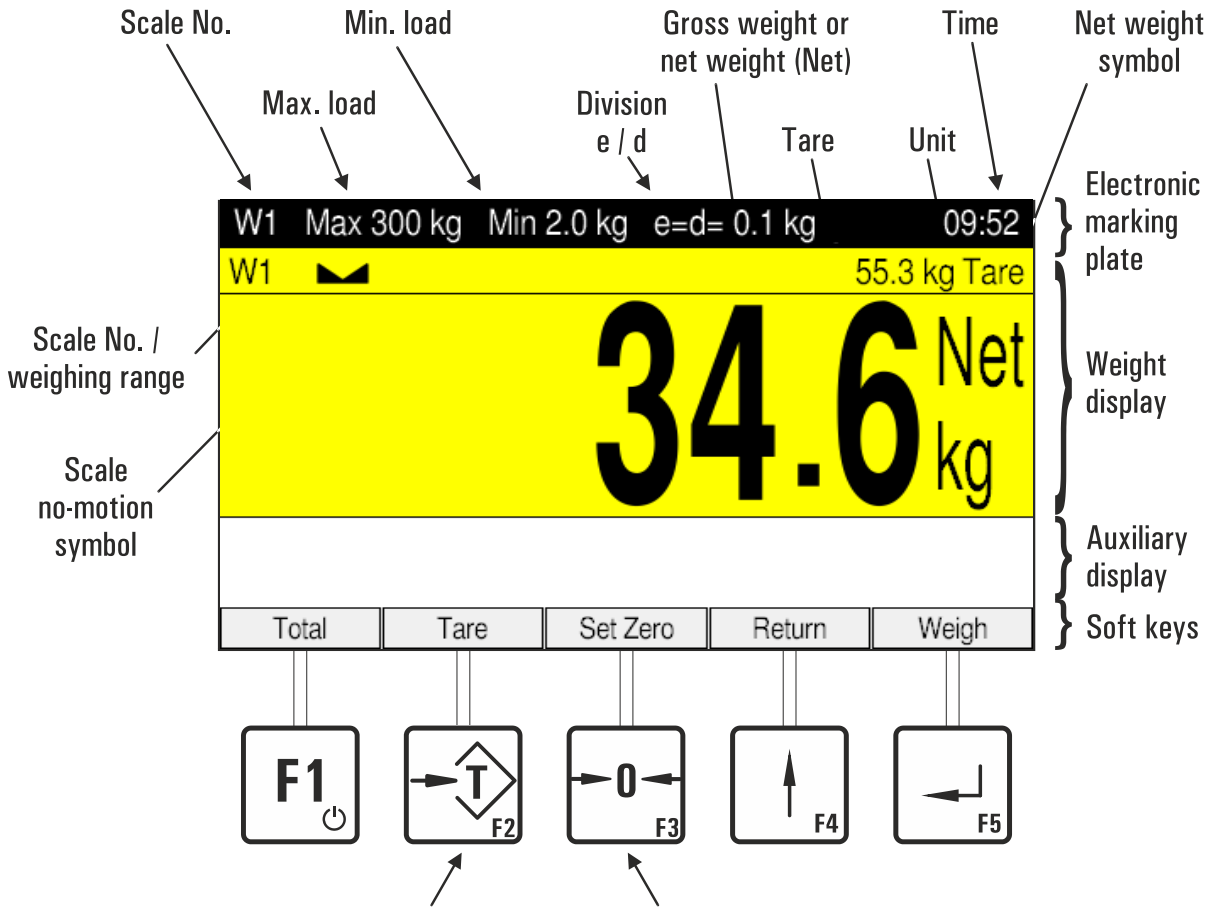
CAUTION
Input voltage of the instrument must comply with local mains supply!

CAUTION
Disconnect all power to this instrument before cleaning and 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!
- 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



Tare Key
for taring of currently displayed weight or clearing the tare weight.
(Function can be disabled in application program)

Set Zero Key
to set the displayed scale to zero (only within zero setting range, selectable in calibration mode).
(Function can be disabled in application program)

Electronic Marking Plate (only for single-range/single-interval scales)

Scale No.	W1	Always 1
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).
09:52		Display of time

Weight Display

Scale No. / **No. Of Weighing Range**	W1 W1.1 ... W1.3	Always 1 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	**55.3 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.

Confirmation Of Entry / Chosen Function

Every entry or selected function / parameter must be confirmed by pressing the 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 program step. The currently valid assignment is shown in the lower display line above the function keys.

Key	Function	Comment
	**F1 -key**	On/off (if enabled)
	Select	Scrolling forward
	Service	Call up Service Mode during display of program version
	Clear	Press once: Delete individual characters Hold down: Delete all entries
	**Taring**	Taring (auto-tare), or clear tare when scale is tared (repetitive tare possible)
	+1 -key	Increase entry by 1 or proceed to next parameter option
	Yes	Activate an option
	=>	Scrolling by one character
	Net(X)	Show net weight with tenfold resolution
	**Zero -key**	Set gross weight to zero (only within zero setting range)
	x10 -key	Appending a zero to the numeric entry (x10)
	No	Deactivate an option
	kg / lb / oz / ...	Switch weight unit: • additional loadable update required • not permitted for W&M approved applications in the EC
	**↑ -key**	Return to previous program step
	**↵ -key**	Confirm entry and continue in next program step
	Setup	Call up Supervisor Mode during display of program version

2.1 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:

Password _	Entry of Service Mode 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:

Wrong password entry:

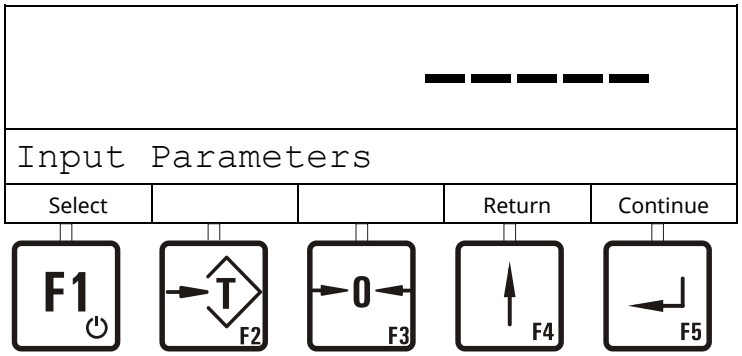
Invalid password!	Error message: Invalid Password!

Keys F5 **and** F4

F5 Confirm entry, continue in next program step

F4 Back to previous program step

2.2 Choose Options / Menus

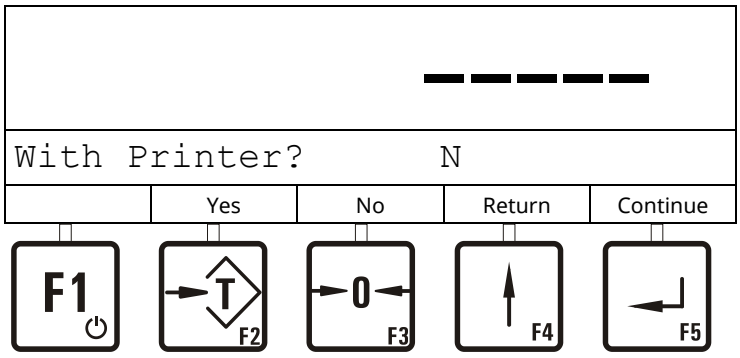


Example:

Input Parameters	Select F1
Weight Storage	Select F1

etc.

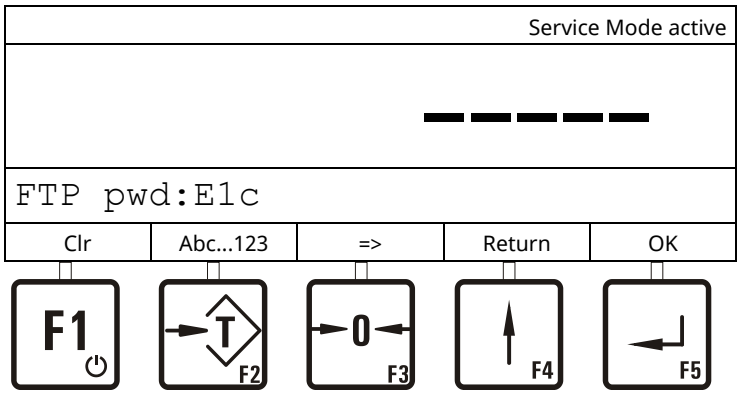
2.3 Yes/No Entries Via Keys F2 (T) And F3 (0)



Example:

With Printer? N	No	'N' is shown, function or parameter is disabled / deselected.
With Printer? Y	Yes	'Y' ('Yes') is shown, function or parameter is enabled / selected.
With Printer? Y	Continue	Confirm choice.

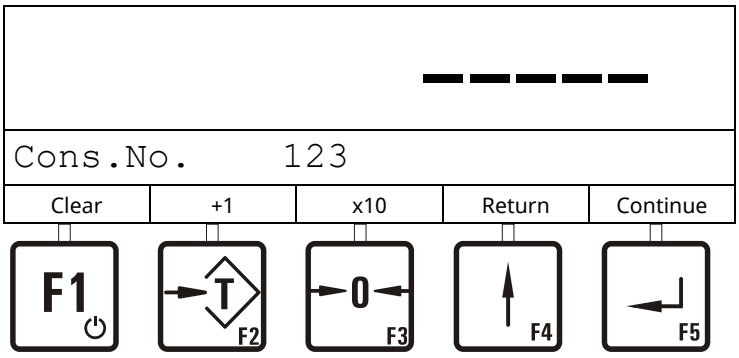
2.4 Alphanumeric Entry



Example: E1c:

`FTP pwd:`		
`FTP pwd:`	Clr 	Delete.
`FTP pwd:A_`	=> 	Press to create a new position for an entry.
`FTP pwd:A`	Abc...123 	Hold down to select entry mode. The display changes continuously between: A=Upper case characters a= Lower case characters 0=Numbers and special characters
`FTP pwd:E`	Abc...123 	Press repeatedly until the desired character appears, e.g.: E.
`FTP pwd:E_`	=> 	Press to create a new position for an entry.
`FTP pwd:E0`	Abc...123 	Hold down to select entry mode.
`FTP pwd:E1`	Abc...123 	Press repeatedly until the desired number appears, e.g.: 1.
`FTP pwd:E1_`	=> 	Press to create a new position for an entry.
`FTP pwd:E1a`	Abc...123 	Hold down to select entry mode.
`FTP pwd:E1c`	Abc...123 	Press repeatedly until the desired character appears, e.g.: c.
`FTP pwd:E1c`	OK 	Confirm entry.

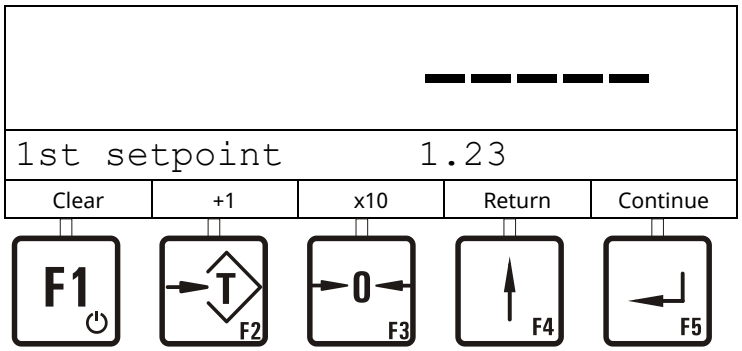
2.5 Entry Of Whole Numbers



Example: 1234:

Cons.No. 123		
Cons.No.	Clear F1	Delete all entries.
Cons.No. 1	+1 T F2	Press repeatedly until desired number is shown, e.g. press once = 1.
Cons.No. 10	x10 0 F3	Press to create a new position for an entry.
Cons.No. 12	+1 T F2	Press repeatedly until desired number is shown, e.g. press twice = 2.
Cons.No. 120	x10 0 F3	Press to create a new position for an entry.
Cons.No. 123	+1 T F2	Press repeatedly until desired number is shown, e.g. press three times = 3.
Cons.No. 123	x10 0 F3	Press to create a new position for an entry.
Cons.No. 1234	+1 T F2	Press repeatedly until desired number is shown, e.g. press four times = 4.
Cons.No. 1234	Continue F5	Confirm entry.

2.6 Entry Of Numbers With Trailing Decimals



Example: 1.23:

1st setpoint 0.321		
1st setpoint 0.0	Clear F1	Delete all entries.
1st setpoint 1	+1 F2	Press repeatedly until desired number is shown, e.g. press once = 1.
1st setpoint 10	x10 F3	Press to create a new position for an entry.
1st setpoint 1.	+1 F2	Press repeatedly until decimal separator appears.
1st setpoint 1.0	x10 F3	Press to create a new position for an entry.
1st setpoint 1.2	+1 F2	Press repeatedly until desired number is shown, e.g. press once = 2.
1st setpoint 1.20	x10 F3	Press to create a new position for an entry.
1st setpoint 1.23	+1 F2	Press repeatedly until desired number is shown, e.g. press three times = 3.
1st setpoint 1.23	Continue F5	Confirm entry.

3 Switching On

After switching the unit on the program version, date/time and the chosen operating mode are shown briefly. After that the program branches to the basic step.

System Startup... Please wait	Start of weighing terminal (approx. 40 sec).
IT1 9.99	Display of version, date and time and chosen operating mode.
	Initial step of operating sequence (in the operating modes *CHECK* and *FILL* first the target value must be entered).

4 Operating Modes

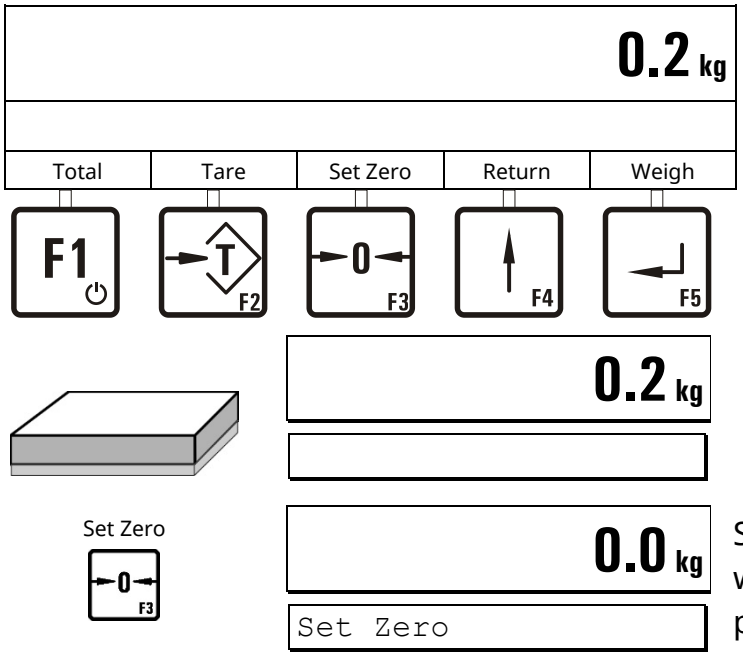
4.1 Weighing Functions

The basic step for all operating modes is the display of the weight. In this step the elementary scale functions are accessible.

For the sequences described below Service Mode settings are required as follows: 'Print mode: Standard,' 'Auto Tare? = N' and 'Peak Hold?=N' (operating mode *BASIC*). See section 'Print mode,' 'Auto Tare' and 'Peak Hold.'

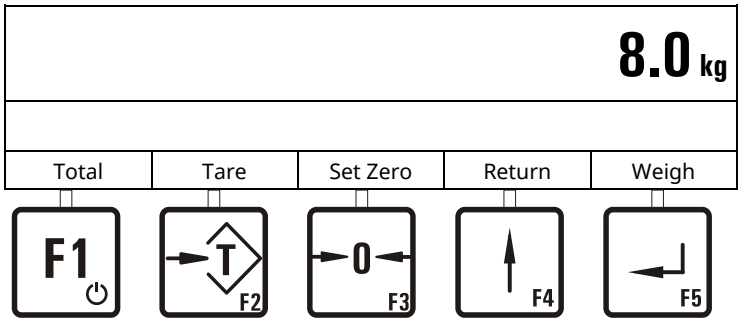
Contact your supplier for further details.

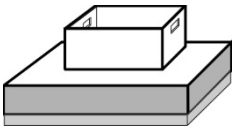
4.1.1 Zero Setting



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

4.1.2 Taring





8.0 kg

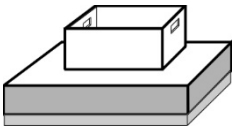
Place container on scale

Tare

0.0 Net/kg

Taring...

Tare scale (Net indicates net mode)



0.0 Net/kg

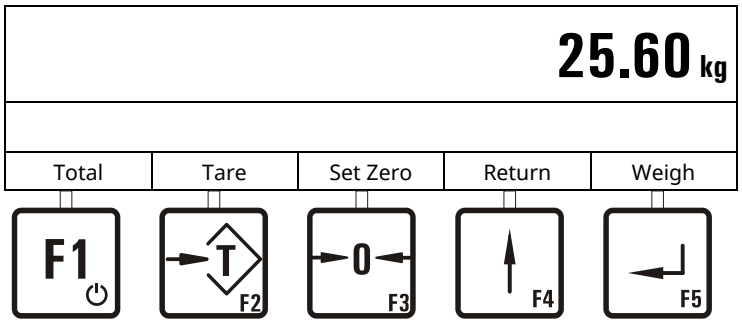
Tare

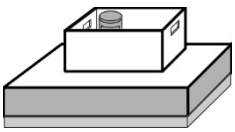
8.0 kg

Set scale back to gross weight

Note:
Only with setting
'Tare mode: Gross/Net,'
(see section 'Tare functions')

4.1.3 Weighing





13.0 kg

Put item into container

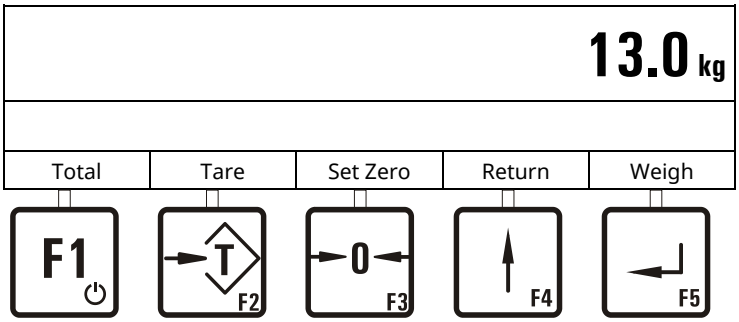
Weigh

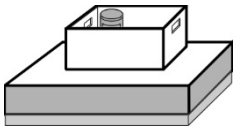
13.0 kg

Weighing...

Printing / data transmission of weight

4.1.4 Show Weight With Tenfold Resolution





13.0 kg

Display of gross weight

Return

13.0 kg

IT1 9.99

From basic step of chosen operating mode switch to display of version message.

Net (X)

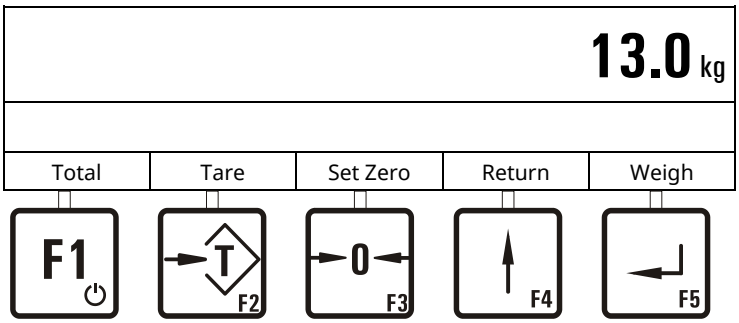
13.0 kg

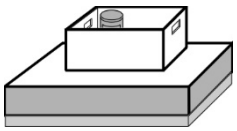
Net(X) 13.03 kg

Show current weight with tenfold resolution.

Display is switched back after 5 sec.

4.1.5 Switch Weight Unit





13.0 kg

Display of gross weight

Return

13.0 kg

IT1 9.99

From basic step switch to display of version message.

kg lb **oz** ...

460 oz

Press repeatedly to select unit.

Display of weight in chosen unit.

4.2 Tare Functions

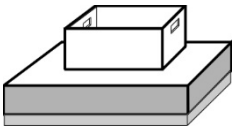
In the Service Mode, Group 'General' one of 3 different tare modes can be chosen.

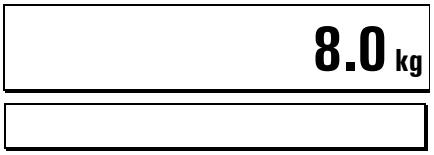
For the sequences described below Service Mode settings are required as follows:
'Print mode: Standard' and 'Auto Tare? = N' (operating mode *BASIC*).
See section 'Print mode' and 'Auto Tare.'

Contact your supplier for further details.

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

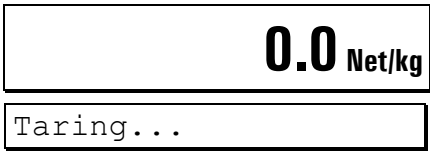
With each actuation of the tare key the display is switched from gross to net and back (setting: 'Tare mode: Gross/Net'). This is the usual tare function which is appropriate for most applications.



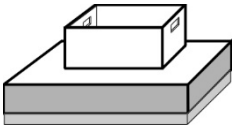


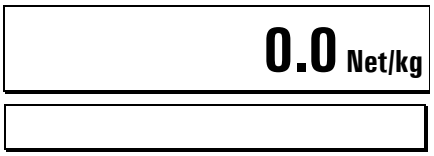
Place container on scale

Tare

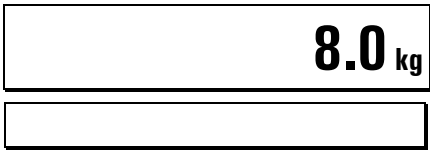


Tare scale (Net indicates net mode)





Tare

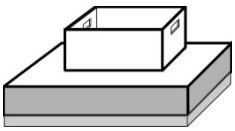


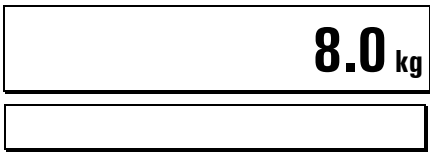
Clear tare and return to display of gross weight.

4.2.2 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.

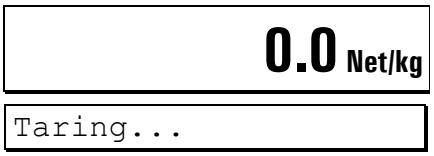
This function is useful for serial weighings with changing tare weight.



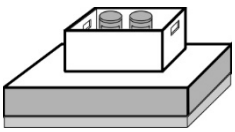


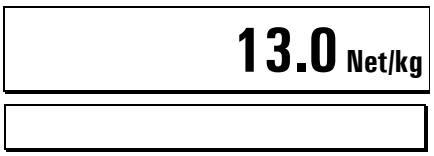
Place container on scale

Tare



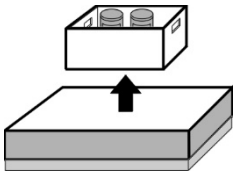
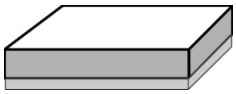
Tare scale (Net indicates net mode)





Put item(s) into container

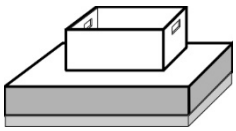
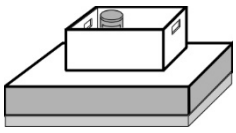
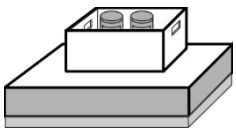
Weigh

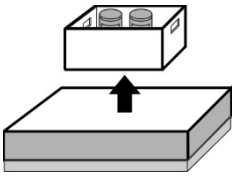
13.0 Net/kg Weighing...	Output weight on printer and/or transmit to host.
 **-8.0** Net/kg	Remove filled container from scale
 **0.0** kg	Tare is cleared automatically

4.2.3 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.

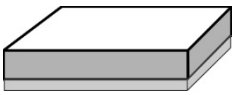
This function is used to subsequently fill several components into one container.

 **8.0** kg	Place container on scale
Tare  **0.0** Net/kg Taring...	Tare scale (Net indicates net mode)
 **13.0** Net/kg	Put first item into container
Weigh  **13.0** Net/kg Weighing...	Printing / data transmission of weight
Tare  **0.0** Net/kg Taring...	Tare scale anew.
 **13.0** Net/kg	Put second item into container
Weigh  **13.0** Net/kg Weighing...	Output weight on printer and/or transmit to host.



-21.0 Net/kg

Remove filled container from scale.



0.0 kg

Tare is automatically cleared.

4.3 Print Mode

In the group 'Application' of the Service Mode the function of the ↵ **-key** (or the corresponding digital input) can be configured for the operating mode *BASIC*.

Contact your supplier for further details.

- **Standard** Standard function of ↵ **-**key and the corresponding digital input.
- **Auto** Automatic printing after exceeding the first setpoint S1.
- **Once**
  One print only after pressing the ↵ **-**key or activating the digital input. Next print release only possible after unloading the scale or after weight falls below the first setpoint S1.

4.4 Auto Tare

In the group 'Application' of the Service Mode automatic taring can be enabled for operating mode *BASIC*. Contact your supplier for further details.

- Automatic taring when Gross greater S1 and Gross smaller S2.
- Tare is automatically cleared when scale is settled and weight below S1.

4.5 Peak Hold

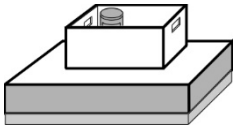
In the group 'Application' of the Service Mode automatic saving and display of last net-weight peak can be enabled for operating mode *BASIC*. The display can be turned on/off and cleared manually by the operator.

Contact your supplier for details.

Activate Display

Notes:

- The peak display must be activated by the operator each time the terminal is started.
- The net peak value is continuously saved in the background even if the peak display has not been activated.



13.0 kg	Display of gross weight

Return

F4

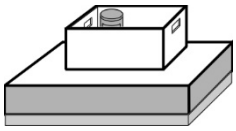
13.0 kg	From basic step of chosen operating mode switch to display of version message.
IT1 9.99	

Peak On

F2

13.0 kg	Activate display of last net-weight peak.
Peak value: 25.6 kg	

Reset peak value



13.0 kg	Display of gross weight
Peak value: 25.6 kg	

Return

F4

13.0 kg	From basic step of chosen operating mode switch to display of version message.
IT1 9.99	

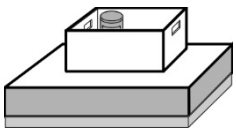
Peak Clr

F4

13.0 kg	Reset net-weight peak value
Peak value: 13.0 kg	

Deactivate display

Note: The net peak value is continuously saved in the background even if the peak display has not been activated.



13.0 kg	Display of gross weight
Peak value: 25.6 kg	

Return

F4

13.0 kg	From basic step of chosen operating mode switch to display of version message.
IT1 9.99	

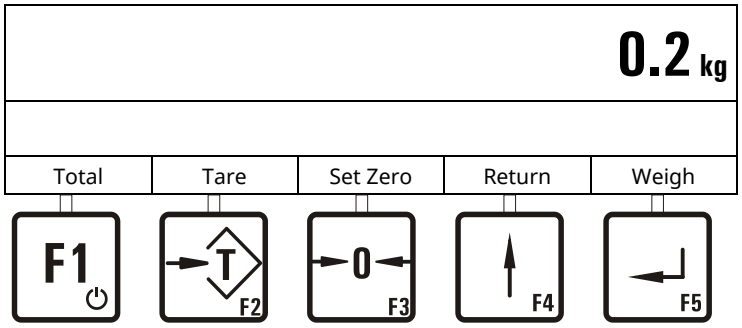
Peak Off

F2

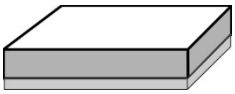
13.0 kg	Deactivate display of net-weight peak.

4.6 *BASIC* (Weigh & Print)

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



Weighing with container



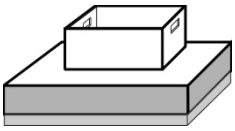
0.2 kg

Set Zero

0.0 kg

Set Zero

Set scale to zero



8.0 kg

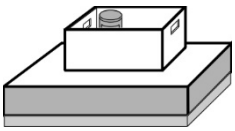
Place container on scale

Tare

0.0 Net/kg

Taring...

Tare scale (Net indicates net mode)



13.0 Net/kg

Put first item into container

Weigh

13.0 Net/kg

Weighing...

Printing / data transmission of weight

If 'Tare mode: Gross/Net' (Service Mode in group 'General'):

Tare

21.0 kg

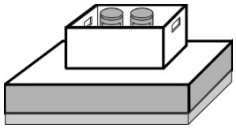
Taring...

Set scale back to gross weight

Weigh further items

Tare

0.0 Net/kg Taring...	Tare scale



13.0 Net/kg	Put second item into container

Weigh

13.0 Net/kg Weighing...	Printing / data transmission of weight

Weigh next item

Calculate totals and terminate weighing cycle

Note: Only with Supervisor Mode setting 'With Totals? = Y.'

Total

13.0 Net/kg Weighings 4	Totalizing: Show number of items

Continue

13.0 Net/kg Total 358.6 kg	Show total net weight.

Only with Supervisor Mode setting 'With Printer? = Y':

Continue

13.0 Net/kg Printing...	Print totals

Continue

13.0 Net/kg Delete totals?

Clear memory or return:

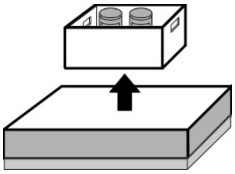
Delete

13.0 Net/kg Totals deleted	Clear memory

or:

Continue

13.0 Net/kg	Return to basic step without clearing totals



-34.0 Net/kg

Remove filled container from scale

Next weighing cycle

Notes:

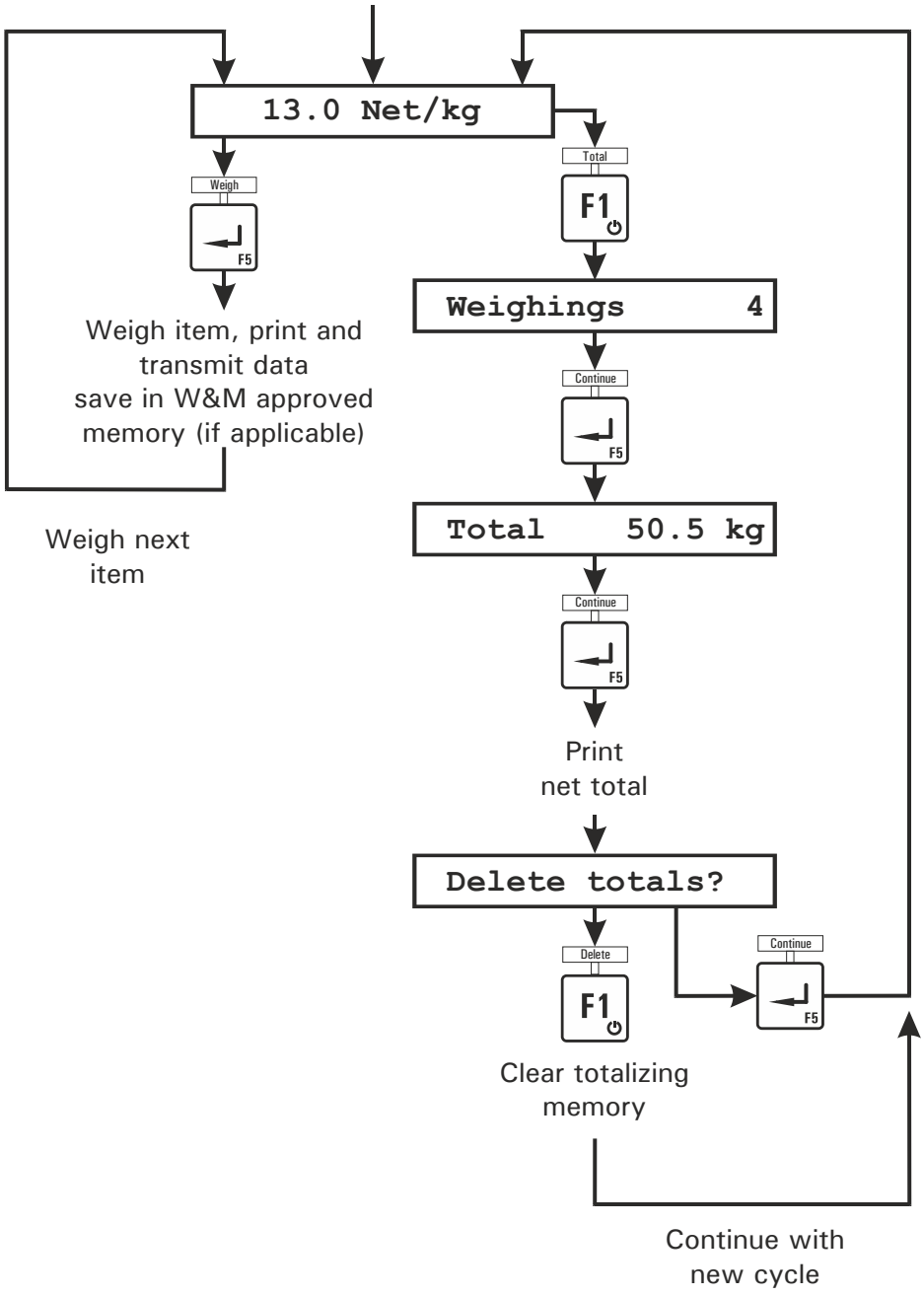
- Printout or data transmission is only possible when:
  - Printer **or** data transmission is enabled in Supervisor Mode.
  - A print format is configured. Contact your supplier for further details.
- The function 'Totalizing' can be disabled in Supervisor Mode in the step 'With Totals? = N.'

Digital inputs and outputs:

Input E0	Input E1	Output A0	Output A1
Signal Capture weight / set to zero *	Signal Taring	Depending on Service Mode setting: 'Assignment of outputs'	

* Depending on Service Mode setting: 'Assignment of input E0'

Flowchart *BASIC*



4.6.1 Display Of Barcode/QR Code

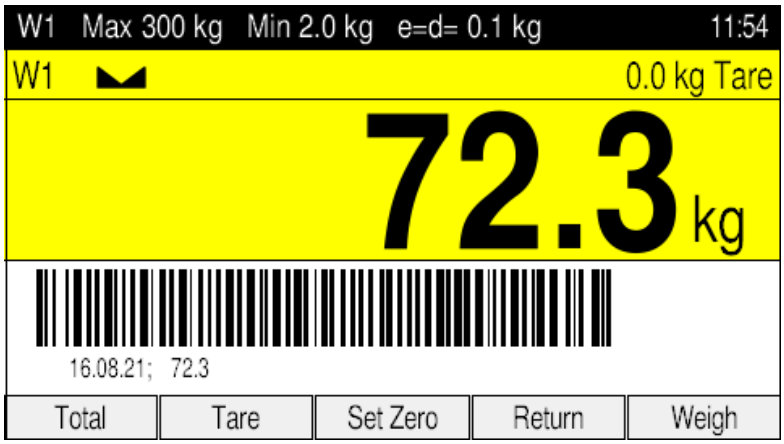
In Service Mode, group 'Application', the display of a barcode (Code 128) or a QR code can be activated in the operating mode *BASIC*. The content of the barcode/QR code is configurable.

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.

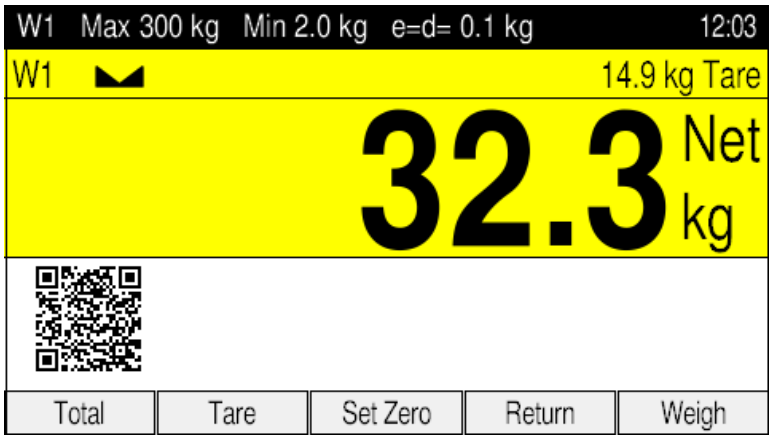
If the barcode/QR code does not contain an ID number, the display is only shown when the scale is settled and only as long as it remains settled. As soon as the scale is in motion, the display is deleted again.

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.

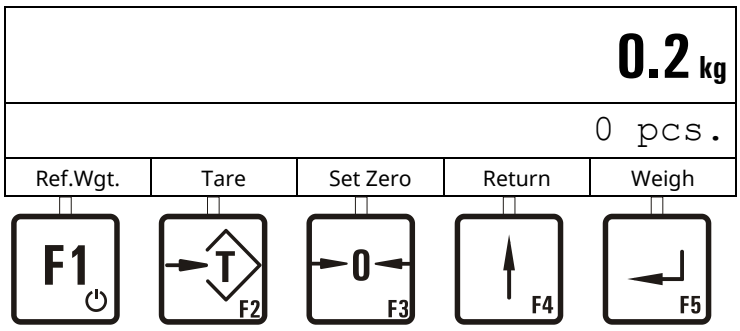


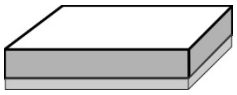
Note: The display of a barcode or QR code requires an additional firmware update, which may need to be downloaded, if applicable.

4.7 *COUNT* (Parts Counting)

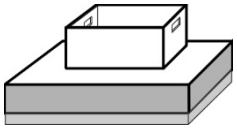
Operating mode *COUNT* permits the counting of an unknown number of pieces with identical piece weight, based on weighing a specified number of reference parts and the comparison of their weight with the unknown quantity.

4.7.1 Counting Into An Empty Container





0.2 kg
0 pcs.



8.0 kg
0 pcs.

Place empty container on scale

Tare

0.0 Net/kg
Taring...

Taring

Ref.Wgt.

0.0 Net/kg
Select Function

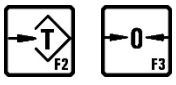
Entry of reference weight

Input

0.0 Net/kg
Piece wgt(g) 000.0

Enter reference weight

+1 x10



0.0 Net/kg
Piece wgt(g) 100.0

Continue

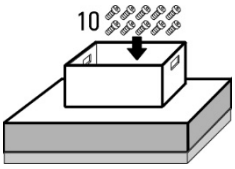
0.0 Net/kg
0 pcs.

or

Weigh reference parts

Weigh

0.0 Net/kg	Set scale to zero / taring
Taring...	



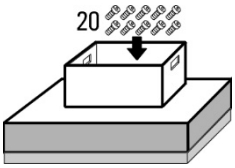
1.0 Net/kg	Put 10 parts (reference parts) into container
No. of parts 10	

Continue

1.0 Net/kg	Average piece weight of reference parts is displayed
Piece weight 100.0 g	

Opt.

1.0 Net/kg	Optimization of reference weight possible
More parts 10 pcs.	



3.0 Net/kg	Add further (uncounted) parts, the average piece weight is optimized.
More parts 30 pcs.	

Continue

3.0 Net/kg	Terminate optimization.
Piece weight 100.0 g	

Continue

3.0 Net/kg	Confirm value.
30 pcs.	

Change number of reference parts

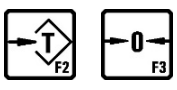
In the cycle described above 10 reference parts were used. The number of reference parts can be changed freely:

2.0 Net/kg	
No. of parts 10	

Clear

2.0 Net/kg	Clear value
No. of parts 0	

+1 x10



2.0 Net/kg	Change number of parts
No. of parts 20	

Continue

F5

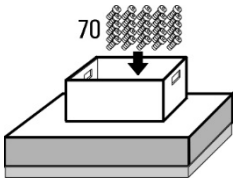
2.0 Net/kg Piece weight 100.0 g	Average piece weight of reference parts is displayed.

Continue

F5

2.0 Net/kg 20 pcs.	Confirm value.

Count pieces

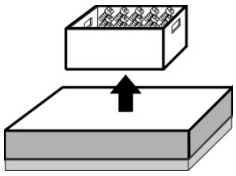


10.0 Net/kg 100 pcs.	Add parts for counting unknown quantity or to reach desired number. Example: Add further parts (70 in this case) to reach 100.

Weigh

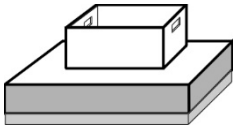
F5

10.0 Net/kg Weighing...	Printing / data transmission of piece count

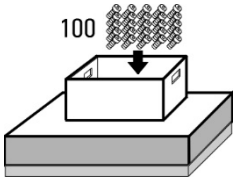


0.0 Net/kg 0 pcs.	Remove filled container from scale, empty out and place on scale again

Count further pieces



0.0 Net/kg 0 pcs.	Empty container on scale

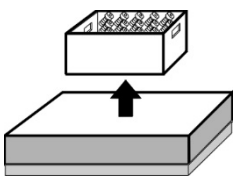


10.0 Net/kg 100 pcs.	Fill parts into container until desired number is reached

Weigh

F5

10.0 Net/kg Weighing...	Printing / data transmission of piece count



0.0 Net/kg 0 pcs.	Remove filled container from scale, empty out and place on scale again

Calculate totals and terminate cycle

Note: Only with Supervisor Mode setting 'With Totals? = Y.'

Return

0.0 Net/kg
IT1 9.99

Show version, date, time and chosen operating mode.

Total

0.0 Net/kg
Weighings 4

Totalizing: Show number of weighings

Continue

0.0 Net/kg
Total 200 pcs.

Show total number

Only with Supervisor Mode setting 'With Printer? = Y':

Continue

0.0 Net/kg
Printing...

Print totals

Continue

0.0 Net/kg
Delete totals?

Clear memory or return:

Delete

0.0 Net/kg
Totals deleted

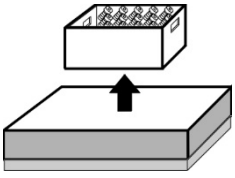
Clear memory

or:

Continue

0.0 Net/kg
0 pcs.

Return to basic step without clearing totals



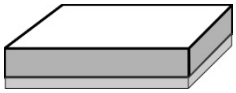
-34.0 kg
340 pcs.

Remove filled container from scale

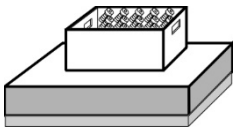
Continue with next weighing cycle

- **Notes:** See at the end of this chapter.

4.7.2 Counting From A Filled Container



0.2 kg
0 pcs.



108.0 kg
100 pcs.

Place filled container on scale

Tare

0.0 Net/kg
Taring...

Taring

Ref.Wgt.

0.0 Net/kg
Select Function

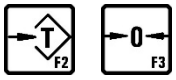
Entry of reference weight

Input

0.0 Net/kg
Piece wgt(g) 000.0

Enter reference weight

+1 x10



0.0 Net/kg
Piece wgt(g) 100.0

Continue

0.0 Net/kg
0 pcs.

or

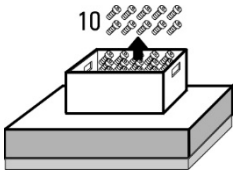
Weigh reference parts

Weigh

0.0 Net/kg
Taring...

Weigh reference parts

10



-1.0 Net/kg
No. of parts 10

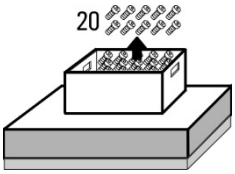
Take 10 pieces (reference parts) out of container.

Continue

-1.0 Net/kg	Average piece weight of reference parts is displayed.
Piece weight 100.0 g	

Opt.

-1.0 Net/kg	Optimization of reference weight possible
More parts 10 pcs.	



-3.0 Net/kg	Take out further (uncounted) parts, the average piece weight is optimized.
More parts 30 pcs.	

Continue

-3.0 Net/kg	Terminate optimization.
Piece weight 100.0 g	

Continue

-3.0 Net/kg	Confirm value.
30 pcs.	

Change number of reference parts

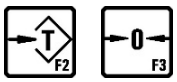
In the cycle described above 10 reference parts were used. The number of reference parts can be changed freely:

-2.0 Net/kg	
No. of parts 10	

Clear

-2.0 Net/kg	Clear value
No. of parts 0	

+1 x10



-2.0 Net/kg	Change number of parts
No. of parts 20	

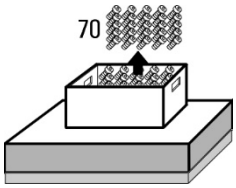
Continue

-2.0 Net/kg	Average piece weight of reference parts is displayed.
Piece weight 100.0 g	

Continue

-2.0 Net/kg	Confirm value.
20 pcs.	

Count pieces

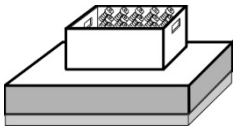


-10.0 Net/kg	Take out parts for counting unknown quantity or to reach desired number. Example: Take out further parts (70 in this case) to reach 100.
100 pcs.	

Weigh F5

-10.0 Net/kg	Printing / data transmission of piece count
Weighing...	

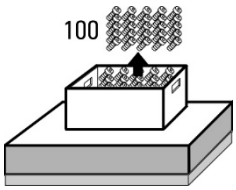
Count further pieces



-10.0 Net/kg	Container (from which pieces have already been taken out) is still on scale.
100 pcs.	

Tare F2

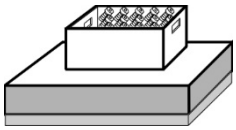
0.0 Net/kg	Taring
Taring...	



-10.0 Net/kg	Take out parts from container until desired number is reached.
100 pcs.	

Weigh F5

-10.0 Net/kg	Printing / data transmission of piece count
Weighing...	



-10.0 Net/kg	**Take out further parts or remove container from scale.**
100 pcs.	

Calculate totals and terminate cycle

Note: Only with Supervisor Mode setting 'With Totals? = Y.'

Return F4

0.0 Net/kg	Show version, date, time and chosen operating mode.
IT1 9.99	

Total F4

0.0 Net/kg	Totalizing: Show number of weighings
Weighings 4	

Continue

0.0 Net/kg	Show total number
Total 200 pcs.	

Only with Supervisor Mode setting 'With Printer? = Y':

Continue

0.0 Net/kg	Print totals
Printing...	

Continue

0.0 Net/kg
Delete totals?

Clear memory or return:

Delete

0.0 Net/kg	Clear memory
Totals deleted	

or:

Continue

0.0 Net/kg	Return to basic step without clearing totals
0 pcs.	

Continue with next weighing cycle

Notes:

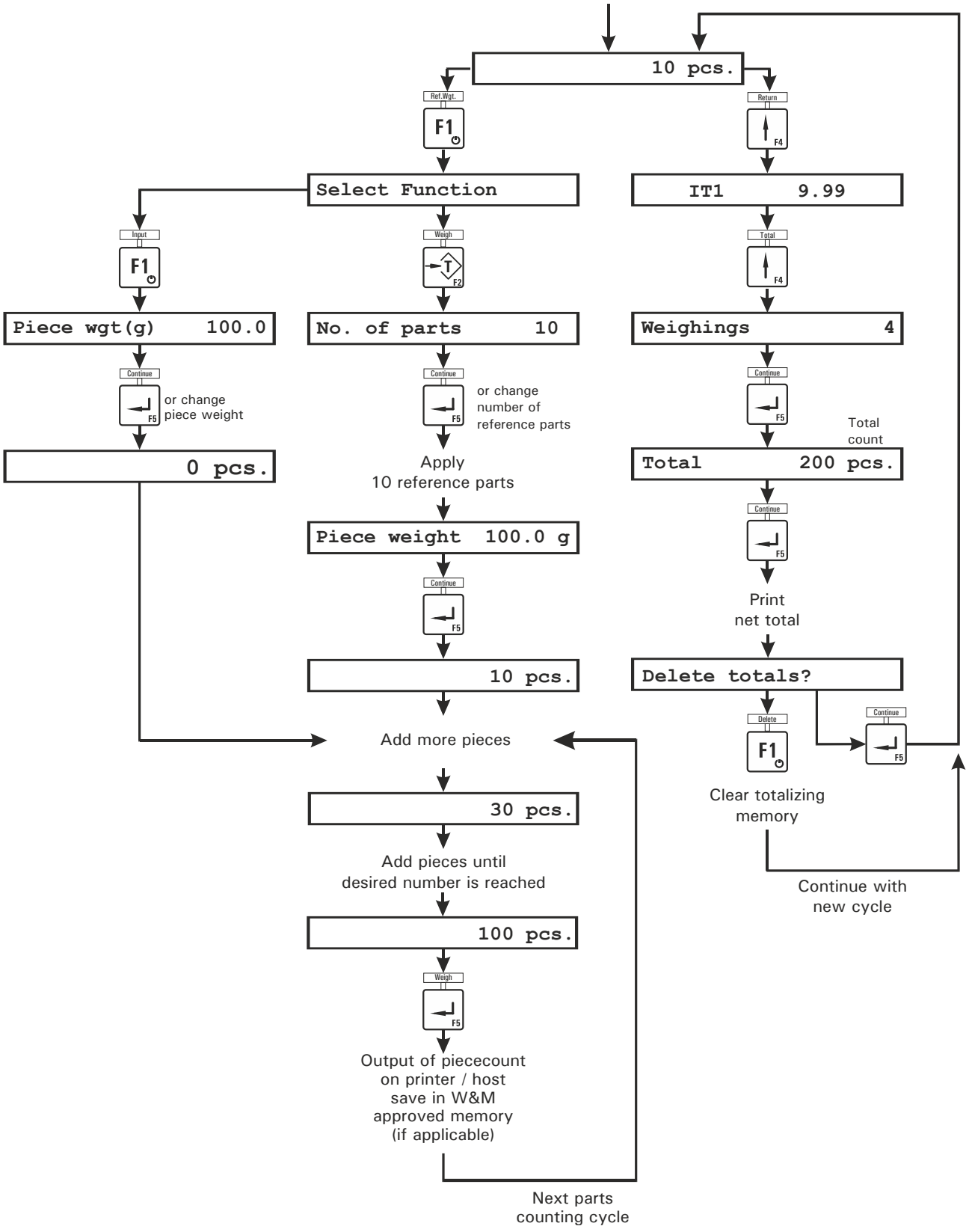
- The function 'Totalizing' can be disabled in Supervisor Mode in the step 'With Totals? = N.'
- Output of piece count and weights on printer or host system is only possible when:
  - Printer **or** data transmission is enabled;
  - A print format is configured. Contact your supplier for details.

Digital inputs and outputs:

Input E0	Input E1	Output A0	Output A1
Signal Capture weight / set to zero *	Signal Taring	Depending on Service Mode setting: 'Assignment of outputs'	

* Depending on Service Mode setting: 'Assignment of input E0'

Flowchart *COUNT*

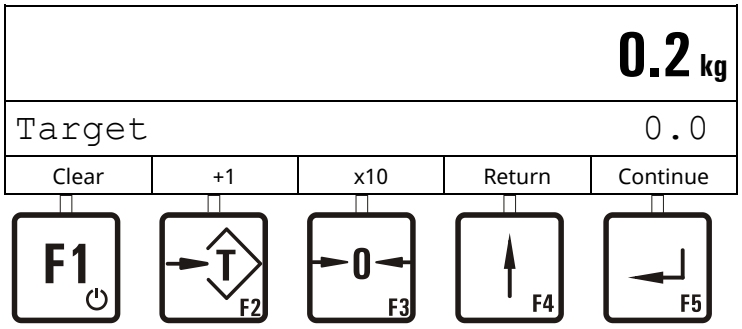


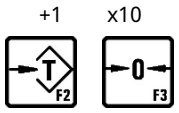
4.8 *FILL* (Filling)

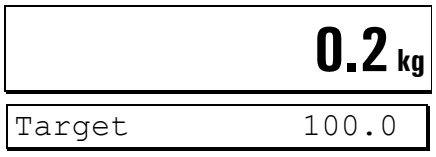
In the operating mode *FILL* a complete 2-speed filling cycle can be carried out. Before filling is started, the target and the preact values must be entered. The switching point from fast to slow speed filling is calculated as target value minus setpoint S1, whereas the cutoff point for filling in slow speed is calculated as target value minus setpoint S2.

Prior to the start of a filling cycle the setpoints must be entered in the Supervisor Mode.

Enter target weight



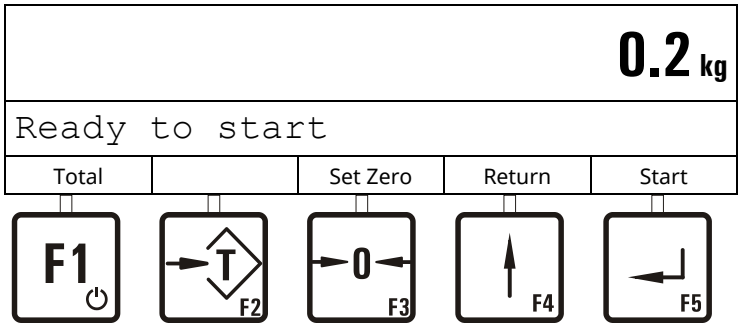


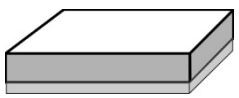


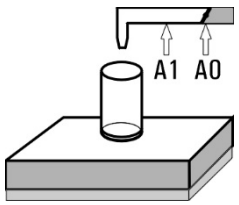
Enter target weight

Ready to start

Filling







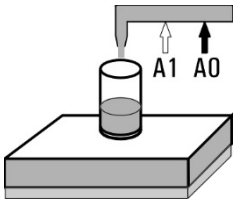
Place empty container on scale

Start

0.0 Net/kg

Taring...

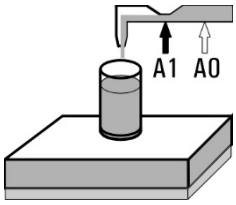
Start filling with ↵ **key** or external signal E0 (e.g. push button). Scale is automatically tared or set to zero.



0.0 Net/kg

Coarse -100.0 kg

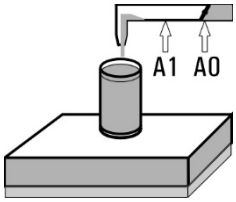
Feeding device for fast-speed feeding is controlled with output signal A0. Container is filled in fast speed until setpoint S1 is reached (fast / slow switching point).
In this example at:
100—20=80 kg. (S1=20 kg)



95.0 Net/kg

Fine -5.0 kg

Feeding device for slow-speed feeding is controlled with output signal A1. Container is filled in slow speed until setpoint S2 is reached (cutoff point).
In this example at:
100—5=95 kg. (S2=5 kg)



100.0 Net/kg

Ready 100.0 kg

After both signals have been switched off, the material that is still between the feeder and the scale falls into the container.

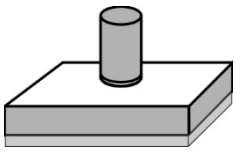
If manual acknowledgement of weight value is configured:

Weigh

100.0 Net/kg

Record weight

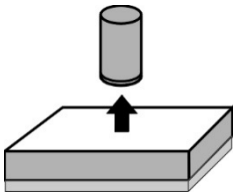
Confirm weight value with ↵ **-key** or external signal E0 (e.g. pushbutton).



100.0 Net/kg

Weighing

Weight is captured and added to totalizing memory.

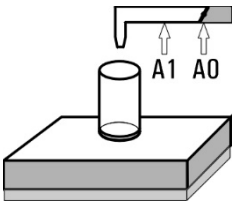


0.0 kg

Ready to start

Remove container from scale

Filling of further containers



	8.0 kg Ready to start	Put empty container on scale
Start F5	0.0 Net/kg Taring...	**Scale is automatically tared and next filling cycle started**

Calculate totals and terminate cycle

Note: Only with Supervisor Mode setting 'With Totals? = Y.'

Total F1	0.0 Net/kg Weighings 4	Totalizing: Show number of weighings
Continue F5	0.0 Net/kg Total 400.0 kg	Show total net weight

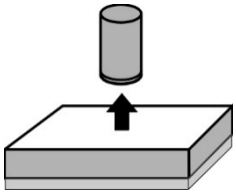
Only with Supervisor Mode setting 'With Printer? = Y':

Continue F5	0.0 Net/kg Printing...	Print totals

Continue F5	0.0 Net/kg Delete totals?	

Clear memory or return:

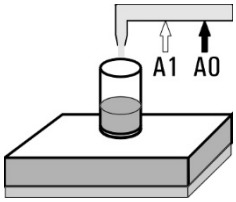
Delete F1	0.0 Net/kg Totals deleted	Clear memory
or:		
Continue F5	0.0 Net/kg Ready to start	Return to basic step without clearing totals



0.0 kg	Remove container from scale
Ready to start	

Next batch

Interrupt filling



30.0 kg	The cycle can be interrupted during fast- or slow-speed filling.
Coarse -70.0 kg	

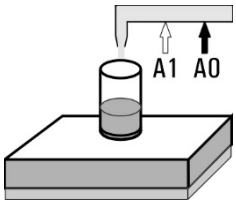
Stop

30.0 kg	Interrupt filling with **F1 key** or set external signal E1
Stop	

Continue

31.0 kg	Continue filling with ↵ **key** or reset external signal E1
Coarse -69.0 kg	

Abort filling



30.0 kg	The cycle can be aborted during fast- or slow-speed filling.
Coarse -70.0 kg	

Stop

30.0 kg	Interrupt filling with **F1 key** or set external signal E1
Stop	

Finish

30.0 kg	Press to abort cycle (e.g. ruptured bag or material short).
Ready to start	

Start next filling cycle

Notes:

- If parameter 'Start Key: Disabled' is set in Service Mode, start with ↵ **-key** is disabled and cycle can only be started via input E0.
- The weight must be acknowledged after every filling when parameter 'Ack. filled weight: Y' is set in Service Mode. The weight value is stored and printed after acknowledgement.
- The function 'Totalizing' can be disabled in Supervisor Mode in the step 'With Totals? = N.'
- **Preact correction:** If the automatic trend-sensing preact correction is enabled in Supervisor Mode, the value for preact slow (=cutoff point slow-speed feeding) is recalculated with every completed filling cycle and saved. The operator may manually change this value, e.g. to shorten – after change of material – the learning curve that the controller needs to again reach target (usually within 4 filling cycles).

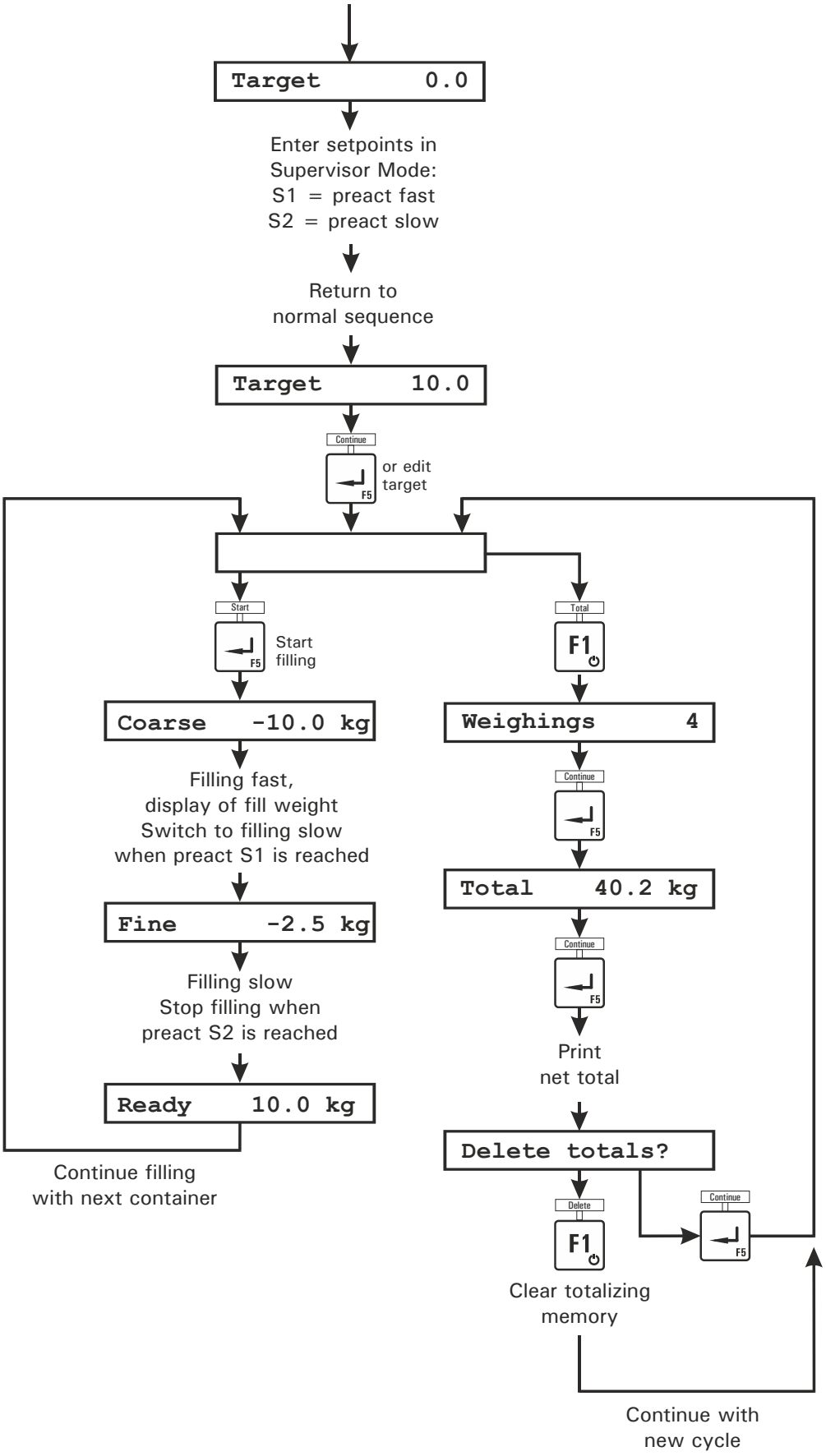
Overview setpoint settings

	Example		Target weight: 100 kg
Setting	S1 (fast)	S2 (slow)	Filling sequence
S1 greater S2	20	5	• up to 80 kg filling fast speed • up to 95 kg filling slow speed • material in flight up to 100 kg
S2 = 0	20	0	• up to 80 kg filling fast speed • up to 100 kg filling slow speed
S2 greater or equal S1	20	≥ 20	• up to 80 kg filling fast speed • material in flight up to 100 kg (filling slow is disabled, filling is only controlled via output A0)

Digital inputs and outputs:

Input E0	Input E1	Output A0	Output A1
Signal Start	Signal Interrupt	Controls the feeder in fast speed	Controls the feeder in slow speed

Flowchart *FILL*

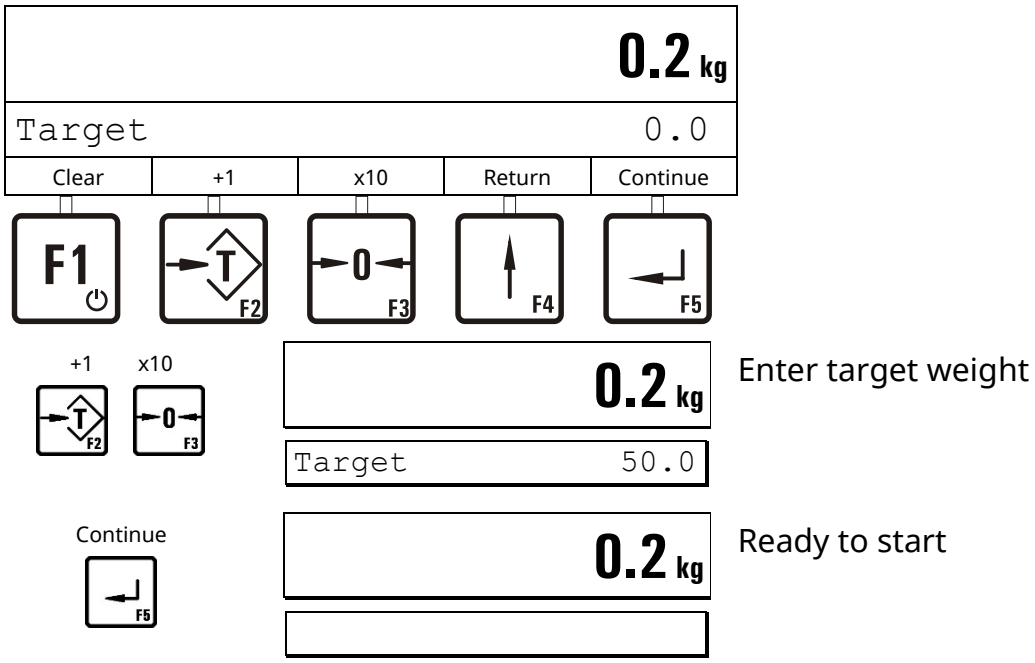


4.9 *CHECK* (Checkweighing)

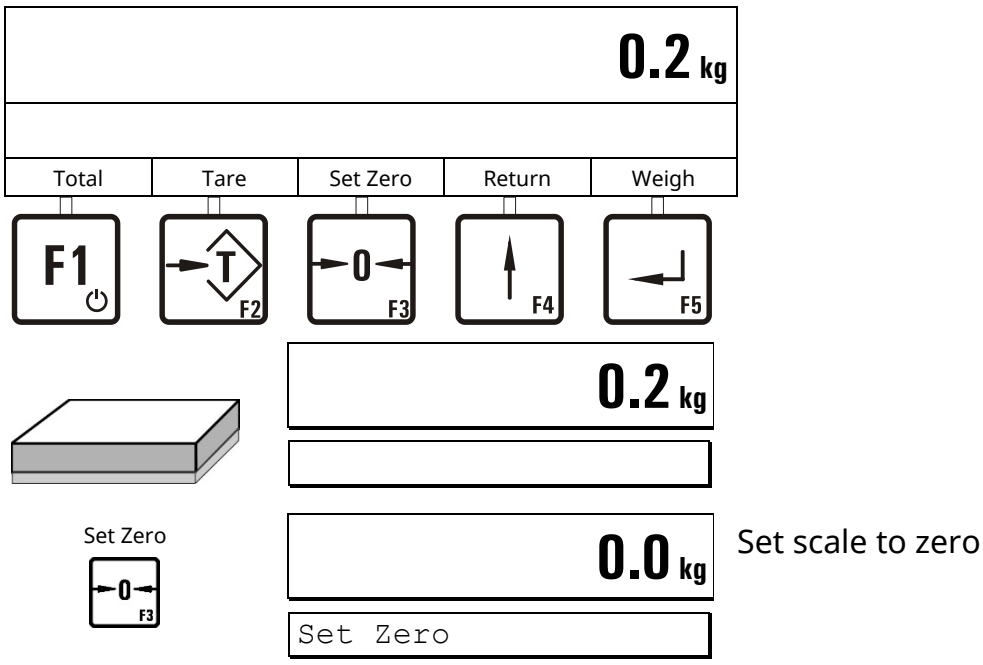
In operating mode *CHECK* the weighing terminal works as a plus/minus checkweigher, classifying the weight of a test object in 3 zones (plus / ok / minus). The minus threshold is defined as target weight minus value of setpoint S1, while the plus threshold is defined as target weight plus value of setpoint S2.

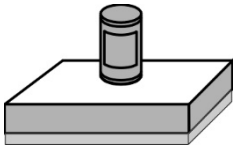
Prior to the start of checkweighing the setpoints must be entered in the Supervisor Mode.

Enter target weight



Checkweighing





55.2 kg
OK +5.2 kg

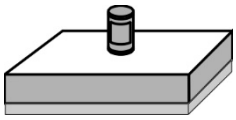
Place test object on scale; check and display of check result: weight is within tolerance band (O =ok), in this example between 45 kg and 60 kg

Weigh

55.2 kg
Weighing...

Printing / data transmission of weight

Weight too small (Minus)



37.2 kg
Minus -12.8 kg

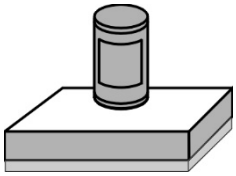
Place next test object on scale; check and display of check result: minus tolerance (—), not ok, in this example below 45 kg

Weigh

37.2 kg
Weighing...

Printing / data transmission of weight

Weight too big (Plus)



70.4 kg
Plus +20.4 kg

Place next test object on scale; check and display of check result: plus tolerance (+), not ok, in this example above 60 kg

Weigh

70.4 kg
Weighing...

Printing / data transmission of weight

Calculate totals and terminate cycle

Note: Only with Supervisor Mode setting 'With Totals? = Y.'

Total

70.4 kg
Weighings 4

Totalizing: Show number of weighings

Continue

70.4 kg
Total 162.8 kg

Show total weight

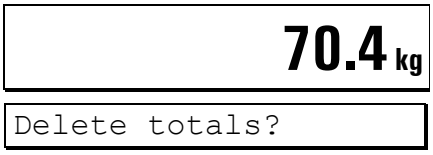
Only with Supervisor Mode setting 'With Printer? = Y':

Continue

70.4 kg
Printing...

Print totals

Continue



Clear memory or return:

Delete

Clear memory

or:

Continue

Return to basic step without clearing totals

Continue with next check cycle

Notes:

- A checkweighing cycle is activated when the scale is loaded with more than 10 % of target weight and settled weight is detected. Then the corresponding output signal is set and it remains on until the weight on the scale falls below 10 % of target. Then the signal is reset and a new cycle can be started.
- The function 'Totalizing' can be disabled in Supervisor Mode in the step 'With Totals? = N.'

Digital inputs and outputs:

Input E0	Input E1	Output A0	Output A1
Signal Capturing / set to zero *	Signal Taring	Indicates 'Weight ok'	Indicates 'Out of tolerance'

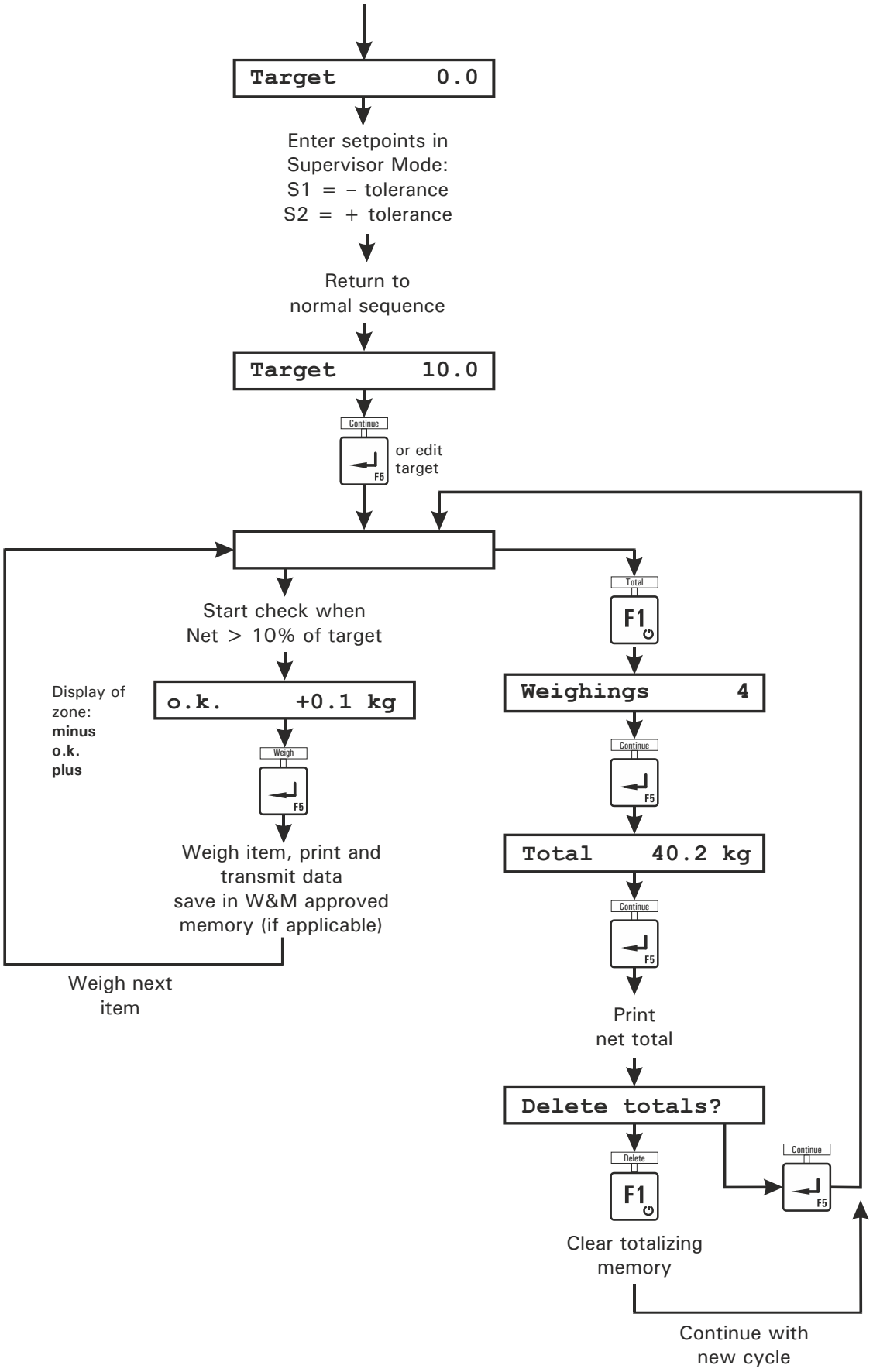
* Depending on Service Mode setting: 'Assignment of input E0'

With output A2 available:

Input E0	Output A0	Output A1	Output A2
Signal Set zero / Taring	'— Weight'	'Weight OK'	'+ Weight'

Note: The assignment of input E0 does not apply if an output A2 is installed.

Flowchart *CHECK*

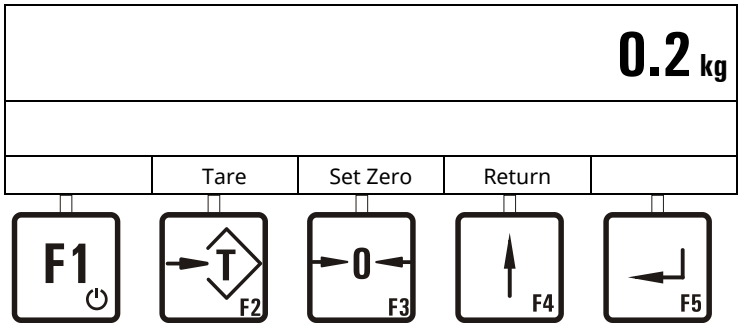


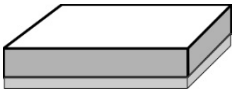
4.10 *CHECK-IN* (Special Program)

In the operating mode *CHECK-IN* the weighing terminal works as a summing scale adding up the weight of any number of articles. This operating mode can be used for check-in counters, for example. The scale has to be unloaded after each weighing.

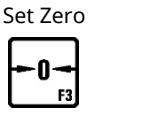
The setpoint S1 is used to check if the scale is empty. Prior to the start of checkweighing the setpoint must be entered in the Supervisor Mode.

Check-In weighing



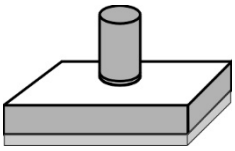


0.2 kg



0.0 kg
Set zero

Set scale to zero

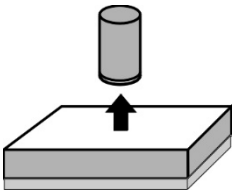


16.5 kg

Place article on scale.

16.5 kg
Total 16.5 kg

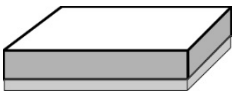
The no-motion control starts when a signal E0 is set.
The terminal reads the loaded weight when the scale is settled.
The total is shown after 3 seconds.



0.0 kg
Total 16.5 kg

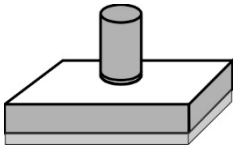
Unload scale.

Summing of articles



0.0 kg
Total 16.5 kg

Scale is empty.

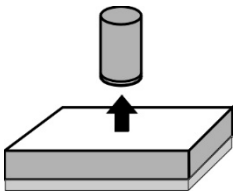


15.1 kg
Total 31.6 kg

Place next article on scale.
The total weight is calculated continuously.

14.9 kg
Total 31.4 kg

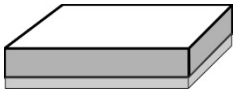
The no-motion control starts when a signal E0 is set.
The terminal reads the loaded weight when the scale is settled.
The total is shown after 3 seconds.



0.0 kg
Total 31.4 kg

Unload scale.

Clear totals and terminate cycle



0.0 kg
Total 31.4 kg

Scale is empty.

0.0 kg

The total weight is cleared when a signal E1 is set.

Continue with next weighing cycle

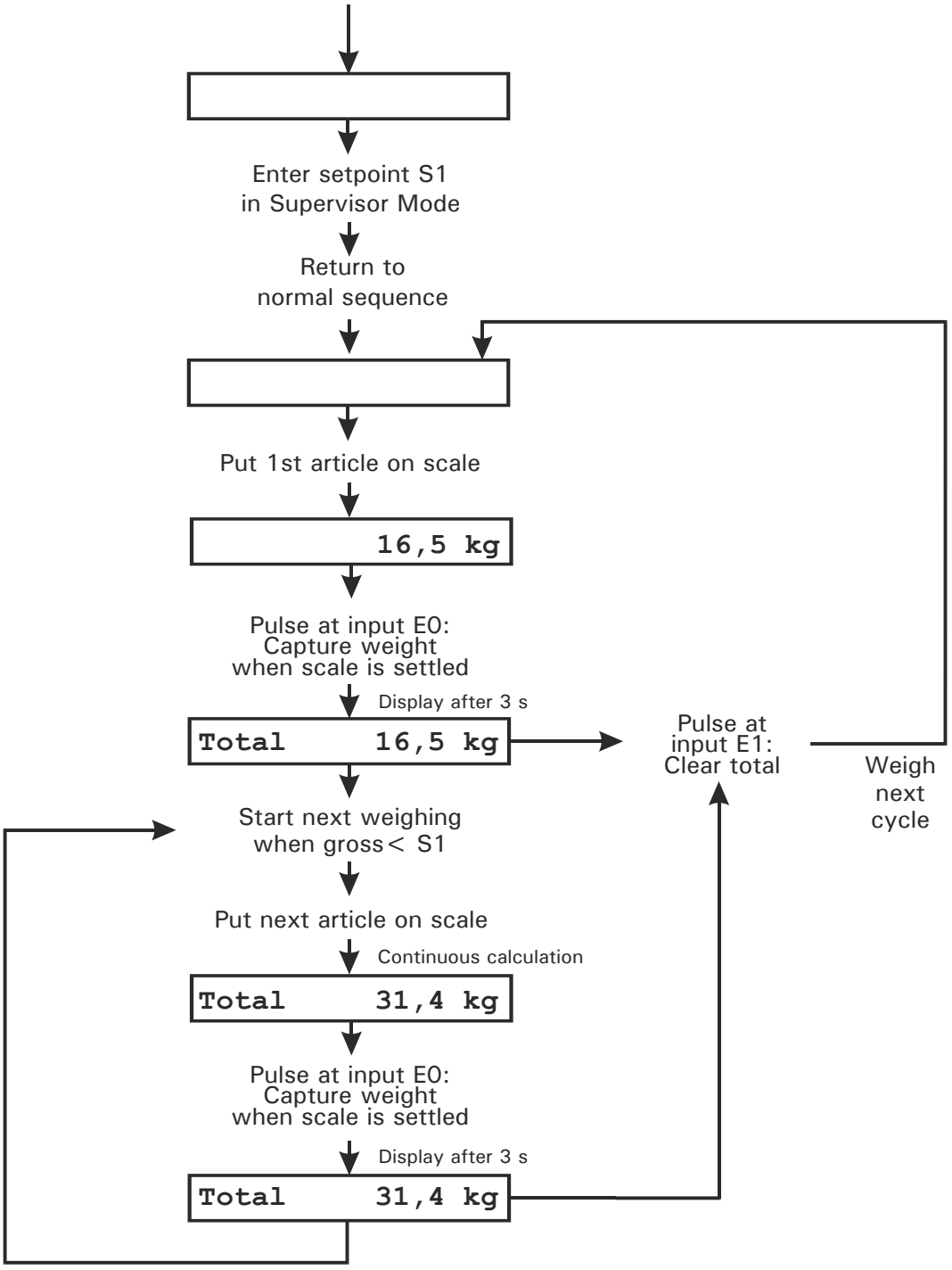
Notes:

- The registration starts when the input E0 is set. The weight is registered and displayed after 3 seconds when the scale is settled.
- Minimum load = setpoint S1
- The operating mode uses only the inputs E0 and E1 (e.g. via external pushbuttons) to control the sequence.
- The next weighing is started when the weight falls below setpoint S1. E0 has to be set again.
- The total weight is cleared when the input E1 is set. The program proceeds with the next weighing cycle.

Digital inputs and outputs:

Input E0	Input E1	Output A0	Output A1
Signal Capture weight and calculate total	Signal Clear total	Transporting	not used

Flowchart *CHECK-IN*



4.11 *ONLINE* (Remote Control From PC)

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

Note: The *ONLINE* commands are also available in Supervisor Mode. For a description of the data strings for the PC communication refer to Technical Manual IT1.

5 Supervisor Mode

The Supervisor Mode is used to enter parameters during running operation. Here also the W&M approved data archive and system information can be viewed.

	Return 	Switch from basic step to display of version.
IT1 9.99		Display of version, date and time and chosen operating mode.
	Setup 	Call up Supervisor Mode.
Input Parameters		Basic step of Supervisor Mode
	Select 	• **Input Parameters** • **Weight Storage** • **Software Updates** • **Software ID** • **MAC/IP Address** • **Master Mode**

5.1 Input Parameters

Input Parameters	Continue 	
Day 99		Enter date
Month 99		Enter month
Year 99		Enter year
Hour 99		Enter hour
Minute 99		Enter minute
Cons.No. 9999		Enter / change consecutive No. 2 for printout

1st Setpoint 0.0

Enter setpoint S1 (function depending on chosen operating mode):

- ***BASIC***
  Threshold S1, either for digital output or automatic printing after scale has settled
- ***COUNT***
  Setpoint S1 for digital output
- ***CHECK*** Minus tolerance
- ***CHECK-IN*** Setpoint S1 for next weighing
- ***FILL***
  Preact value to calculate cutoff point for filling with fast speed

All operating modes except *CHECK-IN*:

2nd Setpoint 0.0

Enter setpoint S2 (function depending on chosen operating mode):

- ***BASIC*** Setpoint S2 for digital output
- ***COUNT*** Setpoint S2 for digital output
- ***CHECK*** Plus tolerance
- ***FILL***
  Preact value to calculate cutoff point for filling with slow speed

Operating mode *FILL*:

Preact Corr.? N

No 

Preact correction disabled

Yes 

Preact correction enabled

The value for preact slow S2 (=cutoff point slow-speed feeding) is recalculated with every completed filling cycle and saved. The operator may manually change this value, e.g. to shorten – after change of material – the learning curve that the controller needs to again reach target (usually within 4 filling cycles).

All operating modes except *CHECK-IN* and *ONLINE*:

With Printer? N	No 	Without printer
	Yes 	With printer
With PC? N	No 	Without data transmission
	Yes 	With data transmission
With Totals? Y	No 	Without summing
	Yes 	With summing, (normal operation)

Brightness 100%		Set display brightness (min. = 40 %)
	-10% 	Decrease brightness by 10 %
	+10% 	Increase brightness by 10 %

5.2 Data Archive

The data archive has a capacity of 1,000,000 entries. A record is stored for every completed weighing cycle in the internal W&M approved data archive consisting of weight, data and Id No. The sequence of a weighing transaction is: weighing / 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 1 with every change of the date if the data archive has been configured to 'Date+Id' (contact 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	Continue 	

With Printer?=Y:

Select Function	Show 	Show data archive info
	Print 	Print stored weights

View Stored Records

`Day 99`	Enter date of weighing
`Month 99`	Enter month
`Year 99`	Enter year
`ID 9999999999`	Enter ID of record that is to be looked up.
`W1 99.99.99 ID 99` `9.9 kg N 9.9 kg`	Display of: • Scale • Date • ID • Net weight (N) • Tare weight
Prev 	Back to previous record.
Next 	Proceed to next record.
Continue 	Return to step '`Day`'

A matching record could not be found in the data archive:

`Not found`	
Prev 	Back to previous record
Next 	Proceed to next record

An error was detected in the checksum of the data archive.

`Error Checksum!`	Important note: The stored data are void!

Print Stored Weights

`From day 99`	Enter day of first record to be printed
`From month 99`	Enter month of first record to be printed
`From year 99`	Enter year of first record to be printed
`To day 99`	Enter day of last record to be printed
`To month 99`	Enter month of last record to be printed

`To year 99`	Enter year
`Printing...`	Print records

A matching record could not be found in the data archive:

`Not found`	Return to step 'From day'

An error was detected in the checksum of the data archive.

`Error Checksum!`	Important note: The stored data are void!

5.3 Software Updates

All firmware updates can be traced and viewed in the 'Software Updates' menu (logbook). It is read only and cannot be changed or deleted. A record shows the consecutive number of the update, the file name and date and time of the installation. The record at top is the most recent one.

`Software Updates`	Continue 	Basic step of Supervisor Mode
`1 Update_99999999.9`	--> 	Show next step
`installed at 9999-99`	--> 	Show next step
`-99 99:99`		
	Continue 	Continue with older record
	Return 	Return to previous record or back to step 'Software Updates.'

5.4 Software ID

`Software ID`	Continue 	Basic step of Supervisor Mode
`ID:15487782/V4.14.20`		Display of identification No. of operating system and version of approved software.
	Return 	Return to step 'Software ID'

5.5 MAC/IP Address

MAC/IP Address	Continue 	Basic step of Supervisor Mode
MAC: 99:99:99:99:99:	Select 	Display of MAC address
IP: 10.0.0.9		Display of IP address
	Return 	Return to step 'MAC/IP Address'

5.6 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

6 Transport, Maintenance And Cleaning

6.1 Transport

CAUTION
Transport and storage of the weighing terminal shall only be made in the original packing with foam cushion. The module must not be exposed to shock or vibration.

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.

6.2 Maintenance

W A R N I N G
Disconnect all power to this unit before servicing!

The 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.

6.3 Cleaning

W A R N I N G
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)!

ATTENTION
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 or detergent. 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.

If cleaning agents are used that contain leach, acid or alcohol, pure water must be used to wash off any residue.

6.3.1 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).

6.3.2 Cleaning With Hose Water

All housing variants (desk-top/wall-mount, panel-mount, Blackbox, and JunctionBox) 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!

6.3.3 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, Blackbox, and JunctionBox version)
  CR (panel-mount version)

6.4 Disposal

6.4.1 Symbol of Crossed-Out Wheeled Bin

The symbol of the crossed-out wheeled bin on the product, packaging and / or accompanying documentation means that the disposal of electrical and electronic equipment as domestic waste is prohibited. The improper disposal of end-of-life equipment and batteries can harm the human health and the environment due to possible pollutants contained. The take-back ensures correct disposal and contributes to environmental protection.

6.4.2 Batteries / Accumulators

Remove the battery and dispose of it separately. This device contains the following battery: 3 V lithium battery of type Varta CR2032.

6.4.3 Data Protection

If personal data is stored on the device to be disposed of, you as the end user are responsible for deleting this data before returning the device.

6.4.4 End-of-Life Electronic Equipment

The devices of SysTec Systemtechnik und Industrieautomation GmbH are professional electric devices, so-called Business to Business devices (B2B). We take back and dispose of end-of-life electronic equipment according to § 19 of the ElektroG (German Electrical Equipment Act).

Please contact us at the following e-mail address prior to shipping end-of-life electronic equipment: repair@systecnet.com

You can then ship the end-of-life equipment to the following address:

SysTec Systemtechnik und Industrieautomation GmbH
Reparatur- und Altgeräte-Annahmestelle
Ludwig-Erhard-Straße 6
50129 Bergheim-Glessen

7 Trouble Shooting

CAUTION
This unit does not contain any customer serviceable parts!
Only permit qualified personnel to service this equipment. Exercise care when making checks, tests, and adjustments!

If any problem arises that has not been explained above, please follow this check list:

- Power supply on (visual inspection)?
- All cables connecting to scales and peripheral devices undamaged (visual inspection)?
- Connectors fitted correctly and tightly secured at peripheral devices (visual inspection)?

If operational difficulties are encountered that cannot be rectified by means of this manual, obtain as much information as possible regarding the particular trouble, as this may eliminate a lengthy, detailed checkout procedure.

If possible, try first to determine the conditions under which the problem occurs. Try to find out whether the appearance of the difficulties can be reproduced under the same conditions.

For the systematic analysis of an unknown problem the information as listed below is required:

- Serial No. of the unit and its peripheral components
- Program version as displayed on power up
- Exact wording of any error message displayed
- Type and model of peripheral devices related to the problem (e.g. scale, printer, etc.)

To obtain professional assistance contact your service station stating the information listed above.

CAUTION
It is suggested that assistance from trained service personnel be requested in the event a problem should arise that is beyond the scope of this instruction manual.

8 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	• No data received from ADM	• Replace ADM
	• Short circuit in load cell cable	• Check cabling
Invalid Setupdata	• Calibration data incompatible to selected scale driver	• Check scale configuration • Repeat calibration
	• ADM defective	• Replace ADM
Resolution Error	• Internal resolution too small, must be at least tenfold the displayed resolution	• Select bigger increment size • Use load cell with lower capacity
Out Of Range	ADM overrange:	
	• Wiring error load cell	• Check wiring
	• Load cell defective	• Check load cell
	• Scale heavily overloaded	• 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 error messages can appear on the auxiliary 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 below zero	• Load scale
	• Terminal cannot detect a settled weight within 6 seconds	• Settle scale
Printer error	• Printer switched off or off-line	• Switch on printer
	• Data cable not connected or damaged	• Check cable and connectors
		• If problem cannot be rectified, disable printer in Supervisor Mode
Scale in Motion	• Capturing weight: Terminal cannot detect a settled weight within 6 seconds	• Settle scale
Gross under zero	• Capturing weight: Gross weight below zero	• Load scale

Out of Zero Range	• Setting to zero: Terminal cannot detect a settled weight within 6 seconds	• Load or unload scale

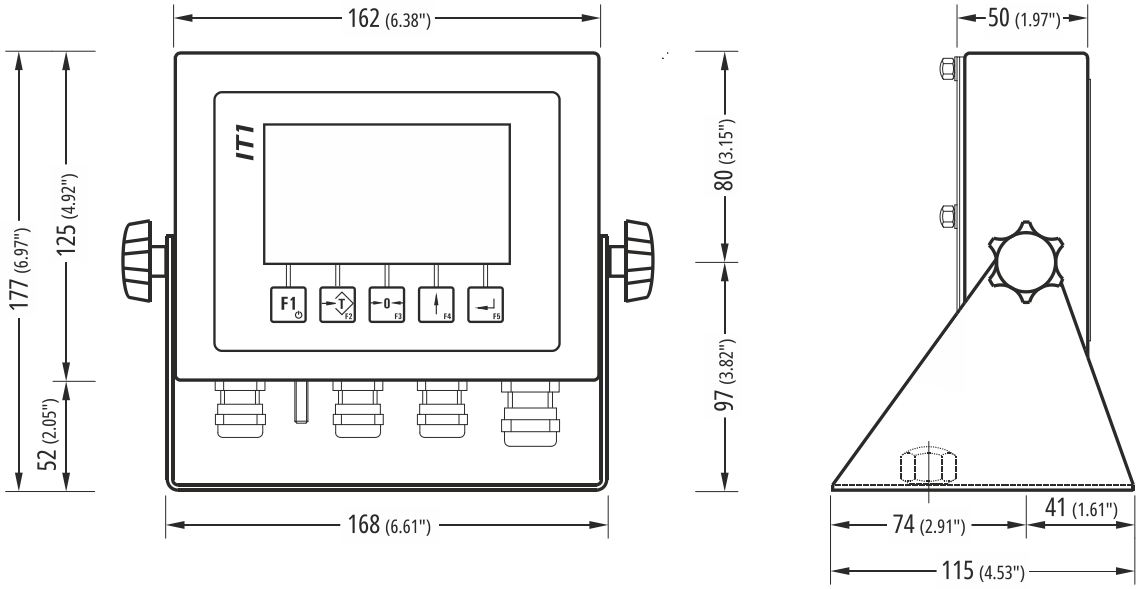
After switching the terminal on:

Error real time clock **Check battery and date/time** **Press ENTER to continue**	• Date/time invalid: the lithium battery could not constantly supply the real-time clock when the device was in de-energized state.	• Check and – if necessary – replace lithium battery • Check and clean contacts of the battery holder • Check and set date and time
Error battery-backed RAM **RAM not detected ...** **Press ENTER to continue**	• The battery-backed memory cannot be recognized.	• Install current firmware • Replace CPU
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

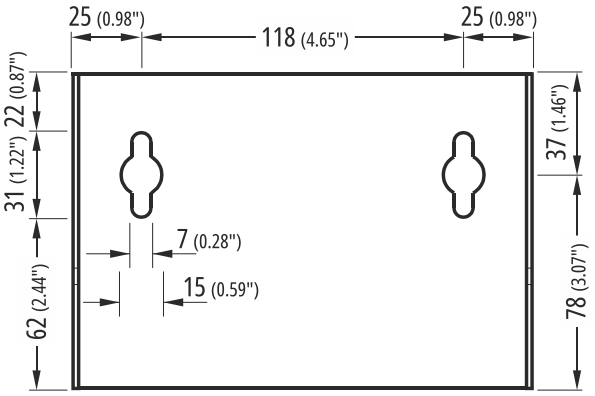
9 Technical Data

Housing	Stainless steel wall/desk-top housing, protected to IP65 / IP69K, weight approx. 1.5 kg
	Panel-mount stainless steel housing, fascia plate protected to IP65, weight approx. 1.5 kg
	Blackbox version, protected to IP65 / IP67
	JunctionBox version, protected to IP65
Temperature Range	Storage: –25 °C to +70 °C at 95 % relative humidity max. without condensation Operation: –10 °C to +40 °C at 95 % relative humidity max. without condensation
Height Above Mean Sea Level	< 5,000 m AMSL
Power Supply AC Version	Supply Voltage: 110 V (–15 %)–240 V (+10 %) Rated Frequency: 50–60 Hz Rated Current: 0.25–0.1 A
Power Supply DC Version	Supply Voltage: 12 V (–15 %)–24 V (+25 %) Rated Current 1100–350 mA
Electrical Safety	Separation between primary and secondary circuits SELV, in accordance with EN 62368
Display	Active color TFT, 10.9 cm (4.3")
Keyboard	Membrane keyboard with tactile feedback, 5 keys incl. scale keys and function keys, softkeys
Processor	32-bit ARM processor, 266 MHz, Linux operating system
Battery	Battery CR2032 As backup for power-fail-safe date / time function, lifetime in normal operation approx. 10 years, approx. 5 years when unit is permanently switched off.

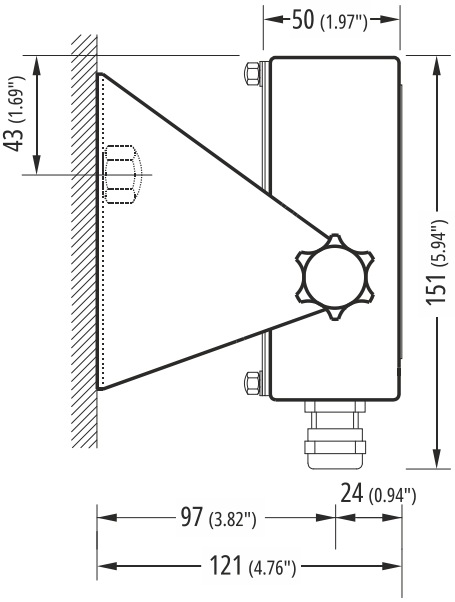
10 Dimensions



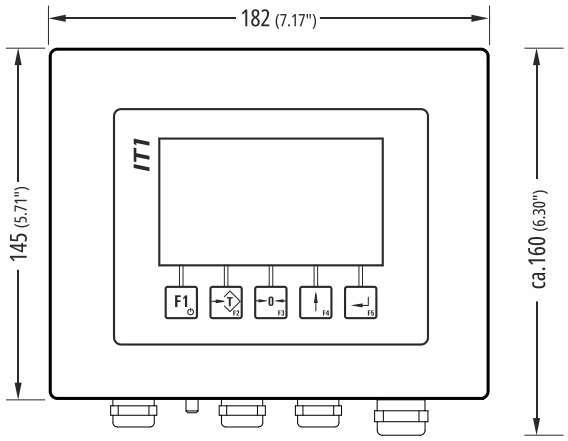
Fixing holes



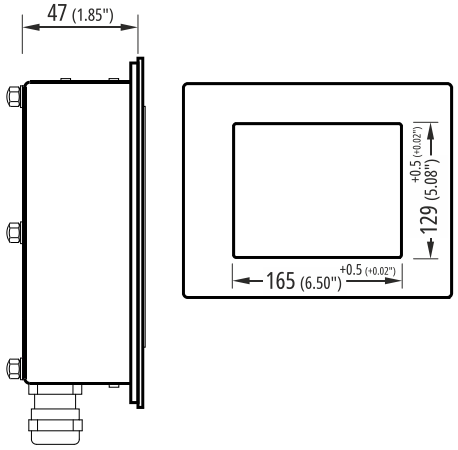
Wall-mount installation



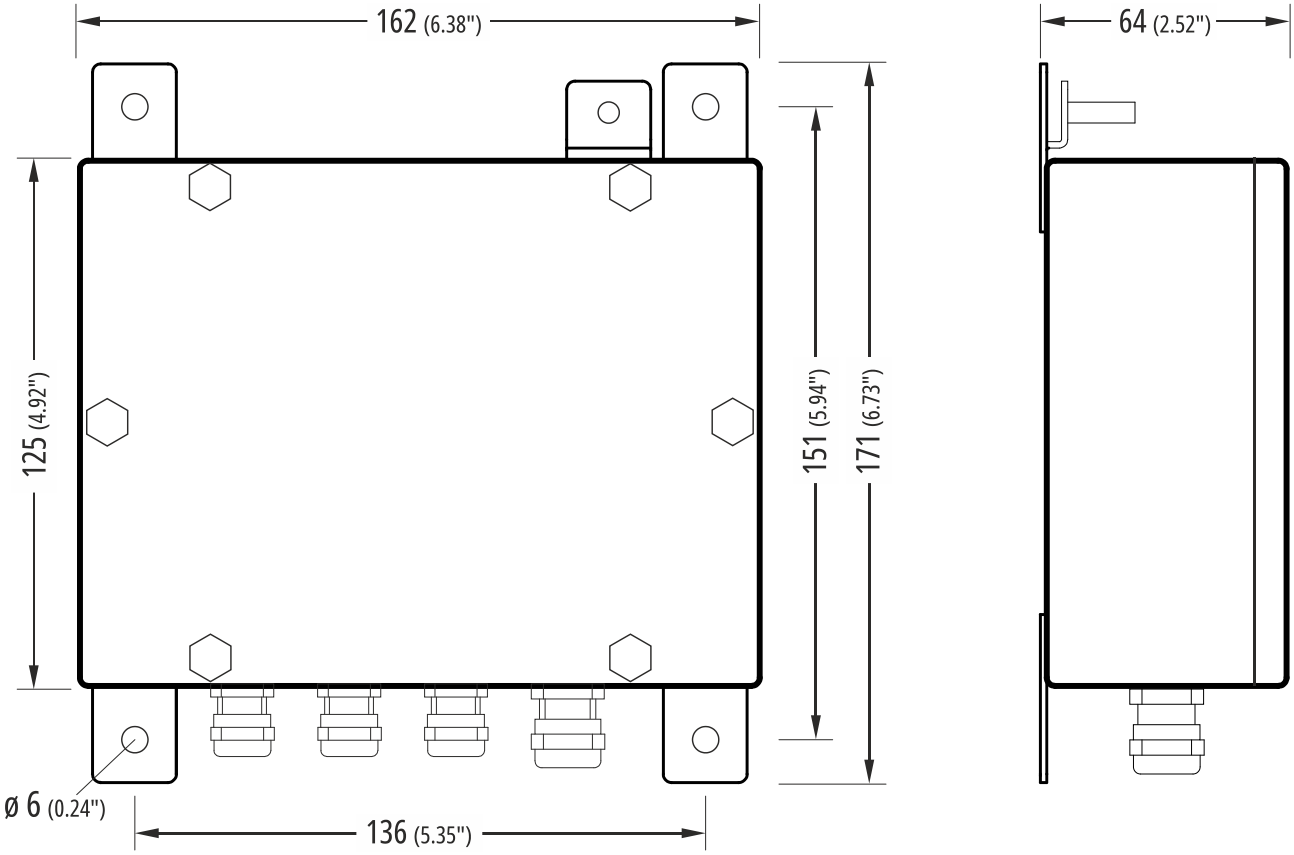
Panel-mount installation



Cutout in panel



Blackbox version



JunctionBox version