Operating Instructions

Minebea Intec Midrics®1 | Midrics® 2

Models MIS1 | MIS2 Indicators

98648-014-89

Intended Use

The Midrics® 1 and 2 indicators are robust indicators for demanding, daily quality control. They meet the highest requirements placed on the accuracy and reliability of weighing results in the following areas:

- The food industry
- The pharmaceutical industry
- The chemical industry
- The electronics and metal industries.

Midrics® indicators:
- Are robust and durable, thanks to their stainless steel housing
- Are easy to clean and disinfect
- Are easy to operate, thanks to the following features:
  - Large, backlit display-elements
  - Large keys with positive click action
- Can be operated independently of the weighing platform location
- Have fast response times
- Have a range of interfaces for flexible use
- Offer optional password-protection to prevent unauthorized alteration of operating parameters

Further features (Midrics® 2):
- Possibility to input tare values via the number block
- Possibility to assign weigh products with 4 identifiers (ID)
- Built-in applications program (applications) for:
  - Counting
  - Neutral measurement
  - Weighing in percent
  - Averaging
  - Checkweighing
  - Classification
  - Net-total formulation
  - Totalizing
- Automatic initialization when the scale is switched on
- Automatic taring when a load is placed on the weighing platform
- Optional remote control using an external computer

The following symbols are used in these instructions:
- ● Indicates required steps
- ○ Indicates steps required only under certain conditions
- > Describes what happens after you have performed a particular step
- – Indicates an item in a list
- ⚠ Indicates a hazard

Contents

Warning and Safety Information

Safety

● To prevent damage to the equipment, read these operating instructions thoroughly before the device is used.

⚠ Do not use this equipment in hazardous areas/locations.
The requirements pertaining to applicable installation regulations must be followed when using electrical equipment in systems and environmental conditions with increased safety requirements.

⚠ Disconnect the indicator from the power supply before connecting or disconnecting peripheral devices.

⚠ The indicator may only be opened by trained service technicians.

⚠ If there is visible damage to the device or power cord:
Unplug the equipment and make sure it cannot be used for the time being.

⚠ Extreme electromagnetic conditions may influence the display value. After the end of this influence, the device can be used for its designated purpose again.

– Information on operational quality is available on request from Minebea Intec (in line with norms pertaining to immunity).

Installation

– Proceed with extreme caution when using pre-wired RS-232 connecting cables purchased from other manufacturers. The pin assignments may not be compatible with Minebea Intec equipment.
Check the pin assignment against the cabling diagrams and disconnect any lines that are not assigned. The operator shall be solely responsible for any damage or injuries that occur when using cables not supplied by Minebea Intec.

– If you use Option L8 (24-volt industrial power supply module) for connection to a low-voltage source, be sure to comply with the requirements for Safety Extra Low Voltage (SELV) and Protective Extra Low Voltage (PELV).

– Use only standard cables that have protective grounding conductors.
The protective conductor must not be disconnected for any reason.

– There must be 3 cm space behind the device so that the power cord does not buckle.

– Check regularly that the power cord has not been damaged.

– Use only Minebea Intec accessories and options as these are perfectly tailored for use with this device. The operator shall be solely responsible for installation and testing of any modifications to Minebea Intec equipment, including connection of cables or equipment not supplied by Minebea Intec. Information on operational quality (in line with norms pertaining to immunity) is available
on request.

NOTE:
This equipment has been tested and found to comply with the limits pursuant to part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with these instructions, may cause harmful interference to radio communications. For information on the specific limits and class of this equipment, please refer to the Declaration of Conformity. Depending on the particular class, you are either required or requested to correct the interference. If you have a Class A digital device, you need to comply with the FCC statement as follows:

"Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense." If you have a Class B digital device, please read and follow the FCC information given below:
"[…] However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
– Reorient or relocate the receiving antenna.
– Increase the separation between the equipment and receiver.
– Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
– Consult the dealer or an experienced radio/TV technician for help."

Before you operate this equipment, check which FCC class (Class A or Class B) it has according to the Declaration of Conformity included. Be sure to observe the information of this Declaration.

IP protection:

– MIS models are rated to IP65

– The indicator's IP65 protection rating is ensured only if the rubber gasket is installed and all connections are fastened securely (including the caps on unused sockets). Weighing platforms must be installed and tested by a certified technician.

– If you install an interface port or battery connection after setting up your indicator, keep the protective cap in a safe place for future use. The cap protects the interface connector from vapors, moisture and dust or dirt.

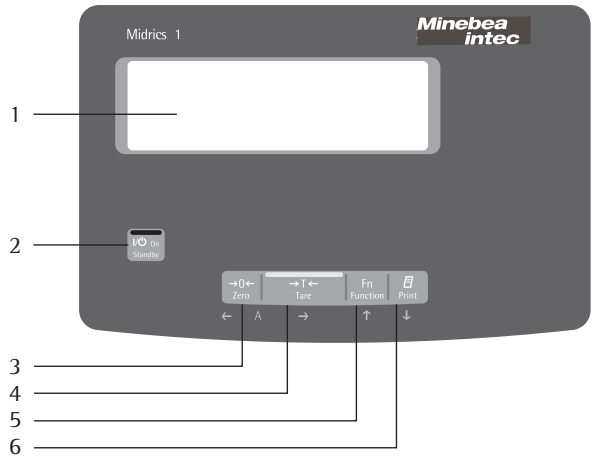
Use in legal metrology:

– When the indicator is connected to a weighing platform and this equipment is to be verified, ensure that the applicable regulations regarding verification are observed. When connecting non-Minebea Intec platforms, see the Appendix "Guide to verification of weighing instruments". When connecting
a Minebea Intec weighing platform, observe the permitted weighing ranges as listed in the Declaration of Conformity.

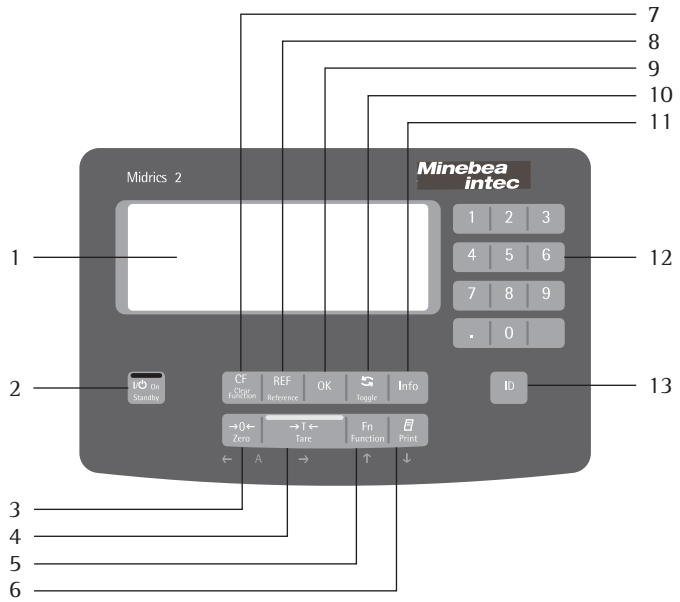
– If any of the verification seals are damaged, ensure the regulations and standards applicable in your country are observed in such cases. In some countries, the equipment must be re-verified.

General View of the Device

Midrics® 1



Midrics® 2



Display and Keypad

1 Display
(For a detailed diagram, please see the chapter “Operating design”)

2 ON/Standby key

3 Zeroing key

4 Tare key

5 Function key (e.g. switch gross/net)

6 Print key (data output)

7 Clear key (function application-dependent)

8 Reference value key (function application dependent)

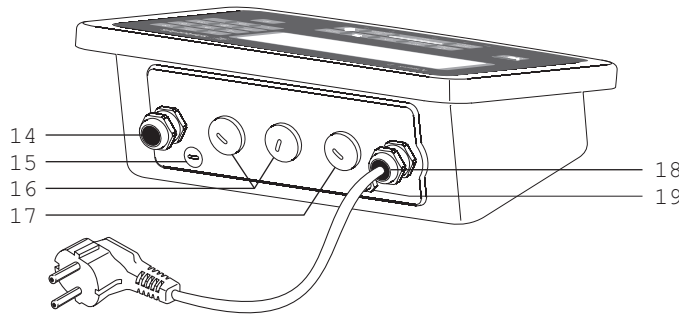
9 Transfer key (function application dependent)

10 Toggle key (function application dependent)

11 Info key for calling up identifiers and manual tare values

12 Numeric keypad

13 Identifier key for entering operator recognitions



Rear View

14 Connector for weighing platform

15 Menu access switch

16 Optional: second interface (UniCOM)

17 Optional: RS-232 interface (COM1)

18 Power supply connection cable

19 Ground connection
(potential equalization)

Start-up

Unpacking
- ● Unpack the device and check it immediately for any visible damage.
- ○ If you detect any damage, proceed as directed in the chapter entitled “Care and Maintenance“, under “Safety Inspection“.
- ○ Save the box and all parts of the packaging for any future transport. Unplug all connected cables before packing the equipment.

Check package contents
- – Indicator
- – Operating instructions (this document)
- – Options (special accessories) as listed on the bill of delivery; possible options are:
  Real-time clock with battery back-up
  Interface (RS-232, RS-485, analog interface 4-20 mA, digital I/O)
  Internal rechargeable battery
  External rechargeable battery
  24V module

Installation instructions
Avoid adverse influences at the place of installation:
- – Heat (heater or direct sunlight; operational temperature: -10 °C to +40 °C)
- – Drafts from open windows and doors
- – Extreme vibrations during weighing
- – Aggressive chemical vapors
- – Extreme moisture (according to IP protection class)

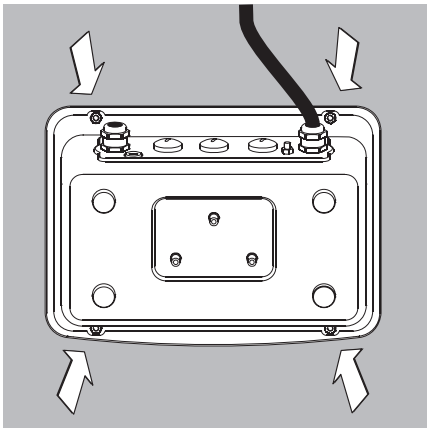
Start up the device
- ○ If necessary, acclimatize the device: see next column
- ● Connect the weighing platform and the indicator, see page 7 (any type of weighing platform or weighing cell that meets the required specifications can be connected to the indicator)
- ● Establish a connection to the power supply see the page after next
- ● Warm up the device: see the page after next (warm up time)
- ● Configure the analog/digital converter (ADC) see page 9
- ● Carry out an alignment: For calibration see page 21; for linearization see page 20

Acclimatize the device
Condensation can form on the surfaces of a cold device when it is brought into a substantially warmer area. Therefore, on transferring the device to a warmer area make sure it is acclimatized for about 2 hours at room temperature (unplugged from power).

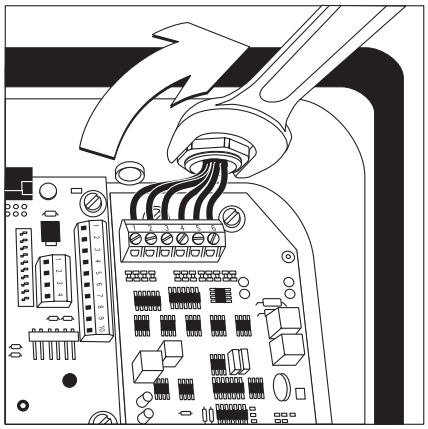
Connecting the Weighing Platform

Connection of an analog Minebea Intec platform MAPP, MAPS, or a commercially available strain-gauge load cell.

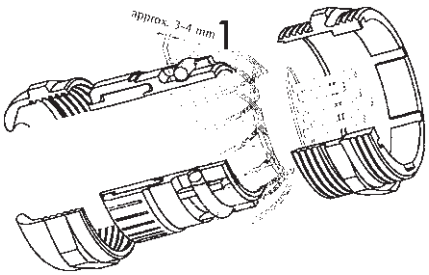
⚠ The load cell should be connected by a certified technician who has received specialized training from Minebea Intec. Any installation work that does not conform to the instructions in this manual results in forfeiture of all claims under the manufacturer's warranty.



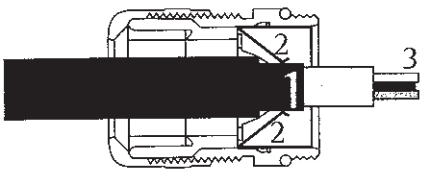
⚠ Disconnect the equipment from the power supply before starting connection work.
- Set up the weighing platform (see operating instructions for the weighing platform)
- Place the cable from the weighing platform next to the indicator
- Open the Midrics indicator:
  Loosen the 4 cap nuts on the front panel. Remove the front panel.



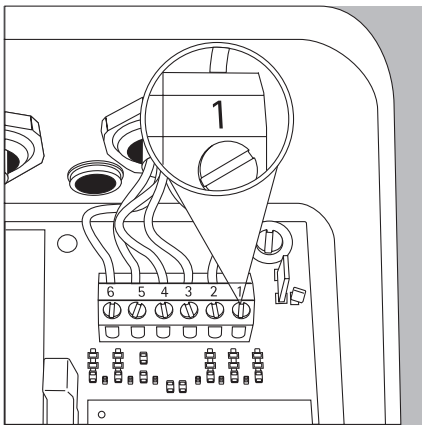
- Connect the weighing platform connection cable to the indicator
  Note:
  The cable gland is installed at the factory. Please use extreme caution when performing any work on the equipment that affects this gland.
  Use a torque wrench.
  Tighten the cable gland to: 5 Nm



- Strip the insulation of the cable and connect it as follows:
– Route the cable through the cable gland.
– Close and tighten the cable gland in accordance with the applicable regulations.
– Strip the insulation from the cable (according to the diagram). The shielding (1) must have contact with the clamps (2).
– Expose approximately 15 cm (3 inches) of the cable wires (3), so that they can be installed.
– Route the cable through the cable gland.
– Make sure the shield has contact with the clamps. The cable is grounded by the shield.



- Connect the cable to the weighing platform as follows:
– Strip the insulation from the cable. Expose approximately 5 cm (3 inches) of the cable wires (3), so that they can be installed.
– Strip approximately 1 cm (1/2 inch) of the insulation from the wires and affix ferrules to the wire ends.
– Place a ferrite ring over all the wires.



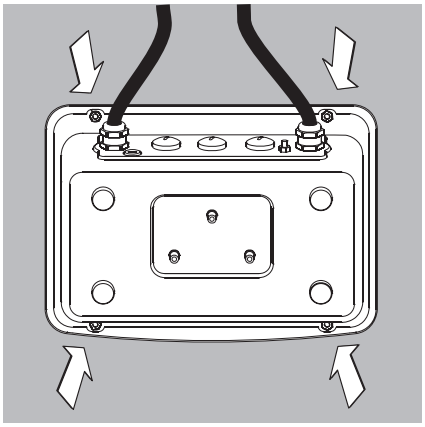
– Screw the wires tightly into the clamps

Indicator Pin Assignment:

No.	Signal description	Meaning
1	BR_POS	Bridge supply voltage (+)
2	SENSE_POS	Sense (+) for bridge supply voltage
3	OUT_POS	Measuring voltage positive
4	OUT_NEG	Measuring voltage negative
5	SENSE_NEG	Sense (-) for bridge supply voltage
6	BR_NEG	Bridge supply voltage (–)

⚠ Refer to the data sheet or operating instructions of the weighing platform for details on the assignment of wire colors/signals. Ensure any lines that are not assigned are insulated correctly.

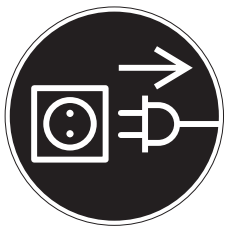
⚠ When connecting a load receptor that uses 4-conductor technology (the cable of the weighing platform to be connected only has 4 lines), connect clamp pairs 1 and 2 (BR_ and SENSE_POS), and 5 and 6 (SENSE_NEG and BR_NEG) with a wire jumper.



● Close the Midrics indicator:
Re-attach the front panel and secure it with 1 Nm the 4 nuts.

Establishing a Connection to the Power Supply

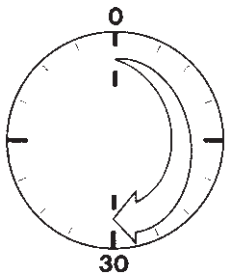
● Check the voltage rating and plug design.



○ Power is supplied via the installed power cord that is supplied. The power supply is integrated into the indicator. The device can be operated with a voltage of 100 V to 240 V. The printed voltage rating (see type label) must match the voltage in the place of installation. If the stated supply voltage or the plug design of the power cord does not comply with the standard you use, please inform your nearest Minebea Intec representative or your dealer.
The power connection must be made in accordance with the regulations applicable in your country.

Connecting the device, rated to Class 1, to power supply (mains supply):
The device must be plugged into a properly installed wall outlet which has a protective grounding conductor (PE). The power plug or a different, suitable disconnecting device for the power must be easily accessible.

Safety Measures
If you use an electrical outlet that does not have a protective grounding conductor, ensure that an equivalent protective conductor is installed by a certified electrician (as specified in the applicable regulations for installation in your country). The protective effect must not be negated by using an extension cord without a protective grounding conductor.



Warm-up Time
To return precise results, the device must warm up for at least 30 minutes after initial connection to the power supply. Only after this time will the device have reached the required operating temperature.

Using a verified device in legal metrology:

○ Ensure that there is a warm-up time of at least 6 hours after initial connection to the power supply.

Analog/Digital Converter (ADC)

Purpose
Adjust the parameters of the analog/digital converter to the connected load cell or weighing platform.
After ADC configuration the ADC is defined as a scale in connection with the load sensor.

Set-up Information
- ADC configuration is only possible when the menu access switch is open. Close the menu access switch after ADC configuration, as otherwise there will not be any display of the conditions “overload” (“H”) and “underload” (“L”).
- When the service mode is active, the ADC configuration takes place in the Setup menu under “WP-1” under the menu item ADC-CON.
- Enter the maximum capacities in a suitable weight unit, without any decimal places (decimal places will be truncated by the rounding function).

⚠ If you return to the highest level of the menu without saving the configuration parameter beforehand (menu item save) any settings that have been made will be deleted.
- Entries made in the ADC configuration will not be affected by a menu reset (returning the set-up parameters to their factory settings).

⚠ Note:
Once the A/D converter configuration has been locked, the indicator can no longer be used to influence weighing results. The scope of functions available in the weighing instrument is defined by the A/D converter. Weighing functions that can be activated include reading weight values, taring, calibration, reading the tare value, saving/deleting the tare entry

Description of the Individual Menu Items for the A/C Converter Configuration

Standard or verifiable configuration (menu items STAND. / VERIF.)
In ADC configuration it is first selected, whether the weighing platform should be configured as a standard or verifiable (for use in legal metrology) weighing platform.
- Standard configuration (STAND.)
- Verifiable configuration (VERIF.).

Accuracy Class (menu item CLASS)
Only displayed in verifiable configuration.
Only menu items 3/4 (accuracy class I/m) can be selected. If the menu item is not already marked as being active with a circle (o), the) key must be pressed once to activate it.

Range Selection (menu item RANGES)
Depending on the setting under this menu item, the menu points RANGE 1, RANGE 2 and RANGE 3 will either be displayed or will not be displayed for further configurations.
- Single range mode (SINGLE)
The entire weighing capacity is divided into decimal numbers dependent on the smallest scale interval d and the maximum weight. The readability corresponds to the scale interval d.
- Multi-interval scale (MULT.INT.)
The function “multi-interval scale” divides the weighing capacity into a maximum of three intervals with differing readability. The corresponding change takes place automatically at the defined interval limits. After taring, the best possible resolution (smallest scale intervals) is available even when there is a load on the weighing platform.
- Multiple range mode (MULT.R.)
A multiple-range scale has two or three weighing ranges. When the range limit for the lower weighing range is exceeded, the scale switches into the next highest weighing range (lower resolution). The scale only switches back to the higher resolution when the weighing platform has been completely unloaded.

Scale Interval d
The scale interval d indicates the resolution of the weighing instrument.
The scale interval can only be entered in increments of 1, 2, 5, 10, 20, etc.
When “verifiable configuration” is used, this menu item is not displayed.
When using verifiable or verified weighing platforms (classes I and m), the scale interval d is the same as the verification scale interval e.

Verification Scale Interval e
The verification scale interval e indicates the resolution of the weighing instrument in legal metrology. The scale interval can only be entered in increments of 1, 2, 5, 10, 20, etc.
When “standard configuration” is used, this menu item is not displayed.

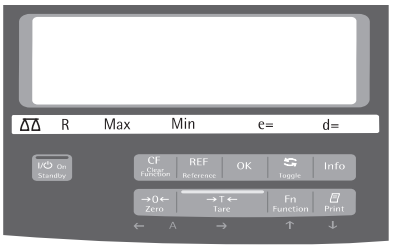
Maximum Capacity (max. cap.)
The maximum capacity is the maximum load that may be placed on the weighing platform. When heavier weights are used the weighing instrument displays overload “H”.
The scale intervals of the weighing instrument are calculated using the maximum capacity and the scale interval d (e.g. max. capacity = 15.000 kg, smallest scale interval = 0.005 kg yields 3000 scale intervals).
In legal metrology the total number of intervals must be no more than 3125 e, and when using multi-interval scales there must not be more than 3125 e intervals per range.

Range 1, Range 2, Range 3
(RANGE 1, RANGE 2, RANGE 3)
The range limits are entered for the individual ranges. The accuracy changes when these limits are exceeded.
The following applies when entering limits:
Range 1 < Range 2 < Range 3 < Max. cap.
This means that the weighing range can be divided into a maximum of 4 ranges. The resolution changes at intervals of 1, 2, 5, 10, 20 etc., where the lowest resolution is the smallest scale interval entered. Set ranges that are not required for use to zero.

Available weighing units (menu item UNITS)
This menu item is used to select the weighing units that have been cleared for use in weighing. All units marked with a circle (o) have been cleared for use, multiple selection is possible.
If you need to use this indicator as a legal measuring instrument (legal for trade), be sure you have selected a permissible unit.

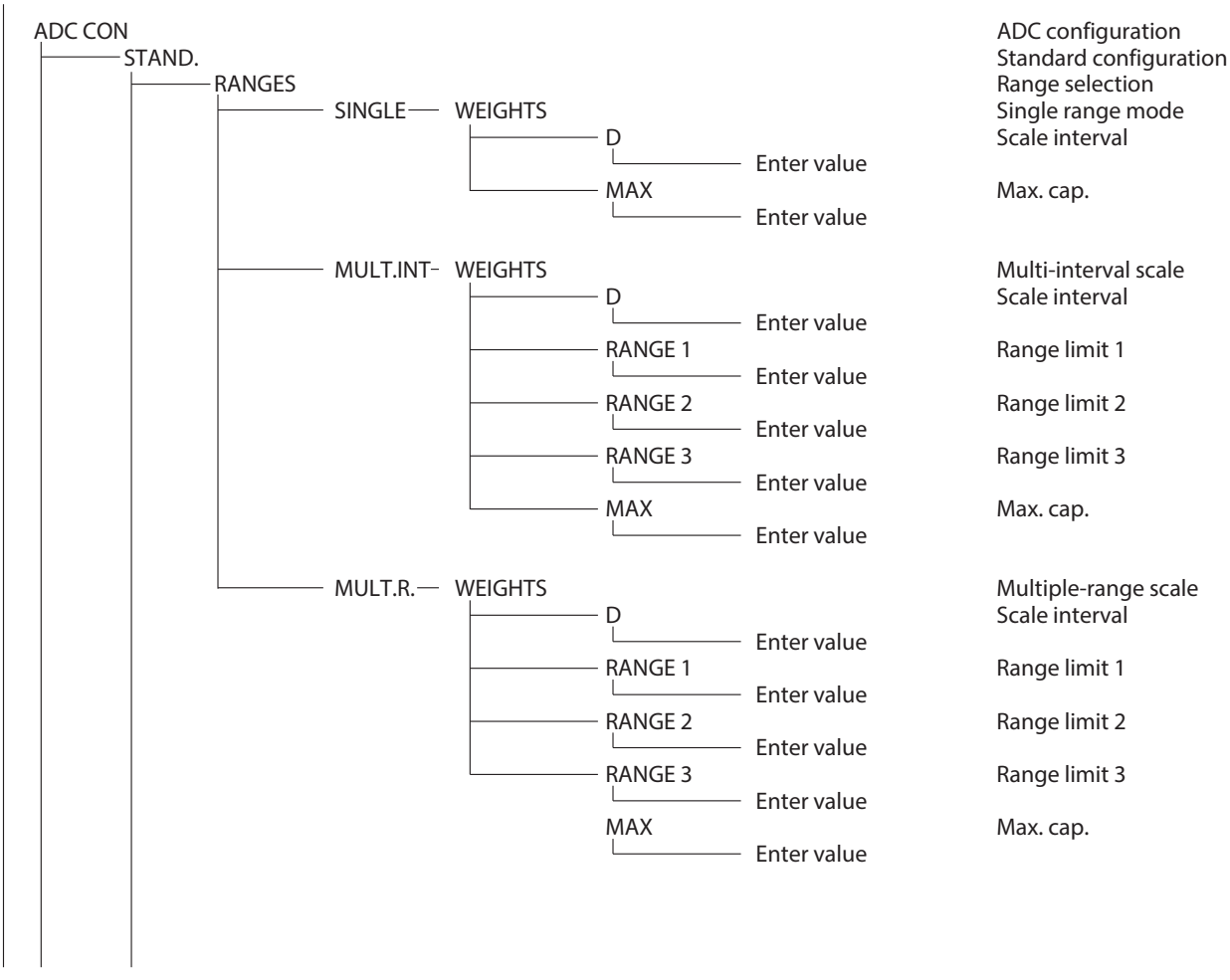
Save parameters (menu item SAVE)
The ADC configuration data is saved once at the end of defining the settings using the SAVE function.

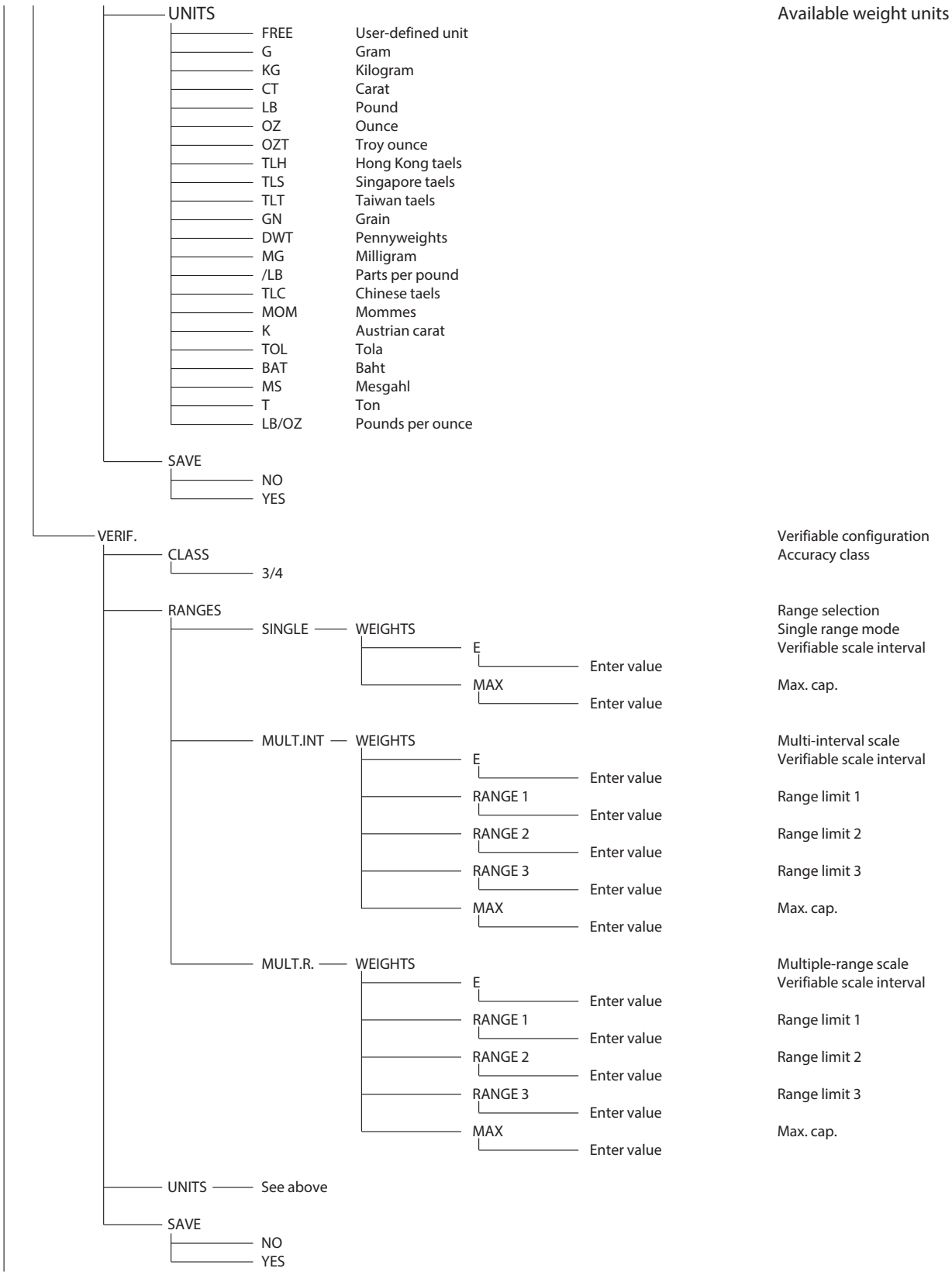
Testing and configuration
for operation in legal metrology
A metrology plate is included in the scope of supply of the indicator.
Once ADC configuration is complete, record the metrological data for all ranges on the metrology plate. Attach the plate underneath the display and cover with the supplied waterproof foil.



Under menu item 1.7, check that only authorized weight units can be selected.

Menu Structure for ADC Configuration
The setup menu for WP1 ("WP- 1") can be extended to include the following additional setting options for ADC configuration:




UNITS
Available weight units
FREE User-defined unit
G Gram
KG Kilogram
CT Carat
LB Pound
OZ Ounce
OZT Troy ounce
TLH Hong Kong taels
TLS Singapore taels
TLT Taiwan taels
GN Grain
DWT Pennyweights
MG Milligram
/LB Parts per pound
TLC Chinese taels
MOM Mommes
K Austrian carat
TOL Tola
BAT Baht
MS Mesgahl
T Ton
LB/OZ Pounds per ounce
SAVE
NO
YES
VERIF.
Verifiable configuration
CLASS
Accuracy class
3/4
RANGES
Range selection
SINGLE
WEIGHTS
Single range mode
E
Verifiable scale interval
Enter value
MAX
Max. cap.
Enter value
MULT.INT
WEIGHTS
Multi-interval scale
E
Verifiable scale interval
Enter value
RANGE 1
Range limit 1
Enter value
RANGE 2
Range limit 2
Enter value
RANGE 3
Range limit 3
Enter value
MAX
Max. cap.
Enter value
MULT.R.
WEIGHTS
Multiple-range scale
E
Verifiable scale interval
Enter value
RANGE 1
Range limit 1
Enter value
RANGE 2
Range limit 2
Enter value
RANGE 3
Range limit 3
Enter value
MAX
Max. cap.
Enter value
UNITS
See above
SAVE
NO
YES

Service Menu

Purpose
The service menu enables access to additional menu items in the setup menu, which are not displayed when the service mode is not active.
The most important calibration and adjustment work for the indicator and for the connected weighing platform can be carried out in the service menu.

When the Service mode is active, an "S" is shown in the top right-hand corner of the display. To deactivate the Service mode, restart the indicator (turn the indicator off and back on again).

The following additional functions are available in the service mode:

The following are the menu items displayed behind the menu items date ("DATE") and code ("CODE"):
– Service date "S DATE"
(Entry of the next service date)
– Memory number "MEM NO"
(Entry of a transaction code for an external Alibi memory)
(Entry of the device serial number)
- Delete the internal alibi memory
CLR.LEG.S

Activating the Service Mode

I/⏻

Switch the device on and immediately (during the initialization of the device) press ...

→T←

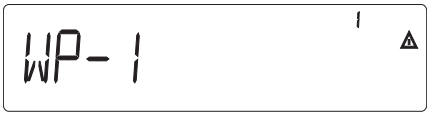
... briefly to display the menu

Fn Fn

Select the SETUP menu item

→T←

Confirm the SETUP menu item [1])



Fn

Select the CODE menu item
(press key Fn until the code appears on the display)

→T←

Confirm the CODE menu item and enter the service password (see Appendix)
Use keys →0← →T← Fn

→T←

Saving the service password
When the service mode is activated an "S"appears in the top right-hand corner of the display.

→0←

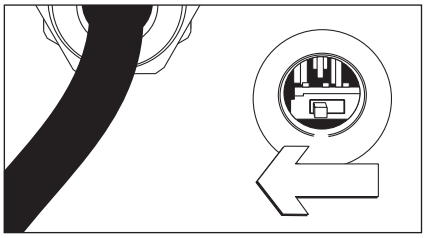
Return to "Code" in the service mode.

→0←

Return to "Setup" in the service mode.

[1]) If a password is requested at this point, enter the service password (see Appendix) and continue once the service password has been accepted.

Configuring the A/D Converter



Open the menu access switch

- Remove the cap that covers the menu access switch on the left-hand side of the back of the indicator
- To do this, move the switch to the left (towards the interface connectors). ("open position")

Activate the service mode (see page 13)

→T←

Select weighing platform and confirm: Press the →T← key

→T←

To select the menu item ADC configuration, press the Fn key several times until ADC- appears. To confirm the menu item ADC configuration, press →T←.

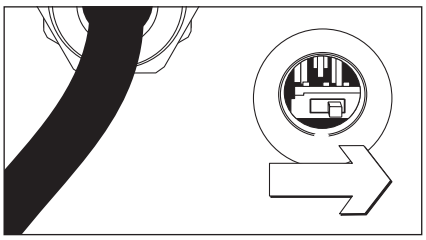
Fn repeatedly

→T←

Select whether a standard configuration (STAND) or a verifiable configuration (VERIF.) should be carried out (in this example, standard configuration).
See the next page for a detailed description of the procedure

Once you have completed the configuration, save the data using the menu item SAVE.

The A/D converter can now be treated like any standard weighing platform in connection with the load sensor.



Close the menu access switch

Once ADC configuration has been completed, an adjustment of the weighing platform (calibration/adjustment and linearization) must be carried out (see page 21 "Calibration/adjustment" and page 23 "Calibration without weights")

Example 1:
Enter or change values for standard configuration in single range mode in the unit set under 1.7.x.

Select menu item ADC CON

→T←
(if necessary Fn)
Confirm menu item ADC CON to select the menu item STAND

Standard configuration

→T←
Confirm menu item STAND.

Range selection

→T←
(if necessary press Fn repeatedly)
Confirm menu item RANGES
Select menu item SINGLE

Single range mode

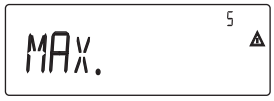
→0←
Confirm menu item SINGLE

Weights

→T←
Confirm menu item WEIGHTS

Scale interval

→T←
Confirm menu item D
→0← →T← Fn (=)
Enter a value (e.g. 0.002 kg)
(if necessary press →T← repeatedly)
until display D appears
Fn
Select menu item MAX.



Maximum capacity

→T←
Confirm menu item MAX.
→0← →T← Fn (=)
Enter a value (e.g. 30 kg)
(if necessary press →T← repeatedly)
until display MAX appears
→0←
(if necessary press the →T← key)
Menu item UNITS is displayed to select available weighing units (UNITS)
Fn
Menu item SAVE is displayed

→T← Fn →T←
Save the entered value (YES) or do not save (NO)

Example 2:
Enter or change values for standard configuration in a multi-interval scale in the unit set under 1.7.x.
(the same applies for multiple range mode).

Select menu item ADC CON

→T←
(if necessary press
→T← Fn (=))
Confirm menu item ADC CON and select the menu item STAND.

Standard configuration

→T←
Confirm menu item STAND.

Range selection

→T←
(if necessary press Fn repeatedly)
Confirm menu item RANGES
Select menu item MULT. INT

Multi-interval scale

→0←
Confirm menu item MULT. INT

Weights

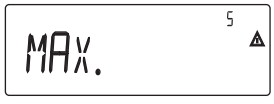
→T←
Confirm menu item WEIGHTS

Scale interval (e.g. 0.002 kg)

→T←
Confirm menu item D
→0← →T← Fn (=)
Enter a value (e.g. 0.002 kg)
(if necessary press →T← repeatedly)
until display D appears
Fn
Select menu item RANGE 1
Enter values for the following in the same way:

Range limit 1 (e.g. 6 kg)

Range limit 2 (e.g. 15 kg)



Maximum capacity (e.g. 30 kg)

Continue as shown in example 1 after entering the maximum capacity

Example 3:
Enter or change values for verifiable configuration in single range mode in the unit set under 1.7.x.

Select menu item ADC CON

→T←
(if necessary press
→T← Fn (⊟))

Confirm menu item ADC CON
and select the menu item VERIF.

Verifiable configuration

→T←

Confirm menu item VERIF.

Accuracy class

(if necessary press →T← →T← →0←) To confirm accuracy class 3/4

Range selection

→T←
(if necessary press Fn repeatedly)

Confirm menu item RANGES
Select menu item SINGLE

Multi-interval scale

→0←

Confirm menu item SINGLE

Weights

→T←

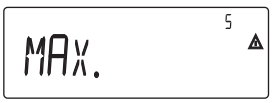
Confirm menu item WEIGHTS

Verifiable scale interval

→T←
→0← →T← Fn (⊟)
(if necessary press →T← repeatedly)
Fn

Confirm menu item E
Enter a value (e.g. 0.002 kg)
until display E appears
Select menu item MAX.

Enter values for the following in the same way:



Maximum capacity (e.g. 30 kg)

Continue as shown in example 1 after entering the maximum capacity

Example 4:
Enter or change values for verifiable configuration in a multi-interval scale in the unit set under 1.7.x.
(the same applies for multiple range mode).

Select menu item ADC CON

→T←
(if necessary press
→T← Fn (⊟))

Confirm menu item ADC CON
and select the menu item VERIF.

Verifiable configuration

→T←

Confirm menu item VERIF.

Accuracy class

(if necessary press →T← →T← →0←) To confirm accuracy class 3/4

Range selection

→T←
(if necessary press Fn repeatedly)

Confirm menu item RANGES
Select menu item MULT. INT

Multi-interval scale

→0←

Confirm menu item MULT. INT

Weights

→T←

Confirm menu item WEIGHTS

Verifiable scale interval

→T←
→0← →T← Fn (⊟)
(if necessary press →T← repeatedly)
Fn

Confirm menu item E
Enter a value (e.g. 0.002 kg)
until display E appears
Select menu item RANGE 1
Enter values for the following in the same way:

Range limit 1 (e.g. 6 kg)

Range limit 2 (e.g. 15 kg)

Maximum capacity (e.g. 30 kg)

Continue as shown in example 1 after entering the maximum capacity

Key →T← - > 2 sec Function Allocation

Purpose
The key →T← - > 2 sec is usually used for the calibration/adjustment function. The following additional functions can be allocated to the key when the service mode is activated:

– External linearization with default weights (menu item 1.9.6)
– External linearization with the linearization weights (menu item 1.9.7) entered under menu item 1.18
– Setting the preload (menu item 1.9.8)
– Clearing the preload (menu item 1.9.9)

⚠ Once linearization has been completed, or after a preload has been set or cleared the function of the key)- > 2 sec must be reallocated back to its normal function in the Setup menu (e.g. external calibration/adjustment with default weights)

Menu structure for key →T← - > 2 sec function allocation

1. 9.	Calibration, adjustment
1. 9. 1	External calibration/adjustment with default weights (service mode not required)
1. 9. 3	External calibration/adjustment with user-defined weights (entered under 1-18), (service mode not required)
1. 9. 6	External linearization with default weights
1. 9. 7	External linearization with user-defined weights (entered under 1-18)
1. 9. 8	Set preload
1. 9. 9	Clear preload
1. 9. 10	Key blocked

Entering Geographical Data

Purpose
Entering geographical data allows the external calibration of weighing equipment at a place (e.g. at the manufacturer or vendor's place of business) that is not the same as the place of installation. If the weighing equipment is calibrated at the place of installation, it is not necessary to enter geographical data.

The sensitivity of weighing equipment changes depending on the place of installation as it is dependent on the on-site gravitational force – or, more precisely, on gravitational acceleration. Saving geographical data makes it possible to change the place of installation of the weighing equipment after external adjustment has been carried out.

The calibration of weighing equipment is valid at the place of installation and within a specific tolerance zone. At 3000 e this zone extends ±100 km from the set geographical latitude and ±200 m from the set elevation above sea level.

An exception to this is the setting for "Germany (Zone D)":
If during external calibration of weighing equipment within Germany the geographical data
- 51.00° geographical latitude
- 513 m elevation above sea level

are entered, the weighing equipment can be used throughout Germany.
Gravitational acceleration for "Germany (Zone D)" is 9.810 m/s?.
On delivery the geographical data for "Germany (Zone D)" are entered in the output device.
It is recommended to use the geographical data settings for "Germany (Zone D)" when calibrating and delivering the weighing equipment within Germany.
Entering exact geographical data will lead to a higher level of accuracy but will also restrict the tolerance zone.

Set-up Information
- It is only possible to enter geographical data when the menu access switch is open.
- Geographical data can be entered when the service mode in the Setup menu for "WP 1" is activated. The settings are made in the corresponding Setup menu under menu item 1.20.
- Either the geographical latitude in degrees (menu item 1.20.1) and elevation in m above sea level (menu item 1.20.2), or the value for gravitational acceleration (menu item 1.20.3) can be entered.
  Gravitational acceleration takes precedence over the geographical latitude and elevation of the location: If it has been entered, input fields for latitude and elevation show the values 99999.99 and 9999999 respectively. If only elevation and latitude have been entered, 0000000 is displayed for gravitational acceleration.

⚠ If you return to the highest level of the Setup menu without saving the configuration parameter beforehand (menu item 1.20.4) any settings that have been made will be deleted.

Procedure
- Open the menu access switch. If the device is part of a verified weighing facility, this will only be possible if the verification seal is broken. The weighing equipment must then be verified again.
- Activating the service mode
- Select the weighing platform
- Enter the geographical data for the place of calibration under menu items 1.20.1 to 1.20.3 and save them under menu item 1.20.4. The data can be obtained from the relevant land registry or Ordnance Survey.
- Carry out external calibration (see page 20)
- After the calibration, enter the geographical data for the place of installation under menu items 1.20.1 to 1.20.3 and save them under menu item 1.20.4.
- Close the menu access switch.
- The weighing equipment can now be operated at the place of installation, and within the abovementioned tolerance zone.

Note:
The set geographical values are displayed during the calibration procedure if the display of the data has been activated in the Setup menu under "UTILIT" menu item 8.12.2 (factory setting: 8.12.1, display deactivated).
When the display of the geographical data is activated the calibration procedure is as follows:
If the elevation and geographical latitude are used, after the start of the calibration procedure "CAL" the word "ALTITUDE" will appear briefly followed by the set elevation (in meters above sea level). The display is confirmed using the →T← key (and cancelled using the →0← key). Then, the word "LATITUDE" will be displayed briefly, followed by
the set geographical latitude in degrees. This can also be confirmed using the →T← key (and cancelled using the →0← key). After this, you will be prompted to place the calibration weight on the platform. If gravitational acceleration has been entered instead of elevation and geographical latitude, the word "GRAVITY" will appear briefly, followed by the set value for gravitational acceleration. The display is confirmed using the →T← key (and cancelled using the →0← key).

Menu Structure for Entering the Geographical Data

1. 20.	Calibration location (geographical latitude and elevation; or alternatively the gravitational acceleration at the place of installation)
1. 20. 1	Latitude in degrees
1. 20. 2	Elevation in meters above sea level
1. 20. 3	Gravitational acceleration
1. 20. 4	Save values for 1. 20

Enter Calibration and Linearization Weights

Purpose
Entering the calibration and linearization weights

Set-up information
– The service mode must be activated in order for linearization weights to be entered under menu items 1.18.2 to 1.18.5.
– Calibration and linearization weights are entered in the Setup menu under "WP 1". The settings are made in the corresponding Setup menu under menu item 1.18.
– The service mode must be activated in order for external user-defined calibration weights to be entered under menu item 1.18.1.

Procedure
– Activate the service mode (only necessary if linearization weights are going to be entered)
– Select the weighing platform.
– Enter the external user-defined calibration weight under menu item 1.18.1
– Enter the external linearization weight under menu items 1.18.2 to 1.18.5.

Menu structure for entering the calibration and linearization weights

1. 18.	Entering the calibration and linearization weights
1. 18. 1	Entering external user-defined calibration weight (service mode not required)
1. 18. 2	Enter lin. weight 1
1. 18. 3	Enter lin. weight 2
1. 18. 4	Enter lin. weight 3
1. 18. 5	Enter lin. weight 4

Changing the weight unit

- Start with the indicator unplugged.
- Set the Menu Switch to the "OPEN" position.
- Plug the indicator in and, during the Display Test "88888888", press down the →0← key.
- The display will show "ADC-CON", followed by "S-CODE", and then the cursor will appear over a blank line.
- Enter the "SERVICE CODE" [202122] and press →T←.
- When the display shows "STAND." with a lower-case "S" in the top right-hand corner, press →T←.
- When the display shows "UNIT", press →T←.
- The display will show the current Unit of Measurement. (To change this, use the Fn key to select the required Unit of Measurement); press →T←.
- When the display shows "RANGES", press →T←.
- When the display shows "SINGLE", press →T←.
- When the display shows "MAX.", press →T←.
- Enter the Maximum Weight Value and press →T←.
- When the display shows "D", press →T←.
- Enter the Resolution and press →T←.
- When the display shows "Save", press →T←.
- If the display shows "NO", use the Fn key to select "YES" and press →T←. The display will show "BUSY" and then return to the weighing mode.
- Once set-up is complete, set the Menu Switch to the "Closed" position.

External Linearization

Set-up information

⚠ External linearization when weighing in legal metrology is only possible when the menu access switch is open.

– The external linearization function must be allocated to the key →T← –> 2 (menu item 1.9.6 or 1.9.7).

⚠ After external linearization, close the menu access switch and reallocate the original function back to the key →T← –> 2 sec (e.g. external calibration/ adjustment with user-defined weights) under menu item 1.9.

Procedure

→0←

Zero the weighing platform.

→T← > 2 sec

Start linearization.

After approximately 2 seconds you will be prompted to place the first linearization weight on the platform.

Place the required amount on the platform. After a short time the difference between the measured value and the true weight of the sample will be displayed.

→T←

Save the linearization weight (cancel using the →0← key).

You will then be prompted to place the second linearization weight on the platform. Repeat the procedure for all required linearization weights.

After the last linearization weight has been saved you will be prompted to remove any load from the weighing pan.

Unload the weighing pan. After a short period of time the zero point will automatically be adopted and the indicator will automatically switch back into weighing mode.

Calibration, Adjustment

Purpose
The accuracy of the measurement results must be checked. This is carried out using calibration and adjustment.

Perform calibration to determine the difference between the value displayed and the actual weight on the platform. Calibration does not entail making any changes within the weighing equipment.

During adjustment, the difference between the measured value displayed and the true weight of a sample is corrected, or is reduced to an allowable level within maximum permissible error limits.

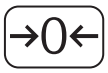
Features
The configured weighing platform determines which of the following features are available:

- External adjustment with the weight of the factory setting – standard weight (1.9.1), not for use in verified weighing instruments
- External calibration with a user-defined weight (1.9.3), not for use in verified weighing instruments
- Block the key →T← –> 2 sec to prevent use of the functions described above (1.9.10):
- Calibration with automatic adjustment (1.10.1), not for use in verified weighing instruments
- Calibration with the option of activating the adjustment function manually (1.10.2)
- Adjustment prompt – flashing ⚖ symbol (1.15.2).
- Block external adjustment (1.16.2)
- Display of elevation and geographical latitude, or gravitational acceleration after CAL has been displayed at the start of the calibration procedure (menu item 8.12.2). These values will only be displayed if they have been entered and activated in the service menu.
  For each of the parameters elevation, geographical latitude and gravitational acceleration, the term is displayed first (Altitude, Latitude or Gravity) for 1 second, and then the corresponding value is displayed continuously until you press the →T← key.

Note
When using verified weighing instruments, the external calibration function can only be used when the menu access switch is open once the verification seal has been broken. The device must then be verified again.

Example
External calibration and manual adjustment with standard weights

Pre-settings in Setup:
1.9.1; 1.10.2

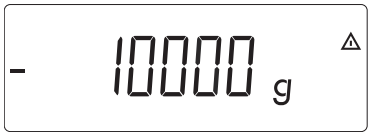


Unload and zero the scale

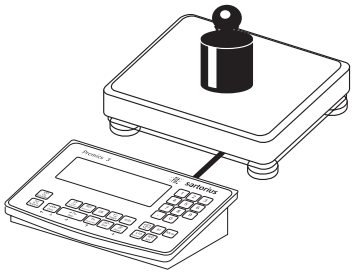
>2 sec

Start calibration (e.g. when adjustment prompt (W Symbol) flashes)

This display appears for 2 seconds



You will then be prompted to place the calibration/adjustment weight on the platform (e.g. 10 kg)



Position the calibration/adjustment weight on the weighing platform

The difference between the measured value and the true weight of the sample will be disayed with plus/minus signs.

```
External calibration
Nom   +    10000 g
Diff. -    2 g
--------------------
```

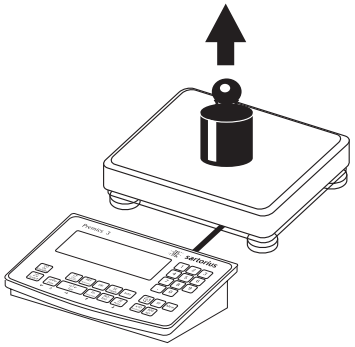
A printout will be generated if the calibration is not carried out and the procedure can be stopped by pressing the →0← key.

Activate calibration manually (press the →0← key to stop calibration/adjustment)

The calibration weight is displayed once calibration is finished.

```
--------------------
14.01.2013    13:00
Type           MIS2
Ser.no.     12345678
Vers.    1.1007.12.1
BVers.      01-25-09
--------------------
External calibration
Nom   +   10000 g
Diff. -       2 g
External calibration
Diff. +       0 g
--------------------
14.01.2013    13:02
Name:

--------------------
```

A GMP-compliant printout is generated



Unload the weighing equipment

Set Preload

Set-up Information

⚠ It is only possible to set a preload when the menu access switch is open.

– The function set preload (menu item 1.9.8) must be allocated to the key →T← - > 2 sec (see page 17).

⚠ After setting a preload, close the menu access switch and reallocate the original function back to the key →T← - > 2 sec (e.g. external calibration/adjustment with user-defined weights) under menu item 1.9.

Clear Preload

Set-up Information

⚠ It is only possible to clear a preload when the menu access switch is open.

– The function clear preload (menu item 1.9.9) must be allocated to the key →T← - > 2 sec (see page 17).

⚠ After clearing a preload, close the menu access switch and reallocate the original function back to the key →T← - > 2 sec (e.g. external calibration/adjustment with user-defined weights) under menu item 1.9.

Calibration/Adjustment without Weights

In the service menu, calibration without weights can be carried out by entering the characteristic data of the load cells (e.g. hopper weighing area with known characteristic data of the load cells)

Set-up information

⚠ Calibration without weights may not be carried out on weighing equipment used in legal metrology.

– Calibration without weights is only possible when the menu access switch is open in the service menu.

– The parameters necessary for calibration without weights are entered in the Setup menu under "WP 1" when the service mode is activated. The settings are made in the corresponding Setup menu under menu item 1.19.
– The parameter "Nominal capacity" must be entered in the unit that is set under 1.7.x.
– The parameter "Sensitivity" is entered in mV/V (take value from e.g. the data sheet).

– Note:
The data entered are saved by selecting menu item "1.19.8". After saving, the data will no longer be able to be read.

Procedure

– Open the menu access switch
– Activating the service mode
– Select the weighing platform
– Enter the nominal load of the load cell(s) under menu item 1.19.1. If the weighing platform has multiple load cells, the nominal capacity must be multiplied accordingly (e.g. 4 load cells, each of which has a capacity of 50 kg, will produce a nominal capacity of 200 kg)
– Enter the sensitivity of the load cells in mV/V under menu item 1.19.3.
– If the weighing platform has multiple load cells, either the individual values for the load cells will be entered in 1.19.3 to 1.19.6, or the average value for all the cells will be entered in 1.19.3.
– Enter the dead load of a hopper construction in mV/V in 1.19.7.
– Save the values for calibration without weighing under menu item 1.19.8.
– Close the menu access switch

Menu Structure for Calibration without Weights

1.19	Calibration without weights (entering the characteristic data of the load cell(s))
1.19.1	Nominal capacity
1.19.3	Sensitivity in mV/V for cell 1 (or average value for all load cells)
1.19.4	Sensitivity in mV/V for cell 2
1.19.5	Sensitivity in mV/V for cell 3
1.19.6	Sensitivity in mV/V for cell 4
1.19.7	Dead load (zero point/offset)
1.19.8	Save values for 1.19

Operating Design

Keys
Operation of the Midrics® 1 or Midrics® 2 scale involves just a few keys. These keys have one function during measurement and another during configuration. Some of the keys have one function when pressed briefly and another activated by pressing and holding the key for longer than 2 seconds.

If a key is inactive, this is indicated as follows when it is pressed:
– The error code "————-" is displayed for 2 seconds. The display then returns to the previous screen content.

Configure the operating menu for the desired application program first (printer settings, etc.). Then you can begin weighing.

Operating elements: Midrics® 2

Input

Keypad Input
Labeled Keys
Some keys have a second function, activated by pressing and holding the key for at least 2 seconds. Whether a function is available depends on the operating state and menu settings.

[I/⏻] On/standby
(in standby mode, OFF is displayed).

[→0←]
– Zero the scale
– Cancel calibration/adjustment

[→T←]
– Tare the scale

[Fn] Toggle between 1st and 2nd weight unit, or gross and net values, or normal and 10-fold higher resolution, depending on operating menu settings

[🖶]
– To print: press briefly (< two seconds).

Midrics 2 only:
[ID] ID key for entering product information

Midrics 2 only:
[Info] View application data or manual tare values, depending on the key pressed subsequently (e.g., [→T←])

Midrics 2 only:
[⇆] Toggle between display modes within an application program

Midrics 2 only:
[OK] Save a value or start an application program.

Midrics 2 only:
[REF] Modify a reference value

Midrics 2 only:
[CF]
– Quit an application or delete an input character

Midrics 2 only:
[0], [1], [2] … [9]
Enter numbers, letters and other characters

Numeric Input Through the Keypad (Midrics 2 only)

- To enter numbers (one digit at a time): Press [0], [1], [2] …[9]

- To save input: press the required key (e.g., [→T←] to save manual tare input)

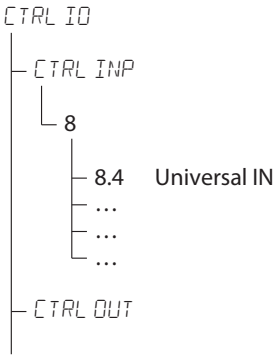
- To delete a digit: Press [CF]

Loading a Tare Value from the Weighing Platform

You can store the weight on the weighing platform; for example, as a tare weight, by pressing the [→T←] key

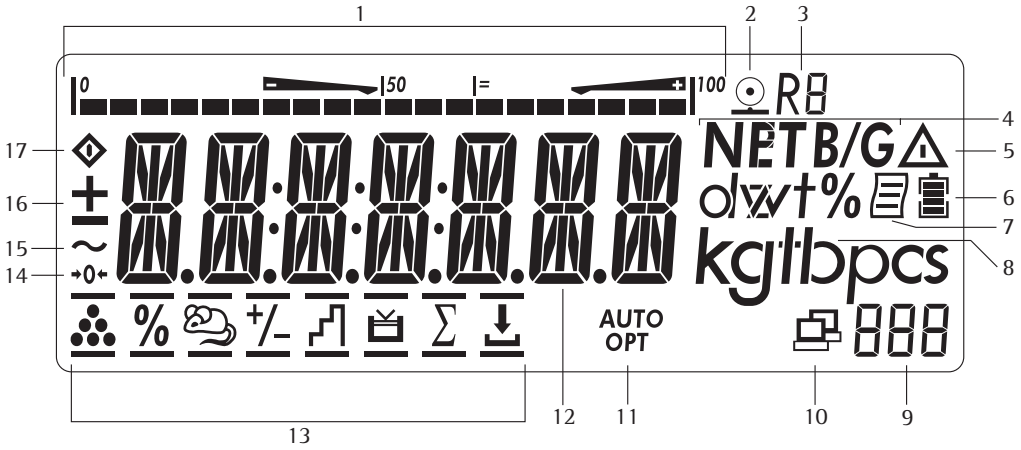
Input Through the Digital Input Port

You can connect a remote hand switch or foot switch to the input control line, for use with all application programs. Assign one of the following functions to this switch in the operating menu, under "CONTROL IO/ -> Control input":



For a detailed list of menu items, please see the chapter entitled "Configuration."

Operating Design



Display in Weighing Mode
The illustration above shows all display segments and the symbols and other elements used during normal weighing operation.

1. Bar graph
   – Shows the percentage of the weighing platform's capacity that is “used up" by the load on the scale (gross value), or
   – Shows the measured value in relation to a target value (with the Checkweighing or Classification application)

2. Printing in progress

3. Display of the range on multiple-range instruments

4. Indicates a net or gross value in the main display (when data is stored in tare memory)

5. Identifies the value on the main display as calculated (value not valid in legal metrology)

6. Battery symbol showing status of rechargeable battery (empty outline indicates battery is drained)

7. GMP-compliant printing in progress (optional; with interface and “clock" options)

8. Weight unit of the value displayed

9. Numeric display; e.g., showing reference value (Midrics 2 only)

   Midrics 2:
10. Symbol indicating data transfer:
    – Interface initialized
    – Flashes during data transfer

11. Symbols for reference updating (Midrics 2 only)
    – Auto: Depending on the weight value, a reaction is triggered in the application
    – Opt: Automatic reference updating has been performed (Counting application)

12. Weight value or calculated value (main display)

13. Application symbols for Midrics® 2 applications:

    Counting

    Weighing in Percent

    Averaging (Animal Weighing)

    Checkweighing

    Classification

    Totalizing

    Net-total Formulation

    Checkweighing towards Zero (filling to a target)

    Verified models only:
14. The “zero-setting" symbol is displayed after the active scale or weighing platform has been zeroed

15. Stability symbol

16. Plus or minus sign for the value displayed

17. Busy symbol; indicates that an internal process is in progress

There are two display modes:
– Normal operation (weighing mode)
– Operating menu (for configuration)

Weighing Mode: Display of Measured and Calculated Values (Main Display)

Application, printing and battery symbols:
The application symbol indicates the selected program; for example:
- Counting application symbol
- Printing mode active
- GMP printing mode active

The battery symbol indicates the charge level of the external rechargeable battery.

Bar graph
The bar graph shows the percentage of the weighing platform's capacity that is “used up" by the load on the scale (gross value).

0% Lower limit
100% Upper limit

The following symbols indicate tolerance levels for Checkweighing:

Bar graph with 10% markings

Minimum in Checkweighing

Target in Checkweighing

Maximum

Plus/minus sign:
+ or − for weight value or calculated value, ○ when the weighing platform is zeroed or tared.

Measured value/result line
This field shows weight values and calculatedvalues(alphanumericcharacters)

Unit and stability
When the weighing system reaches stability, the weight unit or the unit for a calculated value is displayed here.

Tare in memory, calculated values:
The following symbols may be displayed here:

⚠ Calculated value (not permitted to be used in legal-for-trade applications)

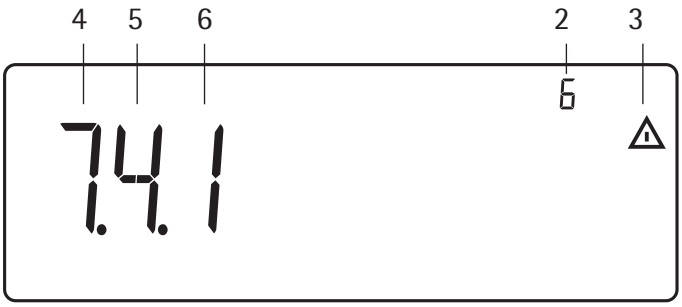
NET Net value
(gross weight minus tare)

B/G Gross value
(net value plus tare)

Data in tare memory, calculated values, designation of the active weighing platform
PT Identification of manual tare input when viewing tare information

Saving Data in Weighing Mode
All of the application parameters saved (e.g., reference values) remain in memory and are still available after
– the Midrics has been switched off and back on again, or
– you return to the originally selected application from a second one (e.g., when you switch from Averaging back to Counting, all parameters saved for Counting are available)

Display of menu settings: Text menu (example)



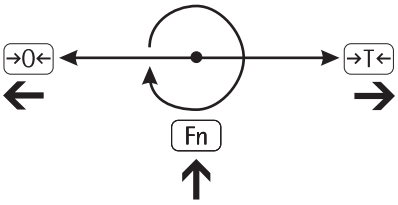
Display of menu settings: Numeric menu (example)

Operating Menu Navigation

The keys below the readout let you navigate the menu and define parameters for configuration.

Opening the Menu
Press the [I/⏻] key to switch the Midrics off and then on again; while all segments are displayed, press the [→T←] key briefly.

Navigating the Menu



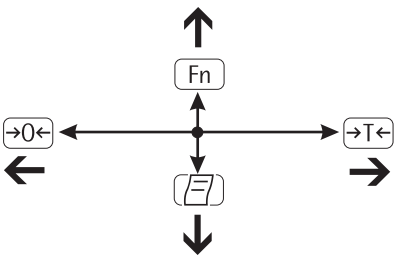
[→0←] Close the active submenu and return to the next higher menu level ("back")

[→T←]
- Press briefly: Select and save a menu item
- Press and hold (> 2 seconds): Exit the menu

[Fn] Show the next item on the same menu level (the display scrolls through all items in series)

[⎙] Print the menu settings starting from the current position, or print Info data

Alphanumeric Input in the Menu



[→0←]
- Press briefly: Activate character to the left of the current character (when first character is active: exit input mode without saving changes)
- Press and hold (> 2 seconds): Exit input mode without saving changes

[→T←]
- Press briefly: Confirm currently active character and move cursor 1 position to the right (after the last character: save input)
- Press and hold (> 2 sec): Save current input and display the menu item

[Fn]
- Cursor in first position, no characters entered yet: Delete character(s) and enter 0
- Change the displayed character; scroll forward (sequence: 0 through 9, decimal point, minus sign, A to Z, space)

[⎙]
- Cursor in first position, no characters entered yet: Delete entire string and enter a space
- Change the displayed character; scroll backwards (sequence: space, Z to A, minus sign, decimal point, 9 through 0)

Numeric input in Midrics 2 operating menu:
Enter values (date and time, etc.) using the 10-key numeric keypad

Display of Menu Settings
The illustrations above show examples of the main display during menu configuration.

1 Selected menu item on the text level (e.g. printer, for configuring the connected printer)
2 Menu history (indicates the highest menu level)
3 Indication that there are other submenus
4 Highest level in numeric menu
5 Second level in numeric menu
6 Third level in numeric menu

Errors

- If a key is inactive, "-------" or "No function" is displayed briefly (2 seconds)

- Temporary errors are displayed for 2 seconds in the measured value/result line (e.g., INF 09); fatal errors are displayed steadily (e.g., ERR 101) until the Midrics is reset (switched off and then on again).

For a detailed description, see "Error Codes" on page 89.

Data Output

Printer
You can connect two strip or label printers to the Midrics 1 or Midrics 2 and have printouts generated at the press of a key or automatically. You can also configure separate summarized printouts, and print a list of the active menu settings. See "Configuring Printouts" on page 82 for details.

Backup

Application parameters (such as reference values) are saved when you change application programs or switch off the Midrics. You can assign a password to prevent unauthorized users from changing settings in the "Device parameters" menu under:

SETUP
└ PASSWORD

See also pages 31 and 48.

Configuration

You can configure the Midrics scale by selecting parameters in the operating menu. The parameters are combined in the following groups (this is the highest menu level):

- Application parameters
- Fn key function
- Device parameters ("SETUP")
- Device-specific information ("INFO")
- Language

When the scale is used in legal metrology, not all parameters can be accessed.

Factory-set parameters are identified by an asterisk ("*") in the list starting on page 33.

You can choose from six language settings for the display of information:

- German
- English (factory setting)
- English with U.S. date/time format
- French
- Italian
- Spanish

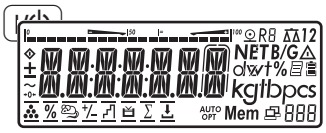
Printing parameter settings:

● Open the operating menu and press the ⎙ key

Scope of printout:
Depends on the active menu level
Setting the Language

Setting the Language

Example: Selecting "U.S. Mode" for the language



Switch on the scale

→T←

While all segments are lit, press the →T← key

The first item in the main menu is shown: APPL

Fn

Switch to the LANG. menu item (press Fn repeatedly until LANG. is shown)

→T←

Select LANG. to open the submenu for setting the language

The currently active language setting is shown

Fn

Press Fn repeatedly until U.S.MODE is displayed

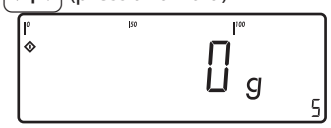
→T←

Confirm this menu item

→0←

Exit this menu level and configure other settings as desired, or

→T← (press and hold)

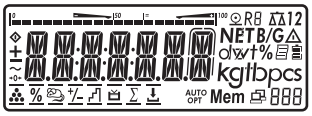


Exit the operating menu

Entering or Changing the Password

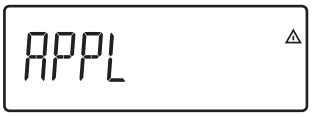
Example:
Assign a password (in this example, AB2) to protect the application program settings APPL and the device parameters SETUP from unauthorized changes

I/⏻



1. Switch on the scale

→T←



2. While all segments are lit, press the →T← key

   The first item in the main menu is shown: APPL

Fn

3. Select the SETUP menu item (press Fn repeatedly until SETUP is displayed)

→T←

4. Open the SETUP menu

Fn

5. Select the PASSWORD menu item (press Fn repeatedly until PASSWORD is displayed)

→T←

6. Open the PASSWORD menu

(⊟), (⊟)

7. Enter the first character using the (⊟) and Fn keys (in this example: A)

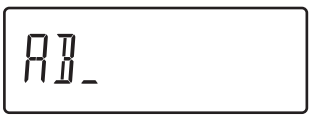
→T←

8. Save the character

(⊟), (⊟), (⊟)

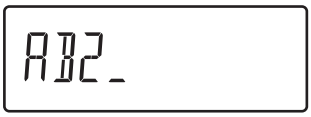
9. Enter the second character using the (⊟) and Fn keys (in this example: B)

→T←



10. Save the character

Fn, Fn, Fn,



11. Enter the third character using the (⊟) and Fn keys (in this example: 2)

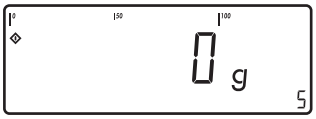
→T←

12. Save the password

→0←

13. Exit this menu level to configure other menu settings, or

→T←



14. Exit the operating menu (press and hold the →T← key)

To modify or delete a password: Overwrite the old password with the new password, or enter a space as the password and press →T← to confirm

Configuration

Operating Menu Overview

You can configure the Midrics to meet individual requirements by entering user data and setting selected parameters in the operating menu.

Menu levels are identified by texts, and numeric codes identify the individual settings.

= Setting/function available on Midrics 2 only

1st level display	2nd level display	Function
Menu		
APPL		Select and configure application programs
		Basic weighing function
		Counting
	nN_	Neutral Measurement
		Averaging (animal weighing)
		Checkweighing
		Classification
		Weighing in percent
		Net-total formulation
		Totalizing
FN-KEY		Define the function of the Fn key
	OFF	No function
	GRO NET	Gross/net toggling
	2.UNIT	Toggle between weight units
	RES 10	10-fold increased resolution
SETUP		Adapt Midrics to user requirements
	WP 1	Settings for weighing instrument on WP1
	COM 1	Settings for the RS-232 interface
	UNICOM	Settings for the optional second interface
	CTRL IO	Assign a function to the control inputs/output
	PRTPROT	Configure the printout
	UTILIT	Operating parameters
	TIME	Set the time
	DATE	Set the date
	U-CODE	Enter a password to protect menu settings
INFO		View device-specific information (service date, serial number, etc.)
LANG		Select language for calibration, adjustment and GMP printouts
	DEUTSCH	German
	ENGLISH	English
	U.S.MODE	English with U.S. date/time format
	FRANC.	French
	ITAL.	Italian
	ESPANOL	Spanish

Operating Menu

= Setting/function available on Midrics 2 only

* Factory setting

Menu

APPL — Application Programs

- Basic weighing function
  - 3.5. — Minimum load for automatic taring and automatic printing
    - 3.5.1* — 1 digit
    - 3.5.2 — 2 digits
    - 3.5.3 — 5 digits
    - 3.5.4 — 10 digits
    - 3.5.5 — 20 digits
    - 3.5.6 — 50 digits
    - 3.5.7 — 100 digits
    - 3.5.8 — 200 digits
    - 3.5.9 — 500 digits
    - 3.5.10 — 1000 digits
  - 3.7. — Automatic taring: first weight tared
    - 3.7.1* — Off
    - 3.7.2 — On
  - 9.1. — Factory settings for all application programs
    - 9.1.1 — Yes
    - 9.1.2* — No
- Counting
  - 3.5. — Minimum load for automatic taring and automatic printing
    - Numeric menu as for Weighing
  - 3.6. — Minimum load for initialization
    - 3.6.1* — 1 digit
    - 3.6.2 — 2 digits
    - 3.6.3 — 5 digits
    - 3.6.4 — 10 digits
    - 3.6.5 — 20 digits
    - 3.6.6 — 50 digits
    - 3.6.7 — 100 digits
    - 3.6.8 — 200 digits
    - 3.6.9 — 500 digits
    - 3.6.10 — 1000 digits
  - 3.7. — Automatic taring: first weight tared
    - 3.7.1* — Off
    - 3.7.2 — On
  - 3.8. — Start application and load most recent application data when the Midrics is switched on
    - 3.8.1 — Automatic (on)
    - 3.8.2* — Manual (off)
  - 3.9. — Resolution for calculation of reference value
    - 3.9.1* — Display resolution
    - 3.9.2 — Display resolution + 1 decimal place
    - 3.9.3 — Display resolution + 2 decimal places
    - 3.9.4 — Internal resolution
  - 3.11. — Parameter for saving weight values (“storage parameter")
    - 3.11.1* — At stability
    - 3.11.2 — At increased stability
  - 3.12. — Reference sample updating (“APW update")
    - 3.12.1 — Off
    - 3.12.3* — Automatic
  - 3.25. — Tare function
    - 3.25.1* — Add input value (weight value) for taring
    - 3.25.2 — Tare value can be overwritten
  - 9.1. — Factory settings for all application programs
    - 9.1.1 — Yes
    - 9.1.2* — No

APPL

- nn — Neutral Measurement
  - 3.5. — Minimum load for automatic taring and automatic printing
    - Numeric menu as for Weighing
  - 3.6. — Minimum load for initialization
    - Numeric menu as for Counting
  - 3.7. — Automatic taring: first weight tared
    - 3.7.1* — Off
    - 3.7.2 — On
  - 3.8. — Start application and load most recent application data when the Midrics is switched on
    - 3.8.1 — Automatic (on)
    - 3.8.2* — Manual (off)
  - 3.9. — Resolution for calculation of reference value
    - 3.9.1* — Display resolution
    - 3.9.2 — Display resolution + 1 decimal place
    - 3.9.3 — Display resolution + 2 decimal places
    - 3.9.4 — Internal resolution
  - 3.10. — Decimal places in displayed result
    - 3.10.1* — None
    - 3.10.2 — 1 decimal place
    - 3.10.3 — 2 decimal places
    - 3.10.4 — 3 decimal places
  - 3.11. — Parameter for saving weight values
    - 3.11.1* — At stability
    - 3.11.2 — At increased stability
  - 3.25. — Tare function
    - 3.25.1* — Add input value (weight value) for taring
    - 3.25.2 — Tare value can be overwritten
  - 9.1. — Factory settings for all application programs
    - 9.1.1 — Yes
    - 9.1.2* — No
- Averaging (Animal Weighing)
  - 3.5. — Minimum load for automatic taring and automatic printing
    - Numeric menu as for Weighing
  - 3.6. — Minimum load for automatic start
    - Numeric menu as for Counting
  - 3.7. — Automatic taring: first weight tared
    - 3.7.1* — Off
    - 3.7.2 — On
  - 3.8. — Start application and load most recent application data when the Midrics is switched on
    - 3.8.1 — Automatic (on)
    - 3.8.2* — Manual (off)
  - 3.18. — Start of averaging routine
    - 3.18.1* — Manual
    - 3.18.2 — Automatic
  - 3.19. — Animal activity
    - 3.19.1 — 0.1% of the animal/object
    - 3.19.2* — 0.2% of the animal/object
    - 3.19.3 — 0.5% of the animal/object
    - 3.19.4 — 1% of the animal/object
    - 3.19.5 — 2% of the animal/object
    - 3.19.6 — 5% of the animal/object
    - 3.19.7 — 10% of the animal/object
    - 3.19.8 — 20% of the animal/object
    - 3.19.9 — 50% of the animal/object
    - 3.19.10 — 100 % of the animal/object
  - 3.20. — Automatic printout of results
    - 3.20.1* — Off
    - 3.20.2 — On

- APPL
  - Averaging (Animal Weighing)
    - 3.21. — Static display of result after load removed
      - 3.21.1* — Display is static until unload threshold reached
      - 3.21.2 — Display is static until [CF] is pressed
    - 3.25. — Tare function
      - 3.25.1* — Add input value (weight value) for taring
      - 3.25.2 — Tare value can be overwritten
    - 9.1. — Factory settings for all application programs
      - 9.1.1 — Yes
      - 9.1.2* — No
  - ±
    - Checkweighing
    - 3.5. — Minimum load for automatic taring and automatic printing
      - Numeric menu as for Weighing
    - 3.6. — Minimum load for initialization
      - Numeric menu as for Counting
    - 3.7. — Automatic taring: first weight tared
      - 3.7.1* — Off
      - 3.7.2 — On
    - 3.8. — Start application and load most recent application data when the Midrics is switched on
      - 3.8.1 — Automatic (on)
      - 3.8.2* — Manual (off)
    - 3.25. — Tare function
      - 3.25.1* — Add input value (weight value) for taring
      - 3.25.2 — Tare value can be overwritten
    - 4.2. — Checkweighing range
      - 4.2.1* — 30 to 170%
      - 4.2.2 — 10% to infinity
    - 4.3. — Activate control line for “Set” as:
      - 4.3.1* — “Set” output
      - 4.3.2 — Ready to operate (for process control systems)
    - 4.4. — Activation of outputs
      - 4.4.1 — Off
      - 4.4.2 — Always active
      - 4.4.3 — Active at stability
      - 4.4.4* — Active within checkweighing range
      - 4.4.5 — Active at stability within the checkweighing range
    - 4.5. — Parameter input
      - 4.5.1* — Min, max, target
      - 4.5.2 — Only target with percent limits
      - 4.5.3 — Set point with free limits percent
      - 4.5.4 — Set point; Min, Max value as relative weights to the set point
    - 4.6. — Automatic printing
      - 4.6.1* — Off
      - 4.6.2 — On
      - 4.6.3 — Only values within tolerance
      - 4.6.4 — Only values outside tolerance
    - 4.7. — Checkweighing towards Zero
      - 4.7.1* — Off
      - 4.7.2 — On
    - 9.1. — Factory settings for all application programs
      - 9.1.1 — Yes
      - 9.1.2* — No
  - Classification
    - 3.5. — Minimum load for automatic taring and automatic printing
      - Numeric menu as for Weighing
    - 3.6. — Minimum load for initialization
      - Numeric menu as for Counting
    - 3.7. — Automatic taring: first weight tared
      - 3.7.1* — Off
      - 3.7.2 — On

APPL

- Classification
  - 3.8. — Start application and load most recent application data when the Midrics is switched on
    - 3.8.1 — Automatic (on)
    - 3.8.2* — Manual (off)
  - 3.25. — Tare function
    - 3.25.1* — Add input value (weight value) for taring
    - 3.25.2 — Tare value can be overwritten
  - 4.3. — Activate control line for “Set” as:
    - 4.3.1* — “Set” output
    - 4.3.2 — Ready to operate (for process control systems)
  - 4.7. — Activation of outputs
    - 4.7.1 — Off
    - 4.7.2 — Always active
    - 4.7.3* — Active at stability
  - 4.8. — Number of classes
    - 4.8.1* — 3 classes
    - 4.8.2 — 5 classes
  - 4.9. — Parameter input
    - 4.9.1* — Weight values
    - 4.9.2 — Percentage
  - 4.10. — Automatic printing
    - 4.10.1* — Off
    - 4.10.2 — On
  - 9.1. — Factory settings for all application programs
    - 9.1.1 — Yes
    - 9.1.2* — No
- % — Weighing in Percent
  - 3.5. — Minimum load for automatic taring and automatic printing
    - Numeric menu as for Weighing
  - 3.6. — Minimum load for initialization
    - Numeric menu as for Counting
  - 3.7. — Automatic taring: first weight tared
    - 3.7.1* — Off
    - 3.7.2 — On
  - 3.8. — Start application and load most recent application data when the Midrics is switched on
    - 3.8.1 — Automatic (on)
    - 3.8.2* — Manual (off)
  - 3.9. — Resolution for calculation of reference value
    - 3.9.1* — Display resolution
    - 3.9.2 — Display resolution + 1 decimal place
    - 3.9.3 — Display resolution + 2 decimal places
    - 3.9.4 — Internal resolution
  - 3.10. — Decimal places in displayed result
    - 3.10.1* — None
    - 3.10.2 — 1 decimal place
    - 3.10.3 — 2 decimal places
    - 3.10.4 — 3 decimal places
  - 3.11. — Parameter for saving weight values
    - 3.11.1* — At stability
    - 3.11.2 — At increased stability
  - 3.15. — Display
    - 3.15.1* — Residue
    - 3.15.2 — Loss
  - 3.25. — Tare function
    - 3.25.1* — Add input value (weight value) for taring
    - 3.25.2 — Tare value can be overwritten
  - 9.1. — Factory settings for all application programs
    - 9.1.1 — Yes
    - 9.1.2* — No

- APPL
  - ↓ — Net-total Formulation (2nd Tare Memory)
    - 3.5. — Minimum load for automatic taring and automatic printing
      - Numeric menu as for Weighing
    - 3.6. — Minimum load for automatically saving/transferring values
      - Numeric menu as for Counting
    - 3.7. — Automatic taring: first weight tared
      - 3.7.1* — Off
      - 3.7.2 — On
    - 3.17. — Printout when value is saved in totalizing memory
      - 3.17.1 — Automatic printout of results off
      - 3.17.2* — Generate printout with complete standard configuration each time [OK] is pressed
      - 3.17.3 — Generate printout with complete standard configuration only the first time [OK] is pressed
    - 3.25. — Tare function
      - 3.25.1* — Add input value (weight value) for taring
      - 3.25.2 — Tare value can be overwritten
    - 9.1. — Factory settings for all application programs
      - 9.1.1 — Yes
      - 9.1.2* — No
  - Σ — Totalizing
    - 3.5. — Minimum load for automatic taring and automatic printing
      - Numeric menu as for Weighing
    - 3.6. — Minimum load for automatically saving/transferring values
      - Numeric menu as for Counting
    - 3.7. — Automatic taring: first weight tared
      - 3.7.1* — Off
      - 3.7.2 — On
    - 3.8. — Start application and load most recent application data when the Midrics is switched on
      - 3.8.1 — Automatic (on)
      - 3.8.2* — Manual (off)
    - 3.16. — Values saved automatically
      - 3.16.1* — Off
      - 3.16.2 — On
    - 3.17. — Individual component data printed when value is added to totalizing memory
      - 3.17.1 — Automatic printout of results off
      - 3.17.2* — Individual printout of a totalizing item when [OK] is pressed
      - 3.17.3 — Components of transaction printed when [OK] is pressed
    - 9.1. — Factory settings for all application programs
      - 9.1.1 — Yes
      - 9.1.2* — No
- FN-KEY — [Fn] Key Assignment
  - OFF* — No [Fn] key function
  - GRO NET — Gross/net toggling
  - 2.UNIT — Show 2nd Weight unit
  - RES 10 — 10-fold increased resolution Display: max. 5 seconds

Device Parameters

SETUP

Password prompt displayed if a password is configured

WP-1 1

Weighing platform 1
(Display designation of this menu level: 1)

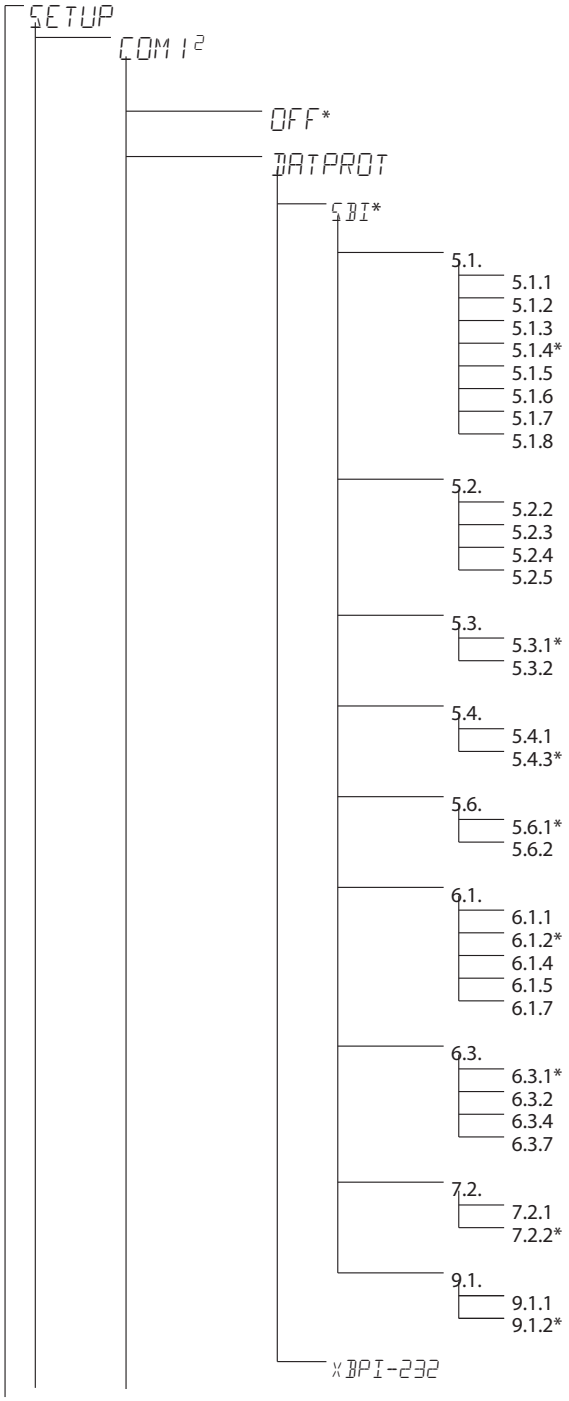
1.1.	Adapt weighing instrument to ambient conditions (adapt filter)
1.1.1	Very stable conditions
1.1.2*	Stable conditions
1.1.3	Unstable conditions
1.1.4	Very unstable conditions
1.2.	Application filter
1.2.1*	Final readout
1.2.2	Filling mode
1.2.3	Low filtering
1.2.4	Without filtering
1.3.	Stability range
1.3.1	4 digit
1.3.2	1 digit
1.3.3	1 digit[1)]
1.3.4*	2 digits[1)]
1.3.5	4 digits[1)]
1.3.6	8 digits[1)]
1.4.	Stability symbol delay
1.4.1	No delay
1.4.2*	Short delay
1.4.3	Average delay
1.4.4	Long delay
1.5.	Taring[1)]
1.5.1	Without stability
1.5.2*	After stability
1.6.	Auto zero
1.6.1*	On
1.6.2	Off
1.7.	Weight Unit 1[2)]
1.7.1	Grams / o
1.7.2	Grams / g
1.7.3	Kilograms / kg
1.7.4	Carats / ct[1)]
1.7.5	Pounds / lb[1)]
1.7.6	Ounces / oz[1)]
1.7.7	Troy ounces / ozt[1)]
1.7.8	Hong Kong taels / tlh[1)]
1.7.9	Singapore taels / tls[1)]
1.7.10	Taiwanese taels / tlt[1)]
1.7.11	Grains /GN[1)]
1.7.12	Pennyweights / dwt[1)]
1.7.14	Parts per pound / lb[1)]
1.7.15	Chinese taels / tlc[1)]
1.7.16	Mommes / mom[1)]
1.7.17	Austrian carats / k[1)]
1.7.18	Tola / tol[1)]
1.7.19	Baht / bat[1)]
1.7.20	Mesghal / MS[1)]
1.7.21	Tons / t
1.7.22	Pounds: ounces (lb:oz)[1)]
1.8.	Display accuracy 1[1)]
1.8.1*	All digits
1.8.2	Reduced by 1 decimal place for load change
1.8.14	10-fold increased resolution
1.8.15	Resolution increased by 2 scale intervals (e.g., 5 g to 1 g)
1.8.16	Resolution increased by 1 scale interval (e.g., from 2 g to 1 g or from 10 g to 5 g)

1) Not available on instruments verified for use in legal metrology
2) Depends on weighing platform model

SETUP
WP- 1 1

1.9.	Calibration and adjustment
1.9.1*	External calibration/adjustment; default weight
1.9.3	External calibration/adjustment; weight can be selected under menu item 1.18.1
1.9.8.	Set preload
1.9.9.	Clear preload
1.9.10	No function when you press and hold →T← > 2 sec
1.10.	Calibration/adjustment sequence
1.10.1	Calibration with automatic adjustment
1.10.2*	Calibration with adjustment triggered manually
1.11.	Zero-setting range
1.11.1	1 percent/max. cap.
1.11.2*	2 percent/max.cap.
1.12.	Initial zero-setting range
1.12.2	2 percent/max. cap.
1.12.3	5 percent/max.cap. (setting depends on model)
1.12.4*	10 percent/max.cap.
1.13.	Tare/zero at power on
1.13.1*	On
1.13.2	Off, load previous tare value
1.13.3	Only zero at power on
1.16.	External calibration/adjustment[1)]
1.16.1*	Accessible
1.16.2[2)]	Blocked
1.17.	Calibration weight unit
1.17.1	Grams
1.17.3*	Tons
1.17.4	Pounds[1)]
1.18.	Enter calibration weight
1.18.1	External user-defined weight (enter value; e.g.: 10,000 kg)
3.1.	Weight unit 2[3)]
3.1.1	Grams / o
3.1.2	Grams / g
3.1.3*	Kilograms / kg
3.1.4	Carats /ct[1)]
3.1.5	Pounds /lb[1)]
3.1.6	Ounces /oz[1)]
3.1.7	Troy ounces / ozt[1)]
3.1.8	Hong Kong taels / tlh[1)]
3.1.9	Singapore taels / tls[1)]
3.1.10	Taiwanese taels / tlt[1)]
3.1.11	Grains / GN[1)]
3.1.12	Pennyweights / dwt[1)]
3.1.14	Parts per pound / lb[1)]
3.1.15	Chinese taels / tlc[1)]
3.1.16	Mommes / mom[1)]
3.1.17	Austrian carats /k[1)]
3.1.18	Tola / tol[1)]
3.1.19	Baht / bat[1)]
3.1.20	Mesghal / MS[1)]
3.1.21	Tons / t
3.1.22	Pounds:ounces (lb:oz)[1)]
3.2.	Display accuracy 2[1)]
3.2.1*	All digits
3.2.2	Reduced by 1 decimal place for load change
3.2.14	10-fold increased resolution
3.2.15	Resolution increased by 2 scale intervals (e.g., 5 g to 1 g)
3.2.16	Resolution increased by 1 scale interval (e.g., 2 g to 1 g or from 10 g to 5 g)
3.3.	Weight unit 3[3)] (settings as for 3.1, "Weight unit 2")
3.4.	Display accuracy[3)] (settings as for 3.2, "Display accuracy 2")
9.1.	Restore factory settings in WP1 numeric menu
9.1.1	Yes
9.1.2*	No

[1)] = Not available on instruments verified for use in legal metrology
[2)] = Factory setting on instrument verified for use in legal metrology
[3)] = Menu depends on weighing platform model



Interface port 1 (optional)
(Display designation of this menu level: 2)

Off

Data protocol

SBI: standard version

Baud rate
150 baud
300 baud
600 baud
1200 baud
2400 baud
4800 baud
9600 baud
19,200 baud

Parity
Space[2)]
Odd
Even
None[3)]

Number of stop bits
1 stop bit
2 stop bits

Handshake mode
Software handshake
Hardware handshake, 1 character after CTS

Number of data bits
7 data bits
8 data bits

Data output: manual/automatic
Manual without stability
Manual after stability
Automatic without stability
Automatic with stability
Protocol for computer (PC)

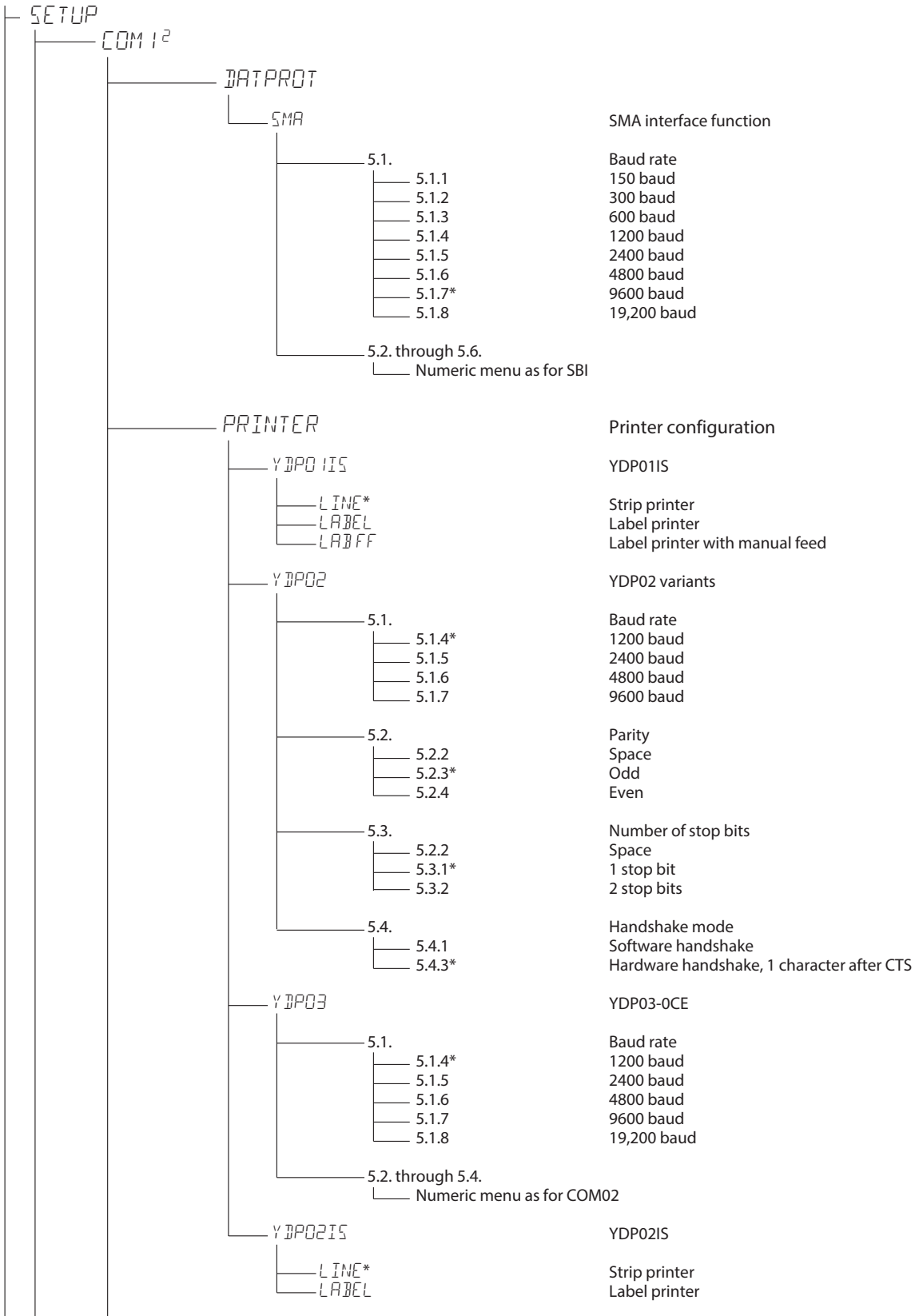
Time-dependent automatic data output
1 display update
2 display updates
10 display updates
100 display updates

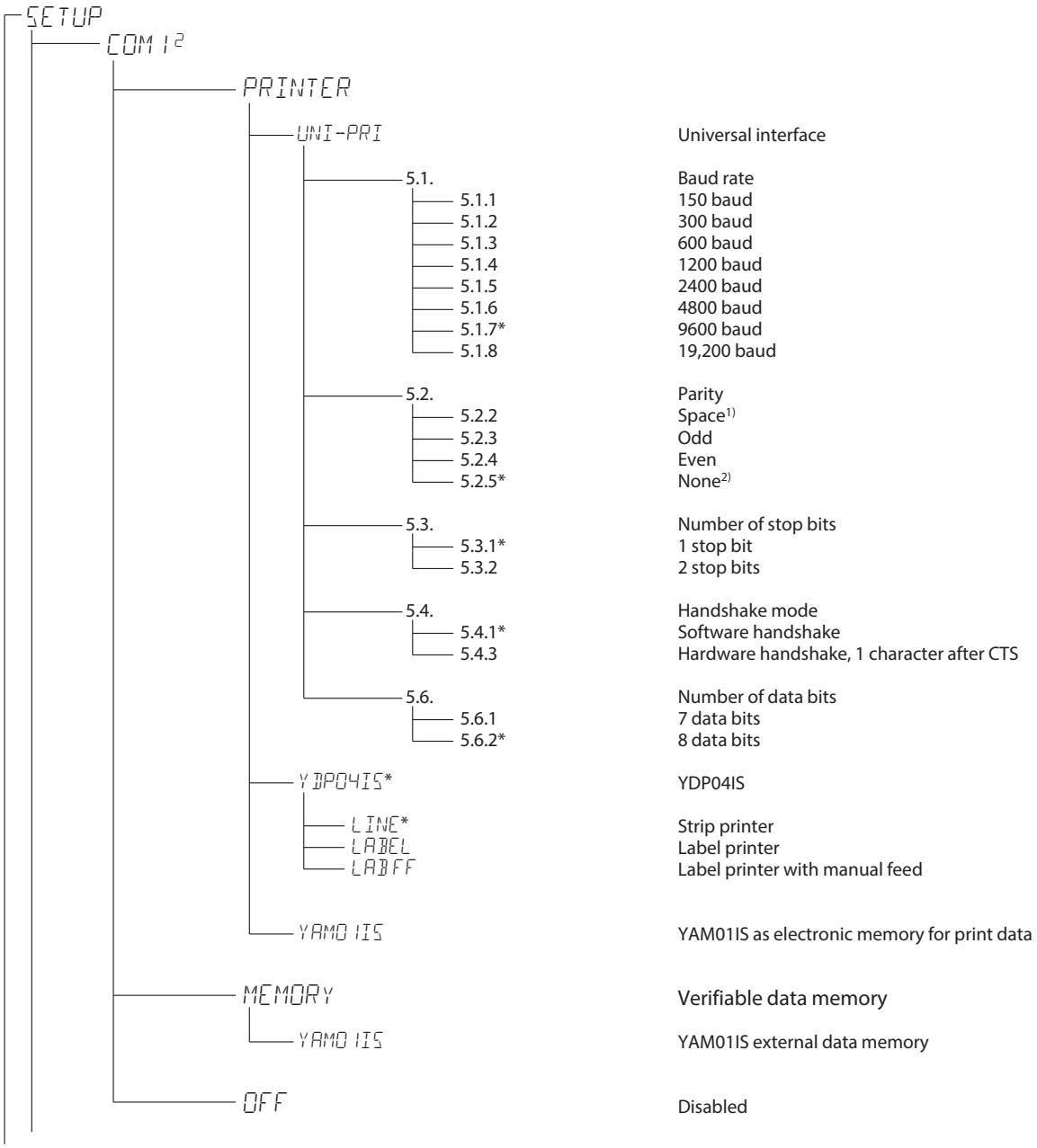
Data output: line format for printout
For raw data: 16 characters
For other applications: 22 characters

Restore factory settings in numeric menu COM1: SBI
Yes
No

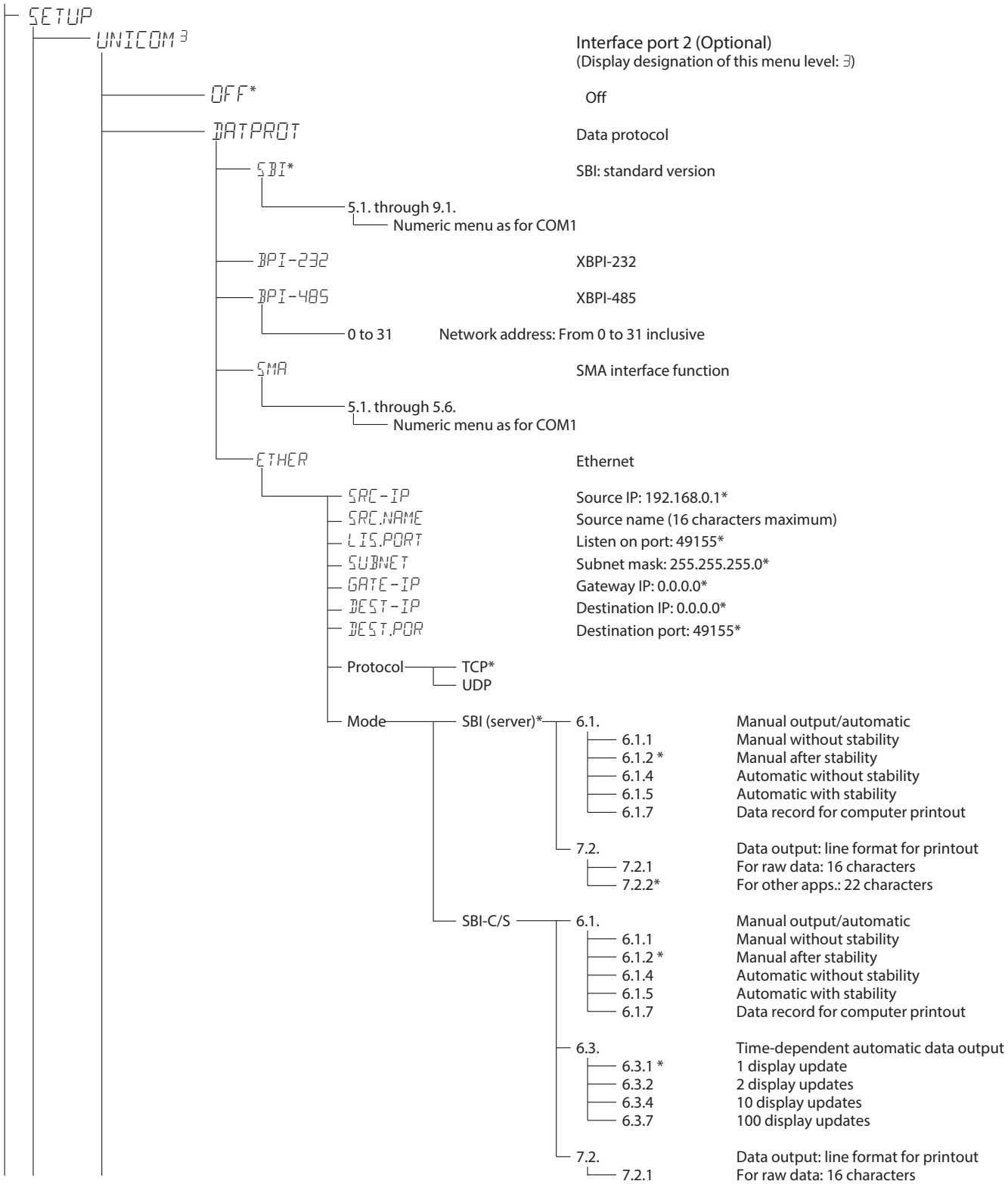
XBPI-232

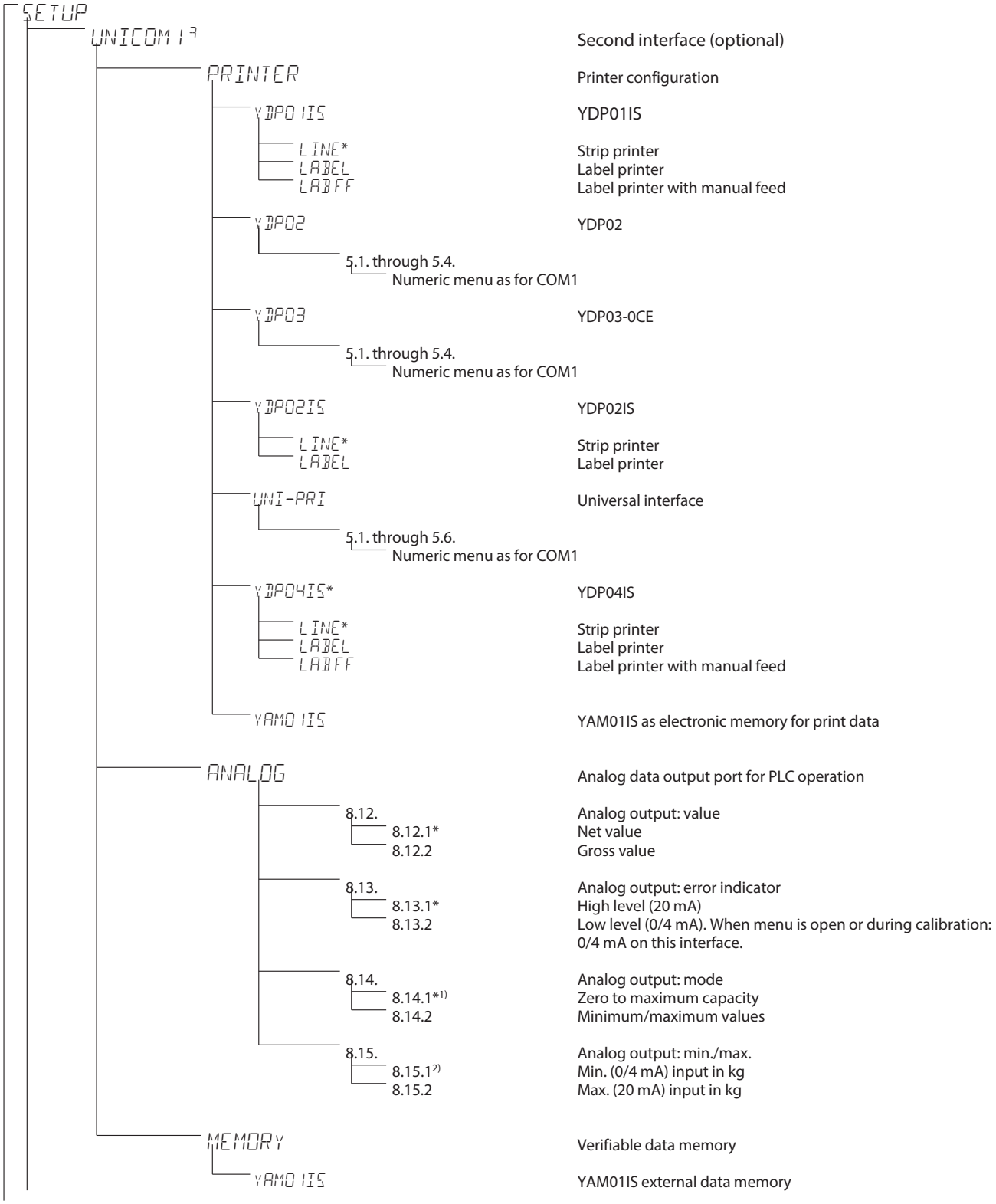
[1)] Menu depends on weighing platform model
[2)] not with setting 5.6.2 (8 bits)
[3)] not with setting 5.6.1 (7 bits)


SETUP
COM1²
DATPROT
SMA
SMA interface function
5.1.
Baud rate
5.1.1
150 baud
5.1.2
300 baud
5.1.3
600 baud
5.1.4
1200 baud
5.1.5
2400 baud
5.1.6
4800 baud
5.1.7*
9600 baud
5.1.8
19,200 baud
5.2. through 5.6.
Numeric menu as for SBI
PRINTER
Printer configuration
YDP01IS
YDP01IS
LINE*
Strip printer
LABEL
Label printer
LABFF
Label printer with manual feed
YDP02
YDP02 variants
5.1.
Baud rate
5.1.4*
1200 baud
5.1.5
2400 baud
5.1.6
4800 baud
5.1.7
9600 baud
5.2.
Parity
5.2.2
Space
5.2.3*
Odd
5.2.4
Even
5.3.
Number of stop bits
5.2.2
Space
5.3.1*
1 stop bit
5.3.2
2 stop bits
5.4.
Handshake mode
5.4.1
Software handshake
5.4.3*
Hardware handshake, 1 character after CTS
YDP03
YDP03-0CE
5.1.
Baud rate
5.1.4*
1200 baud
5.1.5
2400 baud
5.1.6
4800 baud
5.1.7
9600 baud
5.1.8
19,200 baud
5.2. through 5.4.
Numeric menu as for COM02
YDP02IS
YDP02IS
LINE*
Strip printer
LABEL
Label printer

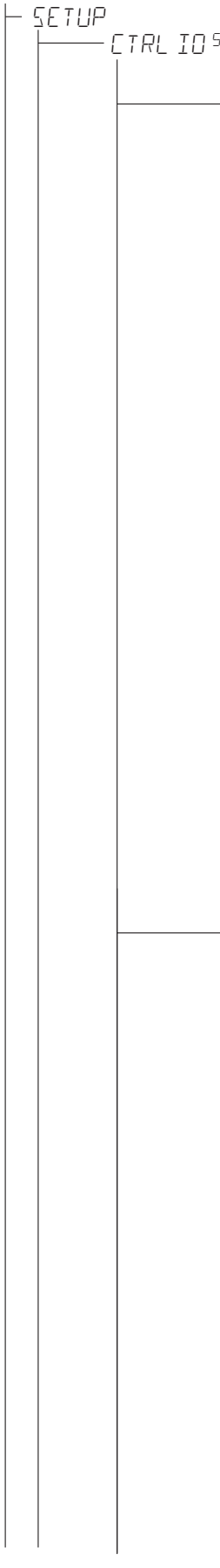


[1)] not with setting 5.6.2 (8 bit)
[2)] not with setting 5.6.1 (7 bits)


SETUP
UNICOM 3
Interface port 2 (Optional)
(Display designation of this menu level: 3)
OFF*
Off
DATPROT
Data protocol
SBI*
SBI: standard version
5.1. through 9.1.
Numeric menu as for COM1
XBPI-232
XBPI-232
XBPI-485
XBPI-485
0 to 31
Network address: From 0 to 31 inclusive
SMA
SMA interface function
5.1. through 5.6.
Numeric menu as for COM1
ETHER
Ethernet
SRC-IP
Source IP: 192.168.0.1*
SRC.NAME
Source name (16 characters maximum)
LIS.PORT
Listen on port: 49155*
SUBNET
Subnet mask: 255.255.255.0*
GATE-IP
Gateway IP: 0.0.0.0*
DEST-IP
Destination IP: 0.0.0.0*
DEST.POR
Destination port: 49155*
Protocol
TCP*
UDP
Mode
SBI (server)*
6.1.
Manual output/automatic
6.1.1
Manual without stability
6.1.2 *
Manual after stability
6.1.4
Automatic without stability
6.1.5
Automatic with stability
6.1.7
Data record for computer printout
7.2.
Data output: line format for printout
7.2.1
For raw data: 16 characters
7.2.2*
For other apps.: 22 characters
SBI-C/S
6.1.
Manual output/automatic
6.1.1
Manual without stability
6.1.2 *
Manual after stability
6.1.4
Automatic without stability
6.1.5
Automatic with stability
6.1.7
Data record for computer printout
6.3.
Time-dependent automatic data output
6.3.1 *
1 display update
6.3.2
2 display updates
6.3.4
10 display updates
6.3.7
100 display updates
7.2.
Data output: line format for printout
7.2.1
For raw data: 16 characters



[1] When setting 8.14.1 is active, analog data output only works for XBPI weighing instruments
[2] not with setting 8.14.1



Control inputs/outputs

(Display designation of this menu level: 5)

Control inputs

For YDO01M-232CO; Option A1
Function for external control inputs (TTL)

- 8.4.1* — Trigger [F] key function
- 8.4.2 — Trigger [F] key (> 2 sec) function
- 8.4.3 — Trigger [→T←] key function
- 8.4.4 — Trigger [→T←] key (> 2 sec) function
- 8.4.5 — Trigger [Fn] key function
- 8.4.7 — Trigger [OK] key function — Midrics 2 only
- 8.4.8 — Combined zero/tare function
- 8.4.9 — Trigger [→0←] key function
- 8.4.10 — Trigger [F] key function
- 8.4.11 — Trigger [CF] key function — Midrics 2 only
- 8.4.12 — Trigger [Info] key function — Midrics 2 only

For YDO01M-IO; Option A5

8.17. External input 1
- 8.17.1 — Trigger [F] key function
- <as under 8.4> — <as under 8.4>
- 8.17.12 — Trigger [Info] key function — Midrics 2 only

8.18. External input 2
- 8.26.1 — Trigger [F] key function
- <as under 8.4> — <as under 8.4>
- 8.18.12 — Trigger [Info] key function — Midrics 2 only

8.19. External input 3
- 8.27.1 — Trigger [F] key function
- <as under 8.4> — <as under 8.4>
- 8.19.12 — Trigger [Info] key function — Midrics 2 only

8.20. External input 4
- 8.28.1 — Trigger [F] key function
- <as under 8.4> — <as under 8.4>
- 8.20.12 — Trigger [Info] key function — Midrics 2 only

8.21. External input 5
- 8.21.1 — Trigger [F] key function
- <as under 8.4> — <as under 8.4>
- 8.21.12 — Trigger [Info] key function — Midrics 2 only

Control outputs

For YDO01M-IO; Option A5

8.24. External output 1
- 8.24.1* — Weighing instrument ready to operate
- 8.24.2 — Weighing instrument stable
- 8.24.3 — Weighing instrument overflow (“H")
- 8.24.4 — Weighing instrument underflow (“L")
- 8.24.5 — Value in tare memory
- 8.24.8 — Lighter — Midrics 2 only
- 8.24.9 — Equal — Midrics 2 only
- 8.24.10 — Heavier — Midrics 2 only
- 8.24.11 — Set

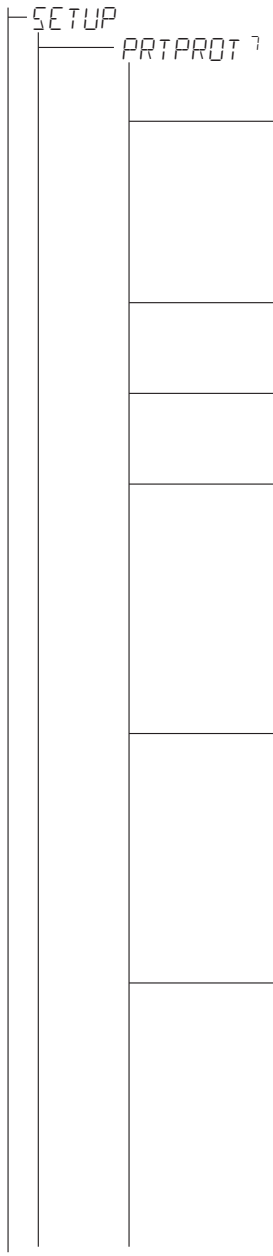
8.25. External output 2
- 8.25.1 — Weighing instrument ready to operate
- <as under 8.24> — <as under 8.24>
- 8.25.11 — Set

8.26. External output 3
- 8.26.1 — Weighing instrument ready to operate
- <as under 8.24> — <as under 8.24>
- 8.26.11 — Set

8.27. External output 4
- 8.27.1 — Weighing instrument ready to operate
- <as under 8.24> — <as under 8.24>
- 8.27.11 — Set

8.28. External output 5
- 8.28.1 — Weighing instrument ready to operate
- <as under 8.24> — <as under 8.24>
- 8.28.11 — Set

Configuration



Printouts
(Display designation of this menu level: ⁊)

7.4.	Header input
7.4.1 (blank)	Header line 1 (max. 20 characters); example: “MEYER'S"
7.4.2 (blank)	Header line 2 (max. 20 characters); example: “STEEL"
7.4.3 (ID 1)	ID code name for ID 1 (max. 40 characters)
7.4.4 (ID 2)	ID code name for ID 2 (max. 40 characters)
7.4.5 (ID 3)	ID code name for ID 3 (max. 40 characters)
7.4.6 (ID 4)	ID code name for ID 4 (max. 40 characters)
7.5.	COM1 interface
7.5.1*	1 printout
7.5.2	2 printouts
7.6.	Optional “UniCOM” interface
7.6.1*	1 printout
7.6.2	2 printouts
7.7.	COM1 interface:
	Configure standard printout (press [⊟], [OK])
7.7.1* [1)]	Header lines 1, 2 (input: see code 7.4.x)
7.7.2* [1)]	Date and time
7.7.3* [1)]	Initialization data for the application program
7.7.4* [1)]	Weighing instrument designation
7.7.5* [1)]	Result from the application program
7.7.6* [1)]	ID codes 1 to 4
7.7.7 [1)]	2 additional blank lines
7.7.8 [1)]	3 additional blank lines
7.8.	Optional “UniCOM” interface
	Configure standard printout (press [⊟], [OK])
7.8.1* [1)]	Header lines 1, 2 (input: see code 7.4.x)
7.8.2* [1)]	Date and time
7.8.3* [1)]	Initialization data for the application program
7.8.4* [1)]	Weighing instrument designation
7.8.5* [1)]	Result from the application program
7.8.6* [1)]	ID codes 1 to 4
7.8.7 [1)]	2 additional blank lines
7.8.8 [1)]	3 additional blank lines
7.9.	COM1 interface:
	Print results when [CF] pressed in
	Totalizing and Net-total applications
7.9.1* [1)]	Header lines 1, 2 (input: see code 7.4.x)
7.9.2* [1)]	Date and time
7.9.4* [1)]	Weighing instrument designation
7.9.5* [1)]	Result from the application program
7.9.6* [1)]	ID codes 1 to 4
7.9.7 [1)]	2 additional blank lines
7.9.8 [1)]	3 additional blank lines

[1)] More than one can be selected

SETUP

PRTPROT 7

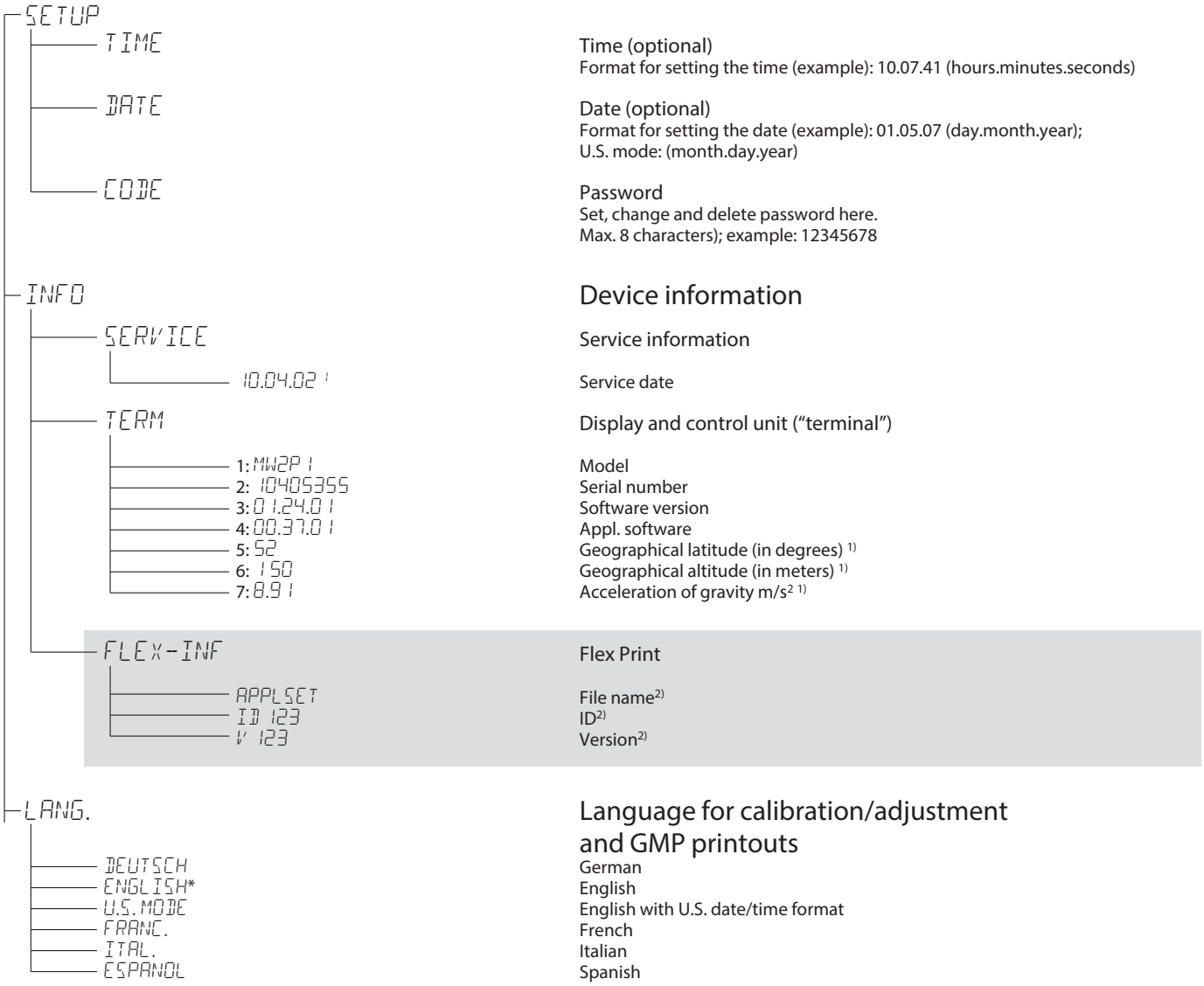
7.10.			Optional "UniCOM" interface Print results when CF pressed in Totalizing and Net-total applications
7.10.1* [1]			Header lines 1, 2 (input: see code 7.4.x)
7.10.2* [1]			Date and time
7.10.4* [1]			Weighing instrument designation
7.10.5* [1]			Result from the application program
7.10.6* [1]			ID codes 1 to 4
7.10.7 [1]			2 additional blank lines
7.10.8 [1]			3 additional blank lines
7.13.			GMP data record or printout
7.13.1*			Off
7.13.2			On for one result
7.13.3			On for multiple results
7.14.			Date/time printout line: Time not printed
7.14.1*			Off
7.14.2			On
7.15.			One-time automatic printout at stability
7.15.1*			Off
7.15.2			On
7.16.			FlexPrint
7.16.1*			Off
7.16.2			On
7.17.			Decimal separator
7.17.1*			Period
7.17.2			Comma
7.18.			Memory printouts
7.18.1			Printouts selection
7.18.1.1			All records
7.18.1.2			Specification of 7.18.2
7.18.2			Number of records (1–255, Default is 1)
9.1.			Restore factory settings of the numeric menu for data protocol
9.1.1			Yes
9.1.2*			No

UTILIT 8

Operation
(Display designation of this menu level: 8)

8.3.			Keys
8.3.1*			All available
8.3.2			All blocked
8.3.3	Keys 0, 1, 2, etc.	blocked	Midrics 2 only
8.3.5	→0← key	blocked	
8.3.6	→T← key	blocked	
8.3.7	Fn key	block	
8.3.9	key	block	
8.3.12	CF key	blocked	Midrics 2 only
8.3.13	REF key	blocked	Midrics 2 only
8.3.14	OK key	blocked	Midrics 2 only
8.3.15	key	blocked	Midrics 2 only
8.3.16	Info key	blocked	Midrics 2 only
8.3.18	ID key	blocked	Midrics 2 only
8.7.			Automatic shutoff of display and control unit
8.7.1			Automatic shutoff acc. to menu item 8.9.
8.7.2*			No automatic shutoff
8.8.			Display lighting
8.8.1*			On
8.8.2			Off
8.8.3			Automatic shutoff acc. to menu item 8.9.
8.9.			Timer mode
8.9.1*			After 1 + 1 minute not in use (after 1 min.: warning [2] is displayed for 1 minute)
8.9.2			After 2 + 2 minutes not in use (after 2 min.: warning [2] is displayed for 2 minutes)
8.9.3			After 5 + 5 minutes not in use (after 5 min.: warning [2] is displayed for 5 minutes)
8.12.			Show geographical data before calibration
8.12.1*			No
8.12.2			Yes
9.1.			Restore factory settings of the numeric operating menu
9.1.1			Yes
9.1.2*			No

[1] More than one can be selected [2] Warning: the ⚠ symbol and weighing platform numbers 1 and 2 flash simultaneously



Time (optional)
Format for setting the time (example): 10.07.41 (hours.minutes.seconds)

Date (optional)
Format for setting the date (example): 01.05.07 (day.month.year);
U.S. mode: (month.day.year)

Password
Set, change and delete password here.
Max. 8 characters); example: 12345678

Device information

Service information

Service date

Display and control unit (“terminal”)

Model
Serial number
Software version
Appl. software
Geographical latitude (in degrees) [1]
Geographical altitude (in meters) [1]
Acceleration of gravity m/s² [1]

Flex Print

File name[2]
ID[2]
Version[2]

Language for calibration/adjustment and GMP printouts

German
English
English with U.S. date/time format
French
Italian
Spanish

[1] Output: either latitude and altitude or acceleration of gravity (depends on the input before verification)
[2] These three parameters are shown for each file loaded

Basic Weighing Function

Weighing
The basic weighing function is always accessible and can be used alone or in combination with application programs, such as Counting, Checkweighing, Weighing in Percent, etc.

Features
- Zero the scale →0←
- Store the weight on the platform as tare by pressing →T←
- Midrics 2 only:
- Use the numeric keys to enter a tare weight (press →T← to save)
- Tare container weight automatically
- Delete tare values by entering 0 (press →T← to save)
- Press Fn to toggle the display between:
  - Gross and net values, or
  - Normal and 10-fold increased resolution (displayed for max. 5 seconds)
- Midrics 2 only:
- Individual ID codes for weight values
- Print weight values:
  - Manually, by pressing
  - Automatically (see “Data Output Functions")
  - With GMP-compliant format (see “Data Output Functions")
- Restore factory settings by selecting the corresponding menu setting

Automatic Taring
The first weight on the scale that exceeds the preset minimum load is stored in the tare memory at stability. The values for subsequent loads are stored as weight values. The scale returns to the initial state when the load is less than 50% of the minimum load.

Minimum Load
To tare container weights automatically, set the minimum load in the operating menu.

You can choose from 10 settings, defined in scale intervals (digits), ranging from:

1 digit (no minimum load)
to
1000 digits

The “digits" here refer to the scale intervals in the connected weighing platform. Example: If the scale interval (d) is 1000 g and the minimum load is set to 1000 digits (=1000 scale intervals), a load of at least 1000 g is required for autotaring.

Automatic Printing
The first weight value that exceeds the minimum load is printed.

Device Parameters

Keys
The keypad can be blocked.
There are four settings to choose from:
- All keys unblocked
- All keys blocked except I/⏻ and SETUP
- Numeric keypad blocked
- One specified key blocked (see the menu in the chapter entitled “Configuration" for options)

Display
You can have the display backlighting shut off automatically when not in use

Automatic Shutoff
You can have the display and control unit shut off automatically.

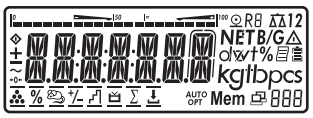
Timer Mode
There are three timer settings for the shutoff functions: two, four and ten minutes.

Settings
See the chapter entitled “Configuration."

Example with Midrics 2:
Switch on; zero; tare container weight; place sample in container;
toggle display to gross weight, second weight unit or 10-fold higher resolution; print results.

I/⏻

1. Switch on the scale

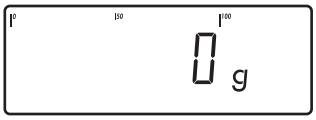


All display segments are shown for about 1 second (self-test)

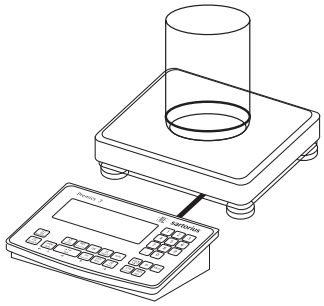
Display with no load on scale

→0←

2. Zero the scale



Display with no load on scale

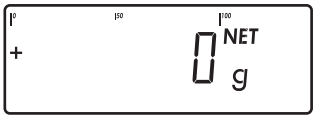


3. Place container on weighing platform

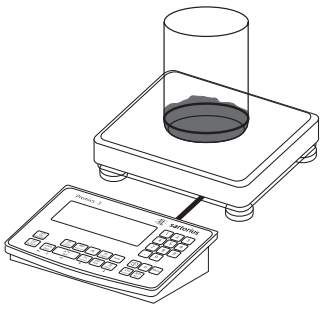
Container weight is displayed

→T←

4. Tare the scale



Display (NET) when tared with container



5. Place sample in container (in this example, 120.2 g)

Display with tared scale and sample in container

Fn

6. Toggle display; readout depends on your settings:

Gross weight (in this example, 50 g for container +120.2 g substrate)

or

display in 2nd weight unit (in this example, kg) or

Weight displayed in second weight unit (in this example, kg)

or

Weight displayed with 10-fold increased resolution

Fn

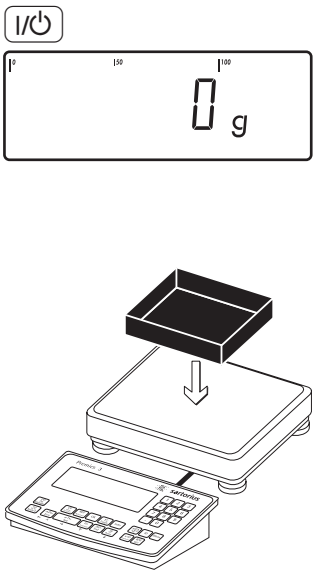
7. Return to previous display (if 10-fold increased resolution is shown, display returns to previousreadoutautomatically after 10 seconds.)

⎙

8. Print results

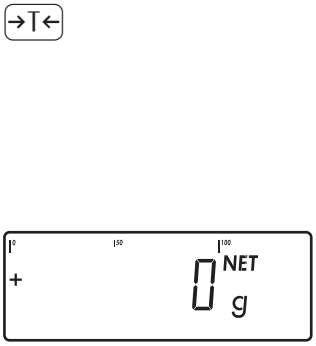
```
    ACE HARDWARE
     GOETTINGEN
24.02.2013     15:10
--------------------

G#     +    170.2 g
T      +     50.0 g
N      +    120.2 g
--------------------
```

Example with Midrics 2
Tare the scale by placing a container on the weighing platform



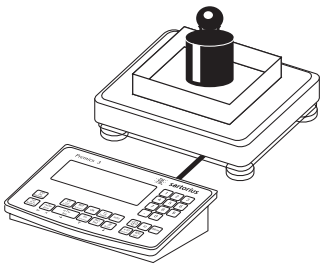
1. Switch on the scale
   The automatic self-test runs. Once a readout is shown, the Midrics is automatically zeroed and ready to operate. Press →0← to reset the unloaded weighing platform to zero at any time.

2. Place empty container on the platform

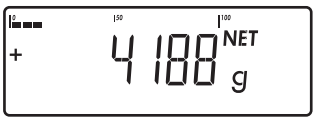


3. Tare the scale.
   Note: If the automatic tare function is active, you do not need to press →T← to tare the scale; the tare weight is stored automatically when you place the container on the platform.

   Wait until a zero value is displayed together with the NET symbol.

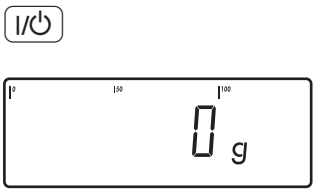


4. Place sample on the platform

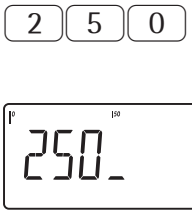


Wait until the weight unit symbol is displayed (indicating stability) and read the weight value

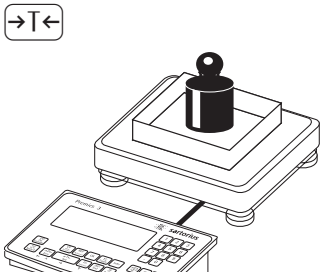
Example with Midrics 2:
Enter the tare value using the keypad; print the results



1. Switch on the scale
   The automatic self-test runs. Once a readout is shown, the Midrics is automatically zeroed and ready to operate. Press →0← to reset the unloaded weighing platform to zero at any time.

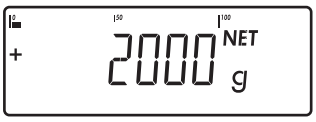


2. Enter the tare weight in the current weight unit using the keypad (in this example, 250 g).



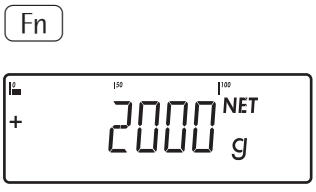
3. Save the tare weight.

4. Place the sample (in this example, 2000 g) in its container on the scale.



Read the result

5. Toggle the display from net to gross weight values.
   The display shows the gross weight (in this example, 250 g for the container plus 2000 g for the sample).



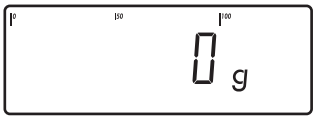
6. Return to the previous display.

7. Print the results.

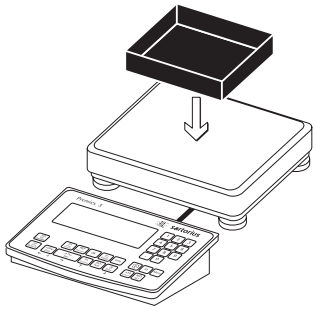
G# + 2.250 kg
T + 0.000 kg
PT2 + 0.250 kg
N + 2.000 kg

Example with Midrics 2:
Weigh with varying tare values; print the results; delete tare values

I/⏻



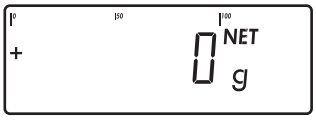
1. Switch on the scale
   The automatic self-test runs. Once a readout is shown, the Midrics is automatically zeroed and ready to operate.
   Press →0← to reset the unloaded weighing platform to zero at any time.



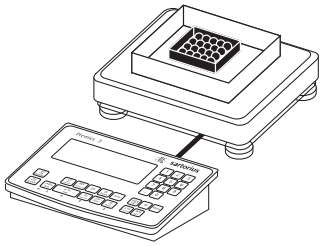
2. Place empty container on the platform

→T←

3. Tare the instrument
   Note: If the automatic tare function is active, you do not need to press →T← to tare the scale; the tare weight is stored automatically when you place the container on the platform.



   Wait until a zero value is displayed together with the NET symbol.



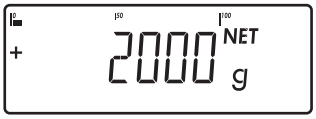
4. Place the sample in its packaging (second tare value) in the container.

2 5 0

5. Enter the tare weight of the packaging in the current weight unit using the keypad (in this example, 250 g).

→T←

6. Save the package weight you entered (the two tare values are added together).



Read the net weight

7. Print the results.

```
G#   +   6.433 kg
T    +   4.183 kg
PT2  +   0.250 kg
N    +   2.000 kg
--------------------
```

0

8. Clear the tare memory:
   Enter a zero (“0") using the keypad

→T←

9. Save the value entered (0). This deletes tare values; the display shows the gross value.

10. Print the results.

```
G#   +   6.433 kg
T    +   0.000 kg
N    +   6.433 kg
--------------------
```

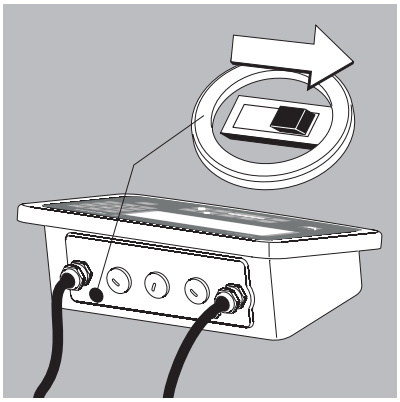
Calibration and Adjustment

Purpose
Perform calibration to determine the difference between the value displayed and the actual weight on the platform. Calibration does not entail making any changes within the weighing instrument.

Perform adjustment to eliminate any difference determined, or to reduce it to a level that is within the applicable tolerance limits.

Configuration for Use in Legal Metrology
To configure the Midrics for use in legal metrology, adjust the switch on the back of the display and control unit (A/D converter configuration: VERIF. selected for legal-for-trade applications). The switch is covered by a protective cap.

Position:
- Switch on the right: For use in legal metrology
- Switch on the left: External calibration/adjustment accessible



Features
You can configure the parameters listed below in the operating menu. Which of the features listed here are available depends on the connected weighing platform.

– External calibration/adjustment blocked in verified weighing instruments

– External calibration/adjustment with the default weight value or standard weight (not available on verified instruments). Configure under:
SETUP
WP- 1
1.9.: (Calibration and adjustment)

[1]) = Setting cannot be changed on scales verified for use in legal metrology
[2]) = Factory setting on instruments verified for use in legal metrology

– Specify the weight for external calibration/adjustment:
SETUP
WP- 1
1.10.: (Enter calibration weight)

– Block the →T← key to prevent use of the two functions described above (1.9.10):
SETUP
WP- 1
1.9.: (Calibration and adjustment)

– Calibrate first; then adjust automatically or manually (not on verified weighing instruments):
SETUP
WP- 1
1.10.: (Calibration/adjustment sequence)

– Block external calibration/adjustment:
SETUP
WP- 1
1.16.: (External calibration)

Note
On verified weighing instruments, the external calibration/adjustment function is available only when the menu access switch is in the “open" position, which entails breaking the verification seal. The equipment must be re-verified after the seal has been broken.

Setting or clearing the Preload

The preload can be set only when the menu access switch is open (see diagram).

- The “set preload" function must be assigned to the →T← key (menu item 1.9.8).
- After setting the preload, close the menu access switch and reset the →T← key to its previous function (e.g., external calibration/adjustment with user-defined weights) under menu item 1.9.

The preload can be cleared only when the menu access switch is open.
- The “clear preload" function must be assigned to the →T← key (menu item 1.9.9).
- After clearing the preload, close the menu access switch and reset the →T← key to its previous function (e.g., external calibration/adjustment with user-defined weights) under menu item 1.9.

Preparation

- Switch on the scale: Press I/⏻
- While all segments are lit, press the →T← key
- Select the Setup menu: Press Fn repeatedly until SETUP is displayed
- Open the Setup menu: Press the →T← key
- ○ Select weighing platform 1, “WP 1": Press the →T← key, or
- ○ Select interface 1, “COM 1" or interface 2, “COM2" (depending on the interface used): Press the →T← key

SETUP
WP- 1 1

1.9.		Calibration and adjustment
	1.9.1*	Ext.calibration/adjustment; default weight
	1.9.3	Ext.calibration/adjustment; user-defined weight (menu code 1.18.1)
	1.9.8.	Set preload
	1.9.9.	Clear preload
	1.9.10	No function when you press and hold →T← > 2 sec
1.10.		Calibration/adjustment sequence
	1.10.1	Calibration with automatic adjustment
	1.10.2*	Calibration with adjustment triggered manually
1.11.		Zero-setting range
	1.11.1	1 percent/max. cap.
	1.11.2*	2 percent/max. cap.
1.12.		Initial zero-setting range
	1.12.2	2 percent/max. cap.
	1.12.3	5 percent/max. load
	1.12.4*	10 percent/max. load
1.13.		Tare/zero at power on
	1.13.1*	On
	1.13.2	Off; load previous tare value
	1.13.3	Only zero at power on
1.16.		External calibration/ adjustment[1])
	1.16.1*	Accessible
	1.16.2[2])	Blocked
1.17.		
	1.17.1	Grams
	1.17.2*	Kilograms
	1.17.4	Pounds [1])
1.18.		Enter calibration weight
	1.18.1	External user-defined weight; (enter value; e.g.: 10,000 g)

- Save settings and exit operating menu: →0← key (repeatedly)

Example:
External calibration and manual adjustment with default weights
(weighing parameters: factory settings)

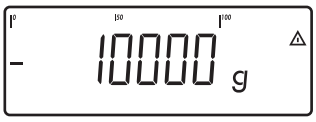
→0←

1. Zero the scale.

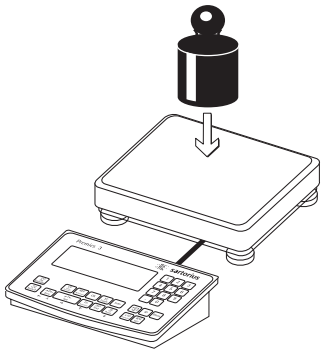
ISO-Test

2. Start calibration
(e.g., after calibration prompt: flashing WP symbol).

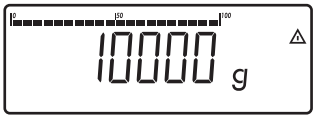
C.EXT.DEF is shown for two seconds.

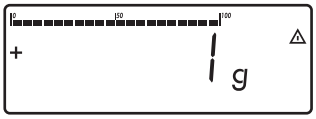


You are prompted to place the required weight on the platform (e.g., 10,000 kg)



3. Position the calibration weight on the weighing platform





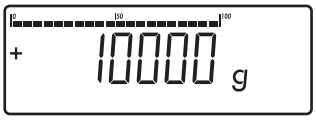
The difference between measured value and the true mass is shown with a plus or minus sign.

Ext. calibration
Nom. + 10000 g
Diff. + 1 g

Printout is generated, if adjustment was not performed and the procedure was cancelled by pressing →0←.

→T←

4. Start adjustment
(or cancel calibration/adjustment by pressing →0←).



After adjustment, the calibration weight value is displayed.

24.10.2012 10:15
Typ MW1P1
Ser.no. 12345678
Vers. 1.0103.11.2
BVers. 01-26-06

Ext. calibration
Nom. + 10000 g
Diff. + 1 g
Ext. adjustment
Diff. + 0 g

24.10.2012w 10:15
Name:

A GMP-compliant printout is generated.

Data ID Codes

Midrics 2 only:
You can assign codes (such as product name, batch number, etc.) for identification of measured values on printouts.

Features
- Assign up to four ID codes.
- Assign both a name and a value for each ID code.
- The name is left-justified and the value is right-justified on the printout. If the entire code is too long for one line, additional lines are printed.
- Enter ID code names in the operating menu under:
  SETUP1
  PRTPROT: 7.4.
  Enter up to 20 characters for the ID code name. No more than 11 characters are displayed during input; all 20 characters are printed.
- Enter up to 40 characters for the value of the ID code. Press the ID key to activate the input mode.
- You can delete characters from the ID code by pressing the CF key.
- If both the name and value fields are empty, no ID code is printed.
- In the operating menu, you can configure when and whether ID codes are printed (see "Configuring Printouts" on page 82).

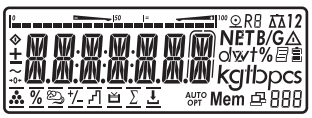
Factory Settings for the ID Code Names:

ID1: ID1
ID2: ID2
ID3: ID3
ID4: ID4

Factory Settings for the ID Code Values:
No default values set.

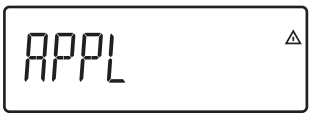
Example with Midrics 2:
Enter ID code names.
Enter "Batch no." and "Cust." as names for ID codes 1 and 2.

I/⏻



1. Switch on the scale

→T←



2. While all segments are lit, press the →T← key

   The first item in the main menu is shown: APPL

Fn

3. Select the SETUP menu to access scale configuration functions
   (press Fn repeatedly until SETUP is displayed)

→T←

4. Open the Setup menu

5. Select the PRTPROT menu item to access ID code settings
   (press Fn repeatedly until PRTPROT is displayed)

→T←

6. Select the menu item for header and ID code settings

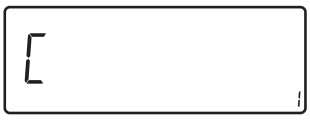
→T←

7. Press Fn repeatedly until 7.4. 1 is displayed.

→T←

8. Press →T← to activate alphanumeric input.

(F), (F), (F)



9. Enter the first character using the (F) and Fn keys (in this example, the first character is "C")

→T←

10. Save the character

11. Proceed as described above to enter subsequent characters.

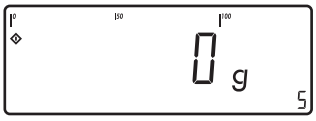
    After entering the last character, press →T← to save the code.

→0←

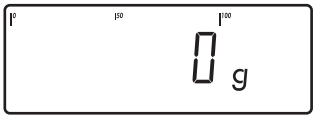
12. Exit the active submenu to configure other menu settings, or

→T←

13. Press and hold →T← to exit the operating menu



Example with Midrics 2:
Enter ID code values.
Enter "123" as the value for ID code 2.



ID

1. Activate ID input.

1 2 3

2. Enter the desired value for ID code 2 (in this example: 123).

OK

3. Press OK to conclude input.

4. Place sample on the platform

(F)

5. Print the weight value

ID2 123
24.02.2006 10:09

Ser.no 12345678
G# + 1083 g
T + 0000 g
N + 1083 g

ID code 2

6. Deleting ID codes:
   ID codes are deleted one at a time; for example, when the weighing operations have been completed

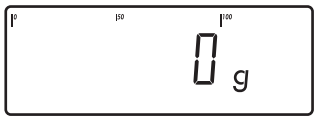
ID, CF

Delete ID code 1

ID, ID, CF

Delete ID code 2

Example with Midrics 2:
Enter a value for ID code 1 directly.

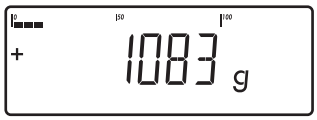


1 2 3

1. Enter the desired value for ID code 1 (in this example: 123).

ID

2. Store the value as ID 1



3. Place sample on the platform

(F)

4. Print the weight value

ID1 123
24.02.2006 10:09

Ser.no 12345678
G# + 1083 g
T + 0000 g
N + 1083 g

ID 1

5. Delete the ID code:
   see Item 6 in the previous example

Application Programs

Applications: Overview

	Midrics 1	Midrics 2
Keypad	5 keys	11 keys + numeric keypad
Display	14-segment	14-segment plus application symbols
Applications		
Basic weighing	X	X
Averaging (animal weighing)		X
Print/send data record to peripheral device	X	X
Label printing		X
Counting		X
Totalizing		X
Checkweighing		X
Batching to a target value		X
Functions		
Zero-setting	X	X
Taring	X	X
Date and time	Optional	Optional
ID codes (4 codes, 40 char. each)		X

Application: Counting ⁂

With the Counting program you can determine the number of parts that each have approximately equal weight.

Features

– Enter the reference piece weight "wREF" via the keypad

– Save the reference weight "wREF" from the weighing platform

– Enter the reference sample quantity "nREF" via the keypad

– Automatic reference sample updating

– Activate info-mode by pressing [Info]

– Toggle the display between quantity and weight by pressing [⇆]

– Define the resolution (level of accuracy) applied when a calculated reference sample weight is stored

– Automatic taring of container weight. Configuration: APPL ⁂: 3.7. (autotare first weight)

– Automatic initialization when the Midrics is switched on. The display and control unit is initialized with the most recently used values for reference sample quantity "nREF" and reference sample weight "wREF". Configuration: APPL ⁂: 3.8. (start app. with last values)

– Closing application program; deleting parameters: The value for reference sample weight remains active in the reference memory until you delete it by pressing the [CF] key, overwrite it or until you select a different application. It also remains saved after the scale has been switched off.

– Restore factory settings. Configuration: APPL ⁂: 9.1.

Before the quantity on the platform can be calculated, the reference sample (average weight of one piece) must be entered in the application. This is known as "initializing" the application. There are three ways to enter this value:

– Calculation:
  – Place the number of parts defined as the reference sample quantity on the weighing platform and press [OK] to calculate the reference sample weight
  – Alternatively, you can place any number of parts on the weighing platform, enter the number of parts using the keypad, and then press the [REF] key to calculate the average piece weight
    How the reference weight is calculated depends on the application setting for resolution ("Resolution for calculation of reference value"). The value is either rounded off in accordance with the display resolution, or saved with 10-fold or 100-fold increased resolution or with the maximum internal resolution of the weighing platform.

– Keypad input: Enter a reference sample weight (i.e., the weight of one piece) using the keypad and press [OK] to save it.

After initialization, you can use the weighing platform to count parts. The initial application values are valid until deleted by pressing the [CF] key, or until overwritten by new values. They also remain saved after you switch off the scale.

– Tare function:

1) If you store a tare (weight value) by pressing the [→T←] key, you can later enter a tare value manually. The tare value you enter is added to the stored tare value.
   Setting: menu code 3.25.1
   (factory default)
2) A tare value entered manually overwrites a stored tare value (weight value). If you enter a tare value manually, a tare value (weight value) stored later overwrites the manually entered value.
   Setting: menu code 3.25.2
   Operating menu setting:
   APPL ⁂: 3.25.

Preparation

- Switch on the scale: Press [I/⏻]
- While all segments are lit, press the [→T←] key
- Select the Application menu: Press [Fn] repeatedly until APPL is displayed
- Open the Application menu: Press the [→T←] key
- Select the Counting application: Press the [Fn] key repeatedly until the desired menu item is displayed and press [→T←] to open the submenu

Application Parameters: Counting

- 3.5. Minimum load for automatic taring and automatic printing
  - 3.5.1* 1 digit
  - 3.5.2 2 digits
  - 3.5.3 5 digits
  - 3.5.4 10 digits
  - 3.5.5 20 digits
  - 3.5.6 50 digits
  - 3.5.7 100 digits
  - 3.5.8 200 digits
  - 3.5.9 500 digits
  - 3.5.10 1000 digits
- 3.6. Minimum load for initialization
  - 3.6.1* 1 digit
  - 3.6.2 2 digits
  - 3.6.3 5 digits
  - 3.6.4 10 digits
  - 3.6.5 20 digits
  - 3.6.6 50 digits
  - 3.6.7 100 digits
  - 3.6.8 200 digits
  - 3.6.9 500 digits
  - 3.6.10 1000 digits
- 3.7. Automatic taring: first weight tared
  - 3.7.1* Off
  - 3.7.2 On
- 3.8. Start application and load most recent application data when the Midrics is switched on
  - 3.8.1 Automatic (on)
  - 3.8.2* Manual (off)
- 3.9. Resolution for calculation of reference value
  - 3.9.1* Display resolution
  - 3.9.2 Display resolution +1 decimal place
  - 3.9.3 Display resolution +2 decimal places
  - 3.9.4 Internal resolution
- 3.11 Parameter for saving weight values
  - 3.11.1* At stability
  - 3.11.2 At increased stability
- 3.12. Average piece weight updating
  - 3.12.1 Off
  - 3.12.3* Automatic
- 3.25. Tare function
  - 3.25.1* Add input value (weight value) for taring
  - 3.25.2 Tare value can be overwritten

* = Factory setting

- Press [→T←] to save your settings and [→0←] (repeatedly) to exit the operating menu

Minimum Load
To tare container weights automatically, set the minimum load in the operating menu.

The minimum load required for initialization of the weighing platform is configured in the operating menu under:
APPL ⁂: 3.6.

- The error code INF 29 is displayed
- The weighing platform is not initialized
- The preset reference sample quantity is saved

You can choose from 10 settings, ranging from

1 digit
to
1000 digits

Example: If the scale interval (d) is 1000 g and the minimum load is set to 1000 digits (=1000 scale intervals), a load of at least 1000 g is required for autotaring.

Resolution for Calculation of Reference Value
The resolution applied for calculating the reference weight is defined in the operating menu under:
APPL ⁂: 3.9.
The resolution for calculating the reference sample weight is increased if "+1 decimal place", "+2 decimal places" or "With internal resolution" is selected. With the "+1 decimal place" setting, the net value is determined to one additional decimal place (i.e., display accuracy × 10); the "+2 decimal places" increases display accuracy × 100, and so on up to the maximum resolution available.

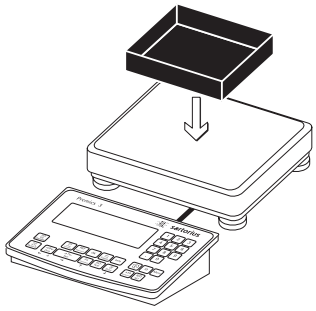
Parameter for Saving Weight Values
The weight on the platform is saved as a reference when the platform has stabilized. If you select "At increased stability," the average piece weight stored will be more accurate and the results more reproducible, but the response time of the weighing instrument might be longer.

Reference Sample Updating
The average piece weight (APW) is updated automatically only when the following 4 criteria are met:

1. The current piece count exceeds the original piece count by at least two.
2. The current piece count is no more than double the original piece count.
3. The new piece count is less than 1000.
4. The scale is stable in accordance with the defined stability parameter.

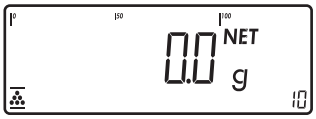
AUTO! Indicates that APW update is active.
OPT! Indicates that the reference sample is currently being updated.
During an updating operation, OPT and the updated piece count are displayed briefly in the measured value line.

Example:
Determining the number of uncounted parts.
Settings (changes in the factory settings required for this example):
Setup: Application: Counting
Setup: PRTPROT (printout): 7.7.x (COM1) (see “Configuration” for options)

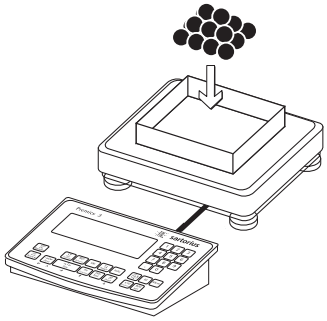


1. Place empty container on the platform

→T←

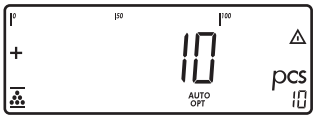


2. Tare the scale
   Note: If the automatic tare function is enabled, you do not need to press the →T← key to tare the scale; the tare weight is saved automatically when you place the container on the platform



3. Place a number of parts in the container for the reference quantity (in this example, 10 pcs)

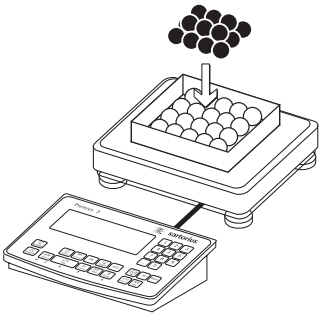
OK



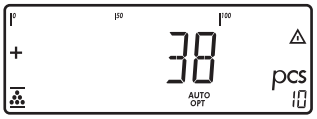
4. Activate calculation of the reference sample weight

   If the weight is too light, INF29 appears on the main display.

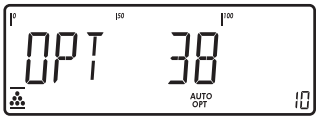
Set the minimum load to a lower number of digits or increase the reference sample quantity and the number of parts in the container.



5. Add more parts to the container



Read the result



OPT is displayed if automatic reference sample updating is enabled

6. Print the results

nRef + 38 pcs
wRef + 0.003280 kg

G# + 0.373 kg
T + 0.248 kg
N + 0.125 kg

Qnt 38 pcs

Configured printout:
see page 82

Application: Neutral Measurement ⁂ NM

With this application you can use your weighing platform to measure the length, surface and volume of parts that have roughly the same specific weight. The ☼ symbol is displayed as the weight unit.

Features
Enter the reference weight "WREF" via the keypad

– Save the reference weight "WREF" from the weighing platform

– Enter the factor for calculation "NREF" via the keypad

– Activate info-mode by pressing [Info] (> sec)

– Toggle the display between measurement and weight by pressing [⇆]

– Define the level of accuracy (display resolution) applied when a calculated reference weight is saved

– Automatic taring of container weight. Configuration:
APPL ⁂ nn: 3.7.
(autotare first weight)

– Automatic initialization when the Midrics is switched on. The scale is initialized with the most recently used calculation factor "nRef" and reference weight "wRef".
Configuration:
APPL ⁂ nn: 3.8.
(start app. with last values)

– Closing application program; deleting parameters:
The value for reference sample weight remains active in the reference memory until you delete it by pressing the [CF] key, overwrite it or until you select a different application. This value also remains saved after the scale has been switched off.

– Restore factory settings. Configuration:
APPL ⁂ nn: 9.1.

In order to calculate the length, surface or volume of a given sample, the average weight of a reference quantity of the sample must be known (in the example below, the reference is 1 meter of electrical cable).
There are three ways to enter the reference weight in the program:

– Calculation:
  – Place the reference quantity (defined by the calculation factor) on the connected weighing platform and calculate the reference sample weight by pressing the [OK] key.
  – Place any amount of the sample material on the connected weighing platform, enter the calculation factor through the keypad, and press the [OK] key to calculate the reference sample weight.

How the reference weight is calculated depends on the application setting for resolution ("Resolution for calculation of reference value"). The value is either rounded off in accordance with the display resolution, or saved with 10-fold or 100-fold increased resolution or with the maximum internal resolution of the weighing platform.

– Keypad input: Enter the reference weight (i.e., the weight of one meter of electrical cable) using the keypad and press [OK] to save it.

The initial application values are valid until deleted by pressing the [CF] key, or until overwritten by new values. They also remain saved after you switch off the scale.

Preparation

- Switch on the scale: Press [I/⏻].
- While all segments are lit, press the [→T←] key
- Select the Application menu: Press [Fn] repeatedly until APPL is displayed
- Open the Application menu: Press the [→T←] key
- Select the Neutral Measurement application: Press the [Fn] key repeatedly until the desired menu item is displayed and press [→T←] to open the submenu

– Tare function:
1) If you store a tare (weight value) by pressing the [→T←] key, you can later enter a tare value manually. The tare value you enter is added to the stored tare value.
Setting: menu code 3.25.1
(factory default)
2) A tare value entered manually overwrites a stored tare value (weight value). If you enter a tare value manually, a tare value (weight value) stored later overwrites the manually entered value.
Setting: menu code 3.25.2
Operating menu setting:
APPL ⁂ nn: 3.25

ApplicationParameters:NeutralMeasurement

- 3.5. Minimum load for automatic taring and automatic printing
  - 3.5.1* 1 digit
  - 3.5.2 2 digits
  - 3.5.3 5 digits
  - 3.5.4 10 digits
  - 3.5.5 20 digits
  - 3.5.6 50 digits
  - 3.5.7 100 digits
  - 3.5.8 200 digits
  - 3.5.9 500 digits
  - 3.5.10 1000 digits
- 3. 6. Minimum load for initialization
  - 3.6.1* 1 digit
  - 3.6.2 2 digits
  - 3.6.3 5 digits
  - 3.6.4 10 digits
  - 3.6.5 20 digits
  - 3.6.6 50 digits
  - 3.6.7 100 digits
  - 3.6.8 200 digits
  - 3.6.9 500 digits
  - 3.6.10 1000 digits
- 3.7. Automatic taring: first weight tared
  - 3.7.1* Off
  - 3.7.2 On
- 3.8. Start application and load most recent application data when the Midrics is switched on
  - 3.8.1 Automatic (on)
  - 3.8.2* Manual (off)
- 3.9. Resolution for calculation of reference value
  - 3.9.1* Display resolution
  - 3.9.2 Display resolution +1 decimal place
  - 3.9.3 Display resolution + 2 decimal places
  - 3.9.4 Internal resolution
- 3.10. Decimal places in displayed result
  - 3.10.1* None
  - 3.10.2 1 decimal place
  - 3.10.3 2 decimal places
  - 3.10.4 3 decimal places
- 3.11. Parameter for saving weight values
  - 3.11.1* At stability
  - 3.11.2 At increased stability
- 3.25. Tare function
  - 3.25.1* Add input value (weight value) for taring
  - 3.25.2 Tare value can be overwritten

* = Factory setting

- Press [→T←] to save your settings and [→0←] (repeatedly) to exit the operating menu.

Minimum Load
The minimum load required for initialization of the weighing platform is configured in the operating menu under:
APPL ⁂ mn: 3.6.
Once the limit is exceeded by the load, initialization can begin. If the load is too light, the following will occur when you try to save a value:

- The error code INF 29 is displayed
- The weighing platform is not initialized
- The preset calculation factor is saved

The minimum load required for automatic taring of the container weight on the platform ("autotare first weight") is configured in the operating menu under:
APPL ⁂ mn: 3.5.

You can choose from 10 settings, ranging from

1 digit
to
1000 digits

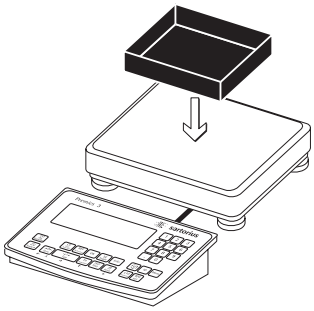
Example: If the scale interval (d) is 1000 g and the minimum load is set to 1000 digits (=1000 scale intervals), a load of at least 1000 g is required for autotaring.

Resolution for Calculation of Reference Value
The resolution applied for calculating the reference value is defined in the operating menu under:
APPL ⁂ mn: 3.9.
The resolution for calculating the reference sample is increased if "+1 decimal place", "+2 decimal places" or "With internal resolution" is selected. With the "+1 decimal place" setting, the net value is determined to one additional decimal place (i.e., display accuracy ×10); "+2 decimal places" increases display accuracy ×100, and so on up to the maximum resolution available.

Parameter for Saving Weight Values
The reference weight is saved when the platform has stabilized. "Stability" is defined as the point at which fluctuation of a measured value lies within a defined tolerance range. The narrower the tolerance range, the more stable the platform is at stability. In the operating menu, under:
APPL ⁂ mn: 3.11.
you can define whether the value is saved when "standard stability" is reached, or only at "increased stability" (narrower tolerance range). If you select "At increased stability," the reference weight saved will be more accurate and the results more reproducible, but the response time of the weighing instrument might be longer.

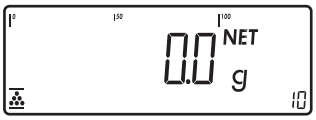
Decimal Places for Display of Results
In neutral measurement, not only whole numbers but also decimal numbers (for example, 1.25 ○ electrical cabling) can be displayed.
The number of decimal places displayed in neutral measurement is configured in the operating menu under:
APPL ⁂ mn: 3.10.

Example:
Measuring 25 m electrical cable.
Settings (changes in the factory settings required for this example):
Setup: Application: Neutral Measurement
Setup: PRTPROT (printout): 7.7.x (COM1) (see “Configuration” for options)



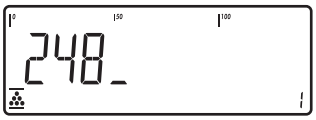
1. Place empty container on the platform

[→T←]



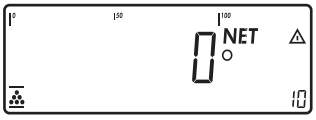
2. Tare the scale
   Note: If the automatic tare function is enabled, you do not need to press the [→T←] key to tare the scale; the tare weight is saved automatically when you place the container on the platform

[2] [4] [8]

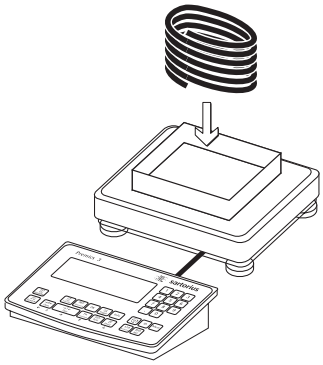


3. Enter the weight of 1 meter of cable using the keypad (in this example, 248 g)

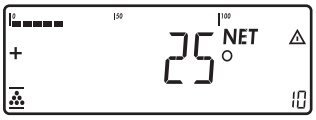
[OK]



4. Save value entered as reference weight.



5. Place the desired amount of cable in the container



Read the result

[⎙]

6. Print the result

nRef + 1 o
wRef + 0.248 kg

G# + 6.794 kg
T + 0.541 kg
N + 6.253 kg

Qnt 25 o

Configured printout:
see page 82

Application: Averaging (Animal Weighing)

With the Averaging application, you can use your weighing platform for calculating weights as the average of a number of individual weighing operations. This function is used to determine weights under unstable ambient conditions or for weighing unstable samples (such as live animals).

Features

– Averaging starts manually or automatically. Configuration:
APPL: 3.18.
With manual start selected, the averaging routine begins when you press a key (provided the start conditions are met. With automatic start selected, averaging begins when you place the first load on the platform (provided the start conditions are met).

– Enter the number of subweighing operations using the keypad

– Press the REF key to select the desired number of subweighing operations

– Activate info mode by pressing Info

– Toggle the display between last result and current weight by pressing ⇆

– Automatic printout of results. Configuration:
APPL: 3.20.

– Automatic taring of container weight. Configuration:
APPL: 3.7.

– Automatic start of averaging when the Midrics is turned on and a sample placed on the platform (provided start conditions are met). Configuration:
APPL: 3.8.

– Closing application program; deleting parameters:
The number of measurements remains active in the memory until you delete it by pressing the CF key, overwrite it or until you select a different application.

– Restore factory settings. Configuration:
APPL: 9.1.

A number of measurements are required, as this forms the basis for calculation of an average weight. You can enter the desired number of measurements, also referred to as subweighing operations, using the keypad.

The number you enter is saved until it is overwritten by another number. It also remains in memory when you switch to a different application program, or switch off the scale.

There are three ways to start the averaging routine:

– Manual start with preset number of measurements:
Place the sample on the platform and press the OK key

– Manual start with user-defined number of measurements:
Place the sample on the platform and enter the number of weighing operations using the keypad.
Press the REF key to save the number entered and begin weighing

– Automatic start with preset number of measurements:
Measurement begins when you place the first sample on the platform, provided the start conditions are met.

– Tare function:

1) If you store a tare (weight value) by pressing the →T← key, you can later enter a tare value manually. The tare value you enter is added to the stored tare value.
Setting: menu code 3.25.1
(factory default)
2) A tare value entered manually overwrites a stored tare value (weight value). If you enter a tare value manually, a tare value (weight value) stored later overwrites the manually entered value.
Setting: menu code 3.25.2
Operating menu setting:
APPL: 3.25

Preparation

- Switch on the scale: Press I/⏻.
- While all segments are lit, press the →T← key
- Select the Application menu: Press Fn repeatedly until APPL is displayed
- Open the Application menu: Press the →T← key
- Select the Animal Weighing application: Press the Fn key repeatedly until the desired menu item is displayed and press →T← to open the submenu

Application Parameters: Averaging (Animal Weighing)

- 3.5. Minimum load for automatic taring and automatic printing
  - 3.5.1* 1 digit
  - 3.5.2 2 digits
  - 3.5.3 5 digits
  - 3.5.4 10 digits
  - 3.5.5 20 digits
  - 3.5.6 50 digits
  - 3.5.7 100 digits
  - 3.5.8 200 digits
  - 3.5.9 500 digits
  - 3.5.10 1000 digits
- 3.6. Minimum load for automatic start
  - 3.6.1* 1 digit
  - 3.6.2 2 digits
  - 3.6.3 5 digits
  - 3.6.4 10 digits
  - 3.6.5 20 digits
  - 3.6.6 50 digits
  - 3.6.7 100 digits
  - 3.6.8 200 digits
  - 3.6. 9 500 digits
  - 3.6.10 1000 digits
- 3.7. Automatic taring: first weight tared
  - 3.7.1* Off
  - 3.7.2 On
- 3.8. Start application and load most recent application data when the Midrics is switched on
  - 3.8.1 Automatic (on)
  - 3.8.2* Manual (off)
- 3.18. Start of averaging routine
  - 3.18.1* Manual
  - 3.18.2 Automatic
- 3.19. Animal activity
  - 3.19.1 0.1% of the animal/object
  - 3.19.2* 0.2% of the animal/object
  - 3.19.3 0.5% of the animal/object
  - 3.19.4 1% of the animal/object
  - 3.19.5 2% of the animal/object
  - 3.19.6 5% of the animal/object
  - 3.19.7 10% of the animal/object
  - 3.19.8 20% of the animal/object
  - 3.19.9 50% of the animal/object
  - 3.19.10 100% of the animal/object
- 3.20. Automatic printout of results
  - 3.20.1* Off
  - 3.20.2 On
- 3.21. Static display of result after load removed
  - 3.21. 1* Display is static until unload threshold reached
  - 3.21. 2 Display is static until [CF] is pressed
- 3.25. Tare function
  - 3.25.1* Add input value (weight value) for taring
  - 3.25.2 Tare value can be overwritten

* = Factory setting

- Press [→T←] to save your settings and [→0←] (repeatedly) to exit the operating menu.

Minimum Load
The minimum load required for initialization of the averaging routine is configured in the operating menu under:
APPL: 3.6.
Setting a minimum load for averaging can be especially useful if you configure automatic start of measurement.

The minimum load required for automatic taring of the container weight on the platform ("autotare first weight"), or for automatic printout of results, is configured in the operating menu under:
APPL: 3.5.

You can choose from the following 10 levels for this setting:

1 digit
to
1000 digits

Example: If the scale interval (d) is 1000 g and the minimum load is set to 1000 digits (=1000 scale intervals), a load of at least 1000 g is required for autotaring.

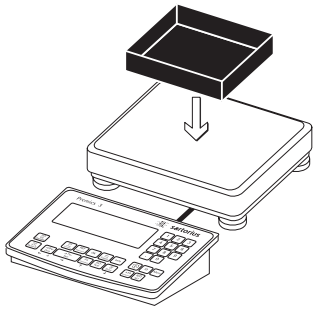
Starting the Measurements
The averaging routine does not begin until any fluctuation in the weight value remains below a defined threshold over three consecutive measurements. The tolerance limit is defined as a percentage of the animal or object weight (for example, 0.1%; 0.2%; ...; 50%; 100%), configured in the operating menu under:
APPL: 3. 19.
If the "Animal activity" parameter is set to 2%, for example, and the animal or object weighs 10 kg, measurement does not begin until the fluctuation in weight value remains below 200 g duringthreeconsecutivemeasurements.

Display
A calculated average value is shown continuously on the main display. The ⚠ symbol (indicating a calculated value) is also displayed.

You can toggle between this display and a readout of the current weight on the scale by pressing the [⇆] key.

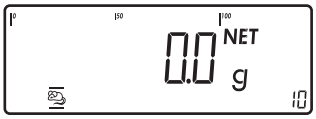
In the operating menu, under:
APPL: 3.2 1.
you can select "Display is static until unload threshold reached" to have the display switch automatically to the weight readout when you unload the weighing platform (i.e., when the load is less than half the minimum load). The result of the most recent averaging operation is not saved.
If you select "Display is static until [CF] is pressed," the calculated average remains displayed even after the weighing platform is unloaded, until you press the [CF] key or begin a new measurement.

Example:
Measuring the weight of one mouse.
Settings (changes in the factory settings required for this example):
Setup: Application: Animal weighing
Setup: PRTPROT (printout): 7.7.x (COM1) (see “Configuration” for options)

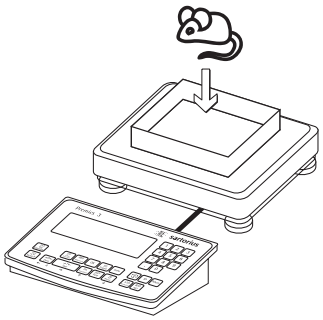


Place empty container on the platform

→T←

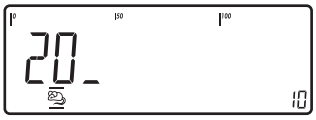


1. Tare the scale.
   Note: If the automatic tare function is enabled, you do not need to press the →T← key to tare the scale; the tare weight is saved automatically when you place the container on the platform.



2. Place 1st animal in container

2 0

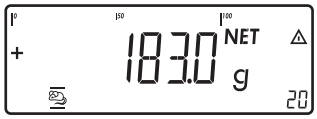


3. Enter the number of subweighing operations using the keypad (in this example, 20 measurements)

REF

4. Save the value entered and begin averaging

The averaging routine does not begin until the fluctuation in weight value remains below a defined threshold over three consecutive measurements. The number of subweighing operations remaining is shown in the numeric display.



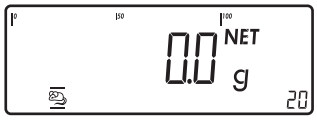
Read the result of averaging

5. Print the results.
   Note: If automatic printout of results is enabled, you do not need to press the key; the results are printed automatically.

mDef + 20

T + 0.292 kg
x-Net + 0.183 kg

Configured printout:
see page 82



When you unload the weighing platform, the display switches to the weight readout automatically, unless configured otherwise in the operating menu. The weighing instrument is ready for the next measurement.

Application: Weighing in Percent %

With the Weighing in Percent application, you can have the value of the weight on the platform displayed as a percentage calculated in relation to a defined reference weight.
The **%** symbol is displayed in place of the weight unit.

Features

– Enter the reference weight "Wxx%" for 100% using the keypad

– Save the current weight value as reference percentage ("pRef")

– Enter the reference percentage "pRef" via the keypad

– Display result as loss (difference) or residue

– Display up to 3 decimal places. Configuration:
APPL **%**: 3.10.

– Activate info-mode by pressing Info

– Toggle the display between percentage and weight by pressing the ⇆ key.

– Automatic taring of container weight. Configuration:
APPL **%**: 3.7.

– Automatic initialization when the Midrics is switched on. The application is initialized with the most recently saved data. Configuration:
APPL **%**: 3.8.

– Closing application program; deleting parameters:
The value for reference sample weight remains active in the reference memory until you delete it by pressing the CF key, overwrite it or until you select a different application.

– Restore factory settings. Configuration:
APPL **%**: 9.1.

To determine the weight of a sample relative to a reference weight, you need to define the reference weight value. There are three ways to enter this value in the application program:

– Calculation:
  – Place the reference quantity (defined by the reference percentage) on the connected weighing platform and press OK.
  – Place any amount of the sample material on the connected weighing platform, enter the reference percentage through the keypad, and press the REF key to initialize the application.

How the reference weight is calculated depends on the application setting for resolution ("Resolution for calculation of reference value"). The value is either rounded off in accordance with the display resolution, or saved with 10-fold or 100-fold increased resolution or with the maximum internal resolution of the weighing platform.

– Enter the reference weight for 100% via the keypad and press the OK key to initialize the application.

The initial application values are valid until deleted by pressing the CF key or until overwritten by new values. They also remain saved after you switch off the scale.

– Tare function:

1) If you store a tare (weight value) by pressing the →T← key, you can later enter a tare value manually. The tare value you enter is added to the stored tare value.
Setting: menu code 3.25.1
(factory default)
2) A tare value entered manually overwrites a stored tare value (weight value). If you enter a tare value manually, a tare value (weight value) stored later overwrites the manually entered value.
Setting: menu code 3.25.2
Operating menu setting:
APPL **%**: 3.25

Preparation

- Switch on the scale: Press I/⏻
- While all segments are lit, press the →T← key
- Select the Application menu: Press Fn repeatedly until APPL is displayed
- Open the Application menu: Press the →T← key
- Select the Weighing in Percent application: Press the Fn key repeatedly until the desired menu item is displayed and press →T← to open the submenu

Application Parameters: Weighing in Percent

- 3.5. Minimum load for automatic taring and automatic printing
  - 3.5.1* 1 digit
  - 3.5.2 2 digits
  - 3.5.3 5 digits
  - 3.5.4 10 digits
  - 3.5.5 20 digits
  - 3.5.6 50 digits
  - 3.5.7 100 digits
  - 3.5.8 200 digits
  - 3.5.9 500 digits
  - 3.5.10 1000 digits
- 3.6. Minimum load for initialization
  - 3.6.1* 1 digit
  - 3.6.2 2 digits
  - 3.6.3 5 digits
  - 3.6.4 10 digits
  - 3.6.5 20 digits
  - 3.6.6 50 digits
  - 3.6.7 100 digits
  - 3.6.8 200 digits
  - 3.6.9 500 digits
  - 3.6.10 1000 digits
- 3.7. Automatic taring: first weight tared
  - 3.7.1* Off
  - 3.7.2 On
- 3.8. Start application and load most recent application data when the Midrics is switched on
  - 3.8.1 Automatic (on)
  - 3.8.2* Manual (off)
- 3.9. Resolution for calculation of reference value
  - 3.9.1* Display resolution
  - 3.9.2 Display resolution +1 decimal place
  - 3.9.3 Display resolution +2 decimal places
  - 3.9.4 Internal resolution
- 3.10. Decimal places in displayed result
  - 3.10.1* None
  - 3.10.2 1 decimal place
  - 3.10.3 2 decimal places
  - 3.10.4 3 decimal places
- 3.11 Parameter for saving weight values
  - 3.11.1* At stability
  - 3.11.2 At increased stability
- 3.15. Display of calculated value
  - 3.15.1* Residue
  - 3.15.2 Loss
- 3.25. Tare function
  - 3.25.1* Add input value (weight value) for taring
  - 3.25.2 Tare value can be overwritten

* = Factory setting

- Press →T← to save your settings and →0← (repeatedly) to exit the operating menu.

Minimum Load
The minimum load required for initialization of the weighing platform is configured in the operating menu under:
APPL **%**: 3.6.

Once the limit is exceeded by the load, initialization can begin. If the load is too light, the following will occur when you try to save a value:

- The error code INF 29 is displayed
- The weighing platform is not initialized
- The preset reference percentage is saved

The minimum load required for automatic taring of the container weight on the platform ("autotare first weight") is configured in the operating menu under:
APPL **%**: 3.5.

You can choose from 10 settings, ranging from

1 digit
to
1000 digits

Example: If the scale interval (d) is 1000 g and the minimum load is set to 1000 digits (=1000 scale intervals), a load of at least 1000 g is required for autotaring.

Resolution for Calculation of Reference Value
The resolution applied for calculating the reference value is defined in the operating menu under:
APPL **%**: 3.9.
The resolution for calculating the reference sample weight is increased if "+1 decimal place", "+2 decimal places" or "With internal resolution" is selected. With the "+1 decimal place" setting, the net value is determined to one additional decimal place (i.e., display accuracy × 10); "+2 decimal places" increases display accuracy × 100, and so on up to the maximum resolution available.

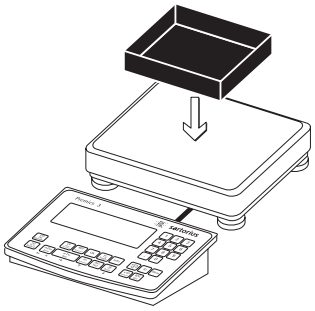
Parameter for Saving Weight Values
The reference weight is saved when the platform has stabilized. "Stability" is defined as the point at which fluctuation of a measured value lies within a defined tolerance range. The narrower the tolerance range, the more stable the platform is at stability.
In the operating menu, under:
APPL **%**: 3.11.
you can define whether the value is saved when "standard stability" is reached, or only at "increased stability" (narrower tolerance range.) If you select "At increased stability," the reference weight saved will be more accurate and the results more reproducible, but the response time of the weighing instrument might be longer.

Display of Results
With the Weighing in Percent application, the result can be displayed as the residue or the loss. Configuration:
APPL **%**: 3.15.

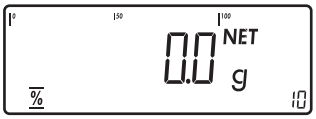
Equations:
Residue= (current weight – 100% weight) / * 100

Loss= (current weight – 100% weight) / 100% weight * 100

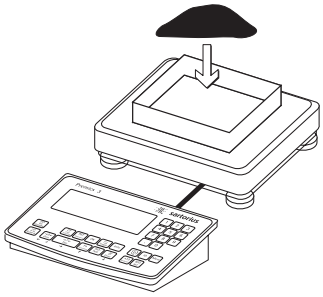
Example:
Weighing in 100% of a sample material.
Settings (changes in the factory settings required for this example):
Setup: Application: Weighing in percent
Setup: PRTPROT (printout): 7.7.x (COM1) (see “Configuration” for options)



1. Place empty container on the platform

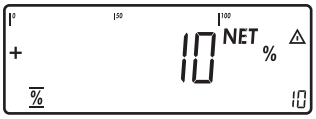


2. Tare the scale
   Note: If the automatic tare function is enabled, you do not need to press the →T← key to tare the scale; the tare weight is saved automatically when you place the container on the platform



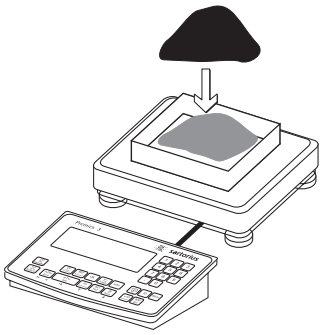
3. Add reference material in accordance with reference percentage
   (in this example, 85 g, = 10%)

4. Activate calculation of the reference weight.
   The calculation is based on the active net weight value and the reference percentage entered.

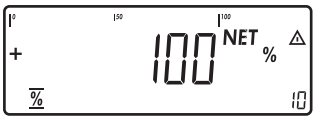


If the weight is too light, the error code INF 29 is shown on the main display.

Reduce the minimum load setting.



5. Continuing filling the container until the target amount is reached
   (in this example, 100%)



6. Print the result

pRef + 20 %
wRef + 0.085 kg

G# + 1.080 kg
T + 0.675 kg
N + 0.423 kg

Prc + 100 %

Configured printout:
see page 82

Application: Checkweighing +/-

With the Checkweighing application, you can check whether the sample on the weighing platform matches a target value, or lies within a given tolerance range. Checkweighing also makes it easy to fill sample materials to specified target weight.

Features

– Enter the nominal or target weight (setpoint) and the tolerance range delimiters either using the keypad or by saving the weight value from a load on the platform.

– Enter the tolerance limits as absolute values (Min and Max) or as percentages of the target. Configuration:
APPL +/-: 4.5.

– The target value can be taken over as a weighed value from a weighing platform, and the tolerance limits are defined by the percentage of deviation from the target value (menu code 4.5.2). The following percentages can be selected as the deviation: 0.1%, 0.2%, 0.5%, 1%, 1.5%, 2%, 3%, 5% or 10%.

– The target value, lower tolerance limit (minimum) and upper tolerance limit (maximum) can be taken over as weighed values from the weighing platform.

– Target and tolerance limits checked during input; values must conform to: Upper limit ≥ Target ≥ Lower limit ≥ 1 digit.

– Checkweighing range: either 30% to 170% of the target, or from 10% to infinity.

– Results are shown on the main display and the bar graph and sent to control output ports for further processing.

– Toggle the main display between weight and tolerances limits by pressing ⇆. If the weight on the readout is outside the tolerance range, "LL" (too low) or "HH" (too high) is displayed.

– Activate info mode by pressing Info

– Automatic printout of results. Configuration:
APPL +/-: 4.6.

– Automatic taring of container weight. Configuration:
APPL +/-: 3.7.

– Automatic initialization with the most recently saved application data when you switch on the Midrics. Configuration:
APPL +/-: 3.8.

– Closing application program; deleting parameters:
The value for reference sample weight remains active in the reference memory until you delete it by pressing the CF key, overwrite it or until you select a different application.

– Restore factory default settings. Configuration:
APPL +/-: 9.1.

Checkweighing entails comparing the current weight value to a defined target. You can enter the value for this target using the keypad, or by saving the weight value displayed.
You can also define upper and lower tolerance limits based on this target. You can do this by:

– Entering absolute values using the keypad or placing the desired amount of weight on the platform and saving the value, or

– Entering each value as a percentage of the target weight

The initial application values are valid until deleted by pressing the CF key or until overwritten by new values. They also remain saved after you switch off the scale.

– Tare function:

1) If you store a tare (weight value) by pressing the →T← key, you can later enter a tare value manually. The tare value you enter is added to the stored tare value.
Setting: menu code 3.25.1
(factory default)
2) A tare value entered manually overwrites a stored tare value (weight value). If you enter a tare value manually, a tare value (weight value) stored later overwrites the manually entered value.
Setting: menu code 3.25.2
Operating menu setting:
APPL +/-: 3.25

Preparation

- Switch on the scale: Press I/⏻
- While all segments are lit, press the →T← key
- Select the Application menu: Press Fn repeatedly until APPL is displayed
- Open the Application menu: Press the →T← key
- Select the Checkweighing application: Press the Fn key repeatedly until the desired menu item is displayed and press →T← to open the submenu

Application Parameters: Checkweighing

- 3.5. Minimum load for automatic taring and automatic printing
  - 3.5.1* 1 digit
  - 3.5.2 2 digits
  - 3.5.3 5 digits
  - 3.5.4 10 digits
  - 3.5.5 20 digits
  - 3.5.6 50 digits
  - 3.5.7 100 digits
  - 3.5.8 200 digits
  - 3.5.9 500 digits
  - 3.5.10 1000 digits
- 3.7. Automatic taring: first weight tared
  - 3.7. 1* Off
  - 3.7.2 On
- 3.8. Start application and load most recent application data when the Midrics is switched on
  - 3.8.1 Automatic (on)
  - 3.8.2* Manual (off)
- 4.2. Checkweighing range
  - 4.2.1* 30% to 170%
  - 4.2.2 10% to infinity
- 3.25. Tare function
  - 3.25.1* Add input value (weight value) for taring
  - 3.25.2 Tare value can be overwritten
- 4.3. Activate control line for "Set" as:
  - 4.3.1* "Set" output
  - 4.3.2 Ready to operate
- 4.4. Activation of outputs
  - 4.4.1 Off
  - 4.4.2 Always active
  - 4.4.3 Active at stability
  - 4.4.4* Active within check range
  - 4.4.5 Active at stability within the check range
- 4.5. Parameter input
  - 4.5.1* Min, max, target
  - 4.5.2 Only target with percent limits
- 4.6. Automatic printing
  - 4.6.1* Off
  - 4.6.2 On
  - 4.6.3 Only values within tolerance
  - 4.6.4 Only values outside tolerance
- 4.7. Checkweighing toward zero
  - 4.7.1* Off
  - 4.7.2 On

* = Factory setting

- Press →T← to save your settings and →0← (repeatedly) to exit the operating menu.

Minimum Load
The minimum load required for automatic taring of the container weight on the platform (first weight), or for automatic printout of results, is configured in the operating menu under:
APPL +/-: 3.5.

You can choose from 10 settings, ranging from

1 digit (no minimum load)
to
1000 digits

Example: If the scale interval (d) is 1000 g and the minimum load is set to 1000 digits (=1000 scale intervals), a load of at least 1000 g is required for autotaring.

Display
The result of a measurement is shown either as a weight value or in relation to the target.

- Weight display mode:
  The measured value line always shows the weight value, even if it lies outside the tolerance range.

  The bar graph is displayed with symbols indicating lower limit, target and upper limit. The bar shows a logarithmic display of the current load if the weight is anywhere from 0 to the minimum load, and a linear display for weights beyond that range.

- Tolerance limit display mode:
  As "Weight display" above, with the exception that:
  - LL is shown on the main display if the weight value is lower than the target, and
  - HH is shown on the main display if the weight value is higher than the target

Digital Input/Output Interface + Optional I/O
The Checkweighing application supports the digital input/output interface. The 4 control outputs are activated as follows (see also the diagram on the right):
- Lighter
- Equal
- Heavier
- Set

or with YDO01M-IO
Configuration in the operating menu:

CTR OUT
8.24

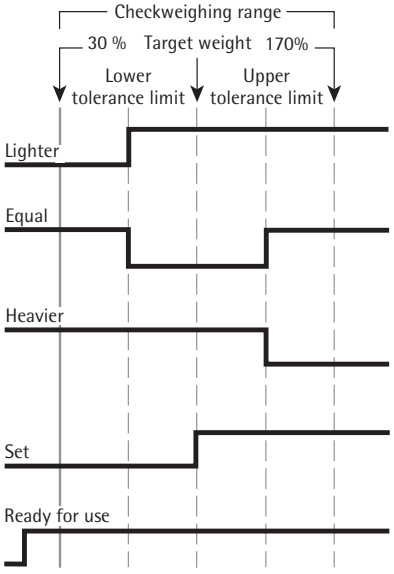
8.24.1	Weighing instrument ready to operate
8.24.2	Weighing instrument stable
8.24.3	Weighing instrument overflow ("H")
8.24.4	Weighing instrument underflow ("L")
8.24.5	Value in tare memory
8.24.8	Lighter
8.24.9	Equal
8.24.10	Heavier
8.24.11	Set

Under:
APPL +/-: 4.4.
you can define whether these control ports are
- off,
- always on,
- active at stability,
- active within the checking range, or
- active at stability within the checking range

The "SET" output normally changes its voltage level when the load is near the target weight. Alternatively, you can assign the "Operative" function (indicating "Ready-for-use") to this port. Configuration:
APPL +/-: Section 4.3.

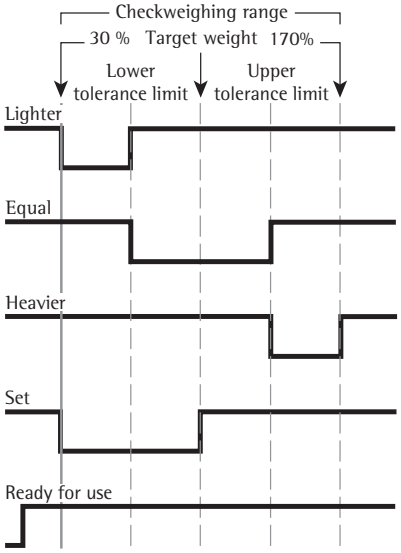
For example, you can use this function to show the weighed or measured result on a simple external indicator.

All data output ports have a high voltage level when:
- the application has not been initialized,
- the weighing instrument is not at stability and one of the "at stability ..." parameters is selected
- The weight is not within the checkweighing range
- Activation of port lines: always on



- Activation of port lines: always on

Digital Input/Output Interface
- <SET> control output: set

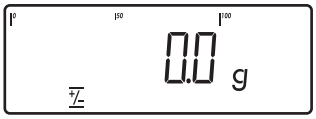


Digital Input/Output Interface
- <SET> control output: set
- Activation of port lines: within checkweighing range

Output Port Specifications
- When not in use, the voltage level is high: >3.7 V/+4 mA
- When activated, the voltage level is low: <0.4 V/–4 mA

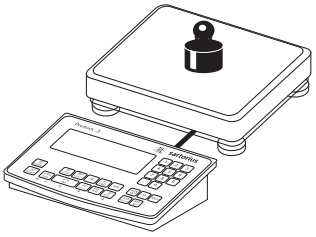
⚠ The data outputs are not protected from short circuits.

Example: 1
Checkweighing samples with a target weight of 1250 g and a tolerance range from –10 g to +30 g
Settings (changes in the factory settings required for this example):
Setup: Application: Checkweighing
Setup: PRTPROT (printout): 7.7.x (COM1) (see “Configuration” for options)



OK

1. Enter the initial target and tolerance limit values



2. Place a sample equal to the target weight (in this example, 1250 g) on the platform

OK

3. Save target value

1 2 4 0

4. Enter value for lower limit (in this example, 1240 g)

OK

5. Save value for the lower limit

1 2 8 0

6. Enter value for the upper limit (in this example, 1280 g)

OK

Save value for upper limit

7. Weigh samples

(E)

8. Print the results
Note: If automatic printout of results is enabled, you do not need to press the (E) key; the results are printed automatically.

Setp + 1.250 kg — Target
Min + 1.240 kg — Minimum
Max + 1.280 kg — Maximum

G# + 1.256 kg — Gross weight
T + 0.000 kg — Tare weight
N + 1.256 kg — Net weight

Lim + 0.48 % — Percentage of deviation from target*

W.Diff+ 0.006 kg — Absolute deviation from target
---

* Only in “Tolerance limits” display mode:
If the weight is lighter than the target, the display shows: LL

If the weight is heavier than the target, the display shows: HH

Application: Classification

With the Classification application, you can determine whether the weight of a given sample lies within the limits of a defined weight class.

Features

– Classification with 3 or 5 weight classes. Configure in Setup under: APPL: 4.8.

– Enter the upper class limits using the keypad or by saving weight values from a load on the platform

– Enter the upper limits of weight classes as absolute values or as a percentage of deviation from the upper limit of Class. Configuration: APPL: 4.9.

– Activate info mode by pressing Info

– Toggle the main display between classes and weight values by pressing ⇆.

– Automatic printout of results. Configuration: APPL: 4.10.

– Automatic taring of container weight. Configuration: APPL: 3.7.

– Automatic initialization with the most recently saved application data when you switch on the Midrics. Configuration: APPL: 3.8.

– Closing application program; deleting parameters: The value for reference sample weight remains active in the reference memory until you delete it by pressing the CF key, overwrite it or until you select a different application.

– Restore factory default settings. Configuration: APPL: 9.1.

The lower limit of Class 1 is defined by the preset minimum load. The other classes are configured by defining their upper limits. There are two ways to enter the delimiters for classes 1 through 3 (or 5):

– By saving the weight value displayed: Each upper value, with the exception of the highest, is entered using the keypad or by saving the weight value of a load on the weighing platform.

– By entering a percentage: The upper value of Class 1 is entered using the keypad or by saving the value indicated. Upper limits for the other classes are defined by entering a percentage of deviation from the upper limit of Class 1, using the keypad. Example: Enter 100 g as the upper limit of Class 1. Then enter 15%. When working with 3 classes, this yields the following weight classes: Class 0: up to the minimum load Class 1: > minimum load, up to 100 g Class 2: >100 g to 115 g Class 3: > 115 g, up to maximum load When working with 5 classes, this yields the following weight classes: Class 0: up to the minimum load Class 1: > minimum load, up to 100 g Class 2: >100 g to 115 g Class 3: >115 g to 130 g Class 4: >130 g to 145 g Class 5: > 145 g, up to maximum load

The initial application values are valid until deleted by pressing the CF key or until overwritten by new values. They also remain saved after you switch off the scale.

– Tare function:

1) If you store a tare (weight value) by pressing the →T← key, you can later enter a tare value manually. The tare value you enter is added to the stored tare value. Setting: menu code 3.25.1 (factory default)
2) A tare value entered manually overwrites a stored tare value (weight value). If you enter a tare value manually, a tare value (weight value) stored later overwrites the manually entered value. Setting: menu code 3.25.2 Operating menu setting: APPL: 3.25

Preparation

- Switch on the scale: Press I/⏻
- While all segments are lit, press the →T← key
- Select the Application menu: Press Fn repeatedly until APPL is displayed
- Open the Application menu: Press the →T← key
- Select the Classification application: Press the Fn key repeatedly until the desired menu item is displayed and press →T← to open the submenu

Application Parameters: Classification

- 3.5. Minimum load for automatic taring and automatic printing
  - 3.5.1* 1 digit
  - 3.5.2 2 digits
  - 3.5.3 5 digits
  - 3.5.4 10 digits
  - 3.5.5 20 digits
  - 3.5.6 50 digits
  - 3.5.7 100 digits
  - 3.5.8 200 digits
  - 3.5.9 500 digits
  - 3.5.10 1000 digits
- 3.6. Minimum load for initialization and defining the class 1 lower limit
  - 3.6.1* 1 digit
  - 3.6.2 2 digits
  - 3.6.3 5 digits
  - 3.6.4 10 digits
  - 3.6.5 20 digits
  - 3.6.6 50 digits
  - 3.6.7 100 digits
  - 3.6.8 200 digits
  - 3.6.9 500 digits
  - 3.6.10 1000 digits
- 3.7. Automatic taring: first weight tared
  - 3.7.1* Off
  - 3.7.2 On
- 3.8. Start application and load most recent application data when the Midrics is switched on
  - 3.8.1 Automatic (on)
  - 3.8.2* Manual (off)
- 3.25. Tare function
  - 3.25.1* Add input value (weight value) for taring
  - 3.25.2 Tare value can be overwritten
- 4.3. Activate control line for "Set" as:
  - 4.3.1* "Set" output
  - 4.3.2 Ready to operate (for process control systems)
- 4.7. Activation of outputs
  - 4.7.1 Off
  - 4.7.2 Always active
  - 4.7.3* Active at stability
- 4.8. Number of classes
  - 4.8.1* 3 classes
  - 4.8.2 5 classes
- 4.9. Parameter input
  - 4.9.1* Weight values
  - 4.9.2 Percentage
- 4.10. Automatic printing
  - 4.10.1* Off
  - 4.10.2 On

* = Factory setting

- Press →T← to save your settings and →0← (repeatedly) to exit the operating menu.

Minimum Load
The minimum load for the first class is configured in the operating menu, under:
APPL : 3.6.
Once the limit is exceeded by the load, initialization can begin.
Once the application is initialized, a weight value below the minimum load is designated Class 0; no class is displayed.

The minimum load required for automatic taring of the container weight on the platform (first weight), or for automatic printout of results, is configured in the operating menu under:
APPL : 3.5.

You can choose from 10 settings, ranging from

1 digit
to
1000 digits

Example: If the scale interval (d) is 1000 g and the minimum load is set to 1000 digits (=1000 scale intervals), a load of at least 1000 g is required for autotaring.

Display
The result of a given measurement is shown as either a weight value or the class number.

- Weight display
  The current weight is shown in the measured value line and the current class in the text line.

- Display of classes
  The current class is shown in the measured value line, and the current weight in the text line.

Digital Input/Output Interface
(CTTL Signal)
The Classification application supports the digital input/output interface.
The 4 control outputs are activated as follows (see also the diagram on the right):

- With 3 classes:
  - Class 1
  - Class 2
  - Class 3
  - Set

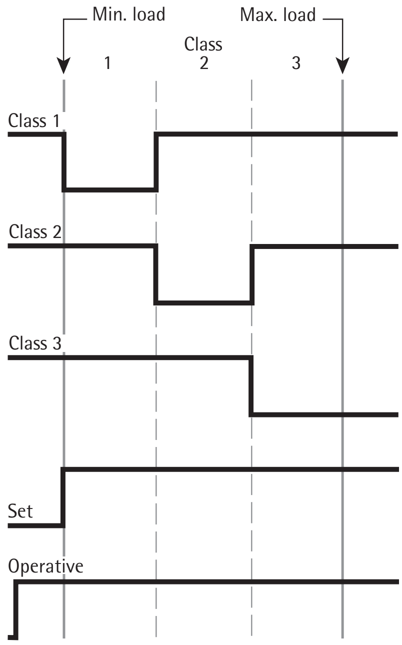
- With 5 classes:
  - Classes 1/2
  - Classes 2/3/4
  - Classes 4/5
  - Set

  Under:
  APPL : 4.7.
  you can define whether these control ports are
- off,
- always on,
- activated at stability,

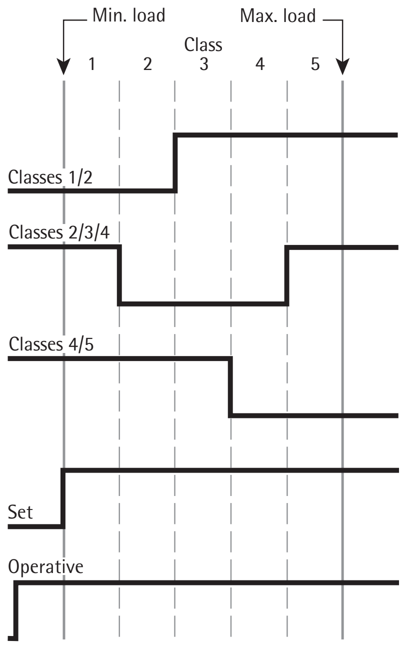
The "SET" output normally changes its voltage level when the current weight exceeds the minimum load. Alternatively, you can assign the "Operative" function (indicating "Ready-for-use") to this port. Configuration:
APPL : 4.3.
or with YDO01M-IO

Configuration in the operating menu:

CTR OUT
8.24
- 8.24.1 Weighing instrument ready to operate
- 8.24.2 Weighing instrument stable
- 8.24.3 Weighing instrument overflow ("H")
- 8.24.4 Weighing instrument underflow ("L")
- 8.24.5 Value in tare memory
- 8.24.8 Lighter
- 8.24.9 Equal
- 8.24.10 Heavier
- 8.24.11 Set

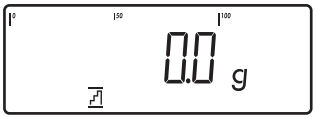


Digital Input/Output Interface
Control lines when working with 3 classes

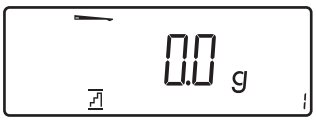


Digital Input/Output Interface
Control lines when working with 5 classes

Example:
Defining three classes.
Settings (changes in the factory settings required for this example):
Setup: Application: Classification
Setup: PRTPROT (printout): 7.7.x (COM1); printout for app; then select desired line items (see “Configuration” for options)



OK

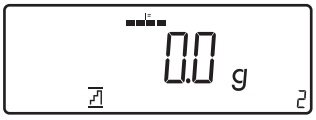


1. Begin input of class delimiters

1 1 0

2. Enter the upper limit for Class 1 via the keypad (in this example, 110 g)

OK



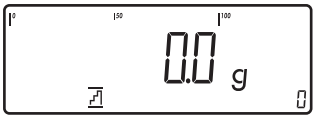
3. Save the upper limit for Class 1

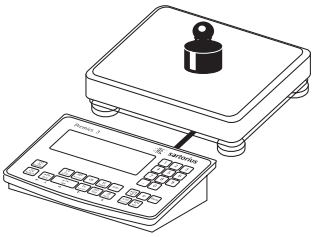
1 3 0

4. Enter the upper limit for Class 2 via the keypad (in this example: 130 g)

OK

5. Save the upper limit for Class 2





6. Place the sample on the weighing platform

Read the result

7. Print the result
Note: If automatic printout of results is enabled, you do not need to press the key; the results are printed automatically.

Configured printout:
see page 82

Lim1 + 0.110 kg
Lim2 + 0.130 kg

G# + 0.118 kg
T + 0.000 kg
N + 0.118 g

Class 2

Application: Totalizing Σ

With the Totalizing application, you can add weight values together in the totalizing memory. In addition to weight values, the number of individual values added to memory is also saved (transaction counter).

Features
– Totalize up to 999 individual weights

Save values automatically:
– Save both net values and calculated values (if available). Configuration:
APPL Σ: 3. 16.

– Save weight values and calculated values from Counting, Weighing in Percent or Checkweighing. Configuration:
APPL Σ: 3.22.

– Current transaction number displayed in the text line (indicating the items already added)

– Weighing in up to a defined target, with the totalization memory content + current weight displayed in the text line.

– Save weight values manually or automatically

– Activate info-mode by pressing Info

– Automatic printout when value saved

– Automatic taring of container weight. Configuration:
APPL Σ: 3.7.

– Content of totalizing memory stored in battery-backed (non-volatile) memory when the Midrics 2 is switched off.

– Closing application program; deleting parameters:
The value for reference sample weight remains active in the reference memory until you delete it by pressing the CF key, overwrite it or until you select a different application.

– Restore factory settings:
APPL Σ: 9. 1.

The Midrics has a totalizing memory for adding individual net and gross values. You can save weight values in totalizing memory manually or automatically. Configuration:
APPL Σ: 3. 16.

– Add a weight value manually by pressing OK
The net value from the active platform is added to the value already saved in totalization memory and the transaction counter value is increased by one. When a value is added manually, the program does not check whether the platform has been unloaded since the last time the OK key was pressed.

– Value saved automatically when the weighing platform is stable and the defined minimum load is exceeded. If the defined minimum load is not exceeded, you can save the item manually by pressing the OK key. The scale must be unloaded before the sample is placed on the platform. The weighing platform is considered to be unloaded when the load is less than 50% of the minimum load.

The number of items added to memory is displayed in the text line.

Press the CF key to clear the totalizing memory. A printout is generated automatically.

– Tare function:
1) If you store a tare (weight value) by pressing the →T← key, you can later enter a tare value manually. The tare value you enter is added to the stored tare value.
Setting: menu code 3.25.1
(factory default)
2) A tare value entered manually overwrites a stored tare value (weight value). If you enter a tare value manually, a tare value (weight value) stored later overwrites the manually entered value.
Setting: menu code 3.25.2
Operating menu setting:
APPL Σ: 3.25

Preparation
- Switch on the scale: Press I/⏻
- While all segments are lit, press the →T← key
- Select the Application menu: Press Fn repeatedly until APPL is displayed
- Open the Application menu: Press the →T← key
- Select the Totalizing application: Press the Fn key repeatedly until the desired menu item is displayed and press →T← to open the submenu

Application Parameters: Totalizing

- 3.5. Minimum load for automatic taring and automatic printing
  - 3.5.1* 1 digit
  - 3.5.2 2 digits
  - 3.5.3 5 digits
  - 3.5.4 10 digits
  - 3.5.5 20 digits
  - 3.5.6 50 digits
  - 3.5.7 100 digits
  - 3.5.8 200 digits
  - 3.5.9 500 digits
  - 3.5.10 1000 digits
- 3.6. Minimum load for automatically saving/transferring values
  - 3.6.1* 1 digit
  - 3.6.2 2 digits
  - 3.6.3 5 digits
  - 3.6.4 10 digits
  - 3.6.5 20 digits
  - 3.6.6 50 digits
  - 3.6.7 100 digits
  - 3.6.8 200 digits
  - 3.6.9 500 digits
  - 3.6.10 1000 digits
- 3.7. Automatic taring: first weight tared
  - 3.7.1* Off
  - 3.7.2 On
- 3.8. Start application and load most recent application data when the Midrics is switched on
  - 3.8.1 Automatic (on)
  - 3.8.2* Manual (off)
- 3.16. Values saved automatically
  - 3.16.1* Off
  - 3.16.2 On
- 3.17. Automatic individual or component printout when value stored
  - 3.17.1 Off
  - 3.17.2* Generate printout with complete standard configuration each time [OK] is pressed
  - 3.17.3 Generate printout with complete standard configuration only the first time [OK] is pressed
- 3.23. Value(s) to be saved
  - 3.23.1* Net
  - 3.23.2 Calculated
  - 3.23.3 Net and calculated
- 3.25. Tare function
  - 3.25.1* Add input value (weight value) for taring
  - 3.25.2 Tare value can be overwritten

* = Factory setting

- Press [→T←] to save your settings and [→0←] (repeatedly) to exit the operating menu.

Minimum Load
The minimum load required for automatic taring of the container weight on the platform ("autotare first weight") is configured in the operating menu under:
APPL Σ: 3.5.

The minimum amount that a component must weigh before it can be saved in totalizing memory is configured in the operating menu under:
APPL Σ: 3.6.

You can choose from 10 settings, ranging from

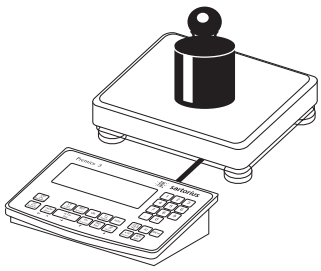
1 digit
to
1000 digits

Example: If the scale interval (d) is 1000 g and the minimum load is set to 1000 digits (=1000 scale intervals), a load of at least 1000 g is required for autotaring.

Data Record or Printout
In the operating menu, under:
APPL Σ: 3.17.
you can configure whether a printout is generated manually, by pressing [⊟], or automatically when a weight value is saved in the totalizing memory.
If you select 3.17.1 for this setting, printouts can be generated only manually, by pressing [⊟] (individual printout).
If you select 3.17.2 (printout of a component on request), the component printout is generated.

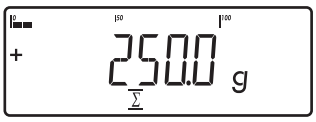
The total data record is printed when you clear the totalizing memory (by pressing the [CF] key).

Example:
Totalizing weight values.
Settings (changes in the factory settings required for this example):
Setup: Application: Totalizing
Setup: PRTPROT: 7.7.x (COM1 interface)
then select the desired line items
Setup: PRTPROT: 7.9.x (“Print when CF pressed")
then select the desired line items



1. Place the first weight on the weighing platform

Weight value is displayed

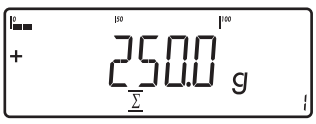


OK

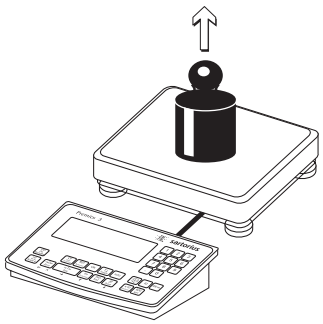
2. Save the first weight value in totalizing memory

G# + 0.250 kg
T + 0.000 kg
N + 0.250 kg
n 1

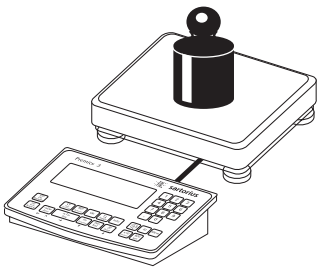
The component data is printed automatically (configured printout)



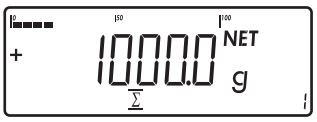
The transaction counter value is increased by 1.



3. Remove the first weight from the weighing platform



4. Place the weight on the weighing platform



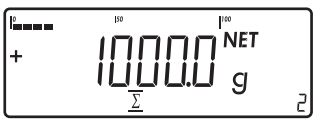
Weight value is displayed

OK

5. Save the second weight value in totalizing memory

G# + 1.346 kg
T + 0.346 kg
N + 1.000 kg
n 2

The component data is printed automatically (configured printout)



The transaction counter value is increased by one, and now shows “2"

6. Toggle the display between individual and total value

CF

7. End totalizing

*G + 1.346 g
*N + 1.250 g
n 2

The total data record is printed as configured.

Application: Net-total Formulation

With the Net-total Formulation application, you can weigh in different components up to a defined total. Each component is saved in a net-total memory.

Features
- Weigh in up to 999 components in series
- Net-total formulation cannot be combined with other applications
- Current component number displayed in the text line (indicating the component to be added)
- Toggle the display between “component mode" and “additive mode" by pressing [⇆].
  - Component mode: Display the weight of the component currently on the platform (for 1 second after it is saved; then the platform is tared)
  - Additive mode: Display the weight of all components on the platform (after it is saved, the net weight of the last component added is displayed briefly)
- Activate info-mode by pressing [Info]
- Automatic printout each of component as it is saved. Configuration: APPL ⭳: 3.17.

  If menu item 3.17.2 is set, the entire component printout is generated every time a component is saved. If menu item 3.17.3 is set, the full printout is generated only once, for the first component:
  Blank line, date, time, ID1 through ID4, header lines 1 and 2. For subsequent components, each “component" item (“Comp xx") is followed by a blank line.
- Automatic taring of container weight. Configuration: APPL ⭳: 3.7.
- Restore factory default settings. Configuration: APPL ⭳: 9.1.

Preparation
- Switch on the scale: Press [I/⏻]
- While all segments are lit, press the [→T←] key
- Select the Application menu: Press [Fn] repeatedly until APPL is displayed
- Open the Application menu: Press the [→T←] key
- Select the Net-total Formulation application: Press the [Fn] key repeatedly until the desired menu item is displayed and press [→T←] to open the submenu

Application Parameters:
Net-Total Formulation

- 3.5. Minimum load for automatic taring and automatic printing
  - 3.5.1* 1 digit
  - 3.5.2 2 digits
  - 3.5.3 5 digits
  - 3.5.4 10 digits
  - 3.5.5 20 digits
  - 3.5.6 50 digits
  - 3.5.7 100 digits
  - 3.5.8 200 digits
  - 3.5.9 500 digits
  - 3.5.10 1000 digits
- 3.6. Minimum load for automatically saving/transferring values
  - 3.6.1* 1 digit
  - 3.6.2 2 digits
  - 3.6.3 5 digits
  - 3.6.4 10 digits
  - 3.6.5 20 digits
  - 3.6.6 50 digits
  - 3.6.7 100 digits
  - 3.6.8 200 digits
  - 3.6.9 500 digits
  - 3.6.10 1000 digits
- 3.7. Automatic taring: first weight tared
  - 3.7.1* Off
  - 3.7.2 On
- 3.17. Automatic individual or component printout when value stored
  - 3.17.1 Off
  - 3.17.2* Generate printout with complete standard configuration each time [OK] is pressed
  - 3.17.3 Generate printout with complete standard configuration only the first time [OK] is pressed
- 3.25. Tare function
  - 3.25.1* Add input value (weigh value) for taring
  - 3.25.2 Tare value can be overwritten

* = Factory setting

- Press [→T←] to save your settings and [→0←] (repeatedly) to exit the operating menu.

Minimum Load
The minimum amount that a component must weigh before it can be saved in net-total memory is configured in the operating menu under:
APPL ⭳: 3.6.

Once the limit is exceeded by the load, the value can be saved. If the load is too light, the following will occur when you try to save a value:

- The error code INF 29 is displayed
- The weighing platform is not initialized

The minimum load required for automatic taring of the container weight on the platform (“autotare first weight") is configured in the operating menu under:
APPL ⭳: 3.5.

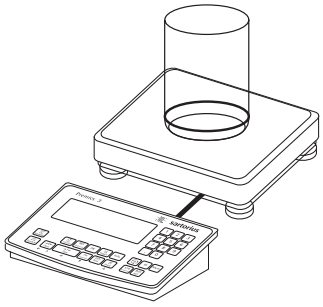
You can choose from 10 settings, ranging from

1 digit
to
1000 digits

Example: If the scale interval (d) is 1000 g and the minimum load is set to 1000 digits (=1000 scale intervals), a load of at least 1000 g is required for autotaring.

Tare function:
1) If you store a tare (weight value) by pressing the [→T←] key, you can later enter a tare value manually. The tare value you enter is added to the stored tare value.
Setting: menu code 3.25.1
(factory default)
2) A tare value entered manually overwrites a stored tare value (weight value). if you enter a tare value manu-ally, a tare value (weight value) stored later overwrites the manually entered value.
Setting: menu code 3.25.2
Operating menu setting:
APPL ⭳: 3.25.

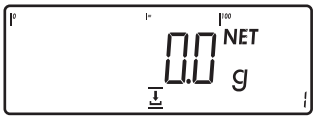
Example:
Weighing in 3 components of a formulation recipe.
Settings (changes in the factory settings required for this example):
Setup: Application: Net-total Formulation
Setup: PRTPROT: 7.7.x (COM1 interface) “Printout when value is saved”;
then select the desired line items
Setup: PRTPROT: 7.9.x “Print when CF pressed"
then select the desired line items



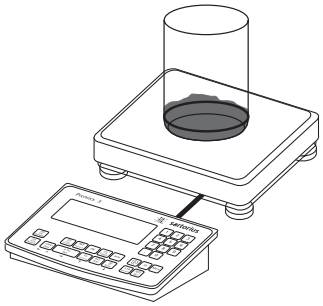
1. Place empty container on the platform

→T←

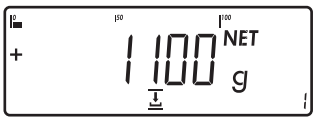
2. Tare the scale
Note: If the automatic tare function is enabled, you do not need to press the →T← key to tare the scale; the tare weight is saved automatically when you place the container on the platform



Prompt to fill and save the first component is displayed



3. Add the first component to the container (in this example, 1100 g)



The weight of the first component is displayed

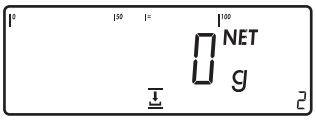
OK

4. Store the weight of the first component

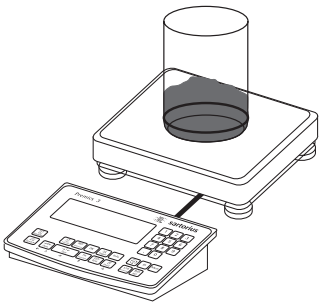
Cmp001+ 1.100 kg

The component weight is printed automatically

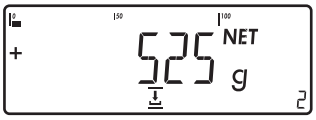
Application: Net-total Formulation



The weighing platform is tared and the component counter value is increased by one. Prompt to fill and save the second component is shown.



5. Add the second component to the container (in this example, 525 g)



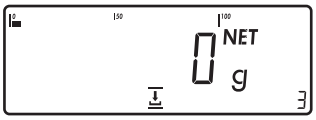
The weight of the second component is displayed

OK

6. Store the weight of the third component

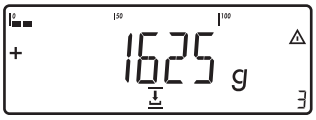
Cmp002+ 0.525 kg

The component weight is printed automatically

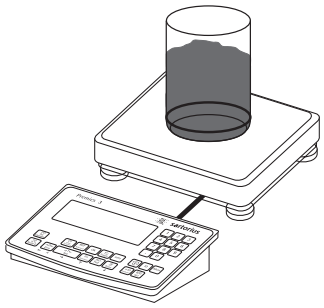


The weighing platform is tared and the component counter value is increased by one. Prompt to fill and save the third component is displayed.

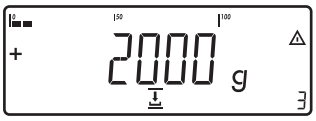
7. Toggle to the “additive mode" to view the total weight of all components.



The value displayed equals the weight of all components added up to now plus the current weight.



8. Add the third component to the container, bringing the total up to the desired target (in this example, 2000 g).



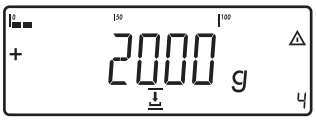
The total weight is displayed

OK

9. Store the weight of the third component

Cmp003+ 0.375 kg

The component weight is printed automatically



The component counter value is increased by one. Prompt to fill and save a fourth component is shown.

CF

10. End weighing-in operation

Results are printed automatically (configured total printout)

n + 3
Tot.cp+ 2.000 kg

Number of components
Contents of component memory

Cont.T+ 0.296 kg

Content of tare memory (container weight

Configuring Printouts

Purpose
You can specify which data items are included on printouts. When using the Totalizing or Net-total Formulation application, you can also define which parameters are included in the "Total" data record when the CF key is pressed.

In the Setup menu under "Printout" you can configure an individual, component or total data record that contains all data items activated for the application program currently in use. The printout should be formatted only after the desired application has been configured, as some of the positions are application-dependent.

Features
- Quantity and content of data record lists:
  6 lists, each with a length of up to 30 data items
  - Individual printout, printer 1
  - Component printout, printer 1
  - Total printout, printer 1
  - Individual printout, printer 2
  - Component printout, printer 2
  - Total printout, printer 2
- You can configure individual, component and total printouts separately
- Generate an individual printout:
  Press ⎙
  Automatic printout from application when active in operating menu:
  - Animal weighing/averaging
  - Checkweighing
  - Classification
- Generate component printout:
  Totalizing/Net-total formulation:
  Press the OK key (Applications: Totalizing: Printing: Component printout)
- Generate total printout:
  For Totalizing or Net-total Formulation; press the CF key
- When you change application programs in the operating menu, the selected data record lists are deleted.
  The new selection list is generated according to the active application programs.
- You can delete individual items from the list
- "Form feed" item in the printout footer:
  For advancing to the start of the next label in print mode "YDP01IS: Label" or "YDP04IS: Label: Manual form feed"
- ISO/GMP-compliant printout:
  The operating menu configuration under "ISO/GMP-compliant printout" is also active for configured printouts.

Preparation
- Switch on the scale: Press I/⏻
- While all segments are lit, press the →T← key
- Select the Setup menu: Press Fn repeatedly until Setup is displayed
- Open the Setup menu: Press the →T← key
- Press Fn repeatedly until PRTPROT is displayed
- Press the →T← key

PRTPROT (Printout; for details on menu items, see page 46)

- 7
  - 7.4 Header input
    Identifier names ID1 to ID4
  - 7.5 COM1 interface
  - 7.6 Optional UniCOM interface
  - 7.7 COM1 interface
    Configure standard printout (press ⎙, OK)
  - 7.8 Configure standard printout for optional UniCOM interface (⎙, OK keys)
  - 7.9 COM1 interface
    Print results when CF pressed in applications
  - 7.10 Printout of results on optional UniCOM interface when CF pressed in applications
  - 7.13 ISO/GMP-compliant printout
  - 7.14 Date/time printout line:
    Time not printed
  - 7.15 One-time automatic printout at stability
  - 7.16 FlexPrint
  - 7.17 Decimal separator
- 9
  - 9.1 Factory settings

- Press →T← to save your settings and →0← (repeatedly) to exit the operating menu.

Configuring the Data Interface as a Printer Port (PRINTER)

You can connect one or two strip printers or one or two label printers to the Midrics. Configure the COM1 and UniCOM interfaces as printer ports under the "PRINTER" menu item.

There are several actions that generate the command for sending data to the printer port:

- Pressing the (F) key. If the operating menu is active, all menu settings under the active menu level are printed.
- On receipt of the SBI command "Esc k P _".
- In some applications, pressing a given key (e.g., to save a value or start a routine), also generates a print command. In this case, a configurable printout is generated with application-specific data.

The ⊙ and ◈ symbols are displayed while data is being sent to the printer port.

Configuring Printouts

Printouts are configured in the operating menu under the "Printouts" menu item (PRTPROT). Printouts should be formatted only after the desired application has been configured, as some of the positions are application-dependent.
You can configure a different printout for each interface. Each printout contains your choice of the information blocks described in the following; to enable or disable a block in the printout, select it or deselect it in the operating menu.

Midrics 2 only:
For the Totalizing and Net-total Formulation applications, you can also configure summarized printouts (results) independent of individual component value printouts.

Block 1: Headers and Identifier Names
You can define 2 header lines, each with up to 20 characters (e.g., for printing your company's name).
Enter the header lines under menu items 7.4.1 and 7.4.2. Forty characters each are available for identifier names ID1 through ID4. Enter these names using menu items 7-4-3 through 7-4-6. Blank header lines are not printed.
Example: format of Block 1:

```
  ACE HARDWARE
   GOETTINGEN
ID1        123
ID4        789
```

In this example, the company name is centered on the printout. This was achieved by entering 3 spaces at the beginning of the first, and 4 spaces at the beginning of the second line.

Block 2: Date/Time
(not on Midrics 1)
Example: format of Block 2:

21.01.2013 16:02

To achieve a standardized time stamp (e.g., for documentation in a fully automated system), you can disable the printout of the time in this information block by selecting "Device parameters: Config. printout: Date/time: Date only" (7.12.2; factory setting: 7.12.1., "Date block includes time on printout"). When the "Time not printed" setting is active, the time stamp can be inserted by a higher-level controller or central computer to maintain consistent time stamping. This setting is especially important for communication between scale and computer.

Separating Block:
Dotted line, blank line (for the Weighing application).
This block is automatically inserted before further information blocks are printed.

Block 3: Initialization Data
Which data is included in this block depends on the active application. It can include, for example, reference sample quantity, reference piece weight, target weight, etc. The block is terminated with a blank line. This block can only by activated for the standard printout; it cannot be selected for the printout of results.
Example: format of Block 3 (Counting application)

```
nRef      10 pcs
wRef +    0.035 kg
```

GMP-compliant Printouts
When the corresponding menu item is active, the measured result is bracketed on the printout by a GMP header and a GMP footer (GMP = “Good Manufacturing Practice").
The GMP header precedes the first measured result. The GMP footer is printed either after each measured result (“ISO/GLP/GMP: For 1 application result," menu item 7.11.2), or after the last result in a series of measurements (“ISO/GMP/GLP: For several application results," menu item 7.11.3). To end a series of measured results, press and hold the (E) key (> 2 seconds). In this case, the E symbol is displayed after the GMP header is printed and remains in the display until the GMP footer is printed.

A GMP-compliant printout is generated automatically at the conclusion of calibration/adjustment routines, as well as when you set or clear a preload.

If you use a label printer for GMP-compliant printouts and menu item 7.11.3 is active, the header and footer are printed on two different labels. To generate GMP-compliant printouts on labels, select menu item 7.11.2.

Examples of GMP headers and one example of a footer are shown in the following.

Weighing platform WP1:

----------	Dotted line
14.01.2013 09:43	Date and time[1)]
Typ MW1P1	Midrics model
Ser.no. 12345678	Midrics serial no.
Vers. 1.1007.12.1	Software release for application
BVers. 01-25-01	Software release for basic version
----------	Dotted line
	GMP footer:
----------	Dotted line
14.01.2013 09:45	Date and time[1)]
Name:	Field for operator signature
	Blank line
----------	Dotted line

[1)] Interface YDO01M-332CLK (Option A31) required

Sample Printouts

For details on the individual information blocks, see “Configuring Printouts" above. For details on configuring the header lines, refer to the chapter describing the particular application.

Weighing Application
There is no data for the “initialization data" block. If this block is enabled for the printout, a blank line is output.

```
   HEADER LINE 1
   HEADER LINE 2
14.01.2006    09:43
--------------------

G#   +   1.402 kg
T    +   0.200 kg
N    +   1.202 kg
--------------------
```

With weighing platform serial number:

```
--------------------

Ser.no.    80705337

G#   +   1.402 kg
T    +   0.200 kg
N    +   1.202 kg
--------------------
```

Counting Application
The “Initialization data" block contains the reference sample quantity and reference piece weight. The “Results" block contains gross, net and tare weights, as well as the calculated piece count.

```
--------------------
nRef        10 pcs
wRef +   0.035 kg

G#   +   1.402 kg
T    +   0.212 kg
N    +   1.190 kg

Qnt         34 pcs
--------------------
```

Neutral Measurement Application
The “Initialization data" block contains the reference sample quantity and reference weight. The “Results" block contains gross, net and tare weights, as well as the calculated piece count.

```
--------------------
Ref         2 o
wRef +   1.200 kg

G#   +  14.700 kg
T    +   0.300 kg
N    +  14.400 kg

Qnt        12 o
--------------------
```

Weighing in Percent Application
The “Initialization data" block contains the reference percentage and reference weight. The results block shows gross, net and tare weights, as well as the percentage, which is shown as either the loss or the residual amount.

Percentage = residue:

```
--------------------
pRef       100 %
Wxx% +   2.100 kg

G#   +   1.859 kg
T    +   0.200 kg
N    +   1.659 kg

Prc         79 %
--------------------
```

Percentage = loss:

```
--------------------
pRef       100 %
Wxx% +   2.100 kg

G#   +   0.641 kg
T    +   0.200 kg
N    +   0.441 kg

D           21 %
--------------------
```

Checkweighing Application
The “Initialization data" block contains the nominal, minimum and maximum weights. The “Results" block always contains the gross, net and tare weights. The other results can be displayed in one of two ways:

- Weight display
  The deviation from the nominal weight is given both as a percentage and as an absolute (weight) value, whether the result lies within the “OK" range or not.
- Result = Threshold status:
  If the result lies within the tolerance limits, the printout shows the deviation from the nominal weight both as a percentage and as an absolute (weight) value, just as in the “Weight" printout mode described above.
  If the result is outside the tolerance limits, the last line of the printout indicates the status as follows:

Result in within limits; “Weight" or “Threshold" printout:

```
--------------------
Setp +   1.300 kg
Min  +   1.235 kg
Max  +   1.365 kg

G#   +   1.312 kg
T    +   0.000 kg
N    +   1.312 kg

Lim  +    0.92 %
Diff.W+   0.012 kg
--------------------
```

Result outside limits; “Threshold” printout:

```
--------------------
Setp +   1.300 kg
Min  +   1.235 kg
Max  +   1.365 kg

G#   +   1.400 kg
T    +   0.000 kg
N    +   1.400 kg

Stat    HH
--------------------
```

Classification Application
The “Initialization data" block contains the upper limits of Classes 1 through 4. The “Results" block contains gross, net and tare weights, as well as the class that the sample belongs to (1 through 5, where Class 5 means that the upper limit of Class 4 was exceeded).

```
--------------------
Lim1  +  10.000 kg
Lim2  +  11.000 kg
Lim3  +  12.000 kg
Lim4  +  13.000 kg

G#   +   9.700 kg
T    +   0.000 kg
N    +   9.700 kg

Class       1
--------------------
```

Animal Weighing Application
The “Initialization data" block contains the number of measured values that averaging is based on. The “Results" block contains the tare weight and the mean value.

```
--------------------
mDef        8

T    +   0.000 kg
x-Net +   4.202 kg
--------------------
```

Net-total Formulation Application
The “Initialization data" block is blank. If this block is enabled for the printout, a blank line is output.
Which data is contained in the “Results" block value depends on the program operating status at the time of printing.
The following options are available:
– Total/results printout
  After [CF] is pressed (tare memory is cleared)
– Individual/components printout
  After [OK] is pressed (component is stored in tare memory)
– Standard
  After [⎙] is pressed (component is not stored in tare memory)

‘Total' printout:

```
--------------------
n           2
S-Comp+   3.200 kg
Cont.T+   0.200 kg
--------------------
```

Component printout (menu item 3.17.3)
When the components printout is configured, the header is printed only once, followed by all components.
If you are using a label printer, make sure a single label is large enough for the list of all components. For printer models YDP01IS and YDP04IS, you can configure manual form feed in the operating menu. If the corresponding setting is active, you can activate “form feed" manually. With the YDP02IS printer, form feed is automatic after each print command (fixed setting).
Example with 2 components

```
   HEADER LINE 1
   HEADER LINE 2
14.01.2013    09:43
--------------------
Cmp001+   1.200 kg

Cmp002+   2.000 kg
```

Individual printout (menu item 3.17.2)
The entire standard printout is generated for each component.
Example for the second component:

```
   HEADER LINE 1
   HEADER LINE 2
14.01.2013    09:46
--------------------
Cmp002+   2.000 kg
```

Standard printout
Example before the second component is stored:

```
G#   +   3.400 kg
T    +   0.200 kg
T2   +   1.200 kg
N    +   2.000 kg
```

Totalizing Application
The “Initialization data" block is empty. If this block is enabled for the printout, a blank line is output.
Which data is contained in the “Results" block value depends on the program operating status at the time of printing.
The following options are available:
– Printout of results
  After [CF] is pressed (totalizing memory is cleared)
– Individual/component printout of one transaction
  After [OK] is pressed (component is stored in tare memory)
– Standard printout
  After [⎙] is pressed (component is not stored in tare memory)

‘Total' printout:

```
--------------------

*G        9.200 kg
*N   +    8.600 kg
n           3
--------------------
```

Component printout
(menu item 3.17.3)
The header is printed only once; all transactions are printed one after the other. For printing on a label printer, see also “Component printout, Net-total."
Example with 2 transactions:

```
   HEADER LINE 1
   HEADER LINE 2
14.01.2013    09:43
--------------------
G#   +   1.400 kg
T    +   0.200 kg
N    +   1.200 kg
n           1

G#   +   3.400 kg
T    +   0.200 kg
N    +   3.200 kg
n           2
```

Individual printout (menu item 3.17.2)
The entire standard printout is generated for each component.
Example: Print second transaction:

```
   HEADER LINE 1
   HEADER LINE 2
14.01.2013   09:43
--------------------
G#   +   2.400 kg
T    +   0.200 kg
N    +   2.200 kg
n            2
```

Standard printout
The transaction counter value is not printed.
Example: Print second transaction:

```
G#   +   2.400 kg
T    +   0.200 kg
N    +   2.200 kg
```

Print menu parameters:
All active menu item settings below the active menu level are printed.

```
---------------------
MENU
   SETUP.
WP1
---------------------
1
 1.1
        1.1.2
        1.2.1
        1.3.2
...
1.18
 1.18.1
  CAL.
       10,000 kg

etc.
```

Data Interface (Optional)

For COM1

Standard equipment: RS-232	Computer with serial RS-232 input port
SBI/XBPI protocol, Option A11:	printer: YDP04IS YDP02IS YDP14IS YDP03-0CE YAM01IS external Alibi memory YBT01 external Bluetooth adapter YRD02Z second display USB adapter cable for connecting a computer over USB: YCC01IS
Option: “RS-232 clock:" Option A31	As for the RS-232 standard, but includes date/time

For UniCOM

Male connector:	For RS-232 / RS-422 / RS-485 analog output port / digital I/O Ethernet: RJ45 socket
UniCOM (can be selected optionally)	
RS-232: Option A1, YDO01M-232CO	Computer with serial RS-232 input port, SBI/XBPI protocol and SMA YAM01IS external Alibi memory YBT01 external Bluetooth adapter YRD02Z second display USB adapter cable for connecting a computer over USB: YCC01-USBM2 YRD14Z red-green-red display (uses digital control lines) Digital control lines (TTL/5V) <;=;set;> to YSB01 relay box
RS-422: Option A2, YDO01M-485/422	Point-to-point connection with SBI/XBPI protocol as SMA Ethernet
RS-485: Option A3, YDO01M-485/422	Network, up to 32 weighing instruments, XBPI bus
Analog output port: Option A9, YDO01M-20MA	Controllers with analog input
Digital I/O, 5 IN/5 OUT: Option A5, YDO01M-IO	For connection to a controller Digital IN: Voltage: 0–30V DC; current: 1 to 2 mA Digital OUT: Voltage: >30V DC; current: 100 mA For specific signals, please refer to the detailed descriptions of the options

Error Messages

Error messages are shown in the main display. Error messages are shown permanently; Information messages are shown for 2 seconds. After this the program automatically returns to the weighing mode.

Display	Cause	Remedy
ERR 101	Key is stuck Key pressed whilst switching on	Release key or Contact your customer service partner
ERR 320	Operating program memory faulty	Contact your customer service partner
ERR 340	Incorrect operating parameter (EEPROM)	Switch scale off and then on again, if Err 340 is permanently displayed: Contact your customer service partner
ERR 341	Loss of data	Contact your customer service partner
ERR 343	Loss of data in storage for external Alibi memory transaction number	Contact your customer service partner
ERR 2627	The time entered or stored in the Alibi memory is incorrect	Set output format correctly
INF 01	Data output not compatible with output format	Set output format correctly
INF 02	Calibration condition was not met e.g. not tared or weighing pan loaded	Do not carry out calibration until after 0 display Unload the weighing equipment Tare with the →T← key
INF 03	Calibration could not be completed within a certain time	Keep to warm-up time and calibrate again
INF 07	Last operating function is not permissible use in legal metrology	For setting changes please Contact your customer service partner
INF 08	Load on the scale is too heavy for scale to be zeroed.	Please check if point 1.12 “Zero-setting range” was adhered to in your configuration.
INF 09	Taring not possible for gross zero	Zero the scale
INF 10	Taring not possible with occupied tare memory	Taring only possible after deletion of the application program
INF 22	Reference takeover error, weight too small	Place a heavier weight on the platform
INF 23	Error in initializing an application	Contact your customer service partner
INF 29	Minimum load not achieved	Reduce minimum load (under Application, menu item 3.6)
INF 71	Saving of measured value (or input) not possible (e.g. control limit too small or too large)	None
INF 72	Saving of measured value not possible (e.g. maximum for item counter reached)	None
INF 73	Stored data is deleted or cannot be read	Contact your customer service partner
INF 74	Function is locked (e.g. menu is locked)	None
INF 98	No weighing platform connected	Contact your customer service partner
INF 99	No weighing platform connected	Contact your customer service partner
NO WP	No weighing platform connected	Connecting weighing platform

Care and Maintenance

Service
Regular maintenance of your equipment by your customer service partner ensures continued weighing accuracy.

The frequency of the maintenance intervals depends on the operating conditions and user's tolerance requirements.

Repairs
⚠ Disconnect the power supply to the defective equipment immediately (unplug the power cord from the mains supply). Repairs should only be carried out by qualified personnel authorized by Minebea Intec, using original spare parts. Any attempt by unqualified personnel to carry out repair work may cause danger for the user. Note: During the guarantee period, return the entire indicator.

⚠ Replace defective or damaged cables or cable glands as a unit.

⚠ Do not open the equipment while power is on. After disconnecting the power supply, wait at least 10 seconds before opening. As the mating surfaces of the housing components affect the IP protection, open and close the equipment correctly.

Cleaning
The devices conform to the guidelines of the EHEDG (European Hygienic Equipment Design Group) on suitable measures to avoid contamination. They can therefore be easily cleaned and disinfected.

⚠ Disconnect the power supply to the defective equipment immediately (unplug the power cord from the mains supply). If necessary, disconnect the data cable.
⚠ No liquid may enter the device.
⚠ Do not use aggressive cleaning agents (solvents or similar).
⚠ Spraying with water or blowing off with compressed air is not permissible.

● Clean the indicator with a cloth lightly moistened with soap solution.
○ For use in the food industry, use the usual cleaning agents.
● Wipe down the indicator with a soft, dry cloth after cleaning.

Cleaning the stainless steel surfaces
All stainless steel parts should be cleaned at regular intervals.
Only use conventional household cleaning agents which are suitable for stainless steel. Stainless steel should be cleaned simply by rubbing.
After this, rinse thoroughly until all residue is removed. After this, let the device dry. For additional protection, protective oil may be applied.
Only use solvents for cleaning stainless steel parts.

Clean the protective cover
○ Replace damaged protective cover.
● Press the protective cover over the edge of the front and rear side of the device until it is fixed in place.

Safety inspection
Safe operation of the device can no longer be guaranteed if:
– The device or the mains connecting lead shows visible damage.
– The integrated mains unit no longer functions.
– The device has been stored for long periods under unfavorable conditions (e.g. extreme dampness).

If safe operation of the equipment can no longer be guaranteed:
● Disconnect the power supply to the device (unplug the power cord from the mains supply) and make sure the device cannot be used for the time being.
● Inform Minebea Intec customer service department.

Maintenance measures may only be carried out by specialist personnel:
– Who have access to the required maintenance documents and manuals
– Who have attended appropriate training courses

⚠ The warranty seals on the device indicate that the device may only be opened and maintained by authorized specialist personnel, so that the correct and safe operation of the device is ensured and the warranty remains valid.

Recycling

Information and Instructions on Disposal and Repairs

Packaging that is no longer required must be disposed of at the local waste disposal facility. The packaging is made of environmentally friendly materials that can be used as secondary raw materials.

The equipment, including accessories and batteries, does not belong in your regular household waste. The European legislation requires that electrical and electronic equipment be collected and disposed of separately from other communal waste with the aim of recycling it.

In Germany and many other countries, Minebea Intec takes care of the return and legally compliant disposal of its electrical and electronic equipment on its own. These products may not be placed with the household waste or brought to collection centers run by local public disposal operations – not even by small commercial operators.

For disposal in Germany and in the other member nations of the European Economic Area (EEA), please contact our Service technicians on location or our Service Center in Goettingen, Germany:

Minebea Intec Bovenden
GmbH & Co. KG
Leinetal 2
37120 Bovenden
WEEE-Reg.-Nr. DE58091735

In countries that are not members of the European Economic Area (EEA) or where no Minebea Intec subsidiaries or dealerships are located, please contact your
local authorities or a commercial disposal operator.

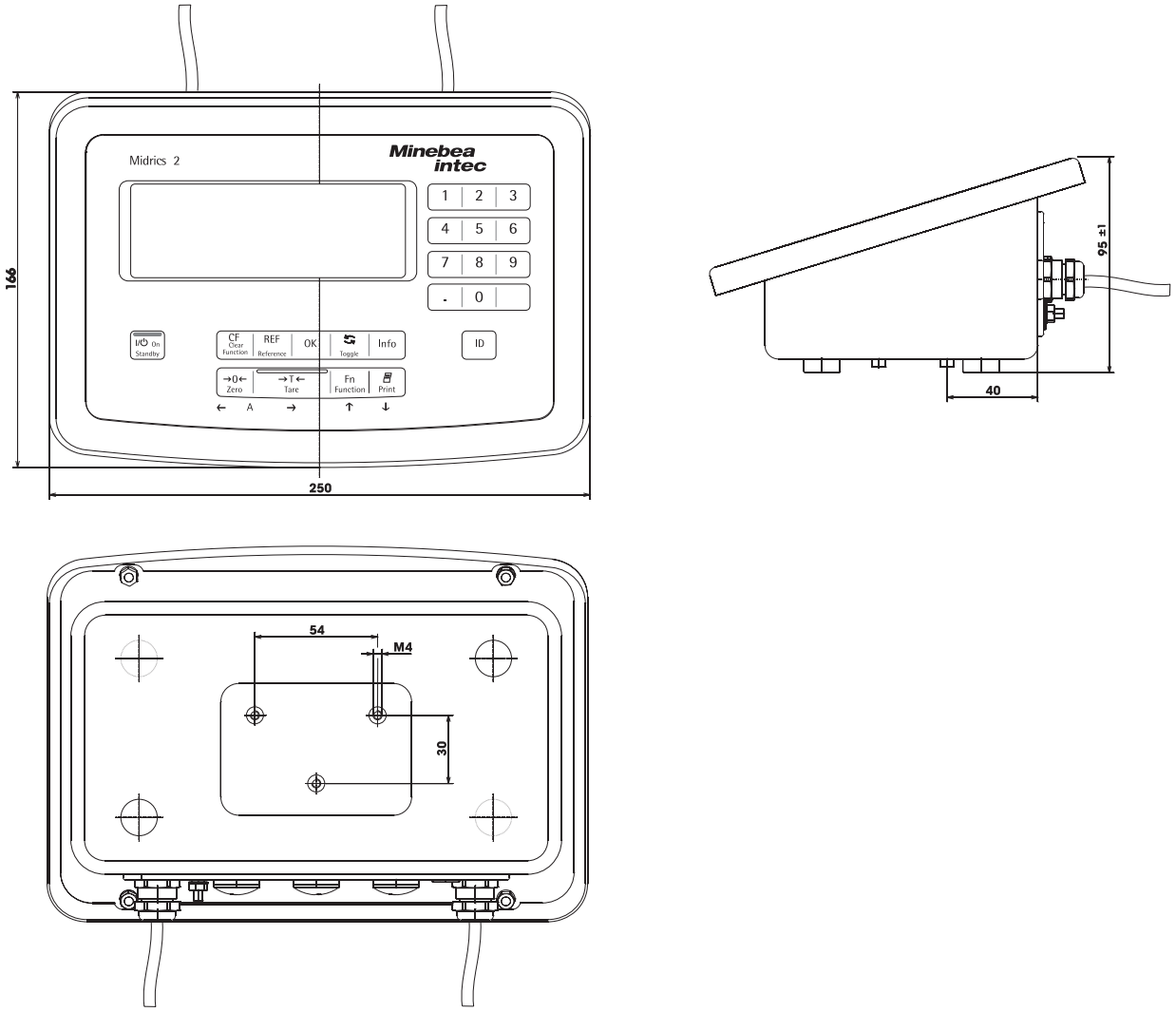
Prior to disposal and/or scrapping of the equipment, any batteries should be removed and disposed of in local collection boxes.

Minebea Intec will not take back equipment contaminated with hazardous materials (ABC contamination) – either for repair or disposal. Please refer to the accompanying leaflet/manual or visit our Internet website (www.minebea-intec.com) for comprehensive information that includes our service addresses to contact if you plan to send your equipment in for repairs or proper disposal.

Overview

Maximum readability	15,000 display steps (not in legal metrology)
Accuracy class	(III), (IIII) (in the design...-CE)
Number of scale values	3,000e or 2× 3.000e according to EN 45501
Digital protective interface	According to EN45501
Data interfaces	2, optional
Display	14-segment backlit display
Housing: Material	 Stainless steel, AISI 304 (1.4301)
Protection class:	According to EN60529 IP65
Ambient conditions: Operating temperature range	 -10°C to +40°C (+14°F to 104°C)
Humidity	Maximum relative humidity 80% for temperature up to 31°C (~88°F); linear decrease down to 50% for relative humidity at 40°C (+104°F)
Protection class of the housing in accordance with EN 60529	 IP 65
Pollution degree 2	Normally only nonconductive pollution occurs. Temporary conductivity caused by condensation is to be expected.
Ratings: Power supply	 100-240 VAC (-15/+10%), 50-60 Hz, 17 W/23 VA max.
Transient overvoltage	Overvoltage category II acc. to IEC 60364-4-443
Operation using protective extra low voltage	See instruction manual for Option L8 (24-volt module)
DC supply	22.8 ... 26.7 V (optional: 21.6 ... 26.7 V); 12 VA max.
AC supply	22.8 ... 26.7 V, 50-60 Hz, 12 VA max.
Operation with rechargeable battery	See Minebea Intec Installation Instructions for Option L9 Operation via built-in or external rechargeable battery (only available as an option that must be ordered with the scale)
Emissions	Acc. to EN613-1 (IEC 61326-1) Group 1, Class B, suitable for use in domestic establishments and establishments directly connected to a low-voltage power-supply network that supplies buildings used for domestic purposes
Immunity to interference:	Acc. to EN61326-1): Immunity test requirements for equipment intended for use in industrial locations (Table 2)
Electrical safety	Acc. to EN 61010-1 (IEC 1010-1), EN 60950 (IEC 950)
Temperature range	-10°C to +40°C.
Power supply DC Supply AC Supply Battery operation	100 – 2 40 VAC (–15/+10 %), 50 – 60 Hz, max. 17 W/23 VA optional 24 VDC (± 5%), max. 12 VA optional 24 VAC (± 5%), 50–60 Hz, max. 12 VA Via internal battery (only available as an option directly with order)
Interference	According to EN61326-1 Class B (IEC 61326-1)
Interference resistance	According to EN61326-1, industrial areas (IEC61326-1)
Electrical safety	According to EN61010-1 (IEC1010-1)

Dimensions (Scale Drawings)



All dimensions given in millimeters

Accessories

YDP21

Printer and printer accessories

Needle high speed matrix printer up to 57 mm paper width with internal power supply 100 - 240 Volt and power cable (EU)	YDP21
Printer paper for data printer (5 rolls; length per roll: 50 m)	6906937
3 ribbon cassettes (replacement)	69Y03952

YDP05

Verifiable strip and label printer with thermal print head, up to 60 mm paper width, with external 100–240V power supply	YDP005
Labels for YDP05 + YDP14IS-0CEUV Labels: 58×30 mm (1000 pcs) Labels: 58×76 mm (500 pcs) Labels: 58×100 mm (380 pcs)	 69Y03092 69Y03093 69Y03094
Labels for YDP14IS-0CEUV Labels: 101×127 mm (305 pcs)	 69Y03195
Printer paper for YDP05 + YDP14IS-0CEUV 3 paper rolls; 60 mm × 75 m, thermo paper	 69Y03090
Printer paper for YDP14IS-0CEUV 1 paper roll; 101 mm × 75 m, thermo paper	 69Y03196

YDP14IS

Verifiable strip and label printer with thermal print head up to 108 mm paper width, with external 100–240V AC adapter and power cord (EU+US); for use only with flexible print formatting; connecting cable required	YDP14IS-0CEUV YCC02-D09M6
Verifiable strip and label printer with thermal print head, VTH up to 108 mm paper width, with external 100–240V power supply and power cord (EU+US); for use only with flexible print formatting; connecting cable required	YDP14IS-0CEU- YCC02-D09M6
3 color ink cartridges for YDP14IS-0CEUVTH	69Y03234

Accessories

Product	Order No.
COM1	
RS-232	YDO01M-232
RS-232+CLOCK	YDO01M-232CLK
Optional interface (UniCOM)	
Interface module (RS232 + TTL)	YDO01M-232CLK
Interface module (RS485) galvanically isolated	YDO01M-485
Digital I/O 5/5 optoisol.	YDO01M-IO
Analog power outlet, 0-20 mA, 4-20 mA, 0 up to 10 Volt, 16 bit	YDA01C-20MA
Ethernet	YD001M-EN
External interface adapter	
Connecting cable from RS-232 data interface to USB port on PC[2)]	YCC01-USBM2
Electrical accessories	
External red/green/yellow display with 12 pole, round plug (IP67) connecting cable YCC02-R12F6 or option M36 required	YRD01IS
Secondary display, connecting cable YCC02-D25F6 or option M31 required	YRD03Z
Relay box to connect weighing instruments to external controls, with 4 (5) relay outputs (250 V/ 3 A) and 1 optocoupler input (0-30V), connecting cable YCC02-RELAIS02 required	YSB01
Miscellaneous:	
Guard covers (×2)	YDC01SW
Cable gland for cables with diameter 4.5 to 9 mm, IP67, M16 × 1.5	YAS04CIS
Kit for installation in control panel[3)]	YAS03MI
Software	
Minebea Intec WinScale Scale driver for Windows 95/98/2000/NT with display of current measured value and verifiable PC-data memory. RS-232 connecting cable YCC-R12F6 (Option M6) required	YSW03
PC program set SartoConnect for reading weighed values using a PC connecting cable YCC02-R12F6 (Option M36) required	YSC03
Power supply	
24 Volt module	YAS02MI

Product	Order No.
Cables	
Connecting cable with cable gland for printer YDP05/14, open cable ends on 9 pin, D-SUB-plug, 6 m	YCC02-D09M6
Connecting cable with cable gland for printer YDP21 or PC open cable ends on 9 pin, D-SUB-plug, 6 m	YCC02-D09M6
Connecting cable with cable gland for accessories open cable ends on 25 pin, D-SUB-plug, 6 m	YCC02D25F6
Connecting cable with cable gland for accessories and IS platforms, open cable ends on 12 pin. round plug socket, 6 m	YCC02R12F6
Connecting cable with cable gland, open cable ends on open cable ends, 6 m	YCC02RELAIS02

Mechanical accessories	
Screw-fixed sheet metal plate for the indicator platform (separate display). Stainless steel 1.4301 (V2A) only for platform dimensions 320 × 240 mm (DC), 400 × 300 mm (ED) and 500 × 400 mm (FE)	YDH12CWS
Plug and socket set to connect a weighing platform to the indicator (separable connection)	YAS99I
Stainless steel wall bracket	YDH01CIS
Stainless steel tilting wall bracket	YDH02CIS
Painted floor-mounted column, height 1.1 m	YDH03CIP
Stainless steel floor-mounted column, height 1.1 m	YDH03CIS
Stainless steel floor-mounted column base (4 supports)	YBP03CIS
Plate for attaching a printer to the floor-mounted column or bench stand	YPP01CWS

"Installation" Service

"Installation" Service in Germany
Our "Installation" service package provides the following services:

- Installation
- Start-up
- Inspection
- Instruction

If the installation of the weighing instrument is to be carried out by Minebea Intec, please request this service from a customer service employee.

Re-verification in Germany
The validity of the verification ends when the next but one calendar year has elapsed. When the weighing instrument is used for the control of filling quantities according to the regulation on prepackaging, the verification ends when the next calendar year has elapsed. At present, re-verification is the responsibility of Weights and Measures officials. Re-verification should be requested in good time from the local Weights and Measures office.
If necessary, please observe any statutory amendments.

Re-verification in other European countries
The period of validity of the verification is determined by the regulations of the particular country in which the weighing instrument is used. For information on legal regulations currently applicable in your country, and to obtain names of the persons responsible, please contact the local Minebea Intec customer service center. Further information concerning verification can be obtained from our customer service centers.

Minebea intec
The true measure

CE

EU-Konformitätserklärung
EU Declaration of Conformity

Hersteller *Manufacturer*	**Minebea Intec Bovenden GmbH & Co. KG** **Leinetal 2, 37120 Bovenden, Germany**

erklärt in alleiniger Verantwortung, dass das Betriebsmittel
declares under sole responsibility that the equipment

Geräteart *Device type*	**Midrics Indikator** *Midrics **Indicator***
Baureihe *Type series*	**MIS1, MIS2**

in der von uns in Verkehr gebrachten Ausführung allen einschlägigen Bestimmungen der folgenden Europäischen Richtlinien - einschließlich deren zum Zeitpunkt der Erklärung geltenden Änderungen - entspricht und die anwendbaren Anforderungen folgender harmonisierter Europäischer Normen erfüllt:

in the form as delivered fulfils all the relevant provisions of the following European Directives - including any amendments valid at the time this declaration was signed - and meets the applicable requirements of the harmonized European Standards listed below:

2014/30/EU	Elektromagnetische Verträglichkeit *Electromagnetic compatibility* EN 61326-1:2013
2014/35/EU	Elektrische Betriebsmittel zur Verwendung innerhalb bestimmter Spannungsgrenzen *Electrical equipment designed for use within certain voltage limits* EN 61010-1:2010
2011/65/EU	Beschränkung der Verwendung bestimmter gefährlicher Stoffe in Elektro- und Elektronikgeräten (RoHS) *Restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS)* EN 50581:2012 Nur für Geräte mit Option Y2 / *Only for devices with option Y2*
2014/34/EU	Geräte und Schutzsysteme zur bestimmungsgemäßen Verwendung in explosionsgefährdeten Bereichen *Equipment and protective systems intended for use in potentially explosive atmospheres* EN 60079-0:2012, EN 60079-11: 2012, EN 60079-15:2010, EN 60079-31:2014
Kennzeichnung *Marking*	II 3G Ex nA ic IIC T4 Gc II 3D Ex tc IIIC T80°C Dc
Referenz *Reference*	Herstellerbescheinigung Nummer: SIS14ATEX005X *Manufacturer's Certificate number:*

Jahreszahl der CE-Kennzeichenvergabe / *Year of the CE mark assignment:* 17

Minebea Intec Bovenden GmbH & Co. KG

Bovenden, 2017-02-08

Dr. Bodo Krebs
President

i.V.
Dr. Jörg Hachenberg
Head of Mechatronics

Diese Erklärung bescheinigt die Übereinstimmung mit den genannten EU-Richtlinien, ist jedoch keine Zusicherung von Eigenschaften. Bei einer mit uns nicht abgestimmten Änderung des Produktes verliert diese Erklärung ihre Gültigkeit. Die (Sicherheits-)hinweise der zugehörigen Produktdokumentation sind zu beachten.

This declaration certifies conformity with the above mentioned EU Directives, but does not guarantee product attributes. Unauthorised product modifications make this declaration invalid. The (safety) information in the associated product documentation must be observed.

Physikalisch-Technische Bundesanstalt

Braunschweig und Berlin

EG-Bauartzulassung

EC Type-approval Certificate

Zulassungsinhaber: *Issued to:*	Sartorius Industrial Scales GmbH & Co. KG Leinetal 2 37120 Bovenden
Rechtsbezug: *In accordance with:*	Richtlinie 2009/23/EG vom 23. April 2009 über nichtselbsttätige Waagen (ABl. L 122 S. 6). *Directive 2009/23/EC of 23 April 2009 on non-automatic weighing instruments (OJ L 122 p. 6)*
Bauart: *In respect of:*	Nichtselbsttätige elektromechanische Waage mit oder ohne Hebelwerk *Non-automatic electromechanical weighing instrument with or without lever system*
Typ: *Type:*	SARTICS Max 0,5 kg ... 300 t Option: Mehrbereichs- und Mehrteilungswaage (III) n ≤ 10000 *multi-interval and multiple range instrument* (IIII) n ≤ 1000
Zulassungsnummer: *Approval No.:*	**D04-09-015 5. Revision**
Gültig bis: *Valid until:*	07.04.2014
Anzahl der Seiten: *Number of pages:*	14
Geschäftszeichen: *Reference No.:*	PTB-1.12-4065116
Benannte Stelle: *Notified Body:*	0102

Zertifizierung:
Certification:

Im Auftrag
On behalf of PTB

Dr. Oliver Mack

Braunschweig, 27.09.2013

Siegel
Seal

PHYSIKALISCH-TECHNISCHE BUNDESANSTALT 40

Bewertung:
Evaluation:

Im Auftrag
On behalf of PTB

Timo Schwabe

Timo Schwabe

Physikalisch-Technische Bundesanstalt

Braunschweig und Berlin

Prüfschein

Test Certificate

Ausgestellt für: *Issued to:*	Sartorius Industrial Scales GmbH & Co. KG Leinetal 2 37120 Bovenden
Prüfgrundlage: *In accordance with:*	DIN EN 45501 (1992) Nr. 8.1, WELMEC-Leitfaden 2.1 (2001), Richtlinie 2009/23/EG, OIML R 76-1
Gegenstand: *Object:*	Auswertegerät/*Indicator*
Typ: *Type:*	TM
Kennnummer: *Serial No.:*	
Prüfscheinnummer: *Test Certificate No.:*	D09-07.21 2. Revision *D09-07.21 Revision 2*
Datum der Prüfung: *Date of test:*	
Anzahl der Seiten: *Number of pages:*	13
Geschäftszeichen: *Reference No.:*	PTB-1.12-4065118
Benannte Stelle: *Notified Body:*	0102

Im Auftrag
On behalf of PTB

Dr. Oliver Mack

Braunschweig, 16.09.2013

Siegel
Seal

PHYSIKALISCH-TECHNISCHE BUNDESANSTALT 40

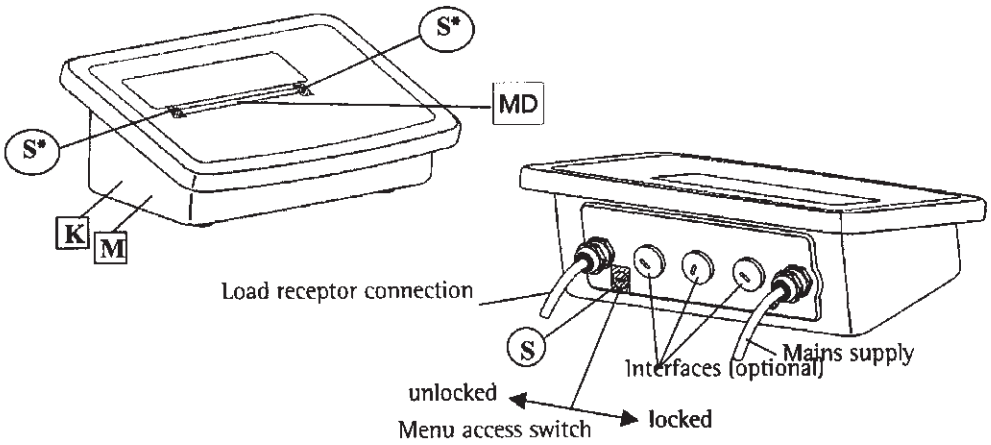
Im Auftrag
On behalf of PTB

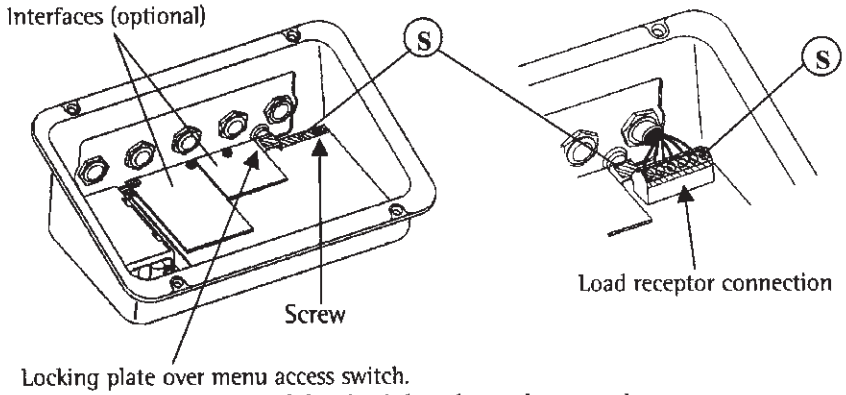
Timo Schwabe

Timo Schwabe

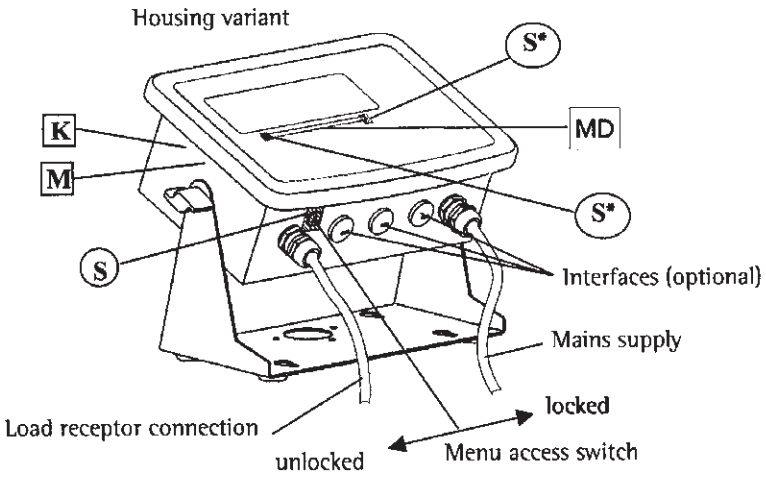
R3-0025 i

Plates and Markings MIS1 / MIS2 (Type TM)





Locking plate over menu access switch.
The plate and one screw of the circuit board must be secured.



PPMI270307e

Type of weighing instrument: MINECOMB Type of indicator: TM
EC type-approval certificate T11379 + test certificate D09-07.21

[K] Descriptive plate (ID label) with CE mark

[M] Green metrology sticker

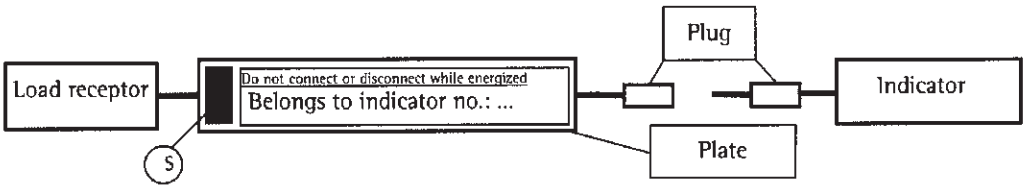
[MD] Metrological data: Max, Min and e

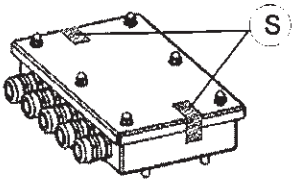
(S) Protective mark (self-adhesive mark or seal)

(S*) Protective mark, only for transferable labels (detachable labels that remain intact after removal)

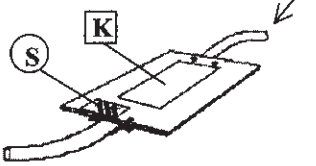
[T] Plate with model designation

Alternative separable (disconnectable) plug connection between indicator and load receptor.





If there is a junction box between the load receptor and the electronic evaluation unit, the junction has to be secured against tampering.



Alternative position for attaching the descriptive plate for the weighing instrument:
Procedure for attaching plate in alternative position:
Affix the descriptive plate (ID label) of the weighing instrument to the tag plate. Affix the ID tag plate to the data cable of the weighing module near the indicator. The verification officer or an authorized Sartorius representative must then place a seal over the fastener of the ID tag plate.

Example of descriptive plate on a weighing instrument already verified [K]

Minebea Intec Bovenden GmbH & Co. KG, Leinetal 2, 37120 Bovenden, Germany
Type: Minecomb Cert. No.: T11379
S/N 12345678 (III) CE

Example of plate with model designation (indicator) [T]

Minebea Intec Bovenden GmbH & Co. KG, Leinetal 2, 37120 Bovenden, Germany
MAT_CODE (TM)
A8.B8.C8.D8.E8.F8.G8.H8.I8.J8
S/N 12345678 Barcode D09-07.21 CE Made in Germany

Example of label with metrological data [MD]

R1 Max 3kg Min 20g e= 1g R2 Max 6kg Min 40g e= 2g

PPMI270307e

Type of weighing instrument: MINECOMB Type of indicator: TM
EC type-approval certificate T11379 + test certificate D09-07.21

Index

EU-type examination certificate

Number **T11379** revision 0
Project number 1902516

Issued by	NMi Certin B.V., designated and notified by the Netherlands to perform tasks with respect to conformity modules mentioned in Article 13 of Directive 2014/31/EU, after having established that the measuring instrument meets the applicable requirements of Directive 2014/31/EU, to:
Manufacturer	Minebea Intec Bovenden GmbH & Co. KG Leinetal 2 D-37120, Bovenden Germany
Measuring instrument	A **Non-automatic weighing instrument** Manufacturer's mark : Minebea Intec Type : MINECOMB
	Further properties are described in the annex: – Description T11379 revision 0.
Valid until	6 July 2028
Issuing Authority	**NMi Certin B.V., Notified Body number 0122** 6 July 2018 C. Oosterman Head Certification Board

NMi Certin B.V.
Hugo de Grootplein 1
3314 EG Dordrecht
The Netherlands
T +31 78 6332332
certin@nmi.nl
www.nmi.nl

INSPECTION RvA I 122

101

Description

Number **T11379** revision 0
Project number 1902516

1 General information about the non-automatic weighing instrument

All properties of the non-automatic weighing instrument, whether mentioned or not, shall not be in conflict with the legislation.
This certificate contains references to other certificates. The properties mentioned in these certificates shall be observed in addition to the properties mentioned in this certificate.

1.1 Essential parts

Indicator / analog data processing device / terminal:

Producer	Type	Certificate number
Minebea Intec GmbH	PR5410	D09-07.54
Minebea Intec Bovenden GmbH & Co. KG	TA	D09-11.02
Minebea Intec Bovenden GmbH & Co. KG	TM...	D09-07.21
Minebea Intec Bovenden GmbH & Co. KG	TA-X	DE-15-EC-PTB002
Minebea Intec GmbH	PR5230 with PR5110	TC7959
Minebea Intec GmbH	PR5900	DE-15-PC-PTB005
Minebea Intec GmbH	PR5500	DE-18-PC-PTB002

Any load cell(s) may be used under this certificate for instruments as described in WELMEC 2.4 Issue 2, provided the following conditions are met:

- There is a respective certificate (EN45501) or an OIML Certificate of Conformity (R 60) issued for the load cell by a Notified Body responsible for type examination under Directive 2014/31/EU.
- The certificate contains the load cell types and the necessary load cell data required for the manufacturer's declaration of compatibility of modules (WELMEC 2, 2015 clause 10), and any particular installation requirements. A load cell marked **NH** is allowed only if humidity testing to EN45501 has been conducted on this load cell.
- The compatibility of load cells and indicator is established by the manufacturer by means of the compatibility of modules form, contained in the above WELMEC 2 document, at the time of putting into use.
- The load transmission must conform to one of the examples shown in WELMEC 2.4 Issue 2.

Description

1.2 Essential characteristics

Accuracy class	(III) or (IIII)
Number of verification scale intervals	n ≤ number of scale intervals in the certificates involved

Further essential characteristics are described in the certificates involved.

1.3 Essential shapes

The data plate is secured against removal by sealing or will be destroyed when removed.

The inscriptions Max, Min, e, as required by Directive 2014/31/EU Annex III point 1.4 are presented in the display by software or on a label near the display.

1.4 Conditional parts

The non-automatic weighing instrument may be equipped with peripheral equipment which is used for the applications listed in Article 1(2), (a) to (f) of Directive 2014/31/EU, provided that the peripheral equipment is certified to be connected to a non-automatic weighing instrument by a Notified Body responsible for type examination under Directive 2014/31/EU, or, that the equipment and the use of the equipment complies with the requirements of WELMEC 2.5 Issue 2 clause 2.2.

The non-automatic weighing instrument is fitted with a levelling device and a level indicator, unless the instrument is installed in a fixed position. A ring on the level indicator indicates when the maximum tilt is exceeded.

1.5 Non-essential parts

The non-automatic weighing instrument may be connected to non-essential devices, for example but not limited to bar code readers, foot switches, second displays and cash drawers, provided that:
- They do not present primary data used for purposes mentioned in Article 1(2), (a) to (f) of Directive 2014/31/EU unless the "Preliminary observation" in Annex I of the Directive is satisfied;
- They do not lead to an instrument having other essential characteristics than those fixed by this certificate.

2 Seals

To secure components that may not be dismantled or adjusted by the user, the non-automatic weighing instrument has to be secured in a suitable manner on the locations indicated in the certificates involved.

The connecting cable of the load cell or the junction box is provided with the possibility to seal.

500

Description

3 Conditions for conformity assessment

The marks, facilities for the marks and the inscriptions on the non-automatic weighing instrument fulfil the requirements of point 1 of Annex III of Directive 2014/31/EU.

The compatibility of load cells and indicator is established by the manufacturer by means of the compatibility of modules form, contained in WELMEC 2, 2015 clause 10, at the time of putting into use.

sartorius

Herstellerbescheinigung
Manufacturer's Certificate

Hersteller
Manufacturer

Sartorius Industrial Scales GmbH & Co. KG
Leinetal 2, D-37120 Bovenden, Germany

bescheinigt in alleiniger Verantwortung, dass das Betriebsmittel
certifies under sole responsibility that the equipment

Geräteart
Device type

Midrics Indikator
*Midrics **Indicator***

Baureihe
Type series

MIS1, MIS2 mit / with **Option Y2**

auf das sich diese Bescheinigung bezieht, in der von uns in Verkehr gebrachten Ausführung mit der/den folgenden Norm(en) oder normativen Dokument(en) übereinstimmt (siehe Seite 2) gemäß den Bestimmungen der „Richtlinie **94/9/EG** des Europäischen Parlaments und des Rates vom 23. März 1994 zur Angleichung der Rechtsvorschriften der Mitgliedstaaten für Geräte und Schutzsysteme zur bestimmungsgemäßen Verwendung in explosionsgefährdeten Bereichen". Das Produkt wird wie folgt gekennzeichnet:

*to which this certification relates in the form as delivered complies with the following standard(s) or other normative document(s) (see page 2) pursuant to the provisions of the "Directive **94/9/EC** of the European Parliament and the Council of 23 March 1994 on the approximation of the laws of the Member States concerning equipment and protective systems intended for use in potentially explosive atmospheres". This product is labelled as follows:*

II 3G Ex nA ic IIC T4 Gc
II 3D Ex tc IIIC T80°C Dc
SIS14ATEX005X

Sartorius Industrial Scales GmbH & Co. KG
Bovenden, 2014-04-04

Dr. Bodo Krebs
Senior Vice President

Dr. Dieter Klausgrete
Head of International Certification Management

Diese Erklärung bescheinigt die Übereinstimmung mit der genannten EG-Richtlinie, ist jedoch keine Zusicherung von Eigenschaften. Bei einer mit uns nicht abgestimmten Änderung des Produktes verliert diese Erklärung ihre Gültigkeit. Die Sicherheitshinweise der zugehörigen Produktdokumentation sind zu beachten.

This declaration certifies conformity with the above mentioned EC Directive, but does not guarantee product attributes. Unauthorised product modifications make this declaration invalid. The safety information in the associated product documentation must be observed.

Die grundlegenden Sicherheits- und Gesundheitsanforderungen werden erfüllt durch Übereinstimmung mit:

Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN 60079-0: 2012
Explosionsfähige Atmosphäre – Teil 0: Geräte - Allgemeine Anforderungen
Explosive atmospheres - Part 0: Equipment - General requirements

EN 60079-11: 2012
Explosionsfähige Atmosphäre - Teil 11: Geräteschutz durch Eigensicherheit „i"
Explosive atmospheres – Part 11: Equipment protection by intrinsic safety „i"

EN 60079-15:2010
Explosionsfähige Atmosphäre - Teil 15: Geräteschutz durch Zündschutzart „n"
Explosive atmospheres – Part 15: Equipment protection by type of protection „n"

EN 60079-31:2009
Explosionsfähige Atmosphäre – Teil 31: Geräte - Staubexplosionsschutz durch Gehäuse "t"
Explosive atmospheres – Part 31: Equipment dust ignition protection by enclosure "t"

* * * * * *

Technische Daten / *Specifications:*

Umgebungstemperatur / *Ambient temperature range:* **-10°C ... +40°C**

IP-Schutz / *IP protection:* **IP6x**

Versorgungsspannung / *Supply voltage*

Standard: 100-240 Vac, 50/60 Hz, 23VA (max), Um = 250V
Option L8: 24 Vdc, 12 W (max), Um = 30 V

Option L9: Interner Akku / internal rechargeable battery

* * * * * *

Besondere Bedingungen für den sicheren Gebrauch / *Special conditions for safe use:*

Sicherheitshinweise **36418-750-16**
Safety instructions **36418-751-*16***

* * * * * *

Prüfbericht / *Test Report*

SLI.14.ATEX.003 (Sartorius Lab Instruments GmbH & Co. KG, Goettingen, Germany)

Appendix: “Guide to Verification of Weighing Instruments”

Verification of Compatibility
for Modules used with Non-automatic Weighing Instruments
The documents required to verify a weighing instrument for legal metrology can be created using the data, documents and programs available from the Minebea Intec website.

The printout of the completed forms is valid as a model for verification of the weighing instrument produced by the scale manufacturer. Once this has been properly completed and signed by the weighing instrument manufacturer, it is submitted to the weights and measures officer together with the Declaration of Conformity (under “Documents”).

Information important to the weights and measures officer may include the type approval certificate or a test report. The test certificate and manufacturer information about the load cell or weigh cell are required.

Filling out the Verification of Compatibility:

- The Guide to Verification, complete with Excel file, documents and information, is available from Minebea Intec in the Internet at:
http://www.minebea-intec.com/leitfaden_eichen/

Using the Program

ReadMe File
Read this file before you select your display and operator terminal series. The ReadMe file contains important information about using the Excel file and offers important tips on how to fill out the documents.

Documents
Once you select a display and operator terminal model, links to all required documents are shown on the left-hand side of the screen.

Getting Started
- Click on “Start the Excel Program” (depending on your settings, the “Download file” dialog might open; select “Open”).

> The Excel file is automatically opened with the Excel program. You need to have an MS-Excel installation on your computer. A dialog box for selecting macros is opened.

- Click on the “Activate macros” button.

> Note: This window might not open, depending on the settings in your computer system.

- Input is required in all the “Data” fields (highlighted in yellow).

> An example of a completed form is stored in the “Documents” folder with explanations of the fields that are marked in yellow. Once the technical specifications provided by the manufacturer have been entered correctly, the program calculates all values automatically.

- The fields should be filled out by an expert.
On the last page, the green or red fields show whether the components (display and operator terminal + load cell) are compatible: Red = incompatible; Green = compatible.

  Note: Any manufacturer of weighing equipment who configures a weighing instrument from individual components (display and operator terminal + load cell(s)) is responsible for validity of the specifications in the corresponding documentation.

- Once all data has been entered correctly (all fields on the last page are green), print out both pages. The file can then be archived (for example, saved on your computer) under a name of your choice.

- Double-check the information and sign the data sheet.

Legal Notices

The program is intended for use by the purchaser only. Transfer to third parties, whether free of charge or in return for payment, is not permitted. The software may not be changed, reverse engineered, or modified through assimilation.

The Excel program used here was developed by the “German Association of Metrology and Verification” (Arbeitsgemeinschaft für Mess und Eichwesen (AGME)). It is also available as freeware on the Internet. The program is copyrighted and may not be modified. Users shall be liable for the improper use of said software.

Appendix: General Password

After selecting the menu item „Setup“ a request to enter the access password „Code“ will be shown on the display for 2 seconds.

The place for the first character of the password flashes.

Press Fn several times, →T←;

Press Fn several times, →T←;

Press Fn several times, →T←;

Press Fn several times, →T←;

Press Fn several times, →T←;

Press Fn several times, →T←;

Press Fn several times, →T←;

Press Fn several times, →T←;

Enter password
– Enter the numbers with Fn key and save with the T key.
Fn key (numbers in ascending Order: 0 ... 9) or key ⌸ (numbers in descending order (9 ... Press 1) as often as necessary until the required character appears in the display

If the password is longer than 7 characters
the first character will be displaced to the right and out of the display

The password set is shown in the display

→T←

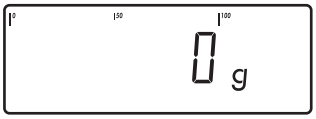
Confirm the password

→0←

Exit from the menu level

press and hold the →T← key

Save settings and exit menu



General Password:
40414243

Service Password:
202122

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