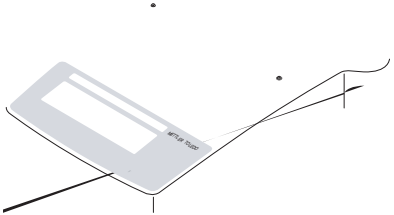
Operating instructions

METTLER TOLEDO
B-S line of balances

- **AB-S**
- **PB-S**



METTLER TOLEDO

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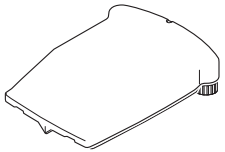
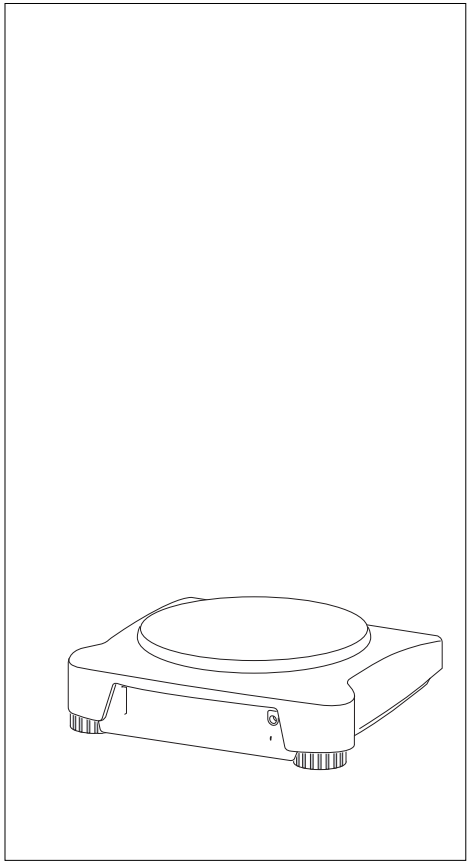
AB-S (0.1 mg / 0.01 mg)



PB-S

1.2 Layout of B-S balances



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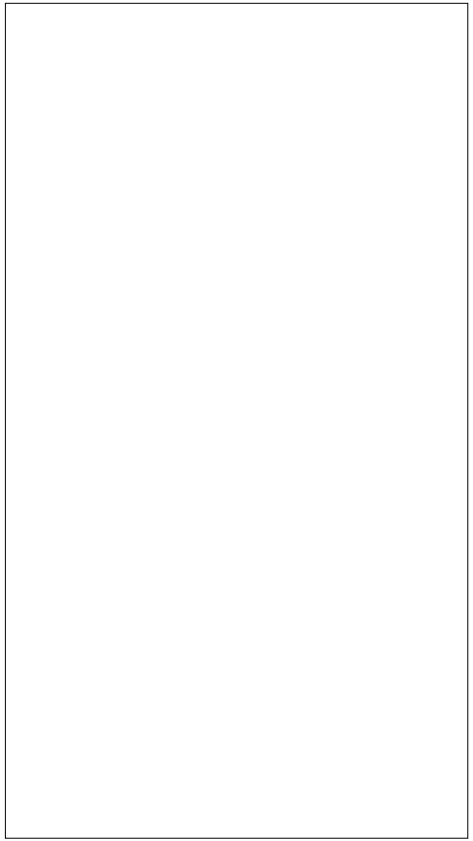

Key functions in weighing mode	
Press briefly	

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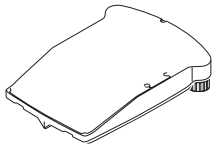
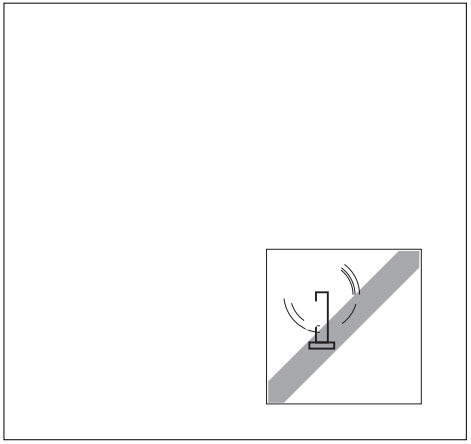
2 Startup

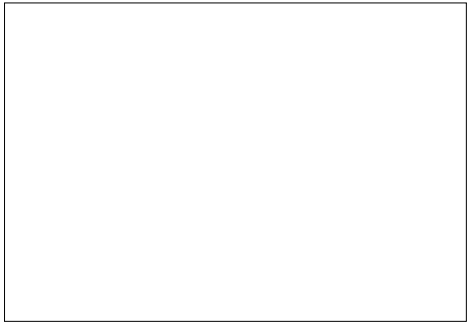
2.1 Unpacking / standard equipment



2.3 Installing the draft shield

2.4 Setting up, leveling, preparations for weighing below the balance, connecting to power supply





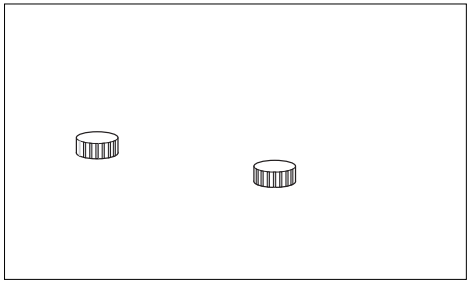
Leveling
B-S balances have a spirit level and two adjustable leveling feet to compensate for slight irregularities in the surface of the weighing bench. The balance is exactly horizontal when the air bubble is in the middle of the level glass.

Procedure
Adjust the two leveling feet appropriately until the air bubble comes to rest exactly in the middle of the glass:

Air bubble at	"12 o'clock"	turn both feet counterclockwise
Air bubble at	"3 o'clock"	turn left foot clockwise, right foot counterclockwise
Air bubble at	"6 o'clock"	turn both feet clockwise
Air bubble at	"9 o'clock"	turn left foot counterclockwise, right foot clockwise

Note
The balance should be leveled and adjusted (Section 2.5) each time it is moved to a new location.

Preparations for weighing below the balance
To carry out weighing operations below the balance, the special cover on the underside of the balance must be slackened (care: when doing this the balance may only be laid on its side, not turned upside down!), turned through 180° and retightened. This exposes the opening for the hanger, making weighing below the balance possible.



Connecting the power supply
- → Before connecting the AC adapter, check that the voltage printed on it corresponds to the local mains voltage. If this is not the case, please contact your local METTLER TOLEDO dealer.
- → Plug the AC adapter into the AC adapter socket on the balance, and connect to the power supply.
- → The balance performs a self-test. This test is finished when "OFF" appears.
- → Press the «**On**» key briefly: the balance is in operational readiness. Before any work is performed with the balance, it must be adjusted (Section 2.5).

Notes
To achieve accurate results with analytical balances (AB-S), these must be connected to the power supply for at least 60 minutes to warm up to operating temperature before the first weighing operation is carried out.
An optional AccuPac B-S (rechargeable external battery) can be used to operate all B-S balances independently of the mains power supply

2.5 Adjusting (calibration)

To obtain accurate weighing results, the balance must be adjusted to match the gravitational acceleration at its location.

Adjusting is necessary

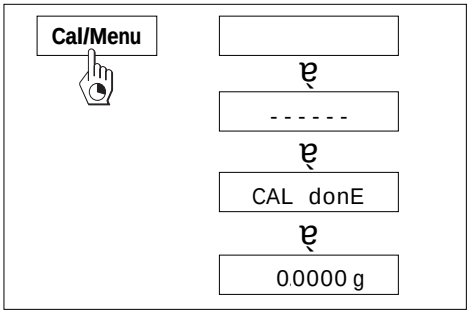
- before the balance is used for the first time
- at regular intervals during weighing service
- after a change of location

Procedure

To obtain accurate results, the balance must be connected to the power supply for 30 minutes (AB-S analytical balances 60 minutes) in order to reach operating temperature before adjusting.

Analytical balances (AB-S), Precision balances (PB-S up to 0.01 g) and all certified models

Adjusting with internal weight



→ To carry out this operation, in the second menu option (Adjustment) select "CAL int" (=factory setting) (Section 4.1).

→ Unload weighing pan

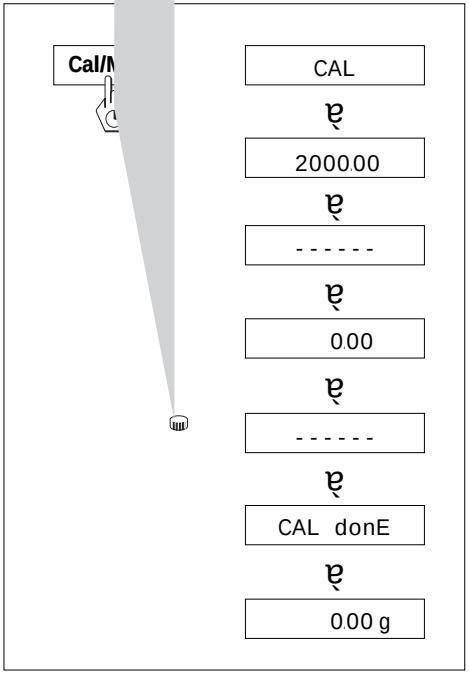
→ Press and hold the «**Cal/Menu**» key down until "CAL" appears in the display, then release key.

→ The balance adjusts itself automatically.
The adjusting is finished when the message "CAL done" appears briefly in the display, followed by "0.0000 g". The balance is again in weighing mode and ready for operation.

Adusting with external weight

→ To carry out this operation, in the second menu option (Adjustment) select "CAL E" (=factory setting) (Section 4.1).

→ Then proceed as for precision balances.



Precision balances (PB-S) without internal weight

- → Have required adjustment weight ready
- → Unload weighing pan
- → Press and hold the «**Cal/Menu**» key down until "CAL" appears in the display, then release key. The required adjustment weight value flashes in the display.
- → Place adjustment weight in center of pan. The balance adjusts itself automatically.
- → When "0.00 g" flashes, remove adjustment weight.
  The adjusting is finished when the message "CAL done" appears briefly in the display, followed by "0.00 g". The balance is again in weighing mode and ready for operation.

AB-S and PB-S certified models

All AB-S and PB-S certified models have an internal adjustment weight and adjust themselves automatically:
AB-S: 2 times within 2 hours of connection to the power supply, thereafter periodically.
PB-S: On connection to the power supply, thereafter periodically.

For the **certified AB-S and PB-S models**, manual adjustment with the internal weight can also be done at a keystroke. To obtain best possible results, it is advisable to adjust these balances regularly (for procedure, see Adjustment Using Internal Weight).

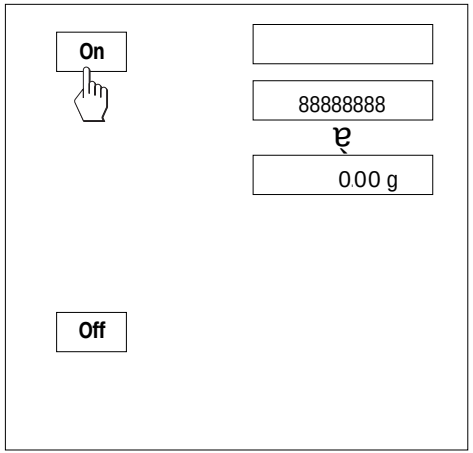
Because of certification legislation, the **certified models** cannot be adjusted with an external weight.

Notes

The adjustment procedure can be terminated at any time with the «**C**» key. The message "Abort" appears briefly to confirm that adjustment has been canceled, and the balance reverts to weighing mode.

3 Weighing

3.1 On/off switching



Switching on

→ Remove any load from weighing pan and press «**On**» key briefly.
The balance performs a display test (all segments in the display light up briefly).
When zero is displayed, the balance is ready for operation.

Switching off

→ Press and hold the «**Off**» key down until “OFF” appears in the display. Release the key.

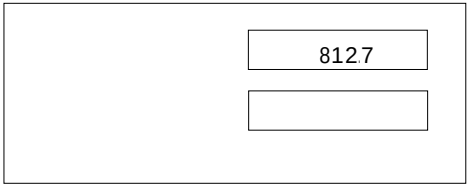
3.2 Simple weighing

→ Place weighing sample on the weighing pan.

→ Wait until the stability detector “ • ” disappears.

→ Read the result.

3.4 METTLER TOLEDO DeltaRange balances



METTLER TOLEDO **DeltaRange balances** have a movable fine range with 10 times smaller display increments over their entire weighing range. In this fine range an additional decimal place always appears in the display.

The balance operates in the fine range

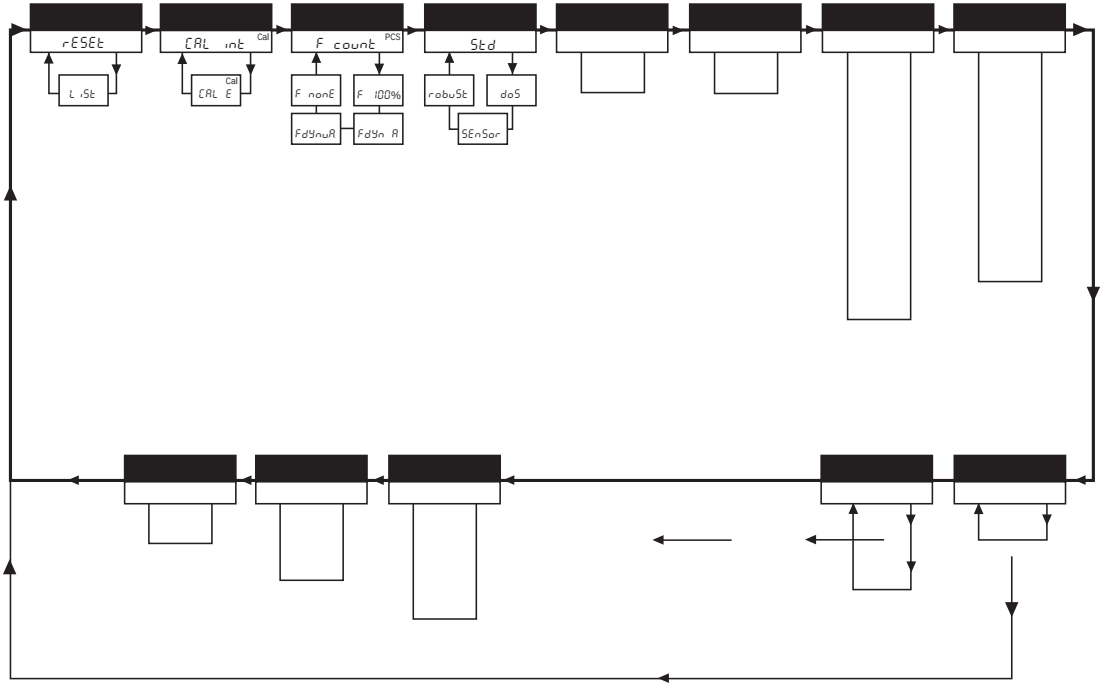
- after switching on
- after every taring operation

If the fine range is exceeded, the balance display automatically switches to coarser display increments.

4 Menu

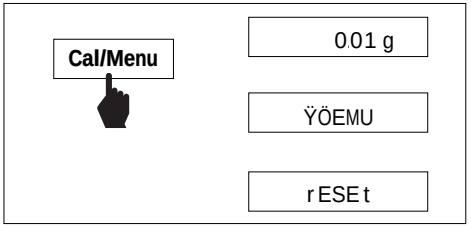
4.1 Overview

In the menu you can change the weighing unit (for certified balances, only if the national certification law allows), select additional functions and carry out various settings. A description of the individual menu options is given in Section 4.3.



Menu option
Factory setting

4.2 Menu operation



Opening the menu

In weighing mode, press and hold down the «**Cal/Menu**» key until “MENU” appears in the display. Release the key: the 1st menu option is displayed.

Select menu options

The « ± » key is used to select individual menu options with their current settings one after the other.

Change settings

The « “ » key is used to change the setting at the selected menu option. Every time the key is pressed, the next setting is displayed. Once the desired setting appears in the display, the next menu option can be selected (see above) or you can close the menu (see following sections).

Saving settings and closing the menu

Hold the «**Cal/Menu**» key down until “StorEd” appears in the display. Release the key and the balance reverts to weighing mode. All changes are saved.

Abort

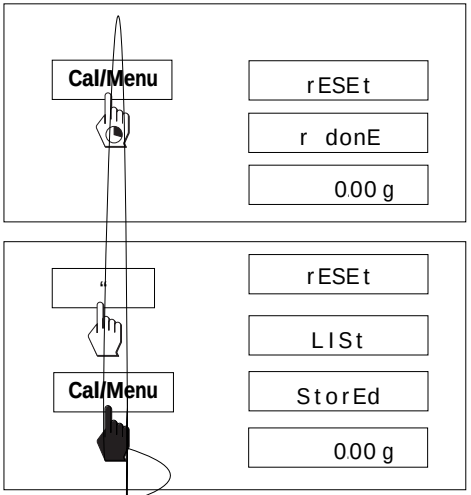
Press the «**C**» key briefly. The balance reverts to weighing mode. Changes are not saved.

Note

If no entry is made within 45 seconds, the balance reverts to weighing mode. Changes are not saved.

4.3 Description of menu options

4.3.1 Reset or recording of balance settings (1st menu option “RESET”)



Reset balance settings

→ Select “Reset”, press and hold down the «**Cal/Menu**» key until the message “r donE” confirms that all menu settings have been reset. The balance then reverts to weighing mode and works with the **factory settings** (Section 4.1).

Recording balance settings

→ Select “List” and hold down the «**Cal/Menu**» key until the message “StorEd” is displayed.

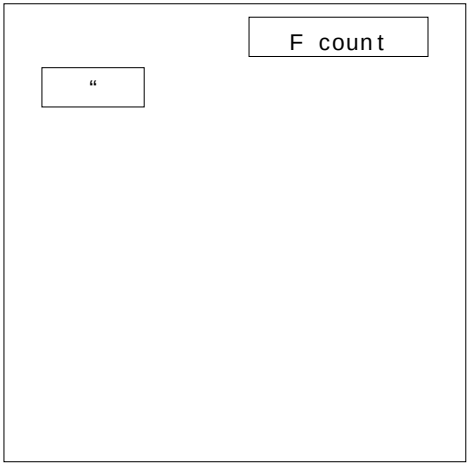
The current balance settings are transmitted to the peripheral device connected to the optional interface. To do this the setting “Printer” must always be selected at the 8th menu option (Peripheral unit). The current balance settings are saved at the same time.

4.3.2 Adjustment (2nd menu option)

This menu item is only on AB-S models available. Under this menu item you can select whether you wish to adjust the balance using the internal or the external adjustment weight.

Adjusting with internal adjustment weight

Adjusting with external adjustment weight



4.3.3 Functions (3rd menu option / Operating Section 5)

In addition to simple weighing, the following functions can be selected:

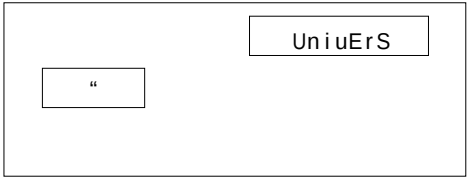
F count	Piece counting
F 100 %	Percent weighing
F dYn A	Dynamic weighing with automatic start
F dYn M	Dynamic weighing with manual start
F nonE	No function, simple weighing (factory setting)

4.3.4 Weighing mode (4th menu option)

This setting allows you to adapt the balance to the weighing mode. Select “Std” (standard) for all normal weighing processes or “doS” (dispensing) for dispensing liquid or powdery weighing samples. In this setting, the balance responds very quickly to smallest weight changes.

When set to “robuSt” (absolute weighing), the balance responds only to greater weight changes, and the weighing result is very stable.

When set to “SEnSor”, the balance delivers a raw, unfiltered weighing signal, and is only suitable for special applications. (Only available on AB135-S/AB265-S models).



4.3.5 Vibration adapter (5th menu option)

The vibration adapter can be used to match your balance to the ambient conditions (vibrations, drafts at location). If you work in surroundings which are practically free from temperature fluctuations, drafts, and vibrations, select “StabLE”. On the other hand, if you work in surroundings where the conditions are constantly changing, select “unStAbLE”. For normal ambient conditions, select “UnivErS” (Standard). This is the factory setting.

4.3.6 Measurement release (Repeatability) (6th menu option) (Only on AB135-S/AB265-S models)

You can use this setting to specify how rapidly the balance considers the measurement value to be stable and releases it. The “FASt” setting is recommended if you require rapid results and their repeatability is of secondary importance. The “rELiAbLE” setting gives very good repeatibility of the measurement results, but lengthens the stabilization time. When the balance is set to “FASt -rELiAbLE” (fast and reliable), the weight display is quickly released as stable, and gives good repeatability. This is the factory setting.

4.3.7 Weighing unit 1 (7th menu option “UNIT 1”)

Depending on requirements, the balance can operate with the following units (possible with certified balances only if permitted by national weights and measures legislation):

Unit		Conversion factor			Comments
g	gram				factory setting
kg	kilogram	1 kg	=	1000 g	not with 0.01 mg and 1 mg balances
mg	milligram	1 mg	=	0.001 g	with 0.1 mg and 1 mg balances
ct	carat	1 ct	=	0.2 g	
lb	pound	1 lb	≈	453.59237 g	
oz	ounce	1 oz	≈	28.349523125 g	
ozt	troy ounce	1 ozt	≈	31.1034768 g	
GN	grain	1 GN	≈	0.06479891 g	
dwt	pennyweight	1 dwt	≈	1.555173843 g	
mo	momme	1 mo	≈	3.749999953 g	
m	Mesghal	1 m	≈	4.6083162 g	
H tl	Hong Kong taels	1 H tl	≈	37.42900 g	
S tl	Singapore taels	1 S tl	≈	37.799366256 g	
t tl	Taiwan taels	1 t tl	≈	37.499995313 g	
cl	tical	1 cl	≈	16.3293 g	

4.3.8 Weighing unit 2 (8th menu option “UNIT 2”)

If it is required to show the weighing results in weighing mode in an additional unit by pressing the « “ » key, the desired second weighing unit can be selected in this menu option. The same weighing units are available as under “UNIT 1”, with the exception of the tael units (“H tl”, “S tl” und “t tl”).

4.3.9 Autozero (9th menu option)

This menu option allows you to switch the automatic zero correction on or off. When it is switched on, the zero point is automatically corrected for drift or contamination of the weighing pan.

The following settings are available:

Autozero switched on

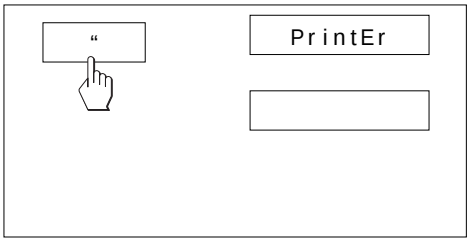
The zero point is automatically corrected.

Autozero switched off

The zero point is not automatically corrected. This setting is advantageous for special applications (e.g. evaporation measurements).

Note

With certified balances, this setting is possible only with a resolution of e = 10d.



4.3.10 Peripheral unit (10th menu option)

At this menu option you can select the peripheral device connected to the optional RS232C interface. The balance automatically saves the appropriate settings (Section 4.3.11 – 4.3.15) for every peripheral device.

Printer	Connected to a printer.
Host	Connection to any desired peripheral device.
Aux. display	Connection of an optional auxiliary display unit (communications parameters cannot be selected).

4.3.11 Send format (11th menu option)

Note: This menu option is only available if you have selected the setting “S. Stb” or “S. Cont” at the 11th menu option (Send mode)!

At this menu option you specify the data transfer format.

“SICS”: The MT-SICS data transfer formats are used. Please refer to the “MT-SICS Reference Manual Basic-S balances 11780447” available from your METTLER TOLEDO dealer or download from the Internet (**www.mt.com/AB-S**). More Information please find in the Section 6.3.

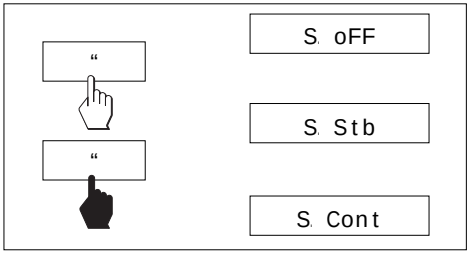
“PM”*: The following PM balance data transfer formats are used:

S. Stb: `/////1.67890/g`

S. Cont: `S////1.67890/g`
`SD///1.39110/g`

Additional information can be found on the Internet at **www.mt.com/support**.

* unidirectional, no MT-SICS commands are accepted.



4.3.12 Send mode (12th menu option)

Note: This menu option is only available if you have selected the setting “Host” in the 10th menu option (Peripheral unit)!

At this menu option you specify how data is transmitted to a peripheral device.

S. oFF Send mode switched off

S. Stb The next possible stable value will be transferred after the « ± » key has been triggered.

S. Cont All values are transferred automatically.

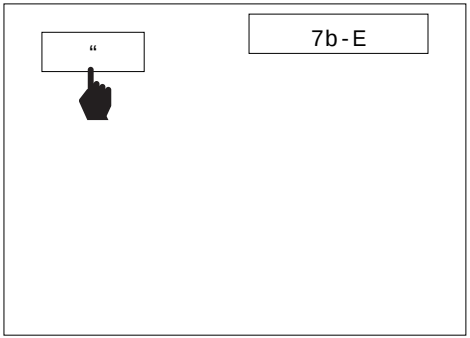
4.3.13 Baud rate (13th menu option)

Note: This menu option is only available if you have selected the setting “Host” in the 10th menu option (Peripheral unit)!

The baud rate (data transfer rate) determines the speed of transmission via the serial interface. The unit is the baud (bd) = 1 bit/second.

The following settings are available: 600 bd, 1200 bd, 2400 bd, 4800 bd, 9600 bd and 19200 bd.

For problem-free data transmission the sending and receiving devices must be set at the same value.



4.3.14 Bit/Parity (14th menu option)

Note: This menu option is only available if you have selected the setting “Host” in the 10th menu option (Peripheral unit)!

At this menu option you can set the character format for the attached peripheral device.

7b–E	7 data bits/even parity
7b–no	7 data bits/no parity
8b–no	8 data bits/no parity
7b–odd	7 data bits/odd parity

4.3.15 Handshake (15th menu option)

Note: This menu option is only available if you have selected the setting “Host” in the 10th menu option (Peripheral unit)!

This menu option allows you to match the data transmission to different serial receivers.

HS oFF	No handshake
HS SoFt	Software handshake (XON/XOFF)
HS HArd	Hardware handshake (DTR/CTS)

5.2 Percent weighing

Requirement

The function “F 100 %” must be activated in the menu (Section 4).

Set target weight

→ Target weight (Reference weight, which corresponds to 100 %) in center of pan.

→ Hold the «**F**» key down until “SEt 100 %” is displayed.

→ Press the « “ » key to select “SEt 100 %” or “SEt no %” (Percent weighing deactivated).

→

5.3 Dynamic weighing

Dynamic weighing is suitable for the weighing of unstable weighing samples. The mean value of the weighing results is determined over a specified time period (weighing time). The more unstable the weighing sample, the longer the selected weighing time.

Requirement

"F dYn A" for automatic start or "F dYn M" for manual start must be activated in the menu (Section 4). Factory setting is a weighing time of 3 seconds (t = 3").

Tare container

→ Tare: Press the « # » key.

Dynamic weighing with automatic start (F dYn A)

→ The « " » key can be used select the dynamic weighing. The display shows the symbol

Dynamic weighing with manual start (F dYn M)

→ The « “ » key can be used select the dynamic weighing. The display shows the symbol .

→ Load weighing sample.

→ Start weighing with the « ± » key.
During the weighing time, a “count down” runs in the display.

→ Read off result.

The result of the dynamic weighing is displayed with ✱ (= calculated value) and remains in the display until the weighing sample is removed from the weighing pan or the container.

Notes

- The weighing cycle with the same weighing sample can be restarted with the « ± » key.
- The « “ » key can be used to switch between dynamic weighing and normal weighing.
- For weighing goods below 5 g the weighing must be started **manually** with the « ± » key, even for dynamic weighing with automatic start.

Changing the weighing time

→ Press and hold the «**F**» key, until “t = 3”” appears in the display.

→ Repeatedly press the « “ » key, until the desired weighing time appears.

5.4 Switching weight units

Requirement

Different weight units must be activated in the menu for unit 1 and unit 2 (Section 4).

“

→ The « “ » key can be used at any time to toggle between the two weighing units selected in the menu (“UNIT 1” and “UNIT 2”).

Notes:

- Switching between weight units may be blocked with **certified balances**, depending on national weights and measures legislation.
- This function is not available with dynamic weighing.

6 Technical data, optional equipment

6.1 Technical data

Materials
- Housing: die-cast aluminum, painted
- Weighing pan:
  Chromium-nickel steel, X2CrNiMo 17 13 2 (1.4404)

Protection
- Protected against dust and water
- Pollution degree: 2
- Overvoltage category: class II
- EMC: see declaration of conformity
  (separate brochure 11780294)

Ambient conditions

The technical data are valid unter the following ambient conditions:

• Ambient temperature	10 °C … 30 °C
• Relative humidity	15 % … 80 % at 31 °C, linear decreasing to 50% at 40 °C noncondensing

Operability is assured at ambient temperatures b1Tj-0.06

Technical data	PB153-S	PB303-S	PB303-S DeltaRange	PB403-S	PB503-S	PB602-S	PB1502-S	PB3002-S
Readability	0.001 g	0.001 g	0.001 g*/0.01 g	0.001 g	0.001 g	0.01 g	0.01 g	0.01 g
Max. capacity	151 g	310 g	60 g*/310 g	410 g	510 g	610 g	1510 g	3100 g
Repeatability (sd)	0.001 g	0.001 g	0.001 g*/0.008 g	0.001 g	0.001 g	0.01 g	0.01 g	0.01 g
Linearity	0.002 g	0.002 g	0.01 g	0.002 g	0.002 g	0.02 g	0.02 g	0.02 g
Sensitivity temperature drift (10 °C … 30 °C)	6 ppm/ °C	6 ppm/ °C	6 ppm/ °C	6 ppm/°C	6 ppm/°C	6 ppm/ °C	6 ppm/ °C	6 ppm/ °C
Settling time, typical	2 s	2 s	2 s	2 s	3 s	2 s	2 s	2 s
Adjustment weight	built-in	built-in	built-in	built-in	built-in	built-in	built-in	built-in
Backlight	yes	yes	yes	yes	yes	yes	yes	yes
External dimensions of balance (W/D/H)	245/321/236 mm					245/321/89 mm		
External dimensions of packaging (W/D/H)	380/430/490 mm (0.078 m^3)					380/430/260mm (0.042 m^3)		
Weighing pan	ø 100 mm					ø 180 mm		
Usable heigh of draft shield	165 mm					–		
Net weight (with packaging)	4.9 kg (6.5 kg)					3.6 kg (4.7 kg)		

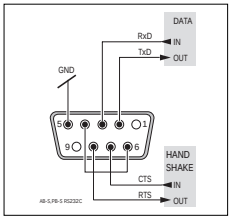
***** Fine range (DeltaRange)

Technical data	PB3002-S DeltaRange	PB4002-S	PB1501-S	PB3001-S	PB5001-S	PB8001-S	PB8000-S
Readability	0.01 g*/0.1 g	0.01 g	0.1 g	0.1 g	0.1 g	0.1 g	1 g
Max. capacity	600 g*/3100 g	4100 g	1510 g	3100 g	5100 g	8100 g	8100 g
Repeatability (sd)	0.01 g*/0.08 g	0.01 g	0.08 g	0.08 g	0.08 g	0.08 g	0.8 g
Linearity	0.1 g	0.02 g	0.1 g	0.1 g	0.1 g	0.1 g	1 g
Sensitivity temperature drift (10 °C … 30 °C)	6 ppm/ °C	6 ppm/ °C	10 ppm/ °C	10 ppm/ °C	10 ppm/ °C	10 ppm/ °C	10 ppm/ °C
Typical stabilization time	2 s	2 s	1.5 s	1.5 s	1.5 s	2 s	1 s
Adjustment weight Adjustment weight for certified balances	built-in built-in	built-in built-in	1000 g [1)] built-in	2000 g [1)] built-in	2000 g [1)] built-in	4000 g [1)] built-in	4000 g [1)] built-in
Backlight	yes	yes	yes	yes	yes	yes	yes
External dimensions of balance (W/D/H)	245/321/89 mm						
External dimensions of packaging (W/D/H)	380/430/260 mm (0.042 m^3)						
Weighing pan	ø 180 mm						
Net weight (with packaging)	3.6 kg (4.7 kg)						

***** Fine range (DeltaRange) **1)** Optional equipment

6.2 Interface

RS232C interface and interface accessories



Every B-S balance is fitted with an RS232C interface for attachment to a peripheral device (e.g. printer or PC with a 9-pin male connector). Matching to a different device can be carried out in the menu (Sections 4.3.10 – 4.3.15).

You will find a detailed description of the available interface commands in the brochure "Reference Manual MT-SICS Basic-S balances 11780447" available from your METTLER TOLEDO dealer or download from the Internet (**www.mt.com/AB-S**).

The wide range of features of the B-S balances regarding documentation of the results can not be exploited to the full until a printer, e.g. the RS-P42 or LC-P45 from METTLER TOLEDO is attached. The printed results make a decisive contribution to a simple way of working in compliance with GLP/GMP.

6.3 MT-SICS Interface commands and functions

Many of the balances and scales used have to be capable of integration in a complex computer or data acquisition system.

To enable you to integrate balances in your system in a simple manner and utilize their capabilities to the full, most balance functions are also available as appropriate commands via the data interface.

All new METTLER TOLEDO balances launched on the market support the standardized command set “METTLER TOLEDO Standard Interface Command Set” (MT-SICS). The commands available depend on the functionality of the balance.

Basic information on data interchange with the balance

The balance receives commands from the system and acknowledges the command with an appropriate response.

Command formats

Commands sent to the balance comprise one or more characters of the ASCII character set. Here, the following must be noted:

- Enter commands only in uppercase.
- The possible parameters of the command must be separated from one another and

The MT-SICS commands listed below is a selected list of available commands. For additional commands and further information please refer to the Reference Manual “MT-SICS Basic-S balances 11780447” downloadable from the Internet under **www.mt.com/AB-S.**

6.4 Optional equipment

AC adapters

For all models except AB135-S/AB265-S

Output:	12 VAC, 500 mA	
• Euro	230V/50Hz/80mA	11103740
• Euro/(grd)	230V/50Hz/80mA	11103744
• UK	240V/50Hz/80mA	11103742
• USA	120V/60Hz/10W	11103741
• Japan	100V/50Hz/10W	11103743
Output:	12 VAC, 1.0 A	
• Universal (bench version) 220-240V/50Hz/100mA		11103745*

For AB135-S/AB265-S (as well as for all B-S models)

Output:	12 VDC, 2.25 A	
• Universal (bench version) 100-240V, 50-60Hz, 0.8A		11132070*

*(appropriate cable for country also required)

AccuPac B-S

- Rechargeable external power source for 15 hours weighing operation with no mains connection 21254691

Adjustment weights

Available as OIML weights (E1, E2, F1, with calibration certificate) For further details see METTLER TOLEDO Weights brochure or see **www.mt.com/weights** 111795461

Antitheft device

- Cable with lock (for all models) 590101

Auxiliary display (RS/LC-BLD)

- Auxiliary display including RS cable for connection to the RS232C interface and separate AC adapter 224200

Density kits (for AB-S only)

- For determination of solids 33360
- For determination of liquids with displacement body 33360 + 210260

Draft shields *

- Draft shield with sliding doors “mg” (165 mm) 11137468
- Draft shield with sliding doors “0.1 mg” (237 mm) 11103682
- Draft shield “mg” (141 mm) 11103683

* Balances with a weighing pan Ø 180 mm require the weighing pan Ø 175 mm 11103680

Interface cable

- RS9–RS25: (m/f), length 2 m 11101052
- RS9–RS9: (m/f), length 1 m 11101051
- RS9–RS9: (m/m), length 1 m 21250066

Printer, Application printer (LC-P45)

- Plain-paper printer, 24 characters, with additional functions (time, date, statistic, multiplier etc.) 229119

Printer, Report printer (RS-P42)

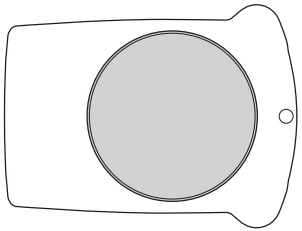
- Plain-paper printer, 24 characters 229265

Protective cover

- For PB-S models (1 piece) 11103681
- For AB-S models (1 piece) 11135408

Transport case

- For all PB-S models, with room for balance, AccuPac, draft shield 165 mm / 141 mm and weight 11101050
- For all AB-S models, has space for balance and draft shield 237 mm 11103834



Function: **Adjusting**

```
 - BALANCE  CALIBRATION -
Date:  ................
```

7.2 What if ...?

Error/Error message	Cause

7.3 Connecting B-S balances to other METTLER TOLEDO devices

Device	Connecting cable	settings/ Remarks
Titrators: DL67, 70ES, 70 V.2, 77 DL12, 18, 20, 21, 25, DL35, 40GP, 40RC	not supported	
DL37 (KF, coulometer)	not supported	
DL31, 36, 38 DL50, 53, 55, 58	RS9–RS9 (m/f) 11101051	send continous
RD10 (rheometer)	not supported	
Contalab	not supported	
MTCom-Bus 310	RS9–RSopen (m/-) 21900640	
SQC 14 (statistical quality control)	RS9–RS9 (m/f) 11101051	
Spider (industrial scale) Viper BC (industrial scale)	RS9–RS9(m/m) 21252588	
MMR, ID-Terminals	not supported	
M peripherals (GM bus)	not supported	
LC-PVolume (pipette calibration)	RS9–RS9 (m/w) 11101051	
LC-PCalc	RS9–RS9 (m/w) 11101051	
LC-P Density	not supported	
LC-P45 (application printer)	RS9–RS9 (m/w) 11101051	
RS-P42 (report printer)	RS9–RS9 (m/w) 1110105	

7.4 Maintenance and cleaning

Service

Regular servicing of your balance by a service technician prolongs its working life. Ask your METTLER TOLEDO dealer for details of servicing options.

Cleaning

Every now and then, clean the weighing pan, draftshield element, draftshield (depending on the model), housing and terminal of your balance using a damp cloth. Your balance is made of high-quality, durable materials and can therefore be cleaned with a standard, mild cleaning agent.

Please observe the following notes

- On no account use cleaning agents, which contain solvents or abrasive ingredients, as this can result in damage to the terminal overlay.
- After working with chemicals, it is advisable to wash or clean the weighing pan and the bottom plate (if draft shield fitted).
- Although all materials are of high quality, corrosion may occur if corrosive substances are deposited on chrome steel for an extended period of time (and if air is excluded, for example by a coating of grease).
- Ensure that no liquid comes into contact with the balance or the AC adapter!
- Never open the balance or AC adapter – they contain no components, which can be cleaned, repaired or replaced by the user.
- Soiled protective covers can be replaced on all balance types (see Optional equipment).

Disposal

Defective instruments must be disposend of in accordance with applicable customer and national regulations.

To protect your METTLER TOLEDO product's future:
METTLER TOLEDO Service assures the quality, measuring accuracy and preservation of value of all METTLER TOLEDO products for years to come.
Please send for full details about our attractive terms of service.
Thank you.

P11780642

Subject to technical changes and to the availability of the accessories supplied with the instruments.

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Mettler-Toledo GmbH, Laboratory & Weighing Technologies, CH-8606 Greifensee, Switzerland
Phone +41-44-944 22 11, Fax +41-44-944 30 60, Internet: http://www.mt.com