User Manual

PB-300 SERIES BALANCES

Cole-Parmer®
an antylia scientific company

INDEX

1. GENERAL INFORMATION

1.1. INTENDED USE

The PBL-Series precision balance enables fast and accurate mass measurements under laboratory conditions.

The weighing pan, made of stainless steel and equipped with anti-draft shield, is an integral part of the PB-300 Series balance. Backlit LCD display ensures clear measurement result. The PB-300 Series balance is equipped with an internal battery (comes standard), so it does not have to be connected to the mains.

The PB-300 Series balance is equipped with the following interfaces: RS 232, USB type A, USB type B. The interfaces enable cooperation between the balance and peripheral devices (e.g. printer, computer, flash drive).

1.2. PRECAUTIONS

- Prior to first use, it is highly recommended to carefully read this User Manual, and operate the balance as intended.
- Do not use the balance for a dynamic weighing. Even if small quantities of weighed material are added or removed from the weighing pan of the instrument, the reading should be taken only after stabilization of the measurement results.
- While loading the balance make sure that load is placed in the very center of the weighing pan.
- Make sure the load does not exceed instrument's measuring range (maximum capacity).
- Do not leave heavy loads on the weighing pan for a long period of time.
- In case of failure, immediately unplug the instrument.
- Balances to be decommissioned, should be decommissioned in accordance with valid legal regulations.
- Do not use the balance is areas endangered with explosion. The balance is not designed to operate in EX zones.

1.3. BATTERY

The PB-300 Series balance is supplied by **NiMH-type** battery (nickel-metal- hydrogen) of **1800-2800mAh** capacity.

In case of prolonged storage of the balance in low temperature, the battery must be charged.

A worn-out battery can be replaced only by the manufacturer or by the authorized service.

The equipment including accumulators does not belong to regular household waste. The European legislation requires electric and electronic equipment to be collected and disposed separately from other communal waste with the aim of being recycled.

Notice:

Symbols on accumulators identify harmful compounds: Pb = lead, Cd = cadmium, Hg = mercury.

1.4. WARRANTY CONDITIONS

Cole-Parmer will exchange, replace or repair the existing balance for any damage that appears to be faulty by production or by construction within the 5-year warranty period.

Warranty is voided if:

A. Cole Parmer will exchange, replace or repair the existing balance for any damage that appears to be faulty by production or by construction within the 5-year warranty period.

B. Warranty is voided if:
   - mechanical defects caused by inappropriate use:
     - defects of thermal and chemical origin,
     - defects caused by lightning, overvoltage in the power network
     - defects caused by water damage
     - or other random event
   - overloading the mechanical measuring system
   - installing another version of the operating system
   - utilizing the balance contrary to its intended use
   - repairs carried out by non-authorized service centers
   - removing or destroying protective stickers which secure the balance's housing against unauthorized access

C. Warranty card must be filled out for warranty to be valid.

2. UNPACKING AND INSTALLATION

2.1. PLACE OF USE AND ASSEMBLING

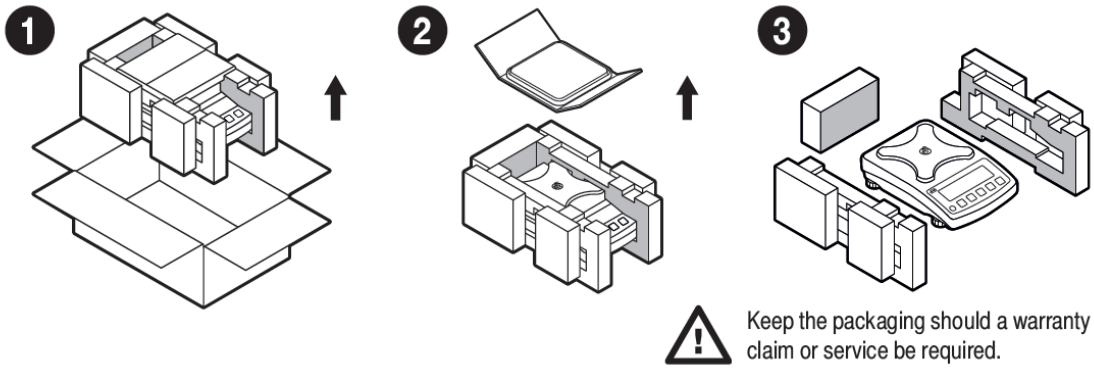
- The balance should be stored and used in locations free of vibrations and shakes, free of air movement and dust.
- Ambient air temperature should not exceed the range of: +15 °C to +30 °C.
- Ambient relative humidity should not exceed 80%.
- During balance operation, ambient temperature in the weighing room should not change rapidly.
- The balance should be located on a stable wall console desk or a stable working table which is not affected by vibrations and distant from heat sources.
- Keep all package element should your device be transported in the future. Remember that only original packaging can be used for shipping purposes. Prior to packing, uncouple any cables, remove any separable components (weighing pan, shields, inserts). Pack the device components into an original packaging. The original packaging protects the equipment against potential damage during transportation.

2.2. STANDARD DELIVERY COMPONENTS LIST

- Balance and components shown in Section 2.4 depending on balance model
- Warranty Card
- USB
  - User Manual
  - Balance USB Driver
  - RLAB Software
  - USB COM Driver

2.3. UNPACKING

To unpack the system, follow the diagram below-

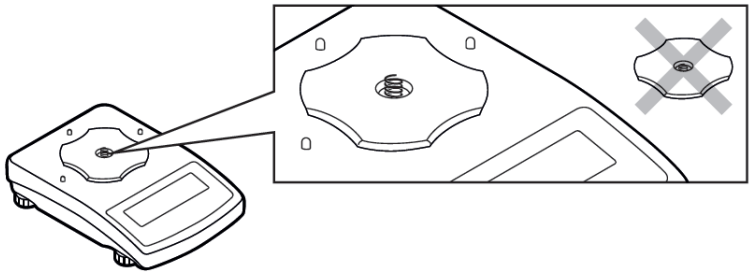


2.4. BALANCE ASSEMBLY

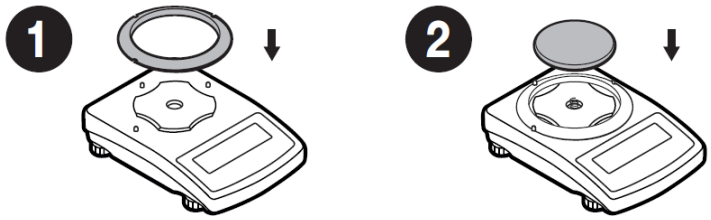
Model:
PB-300-200

Installation:

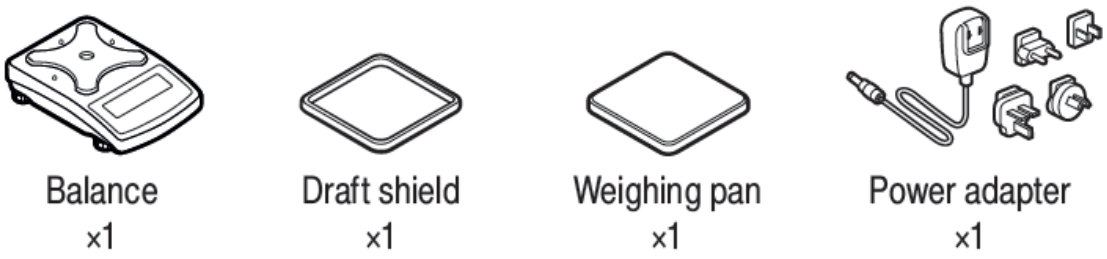
1) Check grounding spring to insure it is in the appropriate location. Make sure that the grounding spring juts slightly out of the hole.



2) Install components following diagram below:
   i. Draft Shield
   ii. Weighing Pan

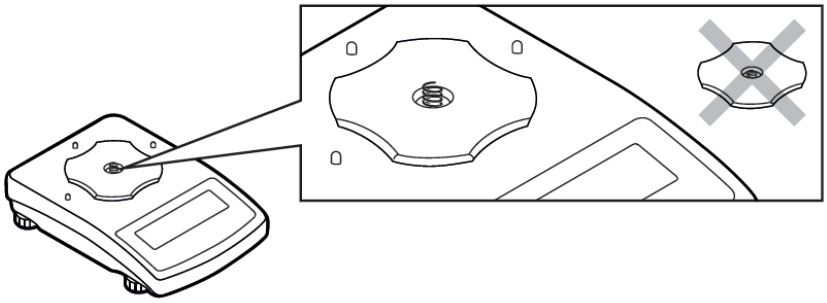


Model: PB-300-602, PB-300-2002, PB-300-3101, PB-300-602.N, PB-300-2002.N, PB-300-3101.N Components:



Installation:

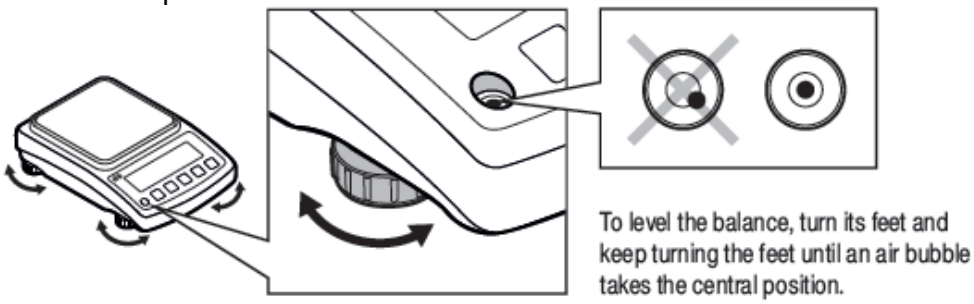
1) Check grounding spring to insure it is in the appropriate location. Make sure that the grounding spring juts slightly out of the hole.



2) Install components following diagram below:
   i. Draft Shield
   ii. Weighing Pan

2.5. BALANCE LEVELING

It is necessary to level the balance prior to plugging it in. To level the balance, turn its feet until the air bubble is in the center position.



The balance should firmly rest on a surface, each of the feet must be supported.

2.6. POWERING THE DEVICE

Before plugging in your balance, it is imperative to wait until the balance reaches thermal stabilization

(estimated 1-8 hours). On switching on, the balance requires 30 minutes of temperature stabilization time. During temperature stabilization displayed information may change. Adjustment should be carried out after temperature stabilization.

For correct operation of the balance the temperature range is +15˚C to +30˚C;
Any changes of temperature and humidity during operation can cause indication errors. Errors can be corrected by carrying out user adjustment.

For balances that were stored in much lower temperatures (e.g. during winter period), thermal stabilization period may be extended.

- Balance should be plugged in only with the power adapter that comes standard with the model. Nominal power supply of the power adapter (specified on the power adapter data plate) should be compatible to the power supply.
- Plug the balance in – connect the power adapter to the socket, next connect its connector to port located at the back of the balance housing.
- Press  button on the key pad.

  ! Remember to start the balance with no load on the weighing pan
- Test of the display unit takes place right after connecting the balance to the power, all the elements and pictograms are backlit for a short time.
- Next, the name and the program number appears
- the indication gets to ZERO (displayed reading unit depends on the balance). During the balance start, the test of an internal mass adjustment mechanism occurs (single location and elevation of the internal mass adjustment).
- If the indication is different than zero, please press  button

2.7. BATTERY STATUS

An internal battery comes standard with the balance.  pictogram, displayed at the top of the display, signals battery status.

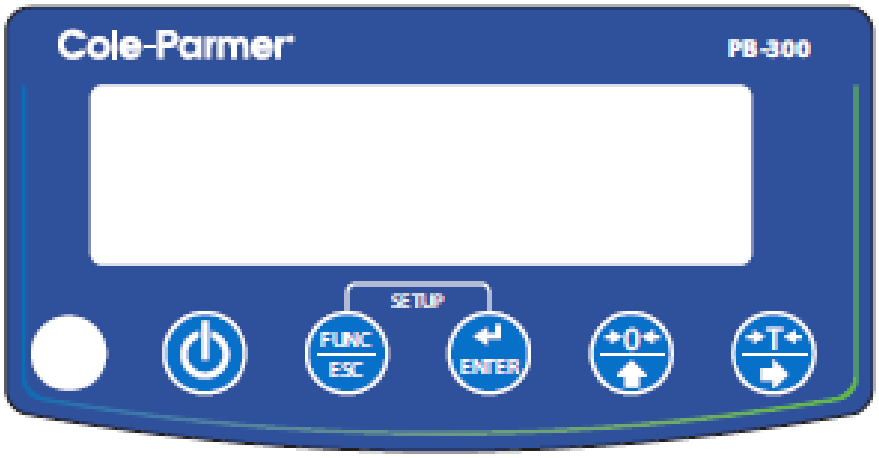
Pictogram operation	**Overview**
No pictogram	Battery full. Standard balance operation.
Pictogram displayed continuously	Battery status low. The balance will shut down. Immediately charge the battery.
Pictogram blinks every 1 s.	Battery charging. Balance connected to power supplier, the battery is being charged.
Pictogram blinks every 0.5 s.	Battery error. Battery damaged.

2.8. BATTERY POWER

- Simultaneously  and  keys.
- Battery power given in **%** is displayed for 2s.
- Wait for the home screen to be displayed.

3. BALANCE CONTROL

3.1. BALANCE KEYBOARD



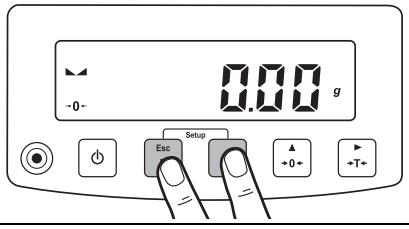
	Press to switch the balance on/off
	Function: press to select working mode. ESC: Exit out of menus/submenus
	Press to send the weighing result to a printer or a computer.
	Zero: press to zero the balance. Up arrow: move up the menu or submenu
	Tare: press to tare the balance. Right arrow: enter into menu or submenu or select parameter to modify

3.2. NAVIGATING BALANCE MENUS

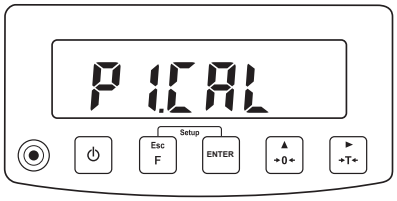
Use keypad to navigate in the balances menus and submenus.

FUNC ESC + ENTER Simultaneously press to enter 'Main Menu'

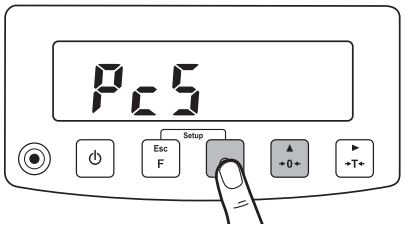
1



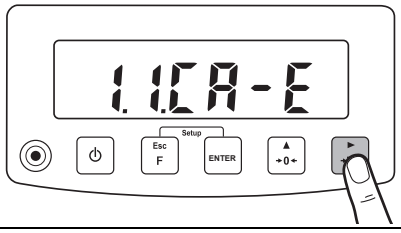
2



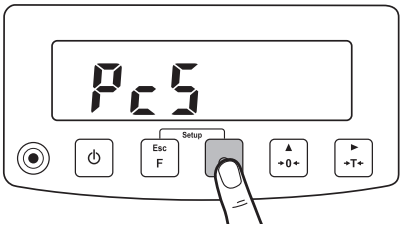
→0← Press to move upwards within balance menus and submenus



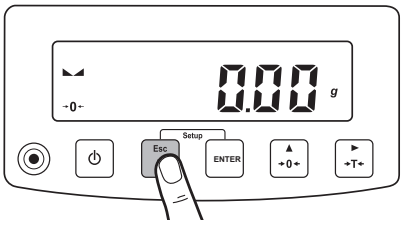
→T← Press to enter submenu



ENTER Press to confirm introduced modifications



FUNC ESC Press to move one menu level up



3.3. BALANCE MENU

Main menu is divided into function groups. Function group is a group of interrelated parameters.

Main Menu		Submenus				Options	Overview	Additional Info
P1.	**CAL**						**Adjustment**	
		1.1.	CA-E				External adjustment	Section 6.1
		1.2.	CA-U				User adjustment with external weight	Section 6.2
P2.	**rEAd**						**Balance parameters**	
		2.1.	FIL			1, 2, 3	Filter	Section 5.1
		2.2.	APPr			FASt, PrEc, F_P	Value release	Section 5.2
		2.3.	Enut			StAb, nStAb	Environment	Section 5.3
		2.4.	Aut			YES, no	Autozero	Section 5.4
		2.5.	tare			no, tArF, AtAr, EAcH	Tare	Section 5.5
		2.6.	ttr			tArEH, tArnn	Tare implementing method	Section 5.5
		2.7.	LdiG			ALAS, nEur, uuSt	Last digit	Section 5.6
P3.	**Func**						**Working modes**	
		3.1.	UUGG				Weighing	Section 7.6
				3.1.1.	Acc	YES, no	Working mode On/Off	Section 7.2
				3.1.2.	Snn	StAb, nStAb, rEPL	Save mode	Section 7.3
				3.1.3.	Int		Automatic Printout Time Interval	Section 7.4
				3.1.4	Lo		LO Threshold	Section 7.5
		3.2.	PCS				Parts counting	Section 7.7
				3.2.1.	Acc	YES, no	Working mode On/Off	Section 7.2
				3.2.2.	UUT	S_s, Suu	Operation mode	Section 7.7.2
				3.2.3.	Snn	StAb, nStAb, rEPL	Save mode	Section 7.3
				3.2.4.	Int		Automatic Printout Time Interval	Section 7.4
				3.2.5.	Lo		LO Threshold	Section 7.5
		3.3.	HiLo				+/- control	Section 7.8
				3.3.1.	Acc	YES, no	Working mode On/Off	Section 7.2
				3.3.2.	Snn	StAb, nStAb, rEPL	Save mode	Section 7.3
				3.3.3.	Int		Automatic Printout Time Interval	Section 7.4
				3.3.3.	Lo		LO Threshold	Section 7.5
		3.4.	dEu				Percent weighing	Section 7.9
				3.4.1.	Acc	YES, no	Working mode On/Off	Section 7.2
				3.4.2.	UUT	S_s, Suu	Operation mode	Section 7.9.2
				3.4.3.	Snn	StAb, nStAb, rEPL	Save mode	Section 7.3
				3.4.4.	Int		Automatic Printout Time Interval	Section 7.4
				3.4.5.	Lo		LO Threshold	Section 7.5
		3.5.	toP				Peak hold	Section 7.10
				3.5.1.	Acc	YES, no	Working mode On/Off	Section 7.2
				3.5.2.	Lo		LO Threshold	Section 7.5
		3.6.	Add				Totalizing	Section 7.11
				3.6.1.	Acc	YES, no	Working mode On/Off	Section 7.2
				3.6.2.	Snn	StAb, nStAb, rEPL	Save mode	Section 7.3
				3.6.3.	Int		Automatic Printout Time Interval	Section 7.4
				3.6.4.	Lo		LO Threshold	Section 7.5

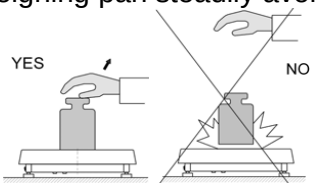
P4.	**Conn**						**Interfaces**	
		4.1.	**rS**				RS232 parameters settings	Section 8.1

				4.1.1.	bAd	2400, 4800, 9600, 19200, 38400.	RS 232 baud rate	Section 8.1.1
				4.1.2.	PAr	nonE, Odd, EuEn	Parity	Section 8.1.2
P5.	**ducE**						**Peripherals**	
		5.1.	PC				Computer	Section 9.1
				5.1.1.	Prt	nonE, rS232, USbB	Computer port	Section 9.1.1
				5.1.2.	Cnt	nonE, CntA, Cntb	Continuous Transmission	Section 9.1.2
				5.1.3.	Int	0.1[s] - 1000[s]	Continuous transmission time	Section 9.1.3
		5.2.	Prtr				Printer	Section 9.2
				5.2.1.	Prt	nonE, rS232, USbb	Printer port	Section 9.2.1
P6.	**Prnt**						**Printouts**	
		6.1.	CrEP				Adjustment report	Section 10.1
				6.1.1.	CtP	YES, no	Adjustment type	
				6.1.2.	dAt	YES, no	Date	
				6.1.3.	tin	YES, no	Time	
				6.1.4.	Idb	YES, no	Balance S/N	
				6.1.5.	CdF	YES, no	Adjustment difference	
				6.1.6.	dSh	YES, no	Dashes	
				6.1.7.	SiG	YES, no	Signature	
		6.2.	GLP				GLP Printout	Section 10.2
				6.2.1.	dAt	YES, no	Date	
				6.2.2.	tin	YES, no	Time	
				6.2.3.	n	YES, no	Net	
				6.2.4.	t	YES, no	Tare	
				6.2.5.	b	YES, no	Gross	
				6.2.6.	CrS	YES, no	Current result	
				6.2.7.	CrP	YES, no	Adjustment report	
P7.	**Misc**						**Miscellaneous**	
		7.1.	bLbt			no, 10, 20, 30, 40, 50, 60, 70, 80, 90, 100	Backlit level in [%]	Section 11.1
		7.2.	bEEP			YES, no	Key sound	Section 11.2
		7.3.	t1			nonE, 1, 2, 3, 5, 10	Automatic Shutdown	Section 11.3
		7.4.	SdAt				Date	Section 11.4
		7.5.	Stnn				Time	Section 11.5
		7.6.	FdAt			1, 2, 3, 4	Date format	Section 11.6
		7.7.	Ftin			12H, 24H	Time format	Section 11.7
		7.8.	dFLu				User default settings	Section 11.8
P8.	**InFo**						**Information on balance**	
		8.1.	Idb				Balance serial number	Section 12
		8.2.	PurS				Program version	Section 12
P9.	**Unit**						**Units**	
		9.1.	UnSt			g, kg, N, ct, lb	Start unit	Section 4.2
		9.2.	Unin			g, kg, N, ct, lb	Temporary unit valid until the balance is turned off.	Section 4.3

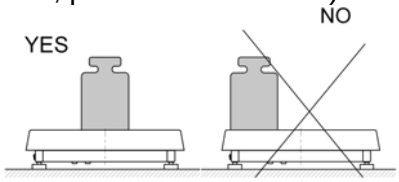
4. WEIGHING MODE

Load the weighing pan. You can read weighing result when  , pictogram is displayed. To assure long-term operation and correct mass measurements follow the rules presented below:

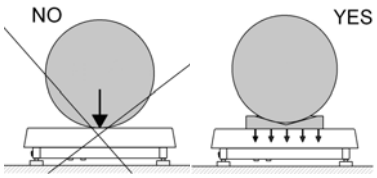
- Load the weighing pan steadily avoiding shocks:



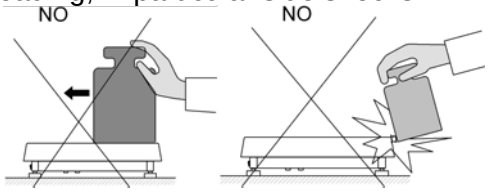
- Place weighed loads centrally on the weighing pan (eccentricity errors are specified by PN-EN 45501 standard, points 3.5 and 3.6.2.):



- Do not load the pan with concentrated force:



- Avoid side loading, in particular side shocks:



4.1. UNITS

<P9.Unit> parameters group enables selecting start and temporary unit. Selecting unit other than [g] is possible during weighing or during other modes operation. 'Parts counting' and 'Percent weighing' modes are exceptions for which the unit cannot be changed.

4.2. START UNIT

Setting the start unit.

Procedure:

- To enter menu navigation, follow process found in Section 3.2 (page 7). Enter **<P9.Unit / 9.1.UnSt>** submenu.
- Press →0← key to view available units: [g,ct,lb]
- On selecting start unit, press ENTER key to confirm. Next, press FUNC ESC key to return to home screen.
- The balance turns on with start unit selected.

4.3. TEMPORARY UNIT

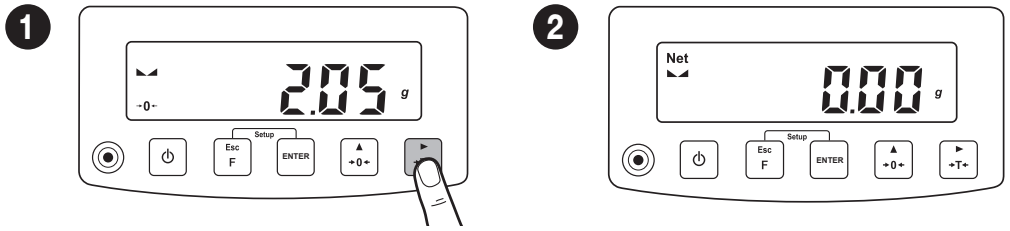
Temporary unit remains active until the balance is turned off.

Procedure:

- To enter menu navigation, follow process found in Section 3.2 (page 7). Enter **<P9.Unit / 9.2.Unin>** submenu.
- Press →0← key to view available units: [g,ct,lb]
- On selecting start unit, press ENTER key to confirm and return to home screen

4.4. TARING

To determine net mass, put the packaging on the weighing pan. On stabilizing, press →T← key (indication changes to zero, Net pictogram is displayed in the left upper corner):



On loading the weighing pan, net mass is displayed. You can tare repeatedly within the whole measuring range. While using tare function remember not to exceed the maximum measuring range of the balance. On unloading the weighing pan, the sum of tared masses with minus sing is displayed.

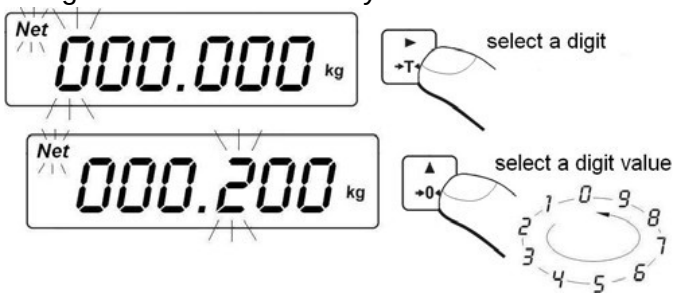
Caution:
*Taring cannot be performed when the displayed value is negative or equal zero. In such case message **Err3** is displayed and short signal is emitted.*

4.5. MANUAL TARE ENTERING

Manual entering of tare value within the balance.

Procedure:

- Simultaneously press →0← and →T← keys.
- Using →0← and →T← keys set **tare value**



- Press ENTER key,
- Balance returns to weighing mode. Tare value with **'-'** sign is displayed.

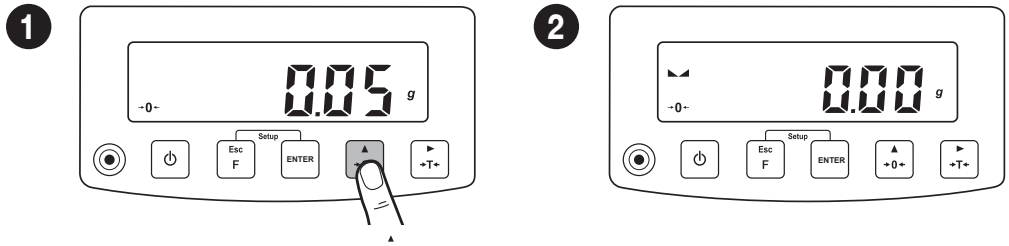
- Tare can be entered at any moment during the weighing process.

Caution:
Tare cannot be entered manually when tare value is already implemented to balance's memory. In such case message ***<Err3>*** *is displayed and a short signal is emitted.*

4.6. ZEROING

To zero mass indication press 

. key. Zero value and following pictograms →0← and ◣◢ are displayed. It is possible to zero the balance only when the indication is stable.



Caution:
Indication can be zeroed only within ***±2%*** *range of maximum capacity. If the zeroed value is greater than* ***±2%*** *of the maximum capacity, message* ***<Err2>*** *is displayed and short signal is emitted.*

5. BALANCE PARAMETERS

You can adjust the balance to ambient conditions (filter level) or to your own needs (autozero, tare value). The parameters are to be found in **<P2.rEAd>** submenu.

5.1. FILTER LEVEL

Filter settings adjustment depends on the working environment. For the best possible conditions, the filter can work in fast mode. For conditions that are poor, the filter should be set to slow.

- To enter menu navigation, follow process found in Section 3.2 (page 7). Enter **<P2.rEAd / 2.1.FiL>** submenu
- Press 

key to view available filter values:
  1 - fast
  2 - average
  3 – slow
- Press 

key to confirm. Return to home screen.

Caution:
The higher filter level, the longer the indication takes to stabilize.

5.2. VALUE RELEASE

Parameter related with the stabilization rate of measurement result. Depending on the selected option, weighing time is either shorter or longer.

Procedure:

- To enter menu navigation, follow process found in Section 3.2 (page 7). Enter **<P2.rEAd / 2.2.APPr>** submenu.
- Press →0← key to view available options:
  F_P - Fast and reliable
  PrEc - Reliable
  FASt - Fast
- Press ENTER key to confirm. Return to home screen.

5.3. BALANCE AMBIENT CONDITIONS

Parameter relating to ambient and environmental conditions in which the balance operates. If the ambient conditions are unstable (air drafts, vibrations), select 'unstable' option.

Procedure:

- To enter menu navigation, follow process found in Section 3.2 (page 7). Enter **<P2.rEAd / 2.3.Enut>** submenu.
- Press →0← key to view available options:
  nStAb – unstable
  StAb –stable.
- Press ENTER key to confirm. Return to home screen.

5.4. AUTOZERO

The balance features an autozero function (Auto) ensuring precise mass indication. This function automatically controls and corrects zero indication.

There are, however, some cases when this function can be a disturbing factor for the measuring process; e.g. very slow placing of a load on the weighing pan (load adding). In such case, it is recommended to disable the function.

Procedure:

- To enter menu navigation, follow process found in Section 3.2 (page 7). Enter **<P2.rEAd / 2.4.Aut>** submenu.
- Press →0← key to view available options:
  YES – function enabled
  no – function disabled
- Press ENTER key to confirm. Return to home screen.

5.5. TARE

Function enables setting appropriate parameters related with taring.

Procedure:

- To enter menu navigation, follow process found in Section 3.2 (page 7). Enter **<P2.rEAd / 2.5.tArA>** submenu.
- Press  key to view available options:

  no- Basic tare mode. Set (selected) tare value is overwritten on entering new tare value.

  tArF- Last tare value is stored in balance's memory. Tare value is automatically displayed on restarting the balance.

  AtAr- Tare value is saved after the power supply is disconnected.

  EAcH- Automatic taring of each approved measurement.
- Press  key to confirm. Return to home screen.

5.6. LAST DIGIT

Function enables displaying the last digit of decimal place for a weighing result the measurement is carried out with lesser accuracy.

Procedure:

- To enter menu navigation, follow process found in Section 3.2 (page 7). Enter **<P2.rEAd / 2.6.LdiG>** submenu.
- Press  key to view available options:

  ALAS - All digits visible

  nEur - Last digit is not displayed

  uuSt - Last digit is displayed only for a stable weighing result
- Press  key to confirm. Return to home screen.

6. ADJUSTMENT

In order to ensure the highest weighing accuracy, it is recommended to periodically introduce a corrective factor of indications to balance memory, the said factor must be referred to a reference mass. It is a balance adjustment.

Adjustment has to be carried out:

- Prior to weighing
- If long breaks between following measuring series occur
- If the ambient temperature has changed dynamically
- If the balance's place of use has changed

Types of adjustment:

- External adjustment **<1.1.CA-E>** carried out with external weight of declared mass which cannot be modified.
- User adjustment **<1.2.CA-u>** carried out with any external weight of mass equal or greater than 30% of maximum capacity.

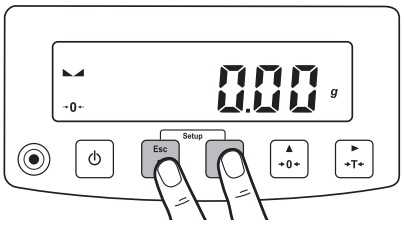
6.1. EXTERNAL ADJUSTMENT

External adjustment is carried out using external weight of class F1.

Procedure:

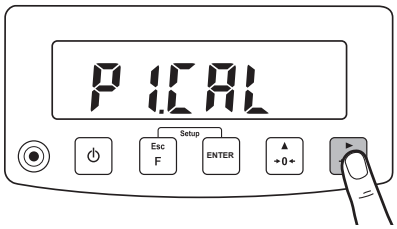
- To enter menu navigation, follow process found in Section 3.2 (page 7). Enter **<P1.CAL / 1.1.CA-E>** submenu.

1



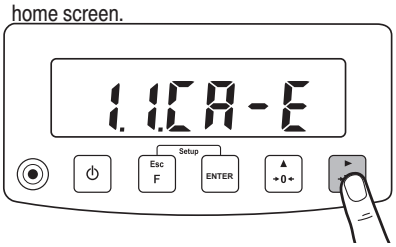
Simultaneously press Esc F and ENTER keys to enter home screen.

2



While "P1.CAL" parameter is on, press →T← ey.

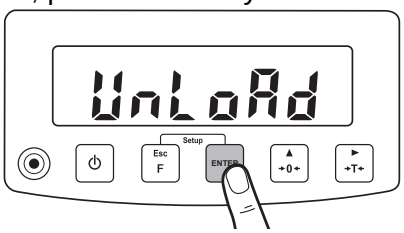
3



While "1.1.CA-E" parameter is on, press →T←

- Message **<UnLoAd>** (unload the weighing pan) is displayed. On unloading the weighing pan, press ENTER key.

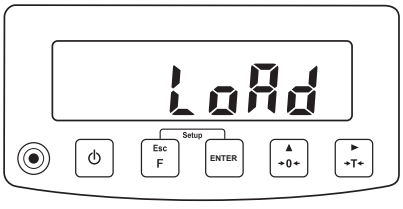
4



Unload the weighing pan and press ENTER key.

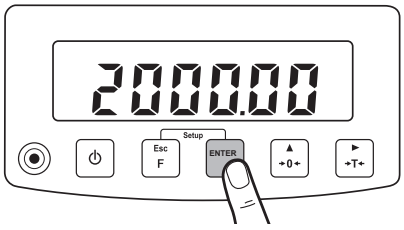
- Balance starts determining mass of an empty weighing pan. The process is signaled by dashes **<- >**. Next, message **<Load>** (put weight) is displayed along with mass value to be put onto weighing pan; e.g.. **200.000g** (depending on balance type). Put the weight of a given mass and press ENTER key.

5



Prepare suitable mass standard.

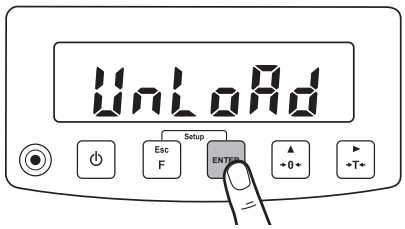
6



Load the weighing pan with the mass standard and press ENTER key.

- Balance starts determining mass of a weight. The process is signaled by dashes **<- >**. Next, message **<UnLoad>** (remove weight) is displayed.

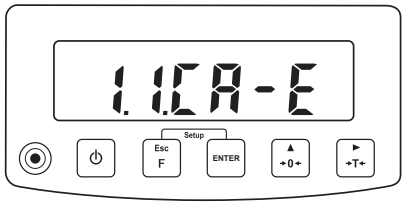
7



Unload the weighing pan.

- On unloading the weighing pan, submenu **<1.1.CA-E>** is displayed.

8



Adjustment completed.

6.2. USER ADJUSTMENT

User adjustment is carried out using external weight of class F1.

Procedure:

- To enter menu navigation, follow process found in Section 3.2 (page 7). Enter **<P1.CAL / 1.2.CA-u>** submenu. Message box for entering mass of a weight used for user adjustment is displayed. Mass of the weight has to be equal or greater than 30% of maximum capacity.

- On entering and confirming the weight mass, message **<UnLoAd>** (unload the weighing pan) is displayed.
- On unloading the weighing pan, press ENTER key.
- Balance starts determining mass of an empty weighing pan. The process is signaled by dashes **<- >**. Next, message **<Load>** (put weight) is displayed along with declared mass value to be put onto weighing pan; e.g.. **100.000g**.
- Put the weight of a given mass and press ENTER key.
- Balance starts determining mass of a weight. The process is signaled by dashes **<- >**. Next, message **<UnLoad>** (remove weight) is displayed.
- On unloading the weighing pan submenu**<1.2.CA-u>** is displayed.

6.3. ADJUSTMENT REPORT

Adjustment report is automatically printed on a printer connected to the balance at the end of each adjustment. Report content is to be declared in **<P6.1.CrEP>** menu and described further down this user manual.

7. WORKING MODES

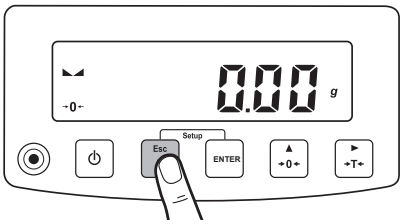
The balance features the following working modes:

- Weighing **<UUGG>**
- Parts counting **<PCS>**
- +/- control **<HiLo>**
- Percent weighing **<dEu>**
- Peak hold **<toP>**
- Totalizing **<Add>**

7.1. RUNNING WORKING MODE

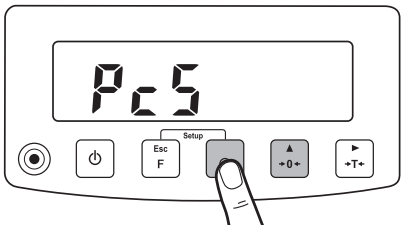
Procedure:

1



Using Esc F ey enter working modes menu.

2



Using ▲ key select working mode and press ENTER.

Caution:
The balance is restarted with the last working mode activated.

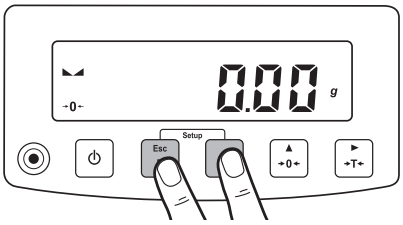
7.2. WORKING MODE ACCESSIBILITY

Within each working mode, accessibility of the working mode can be adjusted.

YES – working mode enabled
no- working Mode Disabled

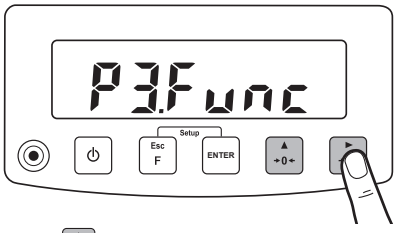
Procedure:

1



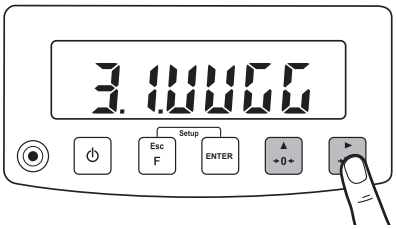
Simultaneously press Esc F ENTER keys to enter home screen.

2



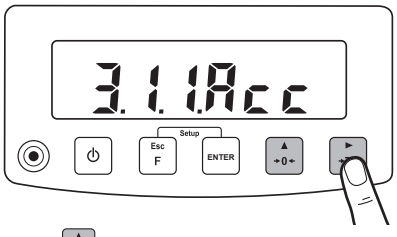
Using ▲ ey select “P3.Func” parameter and press ► key.

3



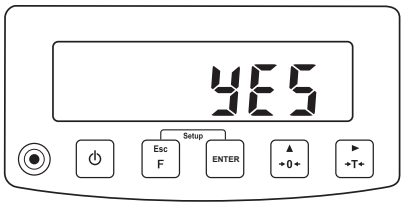
While “3.1.UUGG” parameter is on, press ► ey.

4



Using ▲ key select “3.1.1.Acc” parameter and press ►.

❺



Using ey select “YES” value and press

i **In order to enable other working modes, repeat the steps: ● and ●. Save working mode settings - section ❺.**

7.3. SAVE MODE

You can declare method of sending the information from the balance to a peripheral device (printer, computer).

Procedure:

- Enter **<3.1.UUGG / 3.1.2.Snn>** submenu.
- Press key to view available options:

Select option for sending of data:

StAb	Manual printout of stable weighing result and **<6.2.GLP>** parameter's settings. While ENTER pressing key when the result is unstable (no ◣◢ pictogram displayed), the result is to be printed on measurement stabilization.
nStAb	Manual printout of each weighing result and <6.2.GLP> parameter's settings. In case when the result is unstable, <?> sign is displayed at the beginning of mass frame.
rEPL	Automatic printout of the first stable weighing result above <Lo> threshold.

Caution:
Option not available for Peak Hold working mode.

7.4. AUTOMATIC PRINTOUT TIME INTERVAL

Parameter enabling you to set frequency of automatic printout. Printout interval is set in minutes with 1 [min] accuracy within 1 [min] - 1440 [min] range.

- Enter **<3.1.UUGG / 3.1.3.Int>** submenu.

Utilize 

and 

to set interval time in minutes within 1 [min] – 1440 [min]. To confirm value press 

.

Caution:
Option not available for Peak Hold working mode.

7.5. LO THRESHOLD

<Lo> parameter allows you to configure the function of automatic operation. In order to save the next measurement, before carrying it out the mass indication must get below the set net value of Lo threshold.

- Enter **<3.1.UUGG / 3.1.4.Lo>** submenu.

Utilize 

and 

to set Lo threshold value for automatic operation. To confirm value press 

.

7.6. WEIGHING

<UUGG> (Weighing) mode is a standard working mode that enables carrying out weighing's and saving them to the database.

7.6.1 SETTINGS

- Accessibility of **<UUGG>** (Weighing) mode is declared within **<P3.1.1Acc>,** procedure found within section 7.2
- Method of sending data to peripheral device is declared within **<3.1.2.Snn>**, procedure found within section 7.3.
- Method of setting automatic printout time for sending data to peripheral device is declared within **<3.1.3.Snn>**, procedure found within section 7.4.
- Method of setting lo threshold value for automatic operation is declared within **<3.1.4.Lo>**, procedure found within section 7.5.

7.7. PARTS COUNTING

Standard balance features parts counting option. Parts of the same mass are counted based on determined and reference mass of a single part.

7.7.1 SETTINGS

- Accessibility of **<PcS>** (Parts Counting) mode is declared within **<P3.2.1Acc>,** procedure found within section 7.2
- Method of sending data to peripheral device is declared within **<3.2.2.Snn>**, procedure found within section 7.3.
- Method of setting automatic printout time for sending data to peripheral device is declared within **<3.2.3.Snn>**, procedure found within section 7.4.
- Method of setting lo threshold value for automatic operation is declared within **<3.2.4.Lo>**, procedure found within section 7.5.

7.7.2 OPERATION MODE

Parameter allowing you to select method of determination of sample piece mass.

Procedure:

- To enter menu navigation, follow process found in Section 3.2 (page 7). Enter **<3.2.PcS / 3.2.2.UUt>** submenu.
- Press →0← key, parameter values are displayed successively one by one:
  S_S Select to set sample mass by determining mass of a single part.
  Suu Select to set sample mass by entering mass of a single part.
- Enter respective value and press ENTER key to confirm, then continue weighing.

7.7.3 SETTING REFERENCE MASS BY ENTERING MASS OF A SINGLE PART

Procedure:

- To enter menu navigation, follow process found in Section 3.2 (page 7). Enter **<3.2.PcS / 3.2.2.UUt>** submenu, set **<Suu>** value.
- Enter **<PcS>** working mode (parts counting), first, text **<SEt_Ut>** is displayed for 1 s, next, window for entering mass value of a single part.

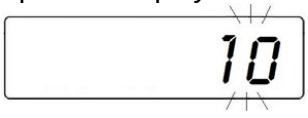
- Enter respective value and press ENTER key to confirm. Home screen is displayed automatically with quantity of parts loaded onto the weighing pan (pcs).

Caution:
If entered mass of a single part is greater than maximum capacity, message ***<Err Hi>*** *is displayed.*

7.7.4 SETTING REFERENCE MASS BY DETERMING MASS OF A SINGLE PART

Procedure:

- To enter menu navigation, follow process found in Section 3.2 (page 7). Enter **<3.2.PcS / 3.2.2.UUt>** submenu, set **<s_s>** value.
- Enter **<PcS>** working mode (parts counting), blinking value of sample quantity is displayed. Blinking quantity of parts is displayed.



- Press →0← key and select an option:
  10 - Reference quantity:10 parts.
  20 - Reference quantity:20 parts.
  50 - Reference quantity:50 parts.
  100 - Reference quantity:100 parts.
  0000 - Any reference quantity: - enter a value.

- Press ENTER key to confirm. Message **<LoAd>** is displayed for 1 s. Next, the following window is displayed:

- If the parts are to be weighed in a container, first put it on a weighing pan and next tare it.
- Load the weighing pan with declared amount of parts. When the indication is stable (pictorgram is displayed) press ENTER key to confirm the mass.
- Mass of a single part is automatically calculated and next quantity of parts (pcs) is displayed:

Remember:

- Maximum mass of all parts on the weighing pan cannot be greater than maximum capacity.
- Mass of a single part has to be equal or greater than **0.1 reading unit** of the balance. If the abovementioned condition is not fulfilled, message **<Err Lo>** is displayed.
- During parts counting determination wait until pictogram is displayed. Next, confirm declared quantity of parts.

7.8. +/- CONTROL

+/- control working mode enables entering checkweighing thresholds values (**Min**, **Max**).

7.8.1 SETTINGS

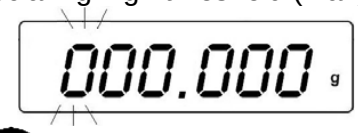
- Accessibility of **<HiLo>** (+/- Control) mode is declared within **<P3.3.1Acc>,** procedure found within section 7.2
- Method of sending data to peripheral device is declared within **<3.3.2.Snn>**, procedure found within section 7.3.
- Method of setting automatic printout time for sending data to peripheral device is declared within **<3.3.3.Snn>**, procedure found within section 7.4.
- Method of setting lo threshold value for automatic operation is declared within **<3.3.4.Lo>**, procedure found within section 7.5.

7.8.2 DECLARING CHECKWEIGHING THRESHOLDS

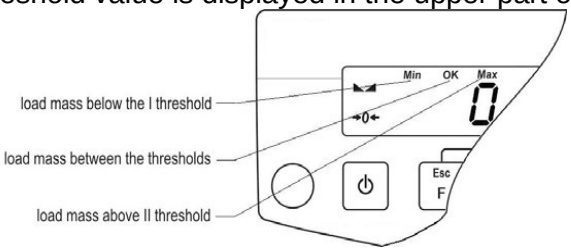
Procedure:

- To enter menu navigation, follow process found in Section 3.2 (page 7). Enter **"+/- control" <HiLo>** working mode.
- Message **<SEt Lo>** is displayed for 1s. Next, a message box for entering low threshold (Min) value is displayed.

- Enter the value and press ENTER key to confirm. Message **<SEt Hi>** is displayed for 1 s. Next, a message box for declaring high threshold (Max) is displayed.



- Enter the value and press ENTER key to confirm. Working mode home screen is displayed. Threshold value is displayed in the upper part of the display.



Caution:

***<Err Lo>** message is displayed:*

- If value of entered low threshold (Min) is greater than high threshold value (Max).

<Err Hi> *message is displayed:*

- If value of entered high threshold (Max) is greater than the maximum capacity.

7.9. PERCENT WEIGHING AGAINST REFERENCE SAMPLE MASS

Working mode enables comparison of a measured sample with the reference mass. The result is expressed in **[%].** Reference mass can be determined by weighing or entered to balance's memory.

7.9.1 SETTINGS

- Accessibility of **<dEu>** (% Weighing) mode is declared within **<P3.4.1Acc>,** procedure found within section 7.2
- Method of sending data to peripheral device is declared within **<34.2.Snn>**, procedure found within section 7.3.
- Method of setting automatic printout time for sending data to peripheral device is declared within **<3.4.3.Snn>**, procedure found within section 7.4.
- Method of setting lo threshold value for automatic operation is declared within **<3.4.4.Lo>**, procedure found within section 7.5.

7.9.2 OPERATION MODE

Parameter allowing you to select method of determination of sample piece mass.

Procedure:

- To enter menu navigation, follow process found in Section 3.2 (page 7). Enter **<3.4.dEu / 3.4.2.UUt>** submenu.
- Press →0← key, parameter values are displayed successively one by one:
  S_S Select to set reference sample mass by determining the mass value.
  Suu Select to set reference sample mass by entering the mass value.
- Enter respective value and press ENTER key to confirm, then continue weighing.

7.9.3 REFERENCE SAMPLE MASS DETERMINED BY WEIGHING

Procedure:

- To enter menu navigation, follow process found in Section 3.2 (page 7). Enter **<3.4.dEu / 3.4.2.UUt>** submenu, set **<s_s>** value.
- Enter **<dEu>** working mode (Percent weighing).
- Message **<Load>** is displayed for 1s. Next, the following window is displayed:

- Load the weighing pan with reference sample. When the indication is stable (pictogram is displayed) press ENTER key to confirm the mass.
- Value of weighed load is automatically entered as reference mass. Next, home screen with **100.000%** value is displayed.

7.9.4 REFERENCE SAMPLE MASS DETERMINED BY ENTERING MASS VALUE

Procedure:

- To enter menu navigation, follow process found in Section 3.2 (page 7). Enter **<3.4.dEu / 3.4.2.UUt>** submenu, set **<Suu>** value.
- Enter **<dEu>** working mode (Percent weighing).
- Message **<SEt_Ut>** is displayed for 1s. Next, a message box for entering mass value is displayed.

- Enter respective reference sample mass value.
- Press ENTER key to confirm. Home screen with **0.000%** value is displayed.

Caution:
If entered reference mass value is greater than maximum capacity, message ***<Err Hi>*** *is displayed.*

7.10 PEAK HOLD

<toP> function enables snapping value of maximum force applied to the weighing pan during one loading.

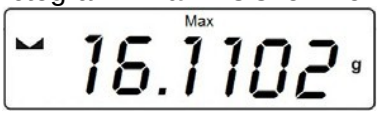
7.10.1 SETTINGS

- Accessibility of **<toP>** (Peak) mode is declared within **<P3.5.1Acc>,** procedure found within section 7.2
- Method of setting lo threshold value for automatic operation is declared within **<3.5.2.Lo>**, procedure found within section 7.5.

7.10.2 MEANS OF OPERATION

Procedure:

- To enter menu navigation, follow process found in Section 3.2 (page 7). Enter **<3.5.toP / 3.5.2.Lo>** submenu, set **<Lo>** parameter value (Lo threshold) after exceeding of which maximum force is to be registered.
- Enter 'Peak hold' **<toP>** working mode.
- From now on the balance registers and holds every single weighment which is above the **<Lo>** threshold, and which is higher than the result of the previous peak hold.
- If the balance detects mass above the threshold, the highest detected indication is held on the main display and the pictogram **<Max>** is shown on the right, over the measuring unit.



- The start of the next process of peak hold measurement is possible only after removing the load from the weighing pan and pressing FUNC ESC key. This causes returning to the home screen of **<toP>** mode. Pictogram **<Max>** is automatically deleted.

7.11 TOTALIZING

Working mode enables mass totalizing of weighed ingredients and printing totalizing report on a printer connected to the balance. It is possible to totalize max. 30 weighing's (ingredients) in one process.

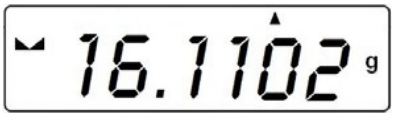
7.11.1 SETTINGS

- Accessibility of **<Add>** (Totalizing) mode is declared within **<P3.6.1Acc>,** procedure found within section 7.2
- Method of sending data to peripheral device is declared within **<3.6.2.Snn>**, procedure found within section 7.3.
- Method of setting automatic printout time for sending data to peripheral device is declared within **<3.6.3.Int>**, procedure found within section 7.4.
- Method of setting lo threshold value for automatic operation is declared within **<3.6.4.Lo>**, procedure found within section 7.5.

7.11.2 MEANS OF OPERATION

Procedure:

- Enter 'Totalizing' **<Add>** mode. A blinking '▲' pictogram is displayed in the upper part of the display.
- If the ingredients are to be weighed in a container, first put it on a weighing pan and next tare it.
- Load the weighing pan with first ingredient. When the indication is stable (pictogram is displayed) press ENTER key to confirm its mass.
- Weighing's sum and '▲' pictogram are displayed continuously.



- Unload the weighing pan. **ZERO** indication is displayed and pictogram "▲" starts to blink.

- Load the weighing pan with another ingredient. On indication stabilization press ENTER key.
- Sum of first and second weighing's and "▲" pictogram are displayed continuously.
- Press FUNC ESC key to finish the process (with loaded or unloaded weighing pan). Message **"Print?" <Prnt?>** is displayed.
- Press ENTER key. Sum of all saved weighing's is printed on a printer connected to the balance.

  Example report:

(1)	13.500 g
(2)	14.400 g
(3)	9.700 g
(4)	100.500 g
(5)	4.000 g
(6)	8.200 g
(7)	20.800 g
(8)	5.800 g
Total:	176.900 g

- Press ENTER key to print the report again. Press FUNC ESC key to exit.
- This causes returning to home screen of **<Add>** mode and automatic zeroing of data on carried out measurements.

Caution:
*In case of exceeding display range of totalized mass on balance's display, message **<Hi>** is displayed. Remove the ingredient from the weighing pan and finish the process. Load the weighing pan with smaller mass that does not exceed display range of totalized mass.*

8. INTERFACES

<P4.Conn> menu enables configuration of ports settings. The balance can communicate with a peripheral device, the communication is established via the following interfaces: RS232, USB type A, USB type B. USB type B port is used for connecting a computer. USB type A port is used for connecting a printer of a flash drive.

8.1. RS232

In **<P4.Conn>** menu, the following RS232 transmission parameters can be set:

- Baud rate
- Parity

8.1.1 BAUD RATE

Procedure:

- To enter menu navigation, follow process found in Section 3.2 (page 7). Enter **<P4.Conn / 4.1.rS / 4.1.1.bAd>** submenu.
- Press  key to view available options:
  2400
  9600
  19200
  38400
  57600
  115200
- Press  key to confirm. Return to home screen.

8.1.2 PARITY

Procedure:

- To enter menu navigation, follow process found in Section 3.2 (page 7). Enter <**P4.Conn / 4.1.rS / 4.1.2.PAr>** submenu.
- Press  key to view available options:
  nonE – none
  EuEn – even
  Odd – odd
- Press  key to confirm. Return to home screen.

8.2. USB A PORT

USB port of type A is intended for:

- Connecting a USB flash drive in order to enable:
  - operator's parameters export/import
  - weighing reports export
  - Alibi reports export
- Connecting scale to PCL printer
- Connecting printer (featuring USB port)

Caution:

The USB flash drive must support FAT files system.

8.2.1 IMPORT / EXPORT

Function enabling you to archive weighing reports and Alibi reports, and to copy parameters between weighing devices of the same series. Import/export operation can be carried out by means of USB flash drive comprising **<FAT files system>**. Upon connection of the USB flash drive to the USB A port, the drive gets detected automatically, as a result **<IE>** submenu is created.

Since extensions of exported weighing reports and Alibi reports files are specific, and the file-stored data is encoded, therefore the files content is not readable for standard computer programs. Please contact your Cole Parmer representative for the software.

Weighing Record Export

Option enabling you to export weighings to a USB flash drive. Weighing device program offers option of record of 100 000 weighings.

Procedure:

- Connect the USB flash drive to USB A port.
- Enter **<IE / IE1.UUE>** submenu.
- The program automatically saves exported data to a USB flash drive file.

File name and extension: xxxxxx.wei, where xxxxxx – serial number.

ALIBI Weighing Record Export

Option enabling you to export ALIBI weighings to a USB flash drive. Weighing device program offers option of record of 500 000 weighings.

Procedure:

- Connect the USB flash drive to USB A port.
- Enter **<IE / IE2.ALE>** submenu.
- The program automatically saves exported data to a USB flash drive file.

File name and extension: xxxxxx.ali, where xxxxxx – serial number.

Parameters Export/Import

Export / import of all user parameters between weighing devices of the same series carried out using USB flash drive.

Export Procedure:

- Connect the USB flash drive to USB A port
- Enter **<IE / IE3.SPE>** submenu.
- The program automatically saves exported data to a USB flash drive file.

File name and extension: xxxxxx.par, where xxxxxx – serial number.

Import Procedure:

- Connect the USB flash drive to USB A port, make sure that the drive stores paramters file in the main directory (file name: xxxxxx.par, where xxxxxx – serial number).
- Enter **<IE / IE4.SPI>** submenu.
- User parameters are automatically imported from xxxxxx.par file

8.3. USB B PORT

USB port of type B is intended for connecting the scale to a computer. In order to make connection of scale and computer possible, it is necessary to install virtual COM port in a computer. To carry out this procedure, you need a respective driver installer which is included on the USB driver included with the balance.

Procedure:

1. After virtual COM port is installed on computer, enter **< P5.ducE / 5.1.PC / 5.1.1.Prt>** submenu and set **<USbb>** value.
2. Run program for measurements readout.
3. Set communication parameters – select COM port
4. Start cooperation.

9. PERIPHERALS

<P5.ducE> menu comprises list of devices that can cooperate with the balance.

9.1. COMPUTER

In **<5.1.PC>** menu you can:

- Select interface to which a computer with program enabling computer- balance communication is connected.
- Enable or disable continuous transmission.
- Set time interval for printouts during continuous transmission.

9.1.1 COMPUTER PORT

Procedure:

- To enter menu navigation, follow process found in Section 3.2 (page 7). Enter **<5.1.PC / 5.1.1.Prt>** submenu.
- Press 

key to view available options:
  nonE – none
  rS232 – RS232
  USbB – USB type B
- Press 

key to confirm. Return to home screen.

9.1.2 CONTINUOUS TRANSMISSION

Procedure:

- To enter menu navigation, follow process found in Section 3.2 (page 7). Enter **<5.1.PC / 5.1.2.Cnt>** submenu.
- Press 

key to view available options:
  nonE - Continuous transmission disabled
  CntA - Continuous transmission in basic unit.
  Cntb - Continuous transmission in current unit.
- Press 

key to confirm. Return to home screen.

9.1.3 PRINTOUT INTERVAL FOR CONTINUOUS TRANSMISSION

Interval for printouts is set in seconds with 0.1[s] accuracy. You can set any interval value ranging from 0.1 to 3600 seconds.

Procedure:

- To enter menu navigation, follow process found in Section 3.2 (page 7). Enter **<5.1.PC / 5.1.3.Int>** submenu. Message box for entering interval value is displayed.
- Press ENTER key to confirm. Return to home screen.

9.2 PRINTER

<5.2.Prtr> menu enables selecting port to which data is send on pressing ENTER key. Content of sent data is set in **<P6.Prnt>** submenu and described further down this user manual.

9.2.1 PRINTER PORT

Procedure:

- To enter menu navigation, follow process found in Section 3.2 (page 7). Enter **<5.2.Prtr / 5.2.1.Prt>** submenu.
- Press →0← key to view available options:
  - **nonE** - None
  - **rS232** - RS232 port
  - **USbB** - USB type B port for connecting a computer.
- Press ENTER key to confirm. Return to home screen.

10. PRINTOUTS

<P6.Prnt> menu enables defining printout templates of:

- Adjustment report
- GLP printout

10.1. ADJUSTMENT REPORT PRINTOUT

<6.1.CrEP> menu enables declaring data that is to be printed on adjustment printout.

List of data to be declared:

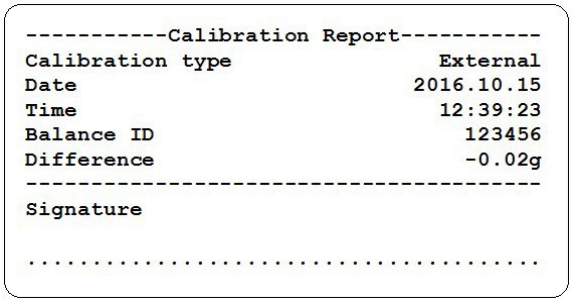
No.	Name	Overview
6.1.1.	CtP	Adjustment type
6.1.2.	dAt	Adjustment date
6.1.3.	tin	Adjustment time
6.1.4.	Idb	Balance serial number
6.1.5.	CdF	Difference between mass of adjustment weight that was measured during last adjustment and mass of currently measured adjustment weight.
6.1.6.	dSh	Line separating data and signature fields on a printout.
6.1.7.	SiG	An area for the signature of a user performing the adjustment.

For the parameters described above, one of these values must be selected:

YES - Print
no - Do not print

Caution:
Printouts are printed in English

Example report:



10.2. GLP PRINTOUT

<6.2.GLP> menu enables declaring data that is to be printed on a **GLP** printout.

List of data to be declared:

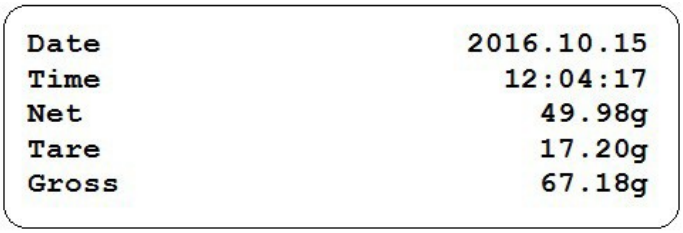
No.	Name	Overview
6.2.1.	dAt	Performed weighing date.
6.2.2.	tin	Performed weighing time.
6.2.3.	n	Net weight value of performed weighing in basic unit.
6.2.4.	t	Tare weight value of performed weighing in current unit.
6.2.5.	b	Gross weight value of performed weighing in current unit.
6.2.6.	CrS	Current result (net weight value) in a current unit.
6.2.7.	CrP	Last adjustment report in accordance with adjustment report printout settings.

For the parameters described above, one of these values must be selected:

YES - Print
no - Do not print

Caution:
Printouts are printed in English

Example report:



11. BALANCE SETTINGS

<P7.Othr> menu allows to customize the balance by setting:

- Backlight
- 'Beep' sound - reaction to pressing a key
- Automatic shutdown
- Date format
- Time format
- User menu default settings

11.1. BACKLIGHT

<7.1.bLbt> parameter enables setting display brightness. The backlight can be disabled completely.

Procedure:

- To enter menu navigation, follow process found in Section 3.2 (page 7). Enter **<P7.Misc / 7.1.bLbt>** submenu.
- Press →0← key to view available options, where:
  - **100** - Maximum brightness
  - **10** - Minimum brightness
  - **nonE** - Backlight disabled.
- Press ENTER key to confirm. Return to home screen.

11.2. 'BEEP' SOUND

<7.2.bEEP> parameter enables switching on/off a 'beep' sound responsible for informing a user about pressing any key.

Procedure:

- To enter menu navigation, follow process found in Section 3.2 (page 7). Enter **<P7.Misc / 7.2.bEEP>** submenu.
- Press →0← key to view available options:
  - **no** - disabled
  - **YES** - enabled
- Press ENTER key to confirm. Return to home screen.

11.3. AUTOMATIC SHUTDOWN

<7.3.t1> parameter enables automatic shutdown of the balance, when indication is stable.

Procedure:

- To enter menu navigation, follow process found in Section 3.2 (page 7). Enter **<P7.Misc / 7.3.t1>** submenu.
- Press →0← key to view available options:
  - **nonE** - Automatic shut down disabled.
  - **1, 2, 3, 5 ,10**- Time in [min]. When indication is stable during set time is shuts down.
- Press ENTER key to confirm. Return to home screen.

11.4. DATE

<7.4.SdAt> parameter enables setting current date.

Procedure:

- To enter menu navigation, follow process found in Section 3.2 (page 7). Enter **<P7.Misc / 7.4.dAt>** submenu.
- Message box is displayed:

Where:

- **16** - Year
- **11** - Month
- **02** - Day

- Press ENTER key to confirm. Return to home screen.

11.5. TIME

<7.5.Stnn> parameter enables setting current time.

Procedure:

- To enter menu navigation, follow process found in Section 3.2 (page 7). Enter **<P7.Misc / 7.5.dAt>** submenu.
- Message box is displayed:

Where:

- **12** - Hour
- **05** - Minute

- Press ENTER key to confirm. Return to home screen

11.6. DATE FORMAT

<7.6.FdAt> parameter enables defining date format for printouts.

Procedure:

- To enter menu navigation, follow process found in Section 3.2 (page 7). Enter **<P7.Misc / 7.6.FdAt>** submenu.
- Press 

key to view available options:
  - **1** - Date format DD.MM.YYYY
  - **2** - Date format MM.DD.YYYY
  - **3** - Date format YYYY.MM.DD
  - **4** - Date format YYYY.DD.MM
- Press 

key to confirm. Return to home screen.

11.7. TIME FORMAT

<7.7.Ftin> parameter enables defining time format for printouts.

Procedure:

- To enter menu navigation, follow process found in Section 3.2 (page 7). Enter **<P7.Misc / 7.7.Ftin>** submenu.
- Press 

key to view available options:
  - **24 H** - 24 hour time format
  - **12 H** - 12 hour time format
- Press 

key to confirm. Return to home screen.

11.8. USER MENU DEFAULT SETTINGS

<P7.8.dFLu> parameter enables setting user default settings.

Procedure:

- To enter menu navigation, follow process found in Section 3.2 (page 7). Enter **<P7.Misc / 7.8.dFLu>** submenu.
- Message **<Cont?>** (continue?) is displayed.
- Press 

key to confirm. Balance restores user default settings. The process is signaled by dashes **<- >**.
- On process completion, balance displays **<7.8.dFLu>** submenu.

12. INFORMATION

<P8.InFo> menu comprises information on the balance. The parameters serve informative purposes:

- Balance serial number – **<8.1.Idb>** parameter
- Program version – **<8.2.PurS>** parameter.
- Settings printout - **<8.4.PStP>** parameter

13. APPENDIX

13.1. BALANCE SPECIFICATIONS

	PB-300-200	PB-300-600	PB-300-2000	PB-300-3100
Catalog Number	10402-51	10402-52	10402-53	10402-54
Maximum capacity	200g	600g	2000g	3100g
Readability [d]	0.001g	0.01g	0.01g	0.1g
Tare range	-200g	-600g	-2000g	-3100g
Repeatability*	0.002g	0.01g	0.01g	0.1g
Linearity	±0.004g	±0.02g	±0.03g	±0.3g
Stabilization time	2s	2s	2s	2s
Adjustment	External			
Display	LCD (with backlit)			
NTEP Verified Unit Option	NO	YES	YES	YES
IP rating	IP 43	IP 43	IP 43	IP 43
RS 232	1	1	1	1
Power supply	100 ÷ 240 V AC 50 ÷ 60 Hz / 12 V DC + battery			
Battery operating time (average time)	33h			
Operating temperature	+15 to +30 ˚C			
Weighing pan dimensions	Ø100mm	128x128mm		
Packaging dimensions [mm]	330x230x140			
Interface	USB type A, USB type B, RS 232			

* - Standard deviation

13.2. MAITENANCE

Disassembly of weighing pan and other detachable components (the components differ depending on a balance type – see: UNPACKING AND INSTALLATION section).

Caution:
Cleaning anti-draft chamber while still installed may cause damage to the measuring system.

13.2.1 CLEANING ABS COMPONETS

To clean dry surfaces and avoid smudging, use clean non-coloring cloths made of cellulose or cotton. You can use a solution of water and detergent (soap, dishwashing detergent, glass cleaner). Gently rub the cleaned surface and let it dry. Repeat cleaning process if needed.

In the case when contamination is hard to remove, e.g. adhesive, rubber, resin, polyurethane foam residues etc., you can use a special cleaning agents based on a mixture of aliphatic hydrocarbons that do not dissolve plastics. Before using the cleanser for all surfaces, we recommend carrying out tests. Do not use products containing abrasive substances.

13.2.2 CLEANING STAINLESS STEEL COMPONETS

Avoid using cleansers containing any corrosive chemicals, e.g. bleach (containing chlorine). Do not use products containing abrasive substances. Always remove the dirt using microfiber cloth to avoid damage of protective coating.

In case of a daily maintenance:

1. Remove the dirt using cloth dipped in warm water.
2. For best results, add a little dishwashing detergent.

13.3. ACCESSORIES

Available Accessories:

- 10100-83 PO108 Cable- RS232 Cable to USB
- 10100-84 PO151 Cable- RS232 Cable to Epson Printer
- 10100-85 EPSON TM-U220D Printer
- 10100-86 Printer Paper

13.4. DIMENSIONS

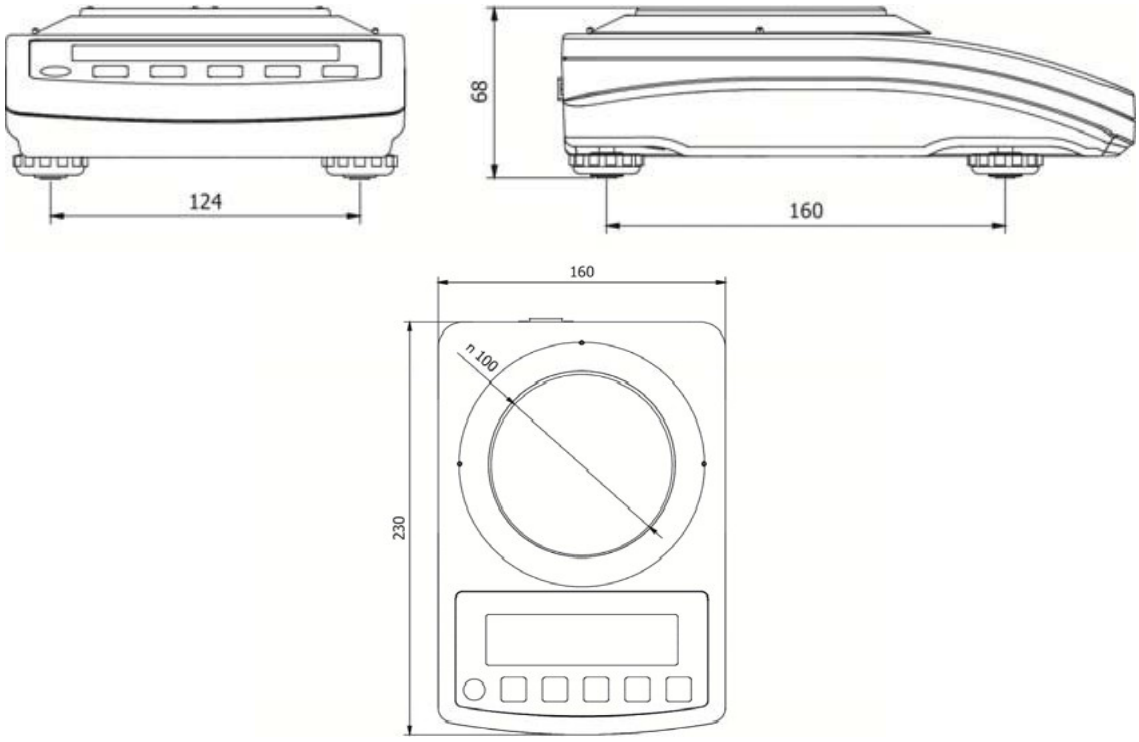


Fig.1. Dimensions of PB-300-200 precision balance.

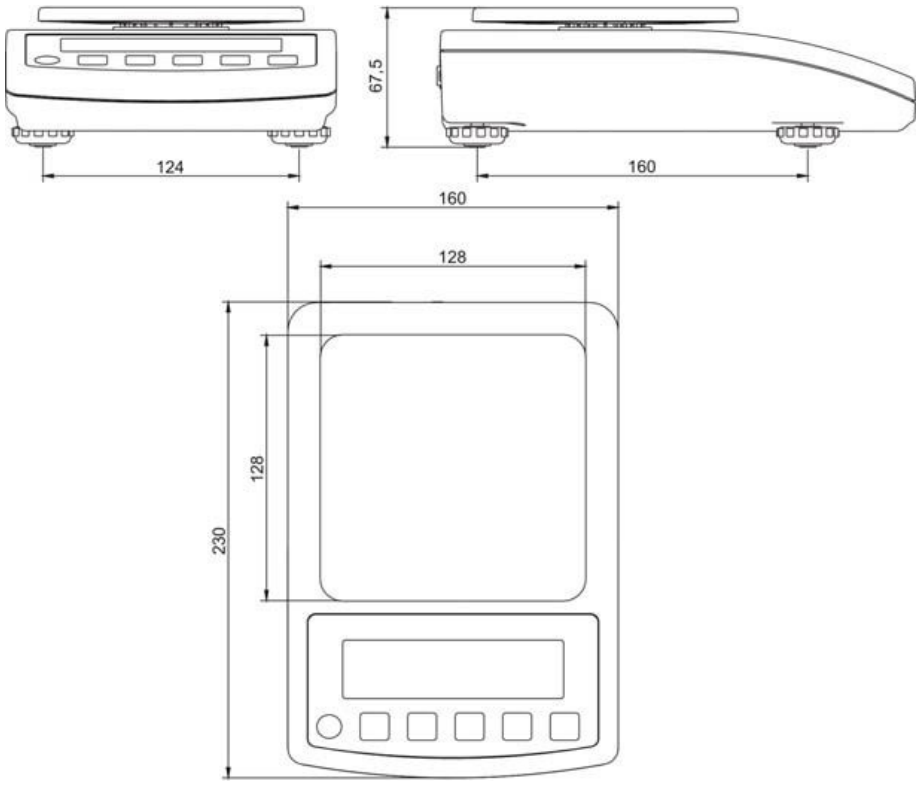
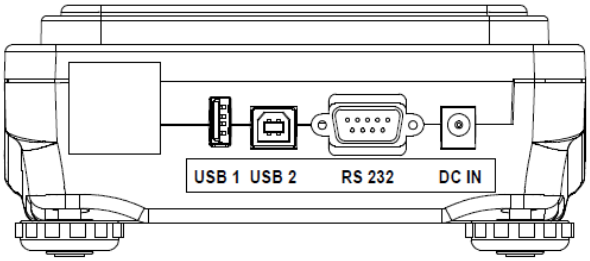


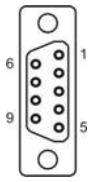
Fig.2. Dimensions of PB-300-600, PB-300-2000 and PB-300-3100 precision balances.

13.5. CONNECTORS



Interfaces view

DC IN - power outlet
RS232 - RS 232 connector
USB 2 - USB 'device' connector
USB 1 - USB 'host' connector

	Pin2 – RxD Pin3 – TxD Pin5 – GND	**RS 232 DB9/M connector (male)**

13.6. TROUBLESHOOTING

Problem	Cause	Solution
The balance does not switch on	Battery (batteries) discharged,	Connect it to the mains, charge the battery (batteries)
	No batteries (batteries not installed or installed incorrectly)	Check if batteries are installed correctly (polarization)
The balance switches off automatically	't1' parameter set to 'YES' value (the balance switches off automatically)	In 'Misc' menu change <7.3.t1> parameter setting to 'nonE' value.
During switching on, message 'LH' is displayed	Weighing pan loaded during switching on	Unload the weighing pan. Zero indication is displayed.

13.7. ERROR MESSAGES

- E r r 2 -	- Value beyond zero range.
- E r r 3 -	- Value beyond tare range.
- E r r 4 -	- Adjustment weight or start mass out of range (±1% for adjustment weight, ±10 for start mass).
- E r r L o -	- Determined mass of single part in 'Parts counting' mode too small - Value of 'Min' threshold is greater than value of 'Max' threshold in '+/- control' mode.
- E r r H i -	- Entered value of single part greater than maximum capacity in 'Parts counting' working mode - Entered value of 'Max' threshold greater than maximum capacity in '+/- control' mode. - Entered reference mass greater than maximum capacity in '+/- control' mode.
- E r r 8 -	- Time of the following operations exceeded taring, zeroing, start mass determining, adjustment process
- n u l l -	- Zero value from converter.
- F U L L -	- Weighing range exceeded.
- L H -	- Start mass error, indication out of range (-5% – +15% of start mass).
- H i -	- Display range of totalized mass on balance display exceeded in 'Totalizing' mode

13.8. WARRANTY CARD

Five-Year Limited Warranty

Cole-Parmer will exchange, replace or repair the existing balance for any damage that appears to be faulty by production or by construction within the 5-year warranty period.

Warranty is voided if:

A. Cole Parmer will exchange, replace or repair the existing balance for any damage that appears to be faulty by production or by construction within the 5-year warranty period.

B. Warranty is voided if:
   - mechanical defects caused by inappropriate use:
     - defects of thermal and chemical origin,
     - defects caused by lightning, overvoltage in the power network
     - defects caused by water damage
     - or other random event
   - overloading the mechanical measuring system
   - installing another version of the operating system
   - utilizing the balance contrary to its intended use
   - repairs carried out by non-authorized service centers
   - removing or destroying protective stickers which secure the balance's housing against unauthorized access

C. Warranty card must be filled out for warranty to be valid.

Cut Here_ _

Warranty Registration Card

(Please Return Within 30 Days)

Company or Institution________________________________ **Department**________________________

Contact Name____________________________________ **Title**_____________________________

Street Address____

City__________________________________ **State**____________ **Zip**__________________

Telephone_________________________________ **Date Purchased**________________________

Purchased From____

Model Number_________________________________ **Serial Number**_________________________

Industry______________________________________ **Application**_ ___________________________

What influenced you to purchase this product?____

For your reference and records:

Model Number

Serial Number

Purchase Date

_____

_____

_____

Place Stamp

Here

Cole-Parmer
Warranty Registration
625 East Bunker Ct
Vernon Hills, IL 60061

It is recommended that Cole-Parmer products are calibrated annually to ensure proper function and accurate measurements; however, your quality system or regulatory body may require more frequent calibrations. To schedule your recalibration, please contact InnoCal, an ISO 17025 calibration laboratory accredited by A2LA.

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Web: InnoCalSolutions.com

For Product and Ordering Information, Contact:

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