USER GUIDE

PUE H315

Radwag

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Software manual

ITKP-39-03-04-22-EN

Weighing Terminal

PUE H315

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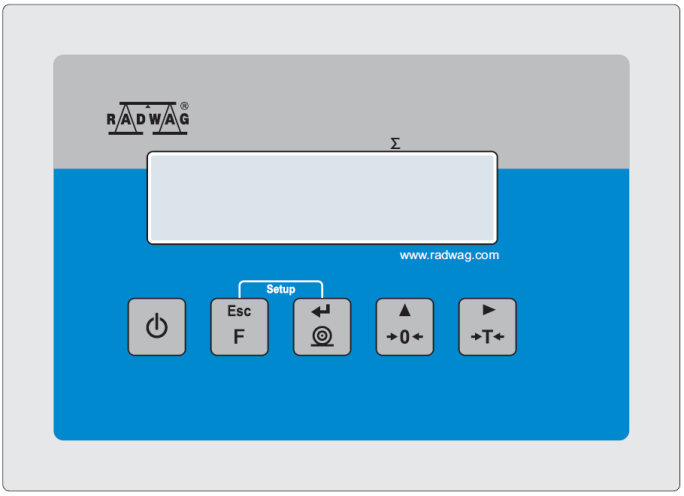
1. INTENDED USE

PUE H315 weighing terminal is intended to be a part of construction of industrial scales based on load cells. It is equipped with a stainless steel housing of high IP. Clear weighing result presentation is ensured due to a large display (LCD).

Standard terminal features one RS232 interface and USB connector for connection with peripheral devices (printer, computer, etc.). The terminal can be optionally equipped with an internal battery, this allows its operation in places where there is no access to the mains.

⚠	***The scale must not be operated in hazardous areas endangered with explosion of gases, and in dusty environments.***

2. OPERATION PANEL



Keys:

⏻	Press to switch the weighing device on/off – hold the key for about 1 second.
Esc F	Function key, press to change the working mode.
↵ ◎	Press to send the weighing result to a printer or computer.
▲ →0←	Press to zero the scale.

► →T←	Press to tare the scale.

⚠	***Upon pressing Esc F + ↵ key combination, functions of given keys change. Detailed information concerning use of Esc F + ↵ key combination is to be found further down this manual.***

3. START-UP

- Plug the power cord to the mains.
- Press ⏻ button. The key is also used to switch the scale on/off.
- Display test proceeds (all symbols are backlit for a moment), program name and number is displayed first, mass indication next.

4. OPERATING THE MENU

In order to navigate the program menu use the operation panel.

Esc F + ↵	Press to enter the main menu.
▲ →0← + ► →T←	Press to enter tare manually. Press to enter tare from tare database. Press to change value by 1 digit up. Press to scroll the menu up.
Esc F + ► →T←	Press to check battery/accumulator state.
Esc F + ▲ →0←	Press to view date/time.
▲ →0←	Press to scroll the menu down. Press to change current parameter value.
► →T←	Press to enter given submenu. Press to modify given parameter.
↵	Press to confirm modification.
Esc F	Press to exit, function remains unmodified. Press to move one menu level up.

4.1. Return to the Weighing Mode

Introduced menu modifications are automatically saved to scale memory upon return to the home screen. To return to the home screen press Esc F key repeatedly.

5. PROGRAM STRUCTURE

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

5.1. Function Groups

Function group number	Function group name	Description
P1	**CAL**	User Adjustment
P2	**rEAd**	Readout parameters
P3	**Func**	Working modes
P4	**Conn**	Communication
P5	**ducE**	Peripheral devices
P6	**Prnt**	Printouts
P7	**Othr**	Operation-related functions
P8	**InFo**	Scale data
P9	**Unit**	Units
PA	**I_O**	Input/Output module (option)
Pb	**CL**	4-20mA current loop module (option)
IE	**-**	Import / Export

6. WEIGHING

Load the weighing pan. Read the result when ◣◢ stability marker is displayed.

⚠	***Only stable weighing results can be recorded (stability marker ◣◢).***

6.1. Zeroing

To zero mass indication press [▲ →0←] key. Zero indication and the following pictograms are displayed: →0← and ◣◢. The instrument can be zeroed only when the indication is stable.

⚠	***Indication can be zeroed only within ±2% range of maximum capacity. If the zeroed value is greater than ±2% of the maximum capacity, then the software displays message <Err2>, and short sound signal is heard.***

6.2. Taring

To determine net weight value, load the weighing pan with a packaging, wait for a stable indication and press [► →T←] key. Zero indication and the following pictograms are displayed: **Net** and ◣◢. The weighing device has been tarred. Upon loading, net mass is displayed. Taring can be carried out repeatedly within the whole weighing range. Remember not to exceed the maximum capacity, i.e. sum of tare weight value and load weight value must be lower than the maximum capacity value. Upon unloading the weighing pan, the sum of tared masses with minus sign is displayed.

⚠	***It is impossible to tare zero or negative values. When you tare zero or negative values, message <Err3> is displayed, short sound signal is heard.***

6.3. Entering Tare Value Manually

- Press [▲ →0←] and [► →T←] key combination, tare value edit box is displayed.
- Enter tare value, to do it press [▲ →0←] and [► →T←] keys:

[► →T←]	Press to select digit that is to be edited.
[▲ →0←]	Press to set digit value, 0 - 9.

- Press [↵ ◎] key to confirm, the scale returns to the weighing mode, modified tare value with **'–'** sign is displayed.
- You can enter tare value at any time during the weighing operation.

6.4. Dual Range Devices

N/A in the case of single range scales

Switching from weighing with the accuracy of the **I weighing range** to weighing with the accuracy of the **II weighing range** takes place automatically upon exceeding Max of the **I weighing range**. Upon switching to weighing with the accuracy of the **II weighing range**, respective pictogram/marker →|2|← is displayed in the top left hand corner. The return to weighing with the accuracy of the I weighing range can be done in two modes:

Manual mode	Manual transition from a higher weighing range to a lower one, when the mass is in autozero (pictograms →0← and ◣◢) after pressing [→0←].
Automatic mode	Automatic transition from a higher weighing range to a lower weighing range, when the mass is in autozero (pictograms →0← an ◣◢).

To select the transition mode, go to **<P2.9.nnrH>** (see section 8.9 of the user manual).

6.5. Units

<P9.Unit> parameter group enables change of start unit and temporary unit. Unit change can be performed in the course of weighing or during operation of other modes. 'Parts counting' and 'Percent weighing' modes are exceptions.

6.5.1. Start Unit

Parameter for setting unit that is displayed and used after the device start-up.

Procedure:

- Enter **<P9.Unit / 9.1.UnSt>** submenu.
- Press [▲ →0←] key, available units are displayed successively one by one.

Options in the case when the main unit is [kg]: kg (kilogram), g (gram), lb (pound)*, N (Newton).

***) –** *unit disabled for verified weighing devices.*

Options in the case when the main unit is [g]: g (gram), kg (kilogram), ct (carat), lb (pound)*.

***) –** *unit disabled for verified weighing devices.*

- Select start unit and press key, next go back to the home screen, to do it press key.
- Upon next start-up the scale runs with set start unit.

6.5.2. Temporary Unit

Temporary unit runs from the moment it is set to the scale shut-down and restart.

Procedure:

- Enter **<P9.Unit / 9.2.Unin>** submenu.
- Press key, available units are displayed successively one by one.

Options in the case when the main unit is [kg]: kg (kilogram), g (gram), lb (pound)*, N (Newton).

***) –** *unit disabled for verified weighing devices.*

Options in the case when the main unit is [g]: g (gram), kg (kilogram), ct (carat), lb (pound)*.

***) –** *unit disabled for verified weighing devices.*

- Select a temporary unit and press key, next go back to the home screen.

7. ADJUSTMENT

option available for non-verified scales exclusively

In order to ensure the highest weighing accuracy, it is recommended to periodically introduce corrective factor of indications to scale memory, the said factor must be referred to a reference weight. This is so called adjustment.

Adjustment has to be carried out:

- prior to weighing,
- if long breaks between successive measuring series occur,
- if the ambient temperature has changed dynamically,
- if the scale has been relocated.

Adjustment types:

- external adjustment, **<1.1.CA-E>**, performed using an external weight of declared mass, i.e. mass that cannot be modified,
- user adjustment, **<1.2.CA-u>**, performed using an external weight of mass of any value comprised within the weighing range, however not lower than 30% of the maximum capacity value.

7.1. External Adjustment

External adjustment must be carried out using an external adjustment weight of class F_1.

Procedure:

- Enter **<P1.CAL / 1.1.CA-E>** submenu, text **<UnLoAd>** (remove weight) is displayed.
- Remove the load from the weighing pan and press key.
- Mass of an empty weighing pan is determined, this is signalled with display of 'dash', **< - >**. Next, text **<LoAd>** (load weight) and mass value that is to be loaded, e.g. **200g** (conditioned by scale type), are displayed.
- Load the weighing pan with weight of specified mass value and press key.
- Weight mass is determined, this is signalled with display of 'dash', **< - >**. Next, text **<UnLoAd>** (remove weight) is displayed.
- Remove the load form the weighing pan, **<1.1.CA-E>** submenu is displayed.

7.2. User Adjustment

User adjustment must be carried out using an external adjustment weight of class F_1.

Procedure:

- Enter **<P1.CAL / 1.2.CA-u>** submenu, edit box for declaring weight mass is displayed (the mass value must be ≥ 30% of the maximum capacity value).
- Enter weight mass value and press key to confirm, text **<UnLoAd>** (remove weight) is displayed.
- Remove the load from the weighing pan and press key.

- Mass of an empty weighing pan is determined, this is signalled with display of 'dash', **< - >**. Next, text **<LoAd>** (load weight) and mass value that is to be loaded, e.g. **100 g**, are displayed.
- Load the weighing pan with weight of specified mass value and press key.
- Weight mass is determined, this is signalled with display of 'dash', **< - >**. Next, text **<UnLoAd>** (remove weight) is displayed.
- Remove the load from the weighing pan, **<1.2.CA-u>** submenu is displayed.

7.3. Adjustment Report

Adjustment report is automatically printed (using scale-connected printer) at the end of each adjustment process. To declare report content go to **<P6.1.CrEP>** submenu. For detailed information concerning report content read later sections of this manual.

8. SCALE PARAMETERS

Scale parameters are set to adjust the weighing device to ambient conditions (filters) or individual needs (autozero on/off, tare values memory). These parameters are to be found in **<P2.rEAd>** submenu. **<P2.rEAd>** submenu comprises functions allowing you to adjust your weighing device to ambient conditions of a given workstation.

8.1. Filter

- Enter **<P2.rEAd / 2.1.FiL>** submenu.
- Press key, filter values are displayed successively one by one: **1** – Fast, **2** – Average, **3** – Slow.
- Set respective value and press key to confirm, next go to the home screen.

⚠	***The higher filter value, the longer the weighing takes.***

8.2. Value Release

Enter this parameter to adjust rate of stabilisation of the measurement result. Depending on the selected option, weighing time is either shorter or longer.

Procedure:

- Enter **<P2.rEAd / 2.2.APPr>** submenu.
- Press key, available values are displayed successively one by one: **F_P** – fast and reliable, **PrEc** – reliable, **FASt** – fast.
- Press key to confirm, next go to the home screen.

8.3. Ambient Conditions

Parameter relating to ambient and environmental conditions of the workstation. Enter this parameter and set 'nStAb' value if the ambient conditions are unfavourable (air drafts, vibrations).

Procedure:

- Enter **<P2.rEAd / 2.3.Enut>** submenu.
- Press key, parameter values are displayed successively one by one: **nStAb** – unstable, **StAb** – stable.
- Press key to confirm, next go to the home screen.

8.4. Autozero Function

'Autozero' function has been designed to enable automatic control and correction of zero indication. This guarantees precise weighing results. 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, e.g. pouring, filling). In such a case, it is recommended to disable the function.

Procedure:

- Enter **<P2.rEAd / 2.4.Aut>** submenu.
- Press key, parameter values are displayed successively one by one: **YES** – autozero function enabled, **no** – autozero function disabled.
- Press key to confirm, next go to the home screen.

8.5. Tare Function

'Tare' function has been designed to enable setup of appropriate parameters for tare operation.

Procedure:

- Enter **<P2.rEAd / 2.5.tArE>** submenu.
- Press [▲ →0←] key, available values are displayed successively one by one:

no	Regular tare mode. Select this parameter to make the scale overwrite the set (selected) tare value with the most recently entered one.
tArF	Select this parameter to make the scale store the latest tare value in memory. The latest tare value is displayed after scale restart.
AtAr	Automatic tare mode.
EAcH	Select this parameter to make the scale automatically tare each accepted measurement.

- Press [↵ ◎] key to confirm, next go to the home screen.

8.6. Tare: Enter Mode

The tare is entered using [▲ →0←] + [► →T←] key combination. There are two enter modes.

Procedure:

- Enter **<P2.rEAd / 2.6.ttr>** submenu.
- Press [▲ →0←] key, parameter values are displayed successively one by one:

tArEH	Select to enter tare value manually by means of [▲ →0←] + [► →T←] key combination.
tArnn	Select to enter tare value that is stored in scale memory, use [▲ →0←] + [► →T←] key combination.

- Press [↵ ◎] key to confirm, next go to the home screen.

8.7. Tare: Values Memory

It is possible to store 10 tare values in scale memory.

8.7.1. Entering Tare Value to the Weighing Device Memory

- Enter **<P2.rEAd / 2.7.tArn>** submenu, name of tare no. 1 from tare database is displayed (**<tArE 0>**), to select a different record press key.
- Select respective entry and press key, tare value edit box is displayed.
- Enter tare value, to do it press and keys:

	Press to select digit that is to be edited.
	Press to set digit value, 0 - 9.

- Press key to confirm, **<tArE 0>** window is displayed.
- Now press key to go to the home screen.

8.7.2. Selecting Tare Value from the Weighing Device Memory

- Enter **<P2.rEAd / 2.7.tArn>** submenu, name of tare no. 1 from tare database is displayed (**<tArE 0>**), to select a different record press key.
- To set the selected tare press key.
- The set tare value is displayed with minus sign, **Net** symbol is shown in the upper-left corner of the screen.

	The tare value acquired from the weighing device memory is not remembered upon the weighing device restart.

8.8. Last Digit

Function designed to disable display of the last weighing indication digit, this results with less accurate measurement.

Procedure:

- Enter **<P2.rEAd / 2.8.LdiG>** submenu.
- Press key, available values are displayed successively one by one:

ALAS	Select to make the last digit always on.
nEur	Select to make the last digit always off.
uuSt	Select to make the last digit on only when the weighing indication is stable.

- Press key to confirm, next go to the home screen.

8.9. Manual Multi-Range

N/A in the case of single range scales

Transition mode from a higher weighing range to a lower weighing range.

Procedure:

- Enter **<P2.rEAd / 2.9.nnrH>** submenu and set a respective option (- Automatic multi-range; - Manual multi-range).

For a description of the transition modes from a higher to a lower weighing range, refer to section 6.4 of the user manual.

9. COMMUNICATION

Communication between the scale and the peripheral devices is established via the following ports: RS232 (1), RS232 (2)*, RS485*, USB type A, Ethernet*. To set the ports go to **<P4.Conn>** submenu.

***)** - *Option*

9.1. RS232 (1) Port

- Enter **<P4.Conn / 4.1.rS1>** submenu and set respective transmission parameters:

4.1.1.bAd	Baud rate: 2400, 4800, 9600, 19200, 38400, 57600, 115200 bit/s.
4.1.2.dtb	Data bits: 7, 8.
4.1.3.Stb	Stop bits: 1, 2
4.1.4.Par *	Parity: **nonE** – none; **EuEn** – even; **Odd** – odd.

***)** *– for RS232, 7 bit data setting requires activation of parity control (<nonE> parity value disabled).*

- Press key to confirm, next go to the home screen.

9.2. RS232 (2) Port

Optional design

- Enter **<P4.Conn / 4.2.rS1>** submenu and set respective transmission parameters:

4.2.1.bAd	Baud rate: 2400, 4800, 9600, 19200, 38400, 57600, 115200 bit/s.
4.2.2.dtb	Data bits: 7, 8.
4.2.3.Stb	Stop bits: 1, 2
4.2.4.Par *	Parity: **nonE** – none; **EuEn** – even; **Odd** – odd.

***)** *– for RS232, 7 bit data setting requires activation of parity control (<nonE> parity value disabled).*

- Press key to confirm, next go to the home screen.

9.3. RS485 Port

Optional design

- Enter **<P4.Conn / 4.3.rS3>** submenu and set respective transmission parameters:

4.3.1.bAd	Baud rate: 2400, 4800, 9600, 19200, 38400, 57600, 115200 bit/s.
4.3.2.dtb	Data bits: 7, 8.
4.3.3.Stb	Stop bits: 1, 2
4.3.2.PAr	Parity: **nonE** – none; **EuEn** – even; **Odd** – odd.
4.3.3.PAr	Scale address setting. Default value **1**.

***)** – *for RS485, 7 bit data setting requires activation of parity control (<nonE> parity value disabled).*

- Press key to confirm, next go to the home screen.

9.4. USB A Port

USB port of type A is intended for:

- Connecting a USB flash drive in order to enable: operator parameters export/import, weighing reports export, Alibi reports export.
- Connecting scale to PCL printer.
- Connecting EPSON TM-T20 printer (featuring USB port).

	Terminal's USB port of type A is equipped with M12 4P connector. Connect devices to the USB port of type A using PT0084 cable (adapter).
	The USB flash drive must support FAT files system.

9.5. Port Ethernet

Optional design

- Enter **<P4.Conn / 4.4.EtH>** submenu and set respective transmission parameters:

4.4.1.tCP	Port number for TCP protocol. Default value: **4001**.
4.4.2.dHC	DHCP activation/deactivation: **no** – DHCP disabled, **YES** – DHCP enabled. Default value: **no**.

4.4.3.tnn	Time delay. Time interval upon passage of which inactive connection with Ethernet module gets deactivated. The parameter value is declared within **0[s] - [60]s** range. The default value is **0 [s]** (parameter disabled).
4.4.4.dFL	Default settings of Ethernet port.

To set transmission parameters, i.e. DHCP, IP address, subnet mask, default gateway, use a proprietary **RADWAG Wagi Elektroniczne** PC software, **„Scales Editor 2.0”**.

	Procedure for change of settings of Ethernet transmission parameters in scale with use of „Scales Editor 2.0” program is to be found in the manual of the program.

Default settings of transmission parameters in the scale:

IP address	192.168.0.230
Subnet mask	255.255.0.0
Default gateway	192.168.0.1

	Set the transmission parameters in accordance with your local network.

10. PERIPHERAL DEVICES

<P5.ducE> menu contains list of devices connecting with scale.

10.1. Computer

<5.1.PC> submenu allows you to:

- select port to which the computer is connected,
- enable/disable continuous transmission,
- set frequency of printouts for continuous transmission.

10.1.1. Computer Port

- Enter **<5.1.PC / 5.1.1.Prt>** submenu.
- Press key, parameter values are displayed successively one by one: **nonE** – none; **rS1** – RS232 (1); **rS2** – RS232 (2)*; **rS3** – RS485*, **EtH** – Ethernet*.
- Press key to confirm, next go to the home screen.

***)** - *Option*

10.1.2. Continuous Transmission

- Enter **<5.1.PC / 5.1.2.Cnt>** submenu.
- Press key, parameter values are displayed successively one by one:

nonE	Continuous transmission disabled.
CntA	Continuous transmission in basic unit.
Cntb	Continuous transmission in current/temporary unit.

- Press key to confirm, next go to the home screen.

10.1.3. Printout Interval for Continuous Transmission

Parameter enabling you to set frequency of printout for continuous transmission. Printout interval is set in seconds with 0.1 [s] accuracy within 0.1 [s] - 3600 [s] range.

Procedure:

- Enter **<5.1.PC / 5.1.3.Int>** submenu, window for entering interval value is displayed.
- Press key to confirm, next go to the home screen.

10.2. Printer

10.2.1. Printer Port

Parameter enabling you to select port to which data is to be sent upon pressing key.

Procedure:

- Enter **<5.2.Prtr / 5.2.1.Prt>** submenu.
- Press key, parameter values are displayed successively one by one: **nonE** – none; **rS1** – RS232 (1); **rS2** – RS232 (2)*; **rS3** – RS485*, **USbA** - USB type A, **EtH** – Ethernet*.
- Press key to confirm, next go to the home screen.

***)** - *Option*

10.3. Additional Display

The weighing instrument can connect with additional displays: WD-4, WWG-2.

10.3.1. Additional Display Port

- Enter **<5.3.AdSP / 5.3.1.Prt>** submenu.
- Press key, parameter values are displayed successively one by one: **nonE** – none; **rS1** – RS232 (1); **rS2** – RS232 (2)*, **rS3** – RS485*.
- Press key to confirm, next go to the home screen.

10.3.2. Additional Display Type

- Enter **<5.3.AdSP / 5.3.2.tYP>** submenu and select respective type.

Where:

Ud-4	WD-4-type additional display (set by default).
UUG-2	WWG-2-type additional display.

11. PRINTOUTS

It is possible to define adjustment report printout template and GLP printout template. To set the printouts go to **<P6.Prnt>** submenu.

11.1. Adjustment Report

<P6.1.CrEP> is a group of parameters allowing you to declare variables that are to be printed on an adjustment report printout. Each variable features accessibility attribute: **YES** – print, **no** – do not print. Adjustment report is automatically generated at the end of each adjustment process.

Variables list:

No.	Name	Description
6.1.1.	CtP	Performed adjustment type.
6.1.2.	dAt	Adjustment date.
6.1.3.	tin	Adjustment time.
6.1.4.	Idb	Serial number of the scale.
6.1.5.	CdF	Difference between mass of the adjustment weight that was measured during the last adjustment and mass of currently measured adjustment weight.

6.1.6.	dSh	Dashed line separating printout data and signature fields.
6.1.7.	SiG	An area for the signature of an operator carrying out the adjustment.

Printouts are generated exclusively in English.

Report example:

```
-----------Calibration Report-----------
Calibration type                External
Date                          2016.10.15
Time                            12:39:23
Balance ID                        123456
Difference                        -0.02g
----------------------------------------
Signature

.........................................
```

11.2. GLP Printout

<P6.2.GLP> is a group of parameters allowing you to declare variables that are to be printed on a weighing printout. Each variable features accessibility attribute: **YES** – print, **no** – do not print.

Variables list:

No.	Name	Description
6.2.1.	dAt	Performed weighing date.
6.2.2.	tin	Performed weighing time.
6.2.3.	Idb	Serial number of the scale.
6.2.4.	n	Net weight value of performed weighing in basic measuring unit.
6.2.5.	t	Tare weight value in the current unit.
6.2.6.	b	Gross weight value in the current unit.
6.2.7.	CrS	Current weighing result (net weight) in a current unit.
6.2.8.	CrP	The last adjustment report generated in accordance with settings declared for the adjustment report printout.

Printouts are generated exclusively in English.

Report example:

```
Date                    2016.10.15
Time                      12:04:17
Net                         49.98g
Tare                        17.20g
Gross                       67.18g
```

12. MISCELLANEOUS PARAMETERS

<P7.Othr> is a group of parameters enabling you to adapt the scale to individual needs.

12.1. Automatic Backlight Switch-Off

Parameter allowing to set time interval, in [min], after which display backlight goes off. If the indication is stable during the declared time interval, the screen backlight goes off automatically.

Procedure:

- Enter **<P7.Othr / 7.1.bl>** submenu.
- Press key, parameter values are displayed successively one by one: **nonE** – function disabled, **0.5**, **1**, **2**, **3**, **5**.
- Press key to confirm, next go to the home screen.

12.2. Display Brightness

Parameter allowing to change display brightness, the brightness can be changed within **0% - 100%** range.

Procedure:

- Enter **<P7.Othr / 7.2.bLbt>** submenu.
- Press key, parameter values are displayed successively one by one, where:

nonE	Backlight off.
10	Display brightness low limit value in [%].
100	Display brightness high limit value in [%].

- Set the respective value, press key to confirm, next go to the home screen.

12.3. 'Beep' Sound

Parameter allowing you to enable/disable sound signal informing the operator about pressing panel key(s).

Procedure:

- Enter **<P7.Othr / 7.3.bEEP>** submenu.
- Press key, parameter values are displayed successively one by one: **no** – sound signal disabled, **YES** - sound signal enabled.
- Press key to confirm, next go to the home screen.

12.4. Automatic Shutdown

Parameter allowing you to set time interval, in [min], after which the weighing device shuts down automatically. If the indication is stable during the declared time interval, the device is shut down automatically. Shutdown function is inactive and the device cannot be turned off if any process is started or if you operate the menu.

Procedure:

- Enter **<P7.Othr / 7.4.t1>** submenu.
- Press key, parameter values are displayed successively one by one: **nonE** – function disabled, **1**, **2**, **3**, **5**, **10**.
- Press key to confirm, next go to the home screen.

12.5. Date and Time

Parameter allowing you to set current date and time and to specify date and time format.

Procedure:

- Enter **<P7.Othr>** submenu and change the settings. Refer to the below table:

Parameter	Description
<7.5.SdAt>	Enter this parameter to set current date, where the date format is **YYYY.MM.DD***.
<7.6.Stnn>	Enter this parameter to set current time, where the time format is **24H****.

<7.7.FdAt>	Enter this parameter to set date format. Values: **1** - DD.MM.YYYY, **2** - MM.DD.YYYY, **3** - YYYY.MM.DD* (set by default), **4** - YYYY.DD.MM.
<7.8.Ftin>	Enter this parameter to set time format. Values: **24H**** (set by default), **12H****.

***)** *- Date format: Y – year, M – month, D – day.*
****)** *- Time format: 12H – 12-hour format, 24H - 24-hour format.*

12.6. Default User Settings

Parameter allowing you to restore default operator settings.

Procedure:

- Enter **<P7.Othr / 7.9.dFLu>** submenu, text **<Cont?>** is displayed (Continue?).
- Press key to confirm. The process of restoring default settings starts, this is signalled with display of 'dash', **< - >**.
- Upon process completion, **<7.9.dFLu>** submenu is displayed. Go to the home screen.

13. SCALE DATA

Scale data menu **<P8.InFo>**, provides information on the weighing device and its program. The parameters serve informative purposes:

Parameter	Description
<8.1.Idb>	Scale serial number.
<8.2.PurS>	Program version.
<8.3.PStP>	Settings printout. Enter the parameter to send scale settings to printer port (all parameters).

14. WORKING MODES – General Information

The scale features the following working modes: Weighing, Parts counting, +/- control, Percent weighing (%), Peak Hold, Totalizing, Animal weighing.

14.1. Running Working Mode

- Go to the home screen, press Esc F key, name of the first available working mode is displayed.
- Press key, names of available working modes are displayed successively one by one.

- Enter selected working mode, to do it press key.

⚠	***The scale program has been designed to make the scale run, upon restart, with the latest operated working mode on.***

14.2. Working Modes Local Settings

Each working mode features specific (local) functions which enable adapting device operation to individual needs. The functions are to be found in local settings. To go to local settings of each working mode enter **<P3.Func>** submenu. Some special functions are available for all working modes, refer to the table below:

	Accessibility	Save mode	Time interval	Lo threshold
Weighing	3.1.1.Acc	3.1.2.Snn	3.1.3.Int	3.1.4.Lo
Parts counting	3.2.1.Acc	3.2.3.Snn	3.2.4.Int	3.2.5.Lo
+/- control	3.3.1.Acc	3.3.2.Snn	3.3.3.Int	3.3.4.Lo
Percent weighing %	3.4.1.Acc	3.4.3.Snn	3.4.4.Int	3.4.5.Lo
Peak Hold	3.5.1.Acc	-	-	3.5.2.Lo
Totalizing	3.6.1.Acc	3.6.2.Snn	3.6.3.Int	3.6.4.Lo
Animal weighing	3.7.1.Acc	-	-	3.7.3.Lo

The table presents special function number and name for each of the working modes. Remaining specific functions referring directly to a given working mode are described further down this user manual.

14.2.1. Working Mode Accessibility

To enable/disable given working mode, press Esc F key.

Procedure:

- Enter **<P3.Func>** menu and select given working mode.
- Go to **<Acc>** function.
- Press key, parameter values are displayed successively one by one: **YES** – working mode enabled, **no** – working mode disabled.
- Press key to confirm, next go to the home screen.

14.2.2. Save Mode

Parameter allowing you to set mode of sending data from the weighing device to a peripheral device.

Procedure:

- Enter **<P3.Func>** menu and select given working mode.
- Go to **<Snn>** function.
- Press key, parameter values are displayed successively one by one:

StAb	Manual printout of stable weighing result. Upon pressing key at the moment when the result is unstable (no pictogram displayed), the program first waits for the stability condition to be met, only then printout is carried out.
rEPL	Automatic printout of the first stable weighing result above **<Lo>** threshold (to set **<Lo>** threshold go to **<Lo>** parameter).
rEPLi	Automatic printout with time interval set in **[min]** (to set the interval go to **<Int>** parameter).
nStAb	Manual printout of each weighing result. In the case of unstable indication, **<?>** sign is displayed in front of the 'mass frame'. **Function available for non-verified scales exclusively**.

- Press key to confirm, next go to the home screen.

14.2.3. 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.

Procedure:

- Enter **<P3.Func>** menu and select given working mode.
- Enter **<Int>** function, window for entering **time interval** value is displayed.
- Press key to confirm, next go to the home screen.

14.2.4. 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.

Procedure:

- Enter **<P3.Func>** menu and select given working mode.
- Enter **<Lo>** function, window for entering **Lo threshold** value is displayed.

- Enter respective value and press key to confirm, then continue weighing.

15. WORKING MODE – WEIGHING

<UUGG> is a standard working mode enabling you to carry out the weighing operation along with record of the result to the database.

15.1. Local Settings

To go to local settings enter **<3.1.UUGG>** submenu.

3.1.1.Acc	**Working mode accessibility**	For detailed description read section 14.2.1.
3.1.2.Snn	**Save mode**	For detailed description read section 14.2.2.
3.1.3.Int	**Time interval**	For detailed description read section 14.2.3.
3.1.4.Lo	**Lo threshold**	For detailed description read section 14.2.4.

16. WORKING MODE – PARTS COUNTING

Parts Counting is a working mode enabling you to determine quantity of small pieces of the same mass, which determination is done on the basis of mass of sample piece (single part), and where the sample piece mass (single part mass) is determined using the weighing device.

16.1. Local Settings

To go to local settings enter **<3.2.PcS>** submenu.

3.2.1.Acc	**Working mode accessibility**	For detailed description read section 14.2.1.
3.2.2.UUt	**Operation mode**	For detailed description read section 16.1.1.
3.2.3.Snn	**Save mode**	For detailed description read section 14.2.2.
3.2.4.Int	**Time interval**	For detailed description read section 14.2.3.
3.2.5.Lo	**Lo threshold**	For detailed description read section 14.2.4.

16.1.1. Selecting Operation Mode

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

Procedure:

- Enter **<3.2.PcS / 3.2.2.UUt>** submenu.
- Press 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 key to confirm, then continue weighing.

16.2. Setting Sample Mass by Entering Mass of a Single Part

- 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 key to confirm, the home screen is displayed automatically along with quantity of parts loaded onto the weighing pan (pcs).

⚠	***If the value of entered single part mass is greater than max capacity value, then message <Err Hi> is displayed.***

16.3. Setting Sample Mass by Determining Mass of a Single Part

- 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.
- Press key to select one of the following options:

10	Reference sample quantity: 10 pcs.
20	Reference sample quantity: 20 pcs.
50	Reference sample quantity: 50 pcs.
100	Reference sample quantity: 100 pcs.
0000	Custom reference sample quantity - enter the required value yourself.

- Select respective option and press key to confirm, first, text **<LoAd>** is displayed for 1 second, then the weighing window.

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

⚠	***Total weight value of all parts loaded onto the weighing pan cannot be greater than the max capacity value.***
⚠	***Single part mass value must be equal or greater than 0.1 of the reading unit. Unless this condition is met, the weighing device displays a message <Err Lo>.***
⚠	***In the course of parts quantity determination before confirming the declared quantity value it is necessary to wait for a stable measurement ◣◢.***

17. WORKING MODE – +/- CONTROL

+/- control is a working mode enabling you to enter checkweighing thresholds values (**Min**, **Max**).

17.1. Local Settings

To go to local settings enter **<3.3.HiLo>** submenu.

3.3.1.Acc	**Working mode accessibility**	For detailed description read section 14.2.1.
3.3.2.Snn	**Save mode**	For detailed description read section 14.2.2.
3.3.3.Int	**Time interval**	For detailed description read section 14.2.3.
3.3.4.Lo	**Lo threshold**	For detailed description read section 14.2.4.

17.2. Declaring Checkweighing Thresholds

- Enter **<HiLo>** working mode (+/- control), first, text **<SEt Lo>** is displayed for 1 s, next, window for declaring low weighing threshold (Min).
- Enter respective value and press key to confirm, first, text **<SEt Hi>** is displayed for 1 second, next, window for declaring high weighing threshold (Max).

- Enter respective value and press key for confirmation, working mode's home screen is displayed along with declared threshold value, where:

Min	Load mass lower than low weighing threshold.
Ok	Load mass within weighing thresholds.
Max	Load mass greater than high weighing threshold.

	If the entered low threshold value (Min) is greater than high threshold value (Max), <Err Lo> error is displayed.
	If the entered high threshold value (Max) is greater than the maximum capacity value, <Err Hi> error is displayed.

18. WORKING MODE – PERCENT WEIGHING

Percent weighing is a working mode enabling you to compare measured load mass with the reference sample mass. The result is expressed in [**%**]. Reference sample mass can be either determined by weighing or entered to weighing device memory by an operator.

18.1. Local Settings

To go to local settings enter **<3.4.dEu>** submenu.

3.4.1.Acc	**Working mode accessibility**	For detailed description read section 14.2.1.
3.4.2.UUt	**Operation mode**	For detailed description read section 18.1.1.
3.4.3.Snn	**Save mode**	For detailed description read section 14.2.2.
3.4.4.Int	**Time interval**	For detailed description read section 14.2.3.
3.4.5.Lo	**Lo threshold**	For detailed description read section 14.2.4.

18.1.1. Selecting Operation Mode

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

Procedure:

- Enter **<3.4.dEu / 3.4.2.UUt>** submenu.
- Press 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.

- Set respective value and press key to confirm, next go to the home screen.

18.2. Reference Sample Mass Determined by Weighing

- Enter **<3.4.dEu / 3.4.2.UUt>** submenu, set **<S_S>** value.
- Enter **<dEu>** working mode (Percent weighing), first, text **<LoAd>** is displayed for 1 second, then the weighing window.
- Load the weighing pan with the reference sample. When the indication is stable (◣◢ pictogram is displayed), press key to confirm the mass.
- Mass of the weighed load is automatically set as reference sample mass, the home screen is displayed along with **100.000%** value.

18.3. Reference Sample Mass Determined by Entering the Mass Value

- Enter **<3.4.dEu / 3.4.2.UUt>** submenu, set **<Suu>** value.
- Enter **<dEu>** working mode (Percent weighing).
- Text **<SEt_Ut>** is displayed for 1 s, next, window for declaring mass of reference sample.
- Enter respective value and press key to confirm. The home screen is displayed automatically with **0.000%** value.

⚠	***If the value of entered reference sample mass is greater than the max capacity value, then message <Err Hi> is displayed.***

19. WORKING MODE – PEAK HOLD

Peak Hold is a working mode allowing you to snap value of maximum force applied to the weighing pan during one weighing process.

19.1. Local Settings

To go to local settings enter **<3.5.toP>** submenu.

3.5.1.Acc	**Working mode accessibility**	For detailed description read section 14.2.1.
3.5.2.Lo	**Lo threshold**	For detailed description read section 14.2.4.

19.2. Peak Hold Operation

- 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 **<toP>** working mode (Peak Hold). From now on the scale registers and holds every single weighing which is above the **Lo threshold**, and which is higher than the result of the previous peak hold. Snapped peak hold value is signalled by **<Max>** pictogram displayed at the top of the screen.
- The start of the next process of peak hold measurement is possible only after removing the load from the weighing pan and pressing [Esc F] key.
- This causes returning to the home screen of **<toP>** mode. Pictogram **<Max>** is automatically deleted.

20. WORKING MODE – TOTALIZING

Totalizing is a working mode enabling you to sum mass of all weighed ingredients, and to print (via scale-connected printer) the total mass value. The program allows you to sum up to 30 weighings (ingredients) maximum within one process.

20.1. Local Settings

To go to local settings enter **<3.6.Add>** submenu.

3.6.1.Acc	**Working mode accessibility**	For detailed description read section 14.2.1.
3.6.2.Snn	**Save mode**	For detailed description read section 14.2.2.
3.6.3.Int	**Time interval**	For detailed description read section 14.2.3.
3.6.4.Lo	**Lo threshold**	For detailed description read section 14.2.4.

20.2. Totalizing Operation

- Enter **<Add>** working mode (Totalizing), blinking „▲” pictogram is displayed.
- If the ingredients are to be weighed in a container, first put the container on a weighing pan and tare it.
- Load the weighing pan with the ingredient no.1. When the indication is stable (◣◢ pictogram is displayed), press [↵] key to confirm the mass.
- Total mass value is displayed, now the „▲” pictogram is displayed continuously.
- Unload the weighing pan, **ZERO** is displayed, „▲” marker starts blinking again.

- Load the weighing pan with the ingredient no.2, wait for a stable weighing result and press key.
- Total mass value of ingredient no. 1 and 2 is displayed, now the „▲” pictogram is displayed continuously.
- In order to finish the process, press key, text **<Prnt?>** (Print?) is displayed.
- Press key, total mass value of all recorded weighings is printed on a scale-connected printer.

Report example:

```
(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
```

- In order to print the report once again press key.
- To exit "report printout mode" press key. As a result the home screen of **<Add>** working mode is displayed and all the data get zeroed automatically.

⚠	***If the display capacity is exceeded (i.e. there is not enough space for all the digits of the weighing result) <Hi> error is displayed. In such a case either remove the ingredient from a weighing pan and finish the totalizing process or place load of a lower weight value on the weighing pan.***

21. WORKING MODE – ANIMAL WEIGHING

Animal Weighing is a working mode enabling you to weigh products that disrupt efficient establishing of stability. It is mostly intended to measure weight of animals.

21.1. Local Settings

To go to local settings enter **<3.7.AnLS>** submenu.

3.7.1.Acc	**Working mode accessibility**	For detailed description read section 14.2.1.
3.7.2.Aut	**Averaging time**	Enter this parameter to declare duration of the process in seconds (5s, 10s, 20s, 30s, 40s, 50s, 60s) - on the basis of indications recorded within the set time interval the scale calculates the weighing result, i.e. an average weight value.
3.7.3.Lo	**Lo threshold**	For detailed description read section 14.2.4.

21.2. Animal Weighing Operation

- Enter **<AnLS>** working mode (Animal Weighing).
- First text **<tinnE>** is displayed for 1 s, next, window for setting duration (in seconds) of animal weighing.
- Press [▲ →0←] key, parameter values are displayed successively one by one: 5[s], 10[s], 20[s], 30[s], 40[s], 50[s], 60[s].
- Set the respective value, press [↵ ◎] key to confirm, weighing window with **A** letter is displayed.
- Load the weighing pan with an animal.
- On exceeding the set mass value of **<Lo> threshold** parameter, animal weighing starts, this is signalled with display of 'dash', **< - >**.
- Upon process completion mass value of an animal is snapped and displayed together with **OK** pictogram in the upper part of the display. The snapped mass value is sent to a scale-connected printer.
- Press [Esc F] key to restart animal weighing.
- Press [↵ ◎] key to reprint the snapped mass value.
- Upon unloading of the weighing platform, the weighing window with letter **A** is displayed. The scale can be loaded with an animal again.

22. 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. These files can be read using **ALIBI Reader**, PC software designed by RADWAG. You can download the software from RADWAG website: http://www.radwag.com/.

22.1. Weighing Records Export

Option enabling you to export weighings to a USB flash drive. Weighing device program enables record of 5000 weighings.

Procedure:

- Use the PT0084 cable, and plug the USB flash drive into the **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.

22.2. ALIBI Weighings Export

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

Procedure:

- Use the PT0084 cable, and plug the USB flash drive into the **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.

22.3. Parameters Export / Import

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

Export procedure:

- Use the PT0084 cable, and plug the USB flash drive into the **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:

- Copy **xxxxxx.par** file (where xxxxxx – scale serial number) to the main directory on the flash drive.
- Use the PT0084 cable, and plug the USB flash drive into the **USB A** port.
- Enter **<IE / IE4.SPI>** submenu.
- User parameters are automatically imported from **xxxxxx.par** file.

23. INPUTS / OUTPUTS MODULE

Optional design

The terminal is optionally equipped with 4 inputs and 4 outputs. In order to set inputs / outputs enter **<PA.I_O>** submenu.

⚠	***For detailed description of installation procedure and technical specification of INPUTS/OUTPUTS module read „PUE H315 terminal user manual".***

23.1. Input Setup

- Enter **<PA.I_O / A.1.In>** submenu and edit a given input.
- Press [▲ →0←] key, available values are displayed successively one by one:

no	Input inactive.
1	Change unit.
2	Zero.
3	Tare.
4	Print.
5	Internal adjustment (function enabled in WLC/A1/C/2, WLC/A2/C/2 scales exclusively).

- Press key to confirm, next go to the home screen.

	By default all inputs' functions are set to <no> value.

23.2. Output Setup

- Enter **<PA.I_O / A.2.Out>** submenu and edit given a output.
- Press key, available values are displayed successively one by one:

no	Output inactive.
1	Stable.
2	MIN stable.
3	MIN unstable.
4	OK stable.
5	OK unstable.
6	MAX stable.
7	MAX unstable.
8	Zero.
9	!OK stable.
10	!OK unstable.
11	MIN threshold.
12	OK threshold.
13	MAX threshold.

- Press key to confirm, next go to the home screen.

	By default all outputs' functions are set to <no> value.

24. CURRENT LOOP UNIT

Optional design

The scale is optionally equipped with 4-20mA module. In order to configure the module go to **<Pb.CL>** submenu.

	For detailed description of installation procedure and technical specification of 4-20mA module read „PUE H315 terminal user manual”.

24.1. 4-20mA Module Activation

- Enter **<Pb.CL / b.1.Acc>** submenu and set a respective option (**YES** – module enabled, **no** – module disabled).

24.2. 4-20mA Module Calibration

The scale program enables determination of transient linear characteristics of 4-20mA module installed in PUE H315 terminal.

	In order to determine transient characteristics, install 4-20mA module in the terminal, and connect it in accordance with diagrams that are to be found in „PUE H315 terminal” user manual.
	For readout of current values use milliammeter with min. range of 20 mA and resolution of 0.01 mA (20 mA – full range of current output module).

Procedure:

- Enter **<Pb.CL / b.2.CCL>** submenu, text **<Cont?>** is displayed (Continue?).
- Press key to confirm, message **<SEt Lo>** is displayed for 1 s, next edit box to declare value of offset coefficient in **MIN** point pops up.
- Set offset coefficient in **MIN** point, make sure that it corresponds to indication of **4mA** value on milliammeter connected to the measuring system.
- Press key to confirm, message **<SEt HI>**, is displayed for 1 s, next edit box to declare value of offset coefficient in **MAX** point pops up.
- Set offset coefficient in **MAX** point, make sure that it corresponds to indication of **20mA** value on milliammeter connected to the measuring system.
- Press key to confirm, next go to the home screen.

24.3. Default Settings

Default settings of offset coefficients of 4-20mA module.

Procedure:

- Enter **<Pb.CL / b.3.dEF>** submenu, default settings of offset coefficients of 4-20mA module are restored.

Where:

Offset coefficient in MIN point	Default value: **0.291**. Adjusted value within **0** - **0.4** range.
Offset coefficient in MAX point	Default value: **0.863**. Adjusted value within **0.6** 1 range.

25. TROUBLESHOOTING

Problem	**Cause**	**Solution**
Scale start-up fail.	Unplugged power cord plug.	Plug the power cord plug.
	Battery discharged.	Plug the power cord plug and charge the battery.
	No battery (not installed or installed incorrectly).	Check if the battery is installed correctly (polarization).
The scale switches off automatically.	<7.4.t1> parameter set to value enforcing scale shut-down after particular time interval.	Go to <P7.Othr> menu, set <7.4.t1> parameter to 'nonE' value.
During the start-up, message 'LH' is displayed.	Weighing pan loaded during the start-up.	Unload the weighing pan. Zero indication is displayed.
Communication with the computer not established.	Incorrect computer port set in parameter <5.1.1.Prt>.	Enter <P5.ducE / 5.1.PC> submenu and set correct <5.1.1.Prt> parameter value.
	Incorrect transmission parameters for the selected computer port.	Enter <P4.Conn> menu and set correct transmission parameters for the selected computer port.
	Incorrect printout frequency for continuous transmission.	Enter <P5.ducE / 5.1.PC> submenu and set correct <5.1.3.Int> parameter value.
No printout on a scale-connected printer.	Incorrect printer port set in <5.2.1.Prt> parameter.	Enter <P5.ducE / 5.2.Prtr> submenu and set correct <5.2.1.Prt> parameter value.
	Incorrect transmission parameters for the selected printer port.	Enter <P4.Conn> menu and set correct transmission parameters for the selected printer port.
	No variable declared in weighing printout project.	Enter <P6.Prnt / 6.2.GLP> submenu and declare variables that are to be printed.

Communication with the additional display not established..	Incorrect additional display port set in <5.3.1.Prt> parameter.	Enter <P5.ducE / 5.3.AdSP> submenu and set correct <5.3.1.Prt> parameter value.
	Incorrect transmission parameters for the selected computer port.	Enter <P4.Conn> menu and set correct transmission parameters for the selected additional display port.
Displayed mass unit does not comply with the scale data plate.	Changed scale start unit in <9.1.UnSt> parameter.	Enter <P9.Unit / 9.1.UnSt> submenu and set unit complying with the scale data plate.
	Changed custom unit in <9.2.Unin> parameter.	Enter <P9.Unit / 9.2.Unin> submenu and set unit complying with the scale data plate.

26. 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 5 -	Battery error. Battery is damaged.
- 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 (±10% of start mass).
- H i -	Display range of total mass on scale display exceeded in 'Totalizing' mode.
- u L o -	Too low battery charge. The scale is about to shut down.
- 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 'Percent weighing' mode.