User manual

ITKU-97-18-02-23-EN

Weighing Terminal

PUE C32

radwag.com

Scan the QR code to view additional scientific material that may be of interest to you.
There you will find more useful information in an accessible format!

FEBRUARY 2023

PRECAUTIONS

Prior to installation, use or maintenance activities, carefully read this user manual. Use the PUE C32 Indicator only as intended.

	Prior to the first use, carefully read this user manual. Use the device only as intended.
	Protect the indicator against considerable temperature variation, solar and UV radiation, substances causing chemical reactions.
	The PUE C32 indicator must not be operated in hazardous areas endangered with explosion of gases, and in dusty environments.
	In case of damage, immediately unplug the device from the mains.
	Scales to be decommissioned must be decommissioned in accordance with valid legal regulations.
	Do not let battery discharge in case of prolonged storage of the device in low temperature.
	A worn out battery can be replaced only by the manufacturer or by the authorized service.
	Accumulators do not belong to regular household waste. The European legislation requires discharged accumulators to be collected and disposed separately from other communal waste with the aim of being recycled. Symbols on batteries identify harmful compounds: Pb = lead, Cd = cadmium, Hg = mercury. Dear user, you are obliged to dispose of the worn out batteries as regulated.

Contents

1. INTENDED USE 5
2. WARRANTY CONDITIONS 5
3. MAINTENANCE ACTIVITIES 6
3.1. Cleaning ABS Components 6
3.2. Cleaning Stainless Steel Components 6
4. MECHANICAL DESIGN 7
4.1. Dimensions 7
4.2. Connectors Arrangement 7
4.3. RS232 Connectors 7
4.4. Inputs / Outputs 8
4.4.1. Technical Specifications 8
4.4.2. I/O Schematic Diagrams 9
4.5. Operation Panel 9
4.6. Technical Specifications 10
5. INDICATOR INSTALLATION 11
5.1. Unpacking and Installation 11
5.2. Start-Up 11
5.3. Battery Status 11
6. HOME SCREEN 12
6.1. Top Bar 12
6.2. Weighing Result Window 13
6.3. Workspace 13
6.4. Pictograms 13
7. OPERATING THE MENU 14
7.1. Entering the Menu 14
7.2. Menu Keys 14
7.3. Entering Numbers / Text 15
7.3.1. Numerical Box 15
7.3.2. Text Box 17
7.3.3. Diacritical Sign Table 18
7.3.4. Special Sign Table 19
7.4. Return to Weighing 19
8. INSTALLER INSTRUCTION 20
8.1. Connecting 6-Wire Load Cell 20
8.2. Connecting 4-Wire Load Cell 21
8.3. Load Cell Shield Connection 22
9. FACTORY SETUP 22
9.1. Factory Setup Access 22
9.2. Global Parameters 23
9.3. Factory Parameters 24
9.4. Return to Weighing 25
9.5. Factory Adjustment 26
9.5.1. External Adjustment 26
9.5.2. Start Mass Determination 26
9.6. Linearity Correction 26
9.6.1. Linearity Determination 26
9.6.2. Corrections 27
9.6.3. Deleting Linearity 27
9.7. Gravitational Coefficient 28
10. DIAGRAMS OF CONNECTION CABLES 29

1. INTENDED USE

The PUE C32 weighing indicator is a part of construction of industrial scales operating on the basis of load cells. The indicator features an ABS plastic housing and a 5" colour graphic display ensuring perfect readability. It is operated using 22-key membrane keypad equipped with programmable function keys.

Standard design offers two RS232 interfaces, USB type A, USB type B, Ethernet, wireless communication, 2 proximity sensors, 4 I/O. The indicator can be operated in areas where there is no access to the mains. It can optionally be supplied by NiMH battery (nickel-metal-hydride) of 1800 - 2800 mAh capacity. The device integrates with receipt and label printers, barcode scanners and PC accessories (mouse, keyboard, USB flash drive).

2. WARRANTY CONDITIONS

A. RADWAG feels obliged to repair or exchange all elements that appear to be faulty by production or by construction.
B. Defining defects of unclear origin and means of their elimination can only be realized with the assistance of the manufacturer and the user representatives.
C. RADWAG does not bear any responsibility for damage or losses resulting from unauthorized or inadequate performing of production or service processes.
D. The warranty does not cover:
   - mechanical damage caused by product exploitation other than intended, damage of thermal and chemical origin, damage caused by lightning, overvoltage in the power network or other random event,
   - inappropriate cleaning habits.
E. Loss of warranty takes place if:
   - a repair is carried out outside RADWAG authorized service point,
   - service claims intrusion into mechanical or electronic construction by unauthorized people,
   - the scale does not bear security seal stickers.
F. Warranty conditions outline the warranty period for rechargeable batteries attached to the device for 12 months.
G. For detailed warranty conditions read the warranty certificate.
H. Contact with the central authorized service: +48 (48) 386 63 30.

3. MAINTENANCE ACTIVITIES

In order to ensure safety in the course of cleaning, it is necessary to disconnect the device from the mains. With this condition met, uninstall the weighing pan and other detachable components.

	***Cleaning the weighing pan while still installed may cause damage of the measuring system.***

3.1. Cleaning ABS Components

To clean dry surfaces and avoid smudging, use clean non-colouring 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 the cleaning process if needed.

In the case of hard to remove contamination, e.g. residues of adhesive, rubber, resin, polyurethane foam 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 cleansers containing abrasive substances.

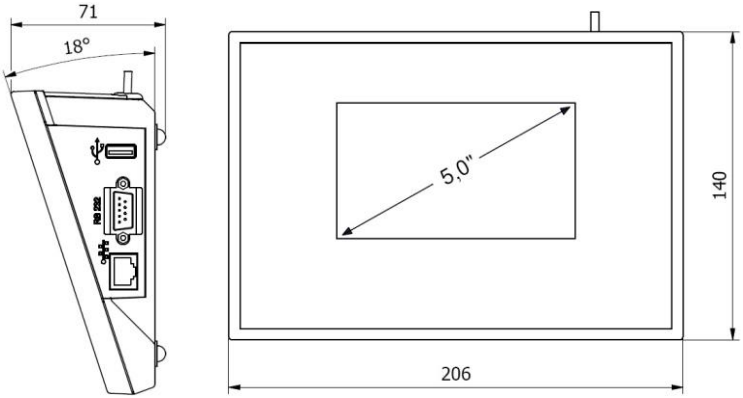
3.2. Cleaning Stainless Steel Components

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

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

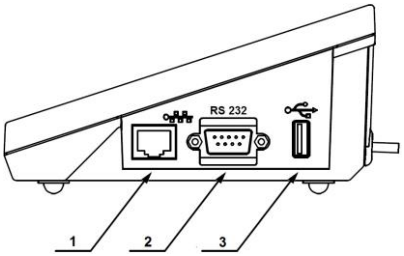
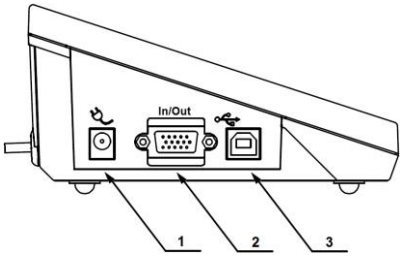
4. MECHANICAL DESIGN

4.1. Dimensions

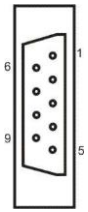


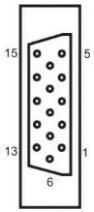
PUE C32 overall dimensions

4.2. Connectors Arrangement

	
1 – Ethernet RJ45 connector *2 – RS232 (COM1) connector* *3 – USB type A connector*	*1 – power supply socket* *2 – I/O, RS232 (COM2) connector* *3 – USB type B connector*

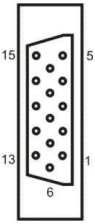
4.3. RS232 Connectors

	**RS232 - DB9/M connector (male), front:** Pin2 - RxD Pin3 – TxD Pin4 - 5VDC Pin5 - GND

	**RS232 - DSUB15/F connector (female), front:** Pin8 - TxD2 Pin9 - 5VDC Pin10 - GND Pin13 - RxD2

4.4. Inputs / Outputs

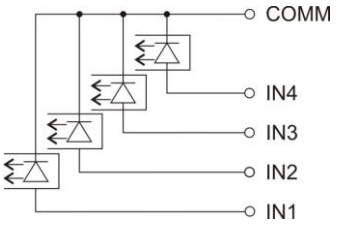
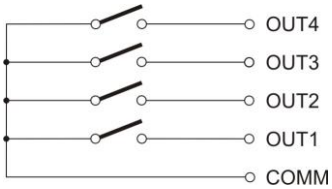
Standard PUE C32 indicator is equipped with 4 optoisolated inputs and 4 semiconductor outputs (solid-state relays). The signals are fed through DSUB15/F connector.

	**I/O, RS232 DSUB15/F (female) connector, front:** Pin1 – GNDWE Pin2 - OUT1 Pin3 - OUT2 Pin4 – COMM Pin6 - IN4 Pin7 - IN3 Pin11 - IN2 Pin12 - IN1 Pin14 - OUT4 Pin15 - OUT3

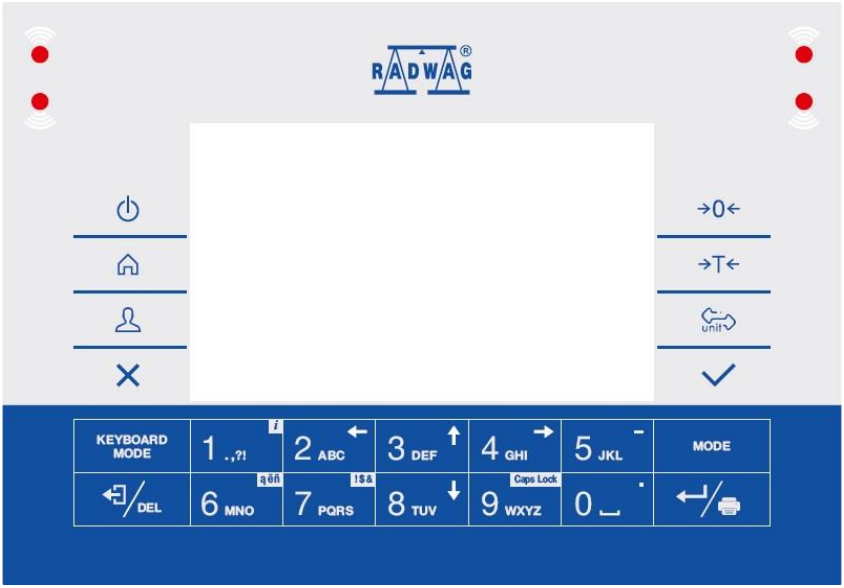
4.4.1. Technical Specifications

Output parameters	
Output quantity	4
Output type	Solid-state relay
Cable cross-section	0.14 - 0.5mm^2
Maximum output current	0.5A DC
Maximum output voltage	30VDC
Input parameters	
Input quantity	4
Input type	Optoisolated
Cable cross-section	0.14 – 0.5mm^2
Input voltage range	5÷24VDC

4.4.2. I/O Schematic Diagrams

	
4 inputs	*4 outputs*

4.5. Operation Panel



Keys

⏻	Press to switch the device on / off.
⌂	Press to enter the main menu.
👤	Press to log in.
✕	Press to cancel the message.
→0←	Press to zero the scale.

	Press to tare the scale.
	Press to change the weighing unit.
	Press to confirm the message.
	Press to confirm the weighing result (PRINT). Press to confirm the messages (ENTER).
	Press to cancel the message.
	Press to change the working mode.
	Programmable key assigned to an on-screen button. *i* key – long press to get scale info.
	Programmable key assigned to an on-screen button.
	Programmable key assigned to an on-screen button.
	Programmable key assigned to an on-screen button.
	Programmable key assigned to an on-screen button.

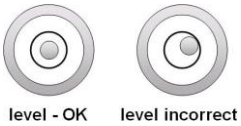
4.6. Technical Specifications

Maximum quantity of verification units	6000
Maximum impedance of load cell	1200 Ω
Minimum impedance of load cell	50 Ω
Maximum voltage per verification unit	3.25 µV
Minimum voltage per verification unit	0.4 µV
Load cell connections	4 or 6 wires + shield
Load cell excitation voltage	5V DC
Maximum signal gain	19.5 mV
Display	5” colour graphic display
IP rating	IP43
Housing	ABS plastic
Maximum number of connected platforms	1
Power supply	10 ÷ 12VDC
Operating temperature	0°C ÷ 40°C
Communication interfaces	2xRS232, USB A, USB B, Ethernet, wireless communication, 4I/O
Multi range option	YES

5. INDICATOR INSTALLATION

5.1. Unpacking and Installation

A. Take the indicator out of the packaging.
B. Connect the indicator to a weighing platform, next place the weighing device on a flat and even surface. Keep it far away from any sources of heat.
C. To level the weighing instrument turn its feet. Keep turning the feet until the air bubble takes central position:



5.2. Start-Up

The indicator can be connected to the mains only with a power supply that comes standard with the particular model. Nominal voltage of the power supply (specified on the power supply data plate) has to be compatible with the mains nominal voltage.

Procedure:

- Connect the power supply to the mains. Plug it to the power supply socket that is located on the scale's side.
- Press ⏻ key, it is to be found at the top of the operation panel.
- Upon completed start-up, the home screen is displayed automatically.

5.3. Battery Status

Optional scale design features an internal battery. 🔋 pictogram, displayed at the top of the screen, either signals battery status or informs that battery charging is in progress:

- 🔋 pictogram displayed in a cyclic manner: battery charging.
- 🔋 pictogram displayed continuously: battery charged within 75% - 100% range of permissible voltage,
- 🔋 pictogram displayed continuously: battery charged within 50% - 75% range of permissible voltage,
- 🔋 pictogram displayed continuously: battery charged within 25% - 50% range of permissible voltage,
- 🔋 pictogram displayed continuously: battery discharged (charge level below 25% of the permissible voltage), connect the scale to the mains in order to charge it,
- blinking 🔋 pictogram: damaged battery or battery lack,

- no pictogram: scale not equipped with the battery.

	Battery discharge is signalled by the following message: <Excessively discharged battery. Scale shutdown is to occur>. Upon scale shutdown, connect it to the mains in order to charge the battery.

6. HOME SCREEN

The home screen features 4 sections: a top bar, a weighing result window, workspace, pictograms.

Home screen view:



	Detailed instruction on how to configure the home screen is to be found in „PUE C32 Indicator Software Manual”.

6.1. Top Bar



The top bar displays the following information:

Weighing	Working mode name and symbol.
PUE C32	Device name.
	Wireless communication on.
	Communication with the USB flash drive on.
	PC keyboard connected.

	Printer connected.
	Battery charge status.
	Communication with a PC on.
E2R	Communication with the E2R SYSTEM on.

6.2. Weighing Result Window

Weighing result window provides all weighing-related data.



6.3. Workspace

The workspace is to be found underneath the weighing result window.

Product:	Tare: 0.000 kg
User:	Sum: 0.000 kg

The workspace comprises 4 programmable widgets. Each working mode features a default home screen widget set. You can customize the screen.

6.4. Pictograms

The pictograms assigned to operation panel keys are to be found underneath the workspace.



You can define on-screen pictograms individually for each working mode.

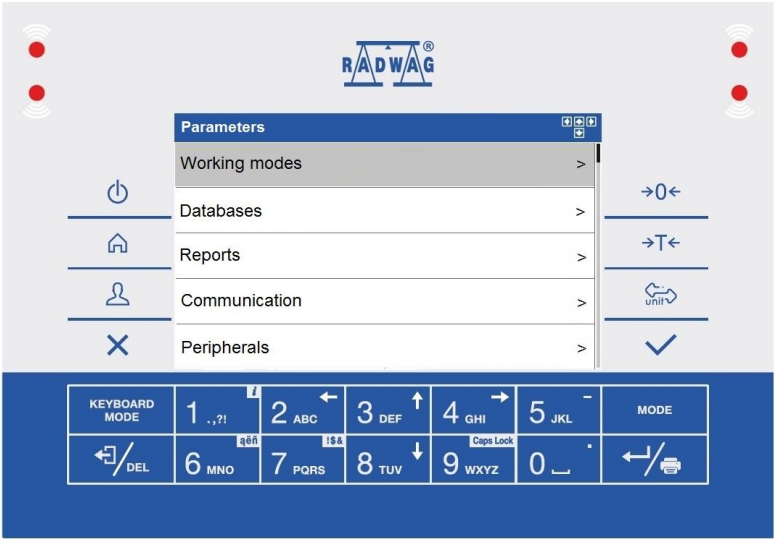
7. OPERATING THE MENU

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

7.1. Entering the Menu

In order to enter the menu press  key. Background colour of the first menu entry differs from the remaining ones. To navigate the program menu use the keys that operate as arrow keys.

Menu view



7.2. Menu Keys

	Press to enter the main menu. Press to go to the home screen.
	Press to go back. Press to discard entering parameter modifications.
	Press to go back. Press to delete a character when editing numeric and text values.
	Press to change keyboard mode when editing numeric and text values.
	Press to select/change working mode.
	Press to confirm/accept modifications.
	Press to go back. Press to discard entering parameter modifications.

3 DEF ↑	Press to go up the menu. Press to edit parameter value and change it by one digit up.
4 GHI →	Press to select parameter group that you want to operate. The first parameter of the selected parameters group is displayed.
8 TUV ↓	Press to go down the menu. Press to edit parameter value and change it by one digit down.

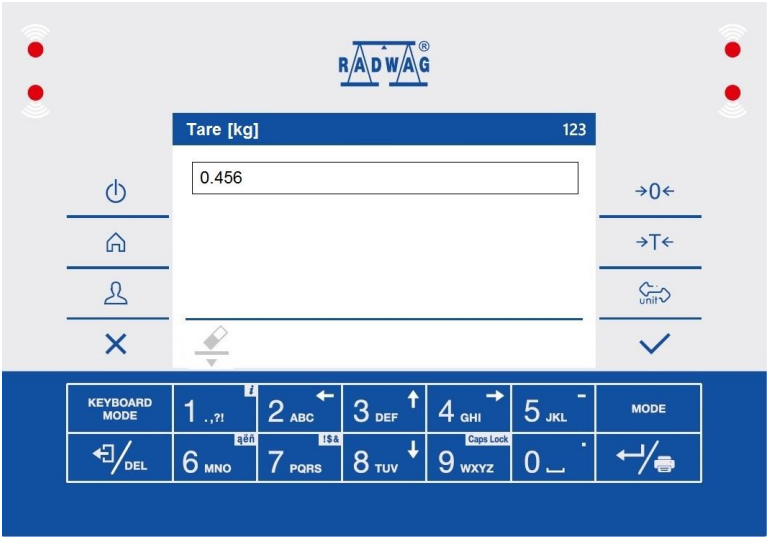
7.3. Entering Numbers / Text

The software features two different edit boxes:

- numerical box (for entering part mass values, tare values, etc.).
- text box (for entering printout template, universal variable value, etc.).

Button functions change depending on the edit box type.

7.3.1. Numerical Box



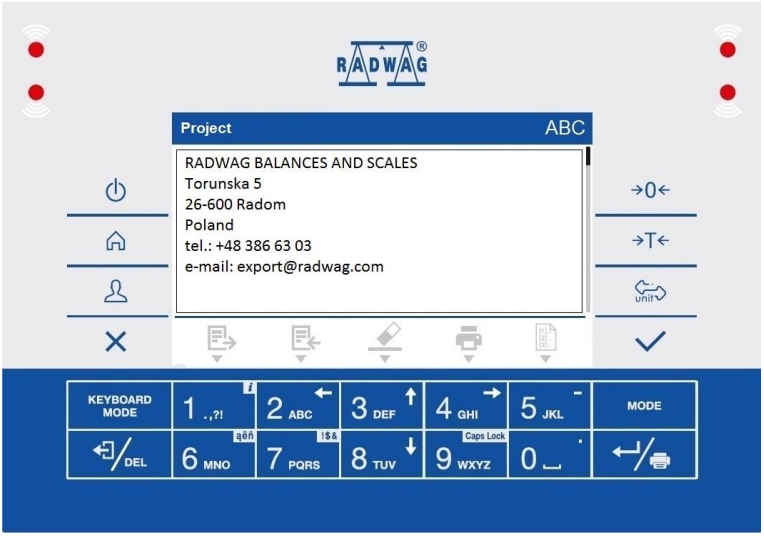
Where:

123	Digit mode. To change keyboard working mode press KEYBOARD MODE key. Keyboard working mode options: 123 - upper-case character mode, - lower-case character mode, - digit mode, - arrow keys operation, Fn - bottom bar operation.
	Press to clear box content.

Keys

	Press to enter digit **1**.
	Press to enter digit **2**.
	Press to enter digit **3**.
	Press to enter digit **4**.
	Press to enter digit **5**. Press to enter „**-**” (minus), hold the key for a few seconds.
	Press to enter digit **6**.
	Press to enter digit **7**.
	Press to enter digit **8**.
	Press to enter digit **9**.
	Press to enter digit **0**. Press to enter „**.**” sign (dot), long press.
	Press to delete one character.
	Press to exit, the edit box content remains unmodified.
	Press to confirm the modifications.
	Press to change keyboard working mode.

7.3.2. Text Box



Where:

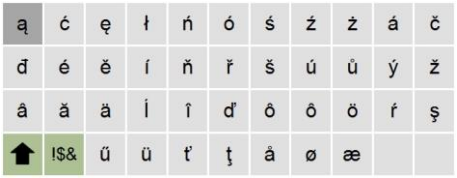
ABC	Upper-case character mode. To change keyboard working mode press KEYBOARD MODE key. Keyboard working mode options: ABC - upper-case character mode, abc - lower-case character mode, 123 - digit mode, - arrow keys operation, Fn - bottom bar operation.
	Press to save the project to *.lb file on a USB flash drive.
	Press to read the project saved to *.lb file on a USB flash drive.
	Press to clear box content.
	Press to print the project using a printer connected to the scale.
	Press to view the list of variables that can be used in the project.

Keys

1 .,?!	Press to enter **. , { } : ° -** .
2 ABC	Press to enter **a b c**. Press to move the cursor to the left, long press.
3 DEF	Press to enter **d e f**. Press to move the cursor up, long press.
4 GHI	Press to enter **g h i**. Press to move the cursor to the right, long press.
5 JKL	Press to enter **j k l**. Press to enter„ **-** ” sign, long press.
6 MNO	Press to enter **m n o**. Press to activate **„ąëñ”** function (diacritical sign table), long press.
7 PQRS	Press to enter **p q r s**. Press to activate **„!$&”** function (special signs table).
8 TUV	Press to enter **t u v**. Press to move the cursor down, long press.
9 WXYZ	Press to enter **w x y z**. Press to activate **„Caps Lock”** function, long press.
0	Press to enter ␣ (space) sign. Press to enter „.” sign (dot), long press. ”.
	Press to go to the next line in the edit box.
DEL	Press to delete one character.
	Press to exit, the edit box content remains unmodified.
	Press to confirm the modifications.
KEYBOARD MODE	Press to change keyboard working mode.

7.3.3. Diacritical Sign Table

In order to activate the diacritical sign table while editing a text box, it is necessary to press and hold down 6 MNO key. Diacritical signs characteristic for a particular interface language are automatically added to the table when the given language gets selected.

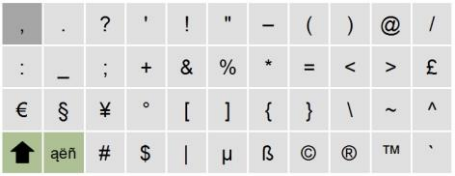
Diacritical sign table: Polish.	Diacritical sign table: English, German, French, Spanish.
	

Where:

⬆	Press to activate **„Caps Lock”** function.
!$&	Press to switch to special sign keyboard.

7.3.4. Special Sign Table

In order to activate special signs table while editing text box it is necessary to press and hold  key.



Where:

⬆	Function inactive.
ąëñ	Press to switch to diacritical sign keyboard.

7.4. Return to Weighing

Introduced modifications are automatically recorded upon return to the home screen. To return to the home screen:

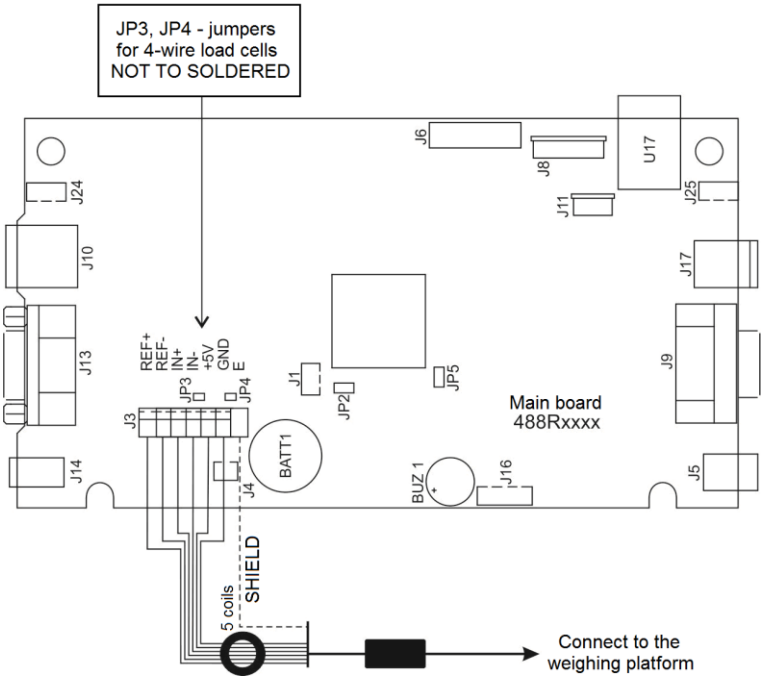
- press  key repeatedly, keep pressing the key until you see the home screen,
- press  key, the home screen is displayed immediately.

8. INSTALLER INSTRUCTION

The PUE C32 indicator serves as basis of load cell scales.

8.1. Connecting 6-Wire Load Cell

Connect 6-wire load cell to the main board following the diagram below:

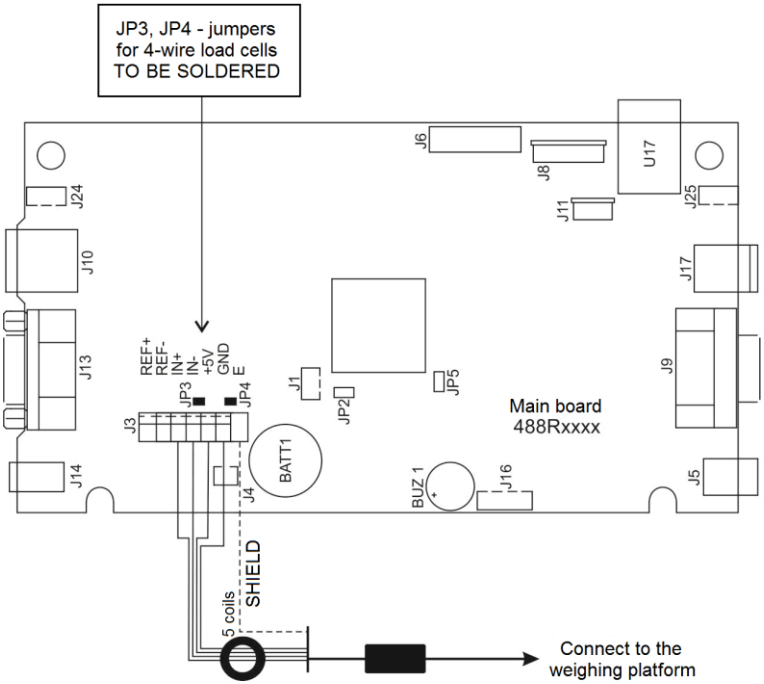


6-wire load cell connection

On RADWAG board	Load cell signal	Notes
E	SHIELD	See section 9.3
REF+	SENSE +	JP3 not soldered
REF-	SENSE -	JP4 not soldered
IN+	OUTPUT+	
IN-	OUTPUT-	
+5V	INPUT+	
AGND	INPUT-	

8.2. Connecting 4-Wire Load Cell

Connect 4-wire load cell to the main board following the diagram below:



Connecting 4-wire load cell

On RADWAG board	Load cell signal	Notes
E	SHIELD	See section 9.3
REF+	-	JP3 soldered
REF-	-	JP4 soldered
IN+	OUTPUT+	
IN-	OUTPUT-	
+5V	INPUT+	
AGND	INPUT-	

8.3. Load Cell Shield Connection

	Load cell with galvanically connected shield of the signal cable.	Load cell w/o galvanically connected shield of the signal cable.
Scale with an indicator in an ABS housing connected with a platform via a load cell signal cable.	**DO NOT connect**	**E**
Compact scale design (scale with an ABS indicator on a post, etc.)	**DO NOT connect**	**E**

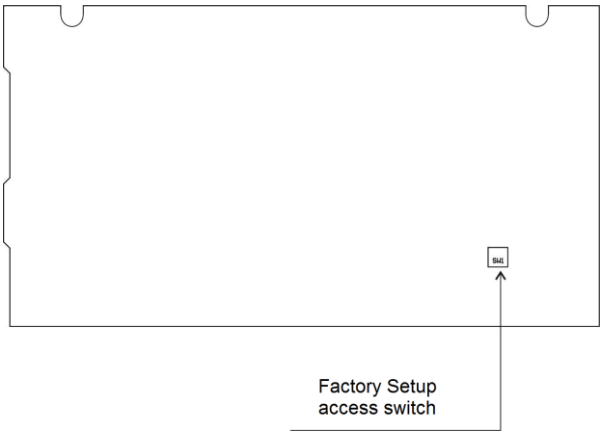
***E** – Soldering spot on the main board and on the additional A/D converter boards.*

9. FACTORY SETUP

To access and modify factory settings and parameters that are made available for a user, run Factory Setup mode. Running Factory Setup mode enables the technician to define the scale.

9.1. Factory Setup Access

- Switch the weighing device on, to do it press  key.
- Upon completed start-up, weighing result window is displayed automatically.
- Using pin, screwdriver, hex key, etc., press an internal **S1** switch, to do it you must find an opening of Phi 3.2 mm in the bottom of the indicator base, insert the pin through it and press the switch.



Factory Setup access switch

- Press  button to enter the home screen. Two submenus are displayed: **<Global>** and **<Factory>**.

9.2. Global Parameters

NAME	RANGE	DESCRIPTION
Weighing module type	Standard*, HRP	Declaring type of a weighing module communicating with the indicator.
Scale type	PUE C32*, C32, HRP	Selecting scale type. For **PUE C32** value set, no metrological data except for indicator name is displayed.
Top Bar - metrology	-	Displaying metrological data in the top bar of the home screen.
Activation	✔ Yes*, ✔ No	Enabling/disabling display of metrological data in the top bar of the home screen.
Scale name	-	Dedicated name and/or RADWAG distributor name (15 characters maximum). Value entered for this parameter replaces selected **"Scale type"**.
Serial number	-	Weighing instrument serial number **(read-only**).
Battery	None*, NIMH, SLA, TSLA	Selection of applied battery.
Customer	None*, D, A, B, V, SC	Customer declaration: D - KERN, A - ADEMI, B - BOECO, V - VWR, SC – SCHULLER.
NTEP	✔ No*, ✔ Yes	Enabling/disabling modifications in 'Parts Counting' working mode for verified weighing instruments (USA market).
Service	-	Service settings menu.
Import / Export	-	Submenu with the function of factory parameter import/export.
Battery diagnostics	-	Preview of battery operation and charging.
RTC adjustment	-	RTC synchronisation.
Operation time	-	Total operation time expressed in "D: xx H: yy" (D - day, H - hour).
CPU Id	-	Number of processor generating code which unlocks WIFI module.
Restore default device settings	-	Restoring default factory setup (factory and user parameters).

*) – Default settings.

9.3. Factory Parameters

NAME	RANGE	DESCRIPTION
Metrology	**-**	**Metrology-connected settings.**
Mass divisions	-	Displaying mass divisions.
Calibration unit	g, kg*, lb	Calibration unit.
GCOR coefficient	0.9 ÷ 1.1	Gravity correction factor (refer to section 9.7). Default settings: **1**.
Reading unit - Range 1	0.0000001 ÷ 50	Reading unit - Range 1. Default settings: **0.001**.
Verification unit - Range 1	None*, 0.001 ÷ 50	Verification unit - Range 1, **<none>** value - unverified version.
Reading unit - Range 2	0,0000001 ÷ 50	Reading unit - Range 2. Default settings: **0.001**.
Verification unit - Range 2	None*, 0.001 ÷ 50	Verification unit - Range 2, **<none>** value - unverified version.
Digits marker	None*, 1, 2, 3	Setting quantity of digits (counting from the last digit of the displayed result) over which a marker is to be displayed and printed out in case of unverified balances and scales.
Max range	-	Maximum range + overload.
Range 2 threshold	-	Balance 2 range switching point. For single range balances set 0.
External adjustment weight	-	External adjustment weight mass.
Autozero range	Predefined*, 0.1, 0.2, 0.25, 0.5, 0.6, 0.7, 0.8, 0.9, 1, 2, 2.5, 3, 4, 5, 6, 7, 8, 9, 10.	Autozero range [d]: **Predefined** - value taken from program-implemented tables; **0.1 ÷ 10** - value entered directly by a user.
Autozero time	Predefined*, 0, 0.2, 0.4, 0.6, 0.8, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 15, 20.	Autozero time [s]: **Predefined** - value taken from program-implemented tables; **0 ÷ 20** - value entered directly by a user.
Stability range	Predefined*, 0.1, 0.2, 0.25, 0.5, 0.6, 0.7, 0.8, 0.9, 1, 2, 2.5, 3, 4, 5, 6, 7, 8, 9, 10.	Stability range [d]: **Predefined** - value taken from program-implemented tables; **0.1 ÷ 10** - value entered directly by a user.
Stability time	Predefined*, 0, 0.2, 0.4, 0.6, 0.8, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 15, 20.	Stability time [s]: **Predefined** - value taken from program-implemented tables; **0 ÷ 20** - value entered directly by a user.
Start mass control	Yes*, No, 50%, Definable.	Start mass control: **YES** – range: -10% to +10% of start mass; **No** – off, 50% – range: -50% to +50% of start mass; **Definable** – range declared in 'Start mass threshold' parameter.

Start mass threshold	10% ÷ 90%	+/- start mass value in [%].
Adjustment	**-**	**Weighing instrument adjustment menu**
External adjustment	-	Weighing instrument adjustment (refer to section. 9.5.1).
Start mass determination	-	Start mass determination (refer to section 9.5.2).
Start mass	-	Current start mass expressed in converter's divisions. Default settings: **100**.
Adjustment factor	-	Current adjustment factor. Default settings: **100**
Factory start mass	-	Start mass value expressed in converter's divisions during factory adjustment. Default settings: **100**.
Factory adjustment factor	-	Adjustment factor determined during factory adjustment. Default settings: **100**.
Section linearity	**-**	**Section linearity correction (refer to section 9.6).**
Determine	-	Determination of linearity correction points.
Corrections	-	Entering corrections to linearity corrections points.
Delete	-	Deleting linearity correction.
Definable filter	Disabled*, Enabled	**Enabling and service determination of filters dynamics.**
Restore default factory setup	**-**	**Restoring default factory setup.**

*) – Default settings.

9.4. Return to Weighing

Introduced modifications are automatically recorded upon return to the home screen. To return to the home screen:

- press  key repeatedly, keep pressing the key until you see the home screen,
- press  key, the home screen is displayed immediately.

9.5. Factory Adjustment

9.5.1. External Adjustment

- Enter **<Factory/Adjustment>** submenu.
- Select **<External adjustment>** parameter. Message **<Remove weight>** is displayed.
- Unload the weighing pan and press  key to confirm.
- Message **<Adjustment. Please wait...>** is displayed.
- Upon completed start mass determination procedure, message **<Put weight xxx>** is displayed (where: xxx – adjustment weight mass).
- Load the weighing pan with a required adjustment weight and press  key to confirm. Message **<Adjustment. Please wait...>** is displayed.
- Upon adjustment completion, message **<Remove weight>** is displayed.
- Unload the weighing pan, the weighing device displays the **<Adjustment>** submenu.

9.5.2. Start Mass Determination

- Enter **<Factory/Adjustment>** submenu.
- Select **<Start mass determination>** parameter. Message **<Remove weight>** is displayed.
- Unload the weighing pan and press  key to confirm.
- Message **<Start mass determination. Please wait…>** is displayed.
- Upon completed determination process, the weighing device displays the **<Adjustment>** submenu.

9.6. Linearity Correction

9.6.1. Linearity Determination

Declaring mass values for subsequent linearity steps and determining corrections using scale software.

Procedure:

- Enter **<Factory/Section linearity>** submenu and select **<Determine>** parameter. Message **<Continue?>** is displayed.
- Press  key to confirm. **<Mass>** edit box is displayed.
- Unload the weighing pan.

- Enter the required mass value (the first linearity correction point) and press ✓ key to confirm. Message **<Put weight xxx>** is displayed (where: xxx – entered mass value) is displayed.
- Load the weighing pan remembering that the load mass must equal weight value specified for the first linearity correction point (it is possible to preview the weighing result in the displayed window).
- Upon result stabilization, press ✓ key to confirm. **<Mass>** edit box is displayed again (second linearity correction point).
- Linearity correction process for the 2nd point is analogous to the linearity correction process for the 1st point.
- Upon declaring requested quantity of linearity correction points, press ✕ key when **<Mass>** edit box is displayed again.
- **<Section linearity>** submenu is displayed automatically.

	***Upon pressing ✓ key to confirm zero value for linearity correction, message: <Value too low> is displayed.***

9.6.2. Corrections

Editing corrections for linearity correction points.

Procedure:

- Enter **<Factory/Section linearity>** submenu.
- Select **<Corrections>** parameter. A list of determined linearity correction points is displayed. The list contains previously determined mass values for each correction point and deviations determined in reading units.
- Select requested position, **<Mass>** edit box is displayed.
- Enter requested correction and/or press ✓ key to confirm. **<Correction>** edit box is displayed automatically.
- Enter requested correction and/or press ✓ key to confirm. **<Corrections>** submenu is displayed automatically.

9.6.3. Deleting Linearity

- Enter **<Factory/Section linearity>** submenu.
- Select **<Delete>** parameter. Message **<Delete?>** is displayed.
- Press ✓ key to confirm.

9.7. Gravitational Coefficient

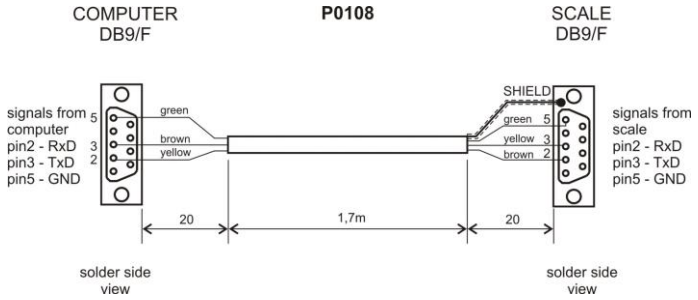
The function of gravity correction compensates changes of gravity force being a result of different latitude. It allows to carry out correct scale calibration/adjustment away from the point of subsequent use. The gravity correction value must be entered with reference to tables prepared by „Radwag Balances and Scales" or calculated using the below formula:

$$Gcor = \frac{g_{uzyt.}}{g_{kal.}}$$

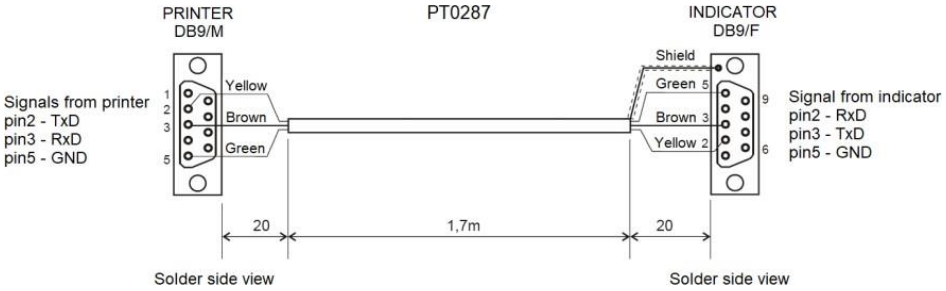
Correction value ranges between 0.90000 ÷ 1.99999.

	***If the weighing instrument is calibrated in the place of use, then the value of <GCOR coefficient> parameter must be 1.00000. If the weighing instrument is calibrated away from the place of use (longitudinal change), the value must be corrected.***

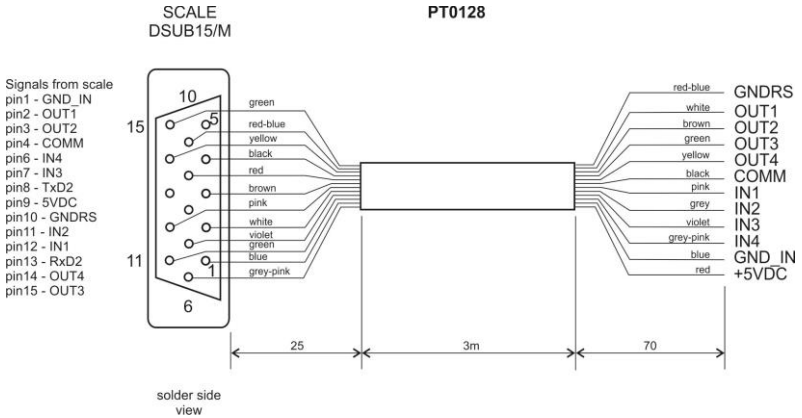
10. DIAGRAMS OF CONNECTION CABLES



Scale - computer cable (RS232)



Scale - printer cable (RADWAG, ZEBRA)



I/O cable

	***„Scale-Ethernet" cable is a standard network cable terminated with RJ45 connectors on both ends.***