USER GUIDE

WLY 10/D2

Radwag

Distributed by AKRIBIS

Software manual

ITKP-06-02-09-21-EN

Appendices 01

PUE 7.1 Terminal
PUE HY10 Terminal
WLY Precision Scales
WPY Multifunctional Scales
HY10 Multifunctional Scales

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!

AKRIBIS www.akribis.info contacto@akribis.info

SEPTEMBER 2021

Contents

1. ANNEX 01 – Printout Variables 4
1.1. Variables List 4
1.2. Variable Formatting 11
1.3. Mathematical Formula 13
2. ANNEX 02 - Programmable Button Functions 15
3. ANNEX 03 – Label Template 18
3.1. Creation of Label Template via the Scale 18
3.2. Sending Label Template to Scale Memory 18
3.3. Assigning a Label with a Template to a Product 19
3.4. Assigning a Label with a Template to a Customer 19
3.5. Printing a Label with a Template 19
4. ANNEX 04 – ZEBRA Printer Configuration 19
5. ANNEX 05 – Barcode Scanner Configuration 20
6. ANNEX 06 – PGC Viewer PC software 21
7. ANNEX 07 – Cooperation with HRP Weighing Platform 22
7.1. Ambient Conditions Parameters 22
7.2. LO Threshold for Automatic Functions 23
7.3. Adjustment 23
7.3.1. Automatic Adjustment 24
7.3.2. Internal Adjustment 25
7.3.3. Automatic Adjustment at Set Time 26
8. ANNEX 08 – Nutrition Facts Label 26
9. ANNEX 09 – Configuration of the Scale for Cooperation with E2R 28
9.1. Procedure 28
9.2. Exemplary Scale Configuration Errors 30
10. ANNEX 10 – Smart Select 30
10.1. Example 1 30
10.2. Example 2 32
11. ANNEX 11 – JavaScript 34

1. ANNEX 01 – Printout Variables

1.1. Variables List

List of variables defining non-standard printout templates and data displayed within the workspace:

⚠	***Each defined variable must be inserted in between curly bracket: {x}, where x – variable number.***

Symbol	Description
{0} [1)]	Standard printout in an adjustment unit
{1} [1)]	Standard printout in a current unit
{2}	Date
{3}	Time
{4}	Date and time
{5}	Mathematical formula
{6}	Net weight in current unit
{7}	Net weight in adjustment unit
{8}	Gross weight
{9}	Tare
{10}	Current unit
{11}	Adjustment unit
{12}	Minimum threshold
{13}	Maximum threshold
{14}	Lot no.
{15}	Statistics: Number
{16}	Statistics: Sum
{17}	Statistics: Average
{18}	Statistics: Min
{19}	Statistics: Max
{20}	CC Statistics: Number
{21}	CC Statistics: Sum
{22}	CC Statistics: Average
{23}	CC Statistics: Min
{24}	CC Statistics: Max
{25}	Mass: [lb]
{26}	Result control
{27}	Value
{28}	C value
{29}	CC value
{30}	Gross value
{31}	Platform no.
{32}	Serial no.

{33}	Reading unit
{34}	Range
{35}	Parts counting: Reference sample mass
{36}	Percent weighing: Reference sample mass
{37}	Statistics: Standard deviation
{38}	CC Statistics: Standard deviation
{39} [2)]	Universal variable: Value
{40}	Text data
{41}	Batch no.: Value
{42}	Statistics: Weighing counter
{43}	Platform mass
{44}	Scale type
{45}	Parts counting: Reference sample quantity
{46}	CC Statistics: Measurement quantity
{47}	Statistics: Gross sum
{48}	CC Statistics: Gross sum
{49}	Universal variable: Name
{50}	Product: Name
{51}	Product: Code
{52}	Product: EAN code
{53}	Product: Mass
{54}	Product: Tare
{55}	Product: Price
{56}	Product: Min
{57}	Product: Max
{58}	Product: PGC mode
{59}	Product: Shelf-life time in days
{60}	Product: VAT
{61}	Product: Date
{62}	Product: Expiry date
{63}	Product: Density
{64} [3)]	Product: Ingredients
{65}	Product: Description
{66}	Product: Low deviation
{67}	Product: High deviation
{68}	Product: Category
{69}	Product: Expiry date 1
{70}	Product: Expiry date 2
{71}	Product: Nutritional value
{73}	Product: Weight loss
{74}	Mass minus weight loss
{75}	Operator: Name
{76}	Operator: Code
{77}	Operator: Permissions

{80}	Packaging: Name
{81}	Packaging: Code
{82}	Packaging: Mass
{85}	Customer: Name
{86}	Customer: Code
{87}	Customer: TIN
{88}	Customer: Address
{89}	Customer: Postal code
{90}	Customer: City
{91}	Customer: Discount
{100}	Weighing report: Measurements
{101}	Weighing report filter: Start date
{102}	Weighing report filter: End date
{103}	Weighing report filter: Product
{104}	Weighing report filter: Operator
{105}	Weighing report filter: Customer
{106}	Weighing report filter: Packaging
{107}	Weighing report filter: Min
{108}	Weighing report filter: Max
{109}	Weighing report filter: Lot no.
{110}	Weighing report filter: Batch no.
{111}	Weighing report filter: Target warehouse
{112}	Weighing report filter: Source warehouse
{113}	Weighing report filter: Result control
{114}	Weighing report filter: Platform no.
{115}	Weighing report: Weighings quantity
{116}	Weighing report: Weighings sum
{117}	Weighing report: Value
{118}	Weighing report: Gross value
{119}	Weighing report: Average
{120}	Weighing report: Min
{121}	Weighing report: Max
{122}	Weighing report: Vehicle
{130}	Source warehouse: Name
{131}	Source warehouse: Code
{132}	Source warehouse: Description
{135}	Target warehouse: Name
{136}	Target warehouse: Code
{137}	Target warehouse: Description
{140}	Net weight in adjustment unit: Sum
{141}	Additional display: WD
{142}	Additional display: WWG
{143}	Hex
{144}	Hex UTF-8

{145}	Partial mass
{146}	Gross weight in current unit
{147}	Tare in current unit
{148}	Lot no.: Name
{149}	Batch no.: Name
{150}	Automatic C label triggering: Threshold
{151}	Automatic CC label triggering: Threshold
{152}	Custom variable: Name
{153}	Custom variable: Value
{155}	Density: Start date
{156}	Density: End date
{157}	Density: Method
{158}	Density: Reference liquid
{159}	Density: Reference liquid density
{160}	Density: Temperature
{161}	Density: Sinker volume
{162}	Density
{163}	Density: Unit
{164}	Density: Sample no.
{165}	Density: Weighing 1
{166}	Density: Weighing 2
{167}	Density: Weighing 3
{168}	Density: Volume
{169}	Density: Pycnometer mass
{170}	Density: Pycnometer volume
{175}	Dosing process: Name
{176}	Dosing process: Code
{177}	Dosing process: Cycle no.
{178}	Dosing process: Cycle quantity
{180}	Dosing report: Start date
{181}	Dosing report: End date
{182}	Dosing report: Result
{183}	Dosing report: Measurements quantity
{184}	Dosing report: Sum
{185}	Dosing report: Measurements
{186}	Measurements: Preset mass
{187}	Measurements: Difference
{195}	Product: Portion size
{205}	Adjustment track record: Nominal mass
{206}	Adjustment track record: Platform no.
{207}	Adjustment track record: Unit
{208}	Vehicle scale: Name
{209}	Vehicle: Operator
{210}	Vehicle: Name

{211}	Vehicle: Code
{212}	Vehicle: Description
{213}	Vehicle scale: Start date
{214}	Vehicle scale: End date
{215}	Vehicle scale: Entry mass
{216}	Vehicle scale: Exit mass
{217}	Vehicle scale: Load mass
{218}	Vehicle scale: Transaction type
{219}	Vehicle scale: Status
{220}	Formulation: Name
{221}	Formulation: Code
{222}	Formulation: Cycle no.
{223}	Formulation: Cycle quantity
{224}	Formulation: Process progress
{225}	Formulation: Process progress in %
{226}	Formulation: Ingredient name
{227}	Formulation: Difference
{228}	Formulation: Portion
{229}	Formulation: Nominal mass
{230}	Formulation: Current ingredient no.
{231}	Formulation: Ingredient quantity
{232}	Formulation: Current batch portion no.
{233}	Formulation: Batch portion quantity
{234}	Formulation: Status
{235}	Formulation: Low deviation
{236}	Formulation: High deviation
{237}	Formulation: Ingredient code
{238}	Formulation: Current weighing no.
{239}	Formulation: Order no.
{240}	Formulation report: Start date
{241}	Formulation report: End date
{242}	Formulation report: Result
{243}	Formulation report: Measurements quantity
{244}	Formulation report: Sum
{245}	Formulation report: Measurements
{246}	Measurements: Preset mass
{247}	Measurements: Difference
{248}	Formulation report: Ingredient code
{249}	Formulation report: Ingredient mass entered manually
{250}	Formulation report: Ingredients
{251}	Formulation report: Ingredient Name
{252}	Formulation report: Note
{253}	Formulation report: Json
{255}	Formulation: Preset mass

{260}	Control report: Batch no.
{261}	Control report: Start date
{262}	Control report: End date
{263}	Control report: Result
{264}	Control report: Batch quantity:
{265}	Control report: Measurements quantity
{266}	Control report: T1 error value
{267}	Control report: 2T1 error value
{268}	Control report: T1 errors quantity
{269}	Control report: Permissible T1 error quantity
{270}	Control report: 2T1 errors quantity
{271}	Control report: Sum
{272}	Control report: Min
{273}	Control report: Max
{274}	Control report: Average
{275}	Control report: Average limit
{276}	Control report: Standard deviation
{277}	Control report: Measurements
{278}	Control report: Unit
{279}	Control report: Report no.
{280}	Control report: T1 [+] error value
{281}	Control report: 2T1 [+] error value
{282}	Control report: T1 [+] error quantity
{283}	Control report: Permissible T1 [+] error quantity
{284}	Control report: 2T1 [+] error quantity
{285}	Control report: Permissible 2T1 error quantity
{286}	Control report: Permissible 2T1 [+] error quantity
{287}	Control report: Navigating bar
{288}	Control report: Qualifying T1 error quantity
{289}	Control report: Tare
{290}	Control report: Average limit value [+]
{291}	Control report: Note
{292}	Control report: Density
{293}	Control report: D
{294}	Control report: RDV
{295}	Average tare report: Date
{296}	Average tare report: Result
{297}	Average tare report: Standard deviation
{298}	Average tare report: 0.25T1
{299}	Average tare report: Measurement quantity
{300}	Average tare report: Measurements
{301}	Average tare report: Report no.
{302}	Average tare report: Average tare
{303}	Average tare report: Note

{320}	Workflow: Name
{321}	Workflow: Code
{322}	Workflow: Threshold
{323}	Workflow: Cycle quantity
{324}	Workflow: Measurements
{325}	Workflow: Report log
{330}	Differential weighing: Start date
{331}	Differential weighing: End date
{332}	Differential weighing: Weighings quantity
{333}	Differential weighing: Measurements
{334}	Differential weighing: Measurement
{335}	Differential weighing: Difference
{336}	Differential weighing: Difference %
{340}	Extra variable: Name
{341}	Extra variable: Value
{342}	Extra variable: Code
{349}	Calendar week
{350}	EPSON paper cut
{351}	EPSON Polish signs
{352}	Additional display: PUE7
{353}	IP address
{354}	Code page
{355}	Day-of-year
{356}	Packaging quantity
{357}	To-be-dosed mass
{358}	Smart Connect
{359}	Working mode
{360}	Printer: Allergen start [pl]
{361}	Printer: Diacritical signs [pl]
{362}	Printer: Allergen end
{363}	Printer: Allergen start [de]
{365}	Printer: Diacritical signs [de]
{366}	Printer: Allergen start [es]
{367}	Printer: Diacritical signs [es]
{368}	Printer: Allergen start [fr]
{369}	Printer: Diacritical signs [fr]
{370}	Transaction report: Name
{371}	Transaction report: Start date
{372}	Transaction report: End date
{373}	Transaction report: Type
{374}	Transaction report: Measurement quantity
{375}	Transaction report: Sum
{376}	Transaction report: Measurements
{377}	Transaction report: Operator starting transaction

{378}	Transaction report: Operator finishing transaction
{384}	Transaction: Name
{385}	Transaction: Start date
{386}	Transaction: End date
{387}	Transaction: Type
{388}	Transaction: Measurement quantity
{389}	Transaction: Sum
{390}	Transaction: Product, Measurement quantity
{391}	Transaction: Product Sum
{392}	Transaction: Sum Threshold
{398}	Weighing
{475}	Value minus weight loss
{476}	Statistics: Value minus weight loss
{477}	CC Statistics: Value minus weight loss
{478}	Statistics: Sum minus weight loss
{479}	CC Statistics: Sum minus weight loss
{480}	Statistics: Unit
{481}	CC Statistics: Unit
{500}	Category: Code
{576}	Ambient conditions: Temperature
{577}	Ambient conditions: Humidity
{578}	Ambient conditions: Pressure
{579}	Ambient conditions: Density

1)	Format of variables {0} and {1} ends with CR LF characters (i.e. switching to a next line is carried out automatically).
2)	For {39} variable each database entry (1,2-n) must be formatted as follows: Entry 1 - {39:1}, Entry 2 - {39:2}, etc.
3)	For {64} variable each line (L1-Ln) must be formatted as follows: Line 1 - {64:L1}, Line 2 - {64:L2} etc.

1.2. Variable Formatting

You can format numeric variables, text variables and dates which are to be printed or displayed in the grey workspace.

Formatting types:

- variables with left justification,
- variables with right justification,
- determining quantity of characters for printing / displaying,
- determining quantity of decimal places for numeric variables,
- converting the format of date and hour,
- converting numeric variables into EAN13 code,
- converting numeric variables and date into EAN128 code.

Special formatting characters:

Character	Description	Example
,	Sign separating variable from format item.	**{7,10}** - Net weight value of fixed length (10 characters), given in an adjustment unit, right justification.
-	Minus sign or left justification.	**{7,-10}** - Net weight value of fixed length (10 characters), given in an adjustment unit, left justification.
:	Sign proceeding formatting or time separator (i.e. hours, minutes and seconds).	**{7:0.000}** - Net weight value in an adjustment unit always with three decimal places. **{3:hh:mm:ss}** – Current time in format: hour : minute : second.
.	First detected dot in a digit is recognized as separator of integer and decimal parts. Each following dot is ignored.	**{55:0.00}** - Product's unit price always with two decimal places. **{17:0.0000}** – Measurements average, always with four decimal places.
V	Formatting mass and quantities being derivatives of mass in EAN13 code.	**{7:V6.3}** - Net weight value in a form of EAN13 code (6-character code) with three decimal places.
F	Either sign formatting digits to a string of "-ddd.ddd…" format (where: d - single digit, minus - for negative values only) or determination of decimal places quantity.	**{7:F2}** - Net weight value given in an adjustment unit, always with two decimal places. **{7,9:F2}** - Net weight value of fixed length (9 characters), given in an adjustment unit, always with two decimal places, right justification.
T	Formatting mass and quantities being derivatives of mass in EAN128 code.	**{7:T6.3}** - Net mass in a form of EAN128 code with three decimal places.
/	Date separator separating days, months and years.	**{2:yy/MM/dd}** - Current date in format: year - month - day, where **yy** stand for two less meaningful characters of a year;
****	Sign Escape deleting a formatting function from the following sign, so that it is recognized as text.	**{2:yy\/MM\/dd}** – Current date in format: year / month / day; **{2:yy\:MM\:dd}** - Current date in format: year : month : day. Should **„\"** be used in literal meaning, insert \\.

Formatted variables application:

CODE	DESCRIPTION
{7:V6.3}	Net weight value in EAN 13 code (6-digit code)
{7:V7.3}	Net weight value in EAN 13 code (7-digit code)
{27:V6.3}	Net amount due in EAN 13 code (6-character code)
{27:V7.3}	Net amount due in EAN 13 code (7-character code)
{7:T6.3}	Net weight value in EAN 128 code
{16:T6.3}	C net weight value in EAN 128 code
{21:T6.3}	CC net weight value in EAN 128 code
{25:T6.3}	Net weight value (lb) in EAN 128 code
{8:T6.3}	Gross weight value in EAN 128 code
{55:T6.2}	Product price in EAN 128 code
{2:yyMMdd}	Date in EAN 128 code
{61:yyMMdd}	Product date in EAN 128 code
{62:yyMMdd}	Product expiry date in EAN 18 code
{16:V6.3}	C net weight value in EAN 13 code (6-digit code)
{16:V7.3}	C net weight value in EAN 13 code (7-digit code)
{28:V6.3}	C net amount due in EAN 13 code (6-character code)
{28:V7.3}	C net amount due in EAN 13 code (7-character code)
{21:V6.3}	CC net weight value in EAN 13 code (6-digit code)
{21:V7.3}	CC net weight value in EAN 13 code (7-digit code)
{29:V6.3}	CC net amount due in EAN 13 code (6-character code)
{29:V7.3}	CC net amount due in EAN 13 code (7-character code)

1.3. Mathematical Formula

Complex functionality of mathematical formulas enables any operation to be carried out with use of **<{5} Mathematical formula>** variable on numbers and variables from the list. Basic mathematical operations are available: adding (+), subtracting (-), multiplying (*), division (/).

Additional function allows use of existing variables for calculation, with this mass can be acquired form a particular platform, next processed in a respective manner.

Example:

{5: ([43:1] + [43:2]) / 2}

Use of **<{43} Platform mass>** variable causes acquiring of mass from respective platforms (:1 and :2), next the value is divided by 2, which allows to calculate average mass from both platforms. Brackets determine particular operations order, they are carried out in accordance with the basic mathematical rules.

⚠	***Variables in mathematical formula are written in between square brackets [ ], not in curly brackets { } as it used to be.***

Additionally advanced functions allowing to modify data extensively are offered. The functions are used in a form of text marker and arguments in between brackets:

- round(numerical value, rounding precision (number)) – rounding,
- abs(numerical value) – absolute value,
- sin(numerical value) – sine,
- cos(numerical value) – cosine,
- tan(numerical value) – tangent,
- sqrt(numerical value) – root,
- pow(numerical value, base of a power (number)) – power,
- log(numerical value) – logarithm,
- log10(numerical value) – logarithm base 10.

⚠	***Numerical value means any number or mathematical operation providing a numerical value as a result.***

Additional functions that modify text values and can operate on numbers by converting the numbers to text:

- remove(„text value”, start (number), to-be-removed signs quantity (number)) – returns text value remaining after deletion, particular quantity of signs counting from the start is returned. Should value of the third parameter be not provided, the whole text value is deleted.
- substring(„text value”, start (number), to-be-copied signs quantity (number)) – returns copied text value, particular quantity of signs counting from the start is copied. Should value of the third parameter be not provided, the whole text value is copied.
- tolower(„text value”) – returns the whole text value with lower-case letters.
- toupper(„text value”) – returns the whole text value with upper-case letters.
- replace(„text value”, old text, new text) – returns text with swapped letters or parts, specified in parameter two and parameter three.

	Place text values in between inverted commas „”.

Examples:

remove(”Exemplary text”,9) – value "Exemplary" is returned.

toupper(”Exemplary text”) – value „EXEMPLARY TEXT” is returned.

replace(”Exemplary text”,”text ”,”txt”) – value "Exemplary txt" is returned.

replace(”2.000”,”0”,”1”) – value „2.111” is returned. The value may be next used for strictly mathematical calculations, it is converted immediately during calculation requiring conversion.

2. ANNEX 02 - Programmable Button Functions

Pictogram	Name	Pictogram	Name
	ENTER		Zero
	Tare		Set tare
	Disable tare		Restore tare
	Parameters		Local parameters
	Set MIN and MAX		C Statistics: Print and Zero
	C Statistics: Print		C Statistics: Zero
	CC Statistics: Print and Zero		CC Statistics: Print
	CC Statistics: Zero		CC Statistics: Delete
	Edit lot no.		Edit batch no.
	Start		Stop
	Select operator		Select operator by name
	Select operator by code		Select product
	Select product by name		Select product by code
	Select packaging		Select packaging by name

	Select packaging by code		Select customer
	Select customer by name		Select customer by code
	Select source warehouse		Select source warehouse by name
	Select source warehouse by code		Select target warehouse
	Select target warehouse by name		Select target warehouse by code
	Change working mode		Parts counting: Set part mass
	Parts counting: Determine part mass		Parts counting: Assign reference sample
	Parts counting: Reference sample quantity - 5 pcs		Parts counting: Reference sample quantity - 10 pcs
	Parts counting: Reference sample quantity - 20 pcs		Parts counting: Reference sample quantity - 50 pcs
	Parts counting: Reference sample quantity - 100 pcs		Percent weighing: Set reference sample mass
	Percent weighing: Determine reference sample mass		Breakdown
	Change unit		Change platform
	Edit universal variable 1		Edit universal variable 2
	Edit universal variable 3		Select dosing process
	Select dosing process by name		Select dosing process by code
	Select formulation		Select formulation by name
	Select formulation by code		Ingredients
	Determine liquid density		Determine solid body density
	Determine density by pycnometer		Determine porous body density
	Edit labels quantity		Edit C labels quantity
	Edit CC labels quantity		Control – Change: Workspace / Graph
	Control: Set control		Control: Go back to home screen
	Control: Average tare start		Control: Ongoing-control info
	Control: Edit note		Control: End control

	Select vehicle		Select vehicle by name
	Select vehicle by code		Select vehicle manually
	Start entry transaction		Start exit transaction
	Select transaction		Select workflow
	Select workflow by name		Select workflow by code
	Select platform 1		Select platform 2
	Select platform 3		Select platform 4
	Print Screen		Select extra variable 1
	Select extra variable 2		Select extra variable 3
	Select extra variable 4		Select extra variable 5
	Zero platform 1		Zero platform 2
	Zero platform 3		Zero platform 4
	Tare platform 1		Tare platform 2
	Tare platform 3		Tare platform 4
	Give mass		Undo weighing
	Increase accuracy		Select record from database
	Select „Weighing” mode		Select „Transactions” mode
	Transaction settings		Start transaction
	Finish transaction		Abort transaction
	Transaction info		Set date and time
	Interactive		Header printout
	Footer printout		

3. ANNEX 03 – Label Template

Label template can be created:

- via scale, using available variables,
- via **Label Editor R02** PC software.

⚠	***For detailed description concerning creation of label template via PC software, read user manual of „Label Editor R02”.***

In order to work in label scale mode, assign a label with template to a particular product or customer.

3.1. Creation of Label Template via the Scale

- Enter **<Databases / Labels>** submenu and select respective entry.
- Enter **<Label template>** parameter, an edit box with an on-screen keyboard is displayed.
- Modify a selected label template, do it using list of variables that is to be displayed upon pressing of button.
- Press button to confirm changes.

3.2. Sending Label Template to Scale Memory

- Copy label template with ***.lb** extension, made using **„Label Editor R02”**, onto the USB flash drive.
- Connect the USB flash drive to scale's USB port.
- Enter **<Databases / Labels>** submenu and select respective entry.
- Enter **<Label template>** parameter, an edit box with an on-screen keyboard is displayed.
- Press button, box with USB flash drive content is displayed.
- Select previously copied label template with ***.lb** extension, the scale program inserts selected template into the edit box.
- Press key to confirm.

⚠	***If the scale does not recognize the USB flash drive, the* button *remains inactive.***

3.3. Assigning a Label with a Template to a Product

- Enter **<** **Databases /** **Products>** submenu and select respective record.
- Enter **<** **Label>** parameter, label database with list of existing labels is displayed.
- Select respective label, it is automatically assigned to a product.

3.4. Assigning a Label with a Template to a Customer

- Enter **<** **Databases /** **Customers>** submenu and select respective record.
- Enter **<** **Label>** parameter, label database with list of existing labels is displayed.
- Select respective label, it is automatically assigned to a customer.

3.5. Printing a Label with a Template

- Go to the home screen, select a product or a customer with a label assigned from a database.
- Load the weighing pan, wait for a pictogram, press **ENTER/PRINT** key.
- The label is printed via scale-connected printer.

⚠	***The label can be assigned to a product or a customer. Label template assigned to the most recently selected database entry (a product or a customer) is printed on a scale-connected printer upon pressing ENTER/PRINT key.***

4. ANNEX 04 – ZEBRA Printer Configuration

Transmission parameters	**Printout data regarding RS232**
Baud rate – 9600 b/sec Parity control – none Bits qty – 8 bits Stop bits – 1 bit	Serial port : **96, N, 8, 1**

For detailed procedure specifying how to print info printout and how to modify printer settings read user manual of ZEBRA printers.

5. ANNEX 05 – Barcode Scanner Configuration

1. For communication with barcode scanners, RADWAG scales use RS232 interfaces and simplex transmission (one-way direction), without handshaking. For this purpose, use of second line of the cable is sufficient. Used scanners should be equipped with RS232 interface, both hardware and software handshaking must be disabled.
2. Transmission parameters can be set for both weighing devices and scanners. For both devices the following parameters must comply: baud rate, data bits quantity, parity control, stop bits quantity; e.g. 9600,8,N,1 – baud rate 9600 bit/s, data 8-bits, no parity control, 1 stop bit.
3. Barcode scanners can send additional information apart from the expected barcode e.g. symbology (type of barcode). Due to the fact that RADWAG devices and software do not use such information, it is advisable to disable it.
4. Some RADWAG systems can omit unnecessary coded information by using parameters that mark the beginning and the length of the code subjected to analysis.
5. A special protocol is required in order the code be received by RADWAG equipment. It is necessary to program an appropriate prefix and suffix. In RADWAG-adopted standard, the prefix is 01 sign (byte) hexadecimal format, the suffix is 0D sign (byte) hexadecimal format.
6. Most barcode scanners allow to enable/disable different symbologies (barcode types).
7. Programming of scanners is performed by reading special barcodes.
8. Scanners marketed together with RADWAG systems are always configured according to the rules above.

Barcode with required prefix and suffix in hexadecimal format	**Barcode without required -fixes in ASCII format**	**Code type**
01 30 30 32 31 30 31 32 36 0D	00210126	EAN-8
01 30 31 32 33 34 35 36 37 38 39 0D	0123456789	CODE 2 OF 5
01 43 4F 44 45 20 33 39 20 54 45 53 54 0D	CODE 39 TEST	CODE 39
01 31 31 30 31 32 33 34 35 36 37 38 39 31 0D	1101234567891	EAN-13
01 43 6F 64 65 20 31 32 38 20 54 65 73 74 0D	CODE 128 Test	CODE 128

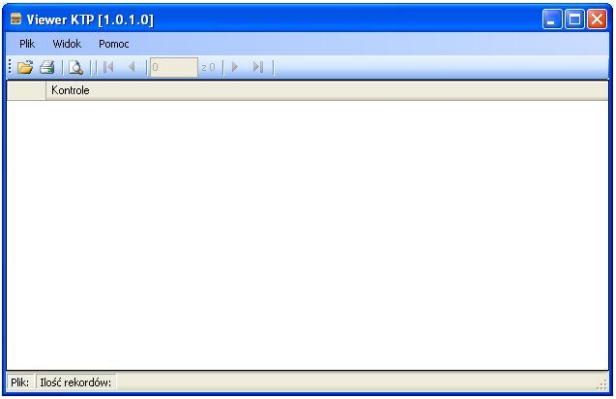
6. ANNEX 06 – PGC Viewer PC software

PGC Viewer PC software is designed to preview and/or print both product control reports and packaging tare control reports on a scale-connected printer.

⚠	***Installation file of PGC Viewer is to be found on a CD supplied with the product.***

Operation:

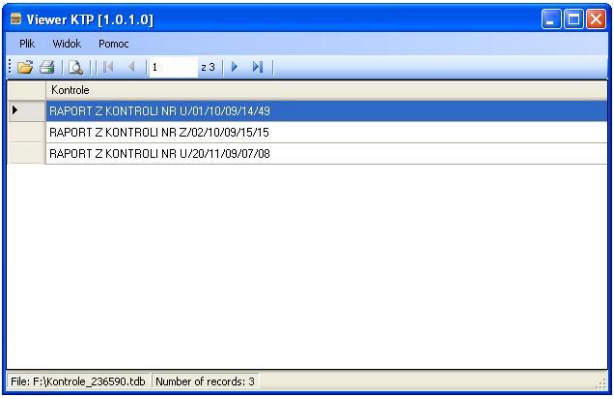
- Run **PGC Viewer** PC software, the home screen is displayed:



Buttons:

	Press to open PGC control database file or average tares file.
	Press to print a selected report
	Press to preview a selected report.
	Press to go one report list entry down.
	Press to go one report list entry up.
	Press to go to the last report list entry.
	Press to go to the first report list entry.

- Press button, **<Open>** window is displayed, find the previously generated PGC control database file or average tares file (*.tdb).
- Click the file and press Otwórz button.
- The home screen is displayed automatically, simultaneously list of controls contained in the open file is displayed in **<Controls>** field:



- Print the selected report on a scale-connected printer, to do it press button.
- Preview the selected record, to do it press button.

7. ANNEX 07 – Cooperation with HRP Weighing Platform

For detailed information on **HRP** weighing platform refer to **„HRP Weighing Platform”** user manual. Cooperation of indicator (scale) with **HRP** weighing platform is carried out via RS232 or Ethernet interfaces using appropriate cables that come standard with the equipment.

Upon establishing connection between **HRP** platform and **PUE 7.1** indicator, the following parameters are enabled in **<** **Weighing>** submenu:

- parameters related to ambient conditions,
- parameters related to an internal adjustment,
- parameter specifying LO threshold for automatic functions.

7.1. Ambient Conditions Parameters

Parameters allowing you to adjust your weighing device to the workstation ambient conditions.

Median filter	Median filter eliminates short impulse disturbances (e.g. mechanical shocks). Values: **None** (median filter off), **0.5**, **1**, **1.5**, **2**, **2.5**.
Filter	Enter this parameter to adjust your weighing device to ambient conditions. The higher filter level, the longer the indication takes to stabilise. Values: **Fast**, **Average**, **Slow**.

Autozero	Enter this parameter to enable automatic control and correction of 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, e.g. pouring, filling). In such case, it is recommended to disable the function. Options: - function disabled, - function enabled.
Last digit	Enter this parameter to enable/disable display of the last digit (placed on the right of the decimal point) of the weighing result. Values: • **Always:** all digits are displayed. • **Never:** last digit disabled. • **When stable:** last digit displayed only when the result is stable.

7.2. LO Threshold for Automatic Functions

<LO threshold> parameter allows you to configure the function of automatic operation. The next measurement is saved only when mass indication gets below the set net value of **LO threshold** parameter.

Procedure:

- Enter **<Weighing / LO threshold>** submenu, an on-screen keyboard is displayed.
- Enter LO threshold value and press button.

7.3. Adjustment

In order to ensure high weighing accuracy, it is necessary to correct indications periodically against a mass standard, this requires entering a corrective factor to module memory. Adjustment must be carried out:

- at weighing start,
- after a long break between measurement series,
- in case of rapid ambient temperature change.

The adjustment has to be carried out for an unloaded weighing pan and stable working conditions (no air drafts or ground vibrations).

There are three types of adjustment:

- automatic internal adjustment,
- internal adjustment initiated by an operator,
- automatic adjustment at set time.

7.3.1. Automatic Adjustment

Automatic adjustment performed using an internal adjustment weight is triggered by:

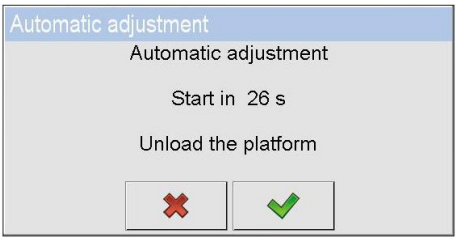
- plugging the instrument to the mains,
- temperature change (by 3°C),
- passage of specified time interval (every 3h).

Enabling <Automatic adjustment> parameter:

- Enter **<Weighing>** submenu.
- Select **<Automatic adjustment>** parameter and set respective value (- function disabled, - function enabled).

Automatic adjustment process:

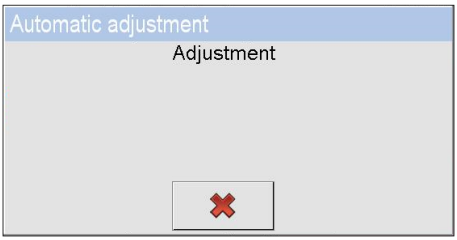
- Upon detecting the need for carrying out an adjustment process, the following message is displayed:



Where:

Start in 26 s	Information about the time remaining until the process start.
Unload the platform	Request to unload the weighing platform.
	Press to delay the adjustment by ca. 3 minutes. The adjustment can be delayed repeatedly, but it is necessary to remember that too many delays cause larger errors during weighing. Errors are caused by temperature and sensitivity changes.
	Press to start the adjustment process immediately

- Adjustment process is signalled by the following message:



- Upon completed adjustment procedure the following message is displayed:

- Press button to confirm.

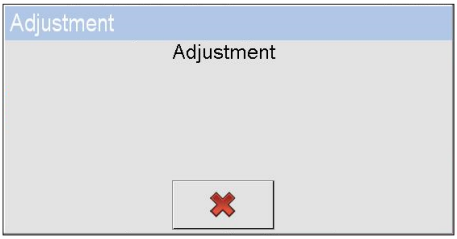
	With <Automatic adjustment> parameter disabled, it is important to carry out manual internal adjustment periodically.

7.3.2. Internal Adjustment

Internal adjustment is carried out by means of an internal adjustment weight.

Procedure:

- Enter **<Weighing / Internal adjustment>** submenu, the following message is displayed:



- Upon completed adjustment procedure the following message is displayed:

- Press button to confirm.

⚠	***The adjustment has to be carried out for an unloaded weighing pan and stable working conditions (no air drafts or ground vibrations).***

7.3.3. Automatic Adjustment at Set Time

The function enables carrying out automatic adjustment each day at a set time. You can declare up to 5 values (times) per day (e.g. 03.00, 8.00, 13.00, 18.00, 23.00).

Procedure:

- Enter **<Weighing / Automatic adjustment time-triggered>** submenu and select **<Automatic adjustment - set time (h:m)>** parameter.
- Enter **<Date>** parameter and set time of automatic adjustment start (keep the following order: **hour**, **minute**).
- Entered value is automatically set as the time of internal adjustment start.
- To disable the function, uncheck **<Active>** parameter (- function disabled, - function enabled).

8. ANNEX 08 – Nutrition Facts Label

Each database product can be completed with the following data regarding nutritional value: caloric value, fat, saturated fatty acids, unsaturated fatty acids, polyunsaturated fatty acids, carbohydrates, sugars, protein, salt, polyols, starch, dietary fiber, sodium, vitamins, minerals.

Exemplary nutrition facts label:

Nutritional value	per 100g	per 12.5g portion	% RWS
Caloric value	1910 kJ 455 kcal	240 kJ 57kcal	3%
Fat	15.0 g	1.9 g	3%
Saturated fatty acids	1.8 g	0.2 g	1%
Carbohydrates	69.0 g	8.6 g	3%
Sugars	27.0 g	3.4 g	4%
Starch	42.0 g	5.2 g	-
Dietary fiber	4.4 g	0.5 g	-
Protein	7.6 g	0.9 g	2%
Salt	0.90 g	0.13 g	2%

Procedure:

- Enter **<Databases / Products>** submenu. Press button to add a new product, or edit an existing one.
- Edit **<Portion size>** field. Respective edit box with an on-screen keyboard is displayed, enter value 12.5 g.
- Select **<Nutritional value>** entry. Window with nutritional values opens, you can edit the values.
- Add **<Caloric value 1>**, to do it press button. Fill in the fields:

Field name	Value
Value for 100g	1910kJ
Value for portion	240kJ
GDA value	3%

- Add new nutritional value **<Caloric value 2>**:

Field name	Value
Value for 100g	455kcal
Value for portion	57kcal
GDA value	

- Add new nutritional value **<Fat>**:

Field name	Value
Value for 100g	15.0g
Value for portion	1.9g
GDA value	3%

- Add remaining nutritional values from the table.

In order to print nutrition facts label:

- Make label template, to do it run Label Editor R02 PC software.
- Add label in scale database, next import previously created template.
- Assign the created label to a product.
- Go to the scale's home screen and select the previously edited product.
- Save the weighing, the label is printed.

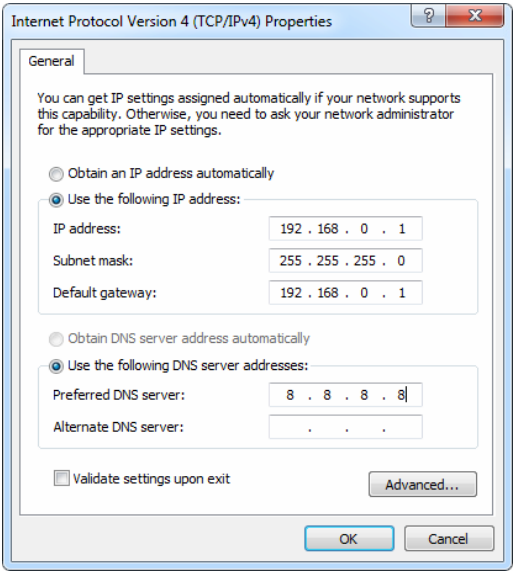
9. ANNEX 09 – Configuration of the Scale for Cooperation with E2R

It is necessary to configure the scale prior connection to E2R PC software.

9.1. Procedure

- Enter **<** **Peripherals /** **Computer / Port>** submenu and set respective port.
- In case of scale connected to Ethernet, set TCP port.
- Enter **<** **Peripherals /** **Computer / E2R System>** submenu, select **<System active>** option (- function enabled).
- Enter **<** **Communication>** submenu and configure port by which the scale is to connect to E2R.
- Check TCP protocol settings on the computer on which the E2R is installed.

Exemplary settings:



The scale must work in the same subnet as PC. Initial fragment of the IP address of both the scale and the PC must be the same. If, for example, the IP address of your computer is 192.168.0.1, then in the scale set the IP address to 192.168.0.2. Exemplary scale settings:

DHCP	✓
IP Address	10.10.9.61
Subnet mask	255.25.0.0
Default gateway	10.10.254.254
DNS	8.8.8.8
MAC address	00-16-59-01-A0-14

⚠	***<E2R System> parameter can be activated only by an operator granted with <Administrator> permission level.***

Correctly configured scale can be searched for and added in E2R PC software.

9.2. Exemplary Scale Configuration Errors

Parameter check procedure:

- Enter **<Peripherals / Computer>** submenu. Check the following settings:

Pictogram	Name	Description
	Address	**1** – correct value
	Continuous transmission	- make sure the function is disabled
	Authorization password	Make sure the password is empty

- Enter **<Databases / SQL connection / Databases accessibility>** submenu, parameters required for connection to the external SQL database are displayed.
- The parameters are filled in automatically when the scale is added to E2R PC software.

Standard parameters of SQL database:

Pictogram	Name	Description
	Server	By default:**(server IP)\bazaradwag2012**.
	Databases	SQL database name, by default: **E2R**.
	Login	Operator's name, by default: **sa**.
	Password	Operator's password, by default: **Radwag99**.
	Connect	Enter the parameter to test connection with the database.
	Mode	By default: **Directly**

10. ANNEX 10 – Smart Select

For an example of Smart Select option read below.

10.1. Example 1

The following operation algorithm is required:

1. The operator loads the weighing pan with objects of different weight values.
2. Respective product is selected from the database on the basis of mass.
3. In case of two products of the same weight value, the operator decides which one is to be selected.

How to make product database:

- Add products to the database. Enter **<Databases / Products>** submenu and press button, the following message is displayed: **<Create new record?>**.
- Press button to confirm, the new entry is automatically edited.
- Fill in respective fields in accordance with the below table:

Name	Code	Min		Max
Product 1	01	0 g		10 g
Product 2	02	10 g		20 g
Product 3	03	15 g		30 g
Product 4	04	25 g		40 g

Smart Select activation:

- Enter **<Working modes>** submenu and select **<Weighing>** working mode.
- Select **<Smart Select>** function and set **<Activation – confirmation box>** option.

Weighing process course:

- Load the weighing pan with mass ranging between 0 - 40 g, the product is set automatically, or list of to-be-selected products is displayed:

Mass range	Selected products
0 – 10 g	Product 1
10 – 15 g	Product 2
15 – 20 g	Product 2, Product 3
20 – 25 g	Product 3
25 – 30 g	Product 3, Product 4
30 – 40 g	Product 4

- Select**<Smart Select>** function and set **<Activation – confirmation mode>** option.

10.2. Example 2

Weighed products sorting carried out with regard to their mass:

1. The operator loads the weighing pan with objects of different weight values.
2. With regard to the mass, a respective product is selected form the database, corresponding container light is lit.
3. The operator puts the product to the container indicated by the light.
4. In case of two products of the same weight value, the operator decides which one is to be selected, only upon selection the corresponding container light is lit.

Required functionality can be obtained after connection of Smart Select option with Workflow. This involves assigning products created in Example 1 with respective Workflow.

How to make workflow:

- Add new record **<Process 1>**.
- Successive process steps are created in **<Workflow wizard>**:

Step	Value	Description
1. Outputs	Output 1: 1	Output 1 activation
2. Delay	Time: 5; Description: Load the container with an object	Output gets activated for 5 s.
3. Outputs	Output 1: 0	Output 1 deactivation

- Add new record **<Process 2>**:

Step	Value	Description
1. Outputs	Output 2: 1	Output 2 activation
2. Delay	Time: 5; Description: Load the container with an object	Output gets activated for 5 s.
3. Outputs	Output 2: 0	Output 2 deactivation

- Add new record **<Process 3>**:

Step	Value	Description
1. Outputs	Output 3: 1	Output 3 activation
2. Delay	Time: 5; Description: Load the container with an object	Output gets activated for 5 s.
3. Outputs	Output 3: 0	Output 3 deactivation

- Add new record **<Process 4>**:

Step	Value	Description
1. Outputs	Output 4: 1	Output 4 activation
2. Delay	Time: 5; Description: Load the container with an object	Output gets activated for 5 s.
3. Outputs	Output 4: 0	Output 4 deactivation

Assigning workflow to products:

- Assign workflow to products

Product	Assigned workflow
Product 1	Process 1
Product 2	Process 2
Product 3	Process 3
Product 4	Process 4

Weighing process course:

- Load the weighing pan with mass ranging between 0 - 40g, the product is set automatically, or list of to-be-selected products is displayed.
- Workflow activating respective output for 5 s runs.
- It is possible to connect lights indicating the respective container to outputs.

11. ANNEX 11 – JavaScript

RADWAG terminals are adapted for implementation of JavaScript code. In terminals there are few locations where the JS code can be inserted. In most cases they are marked with JS icon. The scripts can also be written in locations intended for templates. Below you shall find brief descriptions of locations intended for JS scripts.

- **<Database / Databases configuration / JS>**

Creating database (e.g. table), to which it is possible to refer in other locations. Everything saved here is initiated during the start of the system. With use of the below code, a table named '*codes'* was created.

```
let codes = [];
```

- **<Peripherals / Barcode scanner / JS>**

JS script inserted here determines what is done with the scanned barcode. The below function saves the scanned code to '*code'* variable. Next, thus saved barcode gets inserted into table created in point 1.

```
let code = GetBarcodeValue();
codes.push(code);
```

- **<Database / Workflow>**

While creating the workflow, it is possible to use JS script in order to program buttons. Activation of the button will release the assigned script (e.g. deletion of the most recently added component form the table).

- **<Reports / Reports configuration>**

It is possible to set template of batch number and lot number. In the below presented example, the function acquires the first code from '*codes'* table and sets it as a lot/batch number of the carried out weighing. Next, the code is automatically deleted, and to the next weighing, the next code from the table is assigned. JS scripts inserted into the templates must be preceded with variable 998 responsible for procedure triggering.

```
{998:
  if (codes.length > 0) {{
  code = codes[0];
  codes.shift();}}
}
```

- **<Display / Text data>**

Display templates may include script showing, for example, average mass from two connected platforms. The below code acquires mass from two platforms and saves the acquired values to variables, platform1 and platform2. Next these saved values are added up and divided by 2. As a result, the screen of HY10 terminal will display, within the workspace area, the average mass from the above 2 platforms. Script inserted in this location shall be preceded by variable 998.

```
{ 998:
 let platform1 = parseFloat(GetVar("43:1"));
 let platform2 = parseFloat(GetVar("43:2"));
 return (platform1 + platform2) / 2;
 }
```

Remember that *GetVar()* function used in the above example takes string value as an argument. In order to perform mathematical operations it is necessary to convert data type to a respective form. For data type conversion, *parseFloat()* function was used.

Argument of *GetVar()* function may be any variable intended for printout. To access these variables press button located in edit box of each template.