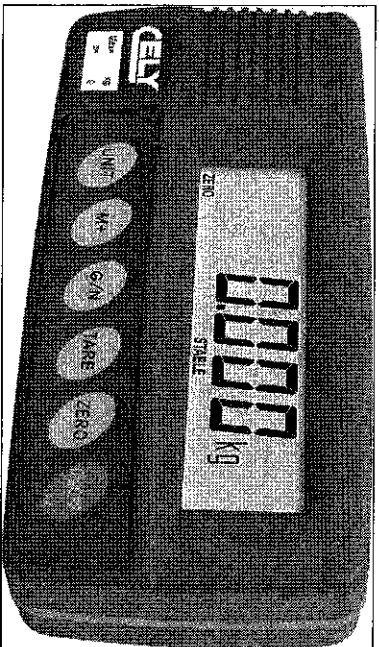


# CELY

# CELY

*User's manual*



## RW Series

REF: 49-MCERW00EN02



DECLARATION OF CONFORMITY



Manufacturer: CELY

Type:

**RW Series**

The aforementioned manufacturer declares that the apparatus described herein complies with the requirements contained in Directive 89/336/CEE and 79/23/CEE and, where applicable, to the following harmonised regulations:

- EN55022 Class B
- EN61000-4-2
- EN61000-4-3
- EN61000-4-4
- EN60950



Ref. : 49-MCERW00EN02 Rev. 00

23/07/a

**12. TECHNICAL PARAMETERS**

Press **UNIT** key and **Me** key together when normal weighing mode, display shows "FO H-L", press **TARE** key until display shows "PrOG", press **ZERO** key, display shows "PiN". You can press **GNL**, **UNIT**, **ZERO** key to enter setting mode, press **Tare** key to select parameter, press **Zero** key to sure, press **UNIT** key to escape.

FUNCTION	SUB-FUNCTION	DESCRIPTION
P1 REF	AZN 0	This option is used to select the auto zero maintain. Options : 0,5d, 1d, 2d, 4d
	0-AUTO	This option is used to select the auto zero range when turn the indicator. Options : 0%, 2%, 5%, 10%, 20%
	0-RANGE	This option is used to select the manual zero range when press the ZERO key. Options: 2%, 4%, 10%, 20%, 50%, 100%
	speed	Set ADC speed, press U. Wt. Key to select ADC speed, press Tare key to enter 7.5: 7.5 times per second 15: 15 times per second 30: 30 times per second 60: 60 times per second Note: 15 times per second or 30 times per second are recommendatory
P2 CAL	DECI	This option is used to select the decimal Options : 0, 0.0, 0.00, 0.000
	INC	This option is used to select the division Options : 1, 2, 5, 10, 20, 50
	CAP CAL	This display will show xxxxxx for setting the capacity. linear nonlin Calibrate, see detail in section 10.
P3 P RO	TRI	This display will show xxxxxx for trimming the load cells, see detail in service manual.
	COUNT RESET	This display will show xxxxxx for indicating the internal counts. This display will show SURE for recovering the factory default setting.
P4 CHK	Mode 1	This is mode of the natural scale
	Mode 2	This is animal scale Scale can lock reading when little unstable
	Mode 3	This is a subtraction scale (print out "-" weight) M+ format: GROSS: 0.888KG gross for gross weight NET: 0.222KG net for net weight TARE: 0.666KG tare for tare weight
	Mode 4	As the mode 2, but M+ out format different NW: 0.222KG nw for net weight GW:0.888KG gw for gross weight

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**10. CALIBRATION**

Press **[UNIT]** key and **[MH]** key together when normal weighing mode, display shows "F0 H-L", press **[TARE]** key until display shows "PrOC", press **[ZERO]** key, display shows "PIN". You can press **[G/N]**, **[UNIT]**, **[ZERO]** key to enter setting mode, press **[TARE]** key to select "p2 CAL", press **[ZERO]** key to sure, press **[TARE]** key to select. While it is showing "CAL " press the **[ZERO]** key to enter. The display will show "linear".

**1. Normal calibrate:**

Press **[TARE]** key to select "nonlin" then press the **[ZERO]** key to enter, the display shows: "unload" Remove any weight from the platform. After stable indicator on, press the **[ZERO]** key.

Then the display will show the last calibration weight used. If this is correct, you can continue by pressing the **[ZERO]** key. If it is not correct use the **[MH]**, **[G/N]**, **[TARE]** keys to change the calibration weight value. When it is correct press the **[ZERO]** key.

Then display will show "LoAd". Place the calibration weight on the scale. After stable, press the **[ZERO]** key. Then the calibration has completed.

**2. Linear calibrate:**

Press the **[ZERO]** key to enter, the display shows: "ld 0". Remove any weight from the platform. After stable indicator on, press the **[ZERO]** key.

Then display will show "Ld 1". Place the 1/3 of capacity calibration weight on the scale. After stable, press the **[ZERO]** key.

Then display will show "Ld 2". Place the 2/3 of capacity calibration weight on the scale. After stable, press the **[ZERO]** key.

Then display will show "Ld 3". Place the full capacity calibration weight on the scale. After stable, press the **[ZERO]** key. Then the calibration has completed.

If the calibration is acceptable the display will return to normal. If an error message is shown try calibration again as a disturbance may have prevented a successful calibration. If the problem persists then contact your dealer or Cely.

After calibration the scale should be checked to verify the calibration and linearity is correct. If necessary repeat calibration, especially be certain the scale is stable before accepting any weight.

**11. ERROR CODES**

ERROR CODES	DESCRIPTION	RESOLUTION
-----	Over range	Remove weight from the scale If the problem persists contact your dealer or Cely for assistance.
Err 1	Date Setting Error	Enter date using correct format and reasonable values. Format: yy:mm:dd
Err 2	Time Setting Error	Enter time using correct format and reasonable values. Format: hh:mm:ss
Err 4	Zero Setting Error	The scale was outside the normal zero setting range either when it was turned on or when the ZERO key was pressed. Remove weight from the scale and try again. Use the TARE key to set the display to zero value. If the problem persists contact your dealer or Cely for assistance.
Err 6	A/D out of range	The values from the A/D converter are outside the normal range. Remove weight from the scale if overloaded, make sure the pan is attached. Indicates the load cell or the electronics may be faulty. If the problem persists contact your dealer or Cely.

**8. BATTERY OPERATION**

The weighing indicator can be operated from the battery if desired. The battery life is approximately 35 hours.

When the battery needs charging a symbol on the weight display will turn on. The battery should be charged when the symbol is on. The scale will still operate for about 10 hours after which it will automatically switch off to protect the battery.

To charge the battery simply plug into the mains power. The scale does not need to be turned on. The battery should be charged for 12 hours for full capacity.

In the LCD display has an battery indicator to indicate the status of battery charging. When the scale is plugged into the mains power the internal battery will be charged. When turn on the indicator if the battery indicator is full then the battery has a full charge. If it is half then the battery is nearly discharged and empty indicates the battery should be charged.

As the battery is used it may fail to hold a full charge. If the battery life becomes unacceptable then contact your distributor or Cely.

**9. RS 232 OUTPUT**

The RW-I Series of scales can be ordered with an optional RS-232 output.

Specifications:

- RS-232 output of weighing data.
- ASCII code.
- 8 data bits.
- No Parity.
- Baud rate from 600bps to 9600bps.

**Normal print out:**

Data Format for normal weighing operations, parts counting or recalling of totals from memory will all be different. Examples follow:

Normal Output:

```

Date AND TIME   The scale will be set date and time
SN              The number increments every time a new value is stored in memory
GW              GW for gross weight, NT for net weight and a unit of weight
<|>            Includes 2 line feeds
<|>
    
```

When parts counting the weight, unit weight and count will be printed:

```

Date:           The scale hasn't printed
Time: 00:00     The scale will be set time
Gross wt: 0.149KG  GW for gross weight, NT for net weight and a unit of weight
Unit wt: 7.4257G  The average piece weight computed by the scale
Quantity : 20PCS  The number of parts counted
<|>
<|>
    
```

When recalling the Total weight stored in the accumulation memory the output format is:

```

*****
<|>           A line of stars is shown
Date:         Includes 1 line feed
Time: 00:00
Total No: 3    Times of the accumulation memory
Total wt.: 0.447KG Weight of the accumulation memory
*****
    
```

**1. INTRODUCTION**

The RW-I series of weighing indicator provides an accurate, fast and versatile series of general purpose weighing scale with units conversion and check-weighing functions.

All the keyboards are sealed, color coded membrane switches and the displays are large easy to read liquid crystal type displays (LCD). The LCD's are supplied with a backlight.

All units include automatic zero tracking, units conversion, audible alarm for pre-set weights, and an accumulation facility that allows the individual weights to be stored and recalled as an accumulated total.

**2. SPECIFICATIONS**

Model	RW-I
Resolution	1/6,000
Interface	RS-232 Output Optional
Stabilisation Time	1 Seconds typical
Operating Temperature	0°C - 40°C / 32°F - 104°F
Power supply (external)	115 / 230 Vac, 120 / 240 Vac, 50/60 Hz, 10 watts
Calibration	Automatic External
Display	6 digits 22mm LCD display, attached backlight
Indicator Housing	ABS Plastic
Zero range	0mV-5mV
Signal input range	0-15mV
ADC	Sigma delta
Internal counts	600,000
ADC update	Max 60 times /second
Load cell drive voltage	Max 5V/150mA
Load cells	Up to four 350 ohms cells

**3. INSTALLATION**

**3.1. GENERAL INSTALLATION**

- The scales should be sited in a location that will not degrade the accuracy.
- Avoid extremes of temperature. Do not place in direct sunlight or near air conditioning vents.
- Avoid unsuitable tables. The tables or floor must be rigid and not vibrate. Do not place near vibrating machinery.
- Avoid unstable power sources. Do not use near large users of electricity such as welding equipment or large motors.
- Avoid high humidity that might cause condensation. Avoid direct contact with water. Do not spray or trimmerse the scales in water.
- Avoid air movement such as from fans or opening doors. Do not place near open windows.
- Keep the indicator clean.
- Do not stack material on the scales when they are not in use.

**3.2. INSTALLATION OF RW-I SERIES**

Please make the load cell connector from the load cell follow the drawing below.  
Attach the AC power adapter to the connector on the back of the indicator.

The connections of the platform are:

- Pin 1: IN+
- Pin 2: SENSE+
- Pin 3: OUT+
- Pin 4: OUT-
- Pin 5: SENSE-
- Pin 6: IN-
- Pin 7: NO USE

**4. KEY DESCRIPTIONS**

**ZERO**

Set the zero point for all subsequent weighing. The display shows zero.

A secondary function **▲**, of "Enter" key when setting parameters or other functions.

**TARE**

Tares the scale. Stores the current weight in memory as a tare value, subtracts the tare value from the weight, and shows the results. This is the net weight. Entering a value using the keypad will store that value as the tare value.

A secondary function **▲** of incrementing the active digit when setting a value for parameters or other functions.

**GIN**

Press the key, the scale can to select gross weight or net weight after you tare a weight.

Secondary function **▲**, in the setting mode, this key used to move active digits right.

**MP**

To print the results to a PC or printer using the optional RS-232 interface. It also adds the value to the accumulation memory if the accumulation function is not automatic.

Secondary function ( **C** or **▲** ), is to act as a clear key or to move active digits left when setting values for parameters or other functions.

**UNIT**

Press this key to select the weight unit. Move the active digit left when setting values for other functions.

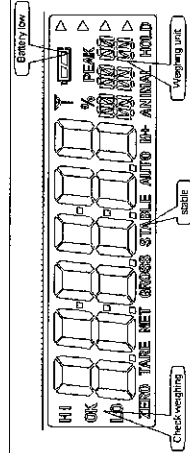
Secondary function (ESC), is to return to normal operation when the scale is in a parameter setting mode.

**ON/OFF**

Turn on or off the power.

**5. DISPLAYS**

The LCD display will show a value and a unit to the right of the digits.  
In addition there are labels for TARE, GROSS weight, Zero and for Low battery.



Print out format form 1 (for TpuP printer)

Lab prt.	0	1	2	3
0	GS: 0.888kg NT: 0.666kg TW: 0.222kg GW: 0.888kg	DATE: 04/06/06 GS: 0.888kg NT: 0.666kg TW: 0.222kg GW: 0.888kg	TIME: 11/11/11 NT: 0.666kg TW: 0.222kg GW: 0.888kg	GS: 0.222kg TOTAL: 0.222kg DATE: 04/06/06 GS: 0.222kg TOTAL: 0.444kg TIME: 11/11/11 NT: 0.222kg TW: 0.666kg TOTAL: 0.666kg
1	DATE: 04/06/06 GS: 0.888kg	DATE: 04/06/06 GS: 0.888kg NT: 0.666kg TW: 0.222kg GW: 0.888kg	TIME: 11/11/11 NT: 0.666kg TW: 0.222kg GW: 0.888kg	DATE: 04/06/06 GS: 0.222kg TOTAL: 0.222kg DATE: 04/06/06 GS: 0.222kg TOTAL: 0.444kg TIME: 11/11/11 NT: 0.222kg TW: 0.666kg TOTAL: 0.666kg
2	TIME: 11/11/11 NT: 0.666kg TW: 0.222kg GW: 0.888kg	DATE: 04/06/06 GS: 0.888kg NT: 0.666kg TW: 0.222kg GW: 0.888kg	TIME: 11/11/11 NT: 0.666kg TW: 0.222kg GW: 0.888kg	DATE: 04/06/06 GS: 0.222kg TOTAL: 0.222kg DATE: 04/06/06 GS: 0.222kg TOTAL: 0.444kg TIME: 11/11/11 NT: 0.222kg TW: 0.666kg TOTAL: 0.666kg
3	DATE: 04/06/06 TIME: 11/11/11 GS: 0.888kg	DATE: 04/06/06 TIME: 11/11/11 NT: 0.666kg TW: 0.222kg GW: 0.888kg	DATE: 04/06/06 TIME: 11/11/11 NT: 0.666kg TW: 0.222kg GW: 0.888kg	DATE: 04/06/06 GS: 0.222kg TOTAL: 0.222kg DATE: 04/06/06 GS: 0.222kg TOTAL: 0.444kg TIME: 11/11/11 NT: 0.222kg TW: 0.666kg TOTAL: 0.666kg
4	NO.: 4 GS: 0.888kg	NO.: 4 NT: 0.666kg TW: 0.222kg GW: 0.888kg	NO.: 4 NT: 0.666kg TW: 0.222kg GW: 0.888kg	NO.: 4 GS: 0.222kg TOTAL: 1.000kg DATE: 04/06/06 NO.: 5 NT: 0.222kg TW: 0.666kg TOTAL: 1.000kg
5	DATE: 04/06/06 NO.: 5 GS: 0.888kg	DATE: 04/06/06 NO.: 5 NT: 0.666kg TW: 0.222kg GW: 0.888kg	DATE: 04/06/06 NO.: 5 NT: 0.666kg TW: 0.222kg GW: 0.888kg	DATE: 04/06/06 NO.: 5 NT: 0.222kg TW: 0.666kg TOTAL: 1.222kg TIME: 11/11/11 NO.: 6 NT: 0.222kg TW: 0.666kg TOTAL: 1.444kg
6	TIME: 11/11/11 NO.: 6 GS: 0.888kg	TIME: 11/11/11 NO.: 6 NT: 0.666kg TW: 0.222kg GW: 0.888kg	TIME: 11/11/11 NO.: 6 NT: 0.666kg TW: 0.222kg GW: 0.888kg	TIME: 11/11/11 NO.: 6 NT: 0.222kg TW: 0.666kg TOTAL: 1.444kg DATE: 04/06/06 TIME: 11/11/11 NO.: 7 NT: 0.222kg TW: 0.666kg TOTAL: 1.666kg
7	DATE: 04/06/06 TIME: 11/11/11 NO.: 7 GS: 0.888kg	DATE: 04/06/06 TIME: 11/11/11 NO.: 7 NT: 0.666kg TW: 0.222kg GW: 0.888kg	DATE: 04/06/06 TIME: 11/11/11 NO.: 7 NT: 0.666kg TW: 0.222kg GW: 0.888kg	DATE: 04/06/06 TIME: 11/11/11 NO.: 7 NT: 0.222kg TW: 0.666kg TOTAL: 1.666kg TOTAL: 1.666kg

**FUNCTION MENU SETTINGS:**

FUNCTION	SUBFUNCTION	DESCRIPTION	DEFAULT VALUE
F0 H-L	SET HI	Set a value for the Low limit.	000.000
	SET LO	Set a value for the High Limit.	000.000
F1 totL	to CLR	Clears the accumulation memory without M+ing the results.	
	to P-C	M+ the Accumulation memory total and then clears the memory.	
	to Ptt	M+ the Accumulation Total, does not clear the memory.	
F2 Unit		Sets the displayed unit, you can press TARE key to set ON or OFF, press ZERO key to sure	Kilogram, kg
F3 tl	SET dA	Set date. The display will show last date set or 00.01.01. Enter new date, format yy.mm.dd	
	SET tl	Set time. The display will show current time. Enter new time, format hh.mm.ss	
F4 off	CLCK K	Set clock off or on, CLK on: RWD will turn to clock display after RWD wait for 5 minutes	CLK off
	BL	Set the backlight to be on, automatic or off, EL on EL Au EL off	EL Au
	BEEP	Set the beep mode.(check weighing mode 2, check weighing mode3, no beep)	
F5 Ptt		Set the RS-232, at first set RS-232 working mode (press TARE key to change, press ZERO key to sure) P Ptt: print weighing ticket when the M+ key is pressed, P Cont: send weighing data continuously, connect to PC, ASK: ask and answer mode (bi-direction mode), connect to PC. Command "R": send weighing data to PC Command "Z": do tare operate Command "T": do tare operate P auto: auto M+ mode. Sel re: connect with remote display (also send continuously) Then set baud rate After set working mode, display will show b xxx, this is current baud rate, you select baud rate by FAKE key ad press ZERO to sure. If you set Sel re, then need set communication protocol. If you set M+er (P PRT, P AUTO), then you can set print out format. Display will shows "PR x", set the date/time M+ format. Then display show "LAB x", set gross/tare M+ format, you can see detail below. These parameter only available in MODED(normal mode), see detail in section 12.	P Ptt
Prog	Pin	Then set printer type. TY-TPr: mini ticket M+er TY 711: A711 label M+er LP-50: LP-50 label M+er Enter the programming and calibration menus by entering the correct password (See the section 12).	

**6. OPERATION**

**6.1. MANUAL ZERO SETTING**

You can press the ZERO key at any time to set the zero point from which all other weighing and counting is measured, within 4% of power up zero. This will usually only be necessary when the platform is empty. When the zero point is obtained the display will show the indicator for zero.

The scale has an automatic rezeroing function to account for minor drifting or accumulation of material on the platform. However you may need to press the ZERO key to rezero the scale if small amounts of weight are shown when the platform is empty.

**6.2. TARIING**

Zero the scale by pressing the ZERO key if necessary. The zero indicator will be on.

Place a container on the platform, a value for its weight will be displayed.

Press the TARE key to tare the scale. The weight that was displayed is stored as the tare value and that value is subtracted from the display, leaving zero on the display. The "TARE" indicator will be on. As product is added only the weight of the product will be shown. The scale could be tared a second time if another type of product was to be added to the first one. Again only the weight that is added after taring will be displayed.

When the container is removed a negative value will be shown. If the scale was tared just before removing the container this value is the gross weight of the container plus all product that was removed. The zero indicator will also be on because the platform is back to the same condition it was when the ZERO key was last pressed.

**6.3. WEIGHING A SAMPLE**

To determine the weight of a sample first tare the empty container then place the sample in the container. the display will show the weight and the units of weight currently in use.

**6.4. CHECK-WEIGHING**

**6.4.1. ABOUT CHECK-WEIGHING**

Check-weighing is a procedure to cause an alarm to sound when the weight on the scale meets or exceeds values stored in memory. The memory holds values for a high limit and a low limit.

**Check mode 2:**

When check range, the display will show OK and the beeper will sound when the weight is between the limits.

**Check mode 3:**

When check range, the display will show OK and the beeper will sound when the weight is out of the limits.

**6.4.2. SET LIMITS**

Press the UNIT key and M+ key together in the weighing mode. It will display "F0 H-L", press ZERO key to enter, use TARE key to select "SET HI" or "SET LO", press ZERO key to enter, use GIN key to move active digit, use TARE key to change value, use UNIT key to clear value. After you enter the value, press ZERO key to sure, press UNIT key to escape.

**6.4.3.SET CHECK WEIGHING MODE**

Press the **UNIT** key and **MH** key together in the weighing mode to enter setting mode, press **TARE** until display show "F4 OFF", press **ZERO** key to enter, press **TARE** key until display show "BEEP", press **ZERO** key to enter, press **TARE** key to select BP 2(check mode 2), BP3 (check mode 3), BP1(no beep), press **ZERO** key to sure, press **UNIT** key to escape.

**The weight must be greater than 20 scale divisions for the check-weighing to operate.**

To disable the Check-Weighing function enter zero into both limits by pressing the **UNIT** key and **MH**key together in the weighing mode, then the current limits are shown, then set zero and store the zero values.

**6.5.ACCUMULATED TOTAL**

The scale can be set to accumulate manually by pressing the **MH** key. See the PARAMETERS Section for details of selecting the method using function "F5 P RT". The accumulation function is only available when weighing.

Please note before every accumulate operate, scale need return to zero, and only press **MH** key when stable, when weight less than 20d, accumulate operate will be invalid.

**6.5.1.ACCUMULATE OPERATE**

The weight displayed will be stored in memory when the **MH** key is pressed and the weight is stable. The display will show "ACC 1" and then the total in memory for 2 seconds before returning to normal. (after do accumulate operate, M+ indicator will turn on) If the optional RS-232 interface is installed the weight will be output to a printer or PC.

Remove the weight, allowing the scale to return to zero and put a second weight on. Press the M+ key, the display will show "ACC 2" and then the new total.

Continue until all weights have been added.

\*Note: after you change weighing unit, accumulate value will be clear.

**6.5.2.MEMORY RECALL**

To view the totals in memory press **MH** key in zero point (ZERO indicator on).

**6.5.3.MEMORY CLEAR**

To clear the memory, just press **UNIT**key.

**6.5.4.AUTOMATICALLY ACCUMULATE**

At first, you need set scale to auto accumulate mode. Press the **UNIT** key and **MH** key together in the weighing mode, it will display "FO H-L", press **TARE** key until display show "5 prt", press **ZERO** key to enter, press **TARE** key to select "p auto", press **ZERO** key to sure, then you need set baud rate and MH-format, print type, (see detail in SECTION 7).

After you set, AUTO indicator on.

Press weight on platform, after stable, you will hear beep on twice, you can add or remove weight now, scale will beep on again after stable, at last, remove all weight on platform, the last weight value will store in memory.

**6.6.ANIMAL SCALES**

RW1 can set as an animal scale, you just need set P4 CHK to mode2, see detail in SECTION12. Let the animal on the platform, after some second, if reading data change not a lot, you can hear beep sound and reading data will be locked.

In reading data lock mode, if you add/remove big weight, display will still update and lock new reading data.

**6.7. POST-TARE OPERATION**

This is used for hopper scale, you need set auto zero range to 0 (see detail in SECTION 7) and set scale mode to mode3/mode4 (see detail in SECTION12).

Turn on power, scale will show "err4", then show current total weight on platform, press **TARE** key, display show 0.00, then remove goods in hopper, display will show it's weight in "g" mode, press **MH** key, scale will print out weighing ticket, mode3/mode4 only different is print format.

**7. PARAMETERS**

The scale has 6 parameters that can be set by the user plus a method of entering the calibration section.

Press the **UNIT** key and **MH** key together in the weighing mode.

The display will show the first function, "FO H-L".

Pressing the **TARE** key will cycle through the other functions.

Pressing **ZERO** will allow you to set the function. It may be necessary to either use **TARE** or set a value using the **GIN** key to move the active digit and then using the **TARE** key to increment a digit, followed by the **ZERO** key to enter the value. Use the **UNIT** key to leave a parameter unchanged.

For example when the display shows "FO H-L" press the **ZERO** key to begin.

The display will show "Set Lo", press the **ZERO** key to set the low limit, or press the **TARE** to skip to the next parameter, "Set Hi" for setting the high limit.

After pressing the **ZERO** key to set a limit, use the **GIN** keys to change the flashing digit, then use the **TARE** key to increment the flashing digit. Continue to the next digit and set it as needed.

When all digits have been set press the **ZERO** key to store the value. The display will go back to the parameter just set, i.e. "Set Lo". Advance to another parameter if needed or press the **UNIT** key to return to weighing.