CELY

User's Manual

VC-50

SVC-50 / MVC-50 / LVC-50

Ref.: 49-MCEVC50EN03   Rev.: 03

INDICATOR VC-50

SVC-50 / MVC-50 / LVC-50
WEIGHING SCALES

CONTENTS

1. INTRODUCTION

NOTE: These indicators are not allowed for the uses mentioned in paragraph 2a of the article 1st of the Directive 90/384/CE, therefore they are not valid for commercial transactions.

Weighing scales series VC-50 / SVC-50 / MVC-50 / LVC-50 offers precise, rapid and versatile weighing for all uses, and includes item counting and weight check.

There are 3 scales in the series in this range with a platform size that starts at 350mm x 450mm and goes up to 600mm x 800mm, with a capacity that ranges from 30 to 600 kg.

All keypads are sealed, membrane switches are colour-marked and displays are easy-to-read, large-sized liquid crystal displays (LCDs). The LCDs are equipped with a backlight.

All models have manual zero setting, an acoustic alarm signal for preset weights, automatic tare, preset tare, and accumulation function that permits calculations to be stored and retrieved as a total accumulated sum.

2. SPECIFICATIONS

Model	SVC-50	MVC-50	LVC-50	VC-50
Platform size	350mm x 450mm	420mm x 520mm	600mm x 800mm	-------------------
Range	30kg/60kg/150kg	60kg/150kg/300kg	300kg/600kg/1,000kg	-------------------
Resolution	1:15,000			
Interface	RS-232 output (optional)			
Stabilisation time	Normally 1 second			
Operating temperature	0°C - 40°C / 32°F - 104°F			
Power supply	External CA adapter, 9V 800 mA			
Calibration	External, automatic			
Display	Digital 6 digit LCD display. Height of digits: 24 mm.			
Manufacture materials	ABS Plastic Indicator			
Operating voltage of load cell	Max 5V/150mA			
Load cells	Up to four 350 ohm cells			

3. INSTALATION

3.1. GENERAL INSTALATION

The platform should be placed on a firm, even surface.

Avoid extreme temperatures. Do not place the scales in direct sunlight or near air conditioning vents.

Avoid unstable tables. The tables and the ground should be firm and not vibrate. Do not place the platforms near vibrating machinery.

Avoid unstable electricity sockets. Do not use the scales near equipment with high electrical power consumption such as soldering equipment or large motors.

Avoid draughts such as those from fans or open doors. Do not place the scales near open windows.

Keep the indicators and the platforms clean and dry.

These indicators and platforms do not have a waterproof design (IP44) and therefore high levels of humidity should be avoided since this can cause condensation. Avoid direct contact with water. Do not spray water on the scales or submerge them in water. If the scales come into contact with water, measurements may become unstable or the scales may not operate correctly. Please unplug the scales immediately from the power supply.

Do not stack anything on the scales when they are not in use.

3.2. INSTALLATION OF SERIES SVC-50 / MVC-50 / LVC-50

The column is attached to the base by means of a bracket that should first be secured to the body of the base using the 4 screws supplied. The column is attached to the bracket with 2 pressure screws. The cable that runs from the indicator module base travels inside the tube and comes out of the plastic support at the top. Any surplus cable can be stored inside the tube.

Series SVC-50 / MVC-50 / LVC-50 comes with a stainless steel platform that is packed separately. Place the platform on the base.

Ensure the scales are standing level, by adjusting the four feet. Adjust the scales so that the bubble in the vial is in the centre and the scales are resting on all four feet. If the scales wobble, readjust the feet.

Place the indicator module on the column by sliding it over the bracket, and securing the edges in the base slots. Position the cable that is in the socket base situated at the back of the indicator.

Plug in the power supply cable in the socket situated at the back of the indicator.

❗ **Make a weight calibration as shown in paragraph 9 (Calibration)**

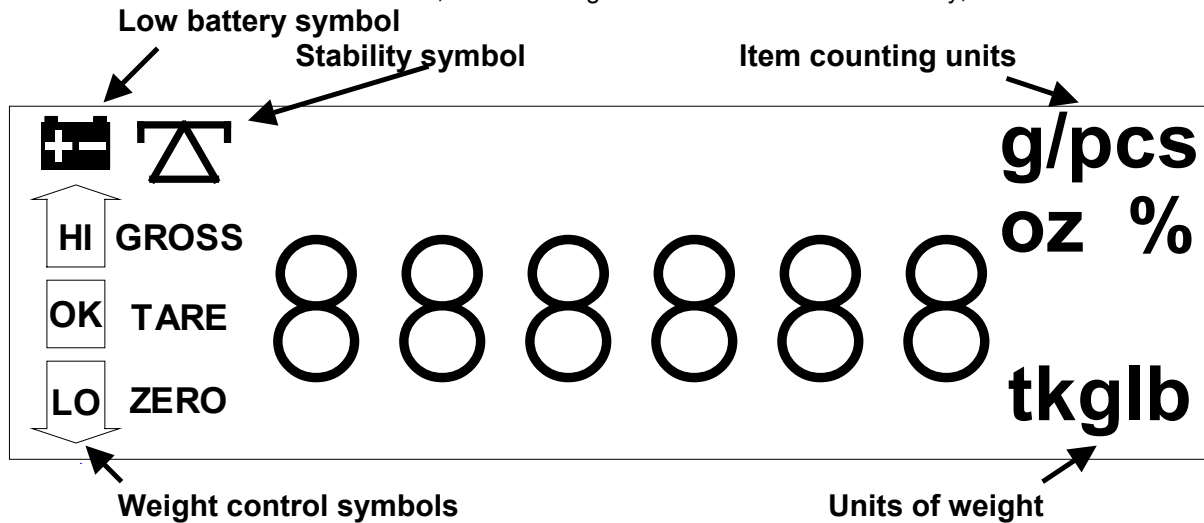Connect the load cell as indicated in the diagram below (7 pin air connector)
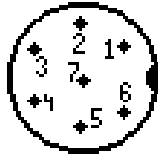
Pin 1	IN+
Pin 2	SENSE+
Pin 3	OUT+
Pin 4	OUT-
Pin 5	SENSE-
Pin 6	IN-
Pin 7	NOT USED

4. DESCRIPTION OF KEYPAD

KEY	DESCRIPTION	
	PRIMARY FUNCTION	**SECONDARY FUNCTION**
	Manual zero setting. Displays shows zero.	Sets parameters and other functions.
	Sets the tare of the scales, saving the current weight in the memory as the tare value, subtracting the value of the tare weight and displays the result. This result represents the net weight. If a value is entered using the keypad, the value will be stored as the tare value.	Increases the active digit when a value is set for a parameter or other function.
	Press this key in the weighing mode to change to item counting mode. In item counting mode, this key changes to unit weight, total weight and number of items.	Moves the active digit to the right when setting a value for a parameter or other function
	It changes the unit of weight.	Moves the active digit to the left when setting a value for a parameter or other function.
	This is used to select the scale function. If the scales are in weighing mode, it will select item count mode. If it is not in weighing mode, it will return to this function.	Acts as a "clear" key when setting values for a parameter or other function.
	This is to send data to a PC or printer using the optional RS-232 interface. It also adds the accumulative memory value if the accumulative function is not automatic.	When the scales are in parameter set-up mode, press this key to return to normal operation.
	ON / OFF key.	

5. DISPLAY

The LED display will show a value and a unit to the right of the digits.
There are also three labels for TARE; GROSS weight and ZERO and for low battery,

Low battery symbol

Stability symbol   **Item counting units**

g/pcs

oz %

HI GROSS

OK TARE   88888

LO ZERO

tkglb

Weight control symbols   **Units of weight**

6. OPERATION

6.1.   MANUAL ZERO SETTING

Press 〔→0←〕 at any time in order to make a manual zero setting.. When zero is obtained, the display will show the zero indicator.

The scales are provided with an automatic resetting function in order solve minor problems in weight deviation or accumulation of materials on the platform. However, it may be necessary to press 〔→0←〕 in order to reset the scales to zero if the display shows a small weight when the platform is empty.

6.2.   SETTING THE TARE

Set the scales to zero using 〔→0←〕 if necessary. The zero indicator will appear.

Place some packaging on the platform and a weight value will appear.

Press 〔⊕〕 to set the tare of the scales. The weight that appeared on the display is saved as the tare value and that value is deducted from the display, which returns to zero. The "NET" indicator will be activated. When a product is added, only the product weight will be shown. The scales may be tared for a second time if another type of product is added to the first. Again, only the additional weight will be shown after the tare has been set.

When the packaging is removed, a negative value will be shown. If the scales are tared before the packaging is removed, this value will be the gross weight of the packaging plus all the product that was removed. the zero indicator will also light up because the platform returns to the same situation as when 〔→0←〕 was pressed.

6.3.   SAMPLE WEIGHT

In order to determine the weight of a sample, first tare the packaging and then place the sample in the same packaging. The display will show the weight and the unit of weight in current use.

6.4. ITEM COUNTING

When the scales show the weight, press [icon] to initiate the item counting function.

The scales will show   "P   10" , to request a sample size of 10 items. Change the sample size by pressing [icon]. The display will move through the different options: 10, 20, 50, 100, 200 and back to 10.

Place the selected number of items on the platform and press [icon]. When the number of items has been calculated, the number of items on the platform will be shown, and from then on the scales will show the number of items that are placed on the platform.

If packaging is to be used when counting items, the empty packaging must first be tared. To do this, place the empty packaging on the platform and press [icon].

Press [icon] to return to normal weighing mode.

6.5. CHECKWEIGHER MODE

6.5.1. Operative

The checkweigher mode triggers an acoustic signal when the weight situated on the platform matches or exceeds the values stored in the memory. The memory stores values for a upper and lower limit.

6.5.1.1.   Checkweigher modes

Weight check range:
The check of the weight is done in a range between the limits.
This sets different values for upper and lower limits where the upper value is higher than the lower value.

Weight Check Key Point:
The check of the weight is done in a exact point.
This sets the same value for the upper and lower limits.

6.5.1.2.   Options of the alarm

Mode 2 of the functioning of the alarm
For the weight check range, the display will show OK and the alarm will beep if the weight is within the two limits.
For the weight check key point, the display will show OK and the alarm will beep if the weight matches the limits.

Mode 3 of the functioning of the alarm
For the weight check range, the display will show OK and the alarm will beep if the weight fall outside the limits.
For the weight check key point, the display will show OK and the alarm will beep if the weight does not match the limits.

6.5.2. Setting the limits

Press [F] and the display will show "F0 H-L". Press [→0←] to enter, use [↑T] to select "SET HI" or "SET LO", press [→0←] to enter. Use [⋮] or [U] to move the active digit and [↑T] to change the value. Use [F] to delete the value. After entering the value, press [→0←] to save and [ESC/Ω] to exit.

6.5.3. Setting the alarm

Press [F] to enter set-up mode, press [↑T] until the display shows "F4 OFF", press [→0←] to enter and [↑T] until the display shows "BEEP". Then press [→0←] to enter and [↑T] to select BP 2 (weight check mode 2), BP3 (weight check mode 3), BP1(no sound), press [→0←] to save changes and [ESC/Ω] to exit.

NOTE:
The weight must be greater than 20 scale divisions for the weight control function to operate.

To deactivate the weight control function, set both limits to zero by pressing [F] when the current values are shown. Then press [→0←] to save the zero values.

6.6.   ACCUMULATED TOTAL

The scales can be set to manual accumulation by pressing [ESC/Ω]. Refer to the CONFIGURATION section for further details on selecting this method using "F5 PRT". The accumulation function is only available when the scales are in weighing mode. It is deactivated in item counting mode.

The weight that appears on the display will be saved in the memory if [ESC/Ω] is pressed when the weight is stable.

The display will show "ACC 1" and the total saved in the memory will be displayed for two seconds before returning to normal mode. If the optional RS-232 interface is installed, the weight will be sent to a printer or PC (this type of machine does not have a print function).

Remove the weight so that the scales return to zero and put another weight on the platform. Press [ESC/Ω] and the display will show "ACC 2" followed by the new total.

Continue until all the weights have been added.
In order to view the totals in the memory, go to the CONFIGURATION section and use the function "F1 TOL".

6.7. WEIGHING SCALES FOR ANIMALS

The VC-50 / SVC-50 / MVC-50 / LVC-50 models can also be used as weighing scales for animals if the external resolution is below 1/3000. To set the scales up in this mode, refer to the Technical Configuration for VC-50 / SVC-50 / MVC-50 / LVC-50.
Place the animal on the platform. After a few seconds, if the data reading falls within the upper and lower limits that have been set, a beep will sound to indicate that the data reading is being recorded. After the animal has been taken off the scales, the data reading display will return to zero and the VC-50 / SVC-50 / MVC-50 / LVC-50 will automatically perform the accumulation operation. If the mini-printer is connected, the VC-50 / SVC-50 / MVC-50 / LVC-50 will print automatically.

To delete the accumulative memory, press [ESC/Ω] when the scales are at ZERO.

**This function is only available in the animal weighing mode.**

7. CONFIGURATION

The scales have 6 Configuration parameters that can be set-up by the user, and there is also a method for entering calibration mode.

To set parameters, press [C/F].

The display will show the first function "F0 H-L". Press [↑T], to move through the other functions.
Press [→0←] to set-up the function. It may be necessary to use [↑T] or to set a value using [▸] in order to move the active digit and then to use [↑T] to increase a digit, followed by [→0←] in order to enter a value. Use [ESC] to leave a parameter without modifying it.

For example, when the display shows "F0 H-L", press [→0←] to begin.

The display will show "Set Lo". Then press [→0←] to set the lower limit, or press [↑T] to go on to the next parameter, "Set Hi" to set the upper limit.

After pressing [→0←] to set a limit, press [▸] to change the flashing digit and then use [↑T] to increase the flashing digit. Continue with the next digit and set the amounts as required.

When all the digits have been set, press [→0←] to save the value. The display will return to the parameter that has just been set, e.g. "Set Lo". Continue until you reach the next parameter, where required, or press [ESC] to return to normal weighing mode.

CONFIGURATION OF THE FUNCTIONS MENU

FUNCTION	SUB-FUNCTIONN	DESCRIPTION	DEFAULT VALUE
F0 H-L	SEt Lo	Sets the lower limit value	000.000
	SEt HI	Sets the upper limit value	000.000
F1 toL	to CLr	Clears the accumulated memory without printing results	
	to P-C	Prints total accumulated memory and then deletes the memory	
	to Prt	Prints accumulated total but does not delete the memory.	
F2 u nt		This determines the unit of weight that appears on the display. Select kg, g, Lb, etc.	kilogram, kg
F3 tl	SEt dA	Sets the date. The display will show the last date set 00.01.01. Enter the new date in the following format: yy.mm.dd	
	SEt tl	Sets the time. The display will show the current time. Enter a new time in the following format hh.mm.ss	

F4 off	Clock	Determines whether the clock is on or off Clock off Clock on: The VC-50 / SVC-50 / MVC-50 / LVC-50 will display the clock after 5 minutes on stand-by.	Clock switched off
	Bl	This is for setting up the backlight. It can be set to on, automatic or off. EL on: EL automatic: EL off:	EL automatic:

	Beep	This sets up the alarm mode:
		  1. No sound.
		  2. Beep within limits.
		  3. Beep when out of limits.	

F5 Prt		This activates the RS.232 print function when [icon], is pressed, P Prt. O continuous printing, P Cont. Series: RS-232 connection with the RS-232 remote display. After setting up the printing mode (communication), the display shows "b xxx". The mean transfer rate must then be set-up. Use [icon] to select 600/1200/2400/4800/9600bps and after selecting the rate, press [icon] to save.	P Prt
Prog	Pin	Access programming and calibration menus by entering the correct password. See section 12 Technical Configuration.	

When the scales are set up to show the weight in other units of weight, the accumulation function is still shown in kilograms

8. BATTERY OPERATION

The weight indicator can operate with batteries if required. The battery will last approximately 100 hours.

When the battery needs recharging, a symbol will appear on the weight display. The battery must be recharged when this symbol appears. The scales will continue to work for about 10 hours and then they will shut down automatically to protect the battery.

To charge the battery, simply plug it into an electricity socket. It is not necessary to switch on the scales.

Recharge the battery for 12 hours in order to completely recharge it.

Immediately below the count display there is a LED to indicate the battery charge status. When the scales are plugged into the mains, the internal battery will be charged. A green LED indicates that the battery is fully charged. A red LED indicates that the battery is almost totally discharged and yellow means that the battery is being recharged.

In the course of use, the battery may lose its capacity to be fully charged. If the battery does not last long enough, please contact your distributor.

Note: new batteries are only partly charged. Before using the scales, insert and charge the battery following the instructions provided below.
Some batteries will perform better after several full cycles of being charged/discharged.
Battery performance depends on many different factors, including the configuration of the backlight and operation.

Never use a damaged battery charger or battery.
Never short-circuit the battery. An accidental short-circuit may occur if a metallic object (coin, paper clip, ballpoint pen) makes a direct connection between the battery's + and – poles (the battery's metal connectors), and this may occur, for example, if the battery is carried in your pocket. Short-circuiting the poles may damage the battery or the object that causes the connection.
Do not throw batteries into fire.
Discard batteries in accordance with local policy (e.g., recycling bin).
Do not discard batteries in home rubbish bins.
Avoid charging the battery in a poorly ventilated room.

In order to maximise battery performance:
Always use original batteries and AC adaptors. The scales guarantee does not cover damage occurring as a result of the use of any other batteries and/or chargers that are not the originals.
The AC adapter voltage output is 9V, but normal voltage ranges from 11 to 15V.
New batteries and batteries that have been stored for a long period of time may take longer to charge.
Keep the battery at room temperature or similar temperature when charging.
Do not expose batteries to temperatures of less than -10°C or more than 45°C.
After a long time, batteries gradually lose their charge capacity and require longer charging times.

This is normal. If you charge the battery regularly and observe that the operating time is decreasing or the charging time is increasing, it would probably be wise to purchase a new battery.

9. INTERFACE RS-232

These indicators can include an optional RS-232 interface.

Specifications:

- RS-232 interface for weighing data
- ASCII code
- 8 data bits
- Non-parity

Connector: 9 pin SUB-D type
- Pin 2:   Tx
- Pin 3:   Rx (not used)
- Pin 5:   GND

Data format differs in normal weighing mode, item counting mode and memory total retrieval. Examples:

Normal output

GS 12.340kg	GW for gross weight, NT for net weight and unit of weight
No. 1	This number increases each time a new value is stored in the memory.
Total 12.340kg	Total value stored in the memory
<lf>	Includes two line-feed characters
<lf>	

When items are counted, the unit weight and count will be printed.

GS 12,.40kg	GW for gross weight, NT for net weight and unit of weight
U.W. 123.4g/pcs	The mean weight per item, calculated by the scales
PCS 100pcs	Total number of items counted
<lf>	Includes two line-feed characters
<lf>	

When the total weight stored in the accumulative memory is retrieved, the outgoing format is:

|	
***************	Line of stars is shown
<lf>	Includes line-feed character
TOTAL	
No. 5	
Weight 21.455kg	.
***************	

10.   CALIBRATION

Switch off the indicator.

Switch them on again and during the countdown from 9 to 0, press ⊞.

The display will show "CAL". While the "CAL" is being shown, press ⊞, ⊞ and ⊞ in the foregoing order in order to enter calibration. The display will show "noLoAd".

Remove any weight from the platform. Press ⊞.

The display will show "LoAd". Place the calibration weight on the scales. Press ⊞.

The display will show the last calibration weight used. If this weight is correct, continue by pressing ⊞. If it is not correct, press the arrow keys to change the calibration weight value. When it is correct, press ⊞.

If the calibration is correct the display will return to normal mode. If an error message appears, try to calibrate the weight again since there may have been something that prevented the calibration from taking place successfully.

If the problem continues, contact CELY or your supplier.
After calibration, the scales should be revised to check that calibration and linearity are correct. If necessary, repeat calibration, and make sure that the scales are in a stable position before accepting any weight.

11.   ERROR CODES

ERROR CODES	DESCRIPTION	SOLUTION
- - - - -	Above the range	Remove the weight from the scales. If the problem continues, contact your distributor or CELY for assistance.
Err 1	Date set-up error	Enter the date using the correct format and logical values. Format: yy.mm.dd
Err 2	Time set-up error	Enter the time using the correct format and logical values. Format: hh.mm.ss.
Err 4	Zero set-up error	The scales were not correctly set-up in the zero range, or they were switched on when was pressed ⊞. Remove the weight from the scales and try again. Use ⊞ to set the display to zero. If the problem continues, contact your distributor or CELY for assistance.
Err 6	A/D out of range	The A/D converter values are out of the normal range. Remove the weight from the scales if there is excessive weight and check that the platform is in position. This error may indicate that the platform or electronics may not be working correctly.

12. TECHNICAL CONFIGURATION

Press [F] when the scales are in normal weighing mode and the display will show "F0 H-L". Press [↑T] until the display shows "PROG" and press [→0←] to enter. The display will show "PIN". Then press [U] [ESC/Q] and [↑T] to enter Technical Configuration mode and [↑T] to select the parameter. Press [→0←] to save and [Q] to exit.

FUNCTIÓN	SUB-FUNCTIÓN	DESCRIPTION
P1 REF	AZN 0	This option is used to select zero tracking options. Options: 0,5d, 1d, 2d, 4d
	0-AUTO	This option is used to select the initial zero setting range when the indicator turns Options: 0%, 2%, 5%, 10%, 20%
	0- RANGE	This option is used to select the manual zero range when the ZERO key is pressed Options: 2%, 4%, 10%, 20%, 50%, 100%
	Speed	This determines the ADC speed. Press [↑T] to select the ADC speed and [→0←] to save it. 7.5: 7.5 times per second 15: 15 times per second 30: 30 times per second 60: 60 times per second Note: 15 or 30 times per second is recommended
P 2 CAL	DECI	This option is used to select the decimal point. Options: 0, 0.0, 0.00, 0.000, 0.0000
	INC	This option is used to select the step. Options: 1, 2, 5, 10, 20, 50
	C AP	This display shows xxxxx to set-up capacity. After selecting, the VC-50 / SVC-50 / MVC-50 / LVC-50 will show the parameter for animal weighing scales if the external resolution that has been set is below 1/3000. First, set the vibration range. Use [↑T] to select the desired value: 0(deactivated)/5/10/15/20/25/30/35/40/45/50, vibrations in reading data in the range that you determine. The reading will be set. Then set-up the reading-block option. A1 (block minimum data), A2 (block mean data), A3 (block maximum data) Then set-up the increase value. Press [...] [↑T] to enter data, and then [→0←] to save. After setting up this data, when the readings have been saved, if any items are added to the platform or any products are removed, the reading will be updated and saved again. Then set-up the delay time: 50/60/70/80. Then set-up the block conditions. 3 may be selected (the VC-50 / SVC-50 / MVC-50 / LVC-50 will block reading data if it detects reading data in a vibration range of 3 times) or 8 (it will block if reading data is detected in a vibration range of 8 times).
	CAL	Calibration, see details in section 10.
P3 P RO	TRI	This display shows xxxxx to trimmer load cells.
	COUNT	This display shows xxxxx to indicate internal counting.
	RESET	This resets the original factory default set-up.

| **CELY** | DECLARATION OF CONFORMITY | AENOR ... ISO 9001   CE |

| Manufactures: | # CELY |
| Type: | ## VC-50 / SVC-50 / MVC-50 / LVC-50 Series |

The aforementioned manufacturer declares that the apparatus described herein complies with the requirements contained in Directive 89/336/CEE and 73/23/CEE and, where applicable, to the following harmonised regulations:
- EN55022 Class B
- EN61000-4-2
- EN61000-4-3
- EN61000-4-4
- EN60950

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