

OPERATING MANUAL

ADE

Electronic counting scale



Counting scale of HWZ series

HWZ-221128-Rev008-UM-en



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1. Applications



This symbol means: "Follow the instructions for use". To achieve precise results, read the instruction manual carefully and follow the instructions it contains. Keep the instructions for use for future reference.

The digital **HWZ series** offers precise, fast and diverse counting and checkweighing and is intended for use in areas that are not regulated by law.

- Scales of HWZ series are represented by 3 models with capacities up to 30 kg.
- All models are equipped with weighing platforms made of stainless steel and with housings made of ABS plastic.
- All scales have sealed keypads with colour-coded membrane switches and three large, very easy-to-read liquid crystal displays (LCD). The LCD display is equipped with a back-light that can be activated or deactivated.
- All scales have an auto zero function, an audible alarm for preset weights, an automatic taring, a preset taring and a totaliser that allows to save and recall the number of pieces as a total sum.
- Power is supplied via a 230 V mains connection and a 6 V 4 Ah rechargeable battery.

2. Warnings

The scale complies with the directives and standards for electrical equipment, electromagnetic compatibility and the stipulated safety regulations. However, improper use may cause personal injury and damage to property.

Read the operating manual carefully before putting the device into operation. This will prevent damage to the device. Keep the operating manual in a safe place.

The following instructions must be observed for safe and trouble-free operation of the scale:



Protect the weighing platform from impacts and vibrations and do not overload the scale. Handle the scale with care when it is carried around and always keep in mind that it is a precision measuring instrument.



Do not expose the scale to high temperatures, whether from neighbouring devices or direct sunlight. The liquid crystal display may suffer damage.



Electronic scales must be protected from possible ingress of water. Use the scale in a dry place. Clean the scale with a damp cloth. If water accidentally penetrates the device, switch off the scale immediately and allow it to dry well.



Never clean the scale with abrasive or aggressive cleaning agents. The housing thereby loses its shiny surface and is more susceptible to dirt.



In this case, before connecting the supplied power cord to the scale, make sure that the voltage on the nameplate matches the local power supply. Connect the power cord to the local power supply.



Do not tamper with the scale! In case of problems, consult your competent customer service representative.

Safe operation is no longer guaranteed

- if the power cord or the supply cable shows visible damages,
- after prolonged storage in humid areas.

In these cases, for your own safety, notify your service provider.

Attention: No other power cords than those supplied by the manufacturer may be used!

3. Delivery contents

- Scale
- Rechargeable battery (integrated into the scale)
- Weighing platform
- Cold device power cord
- Protective hood

4. Set up of the scales

1. Carefully remove the delivery contents from the packaging.
2. Place the scale on a stable, horizontal surface. Do not place the scale on a shaky or vibrating table as this will cause distortion of measurement results.
3. To align the scale, adjust the four feet of the scale so that the air bubble is exactly in the centre of the spirit level.
4. Remove the weighing platform from the separate packaging and insert it carefully into the holes on the top of the scale.
5. Connect the power cord to the connector on the bottom of the scale. Switch on the scale. The on/off switch is located on the right-hand side under the housing. When switching on the scale, the weighing platform must be unloaded. The scale runs through a test programme and acknowledges the end of the routine with an acoustic signal.

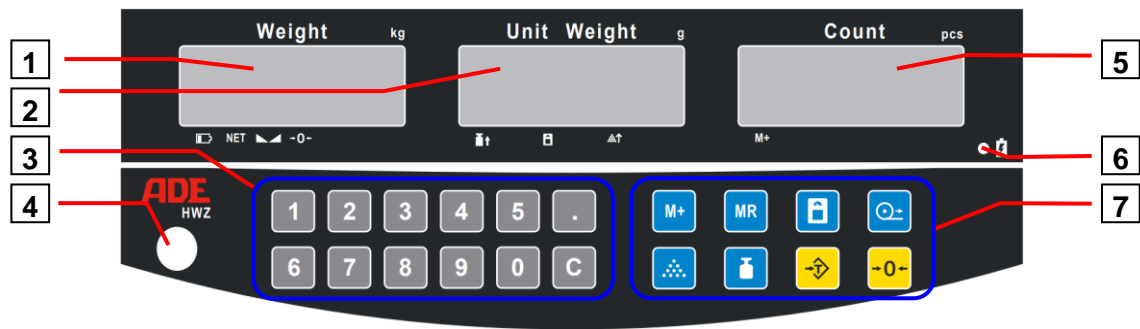


If the weighing platform is loaded when switching on the scale, the scale will not be properly calibrated and ready for use.

Switch off the scale and repeat the switch-on process.

6. The scale is now ready for use.
7. For accurate measurement results, the item to be weighed must be placed in the middle of the weighing platform. The item to be weighed should not protrude beyond the weighing platform.







5. Overview



No.	Designation	Description
1	Weight	Weight window
2	Unit Weight	Unit weight window
3	“Numeric keypad”	0 ~ 9, for data entry to manually enter a value for tare weight and sample size
4	“Spirit level”	For levelling the scale
5	Count	Quantity window
6	Recharge	Indicates the charging process of the battery
7	“Function keys”	Used to trigger predefined functions

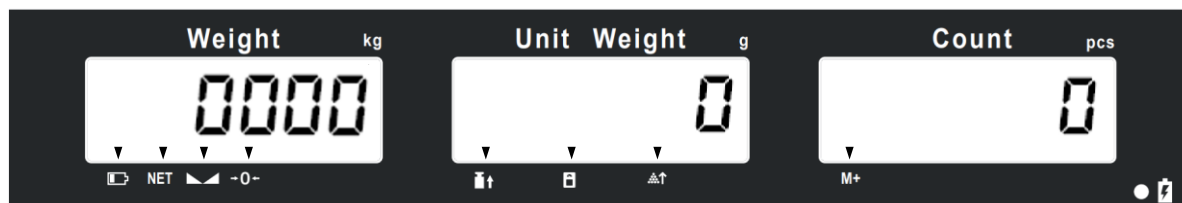
6. Key functions

Button symbols	Description	Function
	Numeric keys	For data entry; to manually enter a value for tare weight and sample size.
	Comma key	For setting decimal places
	Clear key	Used to delete incorrect entries or to return.
	Addition key	Adds the current number of units to the totaliser. Up to 99 values or up to the full capacity of the tare range in the “Weight” window can be added. Also prints the displayed values when self-printing is switched off.
	Totaliser key	Used to call up the totaliser.

	Limit key	Sets the upper limit for the number of units. If this upper limit is exceeded, an acoustic signal sounds.
	Print key	Used to print the totaliser when connected to a printer or PC. Requirement: Optional RS232 data interface is installed.
	Count key	Used to enter the number of units.
	Sample weight key	Used for manual entry of the unit weight.
	Tare button	Tares the scales. Saves the current weight as a tare value, subtracts the tare value from the weight and displays the results. That is the net weight. Entering a value via the keypad saves this value as a tare value.
	Zero key	Sets the zero point for all next weighing operations. Zero is displayed.

7. Display description




The scales have three digital display windows. These are “**Weight**”, “**Unit weight**”, and “**Count**”.



7.1 Weight window (WEIGHT)

This window has a 5-digit display to show the weight on the scale.




The arrows above the symbols indicate:

Symbol	Bedeutung
	Low battery voltage
NET	Net weight
	Stability
	Zero position

7.2 Unit weight window (UNIT WEIGHT)

This window shows the unit weight of a sample. This value is either entered by the user or calculated by the scale. The weighing unit gramme is set for all scales.

An arrow indicator appears above the symbol, when ...

Symbol	Bedeutung
	The number of units is insufficient to accurately determine the number of units. Scale continues the process. The arrows only appear to warn the user of a potential problem.
	If a preset number of units has been saved, a small arrow appears above the symbol.
	Unit weight is not sufficient to determine an exact number of units. Scale continues the process. The arrows only appear to warn the user of a potential problem.

7.3 Count window (COUNT)

This window shows the number of units on the scale or the value of the total number of units. See Section 6 (Operation).


An arrow indicator appears above the symbol, when ...

Symbol	Bedeutung
M+	An arrow indicator appears above "M+" when a value has been entered into memory

7.4 Battery status indicator


7.4.1 Display indication

The scales are designed for battery or mains operation. The battery operating time is up to 100 hours depending on the set parameters.

	Indicator for low battery charge (only in battery mode). The function indicators are indicated by an arrow (▼) in the display. To protect the scale, it switches off automatically if the charging voltage is too low. Before using the scale again, the battery must be fully charged.
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Note: The indicator symbol in the display shows the battery charge level when the scale is not connected to the mains. When the scale is connected to the mains, observe the LED indicator.

7.4.2 LED display

	Green	Mains operation. Battery is charged. To ensure that the battery is fully charged, leave the scale connected to the mains for at least one hour.
	Yellow	The yellow light indicates that the battery should be charged longer.
	Red	The battery is almost discharged and must be charged immediately. The charging process can take up to twelve hours. During the charging process, the LED initially remains lit red.

Note: Please charge the battery fully (for 12 hours) before first use.

8. Operation

8.1 Switching on the scale

The on/off switch is located on the right-hand side under the housing.



No weight may rest on the weighing platform during the switch-on procedure. The scale runs through a test programme and acknowledges the end of the routine with an acoustic signal. The scale is now ready for operation.



If a weighing object rests on the weighing platform during the switch-on process, the scale is not properly ready for operation.

Switch off the scale and repeat the switch-on procedure.




8.2 Setting display to zero

- You can press the  key at any time to set the zero point. All weighing and counting operations are performed from this point. Normally, it is only necessary if the weighing platform is unloaded. When the zero point is reached, the “**Weight**” window shows an arrow indicator above $\rightarrow 0 \leftarrow$ -Symbol.
- The scale has an auto zero function to account for small deviations or accumulation of items on the weighing platform. It is still possible that you must press  to reset the scale to zero if small amounts of weight are displayed while the weighing platform is empty.

8.3 Taring



There are two methods of entering a tare value. The first is based on the weight that is on the weighing platform and the second is based on a value entered by the user.

8.3.1 Method 1:

- Set the scale to zero by pressing the  key. An arrow indicator appears above “ $\rightarrow 0 \leftarrow$ ”. Place a container on the weighing platform. The display will show the value of its weight.
- Press the  key to tare the scale. The weight that was displayed is stored as the tare value and this value is subtracted from the display. Zero remains on the display. An arrow indicator appears above **NET**-Symbol.
- When a product is added, only its weight is shown on the display. The scale could be tared a second time if another type of goods should be added to the first. Again, only the weight added after taring is displayed.
- When the container is removed, a negative value is shown on the display. If the scale was tared shortly before removing the container, this value is the gross weight of the container plus any products that were removed. The arrow indicator above “ $\rightarrow 0 \leftarrow$ ” is also on because the weighing platform is under the same condition as the last time the  key was pressed.

8.3.2 Method 2:

- This method allows you to enter a value for the tare weight using the keypad. This is useful when you are using the same containers, or when the container is already full while the net weight is required and the weight of the container is known.



- Remove all objects from the weighing platform and press the  key to reset the display to zero. Enter the tare weight value (including the decimal point) using the keypad and press  to save the tare value. The weight has a negative value, identical to the tare value.
- Place the container on the weighing platform.
- The display shows the weight of the container minus the tare weight.
- When the full container is placed on the weighing platform, the tare value is subtracted from the gross weight. Only the net weight of the content is displayed.
- If the input value does not match the digit increment on the scale, the tare value of the scale is rounded up to the next possible value. For example, if a tare value of 10.35 g is entered for the 6 kg/0.2 g scale, the scale will show -10.4 g

8.4 Determine / enter reference weight

The basic functions for counting pieces are identical for the basic and secondary scales. To be able to perform the piece counting, it is necessary to know the average weight of the individual pieces that are to be counted. If the reference weight is already known, it can be entered manually via the keyboard. Otherwise, the average reference weight can be determined by weighing a known number of individual parts

8.4.1 Weighing a sample to determine the reference weight

To determine the average weight of the individual parts to be counted, it is necessary to place a known number of pieces on the scale and then enter the number of individual parts to be weighed. The scale then divides the total weight by the number of pieces and the average reference weight is displayed.

- Set the scale to zero by pressing the  key, if necessary. If a container is to be used, place the container on the scale and tare as previously described.
- Place a known number of units on the scale. If the “Weight” display is stable, enter the number of individual units with the numeric keys and press the  key.
- The number of units is shown in the “Count” window and the calculated average weight is shown in the “Unit weight” window.
- If more units are placed on the scale, the weight and the number of units will increase.




If a number is placed on the scale that is lower than the reference unit weight, the scale recalculates the unit weight and increases it. To lock the unit

weight and avoid automatic recalculat-ion, press .


If the scale is not stable, the calculation will not be performed.

If the weight is below zero, the “Count” window shows a negative number of units.

It is possible to increase the accuracy of the piece weight at any time during the counting process by entering the number by pressing the  key. This results in higher accuracy when counting larger quantities. Make sure that the number displayed is the same as the number displayed before pressing the key.

8.4.2 Entering a known reference weight

If the reference weight is already known, this value can be entered using the keyboard.

- Enter the value of the reference weight using the numeric keys and press the  key. The "Reference Weight" window (Unit Weight) shows the value as entered.
 - Place the parts to be counted on the scale. The weight and the number based on reference weight are displayed.
- When weighing in kg, the reference weight is displayed in grams. When weighing in lb, the reference weight in lb is displayed.

8.4.3 Automatic updating of the reference weight


The scale automatically updates the reference weight when the number of pieces on the scale is less than the reference number of pieces. An acoustic signal sounds when the value is updated. It is safer to check that the piece count is correct when the reference weight has been updated automatically.

This feature is deactivated as soon as the number of added pieces exceeds the reference piece count.

8.5 Piece counting

After the unit weight has been determined or entered, it is possible to use the scale for unit counting. The scale can be tared to clear the container weight as explained in the previous section.

- After taring the scale, place the units to be counted on the weighing platform. The "Count" window shows the number of units that was calculated using the total weight and the unit weight.
- It is possible to increase the accuracy of the unit weight at any time during unit counting:

Enter the displayed number of units and press the  key. You must be sure that the number shown equals the amount on the scale before pressing the key. The unit weight can be adjusted if it is based on a larger number of samples. This will allow greater accuracy when a larger sample size is to be counted.



8.6 Acoustic alarm


The counting scale HWZ has a function that sounds an acoustic alarm when the weight falls below/exceeds adjustable limit values. In the parameter settings (chapter **Fehler! Verweisquelle konnte nicht gefunden werden.**) you can choose between the following alarm variants under item "F10 Bep". When delivered, the scale operates in the mode: **OK**.

OK:	Acoustic alarm sounds if the entered value is within the limit values.
Low:	Acoustic alarm sounds if the entered value is below the minimum value.
NG:	Acoustic alarm sounds if the entered value is outside the limit values.
High:	Acoustic alarm sounds if the entered value is above the maximum value.

8.6.1 Setting the acoustic alarm function

The acoustic alarm function can be set for the weight mode or counting mode, or it can be turned off. The function is disabled by default.






- To make the setting, press and hold down the  key for approx. 5 seconds.
- The "Weight" display now shows CHECK, the "Unit weight" display shows NET for an acoustic alarm. The preset weight values are taken into account.
- After pressing the  key again, the preset number of units are taken into account for the acoustic alarm for approx. 5 seconds. The "Weight" display continues to show CHECK, the "Unit weight" display now shows PCS.

- Pressing the  key again deactivates the acoustic alarm for approx. 5 seconds. The “Weight” display still shows CHECK, the “Unit weight” display shows OFF.

8.6.2 Setting the maximum and minimum values for audible alarm








The HWZ counting scale has a programming function that emits an acoustic signal if a count or weight specified by the user is either reached (minimum values) or exceeded (maximum values).

More information about the audible signal setting can be found in chapter **Fehler! Verweisquelle konnte nicht gefunden werden.**



- To make these presets, press the  key.
- The “Weight” display shows HI CNT. Using the 10-key keypad, enter the maximum value for a count (number of units) at which an acoustic signal should sound and confirm with the  key.
- The “Weight” display now shows LO CNT. Using the 10-key keypad, enter the minimum value for a count (number of units) at which an acoustic signal should sound and confirm with the  key.
- The “Weight” display now shows HI NET. Using the 10-key keypad, enter the maximum weight at which an acoustic signal should sound and confirm with the  key.
- The “Weight” display now shows LO NET. Use the 10-key keypad to enter the minimum weight at which an acoustic signal should sound and confirm with the  key.
- You will now return to weighing mode.
- To delete the preset values from the memory and thus deactivate the checkweighing function, save the value 0 in each case.

8.7 Totaliser

8.7.1 Manual totaliser

- The values (weight and number of units) on the display can now be added to the values in memory by pressing the  key. The “Weight” window shows the total weight. The “Count” window shows the total number of units. The “Unit weight” window indicates how often the units were added to the memory for totalisation. The values are displayed for 2 seconds before the scale returns to normal weighing mode. This is also printed out if the optional RS232 data interface is used.
- The scale must return to zero or a negative number before another sample can be added to memory.
- You can add more products. To do this, press  each time. This process can save up to 99 entries or the full capacity of the “Weight” window.
- To view the saved total value, press the  key. The total sum is displayed for 2 seconds.
- To print the total number of units, first press  and then . The prerequisite is the optional RS232 data interface.
- To clear the memory, first press  to view the total sums and then press the  key to clear all values from memory.


8.7.2 Automatic totaliser

- The scale can be set to automatically add total sums when a weight is placed on the scale. It is no longer necessary to press the  key to save values. However, the  key is still active and can be pressed to save the values immediately. In this case, the values will no longer be saved when the scale returns to zero.
- See section 9 (parameters) for details on setting the automatic totaliser.

9. Backlight and parameter setting

9.1 Backlight of the LCD display

- The backlight of the LCD display can be set to be permanently on; it can also only be switched on when a weight is on the scale; or it can be turned off.


- To adjust the backlight, press and hold down the  key for 6 seconds.


- The “Weight” window shows the current setting for the backlight “EL xx”.

EL Au Automatic backlight when a weight is placed on the scale or when a key is pressed.

EL OFF Switching off the backlight.


EL On Permanent activation of the backlight

- Press the  key to select the desired setting.

- Confirm with .

9.2 Scale-specific parameters





- To set the parameters, go to a saved menu. To do this, you have to enter a code.


- To set the parameter menu, press the  key during the test run of the display after switching on.

- The “Weight” window shows “PLn”: Enter your code.

- The default code is “0000”. Press  key 4 times and confirm with the  key.

Note: With the help of the parameter menu (see below) it can be changed as desired.
















- The parameter menu has 11 functions. To navigate through these functions, press the  key. The “Weight” window shows the names of the functions. To select a function, press the  key. To navigate through the values of this function, press . Press  to save the selection.

- You can press the  key at any time to return to weighing mode.

- The functions F1 CAL and F8 GrV are only reserved for specialist personnel authorised by the manufacturer.



Accidental or intentional changes to these parameters by unauthorised persons can significantly affect the scale functionality.

"Weight" display	Description
F2 DI	Sets the scale step. Press  to view the currently set value. Press the  key to scroll through the options (1, 2, 5, 10, 20 or 50). Press  to select an option
F3 CnT	_____ Displays the number of A/D conversions. Press  to return to the menu.
F4 AU	Press  to view the currently set value. Press the  key to navigate through the options. Use the  key to select: Au on For automatic totalling and printing when the scale is stable, Au oFF For manual totalling. To total data, press  . P Cont For continuous printing without totalling. The optional RS232 data interface and a connected printer are required for printing.
F5 AZN	Press  to view the auto-zero range options. Press  to view the currently set value. Press the  key to navigate through the options. The value can be set to 0.5d, 1d, 2d or 4d. Normally it is set to 1d, but it can be increased in order to zero the scale if there is a small amount of material spilled on the weighing platform during operation.
F6 PLn	Sets a new code. Press  . "____" is displayed. Enter the new code and then press the  key. "____" is displayed. Enter the code again and confirm with  . "____" is displayed: The new code was accepted. Keep the new code in a safe place for later use!
F7 SPD	Adjusts the speed of the A/D converter. The settings are 7, 5, 15, 30 and 60. The slowest settings are 7, 5 and the fastest one is 60.
F9 Off	Automatic switch-off setting. The scale can be set to switch off after 3/5/15 or 30 minutes or the switch-off can be deactivated. Press the  key to change the setting.
F10 Bep	Setting the acoustic alarm. Options: OK: Acoustic alarm sounds if the entered value is within the limit values. Low: Acoustic alarm sounds if the entered value is below the minimum value. NG: Acoustic alarm sounds if the entered value is outside the limit values. High: Acoustic alarm sounds if the entered value is above the maximum value.
F11 RSt	Resets the scale to its original state.

10. Care, maintenance and guarantee


10.1 Care and cleaning

Before cleaning, disconnect the device from the power supply. Do not use any aggressive cleaning agents while cleaning, but only a damp cloth or conventional disinfectants.

Make sure that no liquid enters the device!

10.2 Error messages

An error message may appear on the scale display during the switch-on self-test or during operation. The meaning of the error messages is described below. If an error message is displayed, switch off the scale, then switch it on again, repeat the procedure that caused the error message, and finally perform calibration or other functions. If the error message still appears, contact your customer service representative for further assistance.

Error message	Description	Possible causes
Err 4	The switch-on zero is greater than permitted (typically 4% of the maximum weighing range) when the scale is switched on or when the  key is pressed.	<ul style="list-style-type: none">– The weighing platform has already been loaded when the scale has been switched on.– Weighing platform overload when the scale is set to zero.– Improper calibration of the scale– Damaged load cell– Damaged electronics
Err 5	Keypad fault	<ul style="list-style-type: none">– Improper use of the scale.
Err 6	Wrong indication of the AD converter when the scale is switched on.	<ul style="list-style-type: none">– Weighing platform not installed– Damaged load cell– Damaged electronics
FAIL H or FAIL L	Calibration error	<ul style="list-style-type: none">– Improper calibration (should be within $\pm 10\%$ of the factory calibration). The scale will remember the previous calibration file until calibration is finished.
Err 8	Calibration error	<ul style="list-style-type: none">– Improper calibration– Unstable scale
Err 9	The scale is unstable	<ul style="list-style-type: none">– Vibrations and drafts that shake the scale– Damaged electronics

10.3 Storage and Transport Conditions

Keep all parts of the packaging in case you need to return the shipment to avoid possible damage during transportation.

10.4 Disposal



Used electrical equipment and batteries do not belong in the domestic waste.

Please dispose of defective or old products and batteries with the legal and authorised channels!



Please make sure that only discharged batteries or batteries with insulated "Poles" are disposed of as otherwise they may short-circuit!

10.5 Garantie

ADE will repair or replace this product if evidence is provided that it has failed within 1 year from the date of sale (proof of purchase is required) due to lack of workmanship or defective material. All moving parts, such as batteries, cables, etc. are excluded.

The use of accessories other than those approved by ADE, especially batteries, will void the warranty.

This warranty does not cover external normal wear and tear or damage caused by accident or misuse. The warranty will not apply for devices that have been opened by unauthorised persons. The statutory rights of the customer are not affected by this agreement in any way.

The dealer from whom the scale was purchased is responsible for complaints, customer service and spare parts.

11. Technical Data

Model:	HWZ-6	HWZ-15	HWZ-30
Maximum load:	6 kg	15 kg	30 kg
Minimum load:	20 g	50 g	100 g
Digit display:	0,1 g	0,2 g	0,5 g
Resolution	1:60.000	1:75.000	1:60.000
Tare range	-6 kg	-15 kg	-30 kg

Interface	RS232 data output (optional - cannot be retrofitted)
Stabilisation time	Typically 2 seconds
Operating temperature	-10°C ... + 40°C
Protection type	IP20
Power supply	6 DC, 4 AH, cold device power cord via 230 V power connection
Calibration	With external weight
Indicator	Three 6-digit LCD digital displays
Housing	ABS plastic housing, stainless steel weighing platform
Weighing platform	295 x 225 mm
Housing dimensions	(WxDxH) 320 x 340 x 125 mm
Net weight	3.8 kg
Applications	Multi-purpose scale with unit counting function
Weighing functions	Weighing, unit counting, totaliser, preset number of units with acoustic signal

12. Declaration of Conformity



Declaration of conformity by the manufacturer

These scales have been manufactured in accordance with the harmonised European standards. It conforms to the provisions of the EC directives cited below:

- EMC Directive 2014/30/EU
 - Low voltage directive 2014/35/EU
 - RoHS Directive 2011/65/EC
- in the currently valid versions.

This declaration will lose its validity if any modification is made to the scale without our consent.


Hamburg, November 2022


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