



## User manual EN

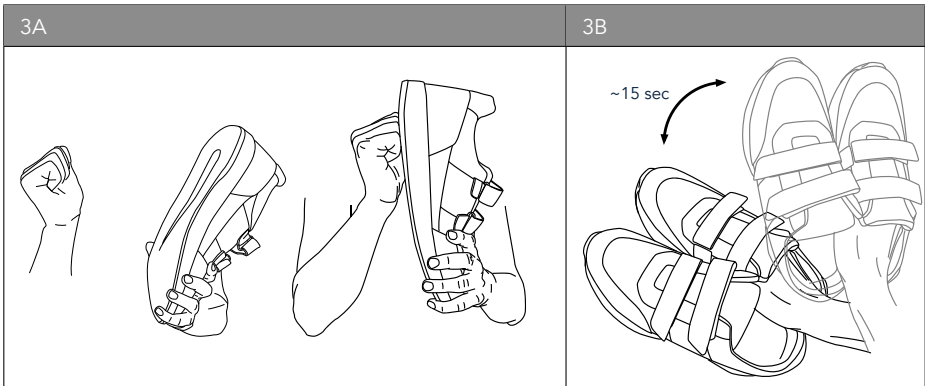
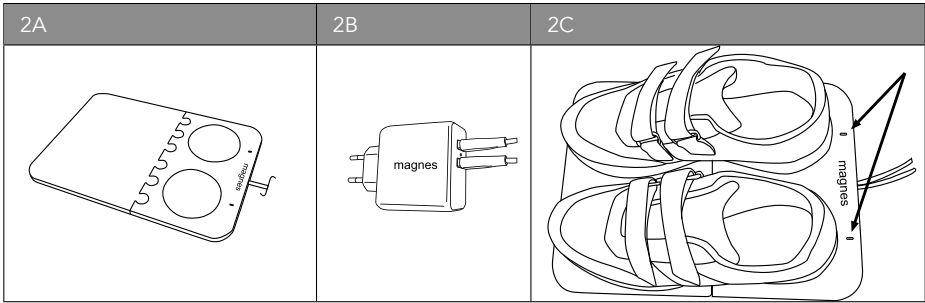
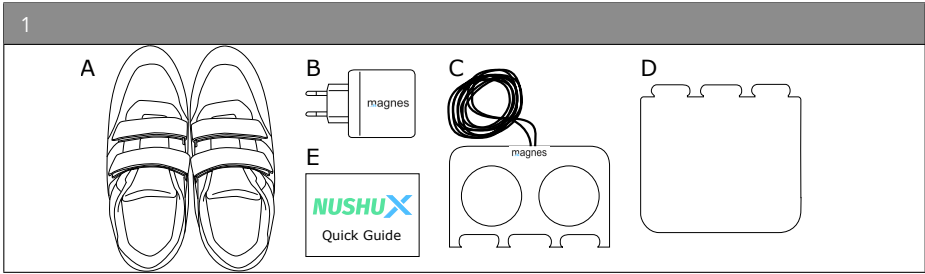
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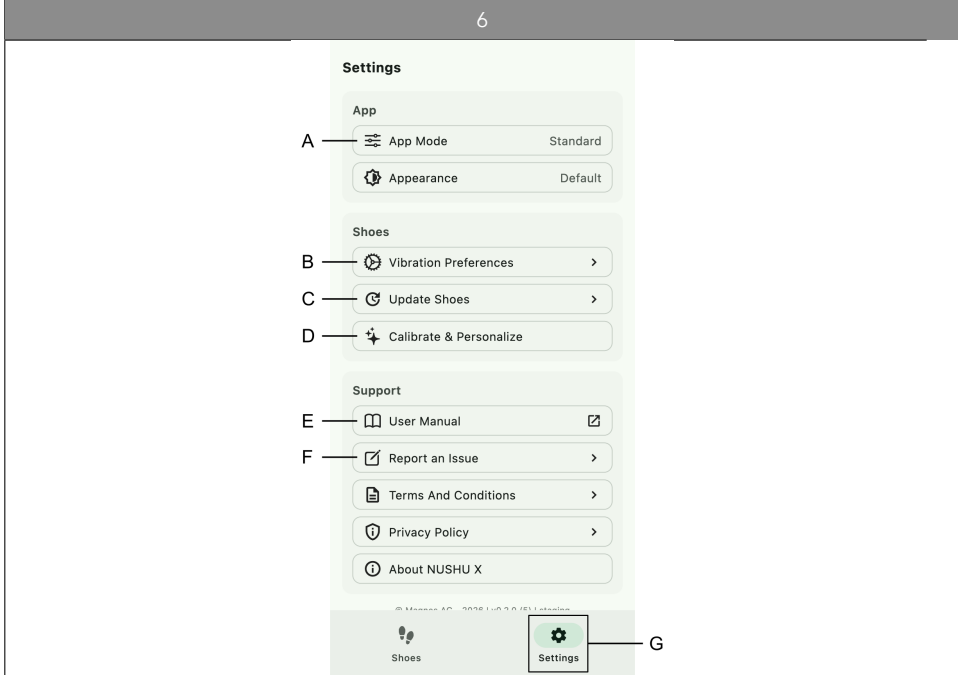
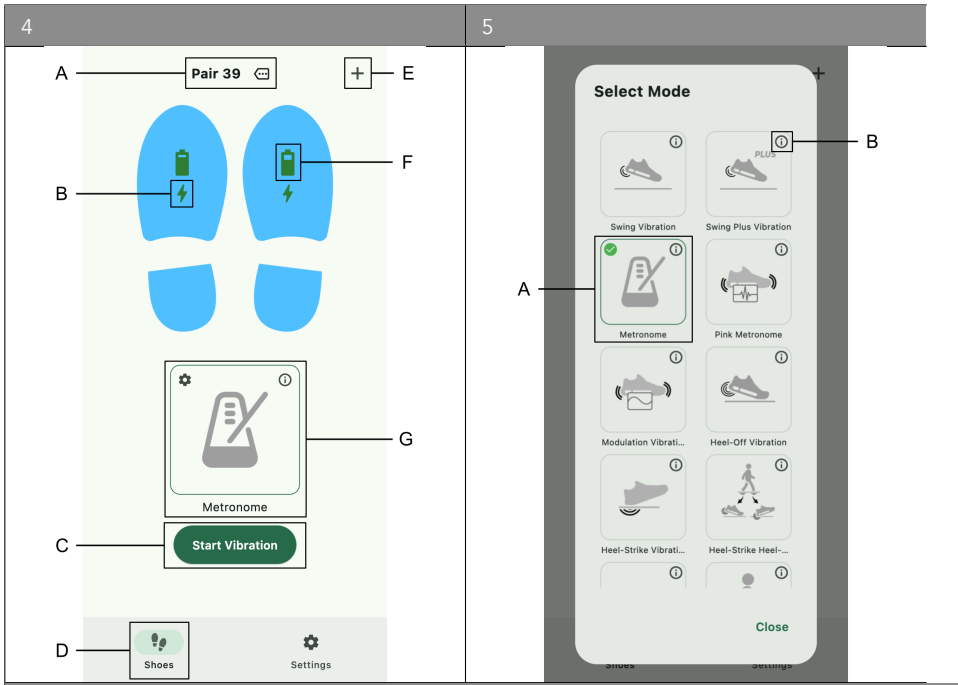
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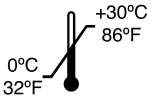

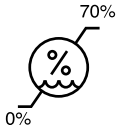
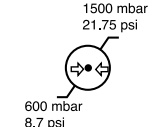
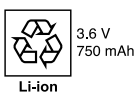



Digital version available for download



<https://magnes.ch/documents/nushu-x/>





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A		B	
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# 1 Support



For the best experience, carefully read and understand this user manual prior to using NUSHU X.

For any inquiries, please reach out to Magnes.

Email: [support@magnes.ch](mailto:support@magnes.ch)

## For Europe and rest of the world

Magnes AG, Hardturmstrasse 253, 8005 Zurich, Switzerland.

## For USA

Magnes Inc, 2261 Market Street STE 5508, San Francisco, CA 94114, USA.

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## 2 Warnings / Important Notes



Users shall report any serious incident to Magnes AG and the authority having jurisdiction in their locale.



The product is NOT intended to come into contact with bare skin or wounds. Users must wear socks when using NUSHU X.



Make sure NUSHU X are charged.



Do not use NUSHU X while they are charging.



NUSHU X shall not be exposed to loads exceeding 120 kg (264 lb).



Transport and store NUSHU X between 0°C (32°F) and 30°C (86°F).



Maximum humidity should not exceed 70%.



Do not leave your NUSHU X exposed to direct sunlight during storage.



No modification of NUSHU X is allowed.



Use with caution on slippery and wet floors.



Keep out of the reach of children.



**WARNING:** Portable RF communications equipment (including peripherals such as antenna cables and external antennas) should be used no closer than 30 cm (12 inches) to any part of NUSHU X, including cables specified by the manufacturer. Otherwise, degradation of the performance of this equipment could result.



Use of this equipment adjacent to or stacked with other equipment should be avoided because it could result in improper operation. If such use is necessary, this equipment and the other equipment should be observed to verify that they are operating normally.



**WARNING:** Use of accessories, transducers and cables other than those specified or provided by the manufacturer of this equipment could result in increased electromagnetic emissions or decreased electromagnetic immunity of this equipment and result in improper operation.



It is possible that high levels of interference due to close proximity or due to the power of a source, disrupts the operation of this device. Medical electrical devices require special precautions regarding electromagnetic compatibility and all devices must be installed and put into service in accordance with the information specified in this user manual.



Please keep the shoe box with the label for future reference.

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## 3 Product Description and Intended Use

Enjoy a new way of walking with NUSHU X, the wearable device that tracks and displays your steps and walking style on the compatible NUSHU X mobile application. This product features vibration and/or cueing modes to encourage healthy lifestyle activities and help improve or maintain a general state of good health. NUSHU X is NOT a medical device.



NUSHU X may NOT perform as expected if used outside of its intended use.



NUSHU X is NOT intended to be used for making diagnostic or therapeutic decisions.



Please stop using the shoes and talk to your healthcare (HCP), if using them causes any discomfort.

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## 4 Intended User Profiles and Use Environment

### Intended User Profiles

NUSHU X can be used by general consumers aged 12 and up.

### Intended Use Environment

NUSHU X can be used indoors and outdoors.



NUSHU X is NOT designed for high-impact activities like running or jogging.



NUSHU X is NOT designed for water sports. Avoid using NUSHU X in heavy rain or snow.

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## 5 Setup of NUSHU X

Before using NUSHU X footwear for the first time, make sure you have completed the setup and your shoes are fully charged.

### 5.1 What's in the Box

Your NUSHU X box includes: (1A) NUSHU X footwear, (1B) charging adapter, (1C) wireless charging unit, (1D) pad for wireless charging unit, (1E) this quick guide.

### 5.2 System Requirements

The NUSHU X Android app is compatible with Android devices running Android 14 or later.

### 5.3 Charge the Shoes

Assemble the two pieces of the charging unit like a jigsaw puzzle (2A).

Connect the two charging cables to the power adapter (2B). Only use the supplied power adapter.

Place the shoes on the charging station. Each heel should completely cover a round disc on the charging station (2C).

Fully charging the shoes can take up to 6 hours.

LED Light	White	Green
	Status	
SLOW flashing	Charging	Charging
QUICK flashing	NOT Charging	NOT Charging
OFF	Fully Charged	—
ON	—	Fully Charged



Do not charge the shoes while wearing them.



If the LED is blinking very fast, the shoes are not positioned correctly onto the charging station.



For the best experience and to preserve the battery life of the shoes, charge the shoes every night, if you wear them daily. Otherwise, we recommend that you fully charge the shoes at least once a month.

## 5.4 Turn ON Your Shoes

NUSHU X shoes can be turned ON by gently shaking them from side to side for at least 15 seconds (3B). The shoes vibrate twice when they power ON.



If the shoes do NOT vibrate, the battery may be low. Charge the shoes for at least 15 minutes and try again.



If the shoes do not turn ON, they may be in deep sleep. Follow the instructions on page 12 to wake them up from deep sleep.

## 5.5 Connect Your Shoes to the Mobile App

In the app, select the + symbol (4E) in the upper right corner of the screen.

Select the correct shoe size. You automatically return to the main menu.

The shoes will appear as connected on the home screen (4F).



Make sure to activate Bluetooth on your mobile device.



If the shoes do NOT appear, they are either switched off or low in battery. Either wake them up and press Scan or recharge and try again.

## 5.6 Turn OFF Your Shoes

If connected to the app, turn off your shoes by closing the NUSHU X app. The shoes will automatically power OFF after 5 minutes of inactivity.

See page 12 for ways to turn OFF your shoes manually.



Always close the NUSHU X app to avoid draining your phone's battery.

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## 6 Using NUSHU X

The home screen indicates the battery level (4F) and if the shoes are charging (flash symbol, 4B).

Select the vibration tile (4G), scroll and select the desired vibration (5A). For more information click on (i) (5B).

To start the vibration, click on the **START VIBRATION** button (4C).

### 6.1 App Modes

The app offers two different modes:

**Standard Mode** Streamlines the app experience by hiding less frequently used functionalities, making it more user-friendly.

**Advanced Mode** Unlocks the full range of app features, providing access to all available settings. At present, this primarily impacts the selection of vibration modes.

To select Advanced Mode, go to **Settings** (6A) and select **App Mode**, then **Advanced**.

### 6.2 Vibration Modes

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*The following vibration modes are available in Standard Mode.*

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No Vibration

Use the shoes without vibration



Metronome Vibration

Vibrate at regular intervals. The frequency and the preferred side (left, right, both) can be adjusted.



Swing Vibration










Vibrate when the foot is in the air, from toe off to heel strike (swing phase).



Swing Plus Vibration

Vibrate when the foot is in the air, from heel off to heel strike (swing phase). Similar to 'Swing Vibration' with an earlier onset.

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	Heel Off (HO) Vibration	Vibrate when the foot leaves the ground (heel off).
	Ground Vibration	Vibrate when the shoes are in contact with the ground.
<i>The following vibration modes are only available in Advanced Mode.</i>		
	Heel Strike (HS) Vibration	Vibrate when the foot hits the ground (heel strike).
	HS-HO Vibration	Vibrate when the foot hits the ground (heel strike) and when it leaves the ground (heel off).
	Load Vibration	Vibrate when the load on the heel is higher than a set threshold.
	Unload Vibration	Vibrate when the load on the heel is lower than a set threshold.
	Length Vibration	Vibrate when the detected step length is either longer or shorter than a set threshold, depending on the selected mode.
	Pink Metronome Vibration	Vibrate at semi-regular intervals, where each interval is slightly different. The frequency and the preferred side (left, right, both) can be adjusted.
	Modulation Vibration	Vibrate continuously in a wave-like pattern where the vibration strength smoothly changes between minimum and maximum intensity. The frequency and the preferred side (left, right, both) can be adjusted.

### 6.3 Set Vibration Preferences

From the home screen, navigate to Settings/Vibration Preferences.

#### Vibration Intensity

Set your preferred vibration intensity by moving the slider. Click **Start Vibration** to test and **Stop Vibration** to end it. The intensity applies to all vibration modes.

## Metronome Variants

Set your preferred vibration frequency (beats per minute) by moving the slider.

Expand the drop-down arrow to set the active side to **Left**, **Right** or **Both**. The default is **Both**.

## Length Vibration

Set your preferred vibration length in centimeters. Apply to the other side with **Match Values**.

Set the mode via the drop-down arrow to:

**Affirmative** The shoes vibrate when you reach your preferred step length.

**Corrective** The shoes vibrate when your step is shorter than your preferred length.

## Load/Unload Vibration

Put on your shoes and connect them to the app. Adjust the sliders to manually change the percentage of weight on a given foot to trigger the vibration. Apply to the other side with **Match Values**.

Click on **Calibrate & Personalize** to calibrate your shoes for optimal use with the Load/Unload Vibration.

Confirm with **Start** in the pop-up message.

Follow the instructions and click **End Calibration** on the calibration screen, once you are done.

## 6.4 Update the Shoes

Your shoes are running firmware which is reading the sensors, driving the vibration motors, and handling communication and storage. The firmware can be updated over the air.

Go to **Settings** (6F) and **Update Shoes** (6C).

If a new version is available, press **Update**. The update may take several minutes.

At least 20% of battery is needed to update the shoes.



Make sure to activate your cellular network with internet access or Wi-Fi.

## 6.5 Additional Shoe Controls (Quick Actions)

Tap on the **three-dot** button next to the **shoe name** at the top of the screen (4A) for the following quick actions:

**Reboot** This setting turns your shoes off and immediately on again.

**Sleep** This setting puts your shoes into sleep mode. To wake them up, gently shake them from side to side for at least 15 seconds (see page 9).

**Deep Sleep** This setting puts your shoes into deep sleep mode, making them less likely to wake up while traveling. To wake them up, firmly tap the heels of your shoes (see below).

**Reset Shoes** This setting restores the shoes to default settings. It may help if you experience faulty behavior of your shoes or trouble downloading data.

## Wake Up the Shoes from Deep Sleep

To wake up the shoes from deep sleep mode, follow these steps:

1. Hold one shoe upright with the heel on top. Strongly hit your fist against the sole of the shoe to turn it ON (3A). If this is too difficult or the shoe does not turn ON, you can also hold the shoe at the front and hit the heel of the shoe on the floor. One tap at a time is enough, wait for 10–15 seconds.
2. The shoe vibrates twice as soon as it turns ON. If the shoe does not vibrate, tap again. Repeat with the second shoe.



If the shoes do NOT vibrate, the battery may be low. Charge the shoes for at least 15 minutes and try again.



The shoes go back to deep sleep if no connection is established within 2 minutes from wakeup.

## 6.6 Cleaning and Maintenance

Clean the NUSHU X shoes regularly. Remove any dirt with a damp cloth (dampen cloth with ambient temperature tap water) and let them air dry. Spray the inside of the shoes with a shoe disinfectant after each use, if multiple users are using the shoe.



Do not use any detergents. Do not machine wash. Do not use sharp utensils. Do not dry shoes in direct sunlight, oven, and/or microwave.

The maintenance of NUSHU X must not be carried out by the user. In case of a malfunction, please contact the distributor or the manufacturer (see page 6).



Device contains a Lithium-Ion battery. Dispose the device in accordance with EC Directive – WEEE (Waste Electrical and Electronic Equipment).

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## 7 Troubleshooting

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Problem	Cause	Action
Shoes not detected	Bluetooth inactive on mobile device	Turn on Bluetooth on your mobile device. Also ensure that Bluetooth is permitted in the app settings of your phone for the NUSHU X app.
Shoes not detected	Battery is empty	Fully charge your shoes.
Shoes not detected	Electromagnetic interference	Try using your shoes in a place free of other Bluetooth and wireless devices.
Shoes do not connect	Shoes in sleep mode	Shake the shoes side to side for 15 seconds to wake them up (see page 9).
Shoes do not wake up	Shoes in deep sleep mode	Strongly tap the heel of the shoe against your hand or fist and wait for 10–15 seconds (see page 13).
Server cannot be reached	No or bad internet connection	Check mobile data or Wi-Fi internet connection.
Cannot connect to the NUSHU-xxxx network	Connection issue	Retry to connect. If the problem persists, try one of the following: close the app completely and reopen it, reboot the shoes (see page 12), check if they are up-to-date (see page 12), and/or check the app permissions.
Firmware update does not start	No local network permission	Ensure that Local Network is permitted in the app settings of your phone for the NUSHU X app.

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## 8 Regulatory and Safety Notices

### 8.1 FCC Compliance Statement

This device complies with Part 15 of the Federal Communications Commission (FCC) Rules.

Model: NUSHU X

FCC ID: 2BDTE-NUSHU1V1

Operation is subject to the following conditions:

1. This device may not cause harmful interference and
2. This device must accept any interference, including interference that may cause undesired operation of the device.

### FCC Warning

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

**Note:** This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Users reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

### 8.2 EU Declaration of Conformity

Hereby, Magnes AG declares that the product NUSHU X is in compliance with 2014/30/EU Electromagnetic Compatibility Directive. The full text of the EU declaration of conformity is available at the following internet address:

<https://backoffice-main.magnes.ch/wp-content/uploads/2024/03/nushu-x-declaration-of-conformity.pdf>

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## 9 Warranty

NUSHU X has a limited warranty of 2 years from the date of purchase. During the warranty period, should this product prove to be incomplete or defective in functionality in accordance with the provisions given in the user manual, Magnes AG shall carry out a repair or a replacement delivery free of charge. The warranty covers manufacturing defects and DOA (dead on arrival) cases. Defect products shall be returned to the return address specified below for further inspection. In no case shall the user modify the devices in any way (or even just try to do so). Any such action will void the warranty. Instances of force majeure are beyond the scope of this warranty. For disputes, Swiss law shall apply.



Return address: See page 6.

The following are explicitly excluded from this warranty:

- Deterioration due to normal use or consumption of the product.
- Accessories supplied with the product which are worn out or used up through proper use (e.g., shoes, rechargeable batteries).
- Products that are stored, used, or cleaned improperly or contrary to the provisions of the user manual.
- Products modified or repaired by the customer or by a service center not authorized by Magnes AG.
- Products that are damaged during shipping between manufacturer/service center and customer

Subject to change without notice.

## 10 Technical Specifications

NUSHU X	Lifetime	24 months
	Gait events accuracy	Heel Off, Flat Foot: 36 ms Toe Off, Heel Strike: 8 ms
	Gait parameters	Gait velocity: 0.06 m/s
	Power supply/capacity	Li-ion battery 3.7 V, 750 mAh IEC 62133-2:2017
	Storage capacity	32 GB (~ 600 h of data recordings)
	Wireless communication	BLE IEEE 802.11b/g/n (Wi-Fi)
	Wireless connection power	BLE: 3 dBm Wi-Fi: 19.5 dBm
	Battery charging rate	Regular: 260 mA Precharge (low voltage): 52 mA
	Unit weight	40 g for each side
	Water and dust proof rating	IP22 Protection against objects and particles > 12.5 mm and dripping water when tilted at 15°.
		The device conforms with the European health, safety, and environmental protections standards.
		Contains FCC-ID: 2BDTE-NUSHU1V1
Charging Station	Mains voltage	110 – 240 V at 50 – 60 Hz
	Valid inputs	5 V/3.0 A   9 V/2.0 A   12 V/1.5 A
	Output power	15 W each pad – 30 W total
	Compatible wireless charging standard	Qi

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## 11 Explanation of Symbols Used

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7A	Important safety or operating instructions	7B	Read the user manual
7C	Do not dispose in household waste	7D	Serial number
7E	European conformity	7F	Federal communication commission
7G	Dust- and water-proof rating	7H	Keep away from rain
7I	Maximal applicable load	7J	Transport and storage temperature
7K	Humidity limitation	7L	Atmospheric pressure limitation
7M	Manufacturer	7N	Battery disposal information
7O	Mains electricity is double insulated	7P	Indoor use only
7Q	Keep out of reach of children		

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