

# User Manual – G5 Smart Brushless Motor

Última actualización hace 21 días • 12 min de lectura


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## General information

Revolutionary **G5 Smart Brushless Motor** – the world's first brushless motor programmable via GCS mobile app exclusively with GATE **TITAN II** or **ASTER II Bluetooth®**! Thanks to GCS app you get precise adjustment of speed ranging from **10k to 46k RPM**.

**Torque adjustment** gives you the ability to adjust torque to your gearbox configuration. **Soft Start** extends the life of the gearbox's internal parts, including the gears, meanwhile, **Fast Start** gives you the quickest possible trigger reaction.

You can change settings even during gameplay, without an additional programmer. What's also unique is that the motor has a built-in anti-reversal mechanism, significantly improving the gearbox's performance. Say goodbye to the problematic standard anti-reversal latches and enjoy quieter operation and even more accurate pre-cocking adjustments. The motor's extremely fast startup ensures an instantaneous trigger response, while its high efficiency reduces battery consumption and motor temperature. High torque enables compatibility with the most demanding replica configurations, and the adjustable rotational speed ensures perfect adaptation to almost any gearbox configuration.


 The information contained in this document is subject to change without notice.

 Read carefully before use the whole manual. Keep for future reference.

 Failing to read this information may void the guarantee!

 When using the product, always follow basic safety rules to reduce the risk of injury from fire or electrical shock.

## Recommendations

 We recommend installing sliding bushings on the middle gear. They can withstand significantly higher stresses than ball bearings.

## Device Structure



1. CNC housing
2. Motor power connector minus "−"
3. Motor power connector plus "+"
4. Compression spring
5. Pinion gear
6. Electronics cover

## Kit Contents


- G5 Smart Brushless Motor





## Safety Summary


Please read this to ensure safe and correct use. Retain this information for future reference. The information contained in this document is subject to update without notice.

For your safety, this product should be installed by a skilled person.

 **Warning**  
Situations that may cause injury to yourself or others.

 **Caution**  
Situations that may cause damage to your device or other equipment.

 **Note**  
Notes, usage tips or additional information.

 **Warning**  
This device is not a toy and may not be operated by people (including children) with limited physical or mental abilities, as well as by people with no earlier experience in operation of electronic equipment. They may use the device only under the supervision of people responsible for their safety.

**Warning**

Before starting the installation process, make sure that your AEG magazine is empty and there are no BBs inside.

**Warning**

This equipment is not suitable for use in locations where children are likely to be present.

**Warning**

Persons under 18 years of age ought not stay unattended near the device during the installation or servicing of a device installed in an ASG replica.

**Warning**

Persons under 18 years of age ought not stay unattended near the device installed in an ASG replica ready for use.

**Warning**

Persons under 18 years of age are not allowed to install or commission the device in an ASG replica.

**Warning**

Persons under 18 years of age are not allowed to service this device.

**Warning**

Do not store or carry flammable liquids, gases or explosive materials in the same compartment as the device, its parts or accessories.

**Warning**

Take caution to prevent short-circuiting the battery as the consequences may be very dangerous to the health of the user.

**Warning**

When an airsoft replica is not in use, its battery must be disconnected and the hop-up chamber must be empty.

**Warning**

While handling an AEG replica with a connected battery, anyone within the range of the replica must wear personal protective equipment.

**Warning**

When an airsoft gun is not in use, its magazine must be detached or kept empty with no BBs inside.

**Warning**

Incorrectly connecting positive and negative battery terminals will cause immediate damage to the device, which is not covered by warranty, and can lead to fire.

**Warning**

Pay attention to correctly connect positive and negative wires to the battery. Make sure you are connecting the positive terminal of the battery to the red wire of the device, and the negative terminal of the battery is connected to the black wire of the device. Incorrect power polarity may result in damage to the device and could even lead to fire or battery explosion.



### ⚠ Warning

Incorrect connection of the motor connectors to the motor will result in immediate damage to the motor, which is not covered by the warranty and may lead to a fire.

### ⚠ Caution

For your own safety you ought to use an additional fuse between the battery and the device.

### ✅ Note

The product Warranty Form is available here: <http://www.gatee.eu/warranty>.



## Installation

### ⚠ Caution

Regardless of your previous experience, follow all safety precautions.

### ✅ Note

In case you have any difficulties while installing or using this product:

- contact us via <https://help.gatee.eu>
- send us an email: [support@gatee.eu](mailto:support@gatee.eu)
- join [GATE Airsoft Community Discord Server](#)



## Installation of the G5 motor in the replica

1. Prepare the replica where you will install the G5 Brushless Motor.
  - If the replica is equipped with the **ASTER II Bluetooth®** or **TITAN II Bluetooth®** unit, you can proceed directly with the motor installation. You will be able to fully utilize the capabilities of the G5 motor.
  - For other ETUs, you will not be able to **configure** the motor via the **GCS application**.
2. Optional installation of the **TITAN II Bluetooth®** or **ASTER II Bluetooth®** unit. Install the **TITAN II Bluetooth®** or **ASTER II Bluetooth®** unit according to the instructions to fully utilize the capabilities of the G5 motor:
  - [TITAN II Bluetooth® installation guide](#)
  - [ASTER II Bluetooth® installation guide](#)
3. Unscrew the pistol grip cover and remove the old motor.
4. Place the G5 motor in the pistol grip.

### ⚠ Caution

Make sure the wires are not in the area of the hole through which the motor gear passes. If necessary, change the wire positioning.

5. Connect the motor wires of the unit to the motor connectors according to their polarization markings:
  - Red wire “+” to red connector “+”.
  - Black wire “-” to black connector “-”.

### ⚠ Caution

Do not bend the motor connectors, as this may cause permanent damage, which is not covered by the warranty.

6. Check if you can push the motor into the pistol grip.

### ✅ Note

If you encounter any issues, follow these steps:



- Change the wire arrangement in the pistol grip.
- Remove the motor, rotate the pinion gear by a few teeth, and then reinstall the motor.

7. Unscrew the adjustment screw from the pistol grip cover.

8. Check if the pistol grip cover fits freely into place – place the grip cover, making sure the wires are not pressed by the cover.

✔ **Note**

The pistol grip cover should easily fit and screw into place. If you encounter difficulties, follow these steps:

- Change the wire arrangement in the pistol grip.
- Remove the motor, rotate the pinion gear by a few teeth, and then reinstall the motor.
- If necessary, modify the grip cover to make room for the wires and motor.

9. Screw the pistol grip cover into place.

10. Screw the adjustment screw into the grip cover. Use it to adjust the motor in the pistol grip:

- Slowly tighten the adjustment screw until you feel resistance (be careful not to strip the threads).
- Loosen the screw by about 1/1.5 turns to allow the motor to move freely on the gear.
- Secure the adjustment screw threads to prevent it from loosening.

⚠ **Caution**

The self-loosening of the screw may cause damage to the pinion gear or the bevel gear in the gearbox.

11. The motor has default settings and is ready for use. To precisely adjust its parameters, connect it to the GCS app.

✔ **Note**

Default settings of the G5 motor:


- Rotation speed - **30000 RPM**
- Torque - **moderate**



## First connection of the G5 motor in the GCS app:

✔ **Note**

The instruction pertains to connecting the motor to the **TITAN II Bluetooth®** or **ASTER II Bluetooth®**.

1. Download and install or update the GCS app on your device from  **GATE CONTROL STATION**

- **Android** – version **1.30.0** or later
- **iOS** – version **1.22.0** or later

⚠ **Caution**

The development of the **GCS** app for **macOS** and **Windows** is currently suspended, so new features are not available on these platforms. We recommend using the **GCS** app on **Android** and **iOS** devices.



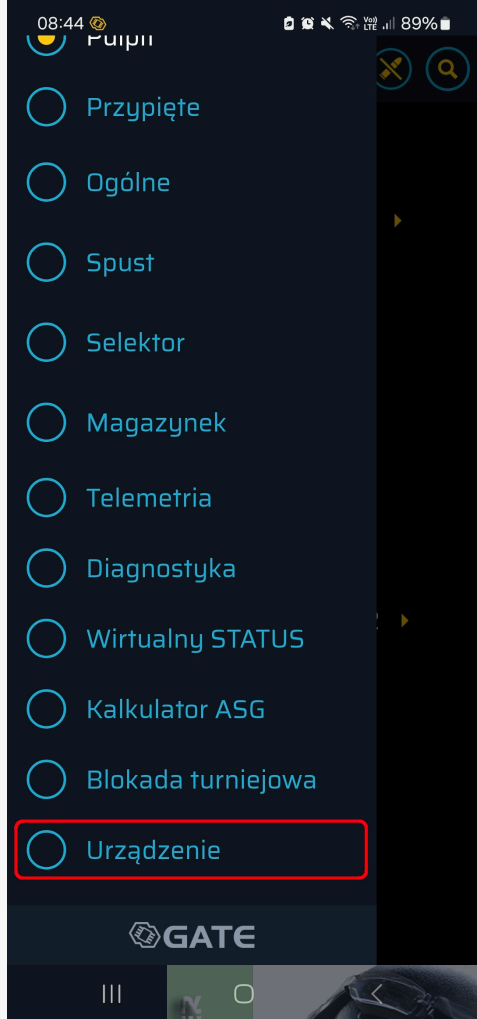
Windows™ | macOS™  
Android™ | iOS™

2. Turn on **Bluetooth**® communication on your device.
3. Connect the battery to the unit.
4. Launch the GCS app and accept all required permissions.
5. Tap “+” on the app’s home screen.
6. Find your unit on the device list.
  - If the unit does not appear on the list, pull the screen down to refresh the list, or select the **“Refresh scan”** option
7. Scan or manually enter the PIN code found on the included stickers.
8. Update the firmware of your ETU:
  - **TITAN II Bluetooth** version **0.1-90** or later
  - **ASTER II Bluetooth** version **0.1-10** or later

⚠ **Caution**

**The first generation** of ASTER and TITAN systems does not support the configuration of the G5 Brushless Motor.

9. Open the **“This Device”** tab.

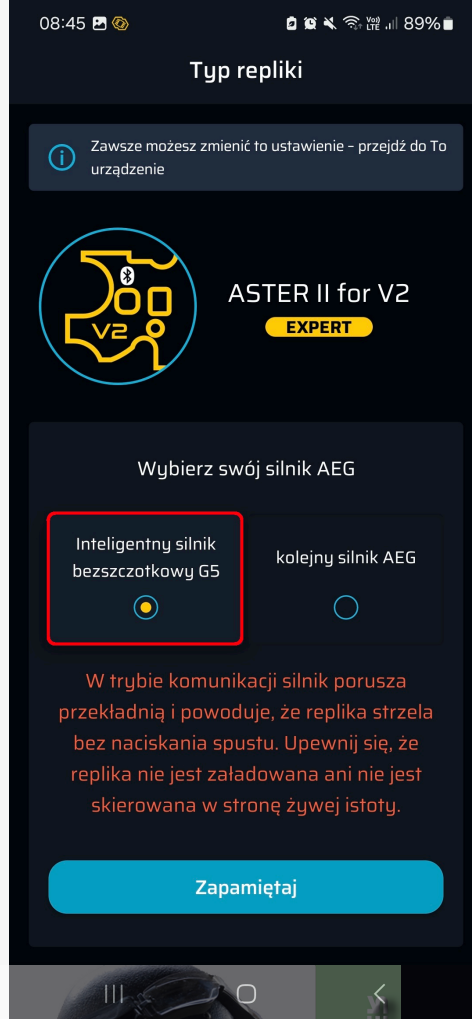


10. Select the "Replica Type" option:

a. Click „AEG”

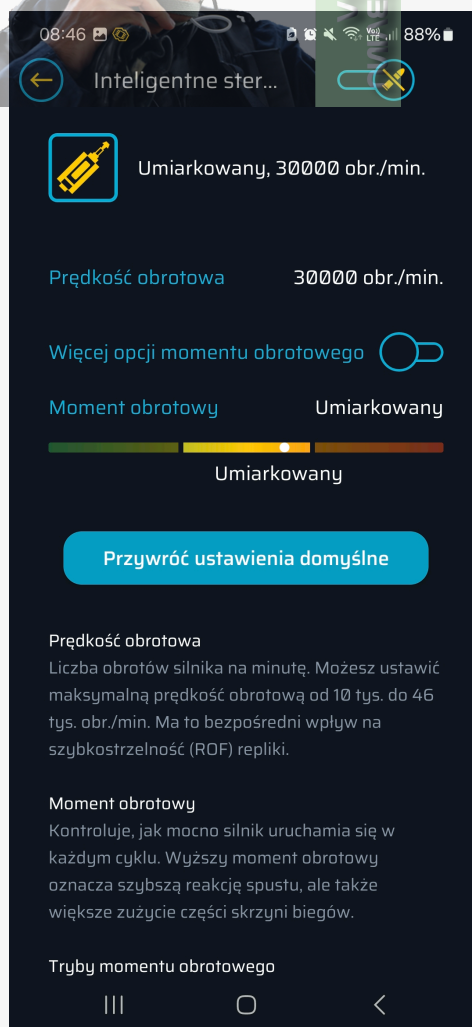
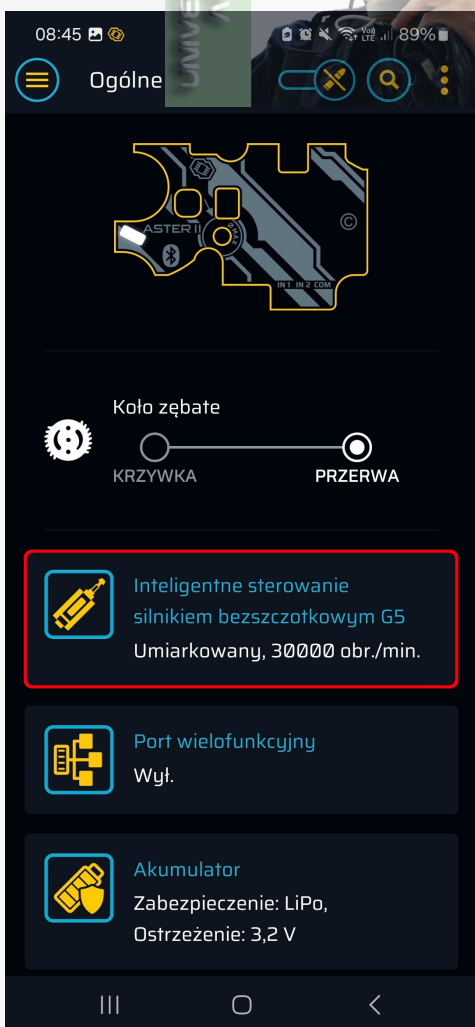
b. Select „G5 Smart Brushless Motor”





11. Go back to the "General" tab

12. Click "Smart Brushless G5 Motor Control".



## G5 Motor Configuration

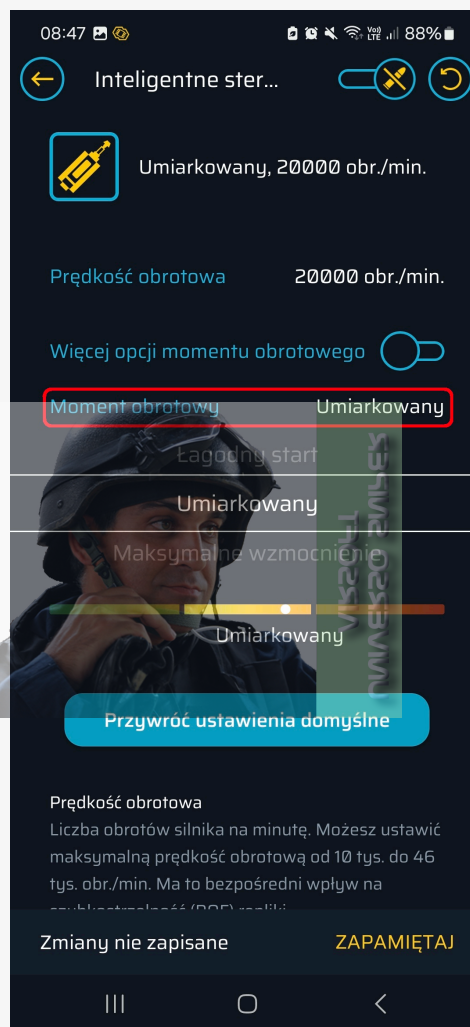
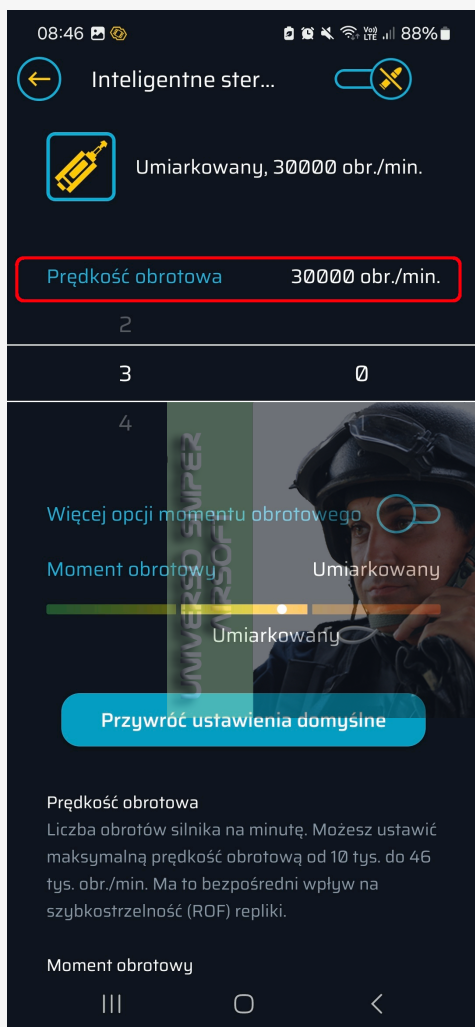
### ⚠ Caution

In communication mode, the motor may move the gearbox and tension the spring, which could result in a shot being fired. Before use, make sure the replica:

- Is unloaded.
- Is not aimed at any living being.
- Is not aimed at valuable property.

1. Go to the **"Smart Brushless G5 Motor Control"** tab.

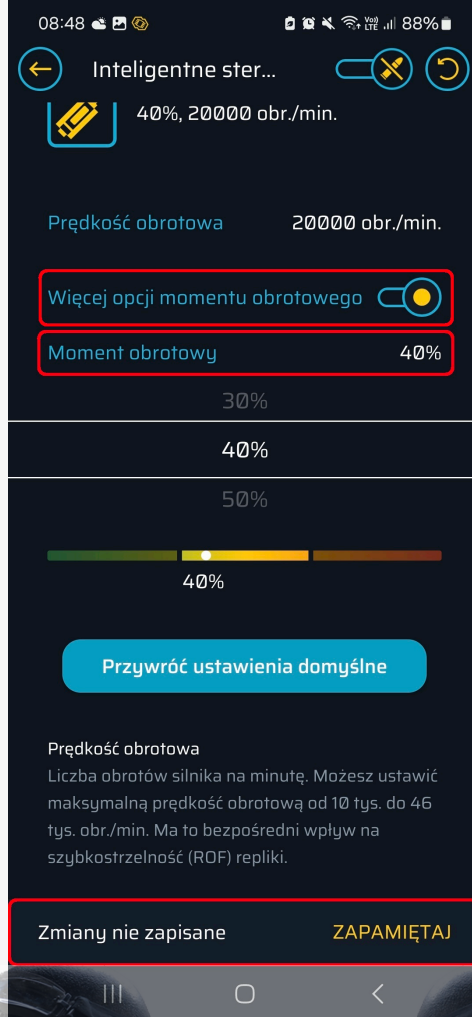
2. Select the motor's **rotation speed** and **torque**.



3. Advanced settings:

a. If you want to fine-tune the motor's torque, click **"More torque options"**.

4. You can set the torque with an accuracy from **10% to 100%**, in **10%** increments.



5. Save the changes by clicking "SAVE".

## Recommended values

In standard replicas, we recommend **not exceeding** the default motor values:

- Rotation speed - **30000 RPM**
- Torque - **moderate**

### ⚠ Caution

Exceeding these values may result in damage to the internal parts of the gearbox. Using values higher than recommended **is at your own risk**.

GATE Enterprise is not responsible for damage to other mechanical or electronic parts that result indirectly from damage to other components of the gearbox.

## Restoring the default settings of the G5 motor

### ✓ Note

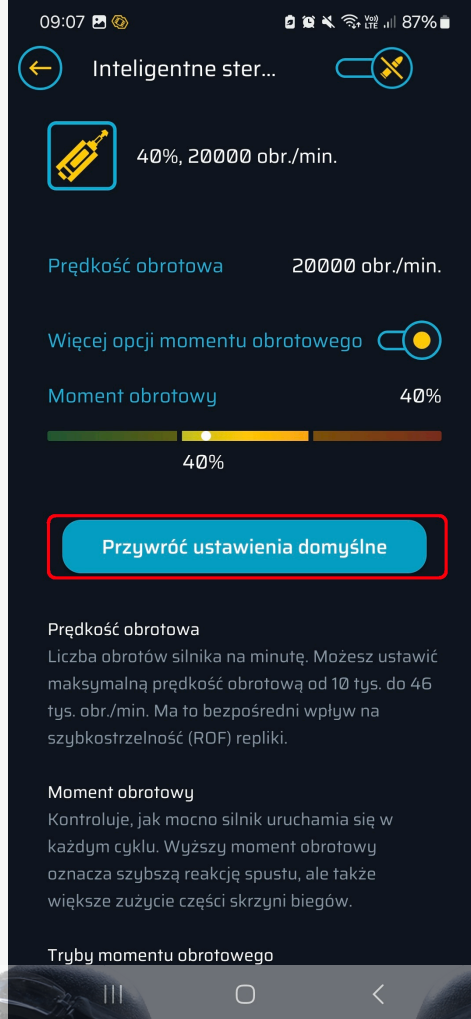
Restoring the default settings will set the following values:

- Rotation speed - **30000 RPM**
- Torque - **moderate**

Restoring the default settings is possible after connecting the **G5 brushless motor** to the GCS app. Follow these steps:

1. Launch the GCS app and connect it to the selected ASTER II Bluetooth® or TITAN II Bluetooth® device that is connected to the G5 motor.
2. Go to the "**General**" tab.
3. Click "**Smart Brushless G5 Motor Control**".
4. Select "**Restore Default Settings**".





5. Save the changes by clicking "SAVE".

## Troubleshooting

The ROF of my replica does not increase after increasing the motor's rotation speed

- Disable the ROF control in the "Trigger" tab.
- The motor has reached the maximum adjustment capabilities for your configuration.

## Connection error

- Make sure you have the latest version of the GCS app and the firmware of your TITAN or ASTER system installed.
- Ensure that the motor connectors are properly connected.
- Gently tighten the motor connectors to ensure a secure connection. Do not use excessive force to avoid damaging the connectors of the TITAN or ASTER unit.
- If any of the connectors are damaged, replace them with the connectors included in the TITAN or ASTER installation kit.
- If the error persists, contact us at [support@gatee.eu](mailto:support@gatee.eu).

## I cannot configure the motor using a 14.8 V battery

The GATE G5 motor can only be configured with 3-cell batteries with a nominal voltage of 11.1 V. Configuration with a 4-cell battery is **not possible**.

## Technical specifications for 11.1 V

**The design and production of the device is based on harmonized standards.**

<b>Power supply voltage range</b>	6-16.8 V
<b>Dimensions (length x width x thickness)</b>	88.5 mm x 29.5 mm x 25 mm

<b>Weight of the finished product</b>	141 g
<b>AT NO LOAD</b>	
<b>Speed</b>	45 800 RPM
<b>Current</b>	3.2 A
<b>AT MAXIMUM EFFICIENCY</b>	
<b>Efficiency</b>	75.9%
<b>Speed</b>	40 987 RPM
<b>Torque</b>	500 G/CM
<b>Current</b>	24.9 A
<b>Output</b>	205 WATTS
<b>AT MAXIMUM POWER</b>	
<b>Efficiency</b>	48.4%
<b>Speed</b>	22 950 RPM
<b>Torque</b>	2334 G/CM
<b>Current</b>	105 A
<b>Output</b>	519 WATTS



## Legal Notice

Please read the Legal Notice before operating your device and keep it for future reference. This document contains important terms and conditions with respect to your device. By using this device, you accept these terms and conditions.

## Exclusion of Liability

GATE Enterprise sp. z o.o. sp. k. is not liable for any damages, injuries or accidents of any kind resulting from the use of this product or airsoft gun with the product installed, including (but not limited to) incidental or special damages to airsoft gun, airsoft gun parts, batteries and gearbox internals.

## Disclaimer

GATE Enterprise sp. z o.o. sp. k. takes no responsibility regarding compliance of the product with the requirements of any law, rule or airsoft restrictions pertaining thereto.

## Intellectual Property

Intellectual Property owned by GATE Enterprise sp. z o.o. sp. k., including but not limited to, devices, accessories, parts, software, documentation, is proprietary to GATE Enterprise sp. z o.o. sp. k. and protected under Polish laws, EU laws, and international treaty provisions. You may not violate the rights of the Intellectual Property and you will not prepare derivative works of or reverse engineer the device or software. No ownership in the Intellectual Property is transferred to you.

## GATE Limited Warranty Policy

GATE Enterprise sp. z o.o. sp. k. warrants that its Product is free from manufacturing and material defects at the date of purchase and for a period of two (2) years from the date of purchase and it is nonextendable. This Limited Warranty is conditioned upon proper use of Product by Purchaser.

This Limited Warranty is valid provided that the owner provides a proof of purchase and properly completed warranty form.

This Limited Warranty does not cover: (a) defects or damage (e.g. mechanical, thermal or chemical) resulting from accident, misuse (misinterpretation of the instructions), abuse, neglect, unusual physical, electrical or electromechanical stress, water immersion, repairs or structural modification of any part of Product, or (b) the Product that has its serial number removed or made illegible; (c) defects or damage from improper operation, maintenance or installation, (d) installation of the products.

Requests for warranty are processed as soon as possible, not exceeding seven (7) working days. The company's obligation under this Limited Warranty shall be limited to providing replacement of parts only.

The color of the product may vary slightly depending on the batch.

## Product Disposal Instructions

The symbol shown here means that the product is classified as Electrical or Electronic Equipment and should not be disposed with other household and commercial waste at the end of its working life. The Waste of Electrical and Electronic Equipment (WEEE Directive 2012/19/EU) has been put in place to recycle products using best available recovery and recycling techniques to minimize the impact on the environment. Purchasers shall take any old electrical equipment to waste recycling public centres or points of sale.



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👍 Aún no le ha gustado a nadie