MOECO MGT1301 Global Sensor User Manual

Contents

Moeco

MOECO MGT1301 Global Sensor

GLOBAL SENSOR MGT1301

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- Moeco IoT Inc. | 440 N Wolfe Road, Sunnyvale, CA, 94085 USA |moeco.io
- **Legal Information**

Liability disclaimer

Moeco IoT, Inc. (hereinafter Moeco) will not be held liable for damage resulting from failure to comply with the instructions and warnings provided in this document. Moeco reserves the right to revise this document at any time under no obligation to notify any person of the revision.

LEGAL INFORMATION

Liability disclaimer

Moeco IoT, Inc. (hereinafter “Moeco”) will not be held liable for damage resulting from failure to comply with the instructions and warnings provided in this document. Moeco reserves the right to revise this document at any time under no obligation to notify any person of the revision.
User shall observe all pertinent state, regional, and local safety regulations when installing and using this device.
The information provided in this document contains general description and technical characteristics of the device as well as instructions addressed to the user of the device.
Failure to observe these instructions can lead to the damage of the device described in this document.

Copyrights

Trademarks

Moeco has strived to provide trademark information about company names, products, and services mentioned in this document. All trademarks are the property of their respective owners.

Compliance

EU Declaration of Conformity

The device complies with the following EU directives:

- 2006/95/EC – Low Voltage Directive
- 2011/65/EU – RoHS Directive
- 2014/53/EU – Radio Equipment Directive

Federal Communications Commission (FCC) Notice
This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

NOTE! Changes or modifications not expressly approved by Moeco IoT Inc. 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:

- 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.

Radio Frequency Notice
This device has been tested and certified to not exceed the specific absorption rate (SAR). It is a threshold at which, depending on the duration of exposure, RF exposure and the accompanying temperature rise can lead to serious health effects.
The device is intended for use at the distance of no less than 20 cm from the body.
You can find more information about SAR here:

- **fcc.gov**
- **icnirp.org**
- **ec.europa.eu**

Company legal address
Moeco IoT Inc.
440 N Wolfe Road, Sunnyvale, CA, 94085 USA

PREFACE

User description
This document instructs users on how to safely set up, use, store, troubleshoot, and dispose of the device.
The user shall study all the included information before using the device. The device may only be used as described in this document and for the specified application scenarios.
This device is restricted for use under the age of 16.

Conventions
The following style conventions are used in this document:

Retaining information
Read and understand this document before using the device. Failure to do so can result in damage to the device or its misuse.
The device can be operated by a person who, having read this manual:

- Has memorised the safety information
- Has understood the technical contents and correctly interpreted drawings and diagrams

Keep all instructions for future reference and pass them on to subsequent users of the device if necessary.

Obtaining documentation
The latest version of the documentation is available at the following address: https://docs.moeco.io/

Feedback
Here at Moeco IoT Inc. we are constantly working on improving user experience. Your feedback will help us deliver the best documentation to you. Please send your comments to feedback@moeco.io.

DESCRIPTION OF THE DEVICE

Moeco MGT1301 is a sensor for monitoring shipments during transportation. It is attached to the cargo like a sticker.

Fig. 3.1: The MGT1301 device

The collected data is sent to the Moeco online platform. The platform lets you see the device on the map, view cargo parameters in real time, export the data, and manage the device itself.

NOTE! The device erases its memory after the platform has received the data.

If any measured parameter exceeds the threshold, the platform alerts you by email or SMS. You can set thresholds in the Moeco platform.
The device does not require reverse logistics. It can be easily disassembled and disposed of on arrival.

Monitoring shipments
While cargo is in transit, the device's built-in sensors keep track of the following parameters:

- Route
- Shocks

- Position
- Ambient temperature
- Relative humidity
- Ambient light intensity

Flight mode
To prevent any intentional emissions during the flight, the device enters ‘flight mode’. This does not require manual intervention.
The device is equipped with acceleration and barometric pressure sensors that operate independently of each other.
After either of the sensors detects that the aircraft is in flight, the device completely deactivates all transmission functions.
Once both acceleration sensor and barometric pressure sensor detect that the aircraft is on ground, the device resumes its normal operation.

Technical specifications

Table 3.3.1: MGT1301 specifications

Measured ranges and tolerances	• Temperature, standard temperature sensor: 0 to +50 °C ± 0.5 °C • Temperature, precise temperature sensor (provided by Moeco upon request): -20 to +60 °C ± 0.1 °C • Relative humidity: 0%-100% ± 3% (for 30%-70% RH) and ± 6% RH (for 0%-30% RH and 70%-100% RH) • Acceleration: ±2, ±4, ±8, ±16 g • Light intensity: 1 to 64,000 lux • Barometric pressure: 300 to 1000 hPa
Other tracked parameters	• Shock counter • Position

Connectivity	• GSM: 850/900/1800/1900 MHz (2G) • Wi-Fi: 802.11 b/g/n • Cat-M1 (Power Class 3): B1/B2/B3/B4/B5/B8/B12/B13 B18/B19/B20/B25/B26/ B27 B28/B66/B73/B85 • Cat-NB2 (Power Class 3): B1/B2/B3/B4/B5/B8/B12/B13 B18/B19/B20/B25/B26/ B28 B66/B73/B85 • Cat-M1 & Cat-NB2 (Power Class 2): B31/B72 • EGPRS: 850/900/1800/1900 MHz
Indication	LED (red, yellow, green)
Temperature operating range	-20 to +60 °C
Relative humidity limit	80% RH at 25 °C
Battery parameters	3.7 V, 1,500 mAh (up to 6 months of operation)
IP rating	IP54
Dimensions	90 x 90 x 13 mm
Weight	45 g ± 2 g

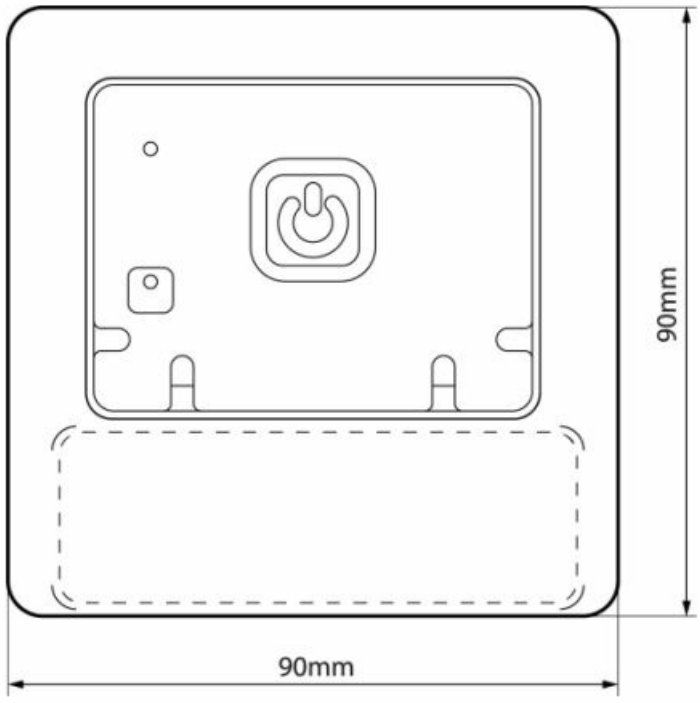


Fig. 3.3.1: MGT1301/MGT1302 dimensions

PREPARATION FOR USE

Package contents

The device ships without accessories.

Identifying the device
Each device has the following information printed on its surface:

1. Product model
2. Place of manufacture
3. Compliance markings
4. IP class
5. Operating temperature range
6. QR code. Scan it with Moeco mobile application to register the device with the Moeco online platform. If scanned by any other means, it will lead to the mobile version of the platform with information about the specific shipment monitored by this device.
7. Bar code that contains a link to the unique device ID (S/N)
8. Unique device ID (S/N), may be requested by the technical support team

Fig. 4.2.1: MGT1301/MGT1302 identification

SAFETY MEASURES

- Do not place the device inside magnetic fields or within interference from nearby electric machines. Doing so can inhibit wireless connectivity or damage the device.

- Do not place the device in metal-containing enclosures. Doing so may inhibit or completely suppress wireless connectivity.
- Follow the recommendations of the IEC 60215:2016 standard, “Safety requirements for radio-transmitting equipment”.

OPERATING THE DEVICE

At departure

1. Register the device with the Moeco online platform. You can also do this in advance.
   NOTE! You can find the guide to registering the device at **https://docs.moeco.io/platform/howtos/shipment-creation-app.html.**
2. Switch the device to the active mode. To do this, press and hold the button in the center of the device for at least 3 seconds (Fig. 4.2.1). Release the button when the indicator starts to blink green. Once in the active mode, the device will connect to the Moeco platform.
3. Attach the device to the cargo by removing the protective film at the back and sticking the device to the surface (Fig. 6.1.1).
   NOTE! Do not attach the device to the top or the bottom of the cargo where it can be crushed under the cumulative weight of multiple cargo items stacked on each other. This can negatively affect the device.

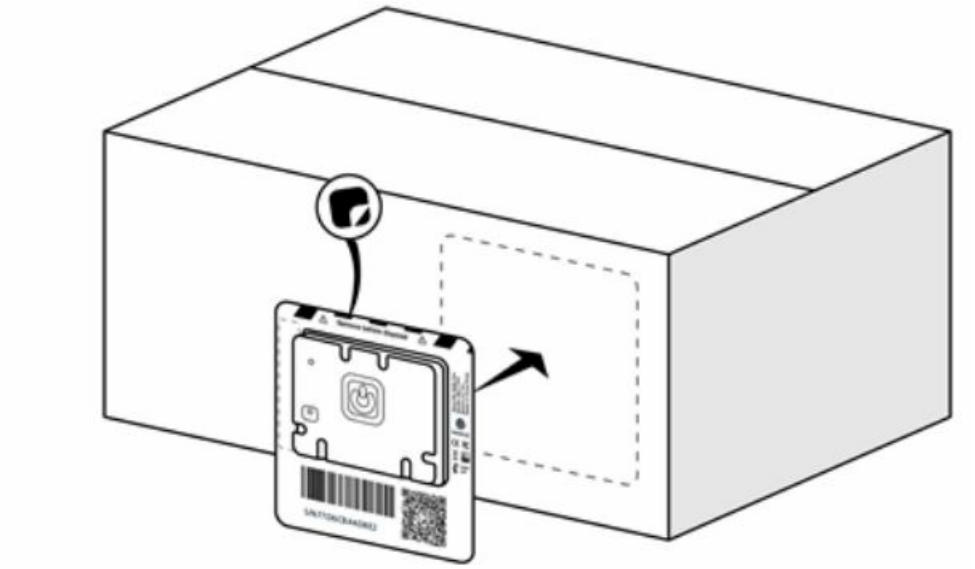
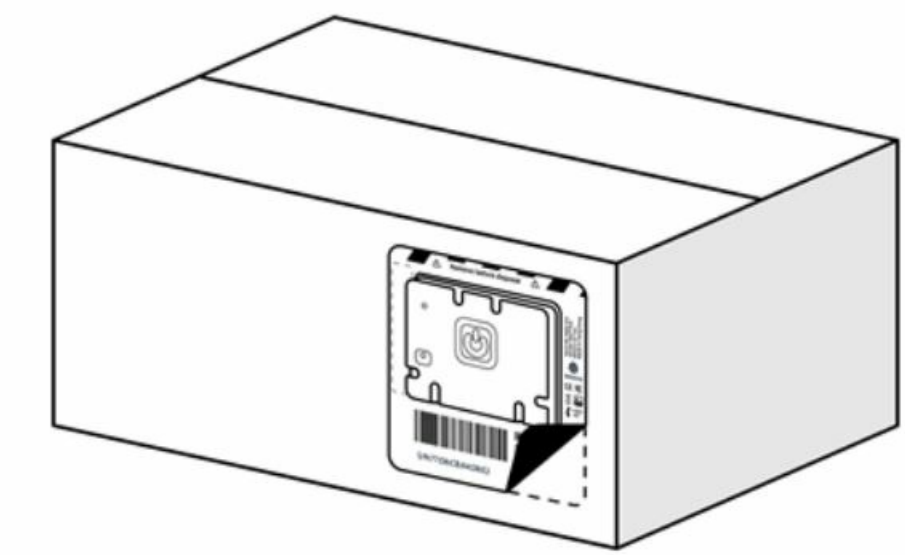


Fig. 6.1.1: Attaching the device to cargo

On arrival

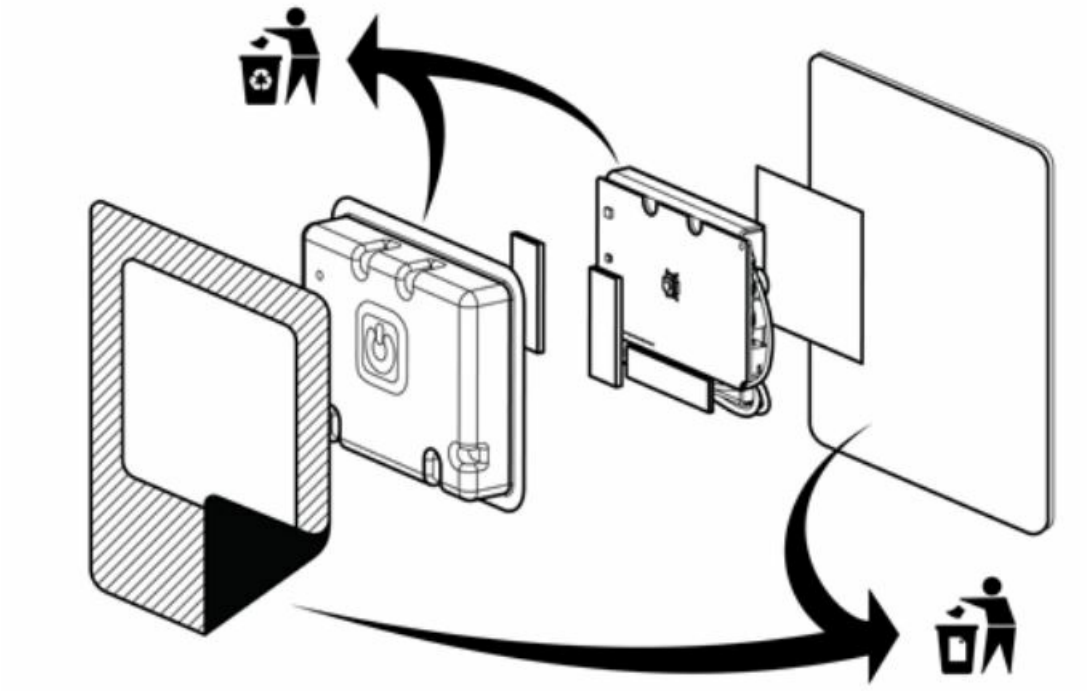
When the cargo arrives to destination, detach the device from the cargo or cargo package and dismantle as follows:

1. Pry up the corner of the device and peel the device off the cargo surface (Fig. 6.2.1). It should be removed from the cargo entirely.



2. Divide the device casing into halves and separate the electronic module from plastic and cardboard parts (Fig. 6.2.2).

Fig. 6.2.2: Disassembling the device



To dispose of the device, follow the recommendations from section Disposal

TROUBLESHOOTING

The following table lists possible causes for a number of issues.
If the issue is not listed in the table, the provided solutions do not solve the issue, or if any part of the device is damaged, do not attempt to repair the device yourself. Contact the technical support team at **support@moeco.io**.

NOTE! Any repair attempts by the user that are out of the scope provided by this document will void the device's warranty.

Table 7.1: Troubleshooting

Issue	Possible cause	Solution
The device does not respond when you press and/or hold the button.	You held the button for less than 3 seconds.	Press and hold the button for at lea st 3 seconds.
The device is not listed in the Moec o platform.	The device has not been registered .	**Register the device** with the Moec o platform.
The device is registered but reports no data to the Moeco platform.	The device cannot connect to a cell ular network.	Increase signal strength at the devi ce location.
The light blinks red and green repe atedly.	The device is in the maintenance m ode.	Wait for the indication to cease and switch the device to the active mod e.

STORAGE

The device must be stored in the following conditions:

- Temperature range: -30 to +60 °C
- Relative humidity: non-condensing, 90% RH max. at 25 °C

DISPOSAL AND RECYCLING

These disposal recommendations are aimed to help save valuable resources and prevent any potential negative effects on human health and the environment which could arise from inappropriate disposal of the device.

NOTE! Contact your local authority for further details of your nearest designated collection point. Penalties may be applicable for incorrect disposal of this waste in accordance with your national legislation.

The device should be dismantled and sorted for environmentally friendly recycling.

Disposal of electronic components

Do not dispose of the electrical parts into household waste!
Electric and electronic devices that are no longer usable must be collected separately and disposed of via a collection point for the recycling of electrical and electronic equipment waste.

Disposal of batteries

The product contains batteries. Batteries may not be disposed of with the usual domestic waste. They are subject to hazardous waste regulations.
Dispose of the used batteries at a local collection point.

Disposal of packaging waste

The packaging is made of environmentally friendly materials, which may be disposed of through your local recycling facilities.

NOTE! These regulations are only applicable in the European Union (EU). If you need to dispose of this product outside of the European Union, contact your local authorities or dealer and ask for the correct method of disposal.

Documents / Resources

	MOECO MGT1301 Global Sensor [pdf] User Manual 2A7WS-MGT1301, 2A7WSMGT1301, MGT1301, MGT1301 Global Sensor, Global Sensor, Sensor

References

- - Moeco documentation | Moeco Documentation
- Getting started - Moeco documentation | Moeco Documentation
- Creating shipments [mobile] - Moeco documentation | Moeco Documentation
- Creating shipments [desktop] - Moeco documentation | Moeco Documentation
- IEC 60215:2016 | IEC Webstore