Datasheet – Melectric Gateway

ME-GW20

Release: Januar 2025

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Melectric Systems GmbH
Endlhauser Straße 7
82064 Straßlach

Amtsgericht München HRB 258090
St. -Nr.: 143/161/61902
USt-Nr.: DE332271021
Sitz der Gesellschaft: Straßlach

1. Instruction for use

Dear customers,

The BLE Gateway by Melectric Systems GmbH is a cutting-edge solution for wireless torque measurement or general sensing applications. Designed for seamless integration with our advanced measurement systems, this gateway ensures reliable and secure data transmission.

With compatibility across mobile and desktop platforms, it provides intuitive monitoring, streamlined data visualization, and enhanced operational efficiency. Ideal for monitoring and Field measurement in industry, and mechanical testing, the BLE Gateway delivers precision and convenience in a compact, robust design.

2. Customer Service Address

Melectric Systems GmbH
Endlhauser Straße 7
82064 Straßlach
Tel: +49 8170 9969055
E-Mail-Adresse: info@melectric-systems.de
Web: www.melectric-systems.de

3. Warranty

The warranty is 12 months from the date of delivery ex works if used as intended, in compliance with the maintenance and calibration regulations and the General Terms and Conditions.

4. Scope of delivery

The gateway consists of a calibrated transmission module integrated in the housing and an external antenna.

5. Structural changes

Unauthorized conversions or changes to the torque measuring system are prohibited for safety reasons and will immediately void any warranty claims.

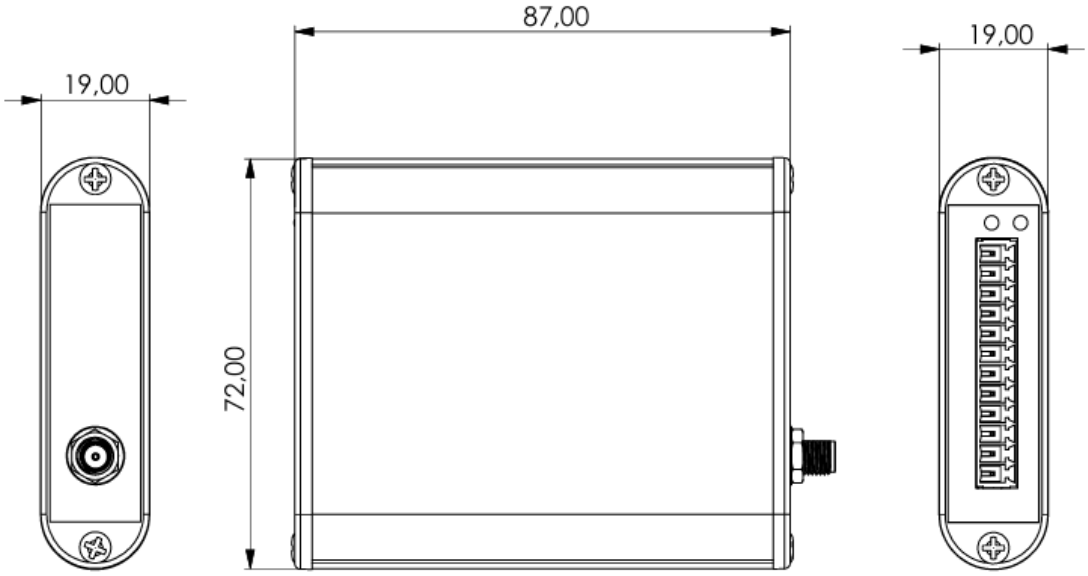
6. Disposal:

For disposal, the device must be returned to Melectric Systems GmbH, Endlhauser Straße 7, 82064 Straßlach.

7. Technical Data

Frequency	2,45	GHZ
BLuetooth Version	Bluetooth Low Energy 5.0	
Maximal no. of connected devices		1
Signal range	20m	
Antenna connection	SMA - female	
Power supply	9-30	V
Maximum current consumption	< 500	mA
Temperature Range	-40 – 85	°C
IP Protection class	IP 54	-

7.1. Dimensions



8. Quick Setup Guide

For a quick setup, place the Gateway near the Melectric Flange. The Gateway will automatically connect to the Flange when it is within range. Once connected, the connection status will be indicated by the status LED, confirming a successful link.

There are two modes the Gateway operates in. They can be configured on the web interface.

Automatic Mode:

Automatically connect to the first Melectric Flange found.

MAC address Mode:

The Gateway only looks for a specific MAC address and only connects to a Flange that fulfills this**.**

The MAC Address can be found on the label on the Melectric Flange

Physical Setup:

- Position the BLE Gateway near the Sensor device for optimal communication range.
- Connect the power supply (chapter 9).

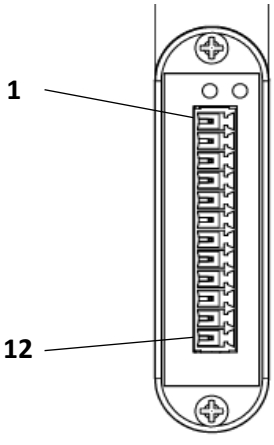
Start Monitoring:

- View live data streams, and log data for analysis.

9. Electrical Connection

Connector Type: Würth: 691361100012

PIN No.	Function
1	GND_RS485
2	RS485_A
3	RS485_B
4	GND_CAN
5	CAN_L
6	CAN_H
7	GND_Aout
8	4-20mAout
9	GND_Vout
10	-10/+10Vout
11	GND_Supply
12	Vin_Supply

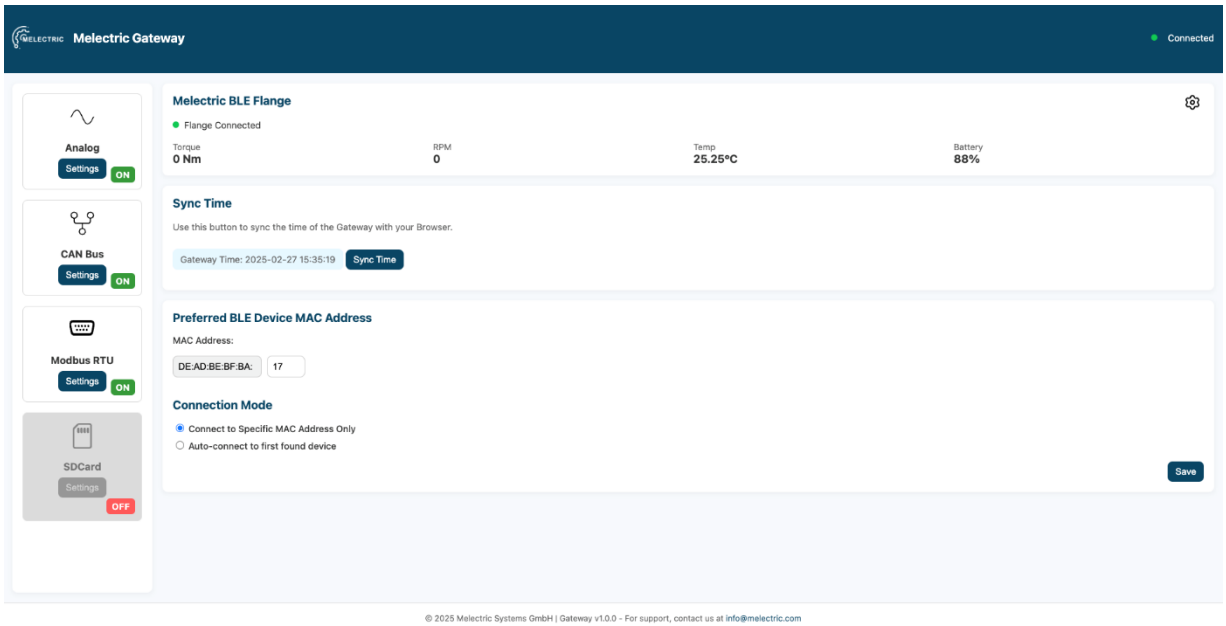


POS	LED		STATUS
	Color	Function	
1	GREEN	ON	Flange connected
2	GREEN	FLASH	No active connection/ currently scanning
3	YELLOW	ON	Data-Output OK
4	YELLOW	OFF	No Data-Output selected
5	YELLOW	FLASH	Data-Output-Error

10. Software and Gateway Setup

1. **For configuration, please Connect to the Gateway's Wi-Fi:**
   - Find and connect to the Wi-Fi network named **"Melectric Gateway X"**.
   - Use the password provided on the label attached to the gateway.
2. **Access the Configuration Interface:**
   - Open any web browser of your choice.
   - Enter the IP: **192.168.4.1** in the address bar.
   - This will take you to the gateway's configuration interface.

The configuration interface should then look like this:



You can configure the Gateway's outputs from this interface. To disable an output, simply click on its corresponding box. Additionally, the settings for the Melectric Flange can be adjusted by clicking the settings button (gear icon) located within the Flange panel.

11. CAN-BUS configuration

The default CAN message ID is 0x100 but can be changed in the configuration interface.

The Baud rate can also be changed on the interface to be one of the following:

- 100k
- 250k
- 500k (default)
- 1000k

Data Payload Breakdown

Byte Index	Data	Type	Description
0 - 1	Torque	Signed 16-bit	Torque in Nm
2 - 3	RPM	Signed 16-bit	RPM in rpm
4 - 5	Temperature	Signed 16-bit	Temperature in Celsius
6	Battery	Unsigned 8-bit	Battery in percent
7	BLE Status	Unsinged 8-bit	1 byte indicating Flange connection (0 or 1)

12. Analog

The Analog output can be adjusted to one of the following ranges:

- 0-5V
- 0-10V
- +-5V
- +-10V
- 4-20mA
- 0-20mA
- 0-24mA

This is configurable via the configuration interface.

13. RS485/Modbus

The default baud rate is 9600 but can be changed via the configuration interface to one of the following:

- 2400
- 4800
- 9600 (default)
- 19200
- 38400
- 57600

Additionally, the Slave Address, stop bits and parity can be adjusted.

Modbus RTU Register Map:

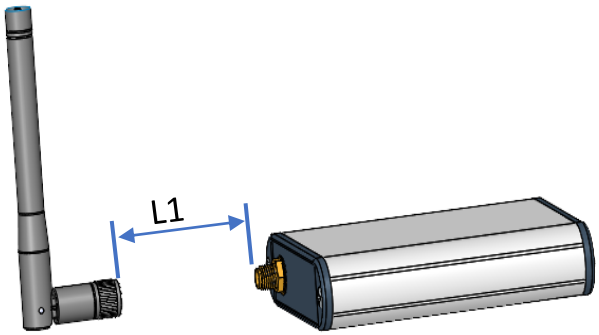
Register Address	Description	Data Type	Notes
0x0000	Torque	Signed 16-bit	Torque Value in Nm
0x0001	RPM	Signed 16-bit	RPM Value in rpm
0x0002	Temperature	Signed 16-bit	Temperature in Celsius
0x0003	Battery Level	Unsigned 8-bit	Battery level in percentage

14. SD Card Settings

You can change the SD Card logging frequency as well as the filename. The SD Card loggings include a timestamp that is displayed on the config interface. To sync it will your local time click on the sync button. A pulsating Green Dot inside the SD Card box indicates that the SD Card is currently being written to.

15. Accessories

14.1 Additional Cable to extend the Standard antenna.



Length L1	Product Article Number
5	1306109
10	4080454

14.2 Antenna with Magnet socket - Cable length 2,5m

Product Article number: 12583

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