

Gateway Specification



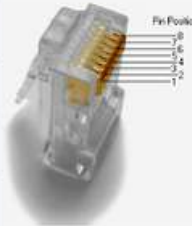
The GreaseBoss Gateway is a multifunctional device designed to facilitate seamless communication between GreaseBoss Endpoints, Head Units, and the GreaseBoss Cloud. This secure and highly configurable gateway ensures robust data transmission and connectivity, even in harsh industrial environments.

General Specification

Router	Teltonika RUTX11
Wireless Protocol Options	Bluetooth, WiFi, LTE (dual sim available)
Power Options	9-50V DC Input (240/120VAC power supply provided) or Passive PoE on LAN1.
Max Power Consumption	14 W
Operating Temperature	-40°C to 75°C
Operating Humidity	N/A
Regulatory Compliance	CE, FCC, UKCA, EAC, RCM
Wired Ports	1x RJ45 Port (PoE capable)
Materials	ABS, Aluminum, PTFE
Mass	1.5 kg 3.3 lb.
Dimensions	160 x 160 x 240 mm 6.3 x 6.3 x 9.45 inch
Ingress Protection Rating	IP67
Mounting Options	Pole Mount

PoE Specification

RJ45 pinout:

Pin	10/100 mode B, DC on spares	T568A Color	T568B Color	Pins on plug face (socket is reversed)
1	TX+	 white/green stripe	 white/orange stripe	
2	TX-	 green solid	 orange solid	
3	RX+	 white/orange stripe	 white/green stripe	
4	DC+	 blue solid	 blue solid	
5	DC+	 white/blue stripe	 white/blue stripe	
6	RX-	 orange solid	 green solid	
7	DC-	 white/brown stripe	 white/brown stripe	
8	DC-	 brown solid	 brown solid	

Head Unit Specification



The Head Unit retrofits to any grease gun and empowers greasers with the lubrication schedule data in their hands as they are greasing. It guides greasers through the lube route and provides intuitive instructions on how to grease each point. Greasing data is captured and synced to the GreaseBoss Cloud, via the Gateway, for analysis.

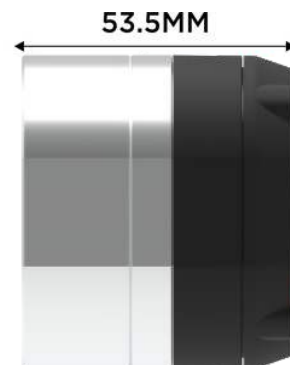
General Specification

Inlet Fitting	7/16" JIC Male (Grease gun adaptor fittings available)
Flow Meter Type	Oval gear positive displacement
Flow Meter Resolution	≈0.6cc
Flow Meter Accuracy	± 0.5%
Materials	Aluminium, Steel, PA11, Acetal
Dimensions	1180 x 80 x 80mm
Hose Length	700mm
Wireless Communications	Bluetooth Low Energy
Battery Specifications	Rechargeable 6 Ah LiPo. 24-hour continuous operation, 1 month standby.
Charger Supply	12 VDC, max 3A
Recommended Operating Pressure	7,500Psi
Max Rated Pressure	Up to 10,000Psi
Max Flow Rate	750 cc/min (NLGI2 @ 25°C)
Mass	2.5 kg
Operating Temperature	-10°C to 50°C
Ingress Protection Rating	Designed to IP68, final product certification pending
Regulatory Compliance	Contains pre-certified components to CE and FCC. Final product certification pending.

Device Operation

- The Head Unit replaces the hose on any grease gun and contains a flow meter, computer, screen, and RFID antenna
- It regularly syncs with the cloud via a Gateway, ensuring it always has the most recent lubrication schedule
- When a lube technician picks up the grease gun, the Head Unit prompts them through the pre-determined grease route with clear, intuitive instructions
- The Head Unit checks that the correct grease type is being used and determines if the grease point is due for greasing and the required volume
- Intuitive on-screen instructions and coloured LEDs in the nozzle assist technicians in performing the greasing as per the schedule
- Compliance reports generated in the GreaseBoss Cloud provide visibility over planned vs actual greasing and highlight areas for improvement
- The Head Unit digitally tracks all manual greasing events and maintains a historical greasing record for warranty claims

Endpoint LF V3.0 Specification



The GreaseBoss Endpoint is an IoT flow meter designed for **high-accuracy monitoring** of small grease flow rates in industrial machinery, transmitting data to a nearby GreaseBoss Gateway, which is then collated and **reported to end users via the secure GreaseBoss Cloud**.

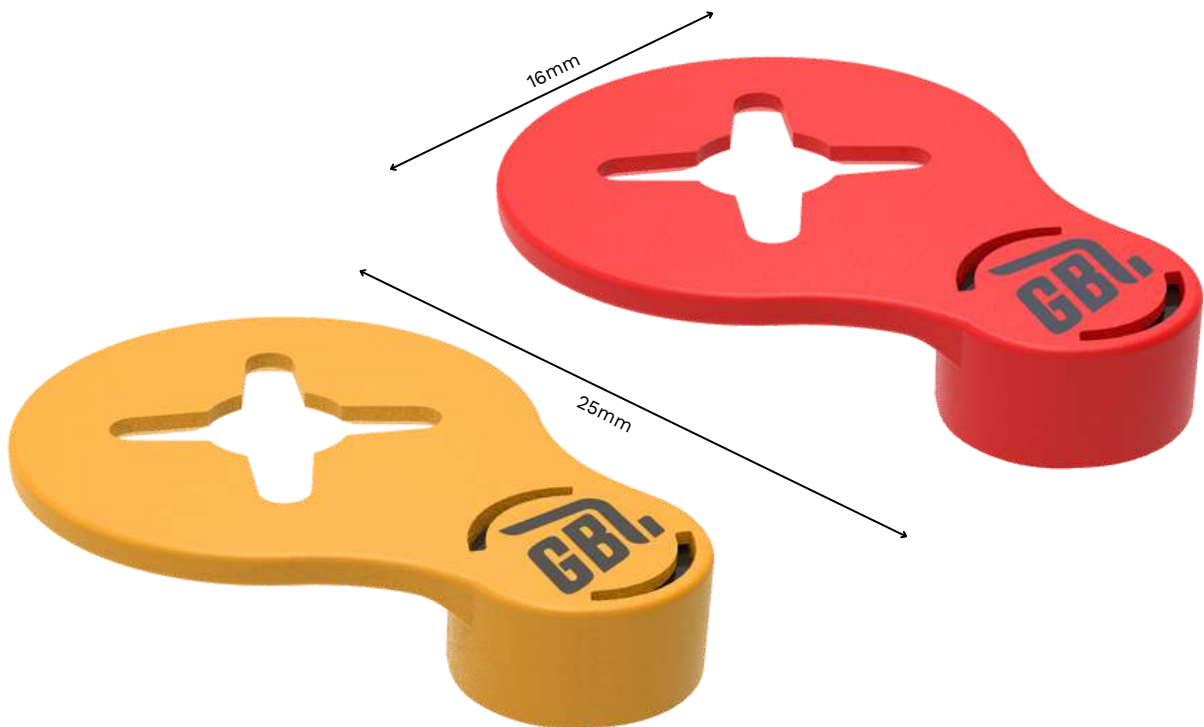
General Specification

Ports	1
Inlet Threads	¼" BSPP Female
Flow Meter Resolution	0.18cc
Flow Meter Accuracy	± 0.5%
Flow Meter Type	Oval gear positive displacement
Flow Direction	Bidirectional, no flow direction detection
Materials	Aluminum, PA11, ABS
Dimensions	58 x 58.7 x 53.4 mm
Wireless Communications	Bluetooth Low Energy
Wireless Range	50 – 250m depending on environment and gateway position
Battery Life	1 - 5 years depending on data resolution and sample rate
Battery Replacement	1x CR2477
Operating Pressure	7,500Psi
Mass	0.22kg
Operating Temperature	-40°C to 85°C
Mounting Options	4x M4 Bolts, Bracket Mount, Magnet Mount
Ingress Protection Rating	Designed to IP68, final product certification pending
Regulatory Compliance	Contains pre-certified components to CE and FCC. Final product certification pending

Device Operation

- The Endpoint sends regular device health information to GreaseBoss Cloud for device performance analytics
- The configurable settings available:
 - Period of grease volume accumulation (ie. granularity of data)
 - Sync interval
 - Transmit power for increased range
- The LED on the Endpoint can be used to:
 - Indicate an error to technicians in the field
 - Indicate connectivity status to the nearby gateway or smart device
- The button on the Endpoint can be used to:
 - Signal that a new grease cartridge has been installed, allowing the GreaseBoss Cloud to manage canister volumes
 - Run a connectivity test to nearby gateways

Grease Tag Specification



The Grease Tag is engineered to withstand the harsh environment of industrial equipment. The Grease Tag snaps on to existing grease nipples and the industrial RFID chip gives each grease point a unique 24-digit identifying code to connect physical grease points with the digital grease points in the cloud.

General Specification

Technology	UHF RFID
Colour Options	Red, Yellow, Others on Request
Materials	Ceramic, ETFE
Dimensions	25 x 16 x 4.4 mm 0.98 x 0.63 x 0.17inch
Operating Temperature	-40°C to 85°C during scanning -40°C to 150°C environment survival Up to 200°C momentary
Mounting Options	Snap-on to Zerk Fitting or Epoxy to asset
Ingress Protection Rating	IP68
Regulatory Compliance	CE, FCC
Shock	1m or 3ft to granite
Vibration	MIL-STD-810G
Chemical Resistance	High acidic & basic resistance
UV Resistance	High

Device Operation

- Grease Tags provide digital identities to each grease point with RFID technology so that the Head Unit can identify each grease point
- Grease Tags are mapped to each grease point via the GreaseBoss app, taking only seconds.
- If lost or damaged, Grease Tags are easily replaced and remapped into the GreaseBoss Cloud, no greasing data is lost in the cloud.