GUILERA S.A.
HEAVY-DUTY ELECTRONICS FOR YOUR PROJECT

ELECTRIFICATION KIT

GLR-20 / 20 kW · 96 V · 112 Ah



20 kW
Peak power, PMSM mid-drive

10.75 kWh
Semi-solid state battery, 96 V

3.3 h
Full charge, 6.6 kW on-board

~220 km
Range at 60 km/h*

Semi-solid state. Production-ready.

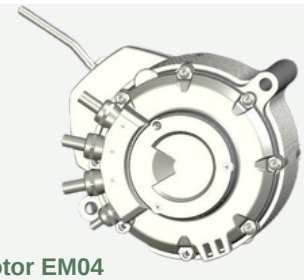
The GLR-20 is a complete, production-tooled powertrain built around a semi-solid state battery: under 7% liquid electrolyte, safer by chemistry and designed for daily professional use. Motor, controller, battery, on-board charger, DC/DC, 7" dashboard, VCU and keyless access come pre-matched and CAN-integrated.

Guilera adapts the system to your vehicle and supports it from prototype to series production in Europe. Available as a complete kit or as discrete components.

WHY SEMI-SOLID STATE

- <7% liquid electrolyte (vs. ~25% in Li-ion)
- φ5 mm needle puncture test: passed
- Thermal-runaway probability −98%, swelling risk −90%
- 1,500 cycles at 70% capacity retention
- Operating range −20 to 55 °C

SYSTEM COMPONENTS

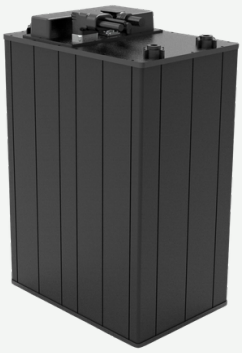


Motor EM04
20 kW peak · 55 N·m (~184 N·m at output) · 10,000 rp
PMSM mid-drive, gear ratio 3.35
Production tooling finished



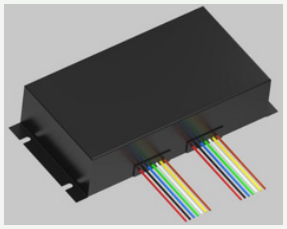
Controller EC05.1002
FOC, 36 MOSFET · 500 Arms
96 V (65–110 V) · ≥97.5% eff.
CAN 250 kbps, UDS diagnostics

Battery SSS 96 V 112 Ah
10,752 Wh · 26s2p · 60 kg
150 A cont. / 250 A peak
460 × 221 × 323 mm · IP67





On-board Charger 6.6 kW
Output 60–135 V, up to 60 A
0–80% in 2.8 h · 0–100% in 3.3 h
Type 2 inlet · IP67



DC/DC Converter 450 W
Input 55–120 V DC
Output 13.3–13.8 V / 32.6 A
192 × 92 × 43 mm · 0.75 kg



7" TFT Dashboard + VCU
CAN dashboard, fault codes, TPMS-ready
VCU EV01 · NFC + PKE keyless
Optional IoT / GPS / OTA

* Reference vehicle: 180 kg curb + 75 kg rider, constant 60 km/h. Manufacturer data; images and specifications for reference only.

BEYOND THE KIT

GLR-20 / Guilera electrification & retrofit engineering

From powertrain kit to road-legal vehicle

Guilera does not just supply components. We are a Spanish heavy-duty electronics manufacturer, founded in 1953, with hands-on vehicle electrification experience since 2015 in motorcycles, off-highway and marine applications. Our engineering team adapts the GLR-20 platform to your vehicle — new designs or retrofits of existing models — and supports you through validation, homologation and series supply from Europe.

HOW WE WORK

01

Feasibility

Requirements, packaging study and powertrain sizing for your vehicle and duty cycle.

02

Integration engineering

Mechanical adapters, harness, CAN/VCU set-up and calibration, with in-house FOC motor-control know-how.

03

Prototype & validation

Prototype build, bench and road testing at our facilities in Molins de Rei (Barcelona).

04

Homologation & supply

Documentation for EU type-approval, series supply, spare parts and after-sales from Europe.

ELECTRIFICATION & RETROFIT REFERENCES

- TRAKTORK – fully functional electric off-highway prototype, built in five months from scratch (IVT Expo 2025).
- Motorcycle OEM – powertrain kit supplied to a Spanish motorcycle manufacturer.
- Classic moped retrofit – 48 V conversion kit for iconic European mopeds, in development.
- Guilera electronics – DC/DC converters, flasher units and traction electronics, designed and made in Spain.

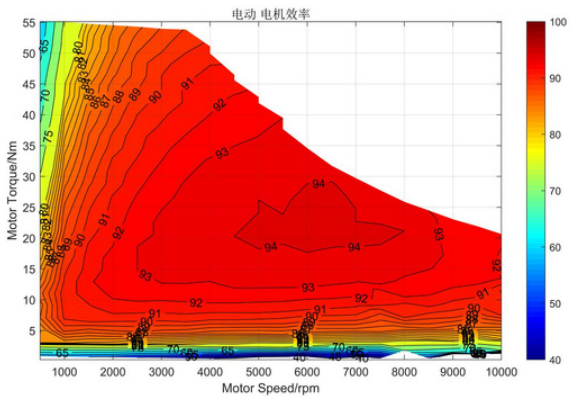
WHAT GUILERA ADDS

- European technical partner and single point of contact
- Adaptation to 48–96 V architectures and custom configurations
- Complete kit or discrete components (charger, DC/DC, display, VCU)
- Homologation documentation support (CE; UNECE R10 / R136 for the motorcycle segment)
- Spare parts, warranty handling and after-sales from Spain

PERFORMANCE & APPLICATIONS

Top speed 80 km/h · 0–50 km/h in ~7 s · range ~220 km at 60 km/h*
Motor torque 55 N·m · ~184 N·m at gearbox output (3.35 reduction) · final drive and gradeability sized to your vehicle.

Applications: electric motorcycles and scooters, delivery and fleet vehicles, three-wheelers, utility vehicles and golf carts, riding mowers, off-highway and agricultural, marine and specialty vehicles.



ALSO INCLUDED



VCU · EU handlebar switches · Type 2 inlet · PKE keyless fob

ORDER INFORMATION

GLR-20 electrification kit: complete system or discrete components. Volume pricing on request.

* Reference vehicle: 180 kg curb + 75 kg rider, 25 °C. Technical values, images and specifications are for reference only. Guilera reserves the right to modify product design and features without prior notice. The latest validated technical drawing of each component is the only official document certifying product characteristics.

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