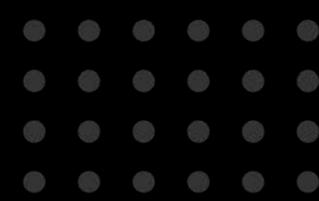




ATHENA

ELECTROMECHANICS RANGE

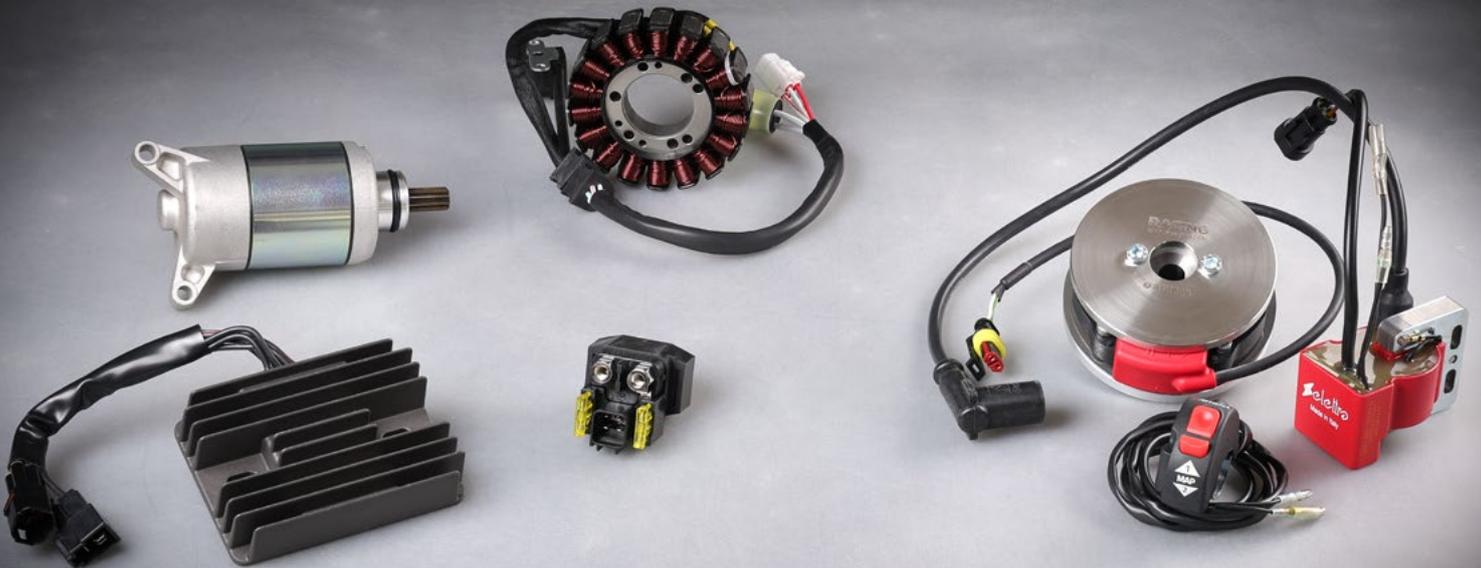
**STREET & OFF-ROAD
BIKES, SCOOTER**



WHY CHOOSE ATHENA

I HIGH-RELIABILITY ELECTRICAL COMPONENTS FOR MOTORCYCLES

With over **50 years of experience**, Athena designs and develops high-performance electromechanical components for the motorcycle industry. The range includes **stators, starter motors, voltage regulators, relays, and ignition systems**, all engineered to ensure maximum reliability and long-lasting durability, even after thousands of kilometers.



I ENGINEERING VALIDATION IN ATHENA LABS

Athena's electromechanical range is the result of an **integrated engineering** approach. Thanks to close collaboration with OE suppliers – often already partners of leading motorcycle manufacturers – components are developed based on a **solid and validated design platform**, with functional and qualitative specifications defined and approved by Athena's technical team.

Athena's **internal engineering team** co-develops each component, optimizing:



Selection of conductive materials (high-density copper windings, low-loss magnetic cores).



Insulation and protective materials for **thermal resistance, dielectric stability, and long-term durability**.



Electromechanical design for **efficiency, reliability, and full vehicle integration**.



Internal validation cycles: thermal, vibrational, and cyclic stress testing under real-world operating conditions.

THE RANGE



STATOR

Optimized power generation

- High-density copper windings providing up to 30% more copper compared to standard market products.
- Optimized coil winding configuration for stable current at high engine speeds.
- Thermoset insulation resisting overheating and moisture.
- Low-loss magnetic core for constant and efficient output.



STARTER MOTOR

Reliable starting cycles

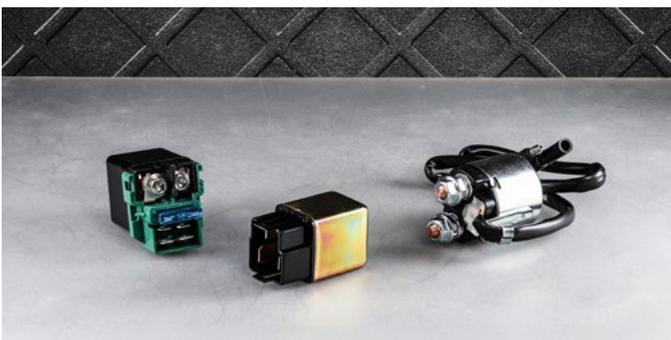
- Low-friction gear design reducing wear and mechanical stress.
- Balanced rotors with high-performance magnetic materials.
- Climatic testing from -20°C to $+70^{\circ}\text{C}$ for extreme starting conditions.
- Sealed bearings for protection against external contaminants.



VOLTAGE REGULATOR

Advanced thermal control

- Automotive-grade diodes and MOSFETs.
- Corrosion-resistant alloy heat sinks.
- Active feedback control for precise voltage regulation.
- Voltage stability under load with variations within $\pm 1.2\text{V}$.



RELAY

Instant activation & secure insulation

- Advanced conductive materials with high arc resistance, optimized for high switching cycles.
- Self-extinguishing glass-filled polyamide housing IP54.
- Service life exceeding 100,000 switching cycles under mixed loads.



IGNITION SYSTEM

Dynamic combustion control

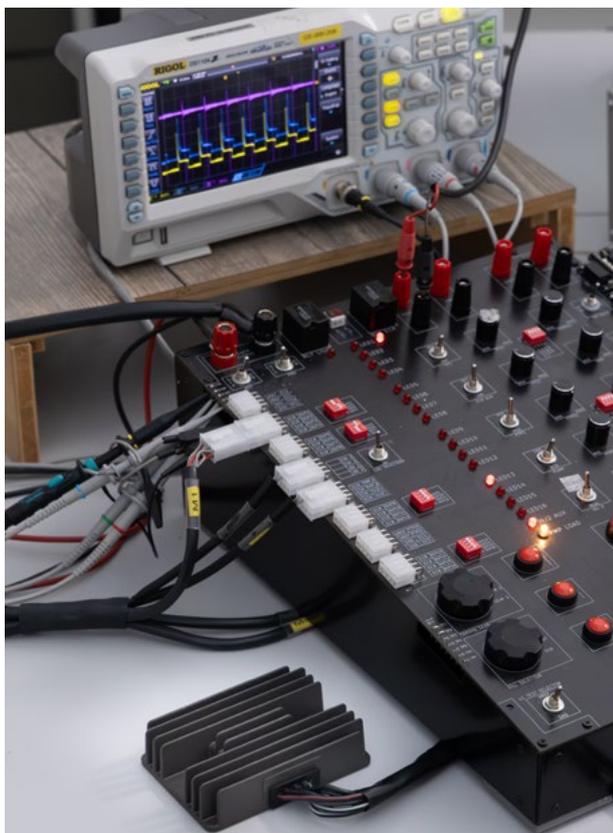
- Digital ECU with continuous advance management across the full RPM range.
- Dedicated maps for sport applications, selectable via integrated switch.
- Lightweight internal rotor with integrated cooling system, reducing rotating mass and improving thermal stability.
- Components validated for extreme operating conditions, including tuned engines.

EXTREME TESTING FOR REAL-WORLD ENDURANCE

I FUNCTIONAL VALIDATIONS & CERTIFIED QUALITY

Every component undergoes:

- **Electrical and mechanical testing** according to ISO 16750-2 standards.
- **Instrumental analysis** with automatic testers, oscilloscopes, spectrum analyzers, and In-Circuit Test (ICT) systems.
- **Thermal stress cycles** from -40°C to $+140^{\circ}\text{C}$.
- **Tri-axial vibration tests** up to 40 G for 20 continuous hours.
- Functional tests on programmable **electronic load benches**.
- **Specific validations** for repeated starting cycles under degraded battery voltage conditions.



Athena components are compatible with **over 900 motorcycle models** and **12V three-phase systems**, supporting OBD/MPI diagnostic protocols.

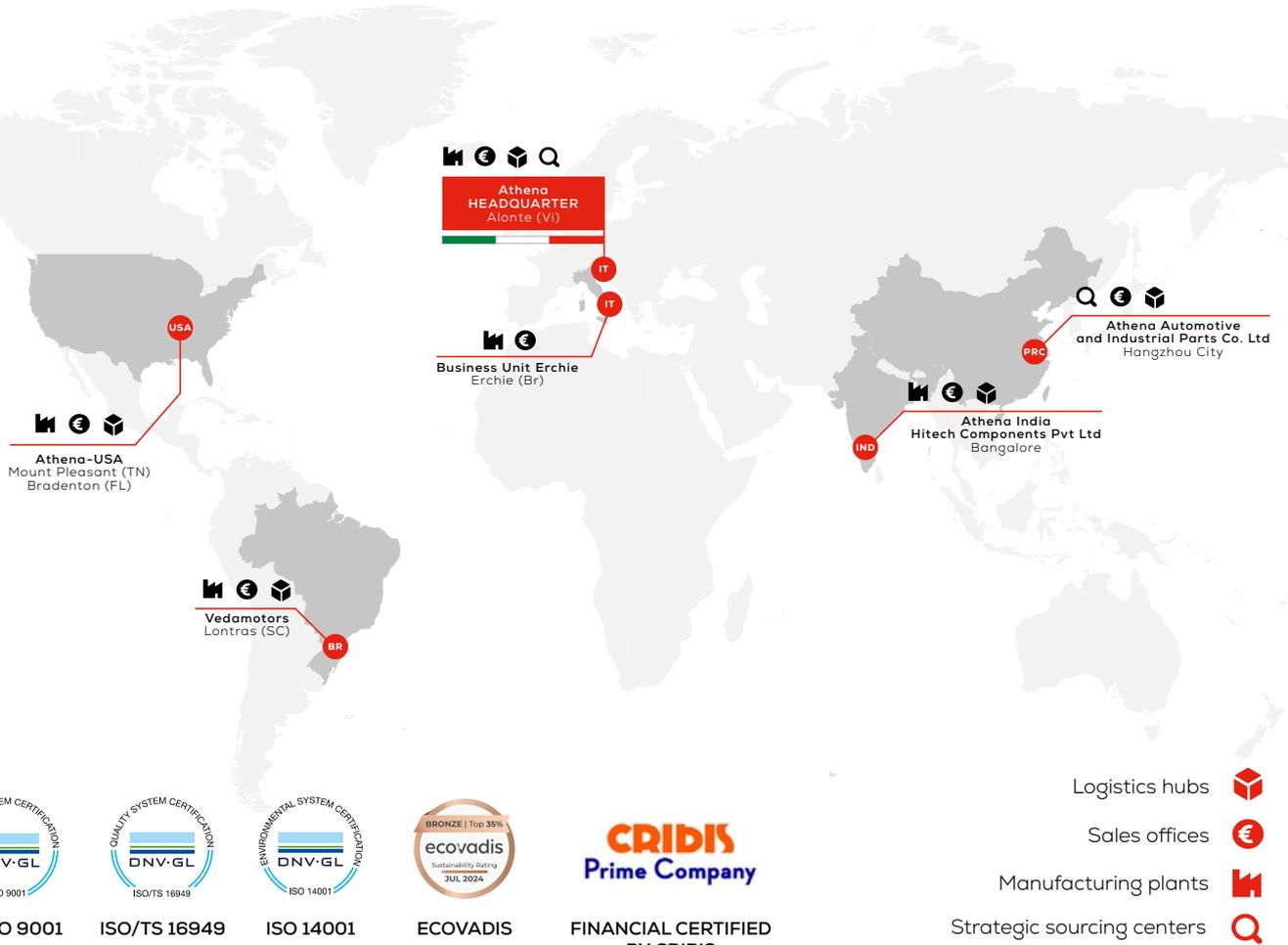


For compatibility search and OE cross-references, visit: athena.eu



PRESENCE WORLDWIDE

Athena develops **innovative electronic** and **mechanical solutions** tailored for the motor industry. We produce and distribute a range of selected technical **aftermarket parts** for the motorbike, car, marine applications and industrial transportation sectors. Our offering is unique worldwide for its size and price/quality ratio.



KEY NUMBERS

1

RATING
FINANCIAL
RELIABILITY

8

WORLDWIDE
PLANTS

4

FOREIGN
BUSINESS UNIT

905

EMPLOYEES

3

BUSINESS
DIVISIONS

118

TURNOVER
MLN €

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SMK-ELETBROEN