

E-POWER



DELLORTO

E-POWER: COMPLETE RANGE - MODULARITY - IN HOUSE KNOW HOW AND ENGINEERING SUPPORT



POWER CONTROLLER



KEY FEATURES

- VCU - INVERTER – DC/DC – INTEGRATED ALL IN ONE
- SCALABLE SIZE ACCORDING TO TARGET APPLICATION
- VERY COMPACT AND LIGHT
- AIR COOLED
- HIGH POWER DENSITY
- CUSTOMER FUNCTIONS INTEGRABLE
- MSIL B
- ABLE TO CONTROL - different motor types - Internal magnet – Surface magnet – switching reluctance motors

MODULAR AND/OR SWAPPABLE - LOW & HIGH VOLTAGE BATTERY PACK SYSTEMS



POWER CONTROLLER

KEY FEATURES

- Compact and light SWAP MODULAR DESIGN
- High Energy Density (up 190 Wh/kg - 275Wh/l)
- NMC - NCA - LFP cell chemistry
- Cylindrical or PRISMATIC cell types
- 48V Modular UP to 8 in PARALLEL
- 48V Modular Up to 8 in SERIES (96V-150V-400V)
- Customizable design if required
- Integrated BMS
- Long cycle life

96V - 2 BATTERY
IN SERIES
WITHOUT EXTERNAL
ELECTRONICS



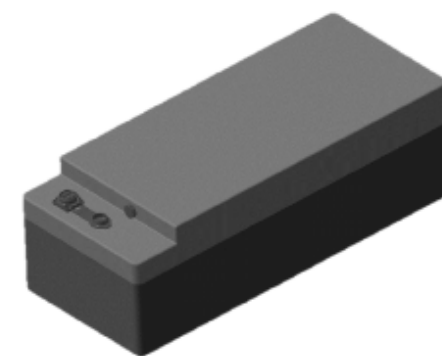
240 X 348 X 88 2,016 KWH
14S8P (21700 CELLS @ 5AH)



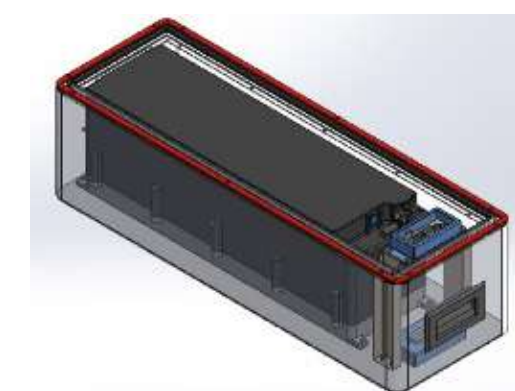
221 X 197 X 195 2,268 KWH
14S9P (21700 CELLS @ 5AH)

UP TO 8 BATTERIES
IN PARALLEL WITHOUT
ANY EXTERNAL ELECTRONICS

48V-400V BATTERY STORAGE
SYSTEM FOR PHOTOVOLTAIC-RAILWAY
AND INDUSTRIAL APPLICATIONS



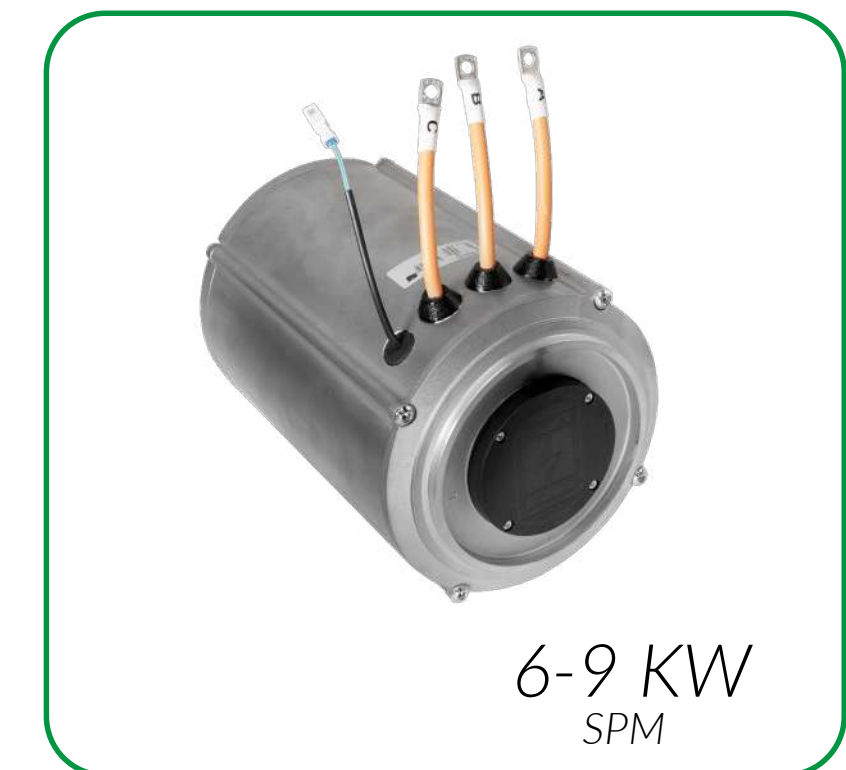
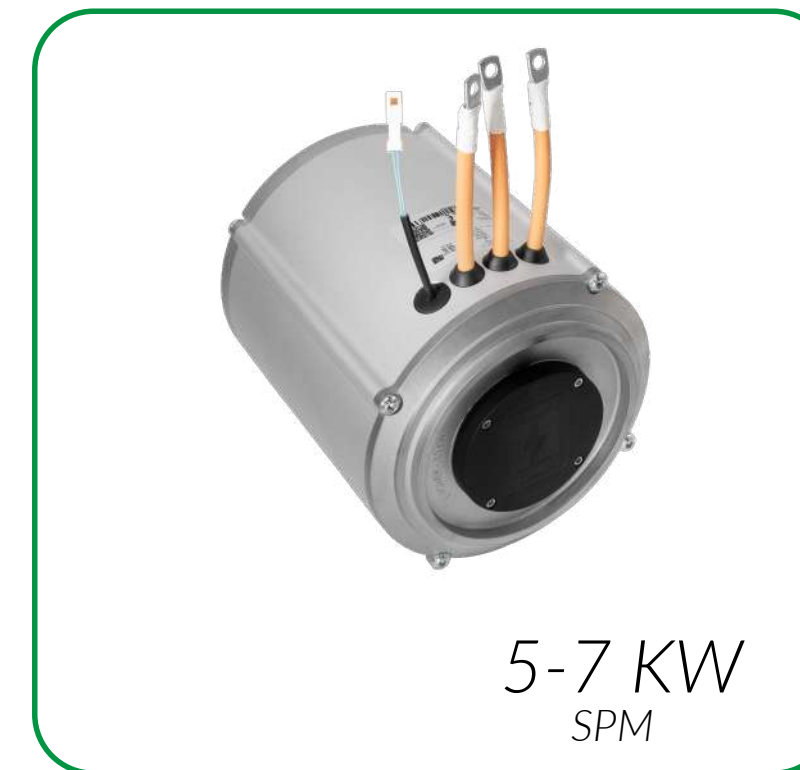
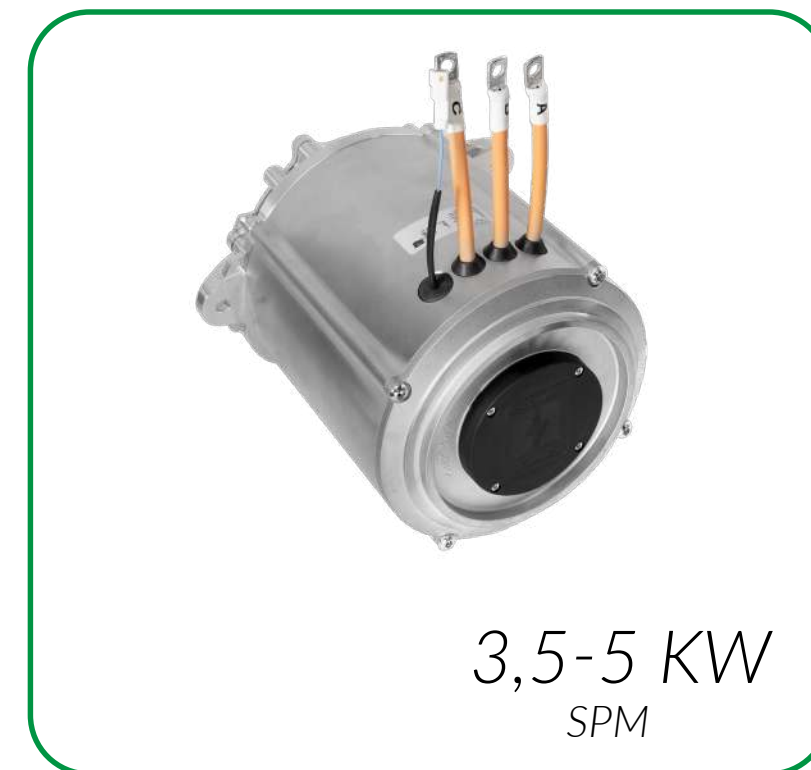
24V BATTERIES FOR INDUSTRIAL APPLICATION



E-POWER: COMPLETE RANGE – MODULARITY – IN HOUSE KNOW HOW AND ENGINEERING SUPPORT



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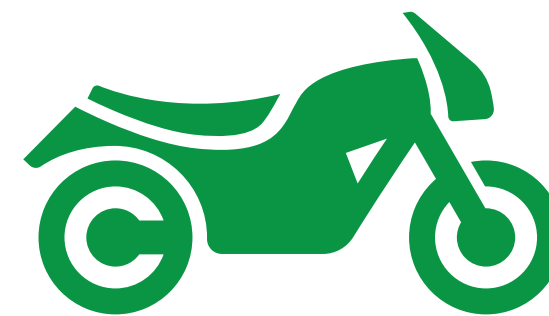


KEY FEATURES

- From 3 kW to 9 kW
- High torque design to have direct wheel connection
- Light and compact design
- Gear Ratio defined on customer needs
- Integrated sensor
- Motor performance customizable as needed

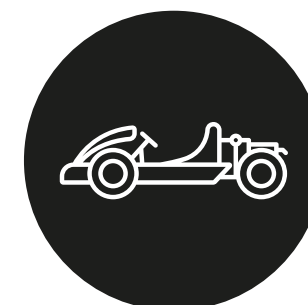
URBAN LIGHT MOBILITY

From Moped to SmallVehicle • From 1,5kW up to 15kW 48V



MISSION IS TO BRING E-POWERTRAIN AUTOMOTIVE QUALITY
AND INNOVATION IN OTHERS FIELDS

engineering | testing | application | homologation | production



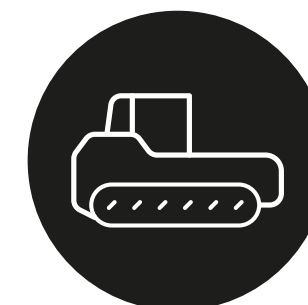
LEISURE



MICRO
MOBILITY



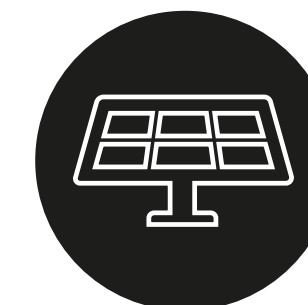
LOGISTIC



AGRICULTURE



INDUSTRIAL



ENERGY STORAGE

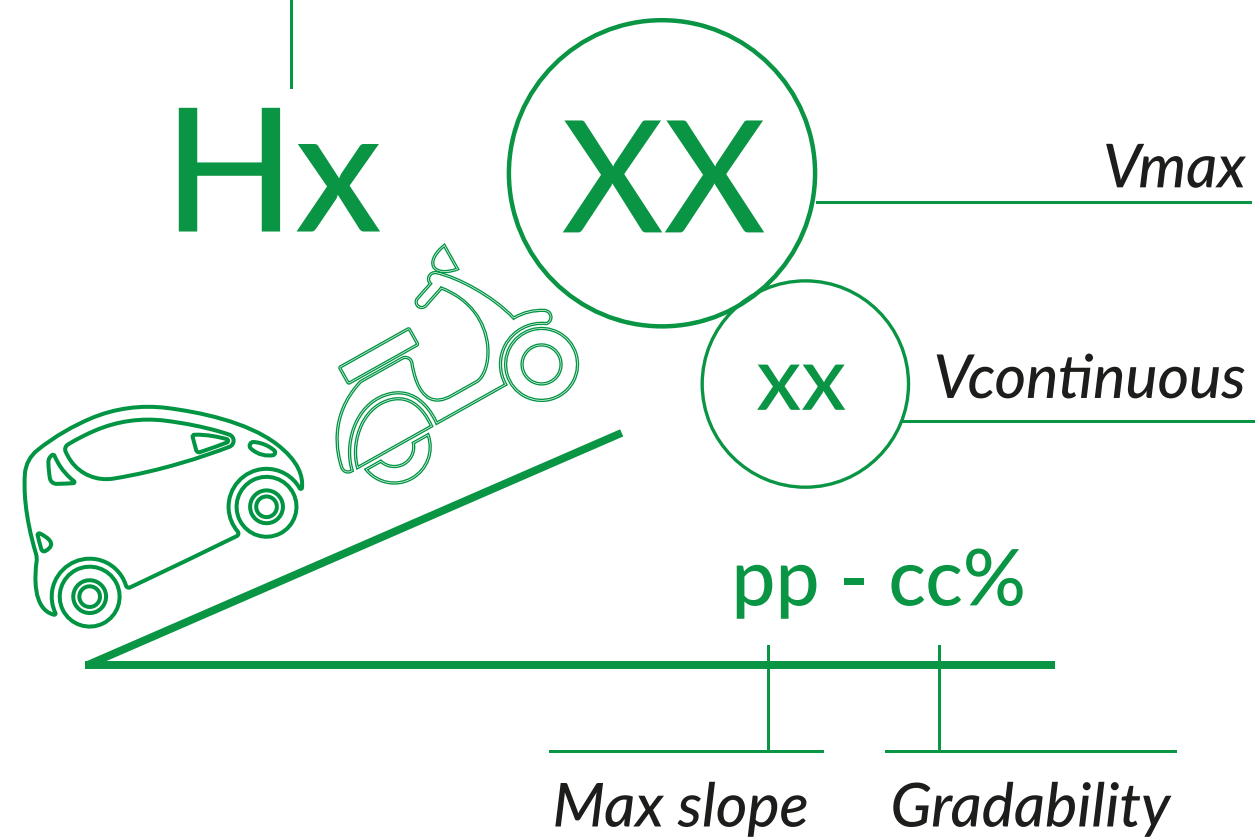
DO E-LIGHT MOBILITY – MODULARITY & PERFORMANCES



- Possibility to define different vehicle configurations, in terms of power, torque, speed and energy



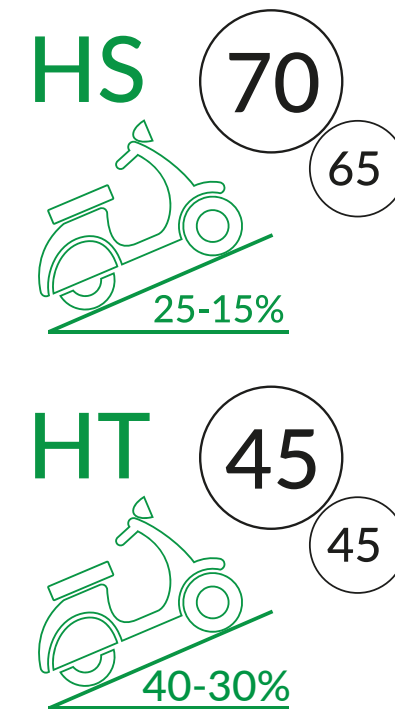
High Speed
High Torque



L1 - ONE BATTERY



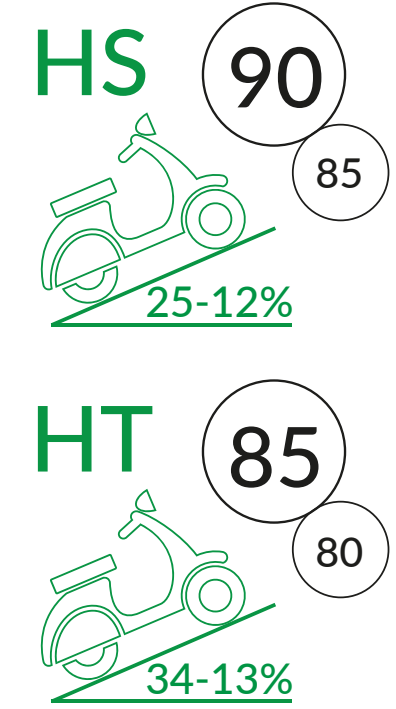
L1 - ONE BATTERY



L3 PRO - 2 BATTERIES



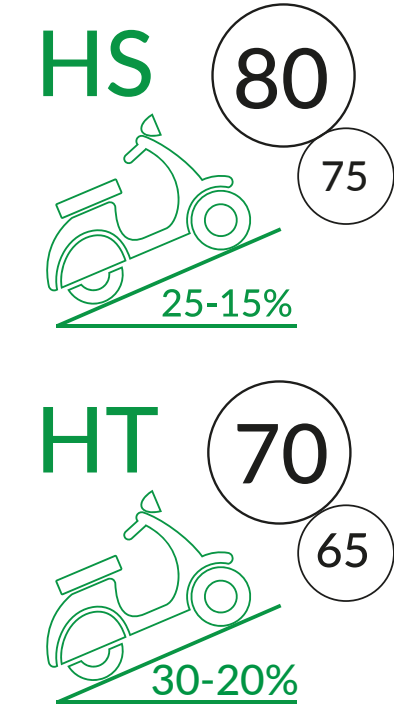
L3 PRO - 2 BATTERIES



L3 SPORT - 2 BATTERIES



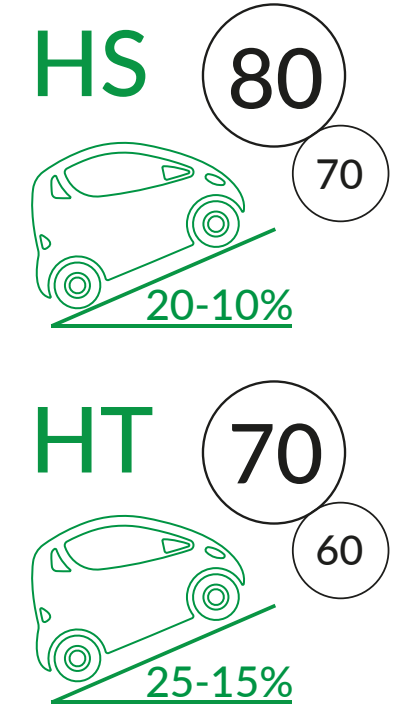
L3 SPORT - 2 BATTERIES



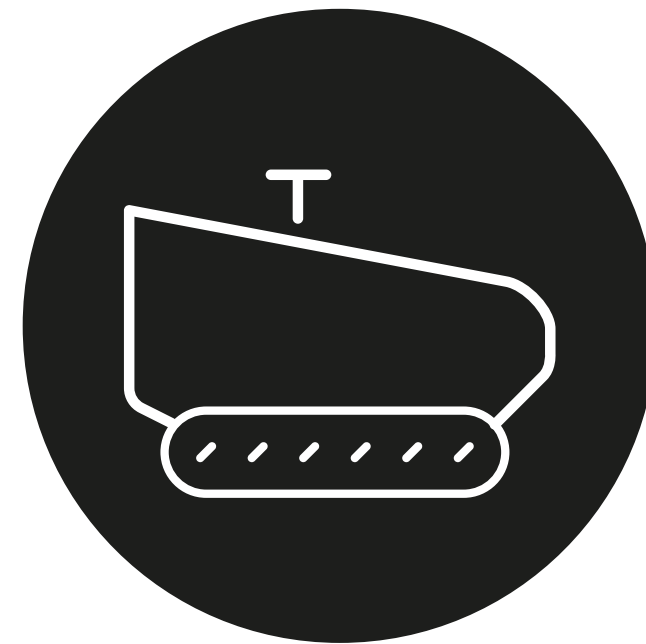
L6-7 4 BATTERY



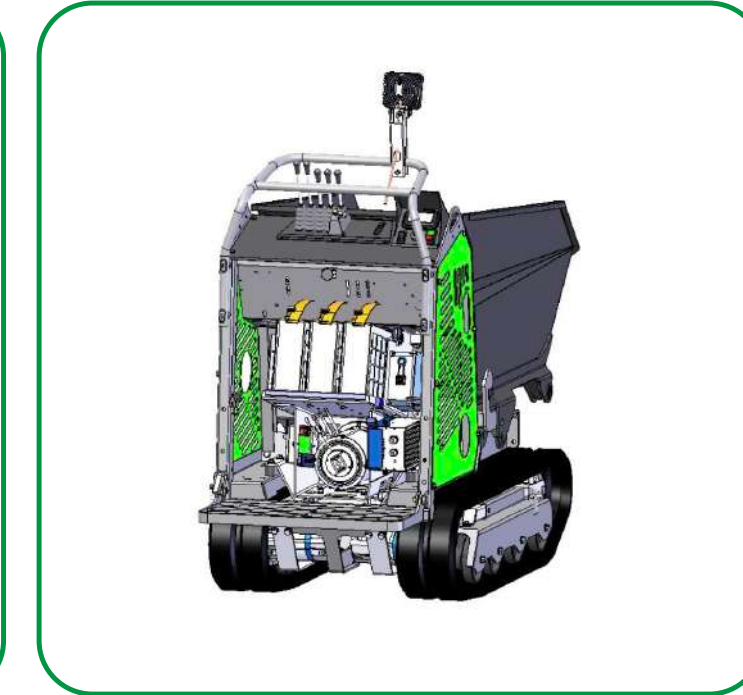
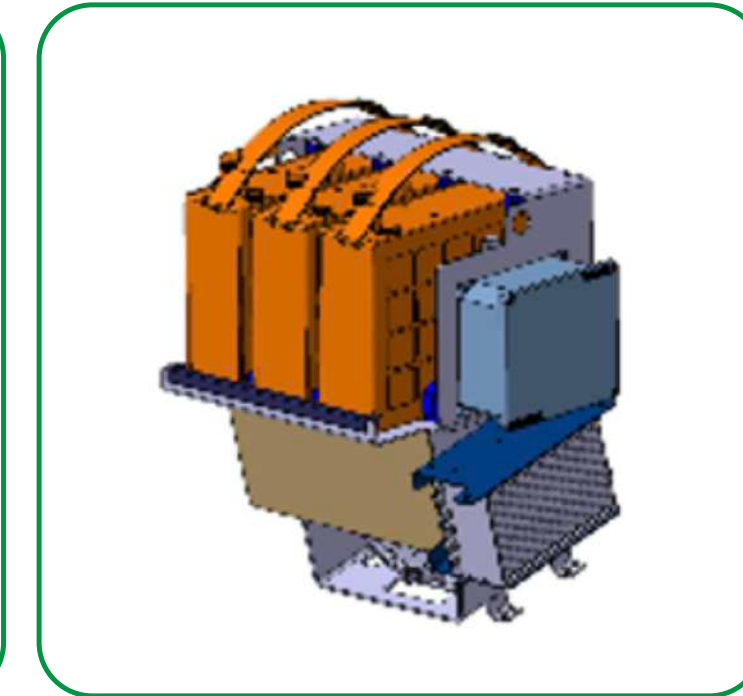
L6-7 4 BATTERY



DO E-INDUSTRIAL – ELECTRIFY PLUG & PLAY



- 100% - Plug & Play Honda GX160- GX200- GX270 (up to GX340, GX390)
- Up to 6kWh battery on board for a WORKING autonomy > 6 h (1kWh average)
- Quick BATTERY Change thanks to SWAP BATTERY CONCEPT
- On Board Charging
- Battery Rack for recharge and NON STOP RANGE
- New functionalities: auto IDLE function and DC/DC integrated
- AUTOMOTIVE QUALITY and VALIDATION
- Metal cathoporesis surface treatment for long life protection to corrosion and harsh environments
- Ready for Industry 4.0



ELECTRIC POWERTRAIN

- Requirements analysis - Vehicle functional specifications:
- Vehicle analysis, mission profile, speed, gradeability, range
- ePWT architectures comparison:
- Electric architectures comparison, technical definition (power, torque, engine speed, lithium battery type and performance, gear box ratio, etc.), performances, auxiliaries loads, thermal management, charging (AC/DC),...
- E-pwt architecture development and system integration
- Electric powertrain installation, E/E components interface (es. HMI), wiring harness, etc.
- Testing and validation of ePWT application, homologation support
- E-pwt supplier: components and/or system level
- Supplier of single components or complete system, diagnosis, etc.

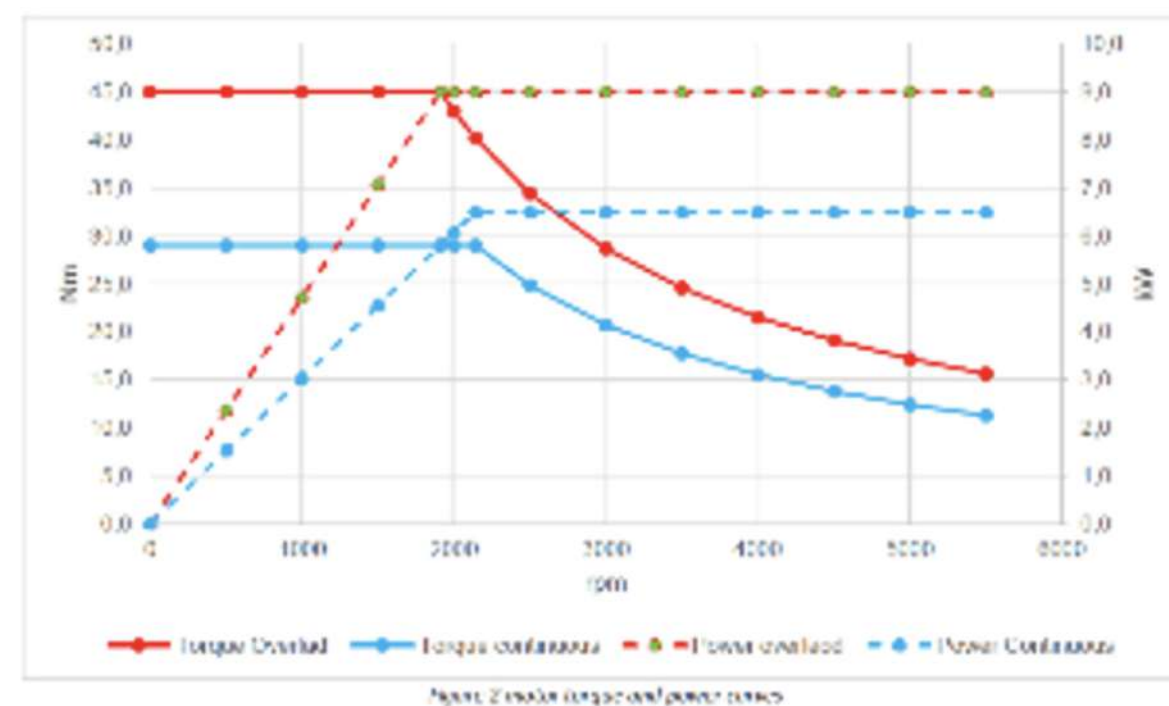


Figure 2: Typical torque and power curves

CELL & BATTERY PACK

- Cell and battery pack issues
 - 21700 NCM,NCA
 - 26650, 31240 and PRISMATIC LFP
- chemistry vs application, balancing power and energy (energy density Wh/l, Wh/kg)
- C-rate (discharge and charge condition, rated & peak) vs thermal management
- Cell and battery pack testing, validation and certification (e.g. UN 38.3)
- High level of safety (e.g. UL 94 V0 materials, Temp. Sensors, Gore venting valve), reliability and durability
- Mechanical protection: IP67, IP6K9K

