LUGE-350 traction drive motor controllers

Speed and Current Control Type for Electrical Vehicle

Digital Mobile Vehicle Controller and Amplifier(LUGE-350) is a family of amplifier/motor controllers with power levels from 5 to 20kVA , designed for nominal voltages 24VDC/48VDC. The LUGE-350 is developed with traction, hydraulic pump and generator applications in mind which makes it an ideal choice for most battery-powered electric mobile vehicles.

LUGE-350 features very high power density. The logic platform, which is common to the entire power electronics range of Luge-350, offers unparalleled flexibility in software customization, as well as adherence to demanding functional safety requirements.

All LUGE-350 feature CAN bus communication and have extended I/O option for standalone operation, or to facilitate distribution of mobile vehicle control and I/O functionality in an overall system.

Features

- **Outstanding quality and reliability**, achieved through superior design and world class manufacturing processes.
- **Rugged design** suitable for the demanding environment of electric vehicles. Protected against ingress of dust and water according to **IP65**.
- **Powerful MCU** with an efficient operating system capable of parallel execution of motor control as well as customized vehicle control tasks.
- Firmware with **built-in standard functionality** for common traction, generator and pump applications.
- Software quality assured through development and review processes designed for **Automotive SPICE®** and **ISO13849-1** compliance.
- **I/O version** available for standalone operation or for distributed system I/O.
- Industry standard **CANopen and J1939** for reliable communication in a vehicle system.
- Control of **AC induction**, **AC synchronous**, **BLDC**, and **synchronous reluctance** machines.
- State of the art vector control for **optimal efficiency** throughout the full speed range.
- Auto-tuning of motor parameters for **rapid commissioning** of inverters into an existing vehicle.
- Extensive and powerful event handling and data logging to simplify troubleshooting and **minimize vehicle down time**.

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General

Motor type	Induction AC, Synchronous AC, Brushless DC, Synchronous Reluctance
Communication	CAN (CANopen, J1939, CANtalk)
Switching frequency	4, 8, 12, 16 kHz (parameterized)
Operating stator frequency	0-599 Hz
Control mode	Speed (rpm), Current (ARMS), Torque (Nm), or Voltage (VDC)
Connector	AMP SEAL 35pin
Operating temperature	-40 °C to 55 °C (-40 °F to 131 °F)
Storage temperature	-40 °C to 70 °C (-40 °F to 150 °F) at ambient humidity of 95%
Protection class	IP65
Standards	UL583, EN1175-1 (decl. of incorporation acc. 2006/42/EC and 2014/30/EU), EN12895

Ratings

Model	Nom. DC supply voltage	Rated RMS current(S2, 2min)	Rated RMS current(S2, 1h)	Rated power(S2, 2min)	Rated power(S2, 1h)
LUGE Low power					
LUGE-350DC24	24 V	350 A	150 A	10.3 kVA	4.4 kVA
LUGE Medium power					
LUGE-350DC48	48 V	350 A	175 A	20.6 kVA	10.3 kVA

Stock model: LUGE-350DC48

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