Design-for-Reliability

Know-how of the Core Technology

DALA started to research and develop DC & AC motor speed controllers for electric vehicles in 2013. Till October 2019, DALA has applied about 50 patents, including 11 patents for inventions.

ZL201721176155.6: Over-current protection circuit and motor controller
ZL201711035955.0: Technique of Anti-slip regulation, device and electric vehicle
ZL201721150865.1: Waterproof structure of motor controller
ZL201721072870.5: Heat-sink structure of motor driver, driver and motor driver
ZL201721538372.5: Intelligence throttle pedal and electric vehicle
...

▲ In-house SMT Facility

Panasonic NPM high speed SMT placement machine

Installed the Panasonic NPM which is the globe leader in SMT capability, ensures high productivity and reliable components mounting.

GKG Automatic PCB Printing

GKG solder paste stencil screen printer is one of the top equipment and an important essential quality assurance.

TRI online AOI

Online automatic optical inspection system delivers fastest PCB inspection and reliably detect the most complex solder and assembly defects.

▲ Reliability Testing Platform

DALA developed and built the patented testing platforms for quality control: Inrush current testing platform, energy feedback featured counter support aging platform, which is a high productivity and 100% aging inspection technique.

Reference Standards

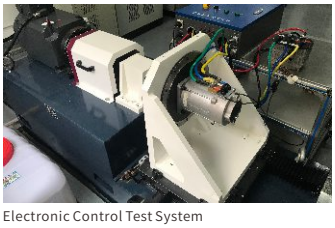
GB/T18488.1-2015《Electric vehicle drive system Part I: Technical Specification》
GB/T18488.2-2015《Electric vehicle drive system Part II: Method of Experiment》
GB/T18488.2-2006.4.10Isolation Resistance
GB/T18488.2-2006.5.9Isolation Resistance
GB/T18488.2-2006.5.1Fixed Frequency Vibration and Sweep
GB/T18488.2-2006.5.20Noise
...

▲ Full Capability Testing Platform

DALA in-house laboratory is deployed with advanced equipments from world reputed brands like Siemens load motor and controller unit, Yokogawa precession power analyzer, Switzerland LEM sampling unit etc.

Reference Standards

GB/T 18488.1-2015《Motor and controllers for electric vehicles Part I: Technical Specification》
GB/T 18488.2-2015《Motor and controllers for electric vehicles Part II: Method of Experiment》
GB/T 755-2008《Method of Testing: Rotating motor rating and performance》
GB/T 22669-2008《Method of testing Tri-phase permanent magnet synchronous motor》
GB/T 1032-2005《Method of testing Tri-phase permanent magnet asynchronous motor》
...



Electronic Control Test System

AC Motor Controller

A8/ A5 / A2

The A series AC motor controller using FOC vector algorithm, automatically identify parameter from AC motors, generates the maximum possible torque and efficiency across the entire speed range, provides excellent drive experience, improved speed regulation, increased grade-ability, extended life of build-in relays and MOSFET units. A series offers fault detect function, supports over-voltage, under-voltage, over current, overheated and Reverse polarity protection.

P/N	Nominal Battery Voltage (V)	2MinuteRMS Current Rating(A)	60MinuteRMS Current Rating(A)
A8-550xIM	48~72	500	225
A8-565xIM	48~72	650	275

P/N	Nominal Battery Voltage (V)	2MinuteRMS Current Rating(A)	60MinuteRMS Current Rating(A)
A5-435xIM	36~48	350	170
A5-440xIM	36~48	400	190
A5-535xIM	48~72	350	150
A5-540xIM	48~72	400	175

P/N	Nominal Battery Voltage (V)	2MinuteRMS Current Rating(A)	60MinuteRMS Current Rating(A)
A2-222xIM	24	225	115
A2-230xIM	24	300	150
A2-422xIM	36~48	225	110
A2-430xIM	36~48	300	145
A2-522xIM	48~72	225	100
A2-530xIM	48~72	300	125

Other Specs

Sensor	Incremental encoder
Communication	CAN
Working / Storage Temperature	-30°C~55°C/-40°C~85°C
IP Rating	IP65
Efficiency	97%
Control Method	IFO Vector

Application

Personnel Carriers

Golf Cars

Lift Truck

Light On-road

Integrated/Sweeper-Scrubber Motor Controller

DN28 - XD515 / XD510 / XD350 / XD250 / XD240

The DN28 series motor controllers are for floor care machines like sweeper and scrubber.
Superior hardware and algorithm design prevent damages from short circuit, over voltage, over current, wiring error etc. Testings of aging, thermal shock, vibration, which ensured high reliability.
The controllers supports CAN bus control, programmable and customizable, and compatible with panel, IoT, BMS equipments.

P/N	Nominal Battery Voltage (V)	Motor	30 Seconds RMS Current Rating(A)	60Minute RMS Current Rating(A)
DN28-XD515	24~36	Traction motor	150	50
		Brush motor	100	50
		Vacuum motor	50	30
		Brush lift motor	20	10
		Squeegee lift motor	20	10

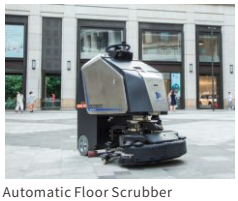
P/N	Nominal Battery Voltage (V)	Motor	2Minute RMS Current Rating(A)	60Minute RMS Current Rating(A)
DN28-XD510	24~36	Traction motor	110	50
		Brush motor	100	50
		Vacuum motor	50	30
		Brush lift motor	20	10
		Squeegee lift motor	20	10

P/N	Nominal Battery Voltage (V)	Motor	2Minute RMS Current Rating(A)	60Minute RMS Current Rating(A)
DN28-XD350	24	Traction motor	100	40
DN28-XD350A	24	Traction motor	70	35

P/N	Nominal Battery Voltage (V)	Motor	2Minute RMS Current Rating(A)	60Minute RMS Current Rating(A)
DN28-XD250	24	Brush motor	80	35
		Vacuum motor	80	25

P/N	Nominal Battery Voltage (V)	Motor	2Minute RMS Current Rating(A)	60Minute RMS Current Rating(A)
DN28-XD240	24	Brush motor	45	30
		Vacuum motor	30	20

Application


Automatic Floor Scrubber

Ride-on Scrubber

Walk-behind Scrubber

Ride-on Sweeper

DC Brushed Motor Controller

D2 / D2S / D1

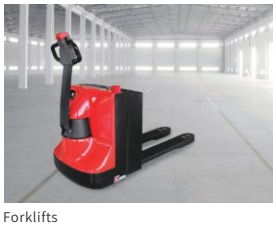
DALA DC brushed motor controllers are cost-effective but well produced reliable devices. Supports CAN Bus and programmable, easy to install and maintenance. D1 can be used for steering motor control.

P/N	Nominal Battery Voltage (V)	20 Seconds RMS Current Rating(A)	60 Minute RMS Current Rating(A)
D2-3101	24	90	20

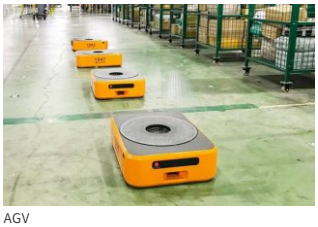
P/N	Nominal Battery Voltage (V)	30 Seconds RMS Current Rating(A)	60Minute RMS Current Rating(A)
D2S-3101	24	90	25

P/N	Nominal Battery Voltage (V)	2Minute RMS Current Rating(A)	60Minute RMS Current Rating(A)
D1-2080x	24	70	35
D1-4070x	36~48	70	35

Application


Forklifts

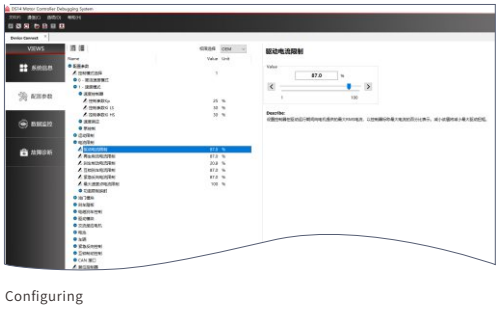
Narrow-aisle Forklift

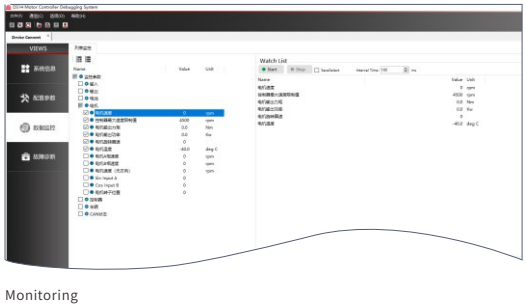

AGV

Mobility Products

DS14 Motor Controller Debugging System

DS14 is a powerful but user friendly Windows PC software which is exclusively for DALA motor controllers for adjusting settings, troubleshooting, firmware upgrading, data logging, identify and fast match motors with electric motors.


Configuring


Monitoring

Design-for-Reliability

DALA Technology (DALA) found in Chengdu, Sichuan, is a technical-driven and quality-focused company that designs, manufactures, and distributes highly reliable controls and integrated systems for electric vehicles.

DALA has 50 patents contributed by its professional R&D team, which has more than 20 highly specialized engineers and technicians. We are know-how of the core algorithm of AC & DC motor driver and speed control, and developed programmable technologies to provide fast and reliable engineering service.

The guide philosophy of DALA is “Highest priority is reliability”, that every aspect of DALA process is committed to the principle: Product Design, Process Design, Test Equipment Design, Failure Analysis Design and we have closed-loop corrective action plan.

DALA operates the factory and laboratory center in Shuangliu, Chengdu, capable to supply 200,000pcs per year and are deployed with advanced equipment from world reputed brands like Siemens, Yokogawa, LEM, Panasonic, TRI (Test Research, Inc.) etc.

We build fully automated Surface Mount Technology lines for consistent quality, and comprehensive performance testing platform for power, high-and-low temperature, vibration, EMC, salt spray, durability, aging etc. In addition to in circuit testing, automated optical inspection (AOI) machines further assure proper component functionality. To maximize heat transfer on IMS boards, we use advanced X-ray and cross-sectioning equipment to inspect solder joints.

We are committed to our culture of integrity, climbing and grateful, and strive to build the 'Made In China'brand which strives to accelerate globe high-quality manufacturing.