



Electric Vehicle Transport

CR SERIES

FEATURES

- Applicable to IM, PM, and BLDC motors
- Nominal Voltage: 48 to 96V
- Peak Current: 315 to 650A
- Continuous Current: 125 to 295A
- CAN 2.0B interface
- Integrated I/O
- IP Rating: IP65
- SMARTuning® motor control software with auto-tuning function
- MTPA (Maximum Torque per Amp.) function
- Field-oriented control (FOC) algorithm
- Regenerative braking
- Protection:
 - Over temperature protection
 - Over current protection
 - Under voltage protection
 - Over voltage protection
- Metal core PCB design improves thermal conductivity
- Usage of 5oz copper in PCB minimizes conduct resistance
- Electrical insulation withstands breakdown voltage up to 1500Vdc.

MOTOR CONTROLLER CR SERIES

CR Series is designed for low voltage, 48~96V, motor applications in low speed electric vehicles (EV) and industrial EVs, which can drive various types of motors, including induction motor (IM), permanent magnet (PM) motor, and BLDC motor, so the CR Series can be integrated with various systems.

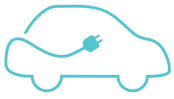
There are several hardware design features in CR Series. The use of low-loss MOSFETs and the increase of PCBA copper thickness lead to high performance and efficiency of the controller, which improves the driving range and alternatively saves initial battery cost. The metal core PCB (MCPCB) design in CR Series provides better thermal conductivity that helps the cooling of the controller. Its safe electrical insulation guarantees to withstand breakdown voltage up to 1500Vac.

CR Series features a comprehensive allocation of multi-function I/O including analog inputs, digital inputs, contactor coil drivers and proportional valve drivers. The CAN 2.0B interface connection allows communication with other devices.

A field-oriented control (FOC) technique is implemented in motor control to provide fast response. Its SMARTuning® software, with auto-tuning function, enables users to optimize new system applications to perform the motor characterization in place at less cost and time to the market.

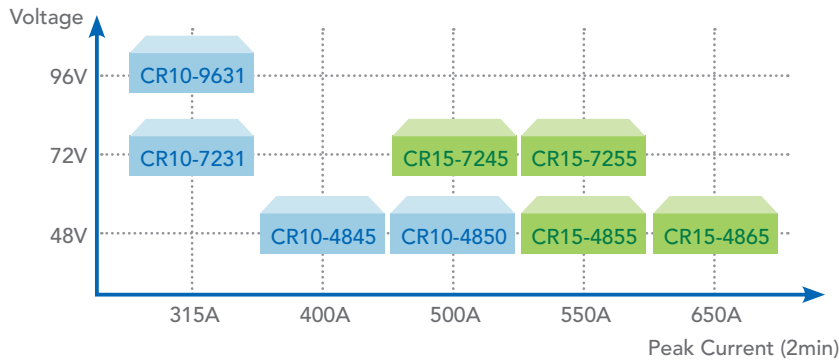
The compact size of the controller makes it easy for system integration, and its robust design, with high IP rating, enables the motor controller to operate in a harsh environment. CR Series is designed and manufactured at the utmost quality to meet performance, safety, and reliability requirements.





Electric Vehicle Motor Controller Solution

CR Series Controller Product Portfolio



■ CR10: 232x165x85mm

■ CR15: 275x232x85mm



APPLICATIONS

Model	CR10 Series	CR15 Series
Micro EV	✓	✓
eTruck	✓	✓
eForklifter	✓	✓
UTV	✓	✓
ATV	✓	✓
eJeepney	--	✓
eTrike/3-Wheeler	✓	✓
Golf Cart	✓	✓
Go-Kart	✓	--



DISPLAY (accessory option)

- Features
 - Adjustable parameters
 - Trackable hour meters
 - Speed adjustment for pump & traction
 - Message/diagnostic/display setting
 - Flexible screen customization
 - Password security
- Resolution
 - 5" color TFT wide-VGA (WVGA) backlit dot matrix LCD, 800 x 480 pixels
 - Colors: 65k, brightness>700cd/m²
- Communication
 - CAN communication: CANopen profiles
 - Wireless: Blue-Tooth 4.0 (option)
 - Alarm buzzer output
- Environment
 - Temperature Range:
 - Operating: -40°C to +70°C
 - Storage: -40°C to +85°C
 - IP Rating: IP65

SPECIFICATIONS

Model	CR10-4845	CR10-4850	CR10-7231	CR10-9631	CR15-4855	CR15-4865	CR15-7245	CR15-7255
Nominal Battery Voltage	48V	48V	72V	96V	48V	48V	72V	72V
Cont. Current (60min)	205A	225A	125A	125A	250A	295A	150A	190A
Peak Current (2min)	450A	500A	315A	315A	550A	650A	450A	550A
Dimension (LxWxH)	232x165x85 mm				275x232x85 mm			
Max. Efficiency	>96%							
Operating Ambient Temp.	-40~50°C							
Max. Heatsink Temp.	85°C							
Motor Position Detection	Encoder and Digital Hall							
IP Rating	IP65							
Communication	CAN 2.0B							
Protection	OTP, UVP/OVP, OCP							

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