

dynamic™ 

RHINO² 

Superior Power and Performance

- Industry leading power & performance
- Advanced safety and battery protection
- Compact and durable full metal casing
- Thermally optimised design
- Reliability second to none!

CLASSIC RANGE
AND 200A MODEL
NOW AVAILABLE

Models available with boosted power up to 90A, 100A, 130A, 140A, 180A and 200A, with optional connector cover.



dynamic™ 

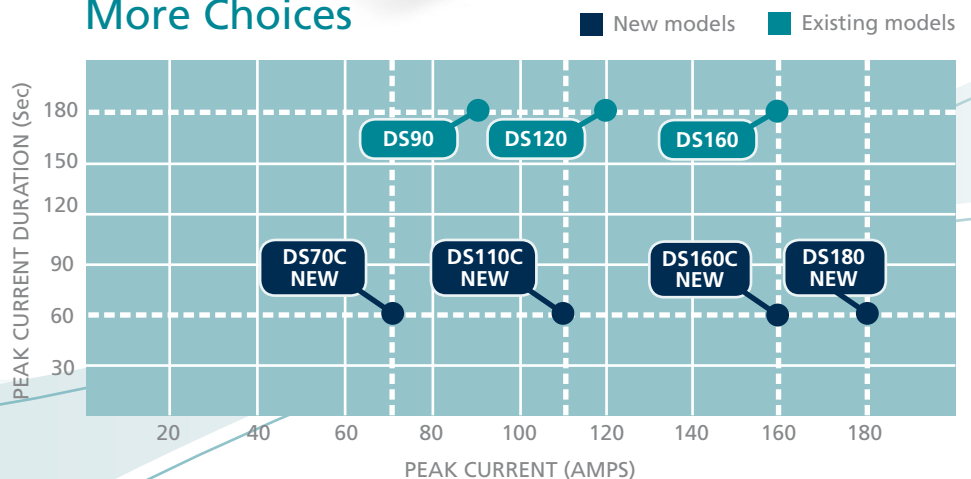
www.dynamiccontrols.com



DS70C*, DS90,
DS110C* & DS120

**Classic models have a
grey shot blast finish.*

More Choices



Building on the legendary performance of Rhino, Dynamic Controls delivers the most powerful and advanced scooter controller range yet with Rhino2. The Rhino2 controllers offer superior drive control, optimised ride comfort and a high level of configuration, making it suitable for a wide variety of scooters. Added to the Rhino2 range is a new more powerful 180A peak current (200A boost current) controller. The Rhino2 range delivers powerful boost current when you need it, peak stated current for a minimum of 3 minutes (60s for DS180) and an incredible continuous current rating, all in a compact, rugged design. Designed to closely match the performance of the original Rhino, the Rhino2 Classic range takes advantage of the enhanced features of Rhino2, whilst giving OEMs more options to match the optimal controller to a scooter. The Rhino2 Classic range delivering a powerful boost current and a peak current time up to a minimum of 60s.

With the original and Classic Rhino2 variants you can future proof your products by offering your customers the very best of safety and security with dual decode signal processing. Your dealer networks will appreciate the advanced battery management and feedback, designed to ensure that end users maximise their battery's life.

Rhino2 Specifications

Model	Description	Peak Current	Peak Current Duration	Continuous Current	Boosted Current (10sec)
New Classic Models					
DS70C	70 Amp	70A	60s	25A	90A
DS110C	110 Amp	110A	60s	43A	130A
DS160C	160 Amp	160A	60s	50A	180A
Original Rhino2 range with new 180A controller					
DS90	90 Amp	90A	3 minutes	36A	100A
DS120	120 Amp	120A	3 minutes	48A	140A
DS160	160 Amp	160A	3 minutes	64A	180A
DS180	180 Amp	180A	60s	64A	200A*

* The DS180 has a Boosted Current of 200A for 5 seconds.

Connectors

	DS70C, DS90, DS110C & DS120	DS160, DS160C & DS180
Battery	6 way QC tabs	2 x M5 screw terminals
Motor	4 way QC tabs	2 x M5 screw terminals

Dimensions

Width	153mm
Height	44mm
Depth	100mm
Mounting pitch	140mm
Weight	1kg

Materials

Electroplated die cast aluminium top and bottom case <i>Note: Classic range are not electroplated</i>
V0 rated waterproof seal
V0 rated fibre reinforced plastic power connector shroud
Optional aluminium cover for all connectors

The Rhino2 features

- 70 Amp, 90 Amp, 110 Amp, 120 Amp, 160 Amp and 180 Amp models available.
- With boosted power of 90 Amp, 100 Amp, 130 Amp, 140 Amp, 180 Amp and 200 Amp, Rhino2 delivers the power you want when you need it.
- Compact design with more power from the same footprint.
- Programmable acceleration curves, improved rollback on slopes and motor matching algorithms ensuring improved curb-climbing and hill-starting capabilities.
- Motor open and short circuit testing while driving allows detection of broken brushes
- Improved downhill speed control to maintain or reduce speed on slopes as desired.
- Enhanced thermal and current control to extend life of motors and controllers.
- Speed reduction wiper (SRW) technology provides a seamless speed reduction when turning for extra stability.
- Throttle Dual Decode* provides extra safety in case of a throttle failure, and allows

manufacturers to comply with the new requirements of ISO7176-14 (2009).

- Intelligent motor and battery management providing automatic power flow optimisation, auto battery configuration, 5V and 12V battery capacity outputs and in-depth battery logging and analysis tools
- Support for a range of battery types, multifunction pins and flexible drive inhibits.
- Advanced diagnostics and servicing tools, including event and drive-time logging, and programmable servicing scheduler.
- 2 x drive profiles, brake and reverse lights, reversing beeper and electronic park brake release.
- A separately available aluminium top cover provides maximum protection against water splashes and mechanical protection to terminals.
- IP54 ingress protection.
- Lead-free RoHS compliant.
- Designed to exceed ISO 7176-14 Standards.

*requires ISO compliant speed pot

Rhino2 Functionality

User Personalisation

- Sleep Timer
- Wakeup Style
- Swap Throttle Direction
- Enable Beeper
- Flash Code Beeper
- Sleep Beeper
- Reverse Beeper
- Motion Beeper
- Beeper Timing
- Deep Discharge Beeper (NEW ISO requirement)
- Sleep on Fault or Inhibit
- Power Off after Sleep

Throttle Configuration

- Throttle Type
- Throttle Input Selection (for single fault tolerant devices)
- Throttle Neutral Offset
- Throttle Full Scale Deflection
- Throttle Response
- Throttle Dead-band
- Throttle Testing
- Maximum Throttle Voltage
- Throttle OONAPU Testing
- Throttle Fault Non Latching
- Speed Limit Pot
- Slam Brake

Drive Performance

- Maximum Forward Speed
- Forward Acceleration
- Forward Deceleration
- Maximum Reverse Speed
- Reverse Acceleration
- Reverse Deceleration
- Lowest Forward Speed
- Lowest Reverse Speed
- Soft Start Period
- Soft Finish
- Emergency Deceleration
- Slam Braking
- Push Speed
- Roll-away Speed
- Speed Reduction Wiper (SRW) Parameters

OEM Drive Limits

- Maximum Forward Speed Limit
- Maximum Reverse Speed Limit
- Lowest Forward Speed Limit
- Lowest Reverse Speed Limit
- Acceleration Limit
- Deceleration Limit

Motor Management

- Motor Protection Parameters
- Motor Reverse
- Load Compensation
- Maximum Load Compensation
- Current Limit
- Boost Current / Boost Time
- Stall Timeout
- Motor Testing
- Maximum Motor Voltage

Parkbrake Management

- Park Brake Testing
- Park Brake Neutral Delay
- Park Brake Release Delay

Battery Management

- Undervoltage Rollback
- Fuel Gauge Minimum/Maximum
- Fuel Gauge Warning
- Battery Cut-Off Voltage
- Battery Gauge Dead-band

System Options

- Service Scheduler

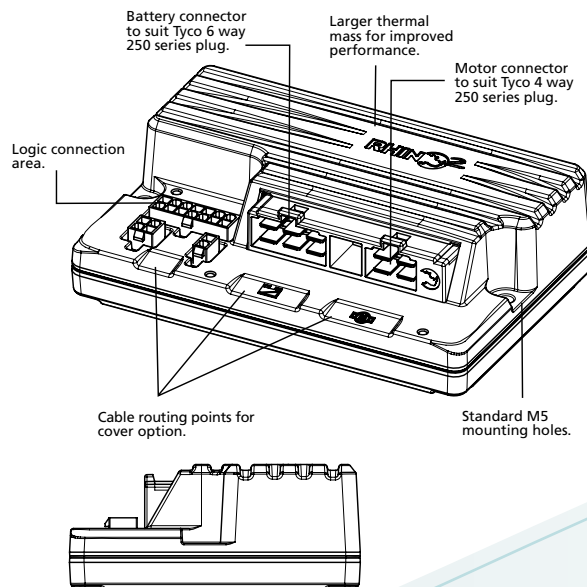
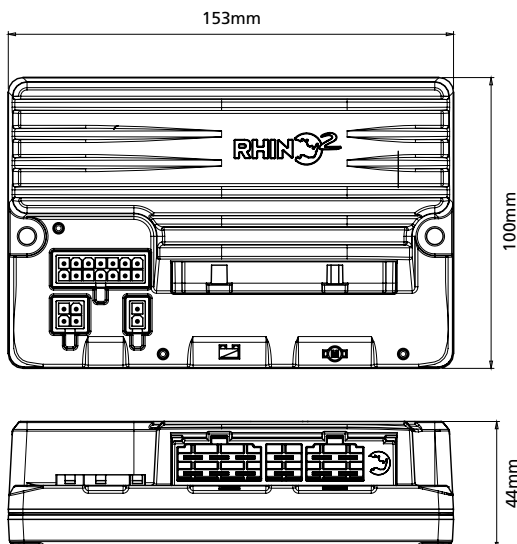
Multi-function Inputs Configuration

- Multi Function Pin Programming
- Active States

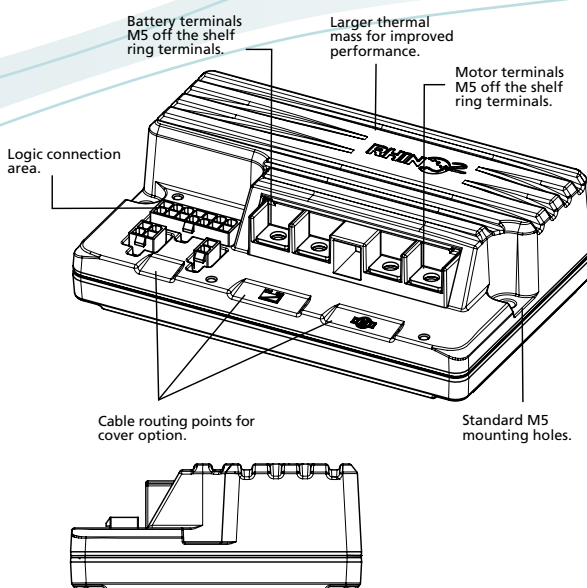
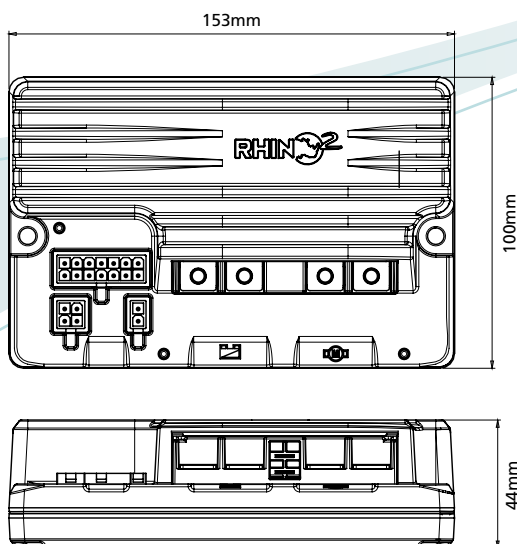
Multi-function Outputs Configuration

- Flash Codes
- Multi Function Pin Outputs
- Key Switch Status LED

DS70C, DS90, DS110C & DS120



DS160C, DS160 & DS180



For further information please call and ask for our sales team at these numbers.

EUROPE

Ph: +44-1562-826-600
 Fax: +44-1562-824-694
 eusales@dynamiccontrols.com

ASIA

Ph: +886-955-335-243
 Fax: +886 225-981-562
 asiasales@dynamiccontrols.com

AUSTRALASIA (CORPORATE OFFICE)

Ph: +64-3-962-2519
 Fax: +64-3-962-2966
 sales@dynamiccontrols.com

USA

Ph: +1-440-979-0657
 Fax: +1-440-979-1028
 usasales@dynamiccontrols.com

Dynamic Controls is the world's leading manufacturer of electronic controls for power wheelchairs and scooters.
 Actual products may vary from those featured. Not all products are available at the time of printing.