



CONTROL
SOLUTIONS LLC

 **Phoenix**
Family of Motor Controllers

*"We Put The Personality
In Your Product"*



*Brushed,
Brushless, &
AC Induction*

*Up to 250A
Peak*

*12V or
24-48V
DC Input*

One Small HW Package



The Phoenix Family of Motor Controllers is “one of a kind” in the world of motion control today. From its power-to-size ratio to the ability to control multiple motor technologies, to the wide range of input voltages and output currents, Phoenix simply has no equal.

The Phoenix family has been developed for a wide variety of applications in the following industries: Material Handling, Floor Care, Robotics, Elevated Work Platforms, Industrial Equipment, Light Construction Equipment, Utility Tugs & Pushers, Small Electric Vehicles, Oil & Gas, etc.

Aside from a traction controller, the Phoenix Family can also be configured for various Chore applications such as Pumps, Blades, Vacuums, and Scrub Brush Motors. There are specific features that come with chore applications such as precise speed monitoring, safety features for enabling and stopping, and being able to hold a specific motor speed regardless of load.

CANbus communication also provides for additional reliability and safety and allows Phoenix to be easily integrated with other CAN enabled devices.

Main Features/Benefits:

- Brushed (PMDC), Brushless (BLDC or PMAC) and AC Induction* supported with the same HW
- Up to 250A (2 min) Peak Output Current
- 12V or 24V-48V nominal input voltages
- CAN J1939, UART, or I2C Interface
- Very High Power-to-Size Ratio
- 5.5”x3.3”x2.2” (140mm X 84mm X56mm)
- Multiple Configurable Analog and Digital I/O
- Configurable for Traction, Chore, or Steering Control

* AC Induction available 2020



Model CSP190 shown



	Phoenix Base Models		
Features	P125	P190	P250
Peak Current (2 min)*	125A	190A	250A
Continuous Current*	50A	75A	100A
Motor Type (S)	Brushed DC, Brushless DC, PMAC, AC Induction**		
Voltage (Nominal)	12, 24-48V		
Voltage (Max)	16V, 60V		
Interfaces	CAN, I2C, UART		
Environmental protection	IP65		
Reverse Battery Protection	Yes		With External Contactor
Integrated Battery Charging	Yes		No
Operating Ambient Temperature	-40C to 60C		
Physical Size	5.40"(137mm) X 3.25"(82.5mm) X 2.10"(53.5mm)		
Weight	.90 lbs. (.41 Kilograms)		
Flammability Rating	UL94V-0		

* May require securing heatsink base to additional metal for maximum performance.

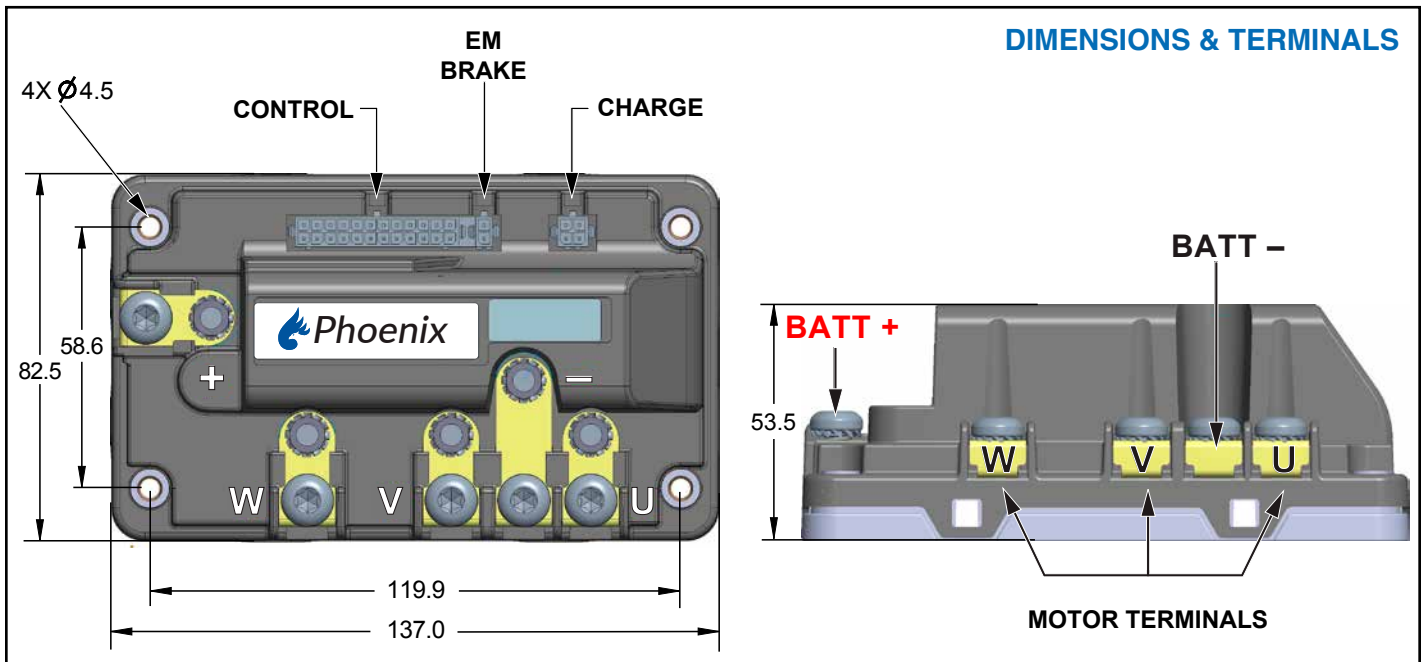
** AC Induction available in 2020.

All specifications subject to change without notice.

Additional Features:

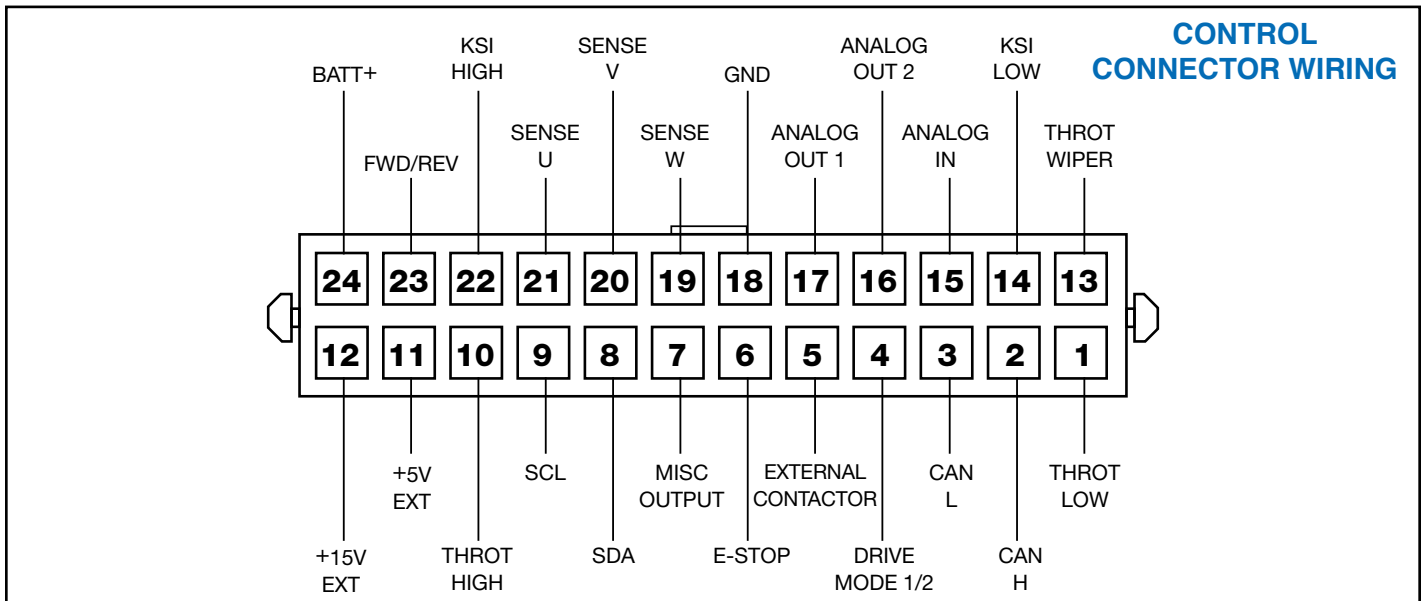
- Traction, Chore, Pump, and Steering Control
- Very High Power to Size Ratio
- Programmable Speeds, Accels, Decels, etc.
- (2) Independently Programmed Drive Modes
- Diagnostics
- (6) Misc. Digital I/O Pins
- (2) Misc. Analog I/O Pins
- Dual Throttle Support
- RPM Hold Mode (BLDC Only)
- BLDC Stall Detection
- Throttle Fault Detection
- Reverse Battery Protection
- Low/High Voltage Shutdown
- Over Temp Protection
- Multiple Current Limit Modes
- Programmable Power Saving Timeout
- Compliance with UL 583 & UL 60335-2-72





All specifications subject to change without notice.

All dimensions are in millimeters



“We Put The Personality In Your Product”

Your end product is unique and special to you. The features it has. The way it feels when you drive it. The way it out performs the competition. There are likely countless attributes that set it apart from the competition that give it true value. This is what we like to call “The Personality”. Control Solutions has been working for 30+ years developing innovative motion control products that do just that. Most importantly, we prefer to work intimately with each and every OEM to help identify the personality needed and to optimize it to its fullest potential.