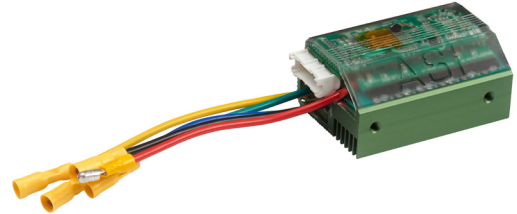
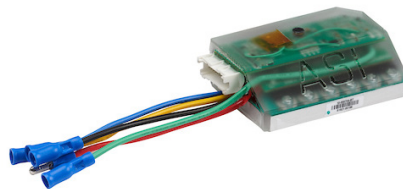
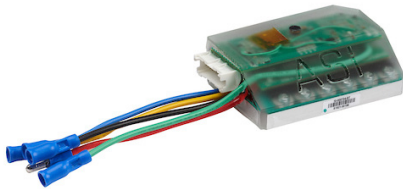


# LOW POWER CONTROLLERS

BAC 350 | BAC 500 | BAC 800



The ASI BAC 350, BAC 500 and BAC 800 are a series of high density motor controllers that utilize the latest in sinusoidal flux vector control to ensure smooth and quiet brushless DC motor operation and efficient vehicle operation. They can operate over a nominal battery voltage range of 24VDC to 72VDC.

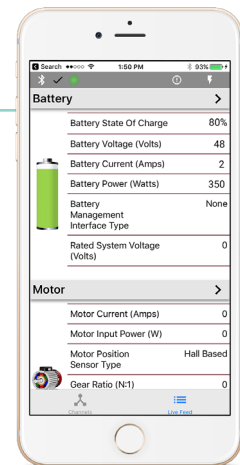
A robust MOSFET-based three phase bridge provides peak efficiencies in excess of 99%, with no audible noise. Hall sensor based motor commutation, and sensorless commutation are also supported.

Programmable performance mapping allows throttle and regenerative braking inputs to be adjusted via ASI's BACDoor™ PC configuration/Engineering software to meet specific performance requirements.

Numerous programmable protection features including motor/controller temperature, battery over/under voltage, and motor/battery current limits increase controller and motor longevity.

## Intelligent. Configurable. Reliable. Powerful.

- Can be attached to additional heat sinking to significantly increase performance
- PWM drive for low ripple current and silent drive
- Field oriented control for increased efficiency and smooth motor operation
- Multiple analog and digital inputs
- CANOpen with (optional) BLE communication
- Support multiple sensor configurations
- Single pulse and quadrature pedal or wheel speed inputs
- Analog voltage model or BMS communication based battery management system interfaces
- Sensorless or hall commutation with automatic switching
- Configurable throttle, brake cut-off and regeneration options
- Fault protection including:
  - Bus over and under voltage
  - Motor over current
  - Motor and controller over temperature
  - MOSFET bridge self tests



Includes BACDoor software to fine tune performance. Available for OEM customers.



Engineered in Canada

519.342.2507 | [www.accelerated-systems.com](http://www.accelerated-systems.com)

# SPECIFICATIONS

## OUTPUT PHASE CURRENT CONTROLLER

CONTROLLER	PEAK
<b>BAC350</b>	50 A-DC
<b>BAC500</b>	70 A-DC
<b>BAC800</b>	90 A-DC

## INPUT POWER

CONTROLLER	VOLTAGE RANGE (DC)
<b>BAC350</b>	24V to 48V
<b>BAC500</b>	24V to 48V
<b>BAC800</b>	36V to 72V

## COMMUNICATION PROTOCOL

TTL-232-CANOpen	Standard
CANOpen with <b>BLE</b>	Optional
TTL-232 with <b>RS-485</b>	Optional
TTL-232 with TTL-232	Optional
TTL-232 with <b>BLE</b>	Optional

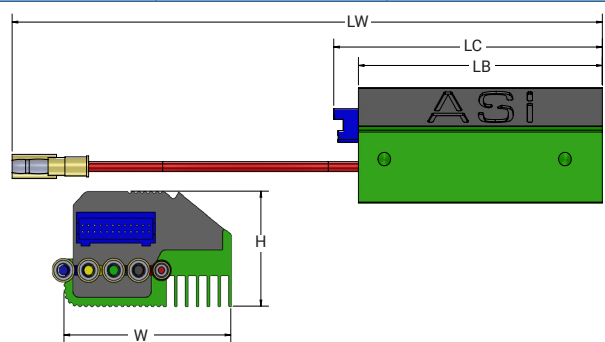
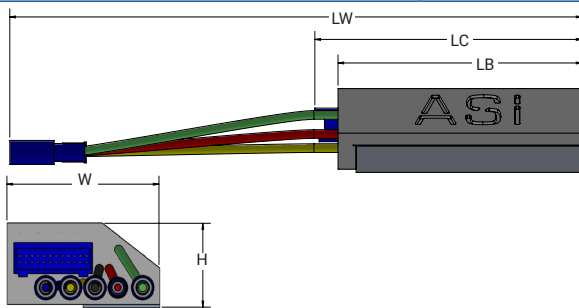
## CONTROLLER POWER AND PERFORMANCE

PWM frequency	13.5 kHz default / up to 16.5 kHz when operating in remote mode
Maximum Controller output frequency	500 Hz
Electrical isolation to heatsink	500 VAC
Storage ambient temperature	-40°C to 75°C
Operating ambient temperature	-20°C to 50°C
Thermal cutback	Controller linearly reduces maximum current limit with an internal heatsink temperature from 85°C to 95°C, complete cutoff occurs above 95°C
Package environmental rating	IP67 (excluding electrical connections)
Speed regulation (range)	+/- 5% at top speed
Minimum motor phase to phase inductance	20 µH
Motor control scheme	Sinusoidal field oriented (FOC)
Motors supported	PMAC and BLDC

\*Also Available in TTL-232 with LIN and LIN BLE

## INPUT SPECIFICATIONS

TYPE	QTY	VOLTAGE	VMIN	VMAX
Hall sensor inputs	3	Logic Low	0 VDC	0.5 VDC
		Logic High	3.5 VDC	5 VDC
Digital inputs	2	Logic Low	-0.3 VDC	1.5 VDC
		Logic High	4 VDC	5.3 VDC
5V analog inputs	3	Analog	0 VDC	5 VDC
10V analog inputs	1	Analog	0 VDC	10 VDC



## DIMENSIONS\* & WEIGHT

MODEL	LW(W/WIRES)		LC (TO CONNECTOR)		LB (BODY)		W		H		WEIGHT	
	mm	in	mm	in	mm	in	mm	in	mm	in	g	lb
<b>BAC350</b>	190.0	7.48	88.7	3.49	81.0	3.18	50.5	1.98	26.2	1.03	173	.38
<b>BAC500</b>	190.0	7.48	88.7	3.49	81.0	3.18	50.5	1.98	26.2	1.03	173	.38
<b>BAC800</b>	196.0	7.70	89.2	3.51	81.0	3.18	55.4	2.18	36.0	1.41	296	.65

\*Measurements are +/- 10mm or .40 in



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