

# 60S12.215BCH-A 3,000 Watt

60V/12V Bi-Directional DC/DC Converter



## Product Overview

The 3,000-Watt 60S12.215BCH-A bi-directional non-isolated DC/DC converter provides a complete solution for in-vehicle power distribution with 12V/60V battery configurations for a variety of applications including micro and mild hybrid e-Mobility systems.

The bi-directional DC/DC converter charges a low side (12V) battery during normal operation (Buck mode) and charges or assists the high voltage (60V) battery in emergency situations (Boost mode). The bi-directional DC/DC converter operates more as an ideal current source with variable direction, thus allowing energy transfer between two voltage domains.

Voltage feedback maintains the output voltage within the acceptable operating range and eventually allows a custom charging profile for the battery pack. The converter regulates the average current flowing between the high voltage and low voltage ports in the direction selected via CAN interface. It is packaged in IP6K9K rated housing. Three M8 bushings are provided for power connection, an 8-pin connector for ENABLE, and baud rate selection signals and CAN communication.

## Features

- E-Mobility 12V/60V Battery System
- Buck and Boost modes of operation
- Low-Side Voltage Range (LS): 9V-16V (Code C)
- High-Side Voltage Range (HS): 36V-63.2V (Code F)
- Overcurrent, Overvoltage, & Over-Temperature Protection. All protections are latching.
- Disconnect switch LS (12V) and HS (60V)
- Constant Voltage and Constant Current Mode
- LS and HS Current Programming and Monitoring
- Internal temperature monitoring
- High power density
- Efficiency up to 96.5%
- Dimensions 10.4" x 9.9" x 2.05"
- Weight 7.58 lb. (3.44 kg)
- Constant switching frequency
- CAN 2.0b Interface including ENABLE
- Good shock and vibration damping
- RoHS Compliant

## Operational Characteristics

Parameter	Min.	Typ.	Max.	Units
Operating Temperature	-40	-	85	°C
Storage Temperature	-55	-	125	

High Side				
Parameter	Min.	Typ.	Max.	Units
Operating Voltage Range	36	48	63.2	V
Turn-on Threshold	35	35	53	
Turn-off Threshold	31	32	52	
Input Current Range	1	-	85	A
Over-Voltage Protection	35	65	66	V

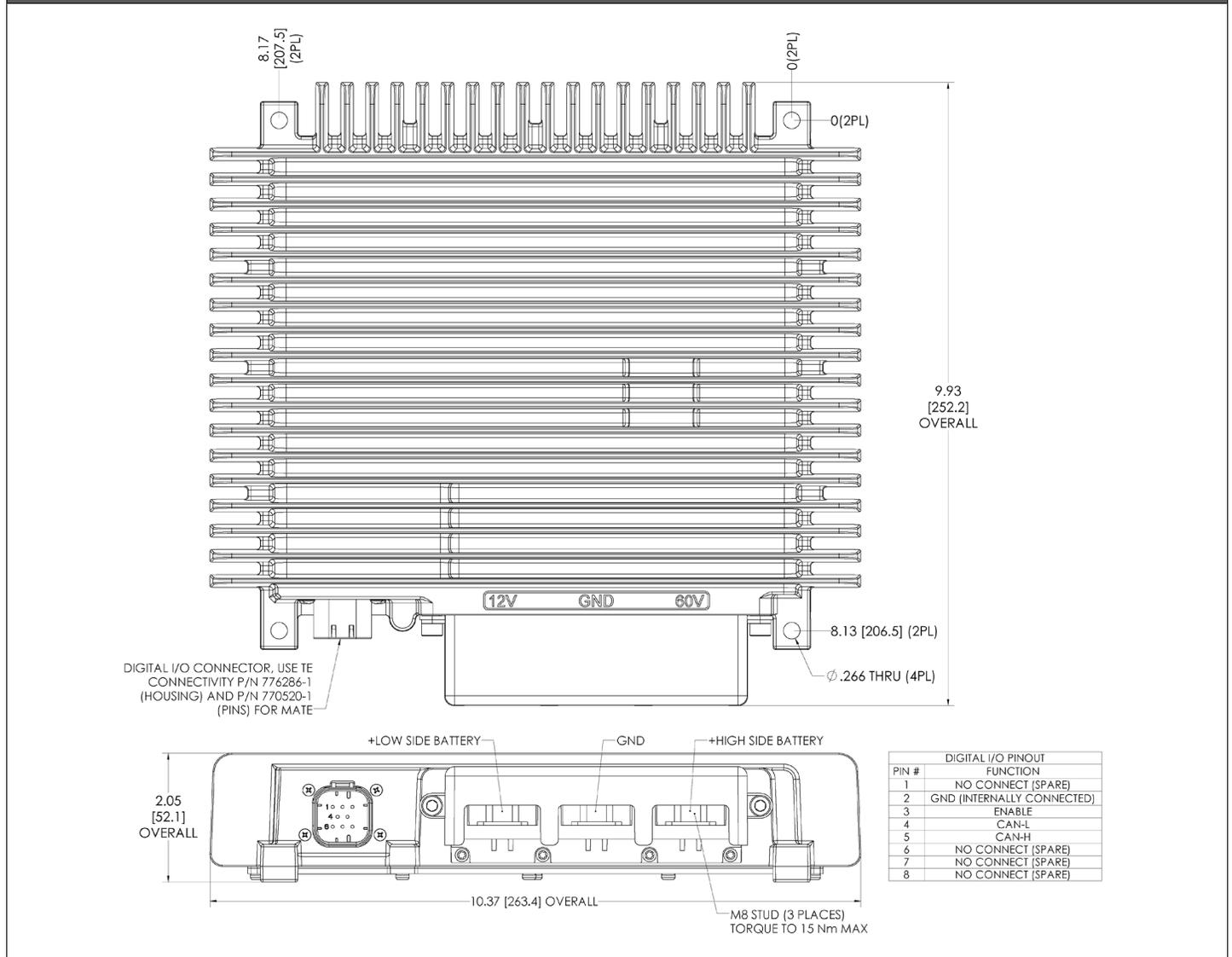
Low Side				
Parameter	Min.	Typ.	Max.	Units
Operating Voltage Range	9	12	16	V
Turn-on Threshold	8	8	13	
Turn-off Threshold	7	7	12	
Input Current Range	1	-	215	A
Over-Voltage Protection	14	17.5	17.5	V
Efficiency	95.1	96.0	96.5	%

Ordering Guide				
Model	Input Voltage	Output Voltage	Output Current	Baud Rate
60S12.215BCH-A	36-60V	9-16V	215A	500
60S12.215BCH-A-F02	36-60V	9-16V	215A	250

### Mechanical Specifications

Parameter	Description	Unit
Dimensions	10.34 x 9.93 x 2.05	inches
	263.4 x 252.2 x 52.1	mm
Weight	3.44	kg
	7.58	lbs.
Enclosure	A380 aluminum	

#### MECHANICAL SPECIFICATIONS



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