

## DC-DC Converter (Isolated) for Hybrid Electric and Fuel Cell Systems

### PRODUCT OVERVIEW:

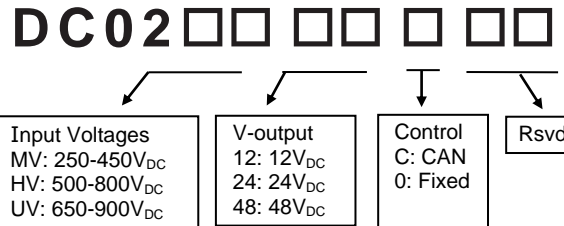
The DC02 Series of converters has been designed for medium and heavy duty electric, hybrid and fuel cell commercial vehicles. It uses advanced digital control with J1939 communications and diagnostics with secondary analog controller and high frequency magnetics with advanced ZVS/ZCS switching to achieve high power density and efficiency. DC02 products are FCC Class A and SAE J1455 compliant. MIL-STD-1275 option available.

### FEATURES:

- DC Input Voltage Range: 250-900V<sub>DC</sub>
- DC output range: 12-30V<sub>DC</sub>
- Efficiency: 95% rated, > 94% from 40% to 100% load.
- Output Current: 300A at 27.8V<sub>DC</sub>, 9 kW, or 450A at 13.6V<sub>DC</sub>. Can be paralleled externally.
- Short Circuit, Over Current, Over/Under Voltage and Over Temp protection.
- Output voltage 12 to 30 V<sub>DC</sub>, (42-57V<sub>DC</sub> optional) programmable via CAN.
- Input and output voltages, currents, power and temperature reporting.
- CAN command, control and diagnostics. Output voltage can be regulated via CAN.
- High Efficiency ZVS/ZCS architecture.
- FCC Class A EMI/EMC Compliance (MIL-STD-1275 optional)
- SAE J1455 Vibration Compliant
- IP65 Rated, (IP67 optional)



### PART NUMBERING:



### APPLICATIONS:

Electric, Hybrid and Fuel Cell Vehicles, Light Rail, Off-road equipment and Battery charging systems. DC02 can be customized to meet your most stringent applications requirements.

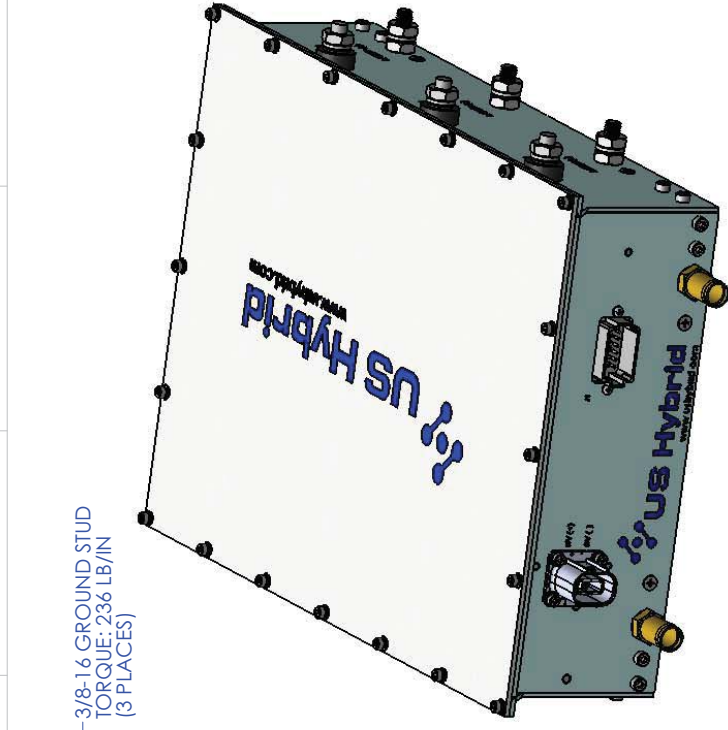
Signal Connector: DEUTSCH DT15-12PA	
1	GND
2	BIAS_ENABLE
3	CAN_H
4	CAN_L
5	RS232_TX
6	RS232_RX
7	GND
8	#CDC_FAULT
9	EXT_BIAS
10	#BOOT_SCI
11	RESERVED
12	RESERVED
<b>HV Connector: Tyco</b> <b>LV Output: 3/8" stud</b>	

Line regulation (±10%)	±1 %
Load regulation	±2%
Ripple	< ±1% + 100 mVp-p
Load transient (10-90%)	< 5% typical
Response time	50 ms typical
Turn-on rise time	Soft-start, 450 ms typical
Output protection	Overload and short circuit
Cooling	Liquid cooled < 60°C, 12 Lpm
Operating temperature	-20°C to +70°C
Load de-rating	2.5% /°C from 60°C liquid
Storage temperature	-40°C to +105°C
Efficiency	95%
Isolation resistance	> 1 MΩ at 700Vdc
Weight	15 kg.
Environmental Rating	IP65 (IP67 Optional)
EMI/EMC	FCC Class A
SAE	J1455



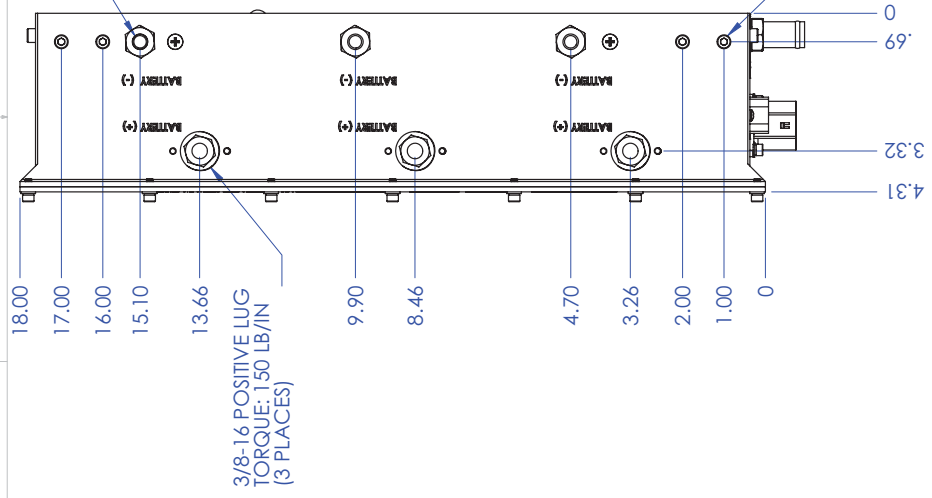
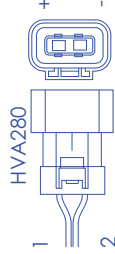
US Hybrid





J1 - PIN Table

SIGNAL GND	1
BIAS_ENABLE	2
CAN_H	3
CAN_L	4
RS232_TX	5
RS232_RX	6
SIGNAL_GND	7
#CDC_FLT	8
EXT_BIAS	9
#BOOT	10
RESERVED	11
RESERVED	12



NOTES: UNLESS OTHERWISE SPECIFIED

- DC/DC CONVERTER WEIGHT: 16.4 kg (36 LBS.).
- COOLANT: 50/50 ETHYLENE GLYCOL / WATER.
- MIN FLOW: 11.4L / MIN (3.0 GPM).
- PRESSURE DROP: 9.65 kPa (1.4 PSI) @ MINIMUM FLOW.
- PRESSURE DROP: 14.05 kPa (2.1 PSI) @ 40 °C.
- INLET TEMP: -20 °C TO 60 °C.
- OPTIONAL 3/8 NPT HOSE FITTINGS: 3/4" - 3/8" OR 90 DEG. FITTINGS.
- TORQUE 3/8-16 FASTENERS TO 150 LB/IN.
- INPUT MATING CONNECTOR: TYCO HVA280 (P/N# 1587902-9).
- SIGNAL MATING CONNECTOR: DEUTSCH P/N# DT06-12SA.

**US HYBRID**

DATE: 3-14-11

NAME: FERICKSON

DRAWN: [ ]

CHECKED: [ ]

ENG APPR: [ ]

MFG APPR: [ ]

TITLE: DC-DC CONVERTER OUTLINE & MOUNTING

REV: E

DWG. NO: DC020000DE

SCALE: 1:3

SHEET 1 OF 1