DC-DC Converters
Rugged Series

CR2XXXXX

Core Technology's series of Rugged Non-Isolated DC-DC converters provide up to 500 Watts in a compact (4.62 X 4.87 X 1.5") form factor. These units are housed in a 0.125" thick aluminum housing, and the internal components are conformal coated for extreme environmental conditions. They are ideal for truck / automotive and other harsh applications which require 14-60 VDC input. These units can be mounted to a metal frame or attached to a heatsink for cooling. The Rugged Series of DC-to-DC Converters provide robust input transient protection, high efficiency, variable output voltage (factory-set) and over temperature shutdown with auto-recovery. These features make the Rugged Series ideal for compact, rugged applications.

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PRODUCT FEATURES

- Over-Temperature Shutdown (With Auto Recovery) (Up to 95°C Base-plate)
- Output Voltages Available From 5V to 48V (Special Output Voltages Available)
- Output Voltage Adjustment From 60% to 110% (Factory Set)
- Over-Voltage Protection
- Over Current Protection
- UL & CSA Recognition (Pending)
- Within FCC & VDE Class A Radiated Limits (Pending)
- High Efficiency
- Compact Form Factor 4.62” X 4.87” X 1.5”
- Low Noise Output
- Vibration Resistant
- Weather Proof
- Reverse Voltage Protection
- Soft start
- Output Current Up to 30 AMPS
- Fused or Non-fused (Factory Set)
- MTBF=629,168 hrs (MILHDBK-217E)
- Operating Temperature Range -35°C to 95°C (Base-plate)
- #8 Brass screw Lugs for Input and Output Terminals

DC INPUT

The input can operate from a 14 - 60 VDC range.

INPUT TRANSIENT PROTECTION

Will withstand input transient of 250V peak, 45us wide at 300 HZ.

REGULATED VOLTAGE

Output voltage available 5, 12, 15, 24, 28, 48. These voltages can be adjusted up by 10% or down by 60%.

OVER-TEMPERATURE SHUTDOWN

The CR2XXXXX- will automatically shut down in the event of an over-temperature condition, and will recover automatically when the base-plate reaches a safe operating temperature.

OVERVOLTAGE PROTECTION

Internal circuitry shuts the converter down should the output exceed the OVP set point.

OVERLOAD PROTECTION

The output is protected against overloads and short circuit. The output will automatically recover upon removal of the overload.

ELECTRICAL SPECIFICATIONS - Output

Parameter	Symbol	Units	CR205XXX	CR212XXX	CR215XXX	CR224XXX	CR228XXX	CR248XXX
Nominal Output Voltage	Vo	Volts	5	12	15	24	28	48
Typical Efficiency *1	heff	%	90	92	93	95	95	96
Max Ripple & Noise	Vpp	mV	50	200	200	250	250	250
Reflected Ripple Current *1	I_{RR}	ma		750				
Output Voltage Accuracy	-	%	≤1%					
Voltage Adjustment Range	-	%	60% to 110% of nominal					
Maximum Line Regulation*3	-	%	≤1.0%					
Maximum Load Regulation*2	-	%	≤1.0%					
Current Limit Type	-	%	Straight					
Over Current Protection	-	%	105% - 125% of output current set point					
Overvoltage Protection	-	%	118% - 125% of nominal output voltage (manual reset)					
Over-Temperature shutdown	%	%	105% of Maximum Base-plate temperature (auto-recovering)					
Over temperature shutdown Hysteresis	Thy	Celsius	5 °C -10 °C					

ELECTRICAL SPECIFICATIONS - Input

Parameter	Symbol	Units	CR205XXX	CR212XXX	CR215XXX	CR224XXX	CR228XXX	CR248XXX
Input Voltage Range	Vi	Volts	14-60	14-60	17-60	26-60	30-60	50-60
Isolation (Input & Output to Chassis)	Vdc	Volts	500	500	500	500	500	500

ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Units	CR205XXX	CR212XXX	CR215XXX	CR224XXX	CR228XXX	CR248XXX
Maximum Output Power	Po	Watts	200	350	350	500	500	500
Maximum Output Current	Io	Amps	40	30	25	23	20	12
Maximum Input Volts	Vi	Volts	64	64	64	64	64	64
Minimum Input Volts	Vi	Volts	14	14	17	26	30	50
Input to output Isolation	-	None	-	-	-	-	-	-
Base Plate Temperature	Tcs	Celsius	-35°C to 95°C	-35°C to 95°C	-35°C to 95°C	-35°C to 95°C	-35°C to 95°C	-35°C to 95°C
Storage Temperature	Tst	Celsius	-40°C to 110°C	-40°C to 110°C	-40°C to 110°C	-40°C to 110°C	-40°C to 110°C	-40°C to 110°C
Vibration	-	GRMS	30 (Three Axis Random Vibration)					

*1 @ 75% of Max **I**

*2 From no-load to Full Load.

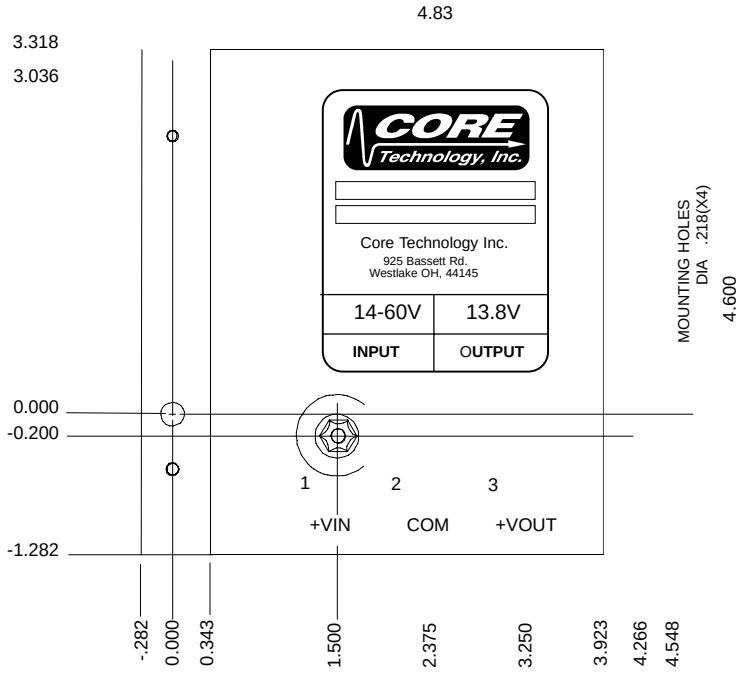
*3 From Min input to Max input voltage.

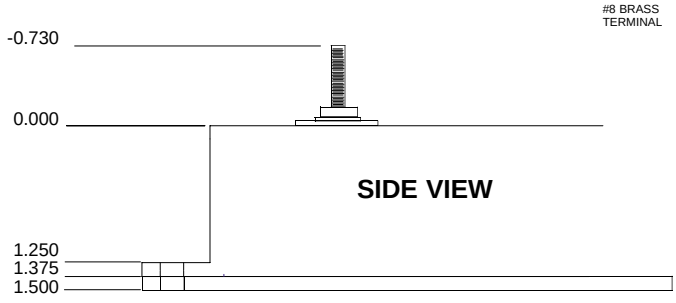
Outline Drawing

Connector Pin Assignment

1	+Vin
2	Com
3	+Vout

DECIMAL TOLERANCES
XXX +/-0.010
XX +/- 0.020





Ordering Information

Part Numbering Scheme for CR2XXXXX Rugged DC-DC Converters

C	*TYPE*	*IN VOLTS*	*OUT-VOLTS*	*POWER LEVEL*	*TEMPERATURE RANGE*	*PACKAGE TYPE*
C	***R*** = Rugged	***2*** = 14-60VDC	05 12 15 24 28 48	***D*** = 100 Watts ***E*** = 200 Watts ***G*** = 250 Watts ***J*** = 350 Watts ***K*** = 500 Watts	***2*** = -25°C to +85°C ***3*** = -35°C to +95°C	*A* = Alum *S* = Steel

C	R	2	12	G	2	A

EXAMPLE - *To order a Rugged DC-DC Converter with an input voltage range of 14VDC to 60VDC, output voltage of 12 volts, output power of 250 watts, and -25C to +85C operating temperature range, use the following part number.(CR212G2A)*

NOTE: - *13.8 Volts factory set is available.*