Wall Industries, Inc.

Rev B

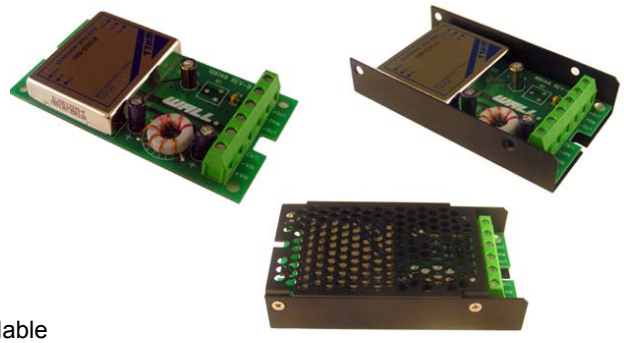
CMMDW Series
20 Watt Single Output
Chassis Mount DC/DC Converter
4:1 Ultra Wide Input Voltage Range

FEATURES

- Output Current up to 5.5A
- Fixed Switching Frequency
- Six-Sided Continuous Shielding
- 20 Watts Maximum Output Power
- 4:1 Ultra Wide Input Voltage Range
- Options: Negative Logic Remote ON/OFF
- Call Factory for More Output Power Options
- Compliant to RoHS EU Directive 2002/95/EC
- CE Mark Meets 2006/95/EC, 93/68/EEC, and 89/336 EEC
- Chassis Mount Options: Open Frame, U Channel, and Enclosed Types Available

APPLICATIONS

- Measurement
- Wireless Network
- Telecom/Datacom
- Industry Control System
- Semiconductor Equipment



SPECIFICATIONS: *CMMDW Series*

All specifications apply @ 25°C ambient unless otherwise noted

INPUT SPECIFICATIONS

Input Voltage Range	24V nominal input	9-36VDC
	48V nominal input	18-75VDC
Input Voltage Variation	dv/dt	5V/ms max (Complies with ETS300 132 part 4.4)
Input Surge Voltage (100ms max)	24V input	50VDC
	48V input	100VDC
Input Reflected Ripple Current (nominal Vin and full load)		20mAp-p
Start Up Time (nominal Vin and constant resistive load)		
Power Up		20ms typ.
Remote ON/OFF		20ms typ.
Start Up Voltage	24V input	9 VDC
	48V input	18 VDC
Shutdown Voltage	24V input	7.5 VDC
	48V input	15 VDC
Remote ON/OFF (Note 6)		
(Positive Logic)	DC-DC ON	Open or 3V < Vr < 12V
	DC-DC OFF	Short or 0V < Vr < 1.2V
(Negative Logic)	DC-DC ON	Short or 0V < Vr < 1.2V
	DC-DC OFF	Open or 3V < Vr < 12V
Input Current of Remote Control Pin (nominal Vin)		-0.5mA ~ +0.5mA
Remote Off Input Current (nominal Vin)		2.5mA

OUTPUT SPECIFICATIONS

Output Voltage	see table
Voltage Accuracy (nominal Vin and full load)	±1%
Voltage Adjustability	10%
Output Current	see table
Output Power	20 watts max.
Line Regulation (LL to HL at FL)	±0.2%
Load Regulation (no load to full load)	±0.5%
Minimum Load	0%
Ripple/Noise (20 MHz BW) (measured with a 0.1uF/50V MLCC)	see table
Transient Response Recovery Time (25% load step)	250us

PROTECTION SPECIFICATIONS

Over Voltage Protection (zener diode clamp)	3.3V output	3.9V
	5V output	6.2V
	12V output	15V
	15V output	18V
Over Load Protection (% of full load at nominal input)		150% typ.
Short Circuit Protection.		Hiccup, automatic recovery

GENERAL SPECIFICATIONS

Efficiency	see table
Switching Frequency	400KHz typ.
Isolation Voltage (Input to Output)	1600VDC min.
Isolation Voltage (Input to case)	1600VDC min.
Isolation Voltage (Output to Case)	1600VDC min.
Isolation Resistance	10^9 ohms min.
Isolation Capacitance	1500pF max.

ENVIRONMENTAL SPECIFICATIONS

Operating Temperature	-40°C ~ +66°C (w/o derating) +66°C ~ +105°C (w/ derating)
Storage Temperature	-55°C ~ +125°C
Maximum Case Temperature	105°C
Relative Humidity	5% to 95% RH
Thermal Impedance (Note 7)	
Natural Convection	12°C / Watt
Natural Convection with Heat-Sink	10°C / Watt
Thermal Shock	MIL-STD-810F
Temperature Coefficient	±0.02% / °C max.
Vibration	10~55Hz, 10G, 30 minutes along X, Y, and Z
MTBF (Note 1) BELLCORE TR-NWT-000332	1.691×10^6 hrs
MIL-STD-217F	5.629×10^5 hrs

PHYSICAL SPECIFICATIONS

Potting material of the DC/DC Converter	Epoxy (UL94-V0)
Shielding of the DC/DC Converter	six-sided
Weight	Approximately 6 oz
Dimensions	4.00(L) x 2.25(W) x 0.81(H) inches

SAFETY & EMC

Approvals and Standards	IEC60950-1, UL60950-1, EN60950-1			
EMI	EN55022	Class A		
ESD	EN61000-4-2	Air ± 8KV Contact ± 6KV		Perf. Criteria B
Radiated Immunity	EN61000-4-3	10V/m		Perf. Criteria A
Fast Transient	EN61000-4-4	±2KV		Perf. Criteria B
Surge	EN61000-4-5	±1KV		Perf. Criteria B
Conducted Immunity	EN61000-4-6	10 Vrms		Perf. Criteria A

Due to advances in technology, specifications subject to change without notice

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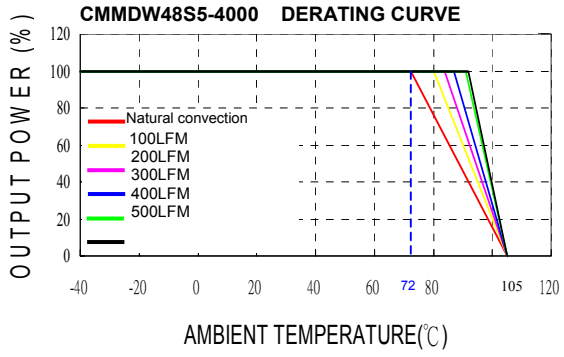
OUTPUT VOLTAGE / CURRENT RATING CHART

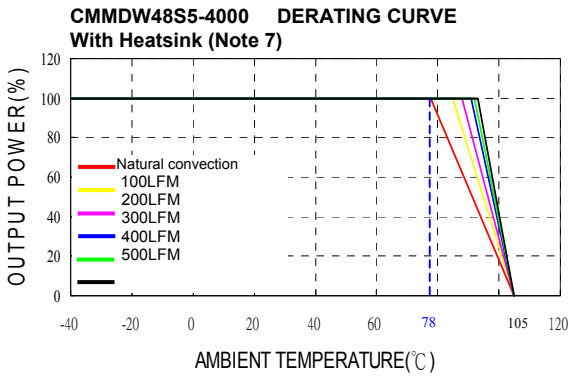
Model Number	Input Range	Output Voltage	Output Current		Output [4] Ripple & Noise	Input Current		Eff [4]	Capacitor[5] Load max
			Min. load	Full load		No load [3]	Full load [2]		
CMMDW24S3.3-5500	24 VDC (9-36 VDC)	3.3 VDC	0mA	5500mA	60mVp-p	50mA	934mA	85%	18000uF
CMMDW24S5-4000		5 VDC	0mA	4000mA	75mVp-p	65mA	992mA	88%	9600uF
CMMDW24S12-1670		12 VDC	0mA	1670mA	75mVp-p	22mA	1018mA	86%	1650uF
CMMDW24S15-1330		15 VDC	0mA	1330mA	75mVp-p	22mA	1014mA	86%	1050uF
CMMDW48S3.3-5500	48 VDC (18-75 VDC)	3.3 VDC	0mA	5500mA	60mVp-p	35mA	467mA	85%	18000uF
CMMDW48S5-4000		5 VDC	0mA	4000mA	75mVp-p	35mA	496mA	88%	9600uF
CMMDW48S12-1670		12 VDC	0mA	1670mA	75mVp-p	15mA	503mA	87%	1650uF
CMMDW48S15-1330		15 VDC	0mA	1330mA	75mVp-p	15mA	501mA	87%	1050uF

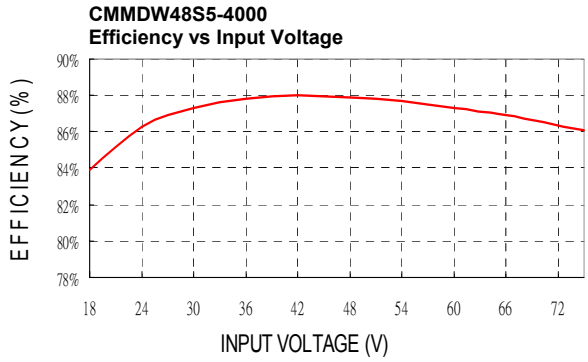
NOTES

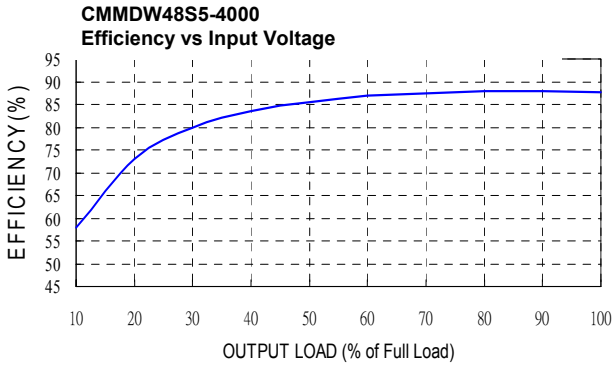
1. BELLCORE TR-NWT-000332. Case 1: 50% Stress, Temperature at 40ºC (Ground fixed and controlled environment). MIL-STD-217F Notice2 @Ta=25 ºC, Full load (Ground, Benign, controlled environment)
2. Maximum value at nominal input voltage and full load.
3. Typical value at nominal input voltage and no load.
4. Typical value at nominal input voltage and full load.
5. Test by minimum Vin and constant resistive load.
6. The ON/OFF control pin voltage is referenced to -Vin.
   To order negative logic ON/OFF control add the suffix ”R” (Ex: CMMDW48S5-4000R)
7. Heat sink is optional, consult factory for ordering details.
8. Chassis Mount Options: No suffix for open frame, “U” suffix for U Channel, and “E” suffix for Enclosed type.

DERATING CURVES & EFFICIENCY GRAPHS









MECHANICAL DRAWING

Unit: inches [mm]