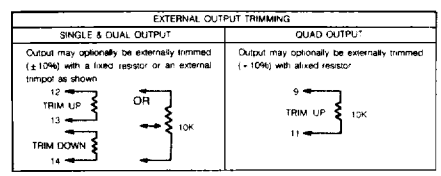
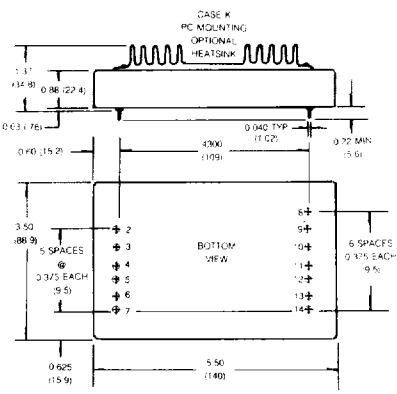
60 WATT DC/DC CONVERTERS
CEM1700 SERIES
Single and Dual
Triple and Quad Output

- **Low Profile 0.91 Inch High**
- **Efficiencies to 84%**
- **2:1 Input Range**
- **PC Mounting**
- **Pi Input Filter**
- **OVP on All Outputs**

MODEL NUMBER	INPUT VOLTAGE RANGE	OUTPUT VOLTAGE	OUTPUT CURRENT	INPUT CURRENT[1] NO LOAD	INPUT CURRENT[1] FULL LOAD	% OFF	CASE[2]
CEM1701	9-18 VDC	5 VDC	10.0 A	25 mA	5.2 A	80	K
CEM1702	9-18 VDC	12 VDC	5.0 A	25 mA	6.1 A	82	K
CEM1703	9-18 VDC	15 VDC	4.0 A	25 mA	6.1 A	82	K
CEM1704	9-18 VDC	5/5 VDC	5/5 A	25 mA	5.2 A	80	K
CEM1705	9-18 VDC	12/12 VDC	2.5/2.5 A	30 mA	6.1 A	82	K
CEM1706	9-18 VDC	15/15 VDC	2.0/2.0 A	30 mA	6.1 A	82	K
CEM1707	9-18 VDC	+5/±12 VDC	5.0/±1.25 A	70 mA	5.72 A	80	K
CEM1708	9-18 VDC	+5/±15 VDC	5.0/±1.00 A	85 mA	5.72 A	80	K
CEM1709	9-18 VDC	±5/±12 VDC	+5/−0.5/±1.25A	145 mA	5.99 A	80	K
CEM1710	9-18 VDC	±5/±15 VDC	+5/−0.5/±1.0 A	165 mA	5.99 A	80	K
CEM1711	18-36 VDC	5 VDC	10.0 A	20 mA	2.6 A	81	K
CEM1712	18-36 VDC	12 VDC	5.0 A	20 mA	3.0 A	83	K
CEM1713	18-36 VDC	15 VDC	4.0 A	20 mA	2.97 A	84	K
CEM1714	18-36 VDC	5/5 VDC	5/5 A	20 mA	2.6 A	81	K
CEM1715	18-36 VDC	12/12 VDC	2.5/2.5 A	25 mA	3.05 A	82	K
CEM1716	18-36 VDC	15/15 VDC	2.0/2.0 A	25 mA	2.97 A	84	K
CEM1717	18-36 VDC	+5/±12 VDC	5.0/±1.25 A	45 mA	2.92 A	82	K
CEM1718	18-36 VDC	+5/±15 VDC	5.0/±1.0 A	55 mA	2.92 A	82	K
CEM1719	18-36 VDC	±5/±12 VDC	+5/−0.5/±1.25A	85 mA	2.96 A	81	K
CEM1720	18-36 VDC	±5/±15 VDC	+5/−0.5/±1.0 A	95 mA	2.96 A	81	K
CEM1721	36-72 VDC	5 VDC	10.0 A	20 mA	1.27 A	82	K
CEM1722	36-72 VDC	12 VDC	5.0 A	20 mA	1.48 A	84	K
CEM1723	36-72 VDC	15 VDC	4.0 A	20 mA	1.48 A	84	K
CEM1724	36-72 VDC	5/5 VDC	5/5 A	20 mA	1.27 A	82	K
CEM1725	36-72 VDC	12/12 VDC	2.5/2.5 A	20 mA	1.49 A	84	K
CEM1726	36-72 VDC	15/15 VDC	2.0/2.0 A	20 mA	1.49 A	84	K
CEM1727	36-72 VDC	+5/±12 VDC	5.0/±1.25 A	35 mA	1.40 A	82	K
CEM1728	36-72 VDC	+5/±15 VDC	5.0/±1.0 A	35 mA	1.40 A	82	K
CEM1729	36-72 VDC	±5/±12 VDC	+5/−0.5/±1.25A	50 mA	1.44 A	83	K
CEM1730	36-72 VDC	±5/±15 VDC	+5/−0.5/±1.0 A	60 mA	1.44 A	83	K

NOTE: 1. At Nominal Input Voltage: 12, 24 or 48 VDC.
2. To order the optional heatsink on the PC mount model, add the suffix "H" to the model number.





Pin Connections					
Term	Triple	Quad	Term	Triple	Quad
	Inputs			Outputs	
1	No Pin	*	8	− Sense 1	− Output 1
2	− Input	*	9	− Output 1	Com 1 & 2
3	− Input	*	10	+ Output 1	+ Output 2
4	+ Input	*	11	+ Sense 1	Trim 2
5	+ Input	*	12	− Output 2	− Output 3
6	Control	*	13	Com 2 & 3	Com 3 & 4
7	Case	*	14	+ Output 3	+ Output 4

* Connection is same as triple column. Tolerance xx = ±0.02, XXX = ±0.006

Pin Connections					
Term	Single	Dual	Term	Single	Dual
	Inputs			Outputs	
1	No Pin	*	8	− Output	− Sense 1
2	− Input	*	9	− Output	− Output 1
3	− Input	*	10	+ Output	+ Output 1
4	+ Input	*	11	+ Output	+ Sense 1
5	+ Input	*	12	− Sense	− Output 2
6	Control	*	13	Trim	Trim 2
7	Case	*	14	+ Sense	+ Output 2

* Connection is same as single column. Tolerance xx = ±0.02, xxx = ±0.005

SPECIFICATIONS

All Specifications Typical At Nominal Line, Full Load and 25°C Unless Otherwise Noted.

INPUT SPECIFICATIONS

Input Voltage Range ..... See Table
Input Filter ..... Pi Network
Surge Protection ..... Transient Clamp
Reverse Voltage Protection ..... Internal Shunt Diode
Use External Fuse

GENERAL SPECIFICATIONS

Isolation Voltage, Input to Output ..... 500 VDC, min.
Input to Case ..... 250 VDC, min.
Isolation Resistance, Input to Output ..... 10^9 ohms, min.
Input to Case ..... 10^6 ohms, min.
Switching Frequency ..... 100 kHz

OUTPUT SPECIFICATIONS

Voltage Accuracy, Primary Outputs ..... ±1.0% max.
−5V, Output ..... ±3.0% max.
Auxiliary Output Balance[1] ..... ±2.0% max.
Voltage Adjustment[2] ..... ±10%
Load Regulation[3], FL ¼L
Single Output ..... ±1.0% max.
Dual Output ..... ±2.0% max.
−5V, Output ..... ±1.0% max.
Line Regulation, HL-LL ..... ±0.5% max.
−5V Output ..... ±1.0% max.
Ripple and Noise, 20 MHz BW ..... 10 mV, RMS max.
75 mV P-P max.
Temperature Coefficient ..... ±0.02%/°C max.
Voltage Stability, 24 Hours ..... ±0.05% max.
Transient Response[4] ±1% Error Band
25% Step Load Change ..... 500 μsec. max.
Remote Sense[5] ..... Output 1
Short Circuit Protection, All Outputs ..... Continuous
Overvoltage Protection[6] ..... OVP Clamp All Outputs

ENVIRONMENTAL SPECIFICATIONS

Operating Temperature Range
Ambient ..... −25°C to +55°C
With Optional Heatsink ..... −25°C to +71°C
Case ..... −25°C to +85°C
Derating, above 85°C Case ..... Linearly to Zero Power at +100°C
Storage Temperature Range ..... −55°C to +105°C
Cooling ..... Free-Air Convection or Conduction

PHYSICAL SPECIFICATIONS

Weight, without Heatsink ..... 16 oz.(454 grams)
Case Material ..... Black Coated Aluminum with Non-Conductive Base

NOTES:
1. Maximum difference between the voltage magnitudes of outputs 2 & 3 for triples; 3 & 4 for quads.
2. All models except triples have provision for output voltage adjustment. See Connection Table and External Output Trimming information.
3. No Minimum load required for operation.
4. Any output
5. REMOTE SENSE is provided on all singles, and on output #1 of duals and triples. It will compensate for up to 1V drop between converter and load. If remote sense is not being used, the + Sense should be connected to its corresponding + Output, and likewise the − Sence should be connected to its corresponding-Output.
6. 5V output clamped at 6.8V; 12 V or 15V outputs clamped at 18V.
7. OUTPUT ISOLATION ON DUALS: The two outputs are isolated, and can be referenced as either positive or negative. No load sharing is possible.

REMOTE ON/OFF CONTROL	
Terminal 6 Control	
Logic Compatibility	CMOS or Open Collector TTL
Control Voltage, ON	+7.5V or open circuit
OFF	+1.8V
Converter Shutdown Idle Current	5mA
Control Common	Input Terminal 2

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