



## DC-DC Converters

Mini Encapsulated - **with screw terminals**  
REGULATED  
*single & dual tracking outputs*



- Shipped Within 3 Days
- One Year Warranty

**These DC-DC Converters** have the versatility to be used in a broad range of applications. Threaded mounting holes permit them to be mounted to a chassis, cabinet wall or bracket, or they may be used on a test bench or tabletop. Screw terminals provide easy connection without sockets or soldering.

Input/output isolation prevents ground loops, and permits the use of inputs of either polarity; outputs of single output models may be used in either polarity and floated up to 500 volts above the input. Short circuit and thermal protection, and rugged encapsulated construction, assure years of reliable service.

### SPECIFICATIONS

**Input Voltage:** Nominal voltage  $\pm 10\%$ .

**Input Reflected Ripple:**  $1\% E_{in}$  (max.)

**Output Ripple (@25 MHz bandwidth):**  
1 mV rms, 50 mV p-p (5-15V outputs).  
1.5 mV rms, 75 mV p-p (18-28V outputs).

**Output Voltage Setting:** Outputs are factory preset to within  $\pm 1\%$  of the nominal output voltage.

**T/C terminal:** For single output models, the T/C terminal can be used to trim the output more precisely to the nominal voltage rating by connecting an external resistor from the T/C terminal to either the + or - terminal. For dual output models, the T/C terminal is the output common.

**Polarity:** The output of single output models may be connected in either polarity. Dual output models have a positive/common/negative output terminal configuration.

**Transient Response (NL-FL):** 50 microseconds.

**Overload/Short Circuit Protection:** Electronic current limiting with automatic recovery. All models have thermal protection with automatic reset.

**Input/Output Isolation:**

- Voltage: 500 Vdc
- Resistance: 100 megohms
- Capacitance: 100 pF

**Switching Frequency:** 20 kHz minimum.

**Temperature Coefficient:**  $0.02\%/^{\circ}\text{C}$  (Typical).

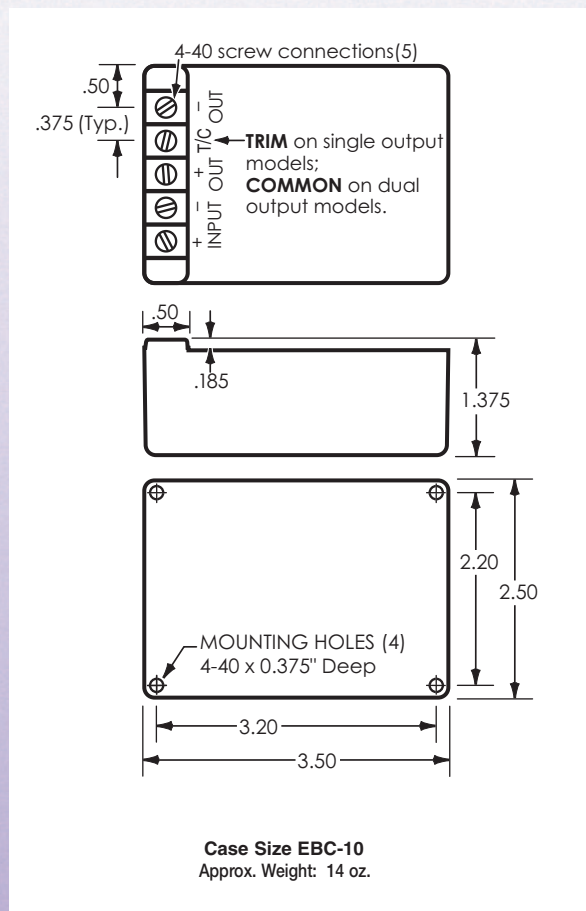
**Ambient Operating Temperature:**  $-20$  to  $+71^{\circ}\text{C}$ .

**Storage Temperature:**  $-40$  to  $+85^{\circ}\text{C}$ .

**Humidity:** 20% to 80% R.H. (non-condensing).

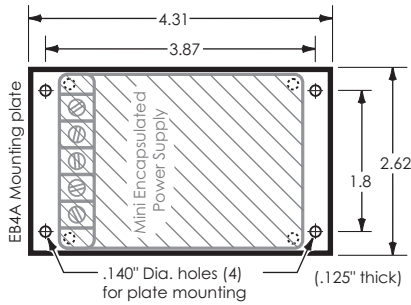
**Case Size:** EBC-10.

**Mounting:** Threaded mounting holes permit mounting to a chassis, cabinet wall or bracket, or they may be used on a test bench or tabletop. When wall-mounting or DIN rail mounting is desired, use accessory Mounting Kits on page 77.



**ACCESSORY MOUNTING KITS** For use with 'Mini Encapsulated - with Screw Terminals' power supplies.

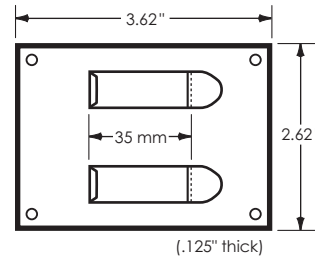
**FOR WALL MOUNTING**



Use Mounting Kit EB4A to mount from the power supply side of the mounting surface, necessary when the other side of the mounting surface is inaccessible. This kit consists of an aluminum plate and four screws for attaching it to the power supply, effectively adding mounting flanges to any Mini Encapsulated power supply with screw terminals or any Mini DC-DC Converter with screw terminals.

Model EB4A . . . . . \$ 10

**FOR DIN RAIL MOUNTING**



Mounting Kit EB35DIN consists of an aluminum plate, with two DIN clips attached to it, and four screws for attaching the plate to the bottom of any Mini Encapsulated power supply with screw terminals or any Mini DC-DC Converter with screw terminals. The power supply can then be snapped onto a 35mm 'top hat' type of DIN rail.

Model EB35DIN . . . . . \$15

**SINGLE OUTPUT, WITH SCREW TERMINALS**

Nominal Input Voltage	Nominal Output Voltage	Output Current Amps. at			Regulation		(\$) Price	Model
		40°C	55°C	71°C	Load ±%	Line ±%		
5	5	2.50	2.25	2.00	.15	.02	150	5EB5E250
5	6	2.00	1.80	1.60	.15	.02	150	5EB6E200
5	8	1.50	1.35	1.20	.10	.02	150	5EB8E150
5	9	1.40	1.25	1.10	.10	.02	150	5EB9E140
5	10	1.30	1.15	1.00	.10	.02	150	5EB10E130
5	12	1.20	1.10	1.00	.05	.02	150	5EB12E120
5	13	1.10	1.00	.90	.05	.02	150	5EB13E110
5	15	1.00	.90	.80	.05	.02	150	5EB15E100
5	18	.80	.70	.60	.05	.02	150	5EB18E80
5	20	.70	.60	.50	.05	.02	150	5EB20E70
5	24	.60	.55	.50	.05	.02	150	5EB24E60
5	28	.50	.45	.40	.05	.02	150	5EB28E50
12	5	2.50	2.25	2.00	.15	.02	150	12EB5E250
12	6	2.00	1.80	1.60	.15	.02	150	12EB6E200
12	8	1.50	1.35	1.20	.10	.02	150	12EB8E150
12	9	1.40	1.25	1.10	.10	.02	150	12EB9E140
12	10	1.30	1.15	1.00	.10	.02	150	12EB10E130
12	12	1.20	1.10	1.00	.05	.02	150	12EB12E120
12	13	1.10	1.00	.90	.05	.02	150	12EB13E110
12	15	1.00	.90	.80	.05	.02	150	12EB15E100
12	18	.80	.70	.60	.05	.02	150	12EB18E80
12	20	.70	.60	.50	.05	.02	150	12EB20E70
12	24	.60	.55	.50	.05	.02	150	12EB24E60
12	28	.50	.45	.40	.05	.02	150	12EB28E50
15	5	2.50	2.25	2.00	.15	.02	150	15EB5E250
15	6	2.00	1.80	1.60	.15	.02	150	15EB6E200
15	8	1.50	1.35	1.20	.10	.02	150	15EB8E150
15	9	1.40	1.25	1.10	.10	.02	150	15EB9E140
15	10	1.30	1.15	1.00	.10	.02	150	15EB10E130
15	12	1.20	1.10	1.00	.05	.02	150	15EB12E120

Nominal Input Voltage	Nominal Output Voltage	Output Current Amps. at			Regulation		(\$) Price	Model
		40°C	55°C	71°C	Load ±%	Line ±%		
15	13	1.10	1.00	.90	.05	.02	150	15EB13E110
15	15	1.00	.90	.80	.05	.02	150	15EB15E100
15	18	.80	.70	.60	.05	.02	150	15EB18E80
15	20	.70	.60	.50	.05	.02	150	15EB20E70
15	24	.60	.55	.50	.05	.02	150	15EB24E60
15	28	.50	.45	.40	.05	.02	150	15EB28E50
24	5	2.50	2.25	2.00	.15	.02	150	24EB5E250
24	6	2.00	1.80	1.60	.15	.02	150	24EB6E200
24	8	1.50	1.35	1.20	.10	.02	150	24EB8E150
24	9	1.40	1.25	1.10	.10	.02	150	24EB9E140
24	10	1.30	1.15	1.00	.10	.02	150	24EB10E130
24	12	1.20	1.10	1.00	.05	.02	150	24EB12E120
24	13	1.10	1.00	.90	.05	.02	150	24EB13E110
24	15	1.00	.90	.80	.05	.02	150	24EB15E100
24	18	.80	.70	.60	.05	.02	150	24EB18E80
24	20	.70	.60	.50	.05	.02	150	24EB20E70
24	24	.60	.55	.50	.05	.02	150	24EB24E60
24	28	.50	.45	.40	.05	.02	150	24EB28E50
28	5	2.50	2.25	2.00	.15	.02	150	28EB5E250
28	6	2.00	1.80	1.60	.15	.02	150	28EB6E200
28	8	1.50	1.35	1.20	.10	.02	150	28EB8E150
28	9	1.40	1.25	1.10	.10	.02	150	28EB9E140
28	10	1.30	1.15	1.00	.10	.02	150	28EB10E130
28	12	1.20	1.10	1.00	.05	.02	150	28EB12E120
28	13	1.10	1.00	.90	.05	.02	150	28EB13E110
28	15	1.00	.90	.80	.05	.02	150	28EB15E100
28	18	.80	.70	.60	.05	.02	150	28EB18E80
28	20	.70	.60	.50	.05	.02	150	28EB20E70
28	24	.60	.55	.50	.05	.02	150	28EB24E60
28	28	.50	.45	.40	.05	.02	150	28EB28E50

120 to 180 See pages 38-39.

**DUAL TRACKING OUTPUTS**

Nominal Input Voltage	Nominal Output Voltages	Amps. per Output at			Regulation		(\$) Price	Model
		40°C	55°C	71°C	Load ±%	Line ±%		
5	±10	.60	.55	.50	.05	.02	155	5EB10D60
5	±12	.60	.55	.50	.05	.02	155	5EB12D60
5	±15	.50	.45	.40	.05	.02	155	5EB15D50
5	±18	.40	.35	.30	.05	.02	155	5EB18D40
12	±10	.60	.55	.50	.05	.02	155	12EB10D60
12	±12	.60	.55	.50	.05	.02	155	12EB12D60
12	±15	.50	.45	.40	.05	.02	155	12EB15D50
12	±18	.40	.35	.30	.05	.02	155	12EB18D40
15	±10	.60	.55	.50	.05	.02	155	15EB10D60
15	±12	.60	.55	.50	.05	.02	155	15EB12D60

Nominal Input Voltage	Nominal Output Voltages	Amps. per Output at			Regulation		(\$) Price	Model
		40°C	55°C	71°C	Load ±%	Line ±%		
15	±15	.50	.45	.40	.05	.02	155	15EB15D50
15	±18	.40	.35	.30	.05	.02	155	15EB18D40
24	±10	.60	.55	.50	.05	.02	155	24EB10D60
24	±12	.60	.55	.50	.05	.02	155	24EB12D60
24	±15	.50	.45	.40	.05	.02	155	24EB15D50
24	±18	.40	.35	.30	.05	.02	155	24EB18D40
28	±10	.60	.55	.50	.05	.02	155	28EB10D60
28	±12	.60	.55	.50	.05	.02	155	28EB12D60
28	±15	.50	.45	.40	.05	.02	155	28EB15D50
28	±18	.40	.35	.30	.05	.02	155	28EB18D40