

# Power Supplies

## DC to AC Inverters

### For 1, 2 Bulb, 6W Non-dimming

## CXA Series CXA-M10A-L/-M10L-L/-M10M-L

#### FEATURES

- The CXA-M10 series inverters for 2-cold cathode fluorescent lamps support a wide range of CCFL devices and are characterized by highly stable output current.
- Employing a resonance-type push-pull circuit, these inverters deliver sine wave output with very low noise levels.
- Through the use of four different connection methods and combinations of 1 and 2 lamps, different output currents can be selected.
- Compact, lightweight printed circuit board design.
- High efficiency (typically 80%).

#### APPLICATIONS

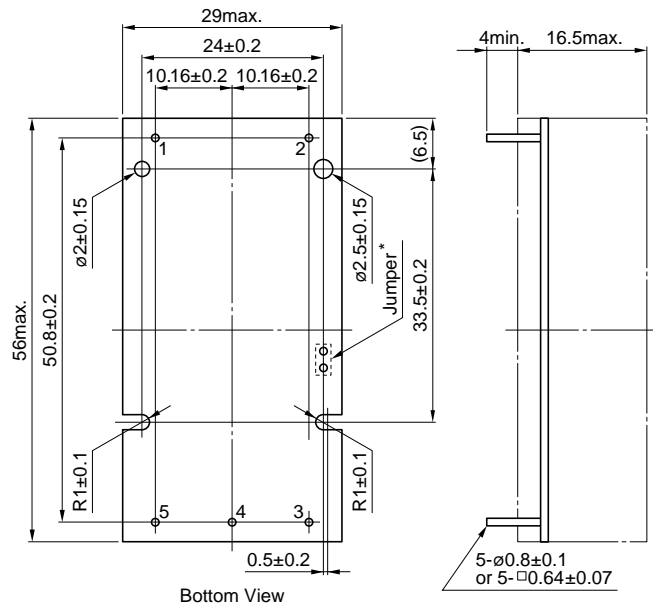
Industrial and other equipment employing LCD panels, products employing small lamps, information terminal devices.

#### TEMPERATURE AND HUMIDITY RANGES

Temperature range	Operating	-10 to +60°C
	Storage	-20 to +85°C
Humidity range	95(%)RH max.	
	[Maximum wet-bulb temperature 38°C]	

#### SHAPES AND DIMENSIONS

##### CXA-M10A-L/-M10L-L/-M10M-L



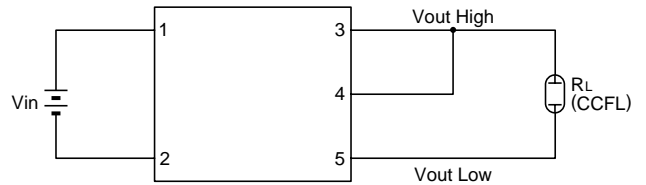
\*Terminal numbers 2 and 5 are connected by the jumper. Cut this jumper to let the secondary side float with respect to the primary side.

Weight: 21g typ.

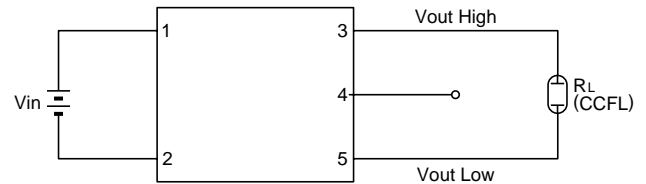
Dimensions in mm

#### CIRCUIT DIAGRAMS

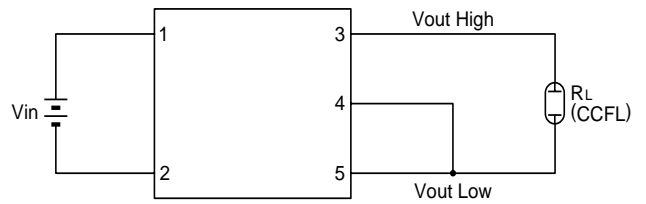
##### CONNECTION A



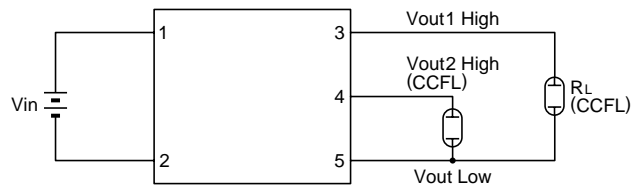
##### CONNECTION B



##### CONNECTION C



##### CONNECTION D



#### TERMINAL NUMBERS AND FUNCTIONS

Terminal No.	Functions
1	+Vin
2	-Vin(GND)
3	lout1
4	lout2
5	lout-return

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### ELECTRICAL CHARACTERISTICS

#### 5V INPUT TYPE, CXA-M10A-L

Connections	Items	Specifications			Conditions				
		min.	typ.	max.	Vin(V)	Ta(°C)	RL(kΩ)		
A	Output current	Irms(mA)	Iout	9	10	11	5±1%	23±5	40
				8	10	12	5±5%	-10 to +60	30 to 50
	Input current	Idc(A)	Iin	—	1	1.5	5±5%	-10 to +60	30 to 50
	Oscillation frequency	(kHz)	f	23	28	33	5±5%	-10 to +60	30 to 50
	Open circuit output voltage	Erms(V)	Vopen	1000	1200	—	5±5%	-10 to +60	∞
Output power	(W)	Pout	—	—	6	5±5%	-10 to +60	—	
B	Output current	Irms(mA)	Iout	5.1	6	6.5	5±1%	23±5	67
				4.5	6	7.1	5±5%	-10 to +60	50 to 84
	Input current	Idc(A)	Iin	—	0.6	1	5±5%	-10 to +60	50 to 84
	Oscillation frequency	(kHz)	f	27	32	37	5±5%	-10 to +60	50 to 84
	Open circuit output voltage	Erms(V)	Vopen	1000	1200	—	5±5%	-10 to +60	∞
Output power	(W)	Pout	—	—	3.6	5±5%	-10 to +60	—	
C	Output current	Irms(mA)	Iout	4.2	5	5.4	5±1%	23±5	80
				3.7	5	5.9	5±5%	-10 to +60	60 to 100
	Input current	Idc(A)	Iin	—	0.6	0.9	5±5%	-10 to +60	60 to 100
	Oscillation frequency	(kHz)	f	23	28	33	5±5%	-10 to +60	60 to 100
	Open circuit output voltage	Erms(V)	Vopen	1000	1200	—	5±5%	-10 to +60	∞
D	Output current	Irms(mA)	Iout1	4.5	5	5.5	5±1%	23±5	80
				Iout2	4.5	5	5.5	5±1%	23±5
	Output current	Irms(mA)	Iout1	4	5	6	5±5%	-10 to +60	60 to 100
				Iout2	4	5	6	5±5%	-10 to +60
	Input current	Idc(A)	Iin	—	1	1.5	5±5%	-10 to +60	60 to 100
Oscillation frequency	(kHz)	f	23	28	33	5±5%	-10 to +60	60 to 100	
Open circuit output voltage	Erms(V)	Vopen	1000	1200	—	5±5%	-10 to +60	∞	
Output power	(W)	Pout	—	—	3×2	5±5%	-10 to +60	—	

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## ELECTRICAL CHARACTERISTICS

### 12V INPUT TYPE, CXA-M10L-L

Connections	Items	Specifications			Conditions				
		min.	typ.	max.	Vin(V)	Ta(°C)	RL(kΩ)		
A	Output current	Irms(mA)	Iout	9	10	11	12±1%	23±5	40
				8	10	12	12±5%	-10 to +60	30 to 50
	Input current	Idc(A)	Iin	—	0.42	0.63	12±5%	-10 to +60	30 to 50
	Oscillation frequency	(kHz)	f	23	28	33	12±5%	-10 to +60	30 to 50
	Open circuit output voltage	Erms(V)	Vopen	1000	1200	—	12±5%	-10 to +60	∞
Output power	(W)	Pout	—	—	6	12±5%	-10 to +60	—	
B	Output current	Irms(mA)	Iout	5.1	6	6.5	12±1%	23±5	67
				4.5	6	7.1	12±5%	-10 to +60	50 to 84
	Input current	Idc(A)	Iin	—	0.27	0.41	12±5%	-10 to +60	50 to 84
	Oscillation frequency	(kHz)	f	26	31	36	12±5%	-10 to +60	50 to 84
	Open circuit output voltage	Erms(V)	Vopen	1000	1200	—	12±5%	-10 to +60	∞
Output power	(W)	Pout	—	—	3.6	12±5%	-10 to +60	—	
C	Output current	Irms(mA)	Iout	4.3	5	5.5	12±1%	23±5	80
				3.8	5	6	12±5%	-10 to +60	60 to 100
	Input current	Idc(A)	Iin	—	0.23	0.35	12±5%	-10 to +60	60 to 100
	Oscillation frequency	(kHz)	f	23	28	33	12±5%	-10 to +60	60 to 100
	Open circuit output voltage	Erms(V)	Vopen	1000	1200	—	12±5%	-10 to +60	∞
Output power	(W)	Pout	—	—	3	12±5%	-10 to +60	—	
D	Output current	Irms(mA)	Iout1	4.5	5	5.5	12±1%	23±5	80
			Iout2	4.5	5	5.5	12±1%	23±5	80
			Iout1	4	5	6	12±5%	-10 to +60	60 to 100
			Iout2	4	5	6	12±5%	-10 to +60	60 to 100
	Input current	Idc(A)	Iin	—	0.42	0.63	12±5%	-10 to +60	60 to 100
	Oscillation frequency	(kHz)	f	23	28	33	12±5%	-10 to +60	60 to 100
	Open circuit output voltage	Erms(V)	Vopen	1000	1200	—	12±5%	-10 to +60	∞
Output power	(W)	Pout	—	—	3×2	12±5%	-10 to +60	—	

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### ELECTRICAL CHARACTERISTICS

#### 24V INPUT TYPE, CXA-M10M-L

Connections	Items	Specifications			Conditions				
		min.	typ.	max.	Vin(V)	Ta(°C)	RL(kΩ)		
A	Output current	I <sub>rms</sub> (mA)	I <sub>out</sub>	9	10	11	24±1%	23±5	40
				8	10	12	24±5%	-10 to +60	30 to 50
	Input current	I <sub>dc</sub> (A)	I <sub>in</sub>	—	0.21	0.33	24±5%	-10 to +60	30 to 50
	Oscillation frequency	(kHz)	f	23	28	33	24±5%	-10 to +60	30 to 50
	Open circuit output voltage	Erms(V)	V <sub>open</sub>	1000	1200	—	24±5%	-10 to +60	∞
Output power	(W)	P <sub>out</sub>	—	—	6	24±5%	-10 to +60	—	
B	Output current	I <sub>rms</sub> (mA)	I <sub>out</sub>	5	6	6.4	24±1%	23±5	67
				4.4	6	7	24±5%	-10 to +60	50 to 84
	Input current	I <sub>dc</sub> (A)	I <sub>in</sub>	—	0.14	0.21	24±5%	-10 to +60	50 to 84
	Oscillation frequency	(kHz)	f	26	31	36	24±5%	-10 to +60	50 to 84
	Open circuit output voltage	Erms(V)	V <sub>open</sub>	1000	1200	—	24±5%	-10 to +60	∞
Output power	(W)	P <sub>out</sub>	—	—	3.6	24±5%	-10 to +60	—	
C	Output current	I <sub>rms</sub> (mA)	I <sub>out</sub>	4.3	5	5.5	24±1%	23±5	80
				3.8	5	6	24±5%	-10 to +60	60 to 100
	Input current	I <sub>dc</sub> (A)	I <sub>in</sub>	—	0.12	0.19	24±5%	-10 to +60	60 to 100
	Oscillation frequency	(kHz)	f	23	28	33	24±5%	-10 to +60	60 to 100
	Open circuit output voltage	Erms(V)	V <sub>open</sub>	1000	1200	—	24±5%	-10 to +60	∞
Output power	(W)	P <sub>out</sub>	—	—	3	24±5%	-10 to +60	—	
D	Output current	I <sub>rms</sub> (mA)	I <sub>out1</sub>	4.5	5	5.5	24±1%	23±5	80
			I <sub>out2</sub>	4.5	5	5.5	24±1%	23±5	80
			I <sub>out1</sub>	4	5	6	24±5%	-10 to +60	60 to 100
			I <sub>out2</sub>	4	5	6	24±5%	-10 to +60	60 to 100
	Input current	I <sub>dc</sub> (A)	I <sub>in</sub>	—	0.21	0.33	24±5%	-10 to +60	60 to 100
	Oscillation frequency	(kHz)	f	23	28	33	24±5%	-10 to +60	60 to 100
	Open circuit output voltage	Erms(V)	V <sub>open</sub>	1000	1200	—	24±5%	-10 to +60	∞
Output power	(W)	P <sub>out</sub>	—	—	3×2	24±5%	-10 to +60	—	

