

On-board type, Non-dimming, 9W, For 1 and 2 bulbs

TDK DC-AC Inverter

CXA-P10A-P/-P10L-P/-P10M-P

FEATURES

- The CXA-P10 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.
- Safe design that includes a built-in overcurrent protection element.

APPLICATIONS

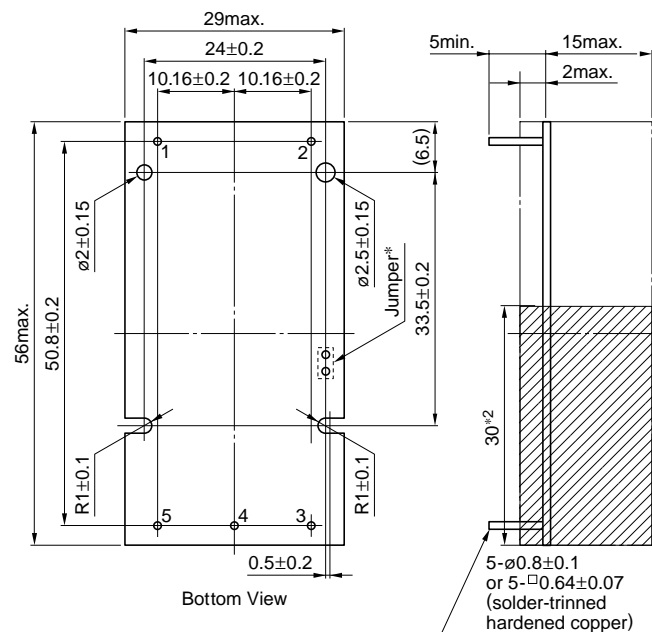
Industrial and other equipment employing LCD panels, products employing small lamps, information terminal devices.

TEMPERATURE AND HUMIDITY RANGES

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

SHAPES AND DIMENSIONS

CXA-P10A-P/-P10L-P/-P10M-P



*1 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.

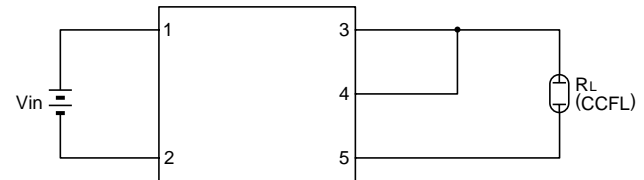
*2 High-voltage generator (The entire surface within a range of 30mm away from the end of the base in the output)

Weight: 25g typ.

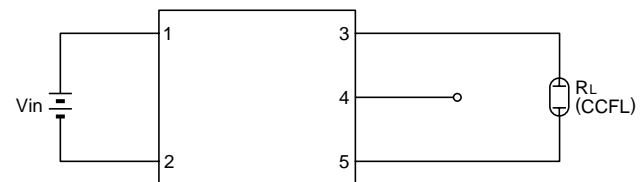
Dimensions in mm

CIRCUIT DIAGRAMS

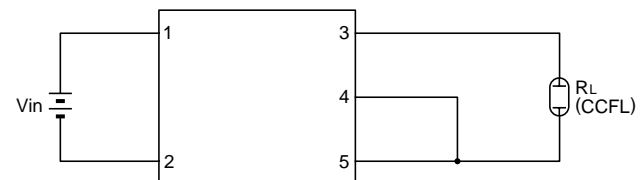
CONNECTION A



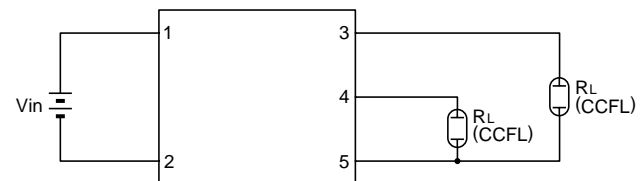
CONNECTION B



CONNECTION C



CONNECTION D



TERMINAL NUMBERS AND FUNCTIONS

| Terminal No. | Functions | CXA-P10A-P | CXA-P10L-P | CXA-P10M-P | Symbol |
|--------------|---|---------------------|-------------------------|-------------------------|--------------------|
| 1 | Input voltage E _{dc} | 0 to 6V 5V[nom.] | 0 to 14.4V 12V[nom.] | 0 to 28.8V 24V[nom.] | V _{in} |
| 2 | | 0V | 0V | 0V | GND |
| 3 | Output 1[High voltage] I _{rms} | 5mA | 5mA | 5mA | V _{HIGH1} |
| 4 | Output 2[High voltage] I _{rms} | 5mA | 5mA | 5mA | V _{HIGH2} |
| 5 | Output [Low voltage] | 0V | 0V | 0V | V _{LOW} |

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ELECTRICAL CHARACTERISTICS

5V INPUT TYPE/CXA-P10A-P

| Connections | Items | Unit | Symbol | Specifications | | | Conditions | | |
|--------------|--|------------------|-------------------|----------------|-------|------|---------------------|---------------------|---------------------|
| | | | | min. | typ. | max. | V _{in} (V) | T _a (°C) | R _L (kΩ) |
| A | Output current I _{rms} | mA | I _{out} | 9 | 10 | 11 | 5±1% | 23±5 | 60 |
| | | | | 8 | 10 | 12 | 5±5% | -10 to +60 | 50 to 70 |
| | Input current I _{dc} | A | I _{in} | — | 1.56 | 2.34 | 5±5% | -10 to +60 | 50 to 70 |
| | Oscillation frequency | kHz | F _L | 32 | 37 | 42 | 5±5% | -10 to +60 | 50 to 70 |
| | Open circuit output voltage E _{rms} | V | V _{open} | 1300 | 1500 | — | 5±5% | -10 to +60 | ∞ |
| Output power | W | P _{out} | — | — | 9 | 5±5% | -10 to +60 | — | |
| B | Output current I _{rms} | mA | I _{out} | 5.1 | 6 | 6.5 | 5±1% | 23±5 | 100 |
| | | | | 4.5 | 6 | 7.1 | 5±5% | -10 to +60 | 80 to 120 |
| | Input current I _{dc} | A | I _{in} | — | 0.92 | 1.35 | 5±5% | -10 to +60 | 80 to 120 |
| | Oscillation frequency | kHz | F _L | 37 | 42 | 47 | 5±5% | -10 to +60 | 80 to 120 |
| | Open circuit output voltage E _{rms} | V | V _{open} | 1300 | 1500 | — | 5±5% | -10 to +60 | ∞ |
| Output power | W | P _{out} | — | — | 5.4 | 5±5% | -10 to +60 | — | |
| C | Output current I _{rms} | mA | I _{out} | 4.3 | 5 | 5.5 | 5±1% | 23±5 | 120 |
| | | | | 3.8 | 5 | 6 | 5±5% | -10 to +60 | 100 to 140 |
| | Input current I _{dc} | A | I _{in} | — | 0.86 | 1.28 | 5±5% | -10 to +60 | 100 to 140 |
| | Oscillation frequency | kHz | F _L | 32 | 37 | 42 | 5±5% | -10 to +60 | 100 to 140 |
| | Open circuit output voltage E _{rms} | V | V _{open} | 1300 | 1500 | — | 5±5% | -10 to +60 | ∞ |
| Output power | W | P _{out} | — | — | 4.5 | 5±5% | -10 to +60 | — | |
| D | Output current I _{rms} | mA | I _{out1} | 4.5 | 5 | 5.5 | 5±1% | 23±5 | 120 |
| | | | I _{out2} | 4.5 | 5 | 5.5 | 5±1% | 23±5 | 120 |
| | | | I _{out1} | 4 | 5 | 6 | 5±5% | -10 to +60 | 100 to 140 |
| | | | I _{out2} | 4 | 5 | 6 | 5±5% | -10 to +60 | 100 to 140 |
| | Input current I _{dc} | A | I _{in} | — | 1.47 | 2.21 | 5±5% | -10 to +60 | 100 to 140 |
| | Oscillation frequency | kHz | F _L | 32 | 37 | 42 | 5±5% | -10 to +60 | 100 to 140 |
| | Open circuit output voltage E _{rms} | V | V _{open} | 1300 | 1500 | — | 5±5% | -10 to +60 | ∞ |
| Output power | W | P _{out} | — | — | 4.5×2 | 5±5% | -10 to +60 | — | |

On-board type, Non-dimming, 9W, For 1 and 2 bulbs

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ELECTRICAL CHARACTERISTICS

12V INPUT TYPE/CXA-P10L-P

| Connections | Items | Unit | Symbol | Specifications | | | Conditions | | |
|-------------|--|------|-------------------|----------------|------|-------|---------------------|---------------------|---------------------|
| | | | | min. | typ. | max. | V _{in} (V) | T _a (°C) | R _L (kΩ) |
| A | Output current I _{rms} | mA | I _{out} | 9 | 10 | 11 | 12±1% | 23±5 | 60 |
| | | | | 8 | 10 | 12 | 12±5% | -10 to +60 | 50 to 70 |
| | Input current I _{dc} | A | I _{in} | — | 0.7 | 1.05 | 12±5% | -10 to +60 | 50 to 70 |
| | Oscillation frequency | kHz | F _L | 25 | 30 | 35 | 12±5% | -10 to +60 | 50 to 70 |
| | Open circuit output voltage E _{rms} | V | V _{open} | 1300 | 1500 | — | 12±5% | -10 to +60 | ∞ |
| | Output power | W | P _{out} | — | — | 9 | 12±5% | -10 to +60 | — |
| B | Output current I _{rms} | mA | I _{out} | 5.1 | 6 | 6.5 | 12±1% | 23±5 | 100 |
| | | | | 4.5 | 6 | 7.1 | 12±5% | -10 to +60 | 80 to 120 |
| | Input current I _{dc} | A | I _{in} | — | 0.4 | 0.6 | 12±5% | -10 to +60 | 80 to 120 |
| | Oscillation frequency | kHz | F _L | 29 | 34 | 39 | 12±5% | -10 to +60 | 80 to 120 |
| | Open circuit output voltage E _{rms} | V | V _{open} | 1300 | 1500 | — | 12±5% | -10 to +60 | ∞ |
| | Output power | W | P _{out} | — | — | 5.4 | 12±5% | -10 to +60 | — |
| C | Output current I _{rms} | mA | I _{out} | 4.3 | 5 | 5.5 | 12±1% | 23±5 | 120 |
| | | | | 3.8 | 5 | 6 | 12±5% | -10 to +60 | 100 to 140 |
| | Input current I _{dc} | A | I _{in} | — | 0.38 | 0.57 | 12±5% | -10 to +60 | 100 to 140 |
| | Oscillation frequency | kHz | F _L | 25 | 30 | 35 | 12±5% | -10 to +60 | 100 to 140 |
| | Open circuit output voltage E _{rms} | V | V _{open} | 1300 | 1500 | — | 12±5% | -10 to +60 | ∞ |
| | Output power | W | P _{out} | — | — | 4.5 | 12±5% | -10 to +60 | — |
| D | Output current I _{rms} | mA | I _{out1} | 4.5 | 5 | 5.5 | 12±1% | 23±5 | 120 |
| | | | I _{out2} | 4.5 | 5 | 5.5 | 12±1% | 23±5 | 120 |
| | | | I _{out1} | 4 | 5 | 6 | 12±5% | -10 to +60 | 100 to 140 |
| | | | I _{out2} | 4 | 5 | 6 | 12±5% | -10 to +60 | 100 to 140 |
| | Input current I _{dc} | A | I _{in} | — | 0.7 | 1.05 | 12±5% | -10 to +60 | 100 to 140 |
| | Oscillation frequency | kHz | F _L | 25 | 30 | 35 | 12±5% | -10 to +60 | 100 to 140 |
| | Open circuit output voltage E _{rms} | V | V _{open} | 1300 | 1500 | — | 12±5% | -10 to +60 | ∞ |
| | Output power | W | P _{out} | — | — | 4.5×2 | 12±5% | -10 to +60 | — |

On-board type, Non-dimming, 9W, For 1 and 2 bulbs

TDK DC-AC Inverter

CXA-P10A-P/-P10L-P/-P10M-P

ELECTRICAL CHARACTERISTICS

24V INPUT TYPE/CXA-P10M-P

| Connections | Items | Unit | Symbol | Specifications | | | Conditions | | |
|-------------|--|------|-------------------|----------------|------|-------|---------------------|---------------------|---------------------|
| | | | | min. | typ. | max. | V _{in} (V) | T _a (°C) | R _L (kΩ) |
| A | Output current I _{rms} | mA | I _{out} | 9 | 10 | 11 | 24±1% | 23±5 | 60 |
| | | | | 8 | 10 | 12 | 24±5% | -10 to +60 | 50 to 70 |
| | Input current I _{dc} | A | I _{in} | — | 0.3 | 0.45 | 24±5% | -10 to +60 | 50 to 70 |
| | Oscillation frequency | kHz | F _L | 21 | 26 | 31 | 24±5% | -10 to +60 | 50 to 70 |
| | Open circuit output voltage E _{rms} | V | V _{open} | 1300 | 1500 | — | 24±5% | -10 to +60 | ∞ |
| | Output power | W | P _{out} | — | — | 6 | 24±5% | -10 to +60 | — |
| B | Output current I _{rms} | mA | I _{out} | 5.1 | 6 | 6.5 | 24±1% | 23±5 | 100 |
| | | | | 4.5 | 6 | 7.1 | 24±5% | -10 to +60 | 80 to 120 |
| | Input current I _{dc} | A | I _{in} | — | 0.18 | 0.27 | 24±5% | -10 to +60 | 80 to 120 |
| | Oscillation frequency | kHz | F _L | 25 | 30 | 35 | 24±5% | -10 to +60 | 80 to 120 |
| | Open circuit output voltage E _{rms} | V | V _{open} | 1300 | 1500 | — | 24±5% | -10 to +60 | ∞ |
| | Output power | W | P _{out} | — | — | 5.4 | 24±5% | -10 to +60 | — |
| C | Output current I _{rms} | mA | I _{out} | 4.3 | 5 | 5.5 | 24±1% | 23±5 | 120 |
| | | | | 3.8 | 5 | 6 | 24±5% | -10 to +60 | 100 to 140 |
| | Input current I _{dc} | A | I _{in} | — | 0.17 | 0.26 | 24±5% | -10 to +60 | 100 to 140 |
| | Oscillation frequency | kHz | F _L | 21 | 26 | 31 | 24±5% | -10 to +60 | 100 to 140 |
| | Open circuit output voltage E _{rms} | V | V _{open} | 1300 | 1500 | — | 24±5% | -10 to +60 | ∞ |
| | Output power | W | P _{out} | — | — | 4.5 | 24±5% | -10 to +60 | — |
| D | Output current I _{rms} | mA | I _{out1} | 4.5 | 5 | 5.5 | 24±1% | 23±5 | 120 |
| | | | I _{out2} | 4.5 | 5 | 5.5 | 24±1% | 23±5 | 120 |
| | | | I _{out1} | 4 | 5 | 6 | 24±5% | -10 to +60 | 100 to 140 |
| | | | I _{out2} | 4 | 5 | 6 | 24±5% | -10 to +60 | 100 to 140 |
| | Input current I _{dc} | A | I _{in} | — | 0.3 | 0.45 | 24±5% | -10 to +60 | 100 to 140 |
| | Oscillation frequency | kHz | F _L | 21 | 26 | 31 | 24±5% | -10 to +60 | 100 to 140 |
| | Open circuit output voltage E _{rms} | V | V _{open} | 1300 | 1500 | — | 24±5% | -10 to +60 | ∞ |
| | Output power | W | P _{out} | — | — | 4.5×2 | 24±5% | -10 to +60 | — |

