Suitable for radiation counter and the withstand voltage testing device

Miniature HV power supply

TQ series

Max. output volt. : 0.2kV to 8kV
Max. output cur. : 0.125mA to 5mA
Max. output power : 1W

▶ Miniature size of 1.4” x 1.1” minimum
▶ Low ripple, high stability, excellent temp. characteristics
▶ Output control by external voltage is also available.

www.matsusada.com
**TQ series**

0.2kV to 8kV / 1W

**FEATURES**
- Miniature size of 1.4” x 1.1” minimum
- Low ripple and high stability
- Low noise due to 6-sided metal shielding
- External voltage for control
- Safety design by continuous short circuit protection

**SUMMARY**
TQ series is miniature and well regulated HV power supply. By our original insulation technology and implementation technology, a setting area realizes the small size of a one-third of the business card in the high-voltage 8kV model.
It is the best choice for the downsizing of a radiation counter and the withstand voltage examination device.

**LINEUP**

<table>
<thead>
<tr>
<th>Output voltage (kVdc)</th>
<th>Output current (mA)</th>
<th>MODEL</th>
<th>Positive polar output</th>
<th>Negative polar output</th>
<th>Ripple (p-p)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.2</td>
<td>5</td>
<td>TQ-0.2P-LX</td>
<td>TQ-0.2N-LX</td>
<td>0.01%</td>
<td></td>
</tr>
<tr>
<td>0.5</td>
<td>2</td>
<td>TQ-0.5P-LX</td>
<td>TQ-0.5N-LX</td>
<td>0.002%</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td>TQ-1P-LX</td>
<td>TQ-1N-LX</td>
<td>0.001%</td>
<td></td>
</tr>
<tr>
<td>1.25</td>
<td>1</td>
<td>TQ-1.25P-LX</td>
<td>TQ-1.25N-LX</td>
<td>0.0015%</td>
<td></td>
</tr>
<tr>
<td>1.5</td>
<td>0.67</td>
<td>TQ-1.5P-LX</td>
<td>TQ-1.5N-LX</td>
<td>0.001%</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>0.5</td>
<td>TQ-2P-LX</td>
<td>TQ-2N-LX</td>
<td>0.001%</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>0.33</td>
<td>TQ-3P-LX</td>
<td>TQ-3N-LX</td>
<td>0.05%</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>0.25</td>
<td>TQ-4P-LX</td>
<td>TQ-4N-LX</td>
<td>0.05%</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>0.2</td>
<td>TQ-5P-LX</td>
<td>TQ-5N-LX</td>
<td>0.05%</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>0.166</td>
<td>TQ-6P-LX</td>
<td>TQ-6N-LX</td>
<td>0.05%</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>0.125</td>
<td>TQ-8P-LX</td>
<td>TQ-8N-LX</td>
<td>0.1%</td>
<td></td>
</tr>
</tbody>
</table>

**NOTE**
This power supply is designed with adequate consideration for high voltage safety as an integrated power supply. Yet, please make sure to ground the case for further safety when using TQ series.

**SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Input voltage / current</th>
<th>11V to 16Vdc 250mA typ.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Output control</td>
<td>By external control voltage (Vcon-in) 0 to 5Vdc</td>
</tr>
<tr>
<td>Line Regulation</td>
<td>±0.1% (at rated voltage for 12V ± 1V)</td>
</tr>
<tr>
<td>Load regulation</td>
<td>0.1% (at rated voltage for 10% to 100% load change)</td>
</tr>
<tr>
<td>Stability</td>
<td>0.01% / H 0.03% / 8H</td>
</tr>
<tr>
<td>Temp. coefficient</td>
<td>50ppm / °C</td>
</tr>
</tbody>
</table>

| **Voltage setting accuracy** | ±2% (by Vcon-in at rated output) |
| **Protections**              | Continuous short circuit, reverse input |
| **Operation temp.**          | -10°C to +50°C             |
| **Storage temp.**            | -20°C to +70°C             |
| **Humidity**                 | 20% to 80%RH(no condensation) |
[up to 4kV models]

**TOP VIEW**

- 0.14min (3.5)
- 0.15 (3.8)
- 0.25 (6.35)

**SIDE VIEW**

- 0.14min (3.5)
- 0.25 (6.35)

**BOTTOM VIEW**

- 0.14min (3.5)
- 0.5 (12.70)

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### [5kV and 6kV models (except -LX type)]

**TOP VIEW**

- 2.6/6.64
- 2.35/5.96
- 2.07/5.25
- 0.01/0.25
- 0.55 (13.97)

**SIDE VIEW**

- 0.5 (12.70)
- 0.14min (3.5)

**BOTTOM VIEW**

- 0.14min (3.5)
- 0.25 (6.35)

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### [5kV to 8kV models of -LX type]

**TOP VIEW**

- 2.6/6.64
- 2.35/5.96
- 2.07/5.25
- 0.01/0.25
- 0.55 (13.97)

**SIDE VIEW**

- 0.5 (12.70)
- 0.14min (3.5)

**BOTTOM VIEW**

- 0.14min (3.5)

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### DIMENSIONS inch (mm)

<table>
<thead>
<tr>
<th>Model</th>
<th>L</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up to 2kV</td>
<td>1.40</td>
<td>0.7</td>
<td>0.6</td>
<td>0.65</td>
<td>0.55</td>
<td>0.01</td>
</tr>
<tr>
<td>3kV, 4kV</td>
<td>1.75</td>
<td>1.00</td>
<td>0.88</td>
<td>0.36</td>
<td>0.00</td>
<td>0.25</td>
</tr>
</tbody>
</table>

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### CONNECTION DIAGRAM

**[up to 4kV models]**

1. Pin ② and ④ are internally connected.
2. Input impedance of Pin ③ (Vcon-in) is greater than 50kΩ.

**[more than 5kV models]**

1. Pin ② and ④ are internally connected.
2. Input impedance of Pin ③ (Vcon-in) is greater than 50kΩ.
Customer Inquiry Sheet (TQ series)

Please copy this page and above fax number after filling out form below.

I would like

☐ A quotation  ☐ An explanation of product  ☐ A demonstration  ☐ To purchase

☐ Other ( )

Give us your requirement / comment

Please fill in below.

Address: ___________________________

Company: __________________________

Dept.: ___________________________

Title: ___________________________

Name: ___________________________

Tel: ___________________________

Fax: ___________________________

E-mail: __________________________

Manufacturer warranty

We warrant the specification, unless otherwise specified, at max. rated output after warm up, and scope of application is between 10% and 100% of max. rated output. We warrant that products contained in this catalog (hereinafter, the “Products”) are free from defects in material and workmanship under normal use for a period of one (1) year from the date of shipment thereof. However, the warranty period for X-ray detectors and X-ray source shall be either one (1) year from the date of shipment or 1,000 hours, whichever shorter. The above warranty shall not apply to any Product which, at our sole judgment, has been: i) Repaired or altered by persons unauthorized by us; or ii) Connected, installed, adjusted or used other than in accordance with the instructions furnished by us (including being used in an inappropriate installation environment, such as in corrosive gas, high temperature and humidity). We are not liable for any loss, damage or failure of the Products after the shipment thereof caused by external factors such as disasters. We will not inspect, adjust or repair any of our power supply products in the field or at any customer site. If you suspect that there has been a power supply failure in the field, please inspect your whole unit by yourself in an effort to determine that the problem is, in fact, arising out of our power supply products. If it is found that the problem is arising out of such power supply product after inspection, please contact your local sales office for additional troubleshooting. A “Return Merchandise Authorization” is required in case the power supply must be sent back to the factory in Japan for inspection and repair. We, at our sole discretion, repair or replace such defective products at no cost to the purchaser. We assume no liability to the purchaser or any third party for special, incidental, consequential, or other damages resulting from a breach of the foregoing warranty. This warranty excludes any and all other warranties not set forth herein, express or implied, including without limitation the implied warranties of merchantability or fitness for a particular purpose. The Products are not designed and produced for such applications as requiring extremely high reliability and safety, or involving human lives (such as nuclear power, aerospace, social infrastructure facility, medical equipment, etc.). The use under such environment is not covered by this warranty and may require additional design and manufacturing processes. No modification or supplement of this warranty shall be binding unless in writing and signed by a duly authorized officer of Matsusada. Matsusada reserves the right to make any changes in the contents of catalogs or specifications at any time without advance notice. Due to compelling reason such as unavailability of components used, products might be un available or unable to repair. The products specified in catalogs or specifications are designed for use by the person who has enough expertise or under the control of such person, and not for general consumers. Schematics of products shall not be submitted to users. Test result or test data for the products shall be available upon request with charge.

Make sure you read the specification in the latest catalog before you order. Contact nearby sales office for the latest catalog. PLEASE SEE THE LINK BELOW FOR THE COMPLETE WARRANTY TERMS

http://www.matsusada.com/site/warranty.html

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