DC160WS
160 Watt

- DC/DC converter with 160 W continuous fanless power
- Ultra wide input range 6…36 VDC
- Selectable output voltage 12, 19 or 24 V via jumper
- Extended temperature range -20…+70 °C
- High efficiency up to 98 %
- Compact design
- High reliability due to premium high quality components
- Delivery includes optional thermal pad for heat dissipation, jumper and distance bolts

Technical data

| Input voltage | 24 VDC (6…36 VDC) |
| Input current | Max. 7.2 A (24 VDC) |
| Inrush current | 20 A max. (24 VDC) |
| Efficiency | Up to 98 % |
| Standby consumption | <1 W |
| Power ON/OFF : J6 | Module OFF: 0…0.8 V / Module ON: >3.5…36 V or open circuit |

Protection
- Input: Inverse-polarity protection
- Output: Short circuit protection
- Overvoltage protection: +28 V
- Overtemperature protection: Depends on ambient temp., load and cooling

Insulation voltage
- No separation between input / output

Temperature
- Operating: -20…+70 °C / Storage: -20…+85 °C

Derating
- See diagrams

MTBF
- >410000 h according to MIL-HDBK-217F at 25 °C, 12 V_in

Humidity
- Operating: 10…90 % RH, non-condensing / Storage: 10…95 % RH, non-condensing

Dimensions (W x D x H)
- 95.0 x 45.0 x 25.4 mm ±0.5 mm

Weight (net)
- 0.08 kg

For detailed max. power please consider the derating diagrams. No galvanic isolation! Ripple and noise was measured by a 20 MHz bandwidth limited oscilloscope with connected 10 µF and 0.1 µF capacitors at each output. The final assembly has to comply with the valid EMC standards.

Article  Jumper J5  Output  Output current  Load  Ripple & Noise
No. Setting  Voltage  min  free air convection max  chassis mounted max  regulation

DC160WS delivery settings
+12 V  0 A  8.3 A  13.3 A  ±3 %  120 mV
+19 V  0 A  5.2 A  8.4 A  ±3 %  190 mV
+24 V  0 A  4.1 A  6.6 A  ±3 %  240 mV

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Optional Accessories

For detailed information please visit our website www.bicker.de and refer to the article number.

<table>
<thead>
<tr>
<th>PSZ-1020</th>
<th>Cable harness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connection cable DC160W</td>
<td></td>
</tr>
<tr>
<td>J6-Motherboard, 2-pole, length 250 mm</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>PSZ-1040</th>
<th>EMC filter</th>
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<tr>
<td>Reduces conducted noise and emission</td>
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</table>

TIP!

To ensure the best heat dissipation from PCB to chassis, please use the thermal pad (included in delivery).
Efficiency curves DC160WS

12 \text{V}_{\text{out}}

19 \text{V}_{\text{out}}

24 \text{V}_{\text{out}}
Derating curves DC160WS

12 V<sub>out</sub>

**Chassis mounted**

![Graph showing derating curves for Chassis mounted configuration with 12 V<sub>out</sub>]

**Free air convection**

![Graph showing derating curves for Free air convection configuration with 12 V<sub>out</sub>]

Vin: 6–8 VDC, 9–11 VDC, 12–24 VDC, 36 VDC

19 V<sub>out</sub>

**Chassis mounted**

![Graph showing derating curves for Chassis mounted configuration with 19 V<sub>out</sub>]

**Free air convection**

![Graph showing derating curves for Free air convection configuration with 19 V<sub>out</sub>]

Vin: 6–8 VDC, 9–11 VDC, 12 VDC, 24–36 VDC

24 V<sub>out</sub>

**Chassis mounted**

![Graph showing derating curves for Chassis mounted configuration with 24 V<sub>out</sub>]

**Free air convection**

![Graph showing derating curves for Free air convection configuration with 24 V<sub>out</sub>]

Vin: 6–8 VDC, 9–11 VDC, 12 VDC, 24–36 VDC
**DC/DC converters**

**Drawing DC160WS**

![Diagram of DC160WS](image)

**Connectors**

<table>
<thead>
<tr>
<th>Connector</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>J1</td>
<td>Input +</td>
</tr>
<tr>
<td>J2</td>
<td>Input –</td>
</tr>
<tr>
<td>J3</td>
<td>Output +</td>
</tr>
<tr>
<td>J4</td>
<td>Output –</td>
</tr>
<tr>
<td>J5</td>
<td>Jumper block</td>
</tr>
<tr>
<td>J6</td>
<td>Power ON/OFF</td>
</tr>
<tr>
<td>F1</td>
<td>Fuse 20 A</td>
</tr>
</tbody>
</table>

**J5 Jumper for output setting**

<table>
<thead>
<tr>
<th>Pin 1</th>
<th>Pin 2</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>OUTPUT VOLTAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open</td>
<td>Open</td>
<td>No use</td>
<td>No use</td>
<td>12 VDC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Short</td>
<td>Open</td>
<td>No use</td>
<td>No use</td>
<td>19 VDC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Short</td>
<td>Short</td>
<td>No use</td>
<td>No use</td>
<td>24 VDC</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Mounting instruction**

- Thermal pad (included in delivery)
- Six Distance bolts, length 2.5 mm, d: 3.2 mm (included in delivery)
- Heat sink/Chassis

Max. torque in and output screws: 0.75 Nm

Six M3, max. torque: 0.6 Nm

Specification is subject to change without notice. Errors excepted.

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