The DPA248 is a very compact power supply designed for fieldbus applications in which power and data share the same twisted-pair.

The unit supplies power, decouples data from the power supply, and makes the two cables symmetrical with respect to the shield terminal. The decoupling allows the use of unshielded cables. The PELV output circuit has electronic protection against overload and short-circuit. Isolation is equivalent to safety transformers as specified in VDE 0551.

Additional to the AS-Interface-output the unit has an independent second SELV-output with 26V and 6A.

The DPA248 is a very compact power supply designed for fieldbus applications in which power and data share the same twisted-pair.

<table>
<thead>
<tr>
<th>Vout</th>
<th>Iout</th>
<th>Pout</th>
<th>Features</th>
<th>Order-No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vout1 30.55V</td>
<td>2.8A</td>
<td>85W</td>
<td>AS-Interface data decoupling</td>
<td>DPA248.141</td>
</tr>
<tr>
<td>Vout2 26.0V</td>
<td>6A</td>
<td>155W</td>
<td>OVP</td>
<td></td>
</tr>
</tbody>
</table>

Warranty: 2 years from date of delivery.

Specifications are valid at 230V AC, unless otherwise stated. They are subject to change without prior notice.
Output (continued)

<table>
<thead>
<tr>
<th>Voltage regulation:</th>
<th>Vout1</th>
<th>Vout2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Line regulation max. %</td>
<td>± 0.2</td>
<td>± 0.2</td>
</tr>
<tr>
<td>Load regulation stat. Δ Uout max. %</td>
<td>± 0.5</td>
<td>± 0.5</td>
</tr>
<tr>
<td>Temperature coefficient typ. %/K</td>
<td>± 0.02</td>
<td>± 0.02</td>
</tr>
</tbody>
</table>

Ripple max. mVpp 50

Current limitation

- Threshold min/max. A 3.0 / 5.0 11.0 / 14.0

- Characteristic See graph on page 3
- Short-circuit

Start delay telay typ. s 6
Vout rise-up time trise typ. ms 25

Output

Voltage regulation:

- Line regulation max. %
- Load regulation stat. Δ Uout max. %
- Temperature coefficient typ. %/K

Ripple max. mVpp 50

Current limitation

- Threshold min/max. A 3.0 / 5.0 11.0 / 14.0

- Characteristic See graph on page 3
- Short-circuit

Start delay telay typ. s 6
Vout rise-up time trise typ. ms 25

Input (continued)

AC input range 1 / 2 V AC 88...132 / 250...300 Full spec.
DC input range V DC 250...300 Full spec.
Derated AC range 1 / 2 V AC 80...88 / 150...187, 150 / 300 for 0.5s Power derating typ. 20%.
Derated DC range V DC 200...250 Full spec.
Frequency range Hz 47...63 Full spec.
In-rush current max. A 63...400 Full spec.
Hold-up time min. ms 50 Increased leakage currents.
Power factor λ typ. 0.6 Full spec.
Internal fuse 5x20mm T8A/250V   (IEC127/2-5) To replace, see page 4.
Input range selection Manual (230V AC set at factory)

Data Decoupling / Earth Symmetrization

Output inductance 100µH ± 10%
Terminating impedance 2 x 39Ω ± 1%
Symmetry tolerance ± 1%
Electric strength 500V

According to AS-Interface-specifications

- Measured between AS-i + and AS-i –.
- As above.
- AS-i + / AS-i – to shield.
- As above.

Electromagnetic Compatibility

Emissions according to EN 50081-1

- Radio interference, EN 55011, EN 55022
- Electrostatic discharge ESD EN 61000-4-2
- Radiated fields, EN 61000-4-3
- Fast transients, EN 61000-4-4
- Surge transients EN 61000-4-5
- Conducted disturb., EN 61000-4-6

Immunity according to further standards

- Transient voltage, IEC 255
- NAMUR-prescription
- Transient resistance, VDE 0160 §§ 3.1.1.2
- Over-voltage resistance (PULS standard)

Class B
No degradation of performance
8kV direct discharge (level 4)
15kV air discharge (level 4)
10kV/m (level 3)
4kV (level 4)
2kV (level 3)
4kV (isolation class 4)
2kV (isolation class 4)
10V (level 3)
5kV
Satisfied
750V / 1.3ms (class 2)
150 / 300V AC / 0.5s

EN 50081-2 is also satisfied.

EN 50082-1 is also satisfied.

Class B
No degradation of performance
80MHz...1000MHz, ACin and Vout lines: I = 1m.
Coupled to ACin line.
Coupled to DCout line.
Common mode, unit on.
Differential mode, unit on.
150kHz...800MHz.
Common mode, unit off.
Valid for total load range.
Switch position 115 / 230V AC.

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2 Outputs • DIN Rail Power Supply • 240 Watt • DPA248

Protection

<table>
<thead>
<tr>
<th>Unit protection</th>
<th>Overload</th>
<th>Yes</th>
<th>See current limit.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Short-circuit proof</td>
<td>Yes</td>
<td>Automatic voltage recovery.</td>
</tr>
<tr>
<td></td>
<td>Open-circuit proof</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Over-temperature (OTP)</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Reverse battery prot.</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ACin range selection</td>
<td>Manual</td>
<td>Switch for 115/230V AC.</td>
</tr>
</tbody>
</table>

Load protection

| Over-voltage (OVP) | Yes | |
| Threshold typ. | 29V | |
| Accuracy | max. ±4% | |
| Method | — | Independent second regulator. |

Safety

Electrical safety

<table>
<thead>
<tr>
<th>Test voltage according to EN 60 950</th>
<th>3kV AC</th>
<th>Primary / secondary.</th>
</tr>
</thead>
<tbody>
<tr>
<td>for t = 2sec</td>
<td>2.5kV AC</td>
<td>Primary / PE.</td>
</tr>
<tr>
<td>Air- and leakage distance</td>
<td>6.4 / 8mm</td>
<td>Primary / secondary.</td>
</tr>
<tr>
<td>4mm</td>
<td>Primary / PE.</td>
<td></td>
</tr>
<tr>
<td>Isolation resistance min.</td>
<td>5MΩ</td>
<td>VDE 0551.</td>
</tr>
<tr>
<td>Protection class</td>
<td>I</td>
<td>VDE 0106 part 1, IEC 536.</td>
</tr>
<tr>
<td>PE resistance</td>
<td>&lt; 0.1Ω</td>
<td>VDE 0805;</td>
</tr>
<tr>
<td>Protection system</td>
<td>IP20</td>
<td>DIN 40050, IEC 529.</td>
</tr>
<tr>
<td>Leakage current max.</td>
<td>0.75mA</td>
<td>EN 60 950 (50Hz frequency line).</td>
</tr>
<tr>
<td>Output circuit</td>
<td>PELV</td>
<td>VDE 0160.</td>
</tr>
<tr>
<td>SELV</td>
<td>EN 60 950.</td>
<td></td>
</tr>
<tr>
<td>Over-voltage class</td>
<td>II</td>
<td>VDE 0110 part 1, IEC 664.</td>
</tr>
</tbody>
</table>

Touch safety

Finger test | VDE 0100 §6, EN 60 950, VBG4. |
Penetration protection | > Ø 3mm | e.g. screws, small parts etc. |

Operation and Ambient Area

Application class | KSF | DIN 40040. |
Operation temperature max. | −10°...+70°C | Ta (measured at 1cm distance). |
Derated range | +60°...+70°C | Derating, see diagram. |
Storage temperature typ. | −20°...+100°C | Ta. |
Humidity max. | 95% | Non-condensing. |
Mechanical usage | Vertical | See page 4. |
Lateral spacing | None | No gap needed. |
Cooling | Normal convection | Don’t obstruct air flow. |
Dirt protection level max. | 2 | VDE 0110 part 1. |
Vibration | 0.075mm | IEC 62-2-6 (10...60Hz). |
Shock | 11ms / 15g | IEC 68-2-27 (3 shocks). |
Operation height max. | 2,000m | Above sea level. |

Efficiency

100% load typ. | 88% | @ 230V ACin. |

Reliability and Lifetime

MTBF according to Siemens standard 29500 typ. | 200,000h | 230VAC, Iout = 100%, +40°C Ta. |
Only long life (> 2,000h @105° C) electrolytic capacitors are used.
Function test | 100% | Test certificate enclosed. |
Run-in (burn-in) | 24h | Full load, Ta = +60°C, on/off cycle. |

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This technical information is valid for +25° C ambient temperature and 5 min. run in time, unless otherwise stated.
**Fuse**

The PSU has electronic protection against external short-circuits. In case of an internal defect, a fuse disconnects the unit. It can only be replaced by opening the unit which should be done by the supplier.

**Installation for Operating**

Install DIN rail TS35/7.5 horizontally, ensuring correct orientation.

For other installation considerations consult your representative. Ensure free air flow.

**Dimensions and Connections**

Fully enclosed Al/Mg alloy housing. All mechanical dimensions are in mm.

1) Do not remove PE screws.

The shield terminal should be connected to earth or to the shield of the load cable.

**Screw terminals:**

On the front side. These accept wire of up to 4mm² cross section (single-core cable) or 2.5mm² cross section (multi-core flex).

Remove 9 to 15mm of insulation from wire.

Take care of standards which must be satisfied, e.g. VDE 0100 or EN 60 950.

**Caution:**

Do not remove any screws on box, as internal safety connections could be disconnected!

**Operation without AS-Interface**

When operating without AS-Interface (e.g. in a lab. test) you should connect a 470µF capacitor between AS-1 + and AS-1 -, because commercial lab-loads often tend to oscillate. They may resonate with the data decoupling, and the oscillations may exceed the permitted modulation voltage.

**Modifications (contact supplier)**

Other output voltages, OEM-versions.