# POWER WIRE RESISTOR PWR-S 30 – 90

**This aluminium housed resistor is suitable for a wide range of applications thanks to its compact design.**

**Customer-specific designs and assemblies as well as a temperature switch are available on request.**

**Advantages**
- High pulse stability
- Optimised thermal conduction
- High degree of protection

**Applications**
- Charge, discharge and braking resistor for drive and automation technology
- Earthing resistor
- Protective resistor



| Electrical Data | |
|---|---|
| Resistance Range | Freely selectable, see table |
| Tolerances | ±5 % (R > 5 Ω)<br>±10 % (R = 1 – 5 Ω)<br>±20 % (R < 1 Ω)<br>Further values on request |
| Temperature coefficient | ±150 ppm / °C |
| Insulation resistance | ≥10000 MΩ (500 V, 25 °C, 75 % RH) |
| Testing voltage | 4000 VAC |
| Voltage limit | $\sqrt{(P \times R)}$ |
| Stability | 1000 h bei 25 °C, ΔR ±5 % |
| Inductance | < 0.5 mH at 1 kHz |
| Parasitic capacitance | < 75 pF at 20 kHz |

| Mechanical Data | |
|---|---|
| Dimensions | See table |
| Mounting positions | See drawing |

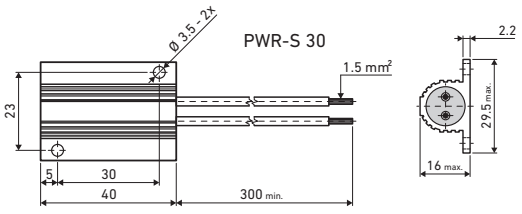
| Environmental Data | |
|---|---|
| Operating temperature | -50 °C to +200 °C, max. 250 °C |
| Storage temperature | 0 °C to +85 °C at 80 % RH max. for min. 12 months |
| Degree of protection acc. to IEC 60529 | IP 65 |

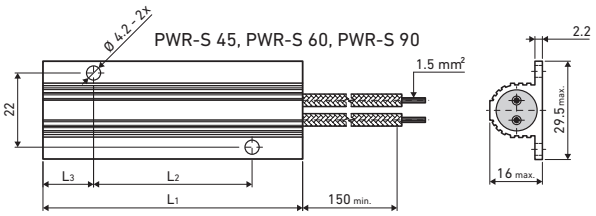
**Overview**

| | Power without Heatsink | | Power with Heatsink | Resistance Range | | Operating Voltage | Dimensions | | Weight |
|---|---|---|---|---|---|---|---|---|---|
| | $P_{NED\,=\,30\,\%}$ | $P_{NED\,=\,100\,\%}$ | $P_N$ | | | | L1 | L2 | |
| Type* | W | W | W | Min. Ω | Max. Ω | V | mm | mm | g |
| PWR-S 30 | 20 | 10 | 30 | 0.7 | 51 | 300 | 40 | 30 | 25 |
| PWR-S 45 | 30 | 15 | 45 | 0.9 | 56 | 400 | 55 | 25 | 35 |
| PWR-S 60 | 40 | 20 | 60 | 1.5 | 110 | 600 | 77 | 47 | 52 |
| PWR-S 90 | 60 | 30 | 90 | 2.2 | 160 | 700 | 104 | 64 | 73 |

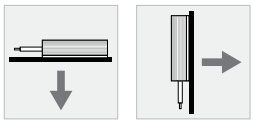
Mechanical tolerances acc. to ISO 2768-m

# POWER WIRE RESISTOR PWR-S 30 – 90



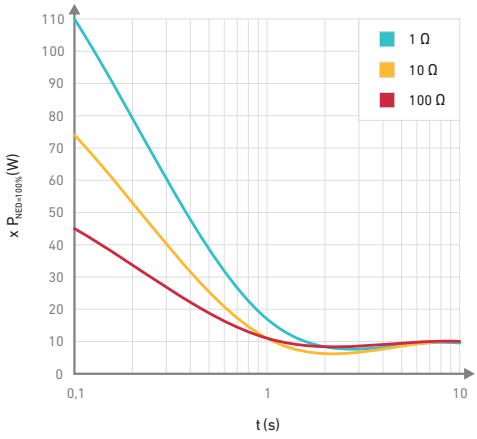




Mounting positions

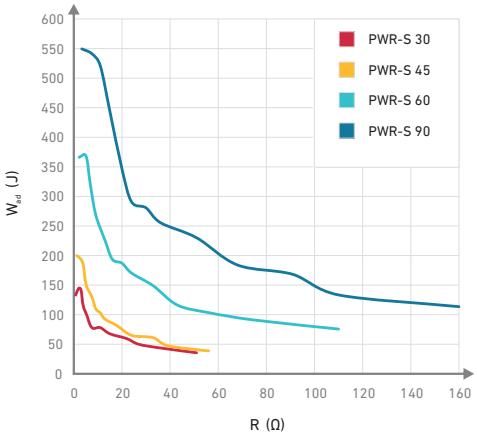


Mounting on a heatsink further improves heat dissipation and increases power of the resistors.

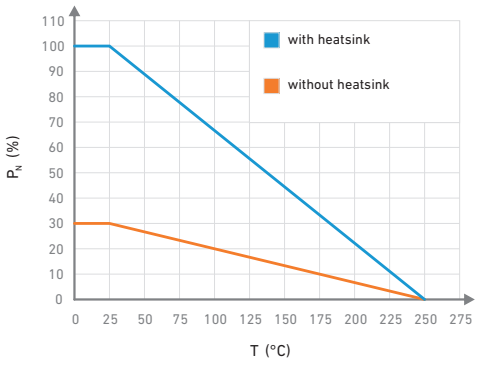
Pulse load – Depending on time and resistance value



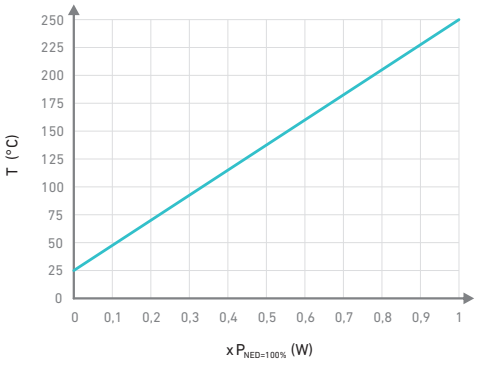

Adiabatic pulse – Depending on resistance value and time




Derating – Depending on ambient temperature




Surface temperature – Depending on load




## Electrical Connection

| | |
|---|---|
| Cable | Standard: UL3071 AWG16 600V 200 °C<br>Cable length 300 mm<br>Optional: UL1199 AWG16 600V 200 °C<br>UL10203 AWG16 1000V 200 °C<br>UL10371 AWG16 1000V 250 °C<br>Other connections and lengths on request |

## Options

Available with temperature switch

## Order designation

To place an order we need the following information

| Type | Temperature Switch | Resistance value | Tolerance | Cable length |
|---|---|---|---|---|
| PWR-S 30 | T | Please specify | ± 5 % (J) | Please specify |
| PWR-S 45 | – | | ± 10 % (K) | |
| PWR-S 60 | | | ± 20 % (M) | |
| PWR-S 90 | | | | |

Metallux cannot picture the customer's operating and application conditions and the customer's existing environmental influences.
We therefore recommend that you carry out your own investigations into the planned use of the products under the actual operating conditions.

We continuously improve our products and also update our data sheets regularly. In this respect, there may be changes in the specification.
These changes will apply to orders received by us from the time of the update, unless otherwise agreed.

Our products comply with Directive 2011/65/EU (RoHS) including Directive 2015/863/EU and Regulation (EC) No. 1907/2006 (REACH).

# POWER WIRE RESISTOR PWR-S 100 – 150

**This UL-certified aluminium housed resistor is suitable for a wide range of applications thanks to its compact design.**

**Customer-specific designs and assemblies as well as a temperature switch are available on request.**

**Advantages**
- High pulse stability
- Optimised thermal conduction
- High degree of protection
- UL 508 approval

**Applications**
- Charge, discharge and braking resistor for drive and automation technology
- Earthing resistor
- Protective resistor



| Electrical Data | |
|---|---|
| Resistance Range | Freely selectable, see table |
| Tolerances | ±5 % (R > 5 Ω)<br>±10 % (R = 1 – 5 Ω)<br>±20 % (R < 1 Ω)<br>Further values on request |
| Temperature coefficient | ±150 ppm / °C |
| Insulation resistance | ≥10000 MΩ (500 V, 25 °C, 75 % RH) |
| Testing voltage | 4000 VAC |
| Voltage limit | $\sqrt{(P \times R)}$ |
| Stability | 1000 h bei 25 °C, ΔR ±5 % |
| Inductance | < 0.5 mH at 1 kHz |
| Parasitic capacitance | < 75 pF at 20 kHz |

| Mechanical Data | |
|---|---|
| Dimensions | See table |
| Mounting positions | See drawing |

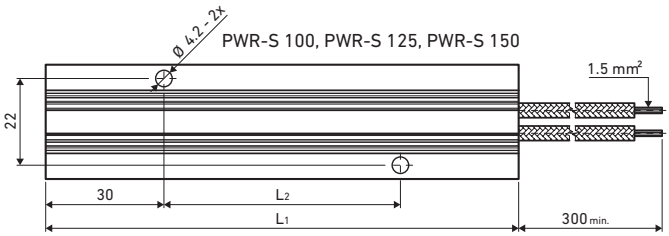
| Environmental Data | |
|---|---|
| Operating temperature | -50 °C to +200 °C, max. 250 °C |
| Storage temperature | 0 °C to +85 °C at 80 % RH max. for min. 12 months |
| Degree of protection acc. to IEC 60529 | IP 65 |
| Certification | UL 508<br>UL labeling on request |

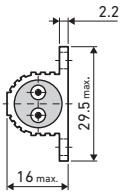
**Overview**

| | Power without Heatsink | | Power with Heatsink | Resistance Range | | Operating Voltage | Dimensions | | Weight |
|---|---|---|---|---|---|---|---|---|---|
| | $P_{NED = 30\%}$ | $P_{NED = 100\%}$ | $P_N$ | | | | L1 | L2 | |
| Type | W | W | W | Min. Ω | Max. Ω | V | mm | mm | g |
| PWR-S 100 | 70 | 30 | 100 | 2.0 | 180 | 700 | 120 | 60 | 86 |
| PWR-S 125 | 85 | 40 | 125 | 3.0 | 300 | 800 | 165 | 105 | 115 |
| PWR-S 150 | 100 | 45 | 150 | 3.3 | 300 | 1000 | 180 | 120 | 120 |

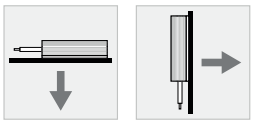
Mechanical tolerances acc. to ISO 2768-m

# POWER WIRE RESISTOR PWR-S 100 – 150



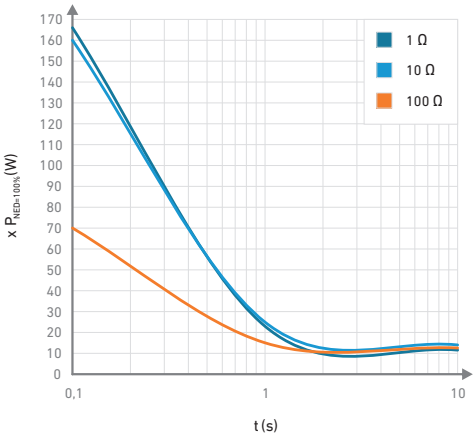




Mounting positions

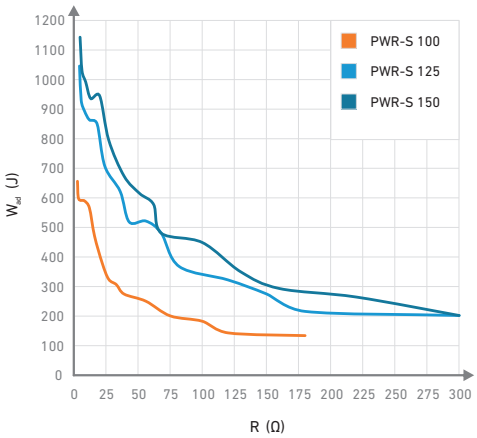


Mounting on a heatsink further improves heat dissipation and increases power of the resistors.

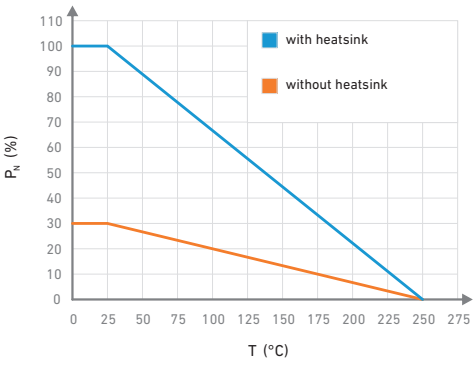
Pulse load – Depending on time and resistance value



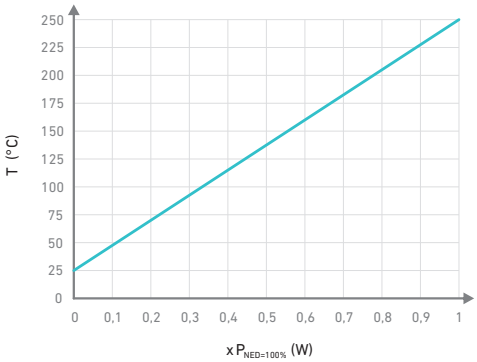

Adiabatic pulse – Depending on resistance value and time




Derating – Depending on ambient temperature




Surface temperature – Depending on load




## Electrical Connection

| | |
|---|---|
| Cable | Standard: UL3071 AWG16 600V 200 °C<br>Cable length 300 mm<br>Optional: UL1199 AWG16 600V 200 °C<br>UL10203 AWG16 1000V 200 °C<br>UL10371 AWG16 1000V 250 °C<br>Other connections and lengths on request |

## Options

Available with temperature switch

## Order designation

To place an order we need the following information

| Type | Temperature Switch | Resistance value | Tolerance | Cable length |
|---|---|---|---|---|
| PWR-S 100 | T | Please specify | ± 5 % (J) | Please specify |
| PWR-S 125 | – | | ± 10 % (K) | |
| PWR-S 150 | | | ± 20 % (M) | |

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