

**PRO ECO 960W 48V 20A II****Weidmüller Interface GmbH & Co. KG**

Klingenbergstraße 26

D-32758 Detmold

Germany

[www.weidmueller.com](http://www.weidmueller.com)

The new PROeco 2nd generation power supplies maximise the availability of automation applications. The twelve-part series offers standard functions: with high performance, efficiency and suitability for many systems. The three-colour LED makes service activities and the integration of PROeco devices particularly easy. The series is compatible with DC UPS, electronic load monitoring and diode modules and is suitable for setting up power management systems. The compact design suits space-constrained applications, such as flat control cabinets in the field.

**General ordering data**

|            |                                                   |
|------------|---------------------------------------------------|
| Version    | Power supply, switch-mode power supply unit, 48 V |
| Order No.  | <a href="#">3025610000</a>                        |
| Type       | PRO ECO 960W 48V 20A II                           |
| GTIN (EAN) | 4099986952003                                     |
| Qty.       | 1 Stück                                           |

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## Technische Daten

### Dimensions and weights

|            |         |                 |            |
|------------|---------|-----------------|------------|
| Depth      | 150 mm  | Depth (inches)  | 5,905 inch |
| Height     | 130 mm  | Height (inches) | 5,118 inch |
| Width      | 112 mm  | Width (inches)  | 4,409 inch |
| Net weight | 3.100 g |                 |            |

### Temperatures

|                     |                |                       |                                         |
|---------------------|----------------|-----------------------|-----------------------------------------|
| Storage temperature | -40 °C...85 °C | Operating temperature | -25 °C...70 °C                          |
| Start-up            | ≥ -40 °C       | Humidity              | 5...95 % rel. humidity, no condensation |

### Rated data UL

|                         |         |
|-------------------------|---------|
| Certificate No. (cURus) | E255651 |
|-------------------------|---------|

### Input

|                                                      |                                                                                                |         |
|------------------------------------------------------|------------------------------------------------------------------------------------------------|---------|
| AC input voltage range                               | 85...264 V AC (derating at 100 V AC)                                                           |         |
| Current consumption in relation to the input voltage | Voltage type                                                                                   | AC      |
|                                                      | Input voltage                                                                                  | 100 V   |
|                                                      | Input current                                                                                  | 10,69 A |
|                                                      | Voltage type                                                                                   | AC      |
|                                                      | Input voltage                                                                                  | 240 V   |
|                                                      | Input current                                                                                  | 4,3 A   |
|                                                      | Voltage type                                                                                   | DC      |
|                                                      | Input voltage                                                                                  | 120 V   |
|                                                      | Input current                                                                                  | 8,79 A  |
|                                                      | Voltage type                                                                                   | DC      |
|                                                      | Input voltage                                                                                  | 370 V   |
|                                                      | Input current                                                                                  | 2,78 A  |
| DC input voltage range                               | 110...370 V DC (derating at <120 V DC)                                                         |         |
| Frequency range AC                                   | 45...65 Hz                                                                                     |         |
| Input fuse                                           | internal                                                                                       |         |
| Inrush current (typ.)                                | 10 A                                                                                           |         |
| Line regulation (typ.)                               | 1 %                                                                                            |         |
| Load regulation (typ.)                               | 2 %                                                                                            |         |
| Nominal power consumption                            | 1.026,74 VA                                                                                    |         |
| Rated input voltage                                  | 110...240 V AC / 120...340 V DC                                                                |         |
| Recommended back-up fuse                             | 15 A / DI, safety fuse<br>20 A, Char. B, circuit breaker<br>16...20 A, Char. C circuit breaker |         |
| Start-up time, max.                                  | 1 s                                                                                            |         |
| Surge protection                                     | Varistor                                                                                       |         |
| Wire connection method                               | Screw connection                                                                               |         |

### Output

|                                                  |               |
|--------------------------------------------------|---------------|
| Capacitive load                                  | unrestricted  |
| Continuous output current @ U <sub>Nominal</sub> | 12.5 A @ 70°C |
| Line regulation (typ.)                           | 1 %           |
| Load regulation (typ.)                           | 2 %           |

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|---------------------------------------------|------------------------------------------|-------|
| Mains failure bridge-over time              | Mains failure bridge-over time, min.     | 20 ms |
|                                             | Input voltage type                       | AC    |
|                                             | Input voltage                            | 230 V |
|                                             | Output current                           | 20 A  |
|                                             | Output voltage                           | 48 V  |
| Max. residual ripple                        | <100 mV <sub>SS</sub> / 20 MHz bandwidth |       |
| Nominal output current for U <sub>nom</sub> | 20 A @ 55 °C                             |       |
| Output power                                | 960 W                                    |       |
| Output voltage, max.                        | 56 V                                     |       |
| Output voltage, min.                        | 36 V                                     |       |
| Parallel connection option                  | yes, max. 3                              |       |
| Protection against inverse voltage          | Yes                                      |       |
| Ramp-up time                                | ≤ 100 ms                                 |       |
| Rated output voltage                        | 48 V DC                                  |       |
| Wire connection method                      | Screw connection                         |       |

General data

|                                                   |                                                |       |
|---------------------------------------------------|------------------------------------------------|-------|
| Degree of efficiency                              | Typ.: 91,7% @ 120 V AC, Typ.: 94,1% @ 230 V AC |       |
| Earth leakage current, max.                       | 3,5 mA                                         |       |
| Housing version                                   | Metal, corrosion resistant                     |       |
| Humidity                                          | 5...95 % rel. humidity, no condensation        |       |
| Mounting position, installation notice            | on terminal rail TS 35                         |       |
| Power factor                                      | Power factor typical                           | 1     |
|                                                   | Input voltage                                  | 120 V |
|                                                   | Ambient temperature                            | 25 °C |
|                                                   | Output power                                   | 960 W |
|                                                   | Power factor typical                           | 0,99  |
|                                                   | Input voltage                                  | 230 V |
|                                                   | Ambient temperature                            | 25 °C |
|                                                   | Output power                                   | 960 W |
| Power loss, idling                                | 5 W                                            |       |
| Power loss, nominal load                          | 60 W                                           |       |
| Protection against over-heating                   | Yes                                            |       |
| Protection against reverse voltages from the load | 60 V DC                                        |       |
| Protection degree                                 | IP20                                           |       |
| Short-circuit protection                          | Yes                                            |       |
| Surge voltage category                            | II                                             |       |

EMC / shock / vibration

|                                    |                                                                                                                                                                                                                                                |                                              |         |
|------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|---------|
| Interference immunity test acc. to | EN 61000-4-2 (ESD),<br>EN 61000-4-3 (RS), EN<br>61000-4-4 (burst), EN<br>61000-4-5 (surge), EN<br>61000-4-6 (conducted),<br>EN61000-4-8 (Fields),<br>EN 61000-4-11<br>(Dips), IEC 61000-6-1,<br>IEC 61000-6-2, IEC<br>61000-6-3, IEC 61000-6-4 | Noise emission in accordance with<br>EN55032 |         |
|                                    |                                                                                                                                                                                                                                                |                                              | Class B |
| Shock resistance IEC 60068-2-27    | 30 g in all directions                                                                                                                                                                                                                         | Vibration resistance IEC 60068-2-6           | 0.7 g   |

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## Technische Daten

## Insulation coordination

|                                  |                       |                                   |        |
|----------------------------------|-----------------------|-----------------------------------|--------|
| Insulation voltage input / earth | 3 kV                  | Insulation voltage output / earth | 0,5 kV |
| Insulation voltage, input/output | 4 kV                  | Pollution severity                | 2      |
| Protection class                 | I, with PE connection | Surge voltage category            | II     |

## Electrical safety (applied standards)

|                                             |                                                        |                                                             |                                    |
|---------------------------------------------|--------------------------------------------------------|-------------------------------------------------------------|------------------------------------|
| Electrical machine equipment                | Acc. to EN60204                                        | For use with electronic equipment                           | Acc. to EN50178 / VDE0160          |
| Protection against dangerous shock currents | Acc. to VDE0106-101                                    | Protective separation / protection against electrical shock | VDE0100-410 / acc. to DIN57100-410 |
| Safety extra-low voltage                    | SELV acc. to IEC 61010-1, PELV acc. to IEC 61010-2-201 | Safety transformers for switch-mode power supplies          | According to EN 61558-2-16         |

## Connection data (input)

|                                                       |                      |                                           |                   |
|-------------------------------------------------------|----------------------|-------------------------------------------|-------------------|
| Conductor cross-section, AWG/kcmil , max.             | 10 AWG               | Conductor cross-section, AWG/kcmil , min. | 20 AWG            |
| Conductor cross-section, flexible , min.              | 0,22 mm <sup>2</sup> | Conductor cross-section, rigid , max.     | 6 mm <sup>2</sup> |
| Conductor cross-section, rigid , min.                 | 0,18 mm <sup>2</sup> | Number of terminals                       | 3 for L/N/PE      |
| Screwdriver blade                                     | 0,8 x 4,0            | Stripping length (input)                  | 8 mm              |
| Tightening torque, max.                               | 0,6 Nm               | Tightening torque, min.                   | 0,5 Nm            |
| Wire connection cross section, flexible (input), max. | 4 mm <sup>2</sup>    |                                           |                   |

## Connection data (output)

|                                           |                   |                                           |                      |
|-------------------------------------------|-------------------|-------------------------------------------|----------------------|
| Conductor cross-section, AWG/kcmil , max. | 10 AWG            | Conductor cross-section, AWG/kcmil , min. | 20 AWG               |
| Conductor cross-section, flexible , max.  | 4 mm <sup>2</sup> | Conductor cross-section, flexible , min.  | 0,22 mm <sup>2</sup> |
| Conductor cross-section, rigid , max.     | 6 mm <sup>2</sup> | Conductor cross-section, rigid , min.     | 0,18 mm <sup>2</sup> |
| Number of terminals                       | 5 (+ + / - -)     | Screwdriver blade                         | 0,8 x 4,0            |
| Stripping length (output)                 | 8 mm              | Tightening torque, max.                   | 0,6 Nm               |
| Tightening torque, min.                   | 0,5 Nm            |                                           |                      |

## Connection data (signal)

|                                                        |                     |                                                        |                     |
|--------------------------------------------------------|---------------------|--------------------------------------------------------|---------------------|
| Number of terminals                                    | 2                   | Stripping length (Signal)                              | 8 mm                |
| Wire connection cross-section, flexible (signal), max. | 1,5 mm <sup>2</sup> | Wire connection cross-section, flexible (signal), min. | 0,2 mm <sup>2</sup> |
| Wire cross-section, AWG/kcmil , max.                   | 14                  | Wire cross-section, AWG/kcmil , min.                   | 28 mm <sup>2</sup>  |
| Wire cross-section, solid , max.                       | 1,5 mm <sup>2</sup> | Wire cross-section, solid , min.                       | 0,2 mm <sup>2</sup> |

## Signalling

|                           |                      |                  |     |
|---------------------------|----------------------|------------------|-----|
| Contact load (NO contact) | max. 30 V DC / 1 A   | Floating contact | Yes |
| LED green                 | Operating voltage OK |                  |     |

## Classifications

|             |             |             |             |
|-------------|-------------|-------------|-------------|
| ETIM 6.0    | EC002540    | ETIM 7.0    | EC002540    |
| ETIM 8.0    | EC002540    | ETIM 9.0    | EC002540    |
| ECLASS 9.0  | 27-04-07-01 | ECLASS 9.1  | 27-04-07-01 |
| ECLASS 10.0 | 27-04-07-01 | ECLASS 11.0 | 27-04-07-01 |
| ECLASS 12.0 | 27-04-07-01 | ECLASS 13.0 | 27-04-07-01 |
| ECLASS 14.0 | 27-04-07-01 |             |             |

Erstellungs-Datum 04:11:32 CET Ngày 03 tháng 3 năm 2025

Katalogstand 15.02.2025 / Technische Änderungen vorbehalten

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## Environmental Product Compliance

|                                      |                                        |
|--------------------------------------|----------------------------------------|
| RoHS Compliance Status               | Compliant with exemption               |
| RoHS Exemption (if applicable/known) | 6c, 7a, 7cl                            |
| REACH SVHC                           | Lead 7439-92-1 Lead monoxide 1317-36-8 |

## Approvals

Approvals



|                         |            |
|-------------------------|------------|
| ROHS                    | Conform    |
| UL File Number Search   | UL Website |
| Certificate No. (cURus) | E255651    |
| Certificate no. (cULus) | E258476    |

## Downloads

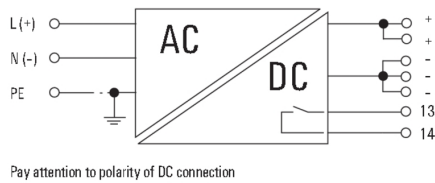
|                                             |                                           |
|---------------------------------------------|-------------------------------------------|
| Approval/Certificate/Document of Conformity | <a href="#">Declaration of Conformity</a> |
| Engineering Data                            | <a href="#">CAD data – STEP</a>           |
| User Documentation                          | <a href="#">Operating instructions</a>    |
| Catalogues                                  | <a href="#">Catalogues in PDF-format</a>  |

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## Zeichnungen



Status indicator and status relay

| Operational status                                                                                                 | Status LED | Relay contact (NO) |
|--------------------------------------------------------------------------------------------------------------------|------------|--------------------|
| Fault-free operation:<br>$U_{OUT} > 90\%$ of the set voltage                                                       | green      | closed             |
| Fault:<br>$U_{OUT} \leq 85\%$ of the set voltage                                                                   | red        | opened             |
| Overload pre-warning:<br>$I_{OUT} > 90\%$ $I_N$ (tolerance: $\pm 5\%$ ) and<br>$U_{OUT} > 90\%$ of the set voltage | yellow     | closed             |

