

**PRO TOP1 960W 48V 20A****Weidmüller Interface GmbH & Co. KG**

Klingenbergstraße 26

D-32758 Detmold

Germany

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

Production processes constantly need to be made more efficient. As well as performance, energy efficiency and sustainability are also playing an increasingly important role in cutting-edge industry. PROtop power supplies combine excellent performance data with exemplary sustainability, which has a positive impact on the productivity of the entire production facility. PROtop offers a number of advantages that give you a real competitive edge. These include the permanent reduction of energy costs thanks to high efficiencies as well as the increase in plant availability due to long service life and high MTBF values. In addition, there is a high functional density due to the extremely spacesaving designs.

PROtop can achieve significant savings compared to conventional power supply units. Its increased efficiency saves an average of 50 kWh per day in a medium-sized production facility with approx. 100 PROtop power supplies working in three-shift operation. This adds up to over 15,000 kWh a year and also improves the facility's carbon footprint. The service life, which is twice as long as that of standard power supplies, also sustainably reduces the costs of repurchase and exchange.

**General ordering data**

|            |                                                   |
|------------|---------------------------------------------------|
| Version    | Power supply, switch-mode power supply unit, 48 V |
| Order No.  | <a href="#">2466920000</a>                        |
| Type       | PRO TOP1 960W 48V 20A                             |
| GTIN (EAN) | 4050118481600                                     |
| Qty.       | 1 pc(s).                                          |

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## Technical data

## Dimensions and weights

|            |         |                 |            |
|------------|---------|-----------------|------------|
| Depth      | 125 mm  | Depth (inches)  | 4.921 inch |
| Height     | 130 mm  | Height (inches) | 5.118 inch |
| Width      | 124 mm  | Width (inches)  | 4.882 inch |
| Net weight | 3,215 g |                 |            |

## Temperatures

|                                   |                           |                             |                |
|-----------------------------------|---------------------------|-----------------------------|----------------|
| Storage temperature               | -40 °C...85 °C            | Operating temperature       | -25 °C...70 °C |
| Operating temperature, min.       | -25 °C                    | Operating temperature, max. | 70 °C          |
| Humidity at operating temperature | 5...95 %, no condensation |                             |                |

## Input

|                                                      |                                         |       |
|------------------------------------------------------|-----------------------------------------|-------|
| AC input voltage range                               | 85...277 V AC                           |       |
| Connection system                                    | PUSH IN                                 |       |
| Current consumption in relation to the input voltage | Voltage type                            | AC    |
|                                                      | Input voltage                           | 100 V |
|                                                      | Input current                           | 12 A  |
|                                                      | Voltage type                            | DC    |
|                                                      | Input voltage                           | 120 V |
|                                                      | Input current                           | 12 A  |
| DC input voltage range                               | 80 ... 410 V DC                         |       |
| Frequency range AC                                   | 45...65 Hz                              |       |
| Input fuse (internal)                                | Yes                                     |       |
| Inrush current                                       | max. 15 A                               |       |
| Nominal power consumption                            | 1,021 VA                                |       |
| Rated input voltage                                  | 110...240 V AC / 120...340 V DC         |       |
| Recommended back-up fuse                             | 16 A, DI / 16 A, Char. B / 16 A, Char C |       |
| Surge protection                                     | Varistor                                |       |

## Output

|                                             |                                                      |       |
|---------------------------------------------|------------------------------------------------------|-------|
| Connection system                           | PUSH IN                                              |       |
| DCL - peak load reserve                     | Multiple of the rated current                        | 150 % |
|                                             | Boost duration                                       | 5 s   |
|                                             | Multiple of the rated current                        | 400 % |
|                                             | Boost duration                                       | 15 ms |
| Mains failure bridge-over time              | > 20 ms @ 115V AC/ 230 VAC                           |       |
| Nominal output current for U <sub>nom</sub> | 20 A @ 60 °C                                         |       |
| Output power                                | 960 W                                                |       |
| Output voltage, max.                        | 56 V                                                 |       |
| Output voltage, min.                        | 45 V                                                 |       |
| Output voltage, note                        | adjustable with potentiometer or comunication module |       |
| Parallel connection option                  | yes, max 10                                          |       |
| Protection against inverse voltage          | Yes                                                  |       |
| Ramp-up time                                | ≤ 100 ms                                             |       |
| Rated output voltage                        | 48 V DC ± 1 %                                        |       |
| Residual ripple, breaking spikes            | < 100 mV <sub>pp</sub>                               |       |

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## General data

|                                        |                                                                                                                                                                                                                                            |                          |                            |
|----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|----------------------------|
| AC failure bridging time @ $I_{nom}$   | > 20 ms @ 230 V AC / > 20 ms @ 115 V AC                                                                                                                                                                                                    | Conformal coating        | No                         |
| Degree of efficiency                   | 94%                                                                                                                                                                                                                                        | Derating                 | > 60°C (2.5% / 1°C)        |
| Earth leakage current, max.            | 3.5 mA                                                                                                                                                                                                                                     | Housing version          | Metal, corrosion resistant |
| Mounting position, installation notice | Horizontal on DIN rail TS 35, top and bottom 50 mm clearance for free air flow, 10 mm clearance to neighbouring active subassemblies with full load, 5 mm with passive neighbouring subassemblies, direct row mounting with 90% rated load | Power factor (approx.)   | > 0.9                      |
| Power loss, idling                     | 10 W                                                                                                                                                                                                                                       | Power loss, nominal load | 61.3 W                     |
| Protection degree                      | IP20                                                                                                                                                                                                                                       | Short-circuit protection | Yes, internal              |
| Start-up                               | ≥ -40 °C                                                                                                                                                                                                                                   | Surge voltage category   | III, II                    |

## EMC / shock / vibration

|                                    |                                                                                                                                                                                       |                                           |                                                            |
|------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|------------------------------------------------------------|
| Interference immunity test acc. to | EN 55032:2015, EN 55024:2010/A1:2015, EN 55035:2017, EN 61000-3-2:2014, EN 61000-3-3:2013, EN 61000-6-1:2007, EN 61000-6-2:2005, EN 61000-6-3:2007/A1:2011, EN 61000-6-4:2007/A1:2011 | Noise emission in accordance with EN55032 |                                                            |
| Shock resistance IEC 60068-2-27    | 30 g in all directions                                                                                                                                                                | Vibration resistance IEC 60068-2-6        | Class B<br>2.3 g (on DIN rail), 4 g (with direct mounting) |

## Insulation coordination

|                                  |                       |                                   |         |
|----------------------------------|-----------------------|-----------------------------------|---------|
| Insulation voltage input / earth | 3.2 kV                | Insulation voltage output / earth | 0.5 kV  |
| Insulation voltage, input/output | 3.5 kV                | Pollution severity                | 2       |
| Protection class                 | I, with PE connection | Surge voltage category            | III, 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 60950-1, PELV according to EN 60204-1 | Safety transformers for switch-mode power supplies          | According to EN 61558-2-16         |

## Connection data (input)

|                                                       |                      |                                           |                    |
|-------------------------------------------------------|----------------------|-------------------------------------------|--------------------|
| Conductor cross-section, AWG/kcmil , max.             | 4                    | Conductor cross-section, AWG/kcmil , min. | 20                 |
| Conductor cross-section, flexible , min.              | 0.75 mm <sup>2</sup> | Conductor cross-section, rigid , max.     | 16 mm <sup>2</sup> |
| Conductor cross-section, rigid , min.                 | 0.75 mm <sup>2</sup> | Connection system                         | PUSH IN            |
| Wire connection cross section, flexible (input), max. | 16 mm <sup>2</sup>   |                                           |                    |

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## Connection data (output)

|                                           |                    |                                           |                      |
|-------------------------------------------|--------------------|-------------------------------------------|----------------------|
| Conductor cross-section, AWG/kcmil , max. | 4                  | Conductor cross-section, AWG/kcmil , min. | 20                   |
| Conductor cross-section, flexible , max.  | 16 mm <sup>2</sup> | Conductor cross-section, flexible , min.  | 0.75 mm <sup>2</sup> |
| Conductor cross-section, rigid , max.     | 16 mm <sup>2</sup> | Conductor cross-section, rigid , min.     | 0.75 mm <sup>2</sup> |
| Connection system                         | PUSH IN            | Number of terminals                       | 5 (+ + / ---)        |

## Connection data (signal)

|                                      |                      |                                      |                     |
|--------------------------------------|----------------------|--------------------------------------|---------------------|
| Wire connection method               | PUSH IN              | Wire cross-section, AWG/kcmil , max. | 16                  |
| Wire cross-section, AWG/kcmil , min. | 26                   | Wire cross-section, solid , max.     | 1.5 mm <sup>2</sup> |
| Wire cross-section, solid , min.     | 0.14 mm <sup>2</sup> |                                      |                     |

## Signalling

|                          |                                          |                                                                                                                                                                 |
|--------------------------|------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Floating contact         | LED green/red                            | Green: Operation (failure-free), Flashing green: advance warning I>90%, Green/red flashing: output switched off (switch-off mode), Flashing red: overload/error |
| Status relay (max. load) | Yes<br>Output voltage OK (30 V DC / 1 A) |                                                                                                                                                                 |

## Approbations

|                         |         |                           |         |
|-------------------------|---------|---------------------------|---------|
| Certificate no. (cULus) | E258476 | Certificate no. (cULusEX) | E470829 |
| Institute (cULus)       | CULUS   | Institute (cULusEX)       | CULUSEX |

## Classifications

|             |             |             |             |
|-------------|-------------|-------------|-------------|
| ETIM 6.0    | EC002540    | ETIM 7.0    | EC002540    |
| ETIM 8.0    | 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 |

## Environmental Product Compliance

|            |                                      |
|------------|--------------------------------------|
| REACH SVHC | Lead 7439-92-1                       |
| SCIP       | 6d8cdf22-8230-4af8-86c8-3558c716666d |

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Approvals



|                           |            |
|---------------------------|------------|
| ROHS                      | Conform    |
| UL File Number Search     | UL Website |
| Certificate no. (cULus)   | E258476    |
| Certificate no. (cULusEX) | E470829    |

**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 instruction</a>                                                          |
| Catalogues                                  | <a href="#">Catalogues in PDF-format</a>                                                       |
| Brochures                                   | <a href="#">Produkt Information PROTOP DE</a><br><a href="#">Produkt Information PROTOP EN</a> |

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# Drawings

