

## Main

|                                       |                                                                                                                                                                                                                                                                                      |
|---------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Range of product                      | Phaseo                                                                                                                                                                                                                                                                               |
| Product or component type             | Power supply                                                                                                                                                                                                                                                                         |
| Power supply type                     | Regulated switch mode                                                                                                                                                                                                                                                                |
| Input voltage                         | 100...240 V AC phase to phase, terminal(s): L1-L2<br>100...240 V AC single phase, terminal(s): N-L1<br>110...220 V DC                                                                                                                                                                |
| Output voltage                        | 24 V DC                                                                                                                                                                                                                                                                              |
| Rated power in W                      | 120 W                                                                                                                                                                                                                                                                                |
| Input protection type                 | Integrated fuse (not interchangeable)                                                                                                                                                                                                                                                |
| Power supply output current           | 5 A                                                                                                                                                                                                                                                                                  |
| Output protection type                | Against overload, protection technology: 1.1 x In<br>Against overvoltage, protection technology: tripping if $U > 1.5 \times U_n$<br>Against short-circuits, protection technology: automatic reset<br>Against undervoltage, protection technology: tripping if $U < 0.8 \times U_n$ |
| Ambient air temperature for operation | 0...60 °C without derating                                                                                                                                                                                                                                                           |

## Complementary

|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Input voltage limits     | 100...250 V<br>85...264 V                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Network frequency        | 47...63 Hz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Inrush current           | $\leq 30$ A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Cos phi                  | 0.65                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Efficiency               | $> 85$ %                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Output voltage limits    | 100...120 % adjustable                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Power dissipation in W   | 21.2 W                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Current consumption      | 1.2 A at 240 V<br>1.9 A at 100 V                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Line and load regulation | $\pm 3$ %                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Residual ripple          | $\leq 200$ mV                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Holding time             | $\geq 10$ ms at 100 V<br>$\geq 10$ ms at 240 V                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Connections - terminals  | Screw type terminals for input connection, connection capacity: 2 x 0.14...2 x 2.5 mm <sup>2</sup> AWG gauge26...14<br>Screw type terminals for input ground connection, connection capacity: 1 x 0.14...1 x 2.5 mm <sup>2</sup> AWG gauge26...14<br>Screw type terminals for output connection, connection capacity: 4 x 0.14...4 x 2.5 mm <sup>2</sup> AWG gauge26...14<br>Screw type terminals for output ground connection, connection capacity: 2 x 0.14...2 x 2.5 mm <sup>2</sup> AWG gauge26...14 |
| Marking                  | CE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Mounting support         | 35 x 15 mm symmetrical DIN rail<br>35 x 7.5 mm symmetrical DIN rail<br>75 x 7.5 mm symmetrical DIN rail                                                                                                                                                                                                                                                                                                                                                                                                  |
| Operating position       | Vertical                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Output coupling          | Parallel<br>Series                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

|                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Name of test   | Conducted/Radiated emissions conforming to EN 55011<br>Conducted/Radiated emissions conforming to EN 55022 Class B<br>Electrostatic discharges conforming to EN/IEC 61000-4-2<br>Emission conforming to EN 50081-1<br>Induced electromagnetic field conforming to EN/IEC 61000-4-6<br>Primary outage conforming to IEC 61000-4-11<br>Radiated electromagnetic field conforming to EN/IEC 61000-4-3<br>Rapid transient conforming to IEC 61000-4-4<br>Surge conforming to EN/IEC 61000-4-5 |
| Status LED     | 1 LED green for output voltage<br>1 LED orange for input voltage                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Depth          | 120 mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Height         | 120 mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Width          | 27 mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Product weight | 1 kg                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

## Environment

|                                            |                                                                                                                                                                      |
|--------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product certifications                     | CCSAus<br>CSA 22-2 No 950-1<br>C-Tick<br>CULus 508<br>TUV 60950-1                                                                                                    |
| Environmental characteristic               | EMC conforming to EN 50081-1<br>EMC conforming to EN 50082-2<br>EMC conforming to EN/IEC 61000-6-2<br>Safety conforming to EN/IEC 60950<br>Safety conforming to SELV |
| IP degree of protection                    | IP20 conforming to EN/IEC 60529                                                                                                                                      |
| Ambient air temperature for storage        | -25...70 °C                                                                                                                                                          |
| Relative humidity                          | 0...95 % without condensation or dripping water                                                                                                                      |
| Class of protection against electric shock | Class I conforming to VDE 0106-1                                                                                                                                     |
| Dielectric strength                        | 3000 V between input and ground<br>3000 V between input and output<br>500 V between output and ground<br>500 V between outputs                                       |
| RoHS EUR status                            | Compliant                                                                                                                                                            |
| RoHS EUR conformity date                   | 0501                                                                                                                                                                 |

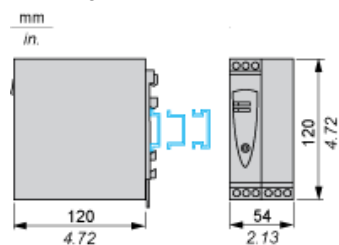
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Regulated Switch Mode Power Supply

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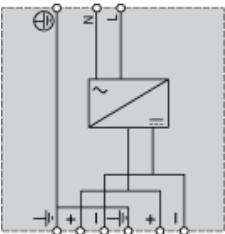
Dimensions and Mounting

Mounting on 35 mm/1.37 in. or 75 mm/2.95 in. Rail



Regulated Switch Mode Power Supply

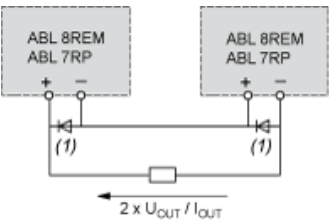
Internal Wiring Diagram



Regulated Switch Mode Power Supplies

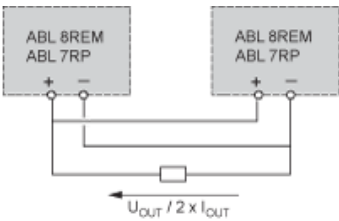
Series or Parallel Connection

Series Connection



(1) Two Schottky diodes  $I_{min}$  = power supply  $I_n$  and  $V_{min}$  = 50 V

Parallel Connection



| Family       | Series          | Parallel        |
|--------------|-----------------|-----------------|
| ABL 8REM/7RP | 2 products max. | 2 products max. |

Series or parallel connection is only recommended for products with identical references.

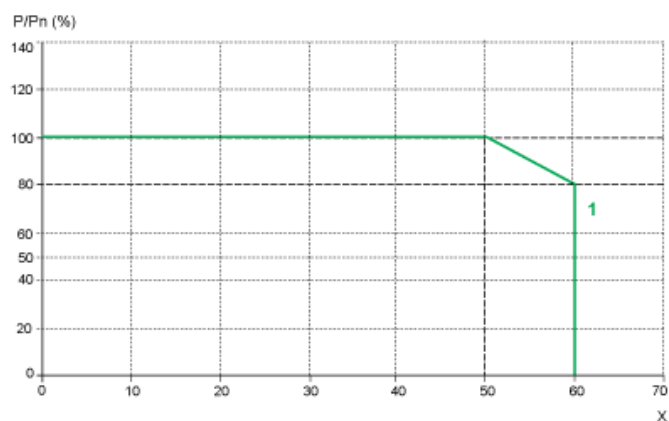
## Regulated Switch Mode Power Supplies

### Derating

The ambient temperature is a determining factor that limits the power an electronic power supply can deliver continuously. If the temperature around the electronic components is too high, their life will be significantly reduced.

The nominal ambient temperature for the Optimum range of Phaseo power supplies is 50 °C. Above this temperature, derating is necessary up to a maximum temperature of 60 °C.

The graph below shows the power as a percentage of the nominal power that the power supply can deliver continuously, depending on the ambient temperature.



X Maximum operating temperature (°C)

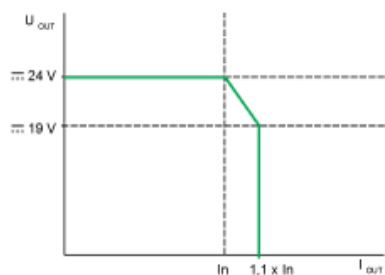
(1) ABL 8REM, ABL 7RP mounted vertically

Derating should be considered in extreme operating conditions:

- Intensive operation (output current permanently close to the nominal current, combined with a high ambient temperature)
- Output voltage set above 24 Vdc (to compensate for line voltage drops, for example)
- Parallel connection to increase the total power

## Regulated Switch Mode Power Supply

### Load Limit



## Regulated Switch Mode Power Supply

## Temporary Overloads

