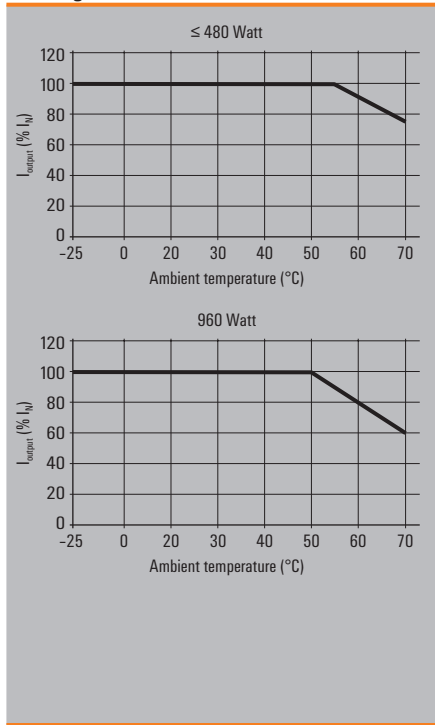


**PROeco power supplies with basic functionality and a high level of reliability**

- Single- and three-phase switched-mode power supply units
- Slim design
- Large temperature range from -25 °C to 70 °C
- The output voltage can be precisely adjusted via the potentiometer on the front
- Remote monitoring via integrated status relay
- Three-coloured LED indicators for simple error detection
- Advanced visual warning at 90 % rated output current
- International approvals



**Derating curves**



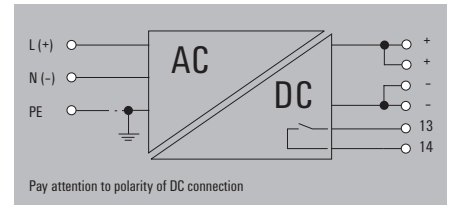
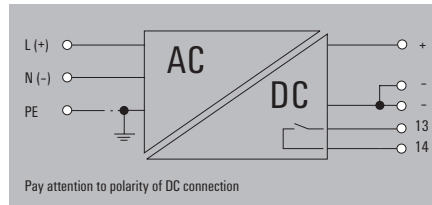
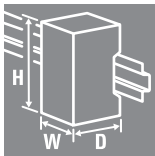
**Technical data**

General technical data	
Ambient temp. operating / storage temperature	-25 °C...+70 °C / -40 °C...+85 °C
Max. perm. air humidity (operation)	5 %...95 % RH
Degree of protection	IP 20
Class of protection	I, with PE connection
Pollution degree	2
Insulation voltage input/output	3 kV E/A / 2 kV E/earth / 0.5 kV A/earth
MTBF	> 500.000 h acc. to IEC 1709 (SN29500)
Parallel connection option	yes, max. 5 without diode module
Housing version	metal, corrosion resistant
Mounting position, installation notice	horizontal on mounting rail TS 35, 50 mm spacing top and bottom for free air circulation
Short-circuit protection	Yes, automatic restart
Overload protection	Yes, IU characteristic curve
Overtemperature protection	Yes, automatic restart
EMC / shock / vibration	
Noise emission acc. to EN55022	Class B
Noise immunity tests acc. to	EN61000-4-2 (ESD), EN61000-4-3 and EN61000-4-8 (Fields), EN61000-4-4 (Burst), EN61000-4-5 (Surge), EN61000-4-6 (conducted), EN61000-4-11 (Dips)
Limiting of mains voltage harmonic currents	Acc. to EN61000-3-2
Resistance against vibration and shock	1 g acc. to EN50178, shock: 15 g in all directions
Electrical safety (applied standards)	
Electrical equipment of machines	Acc. to EN60204
Safety transformers for switched-mode power units	Acc. to EN61558-2-17
Machinery with electronic equipment	Acc. to EN50178 / VDE0160
Safety extra-low voltage	SELV acc. to EN60950-1, PELV acc. to EN60204-1
Protective separation / protection against electrical shock	VDE0100-410 / acc. to DIN57100-410
Protection against dangerous shock currents	Acc. to VDE0106-101

PROeco

PRO ECO 72W 24V 3A

PRO ECO 120W 24V 5A



Technical data

Input

- Rated input voltage
- AC input voltage range
- AC frequency range
- DC input voltage range
- AC current consumption
- DC current consumption
- Input fuse (internal) / inrush current
- Recommended back-up fuse

- 100 ... 240 V AC
- 85 ... 264 V AC (Derating @ 100 V AC)
- 47 ... 63 Hz
- 80 ... 370 DC (Derating @ 120 V DC)
- 0.55 A @ 230 V AC / 1.04 A @ 110 V AC
- 0.22 A @ 370 V DC / 0.68 A @ 120 V DC
- Yes / max. 40
- 2 A / DI, Safety fuse
- 6 A, Char. B, Circuit breaker
- 2...4 A, Char. C, Circuit breaker

- 100 ... 240 V AC
- 85 ... 264 V AC (Derating @ 100 V AC)
- 47 ... 63 Hz
- 80 ... 370 DC (Derating @ 120 V DC)
- 1.26 A @ 230 V AC / 2.24 A @ 110 V AC
- 0.39 A @ 370 V DC / 1.16 A @ 120 V DC
- Yes / max. 40
- 4 A / DI, Safety fuse
- 6 A, Char. B, Circuit breaker
- 3...5 A, Char. C, Circuit breaker

Output

- Rated output voltage
- Output voltage
- Ramp-up time / residual ripple, switching peaks
- Rated output current @  $U_{rated}$
- Continuous output current @ 24 V DC
- Power boost @ 24 V DC, 60 °C
- Capacitive load
- Protection against reverse voltages from the load
- Protection against internal surge voltage

- 24 V DC  $\pm$  1 %
- 22...28 V DC (adjustable via potentiometer on front)
- < 100 ms / < 50 mVSS @ 24 V DC,  $I_b$
- 3 A up to 55 °C
- 3 A @ 55 °C, 2.25 A @ 70 °C
- 3.6 A for 1 min, ED = 5 %
- Unrestricted
- 30...35 V DC
- 35 V DC

- 24 V DC  $\pm$  1 %
- 22...28 V DC (adjustable via potentiometer on front)
- < 100 ms / < 50 mVSS @ 24 V DC,  $I_b$
- 5 A up to 55 °C
- 5 A @ 55 °C, 3.75 A @ 70 °C
- 6 A for 1 min, ED = 5 %
- Unrestricted
- 30...35 V DC
- 35 V DC

Signalling

- DC OK
- Alarm
- Error
- Voltage monitoring / no-voltage contact / contact load
- On/Off relay

- LED Green ( $U_{output} > 21.6$  V DC)
- LED Yellow ( $I_{output} > 90 \% I_b$ )
- LED Red (Overload, overtemperature, short-circuit,  $U_{output} < 20.4$  V DC)
- Yes / NO contact / max. 30 V AC/DC 1 A
- Output voltage > 21.6 V DC / < 20.4 V DC

- LED Green ( $U_{output} > 21.6$  V DC)
- LED Yellow ( $I_{output} > 90 \% I_b$ )
- LED Red (Overload, overtemperature, short-circuit,  $U_{output} < 20.4$  V DC)
- Yes / NO contact / max. 30 V AC/DC 1 A
- Output voltage > 21.6 V DC / < 20.4 V DC

General data

- Efficiency
- Power loss @ idling / nominal load
- Earth discharge current
- Power factor (approx.)
- Mains buffering @  $I_{rated}$
- Parallel connection option
- Height x width x depth / weight

- > 87 % @ 230 V AC & 3 A
- 4 W / 9.5 W
- < 1 mA
- > 0.42 @ 230 V AC / > 0.45 @ 115 V AC
- > 100 ms @ 230 V AC / > 20 ms @ 115 V AC
- yes, max. 5
- 125 / 34 / 100 mm / 0.5 kg

- > 87 % @ 230 V AC & 5 A
- 4 W / 15 W
- < 1 mA
- > 0.47 @ 230 V AC / > 0.56 @ 115 V AC
- > 80 ms @ 230 V AC / > 20 ms @ 115 V AC
- yes, max. 5
- 125 / 40 / 100 mm / 0.6 kg

Approvals

Approvals

CE, TÜV (EN/IEC 60950-1), cULus (Pending)

CE, TÜV (EN/IEC 60950-1), cULus (Pending)

Connection data

Conductor connection system	
Number of terminals	
Wire cross-section, rigid min/max	mm <sup>2</sup>
Wire cross-section, flexible min/max	mm <sup>2</sup>
Wire cross-section, AWG/kcmil	min/max
Min./max. tightening torque range	Nm
Stripping length	mm

Input	Output
Screw connection	Screw connection
3 for L/N/PE	5 (13,14,+, -)
0.5/6	0.5/6
0.5/2.5	0.5/2.5
26/12	26/12
0.5/0.6	0.5/0.6
6	6

Input	Output
Screw connection	Screw connection
3 for L/N/PE	6 (13,14,+,+, -)
0.5/6	0.5/6
0.5/2.5	0.5/2.5
26/12	26/12
0.5/0.6	0.5/0.6
6	6

Note

Ordering data

Type	Qty.	Order No.
PRO ECO 72W 24V 3A	1	1469470000

Type	Qty.	Order No.
PRO ECO 72W 24V 3A	1	1469470000

Type	Qty.	Order No.
PRO ECO 120W 24V 5A	1	1469480000

Note

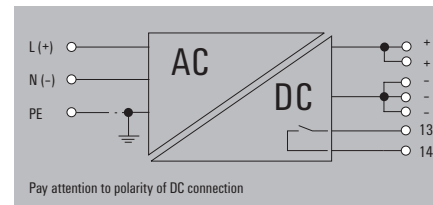
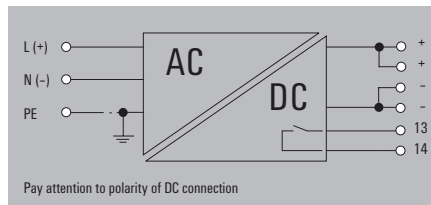
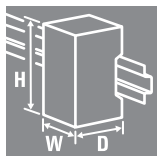
The internal varistor found in a switch-mode power unit does not replace the necessary surge protection in a system.

The internal varistor found in a switch-mode power unit does not replace the necessary surge protection in a system.

PROeco

PRO ECO 240W 24V 10A

PRO ECO 480W 24V 20A



Technical data

Input

- Rated input voltage
- AC input voltage range
- AC frequency range
- DC input voltage range
- AC current consumption
- DC current consumption
- Input fuse (internal) / inrush current
- Recommended back-up fuse

- 100 ... 240 V AC
- 85 ... 264 V AC (Derating @ 100 V AC)
- 47 ... 63 Hz
- 80 ... 370 DC (Derating @ 120 V DC)
- 1.23 A @ 230 V AC / 2.47 A @ 110 V AC
- 1.18 A @ 370 V DC / 2.4 A @ 120 V DC
- Yes / max. 15 A
- 4 A / DI, Safety fuse
- 10 A, Char. B, Circuit breaker
- 3...4 A, Char. C, Circuit breaker

- 100 ... 240 V AC
- 85 ... 264 V AC (Derating @ 100 V AC)
- 47 ... 63 Hz
- 80 ... 370 DC (Derating @ 120 V DC)
- 2.37 A @ 230 V AC / 5.2 A @ 110 V AC
- 1.55 A @ 370 V DC / 4.65 A @ 120 V DC
- Yes / max. 3 A
- 6 A / DI, Safety fuse
- 16 A, Char. B, Circuit breaker
- 6...8 A, Char. C, Circuit breaker

Output

- Rated output voltage
- Output voltage
- Ramp-up time / residual ripple, switching peaks
- Rated output current @  $U_{rated}$
- Continuous output current @ 24 V DC
- Power boost @ 24 V DC, 60 °C
- Capacitive load
- Protection against reverse voltages from the load
- Protection against internal surge voltage

- 24 V DC  $\pm$  1 %
- 22...28 V DC (adjustable via potentiometer on front)
- < 100 ms / < 50 mVSS @ 24 V DC,  $I_b$
- 10 A up to 55 °C
- 10 A @ 55 °C, 7.5 A @ 70 °C
- 12 A for 1 min, ED = 5 %
- Unrestricted
- 30...35 V DC
- 35 V DC

- 24 V DC  $\pm$  1 %
- 22...28 V DC (adjustable via potentiometer on front)
- < 100 ms / < 50 mVSS @ 24 V DC,  $I_b$
- 20 A up to 55 °C
- 20 A @ 55 °C, 15 A @ 70 °C
- 24 A for 1 min, ED = 5 %
- Unrestricted
- 30...35 V DC
- 35 V DC

Signalling

- DC OK
- Alarm
- Error
- Voltage monitoring / no-voltage contact / contact load
- On/Off relay

- LED Green ( $U_{output} > 21.6$  V DC)
- LED Yellow ( $I_{output} > 90 \% I_b$ )
- LED Red (Overload, overtemperature, short-circuit,  $U_{output} < 20.4$  V DC)
- Yes / NO contact / max. 30 V AC/DC 1 A
- Output voltage > 21.6 V DC / < 20.4 V DC

- LED Green ( $U_{output} > 21.6$  V DC)
- LED Yellow ( $I_{output} > 90 \% I_b$ )
- LED Red (Overload, overtemperature, short-circuit,  $U_{output} < 20.4$  V DC)
- Yes / NO contact / max. 30 V AC/DC 1 A
- Output voltage > 21.6 V DC / < 20.4 V DC

General data

- Efficiency
- Power loss @ idling / nominal load
- Earth discharge current
- Power factor (approx.)
- Mains buffering @  $I_{rated}$
- Parallel connection option
- Height x width x depth / weight

- > 90 % @ 230 V AC & 10 A
- 3 W / 24 W
- < 1 mA
- > 0.93 @ 230 V AC / > 0.99 @ 115 V AC
- > 20 ms @ 230 V AC / > 20 ms @ 115 V AC
- yes, max. 5
- 125 / 60 / 100 mm / 1 kg

- > 91 % @ 230 V AC & 20 A
- 5 W / 43 W
- < 1 mA
- > 0.97 @ 230 V AC / > 0.99 @ 115 V AC
- > 20 ms @ 230 V AC / > 20 ms @ 115 V AC
- yes, max. 3
- 125 / 100 / 120 mm / 1.6 kg

Approvals

Approvals

CE, TÜV (EN/IEC 60950-1), cULus (Pending)

CE, TÜV (EN/IEC 60950-1), cULus (Pending)

Connection data

Conductor connection system	
Number of terminals	
Wire cross-section, rigid min/max	mm <sup>2</sup>
Wire cross-section, flexible min/max	mm <sup>2</sup>
Wire cross-section, AWG/kcmil	min/max
Min./max. tightening torque range	Nm
Stripping length	mm

Input	Output
Screw connection	Screw connection
3 for L/N/PE	6 (13, 14, +, -, -)
0.5/6	0.5/6
0.5/2.5	0.5/2.5
26/12	26/12
0.5/0.6	0.5/0.6
6	6

Input	Output
Screw connection	Screw connection
3 for L/N/PE	7 (13, 14, +, +, -, -)
0.5/6	0.18/6
0.5/2.5	0.5/2.5
26/12	26/10
0.5/0.6	0.5/0.6
6	7

Note

Note

Note

Ordering data

Type	Qty.	Order No.
PRO ECO 240W 24V 10A	1	1469490000

Type	Qty.	Order No.
PRO ECO 240W 24V 10A	1	1469490000

Type	Qty.	Order No.
PRO ECO 480W 24V 20A	1	1469510000

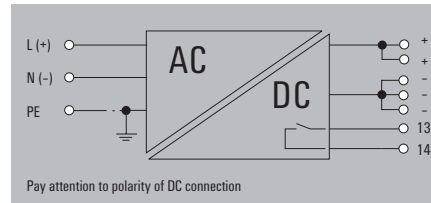
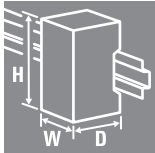
The internal varistor found in a switch-mode power unit does not replace the necessary surge protection in a system.

The internal varistor found in a switch-mode power unit does not replace the necessary surge protection in a system.

The internal varistor found in a switch-mode power unit does not replace the necessary surge protection in a system.

## PROeco

## PRO ECO 960W 24V 40A



## Technical data

## Input

Rated input voltage
AC input voltage range
AC frequency range
DC input voltage range
AC current consumption
DC current consumption
Input fuse (internal) / inrush current
Recommended back-up fuse

100 ... 240 V AC
85 ... 264 V AC (Derating @ 100 V AC)
47 ... 63 Hz
80 ... 370 DC (Derating @ 120 V DC)
4.6 A @ 230 V AC / 9.9 A @ 110 V AC
2.9 A @ 370 V DC / 9 A @ 120 V DC
Yes / max. 3 A
16 A / DI, Safety fuse
20 A, Char. B, Circuit breaker
16 A, Char. C, Circuit breaker

## Output

Rated output voltage
Output voltage
Ramp-up time / residual ripple, switching peaks
Rated output current @ $U_{rated}$
Continuous output current @ 24 V DC
Power boost @ 24 V DC, 60 °C
Capacitive load
Protection against reverse voltages from the load
Protection against internal surge voltage

24 V DC $\pm$ 1 %
22...28 V DC (adjustable via potentiometer on front)
< 100 ms / < 50 mVSS @ 24 V DC, $I_h$
40 A up to 50 °C
40 A @ 50 °C, 24 A @ 70 °C
48 A for 1 min, ED = 5 %
Unrestricted
30...35 V DC
35 V DC

## Signalling

DC OK
Alarm
Error
Voltage monitoring / no-voltage contact / contact load
On/Off relay

LED Green ( $U_{output} > 21.6$ V DC)
LED Yellow ( $I_{output} > 90 \% I_R$ )
LED Red (Overload, overtemperature, short-circuit, $U_{output} < 20.4$ V DC)
Yes / NO contact / max. 30 V AC/DC 1 A
Output voltage > 21.6 V DC / < 20.4 V DC

## General data

Efficiency
Power loss @ idling / nominal load
Earth discharge current
Power factor (approx.)
Mains buffering @ $I_{rated}$
Parallel connection option
Height x width x depth / weight

> 93 % @ 230 V AC & 40 A
6 W / 76 W
< 1 mA
> 0.97 @ 230 V AC / > 0.99 @ 115 V AC
> 20 ms @ 230 V AC / > 20 ms @ 115 V AC
yes, max. 3
125 / 160 / 120 mm / 2.9 kg

## Approvals

## Approvals

CE, TÜV (EN/IEC 60950-1), cULus (Pending)

## Connection data

Conductor connection system
Number of terminals
Wire cross-section, rigid min/max
Wire cross-section, flexible min/max
Wire cross-section, AWG/kcmil
Min./max. tightening torque range
Stripping length

Input	Output
Screw connection	Screw connection
3 for L/N/PE	7 (13, 14, +, +, +, -)
0.18/6	0.5/16
0.5/2.5	2.5/10
26/10	22/8
0.5/0.6	1.2/1.5
7	12

## Note

## Ordering data

Type	Qty.	Order No.
PRO ECO 960W 24V 40A	1	1469520000

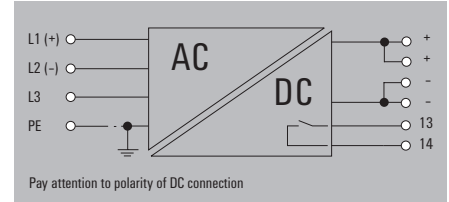
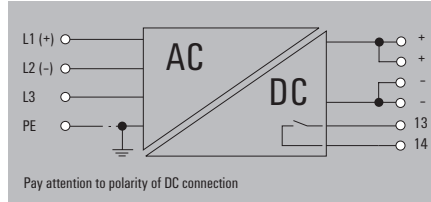
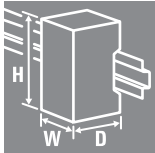
## Note

The internal varistor found in a switch-mode power unit does not replace the necessary surge protection in a system.

PROeco

PRO ECO3 120W 24V 5A

PRO ECO3 240W 24V 10A



Technical data

Input	
Rated input voltage	3 x 400...3 x 500 V AC (Wide-range input)
AC input voltage range	3 x 340...3 x 575 V AC / 2 x 360...2 x 575 V AC
AC frequency range	47...63 Hz
DC input voltage range	450...800 V DC (max. 500 V DC in accordance with UL 508)
AC current consumption	0.3 A @ 3 x 500 V AC / 0.4 A @ 3 x 400 V AC
DC current consumption	0.2 A @ 800 V DC / 0.4 A @ 450 V DC
Input fuse (internal) / inrush current	Yes / max. 40 A
Recommended back-up fuse	2 A / DI, Safety fuse 2...3 A, Char. C, Circuit breaker
Output	
Rated output voltage	24 V DC ± 1 %
Output voltage	22...28 V DC (adjustable via potentiometer on front)
Ramp-up time / residual ripple, switching peaks	< 100 ms / < 50 mVSS @ 24 V DC, I <sub>h</sub>
Rated output current @ U <sub>rated</sub>	5 A up to 55 °C
Continuous output current @ 24 V DC	5 A @ 55 °C, 3.75 A @ 70 °C
Power boost @ 24 V DC, 60 °C	6 A for 1 min, ED = 5 %
Capacitive load	Unrestricted
Protection against reverse voltages from the load	30...35 V DC
Protection against internal surge voltage	35 V DC
Signalling	
DC OK	LED Green (U <sub>output</sub> > 21.6 V DC)
Alarm	LED Yellow (I <sub>output</sub> > 90 % I <sub>h</sub> )
Error	LED Red (Overload, overtemperature, short-circuit, U <sub>output</sub> < 20.4 V DC)
Voltage monitoring / no-voltage contact / contact load	Yes / NO contact / max. 30 V AC/DC 1 A
On/Off relay	Output voltage > 21.6 V DC / < 20.4 V DC
General data	
Efficiency	87 % @ 3 x 500 V AC / 88 % @ 3 x 400 V AC
Power loss @ idling / nominal load	6 W / 13 W
Earth discharge current	< 1 mA
Power factor (approx.)	> 0.4 @ 3 x 500 V AC / > 0.45 @ 3 x 400 V AC
Mains buffering @ I <sub>rated</sub>	> 40 ms @ 3 x 500 V AC / > 20 ms @ 3 x 400 V AC
Parallel connection option	yes, max. 5
Height x width x depth / weight	125 / 40 / 100 mm / 0.6 kg
Approvals	
Approvals	CE, TÜV (EN/IEC 60950-1), cULus (Pending)
Connection data	
Conductor connection system	Screw connection
Number of terminals	4 for L1/L2/L3/PE
Wire cross-section, rigid min/max	0.18/6
Wire cross-section, flexible min/max	0.5/2.5
Wire cross-section, AWG/kcmil	26/10
Min./max. tightening torque range	0.5/0.6
Stripping length	8
Note	

Input	
Rated input voltage	3 x 400...3 x 500 V AC (Wide-range input)
AC input voltage range	3 x 340...3 x 575 V AC / 2 x 360...2 x 575 V AC
AC frequency range	47...63 Hz
DC input voltage range	450...800 V DC (max. 500 V DC in accordance with UL 508)
AC current consumption	0.3 A @ 3 x 500 V AC / 0.4 A @ 3 x 400 V AC
DC current consumption	0.2 A @ 800 V DC / 0.4 A @ 450 V DC
Input fuse (internal) / inrush current	Yes / max. 40 A
Recommended back-up fuse	2 A / DI, Safety fuse 2...3 A, Char. C, Circuit breaker
Output	
Rated output voltage	24 V DC ± 1 %
Output voltage	22...28 V DC (adjustable via potentiometer on front)
Ramp-up time / residual ripple, switching peaks	< 100 ms / < 50 mVSS @ 24 V DC, I <sub>h</sub>
Rated output current @ U <sub>rated</sub>	10 A up to 55 °C
Continuous output current @ 24 V DC	10 A @ 55 °C, 7.5 A @ 70 °C
Power boost @ 24 V DC, 60 °C	12 A for 1 min, ED = 5 %
Capacitive load	Unrestricted
Protection against reverse voltages from the load	30...35 V DC
Protection against internal surge voltage	35 V DC
Signalling	
DC OK	LED Green (U <sub>output</sub> > 21.6 V DC)
Alarm	LED Yellow (I <sub>output</sub> > 90 % I <sub>h</sub> )
Error	LED Red (Overload, overtemperature, short-circuit, U <sub>output</sub> < 20.4 V DC)
Voltage monitoring / no-voltage contact / contact load	Yes / NO contact / max. 30 V AC/DC 1 A
On/Off relay	Output voltage > 21.6 V DC / < 20.4 V DC
General data	
Efficiency	88 % @ 3 x 500 V AC / 89 % @ 3 x 400 V AC
Power loss @ idling / nominal load	8 W / 26 W
Earth discharge current	< 0.5 mA
Power factor (approx.)	> 0.45 @ 3 x 500 V AC / > 0.5 @ 3 x 400 V AC
Mains buffering @ I <sub>rated</sub>	> 40 ms @ 3 x 500 V AC / > 20 ms @ 3 x 400 V AC
Parallel connection option	yes, max. 5
Height x width x depth / weight	125 / 60 / 100 mm / 1 kg
Approvals	
Approvals	CE, TÜV (EN/IEC 60950-1), cULus (Pending)
Connection data	
Conductor connection system	Screw connection
Number of terminals	4 for L1/L2/L3/PE
Wire cross-section, rigid min/max	0.18/6
Wire cross-section, flexible min/max	0.5/2.5
Wire cross-section, AWG/kcmil	26/10
Min./max. tightening torque range	0.5/0.6
Stripping length	7
Note	

Input	
Rated input voltage	3 x 400...3 x 500 V AC (Wide-range input)
AC input voltage range	3 x 340...3 x 575 V AC / 2 x 360...2 x 575 V AC
AC frequency range	47...63 Hz
DC input voltage range	450...800 V DC (max. 500 V DC in accordance with UL 508)
AC current consumption	0.6 A @ 3 x 500 V AC / 0.8 A @ 3 x 400 V AC
DC current consumption	0.4 A @ 800 V DC / 0.7 A @ 450 V DC
Input fuse (internal) / inrush current	Yes / max. 50 A
Recommended back-up fuse	2 A / DI, Safety fuse 2...3 A, Char. C, Circuit breaker
Output	
Rated output voltage	24 V DC ± 1 %
Output voltage	22...28 V DC (adjustable via potentiometer on front)
Ramp-up time / residual ripple, switching peaks	< 100 ms / < 50 mVSS @ 24 V DC, I <sub>h</sub>
Rated output current @ U <sub>rated</sub>	10 A up to 55 °C
Continuous output current @ 24 V DC	10 A @ 55 °C, 7.5 A @ 70 °C
Power boost @ 24 V DC, 60 °C	12 A for 1 min, ED = 5 %
Capacitive load	Unrestricted
Protection against reverse voltages from the load	30...35 V DC
Protection against internal surge voltage	35 V DC
Signalling	
DC OK	LED Green (U <sub>output</sub> > 21.6 V DC)
Alarm	LED Yellow (I <sub>output</sub> > 90 % I <sub>h</sub> )
Error	LED Red (Overload, overtemperature, short-circuit, U <sub>output</sub> < 20.4 V DC)
Voltage monitoring / no-voltage contact / contact load	Yes / NO contact / max. 30 V AC/DC 1 A
On/Off relay	Output voltage > 21.6 V DC / < 20.4 V DC
General data	
Efficiency	88 % @ 3 x 500 V AC / 89 % @ 3 x 400 V AC
Power loss @ idling / nominal load	8 W / 26 W
Earth discharge current	< 0.5 mA
Power factor (approx.)	> 0.45 @ 3 x 500 V AC / > 0.5 @ 3 x 400 V AC
Mains buffering @ I <sub>rated</sub>	> 40 ms @ 3 x 500 V AC / > 20 ms @ 3 x 400 V AC
Parallel connection option	yes, max. 5
Height x width x depth / weight	125 / 60 / 100 mm / 1 kg
Approvals	
Approvals	CE, TÜV (EN/IEC 60950-1), cULus (Pending)
Connection data	
Conductor connection system	Screw connection
Number of terminals	4 for L1/L2/L3/PE
Wire cross-section, rigid min/max	0.18/6
Wire cross-section, flexible min/max	0.5/2.5
Wire cross-section, AWG/kcmil	26/10
Min./max. tightening torque range	0.5/0.6
Stripping length	7
Note	

Ordering data

Type	Qty.	Order No.
PRO ECO3 120W 24V 5A	1	1469530000
The internal varistor found in a switch-mode power unit does not replace the necessary surge protection in a system.		
Note		

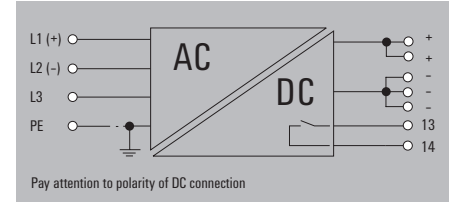
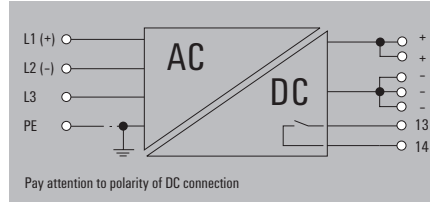
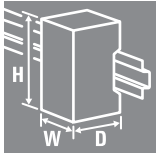
Type	Qty.	Order No.
PRO ECO3 240W 24V 10A	1	1469540000
The internal varistor found in a switch-mode power unit does not replace the necessary surge protection in a system.		
Note		

Type	Qty.	Order No.
PRO ECO3 240W 24V 10A	1	1469540000
The internal varistor found in a switch-mode power unit does not replace the necessary surge protection in a system.		
Note		

PROeco

PRO ECO3 480W 24V 20A

PRO ECO3 960W 24V 40A



Technical data

Input

Rated input voltage	3 x 400...3 x 500 V AC (Wide-range input)
AC input voltage range	3 x 340...3 x 575 V AC / 2 x 360...2 x 575 V AC
AC frequency range	47...63 Hz
DC input voltage range	450...800 V DC (max. 500 V DC in accordance with UL 508)
AC current consumption	1.2 A @ 3 x 500 V AC / 1.5 A @ 3 x 400 V AC
DC current consumption	0.7 A @ 800 V DC / 1.2 A @ 450 V DC
Input fuse (internal) / inrush current	Yes / max. 50 A
Recommended back-up fuse	4 A / DI, Safety fuse 3...5 A, Char. C, Circuit breaker

Output

Rated output voltage	24 V DC ± 1 %
Output voltage	22...28 V DC (adjustable via potentiometer on front)
Ramp-up time / residual ripple, switching peaks	< 100 ms / < 50 mVSS @ 24 V DC, I <sub>h</sub>
Rated output current @ U <sub>rated</sub>	20 A up to 55 °C
Continuous output current @ 24 V DC	20 A @ 55 °C, 15 A @ 70 °C
Power boost @ 24 V DC, 60 °C	24 A for 1 min, ED = 5 %
Capacitive load	Unrestricted
Protection against reverse voltages from the load	30...35 V DC
Protection against internal surge voltage	35 V DC

Signalling

DC OK	LED Green (U <sub>output</sub> > 21.6 V DC)
Alarm	LED Yellow (I <sub>output</sub> > 90 % I <sub>h</sub> )
Error	LED Red (Overload, overtemperature, short-circuit, U <sub>output</sub> < 20.4 V DC)
Voltage monitoring / no-voltage contact / contact load	Yes / NO contact / max. 30 V AC/DC 1 A
On/Off relay	Output voltage > 21.6 V DC / < 20.4 V DC

General data

Efficiency	89 % @ 3 x 500 V AC / 90 % @ 3 x 400 V AC
Power loss @ idling / nominal load	8 W / 48 W
Earth discharge current	< 0.5 mA
Power factor (approx.)	> 0.41 @ 3 x 500 V AC / > 0.43 @ 3 x 400 V AC
Mains buffering @ I <sub>rated</sub>	> 30 ms @ 3 x 500 V AC / > 20 ms @ 3 x 400 V AC
Parallel connection option	yes, max. 3
Height x width x depth / weight	125 / 100 / 120 mm / 1.3 kg

Approvals

Approvals	CE, TÜV (EN/IEC 60950-1), cULus (Pending)
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Connection data

Conductor connection system	Input	Output
Number of terminals	4 for L1/L2/L3/PE	7 (13,14,+,+,-,-)
Wire cross-section, rigid min/max	0.18/6	0.18/6
Wire cross-section, flexible min/max	0.5/2.5	0.5/2.5
Wire cross-section, AWG/kcmil	26/10	26/10
Min./max. tightening torque range	0.5/0.6	0.5/0.6
Stripping length	7	7

Note

Ordering data

Type	Qty.	Order No.
PRO ECO3 480W 24V 20A	1	1469550000

Note

The internal varistor found in a switch-mode power unit does not replace the necessary surge protection in a system.

Input

Rated input voltage	3 x 400...3 x 500 V AC (Wide-range input)
AC input voltage range	3 x 340...3 x 575 V AC / 2 x 360...2 x 575 V AC
AC frequency range	47...63 Hz
DC input voltage range	450...800 V DC (max. 500 V DC in accordance with UL 508)
AC current consumption	2.15 A @ 3 x 500 V AC / 2.68 A @ 3 x 400 V AC
DC current consumption	1.37 A @ 800 V DC / 2.37 A @ 450 V DC
Input fuse (internal) / inrush current	Yes / max. 40 A
Recommended back-up fuse	6 A / DI, Safety fuse 10 A, Char. B, Circuit breaker 6...8 A, Char. C, Circuit breaker

Output

Rated output voltage	24 V DC ± 1 %
Output voltage	22...28 V DC (adjustable via potentiometer on front)
Ramp-up time / residual ripple, switching peaks	< 100 ms / < 50 mVSS @ 24 V DC, I <sub>h</sub>
Rated output current @ U <sub>rated</sub>	40 A up to 50 °C
Continuous output current @ 24 V DC	40 A @ 50 °C, 24 A @ 70 °C
Power boost @ 24 V DC, 60 °C	48 A for 1 min, ED = 5 %
Capacitive load	Unrestricted
Protection against reverse voltages from the load	30...35 V DC
Protection against internal surge voltage	35 V DC

Signalling

DC OK	LED Green (U <sub>output</sub> > 21.6 V DC)
Alarm	LED Yellow (I <sub>output</sub> > 90 % I <sub>h</sub> )
Error	LED Red (Overload, overtemperature, short-circuit, U <sub>output</sub> < 20.4 V DC)
Voltage monitoring / no-voltage contact / contact load	Yes / NO contact / max. 30 V AC/DC 1 A
On/Off relay	Output voltage > 21.6 V DC / < 20.4 V DC

General data

Efficiency	90 % @ 3 x 500 V AC / 91 % @ 3 x 400 V AC
Power loss @ idling / nominal load	5 W / 95 W
Earth discharge current	< 1 mA
Power factor (approx.)	> 0.56 @ 3 x 500 V AC / > 0.56 @ 3 x 400 V AC
Mains buffering @ I <sub>rated</sub>	> 25 ms @ 3 x 500 V AC / > 20 ms @ 3 x 400 V AC
Parallel connection option	yes, max. 3
Height x width x depth / weight	125 / 160 / 120 mm / 2.5 kg

Approvals

Approvals	CE, TÜV (EN/IEC 60950-1), cULus (Pending)
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Connection data

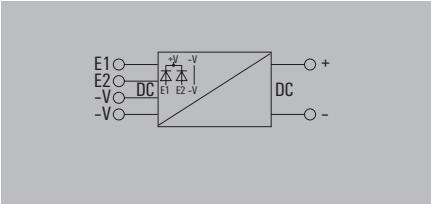
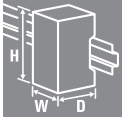
Conductor connection system	Input	Output
Number of terminals	4 for L1/L2/L3/PE	7 (13,14,+,+,-,-)
Wire cross-section, rigid min/max	0.18/6	0.5/16
Wire cross-section, flexible min/max	0.5/2.5	2.5/10
Wire cross-section, AWG/kcmil	26/10	22/8
Min./max. tightening torque range	0.5/0.6	1.2/1.5
Stripping length	7	12

Note

The internal varistor found in a switch-mode power unit does not replace the necessary surge protection in a system.

connectPower PROeco

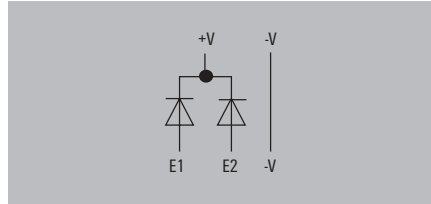
connectPower PROeco diode module



Technical data

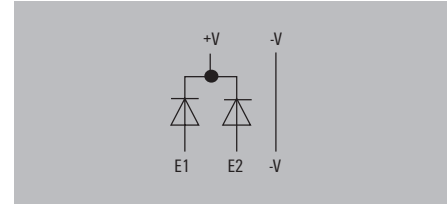
<b>Input</b>	
Input voltage	40 V DC max.
Input current	2 x 0...10 A max.
<b>Output</b>	
Output voltage	$U_m$ - 0.5 V typical
Output current	0...20 A max. or 10 A max. for redundancy operation
<b>General data</b>	
Ambient temperature (operational)	-10 °C...+55 °C
Storage temperature	-20 °C...+85 °C
Degree of efficiency at max. load	95.5%
Mounting position, installation notice	horizontally, on terminal rail TS 35
Installation advice	Space: side $\geq$ 2 cm; above/below $\geq$ 10 cm
Weight	0.4 kg
Approvals	CE; cULus; cURus

CP DM 10



<b>Input</b>	
Input voltage	40 V DC max.
Input current	2 x 0...10 A max.
<b>Output</b>	
Output voltage	$U_m$ - 0.5 V typical
Output current	0...20 A max. or 10 A max. for redundancy operation
<b>General data</b>	
Ambient temperature (operational)	-10 °C...+55 °C
Storage temperature	-20 °C...+85 °C
Degree of efficiency at max. load	95.5%
Mounting position, installation notice	horizontally, on terminal rail TS 35
Installation advice	Space: side $\geq$ 2 cm; above/below $\geq$ 10 cm
Weight	0.4 kg
Approvals	CE; cULus; cURus

CP DM 20



<b>Input</b>	
Input voltage	40 V DC max.
Input current	2 x 0...20 A max.
<b>Output</b>	
Output voltage	$U_m$ - 0.5 V typical
Output current	0...40 A max. or 20 A max. for redundant operations
<b>General data</b>	
Ambient temperature (operational)	-10 °C...+55 °C
Storage temperature	-20 °C...+85 °C
Degree of efficiency at max. load	97.5%
Mounting position, installation notice	horizontally, on terminal rail TS 35
Installation advice	Space: side $\geq$ 2 cm; above/below $\geq$ 10 cm
Weight	0.4 kg
Approvals	CE; cULus; cURus

<b>Dimensions</b>	
Clamping range (nominal / min. / max.)	mm <sup>2</sup>
Depth x width x height	mm
<b>Note</b>	

<b>Input</b>	<b>Output</b>
4 / 0.13 / 6	4 / 0.13 / 6
110 / 55.5 / 125	110 / 55.5 / 125

<b>Input</b>	<b>Output</b>
4 / 0.13 / 6	10 / 0.32 / 16
110 / 55.5 / 125	110 / 55.5 / 125

Ordering data

Screw connection
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Type	Qty.	Order No.
CP DM 10	1	8710620000

Type	Qty.	Order No.
CP DM 20	1	8768650000

<b>Note</b>
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<b>Note</b>
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<b>Note</b>
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Accessories

<b>Note</b>
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<b>Note</b>
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<b>Note</b>
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**Small metal foot**



Type	Order No.
MTA 30 MF	1251320000

**Large metal foot**



Type	Order No.
MTA 45 MF	1251310000

**Small plastic foot**



Type	Order No.
MTA 30 BK	1168970000

**Large plastic foot**



Type	Order No.
MTA 45 BK	1962250000

**Small wall mounting**



Type	Order No.
CP A WALLADAPTER 30 MM	1461870000

**Large wall mounting**



Type	Order No.
CP A WALLADAPTER 45 MM	1461850000

**Small screwdriver**



Type	Blade type	Size/AF	a	b	c	Order No.
SDIK PH1		1.00			80	9008570000
SDIS 0.5X3.0X100	B		0.5	3	100	9008380000

**Markers**



Type	Colour	Qty.	Order No.
SM 18/9.5 K MC NE WS	white	200	1248580000

**End bracket**

For DIN rail TS 35



Polyamide with fibre glass, screwable	Colour	Torque	Qty.	Order No.
WEW 35/1 SW	black	1.2 Nm	50	1162600000