



100

50,4

100

ZERO

SPAN

ERROR

3-wire

4-wire

Range I
Range II

0...20
4...20

interface

Power Supplies
Overvoltage Protection

S. 552

S. 568

**Measuring and
Monitoring Relays**

S. 606

Timer and Switching Relays

S. 684

Coupling Relays

S. 866

Analog Modules

S. 926

Passive Interfaces

S. 948





100

50.4

100

ZERO

SPAN

ERROR

3-wire

4-wire

Range I
Range II

0...20
4...20

interface

Power Supplies



wieland
wipos
81.000.6031.0
24V/5A
CE **UL** US
LGA4
Kompatibilität
geprüft

N L PE
Netz Line
105-250V AC

Power

Ausgang
Output

Adj.:
23...27V

Wir empfehlen das Gehäuse Entlüftung
bei 20°C abwarten (ca. 3 min.)
bevor die Messung beginnt

Before opening the cover wait about 3 min.
to ensure the discharge of the capacitors.
Pay attention to operating instructions.

24V

7.200.2200.3 B
D-SUB 9
7.200.2200.3 S

NENNSP. 00V AC
WDE 01100 9P-2
NENNSTROM 1,5A

07

99.99

33

34 NO 11
31 NC 11

6-24 V DC

00V 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100

wieland

wieland

ALUMINUM

ALU-TAP 70

Spann. 0-10V
Nennstrom 10mA
Nennleistung 100mW

CE



Power supply units

interface

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	Primary switched-mode regulator, single phase, 24 V / 2 A	wipos 24VDC/2.0A 1PH V	560
	Primary switched-mode regulator, single phase, 24 V / 5 A	wipos 24VDC/5.0A 1PH V	561
	Primary switched-mode regulator, single phase, 24 V / 10 A	wipos 24VDC/10A 1PH V	561
	Primary switched-mode regulator, three phase, 24 V / 10 A	wipos 24VDC/10A 3PH V	562
	Primary switched-mode regulator, single phase, 24 V / 20 A	wipos 24VDC/20A 1PH V	562
Horizontal design	Primary switched-mode regulator, single phase, 24 V / 5 A	wipos 24VDC/5.0A 1PH H	563
	Primary switched-mode regulator, single phase, 24 V / 10 A	wipos 24VDC/10A 1PH H	563
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	Primary switched-mode regulator, three phase, 24 V / 40 A	wipos 24VDC/40A 3PH H	565
Characteristics – Output data			566

Power supply units
Selection by function

interface

CATALOG PAGE

OUTPUT DATA	INPUT DATA/DESIGN
24 V / 1.25 A DC	110 – 250 V AC single phase / vertical
24 V / 2 A DC	110 – 250 V AC single phase / vertical
24 V / 5 A DC	115 – 230 V AC single phase / vertical
	105 – 250 V AC single phase / horizontal
24 V / 10 A DC	115/230 V AC single phase / vertical
	115/230 V AC single phase / horizontal
	3 x 380 – 500 V AC three phase / vertical
24 V / 20 A DC	230 V AC single phase / vertical
	115 V AC single phase / horizontal
	230 V AC single phase / horizontal
24 V / 40 A DC	3 x 380 – 500 V AC three phase / horizontal
	3 x 380 – 500 V AC three phase / horizontal

**Power supply units
Selection by function**

interface

Vertical design						Horizontal design					
WIPOS 24 V DC/ 1.25 A 1PH V	WIPOS 24 V DC/ 2.0 A 1PH V	WIPOS 24 V DC/ 5.0 A 1PH V	WIPOS 24 V DC/ 10 A 1PH V	WIPOS 24 V DC/ 10 A 3PH V	WIPOS 24 V DC/ 20 A 1PH V	WIPOS 24 V DC/ 5.0 A 1PH H	WIPOS 24 V DC/ 10 A 1PH H	WIPOS 24 V DC/ 20 A 115 ACH	WIPOS 24 V DC/ 20 A 1PH H	WIPOS 24 V DC/ 20 A 3PH H	WIPOS 24 V DC/ 40 A 3PH H
560	560	561	561	562	562	563	563	564	564	565	565
•											
	•										
		•									
			•			•					
				•			•				
					•			•			
									•		
										•	
											•

Power supply units General information **interface**

Output characteristic under overload

As standard

- Constant current characteristic curve**
When the nominal current is exceeded, the device supplies a constant current independent of the voltage.
- Fold-back characteristic curve**
When the nominal current is exceeded, the output voltage goes towards zero and the current drops off.
- Hiccup mode**
The device is disconnected when the nominal current is exceeded but switches on periodically and checks whether the overload is still present. Once the overload has been rectified, the device is switched on again automatically.
- Overvoltage disconnection**
When the nominal current is exceeded, the device is disconnected and must be switched on again once the overload has been rectified.

Dynamic response

The period required after a defined load variation until the output voltage lies within the tolerance band again.

Leakage current

The AC or DC flowing from input to output of an isolated power supply and specified voltage.

Ripple

Is the magnitude of AC voltage on the output of a power supply expressed in millivolts peak to peak.

Input current surge

The peak current caused by the load current of the charging capacitor when a power supply unit is switched on. It is limited by the input impedance without carrying out any further measures but can be further restricted using special components.

Radio interference, electromagnetic interference

Unwanted, high-frequency interference caused by switching operations within a power supply unit. A distinction is made between interference from the mains and radiated interference. Mains-borne interference is reduced to permissible values with the use of filters while radiated interference can be maintained within the limits due to optimised routing and shielding.

Insulation voltage

The insulation voltage is the maximum voltage which can lie between circuits that are isolated from each other.

Cooling

Heat removal from components which produce leakage loss. There is a distinction between thermal radiation, convection (natural and forced convection with fans) and thermal conduction to an external heat exchanger.

Short-circuit protection

Protection of a power supply unit against overload and short circuits.

See the output characteristic curve for the various possibilities.

Storage temperature

Temperature range in which a device may be stored (not operated) without incurring any damage.

Load control

Modification of the output voltage in the event of a defined change in the load at the output.

Power reduction, derating

Necessary reduction in the output power under certain conditions e.g. when a defined temperature is exceeded.

Power factor $\cos \varphi$

Ratio of active power to apparent power. In the case of a switched-mode power supply unit, the power factor is generally less than 1, conditioned by a non-sinusoidal power consumption.

Mains buffering time

The period in which the output voltage is still regulated, once the mains voltage has completely failed.

System control

Modification of the output voltage after a defined change in the mains voltage while all other parameters (load) are kept constant.

Nominal output voltage

Output voltage which is specified for the device and can be raised or lowered while observing the limits.

Temperature co-efficient

Change in output voltage depending on temperature.

Ambient temperature

Temperature of the air which is circulating around the device. Normally measured approx. 10 mm next to the device that is in operation.

Overrun

Rise of the output voltage above the specified value after a rapid load variation.

Current limit

Protective mechanism against overload of a power supply unit due to an excessive output current. See short-circuit current.

Power efficiency

Ratio of the output power to the input power, normally indicated at full load and nominal input voltage. The power efficiency is one of the most important characteristics when assessing a power supply unit.

The differential between the input power and output power is converted into heat. Each increase in the power efficiency means a reduction in the thermal load for the modules and thus an increase in the service life of the device. Even a slight improvement in the power efficiency dramatically influences the service life.

Power supply units General information

interface

wipos switched-mode power supply units – power competence for every switchgear cabinet

Power supply units are at the heart of any switchgear cabinet. They guarantee the life of each connected electrical and electronic component. A wide variety of requirements must be fulfilled. Apart from the reliable supply of all the units under very different loads, the devices themselves must also be safe for the user.

Compact but powerful

The requirements and wishes of the users have been taken into consideration during the development of the vertical **wipos** range. The main characteristic of this range is its compact design which enables an optimum use of space in the switchgear cabinet. The space requirement for single-phase, DIN rail mounted devices in the range 50 W to 480 W corresponds to an overall width between 45 mm and 86 mm.

Safety is important to us

The vertical **wipos** device range provides a cover for the connections on the primary side via a hinged plate. All the connections with hazardous touch voltage are thus safely concealed. The cable routing preset by the cover also produces a clean visual appearance.

Over load problems – a foreign concept for wipos

To provide protection against overload due to excessive ambient temperatures or unfavourable installation conditions which do not allow sufficient heat dissipation, all the vertical and the 40 A horizontal **wipos** devices have a temperature-controlled power limiter. The output power is reduced by a withdrawal of the output voltage before the semiconductor reaches its upper temperature limit.

Parallel operation wherever required

It is possible to connect 2 **wipos** units of the same type in parallel via decoupling diodes to achieve redundancy. The diodes should have reverse voltage rating of 40 V and a current rating of at least the maximum output current of the module.

Redundancy can only be achieved if the total load is less than the individual **wipos** nominal current and the input to each **wipos** is separately connected.

It is also possible to connect up to 5 **wipos** units of the same type in parallel for increased power output. If the following conditions are adhered to:

The cables on the output of each **wipos** should be the same cross section and impedance. Each parallel unit should be switched on simultaneously. The output voltage of each must be within 50 mV (factory set).

Further features of the **wipos** range of switched-mode power supply units:

- Power factor correction (PFC) in accordance with EN 61000-3-2 (vertical design)
- Temperature prompted power limitation
- Power efficiency up to 90 %
- Extended output voltage range of 23 V – 30 V
- Selectable output characteristic curves for balancing the output current during parallel operation
- Modification of the current limit via internal potentiometer
- Reduced ramp up the output (< 50 mV)
- Reduced acceleration time < 1 s
- Protection against battery discharge in OFF state for parallel charging operation
- Red LED for signalling overload
- Convenient DIN rail installation even for 3-phase devices 40 A
- UL, CSA approvals
- Norms
VDE 0805, EN 60950, IEC 950,
UL 1950, safety extra-low voltage (SELV) EN 60950, EN 55011,
EN 61000-3/4, EN 55022 Class B

You can of course also request customer-specific devices and solutions.

Power supply units Vertical design interface



**wipos 24 V / 1.25 A
single phase**

Approvals:
45 x 72 x 105



**wipos 24 V / 2 A
single phase**

Approvals: being preparation:
45 x 72 x 105

Dimensions (mm): W x H x D

Description	Type	Part No.	Std. Pack	Type	Part No.	Std. Pack
30 W	wipos 24 V DC/1,25 A 1PH V	81.000.6005.0	1			
48 W				wipos 24 V DC/2,0 A 1PH V	81.000.6010.0	1
120 W						
240 W						
480 W						
Input data						
Operating voltage	105 – 250 V _{AC} , 47 – 63 Hz			110 – 230 V _{AC} , 47 – 63 Hz		
Input voltage range	94 – 265 V _{AC} , 47 – 63 Hz			94 – 265 V _{AC}		
Nominal input current	0.35 A at 230 V _{AC} / 0.6 A at 115 V _{AC}			0.6 A at 230 V _{AC} / 1.1 A at 115 V _{AC}		
Input current surge	< 30 A			I ² t < 1.5 A ² s		
Power factor φ	0.43 capacitive at 230 V _{AC} / 0.53 capacitive at 115 V _{AC}			0.45 capacitive at 230 V _{AC} / 0.5 capacitive at 115 V _{AC}		
PFC norm (harmonic wave)				–		
Switching characteristics						
Nominal voltage	24 V \pm 3% DC			24 V \pm 3%		
Typical setting range	–			–		
Output direct current	0 – 1.24 A			0 – 2 A		
Max. output power				–		
Ripple	< 50 mV			< 50 mV		
Typical current limiting	1.5 A			2.5 A		
Parallel operation	yes			yes		
Typical power efficiency	85%			89%		
Mains buffering	> 80 ms / 230 V _{AC} ; 8 ms / 115 V _{AC}			> 70 ms / 230 V _{AC} ; > 10 ms / 115 V _{AC}		
System control	< 0.2% at U _{ON} \pm 15 %			< 0.2% at U _{ON} \pm 15%		
Load control	< 1% at 0 A ->> I _{nominal}			< 1% at 0 A -> > I _{nominal}		
Dynamic response	< 2 ms at 10 \leftrightarrow 90% I _{nominal} overshoot < 2%			< 2 ms at 10 \leftrightarrow 90% I _{nominal}		
Current limiting	Sustained short-circuit protection (see diagram)			Sustained short-circuit protection (see diagram)		
Overrun + open circuit	yes			yes		
Disconnection of output after excess current	yes			yes		
Output safety	VDE 0805/EN 60950/IEC 950/UL 1950			VDE 0805/EN 60950/IEC 950/UL 1950		
	Safety extra-low voltage (SELV) EN 60950			Safety extra-low voltage (SELV) EN 60950		
Protection class	Class I			Class II		
Protection degree	IP 20			IP 20		
Leakage current	< 0.25 mA (47 – 63 Hz mains frequency)			< 0.25 mA (47 – 63 Hz mains frequency)		
Ambient temperature	0 °C...+70 °C or free convection			–10 °C...+70 °C for free convection		
Power derating	2.5%/K from +60 °C (See diagram)			2.5%/K from +60 °C (See diagram)		
Storage temperature	–25 °C...+85 °C			–25 °C...+85 °C		
EMC CE certified	EN 50081-1/-2, EN 50082-1/-2			EN 55011, EN 50082-1/-2		
Radio interference	EN 55011/EN 55022 Class B			EN 55011/EN 55022 Class B		
Static discharge ESD (IEC 1000-4-2)	8 kV contact discharge, 15 kV air discharge			8 kV contact discharge, 15 kV air discharge		
Electromagnetic fields (IEC 1000-4-3)	10 V/m			10 V/m		
Burst (IEC 1000-4-4)	4 kV input, 2 kV output / capacitive coupling			4 kV input, 2 kV output / capacitive coupling		
Surge (IEC 1000-4-5)	4 kV asymmetric, 4 kV symmetric			4 kV asymmetric, 4 kV symmetric		
Conducted interference (ENV 50141, IEC 1000-4-6)	10 V, 150 kHz...80 MHz			10 V, 150 kHz...80 MHz		
Weight	approx. 0.2 kg			approx. 0.2 kg		
Installation	Clip for installation onto DIN rail DIN EN 60715			Clip for installation onto DIN rail DIN EN 60715		
Mounting position	Panel mounted; input terminals at top, output terminals at bottom			Panel mounted; input terminals at top, output terminals at bottom		

**Power supply units
Vertical design**

interface



**wipos 24 V / 5 A
single phase**

Approvals:
70 x 138 x 139



**wipos 24 V / 10 A
single phase**

Approvals:
70 x 153.5 x 164

Dimensions (mm): W x H x D

Description	Type	Part No.	Std. Pack	Type	Part No.	Std. Pack
30 W						
48 W						
120 W	wipos 24 V DC/5,0 A 1PH V	81.000.6030.0	1			
240 W				wipos 24 V DC/10 A 1PH V	81.000.6040.0	1
480 W						
Input data						
Operating voltage	115/230 V _{AC} , 47 – 63 Hz			115/230 V _{AC} , 47 – 63 Hz		
Input voltage range	93 – 132 V _{AC} , 187 – 265 V _{AC}			93 – 132 V _{AC} , 187 – 265 V _{AC}		
Nominal input current	0.9 A at 230 V _{AC} /2.2 A at 115 V _{AC}			1.8 A at 230 V _{AC} /4.2 A at 115 V _{AC}		
Input current surge	< 30 A			< 30 A		
Power factor φ	0.5 capacitive at 230 V _{AC} /0.58 capacitive at 115 V _{AC}			0.5 capacitive at 230 V _{AC} /0.58 capacitive at 115 V _{AC}		
PFC norm (harmonic wave)	EN 61000-3-2			EN 61000-3-2		
Output data						
Nominal voltage	24 V \pm 1%			24 V \pm 1%		
Typical setting range	22 – 30 V DC			22 – 30 V DC		
Output direct current	0 – 5 A			0 – 10 A		
Max. output power	120 W (on setting of 30 V max. 4 A)			240 W (on setting of 30 V max. 8 A)		
Ripple	< 50 mV			< 50 mV		
Typical current limiting	6 A			12 A		
Parallel operation	yes			yes		
Typical power efficiency	89%			90%		
Mains buffering	> 20 ms / 230 V _{AC} ; > 15 ms / 115 V _{AC}			> 35 ms / 230 V _{AC} ; > 30 ms / 115 V _{AC}		
System control	< 0.2% at U _{ON} \pm 15%			< 0.2% at U _{ON} \pm 15%		
Load control	< 1% at 0 A -> > I _{nominal}			< 1% at 0 A -> > I _{nominal}		
Dynamic response	< 2 ms at 10 \leftrightarrow 90% I _{nominal}			< 2 ms at 10 \leftrightarrow 90% I _{nominal}		
Current limiting	Sustained short-circuit protection (see diagram)			Sustained short-circuit protection (see diagram)		
Overrun + open circuit	yes			yes		
Disconnection of output after excess current	yes			yes		
Output safety	VDE 0805/EN 60950/IEC 950/UL 1959			VDE 0805/EN 60950/IEC 950/UL 1959		
	Safety extra-low voltage (SELV) EN 60950			Safety extra-low voltage (SELV) EN 60950		
Protection class	Class I			Class I		
Protection degree	IP 20			IP 20		
Leakage current	< 0.75 mA (47 – 63 Hz mains frequency)			< 3.5 mA (47 – 63 Hz mains frequency)		
Ambient temperature	-10 °C...+70 °C for free convection			-10 °C...+70 °C for free convection		
Power derating	2.5%/K from +60 °C (See diagram)			2.5%/K from +60 °C (See diagram)		
Storage temperature	-25 °C...+85 °C			-25 °C...+85 °C		
EMV CE certified	EN 55011, EN 50082-1/-2			EN 55011, EN 50082-1/-2		
Radio interference	EN 55011/EN 55022 Class B			EN 55011/EN 55022 Class B		
Static discharge ESD (IEC 1000-4-2)	8 kV contact discharge, 15 kV air discharge			8 kV contact discharge, 15 kV air discharge		
Electromagnetic fields (IEC 1000-4-3)	10 V/m			10 V/m		
Burst (IEC 1000-4-4)	4 kV input, 2 kV output / capacitive coupling			4 kV input, 2 kV output / capacitive coupling		
Surge (IEC 1000-4-5)	4 kV asymmetric, 4 kV symmetric			4 kV asymmetric, 4 kV symmetric		
Conducted interference (ENV 50141, IEC 1000-4-6)	10 V, 150 kHz...80 MHz			10 V, 150 kHz...80 MHz		
Weight	approx. 0.9 kg			approx. 1.2 kg		
Installation	Clip for installation onto DIN rail DIN EN 60715			Clip for installation onto DIN rail DIN EN 60715		
Mounting position	Panel mounted; input terminals at top, output terminals at bottom			Panel mounted; input terminals at top, output terminals at bottom		

Power supply units Vertical design interface



**wipos 24 V / 10 A
three phase**

Approvals being prepared: cULus
81 x 153 x 160



**wipos 24 V / 20 A
single phase**

Approvals: cULus cULus
86 x 233 x 173

Dimensions (mm): W x H x D

Description	Type	Part No.	Std. Pack	Type	Part No.	Std. Pack
48 W						
120 W						
240 W	wipos 24 V DC/10 A 3PH V	81.000.6043.0*	1			
480 W				wipos 24 V DC/20 A 1PH V	81.000.6050.0	1
Input data						
Operating voltage	3 x 380 – 500 V _{AC} , 47 – 63 Hz			230 V _{AC} , 47 – 63 Hz		
Input voltage range	3 x 340 – 550 V _{AC}			190 – 265 V _{AC}		
Nominal input current	3 x 0.7 A at 400 V _{AC}			3.0 A at 230 V _{AC}		
Input current surge	< 50 A			< 30 A		
Power factor φ	0.60 capacitive at 230 V _{AC}			0.82 capacitive at 230 V _{AC}		
PFC norm (harmonic wave)	–			EN 61000-3-2		
Switching characteristics						
Nominal voltage	24 V \pm 1% DC			24 V \pm 1%		
Typical setting range	23 – 30 V _{DC}			23 – 29 V _{DC}		
Output direct current	0 – 10 A			0 – 20 A		
Max. output power	–			480 W (at setting of 29 V max. 16 A)		
Ripple	< 50 mV SS			< 50 mV		
Max. output power	12.5 A			22 A		
Parallel operation	yes			yes		
Typical power efficiency	90%			89%		
Mains buffering	> 5 ms / 400 V _{AC}			> 20 ms / 230 V _{AC}		
System control	< 0.2% at U _{ON} \pm 15%			< 0.2% at U _{ON} \pm 15%		
Load control	< 1% at 0 A \rightarrow > I _{nominal}			< 1% at 0 A \rightarrow > I _{nominal}		
Dynamic response	< 2 ms at 10 \leftrightarrow 90% I _{nominal} , overshoot < 2%			< 2 ms at 10 \leftrightarrow 90% I _{nominal}		
Current limiting	Sustained short-circuit protection (see diagram)			Sustained short-circuit protection (see diagram)		
Overrun + open circuit	yes			yes		
Disconnection of output after excess current	yes			yes		
Output safety	VDE 0805/EN 60950/IEC 950/UL 1950 Safety extra-low voltage (SELV) EN 60950			VDE 0805/EN 60950/IEC 950/UL 1950 Safety extra-low voltage (SELV) EN 60950		
Protection class	Class I			Class I		
Protection degree	IP 20			IP 20		
Leakage current	< 0.75 mA (47 – 63 Hz mains frequency)			< 3.5 mA (47 – 63 Hz mains frequency)		
Ambient temperature	0 °C...+70 °C for free convection			–10 °C...+70 °C for free convection		
Power derating	2.5%/K from +60 °C (See diagram)			2.5%/K from +60 °C (See diagram)		
Storage temperature	–25 °C...+85 °C			–25 °C...+85 °C		
EMV CE certified	EN 50081-1/-2, EN 50082-1/-2			EN 55011, EN 50082-1/-2		
Radio interference	EN 55011/EN 55022 Class B			EN 55011/EN 55022 Class B		
Static discharge ESD (IEC 1000-4-2)	8 kV contact discharge, 15 kV air discharge			8 kV contact discharge, 15 kV air discharge		
Electromagnetic fields (IEC 1000-4-3)	10 V/m			10 V/m		
Burst (IEC 1000-4-4)	4 kV input, 2 kV output / capacitive coupling			4 kV input, 2 kV output / capacitive coupling		
Surge (IEC 1000-4-5)	4 kV asymmetric, 4 kV symmetric			4 kV asymmetric, 4 kV symmetric		
Conducted interference (ENV 50141, IEC 1000-4-6)	10 V, 150 kHz...80 MHz			10 V, 150 kHz...80 MHz		
Weight	approx. 1.4 kg			approx. 2.0 kg		
Installation	Clip for installation onto DIN rail DIN EN 60715			Clip for installation onto DIN rail DIN EN 60715		
Mounting position	Panel mounted; input terminals at top, output terminals at bottom			Panel mounted; input terminals at top, output terminals at bottom		
	* does not comply with the PFC norm					

Power supply units
Horizontal design

interface



wipos 24 V / 20 A
three phase
Approvals:
240 x 130 x 86



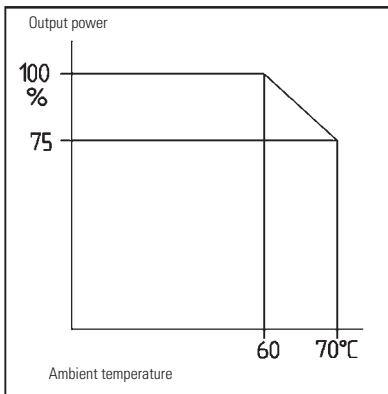
wipos 24 V / 40 A
three phase
Approvals:
296 x 176 x 86

Dimensions (mm): W x H x D

Description	Type	Part No.	Std. Pack	Type	Part No.	Std. Pack
240 W						
480 W	wipos 24 V DC/20 A 3PH H	81.000.6053.0	1			
960 W				wipos 24 V DC/40 A 3PH H	81.000.6063.0	1
Input data						
Operating voltage	3 x 360 – 500 V _{AC} , 47 – 63 Hz			3 x 360 – 500 V _{AC} , 47 – 63 Hz		
Input voltage range	3 x 340 – 550 V _{AC} , 47 – 63 Hz			3 x 340 – 550 V _{AC} , 47 – 63 Hz		
Nominal input current	3 x 1.5 A at 3 x 400 V _{AC}			3 x 3 A at 3 x 400 V _{AC}		
Input current surge	< 50 A			< 50 A		
Power factor φ	0.53 capacitive at 400 V _{AC}			0.53 capacitive at 400 V _{AC}		
Output data						
Nominal voltage	24 V _{DC} \pm 1%			24 V _{DC} \pm 1%		
Typical setting range	22.5 – 27.5 V _{DC}			22.5 – 27.5 V _{DC}		
Output direct current	0 – 20 A			0 – 40 A		
Ripple	< 100 mV			< 100 mV		
Typical current limiting	25 A			45 A		
Parallel operation	yes			yes		
Typical power efficiency	90%			90%		
Mains buffering	> 5 ms / 400 V _{AC}			> 5 ms / 400 V _{AC}		
System control	< 0.2% at U _{ON} \pm 15%			< 0.2% at U _{ON} \pm 15%		
Load control	< 1% at 0 A -> >I _{nominal}			< 1% at 0 A -> >I _{nominal}		
Dynamic response	< 2 ms at 10 <-> 90% I _{nominal} , overshoot < 2%			< 2 ms at 10 <-> 90% I _{nominal} , overshoot < 2%		
Current limiting	Sustained short-circuit protection (see diagram)			Sustained short-circuit protection (see diagram)		
Overrun + open circuit	yes			yes		
Disconnection of output after excess current	yes			yes		
Output safety	VDE 0805/EN 60950/IEC 950/UL 1959 Safety extra-low voltage (SELV) EN 60950			VDE 0805/EN 60950/IEC 950/UL 1959 Safety extra-low voltage (SELV) EN 60950		
Protection class	Class I			Class I		
Protection degree	IP 20			IP 20		
Leakage current	< 3.50 mA (47 – 63 Hz mains frequency)			< 3.50 mA (47 – 63 Hz mains frequency)		
Ambient temperature	0 °C...+70 °C for free convection			0 °C...+70 °C for free convection		
Power derating	2.5%/K from +60 °C (See diagram)			2.5%/K from +60 °C (See diagram)		
Power derating	-25 °C...+85 °C			-25 °C...+85 °C		
EMV CE certified	EN 50081-1/-2, EN 50082-1/-2			EN 50081-1/-2, EN 50082-1/-2		
Radio interference	EN 55011/EN 55022 Class B			EN 55011/EN 55022 Class B		
Static discharge ESD ESD (IEC 1000-4-2)	8 kV contact discharge, 15 kV air discharge			8 kV contact discharge, 15 kV air discharge		
Electromagnetic fields (IEC 1000-4-3)	10 V/m			10 V/m		
Burst (IEC 1000-4-4)	4 kV input, 2 kV output / capacitive coupling			4 kV input, 2 kV output / capacitive coupling		
Surge (IEC 1000-4-5)	4 kV asymmetric, 4 kV symmetrisch			4 kV asymmetric, 4 kV symmetrisch		
Conducted interference (ENV 50141, IEC 1000-4-6)	10 V, 150 kHz...80 MHz			10 V, 150 kHz...80 MHz		
Weight	approx. 1.9 kg			approx. 3.6 kg		
Installation	Clip for installation onto DIN rail DIN EN 60715			Clip for installation onto DIN rail DIN EN 60715		
Mounting position	Panel mounted; input terminals at top, output terminals at bottom			Panel mounted; input terminals at top, output terminals at bottom		

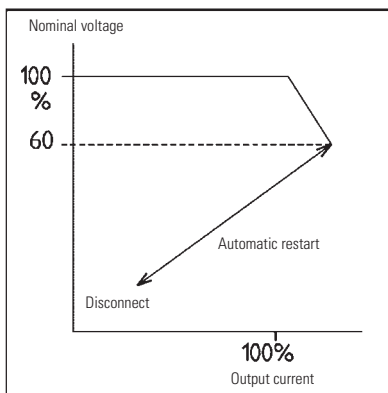
Power supply units Characteristics – Output data – *interface*

Derating: Output power



Current limiting curve: Hiccup mode

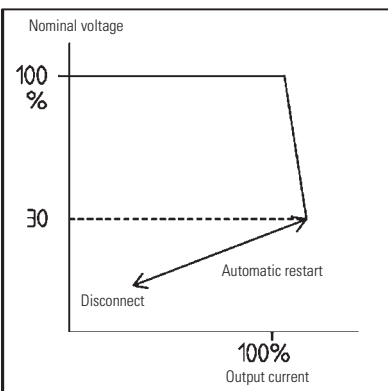
Single-phase power supply unit, vertical design: 2 A
Single-phase power supply unit, horizontal design: 5 A



Current limiting curve: Hiccup mode

Single-phase power supply unit, vertical design:
5 A / 10 A / 20 A

Single-phase/three phase power supply unit, horizontal design:
10 A / 20 A / 40 A



interface

