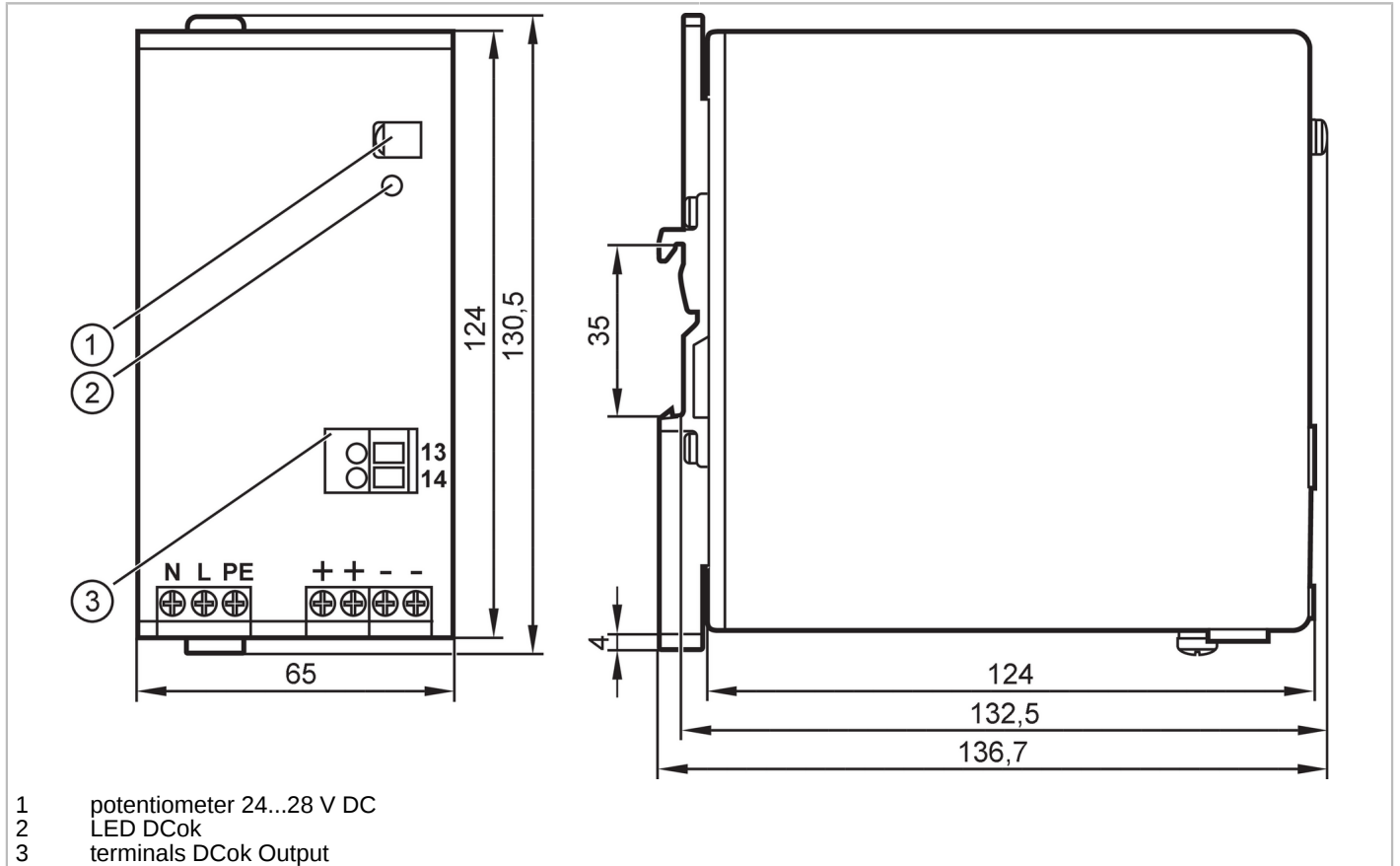


# DN4014



## Switched-mode power supply 24 V DC

PSU-1AC/24VDC-20A



### Application

Design housing for DIN rail mounting

### Electrical data

Frequency AC	[Hz]	47...64
Nominal voltage AC	[V]	< 230
Input voltage range AC	[V]	100...240; (-15 % / +10 %)
Output voltage DC	[V]	24...28
Protection class		I; (IEC 61140)
Overvoltage protection		yes; (< 32 DC)
Output voltage	[V]	adjustable; output voltage to SELV, PELV
Max. output current at min. output voltage	[A]	20
Max. output current at max. output voltage	[A]	17.1
Max. output current peak at min. output voltage	[A]	24
Max. output current peak at max. output voltage	[A]	20.6
Output power (permanent)	[W]	480
Output power (peak)	[W]	576
Note on output power (peak)	[W]	≤ 45 °C permitted continuously; > 45 °C < 1 minute every 10 minutes

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Power factor (nominal voltage 120 V AC / 60 Hz)	0.99
Power factor (nominal voltage 230 V AC / 50 Hz)	0.95
Power reserve [%]	20
Number of output circuits	1
Max. residual ripple [mV]	50
Switch-on peak current (nominal voltage 120 V AC / 60 Hz) [A]	9
Switch-on peak current (nominal voltage 230 V AC / 50 Hz) [A]	7
Inrush current limitation	yes
Efficiency (nominal voltage 120 V AC / 60 Hz) [%]	92.7
Efficiency (nominal voltage 230 V AC / 50 Hz) [%]	94
External input protection	$\geq B-10 A / \geq C-10 A$
Derating [W/K]	12 (60...70 °C)
Mains buffering time (nominal voltage 120 V AC / 60 Hz) [ms]	26
Mains buffering time (nominal voltage 230 V AC / 50 Hz) [ms]	26
Input current (nominal voltage 120 V AC / 60 Hz) [A]	4.36
Input current (nominal voltage 230 V AC / 50 Hz) [A]	2.33
Power loss (nominal voltage 120 V AC / 60 Hz) [W]	37.8
Power loss (nominal voltage 230 V AC / 50 Hz) [W]	30.6
Back feeding protection [V]	35

### Outputs

Short-circuit proof	yes
Overload protection	yes
Overload performance	Hiccup Mode; in the event of overload / short circuit, the output alternately supplies continuous power for 2 s and then switches off for 18 s
Type DC-OK signal	Relay output
Reliability of the DC OK signal	60 V DC (0.3 A) / 30 V DC (1 A) / 30 V AC (0.5 A)

### Operating conditions

Ambient temperature [°C]	-25...70
Note on ambient temperature	observe the free space for convection (see operating instructions)
Storage temperature [°C]	-40...85
Max. relative air humidity [%]	95; (IEC 60068-2-30)
Protection	IP 20; (EN 60529)
Degree of soiling	2; (IEC 62103: conductive soiling not permitted)

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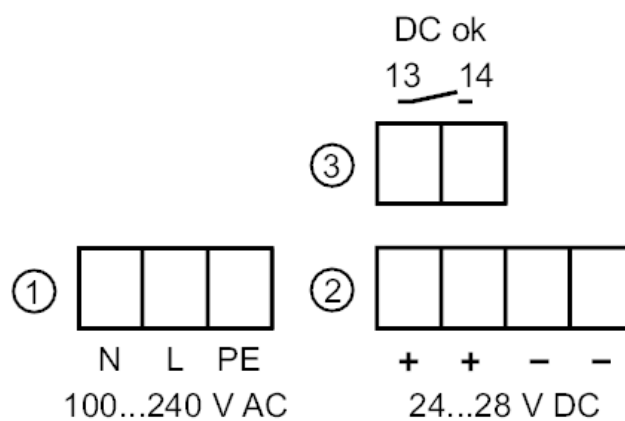
Tests / approvals		
EMC	EN 61000-6-1	
	EN 61000-6-2	
	EN 61000-6-3	
	EN 61000-6-4	
	EN 61000-3-2	class A
Vibration resistance	IEC 60068-2-6	±1,6 mm 2...17,8 Hz / 2 g 17,8...500 Hz
Shock resistance	IEC 60068-2-27	30 g 6 ms / 20 g 11 ms
MTTF [years]		53
Power Factor Correction (PFC)		met

Mechanical data		
Weight [g]		1121.5
Housing		rectangular
Type of mounting		Mounting on DIN rail; (TH35 (EN 60715))
Dimensions [mm]		124 x 65 x 132.5
Material		housing: steel sheet

Displays / operating elements		
Display	DCok	1 x LED

Remarks		
Remarks	series connection of outputs only applies to identical units up to max. 150 V DC overall voltage	
Pack quantity	1 pcs.	

Electrical connection		
screw terminals:		
Connection		



- 1: primary  
2: secondary

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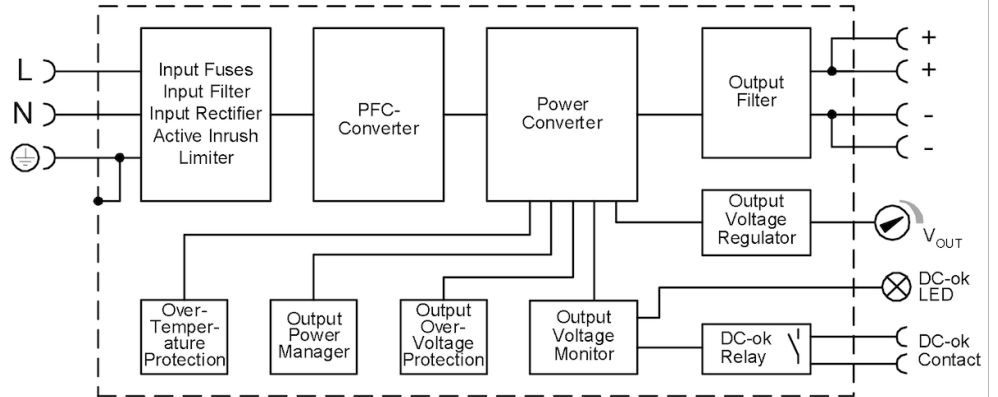


## Switched-mode power supply 24 V DC

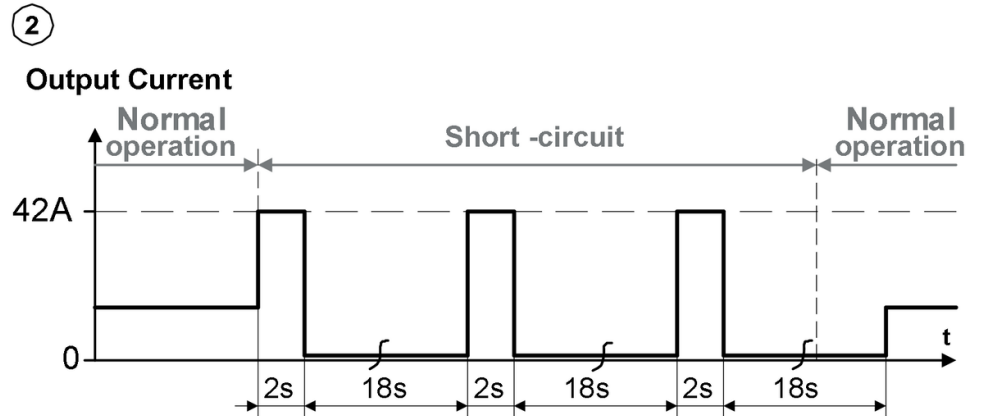
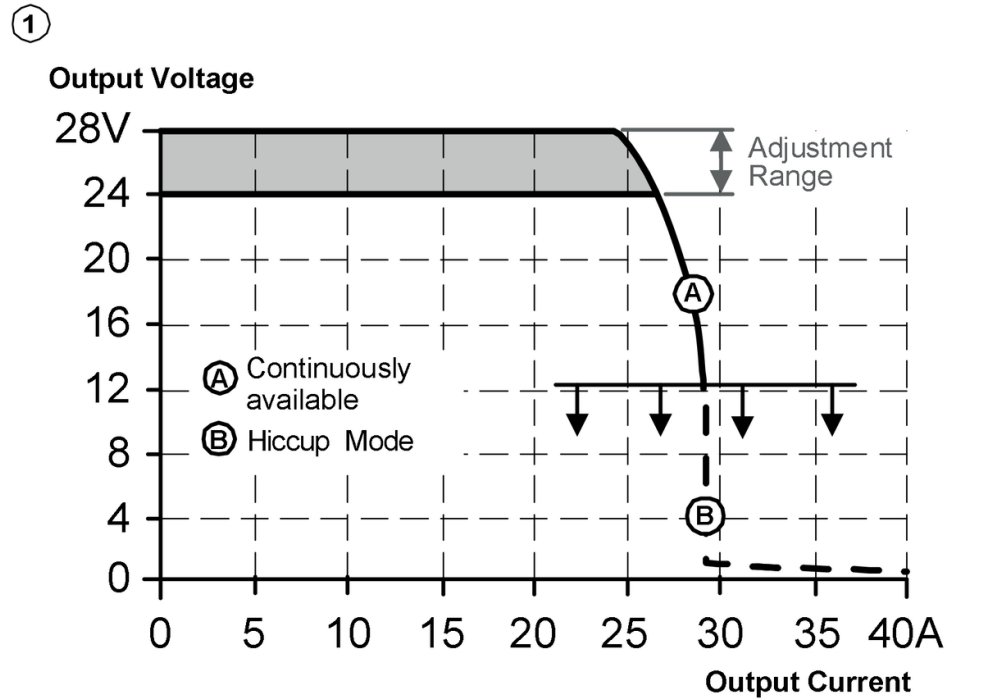
PSU-1AC/24VDC-20A

### Diagrams and graphs

#### Block diagram



#### Output curve



- 1: Output curve
- 2: Hiccup Mode

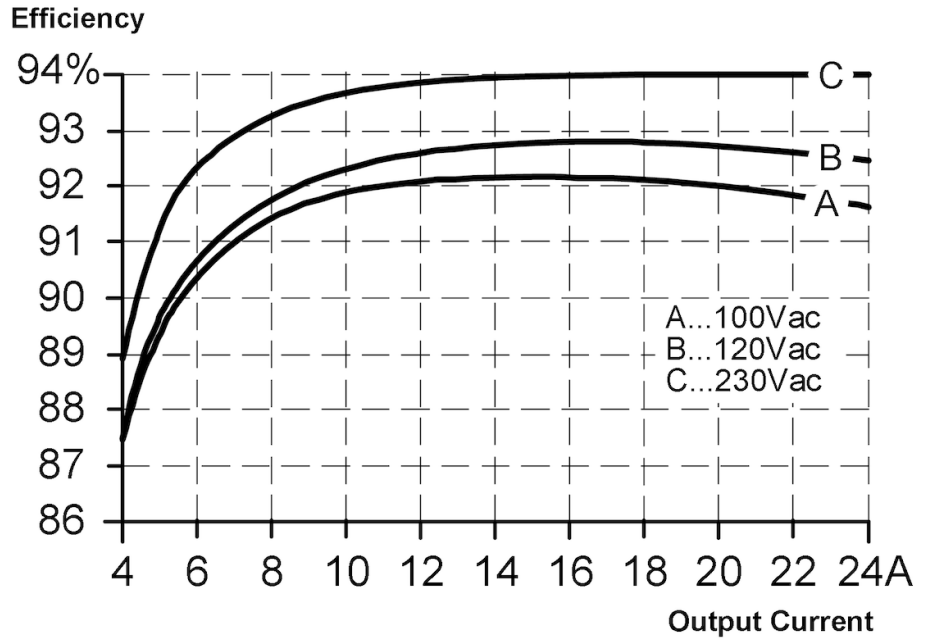
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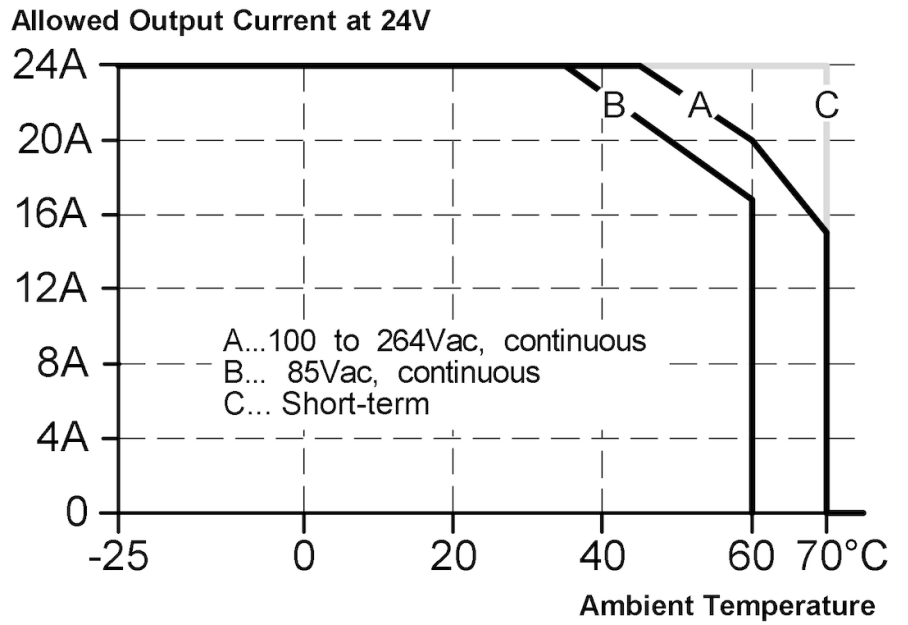
## Switched-mode power supply 24 V DC

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Characteristic curve for degree of efficiency / power loss



Characteristic curve for derating



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## Switched-mode power supply 24 V DC

PSU-1AC/24VDC-20A

Characteristic curve for mains buffering time

Hold-up Time at 24V

