

AS-Interface Power Supply with 2.8A

SLA3.100

- Input: AC 115V / 230V
- Output: 30.55V / 2.8A
- AS Interface data decoupling
- Infrared (IR) addressing mode
- For highly demanding industrial applications
- NEC Class 2 Power Supply



UL508 LISTED
IND. CONT. EQ.
18 WIM, 60°C



Data sheet

Short description

Data and energy:

The primary switched mode DIN rail power supply SLA3.100 specifically supplies AS Interface® systems with energy. The AS-Interface bus technology allows to connect up to 62 participants to a control and to supply them with energy with a single two-conductor cable. When connecting slaves, the yellow AS-Interface cable offers the high degree of protection IP67 in conjunction with the insulation displacement. The communication signals of the individual network participants are modulated onto the supply voltage. For this purpose, specific power supply units with integrated data decoupling are required for AS-Interface systems.

Fast addressing of slaves:

The "IR addressing mode" selectable via jumper interrupts the data communication on the yellow AS-Interface cable. Participants with an infrared interface can then quickly be assigned a new ID address by means of an infrared programming unit without the need to disconnect them from the AS-Interface cable. Afterwards, the "Communication Mode" can be selected again to re-start the data communication.

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Input

Rated voltage	AC 100-120/220-240V (selectable by front panel slide switch)
Rated current	2.0A (switch in 115V position) 0.9A (switch in 230V position)
Frequency	47...63 Hz (alternatively DC also possible)
Voltage range	AC 85...132V/184...264V, DC 230...375V
Power factor	>0.5
Harmonic current emissions	EN 61000-3-2 [PFC], Class A limits are fulfilled
Integrated internal fuse	T2A5 / 250V HBC (not accessible)
Inrush current	limited by NTC resistor T _{amb} = +50°C, cold start (line impedance acc. EN 61000-3-3)
Peak current I _{pk} I ² t	20A (AC 132V) / 38A (AC 264V) 1.5 A ² s (AC 132V) / 1.8 A ² s (AC 264V)
Hold-up time	>26 ms @ AC 100V or 196V and rated load (also see diagram)

Output

Rated voltage	DC 30.55V ±3% (not adjustable)
Rated current	2.8A
Isolation	Safe low voltage PELV (IEC364-4-41) SELV (IEC60950)
Current limitation	>3.2 A
Overload behaviour	Continuous current (also see diagram)
Short-circuit current	min. 3.2A, max. 4.6A
Load regulation	stat. <200mV (no load / full load)
Line regulation	stat. <10mV (AC 85...132V/184...264V)
Ripple	<50 mV _{pp} (500kHz bandw., 50Ω measurem., ohmic load)
Noise (Spikes)	<100mV _{pp} (20MHz bandw., 50Ω measurem., ohmic load)
Over-voltage protection	max. 55V
Operating indicator	Green LED (extinguishes at overload)
Output is protected against short-circuit, open circuit and overload.	
Use AS-Interface power supplies only together with AS-Interface lines.	

Order information

Order number	Description
SLA3.100	AS-Interface power supply unit
SLZ11	Adapter for S7-300 rail
SLZ02	Wall mounting set (two pcs. per package)

Efficiency, Reliability

Efficiency	typ. 90.5%	(AC 230V, 2.8A)
Power dissipation	typ. 9.1W	(AC 230V, 2.8A)

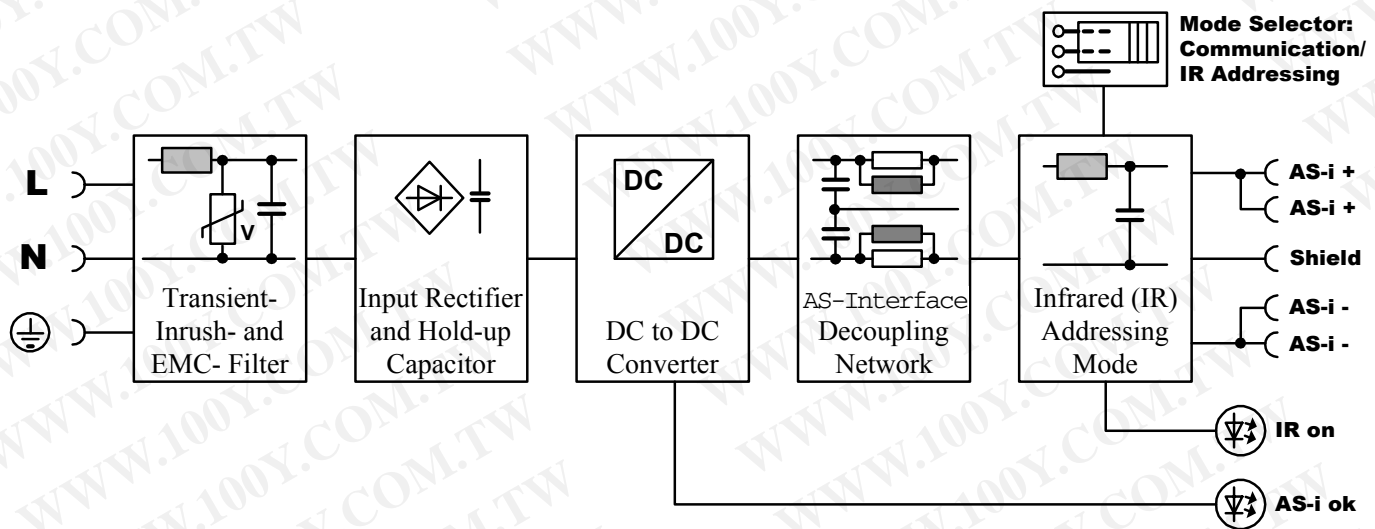
Operating and environmental data

Non-operating temperature range	-25°C...+85°C
Operating temperature range	-10°C...+70°C (measured at 25mm below the unit)
Derating	from 60°C 2W/K onwards, power reduction necessary
Cooling	natural convection, no forced air-cooling necessary
Over-temperature protection	not implemented
Humidity	protect from moisture and condensation
Vibration	2 – 17.8Hz ±1.6mm (IEC 68-2-6)
• Sinus	17.8Hz – 500Hz 2g (IEC 68-2-6)
• Random	2...800Hz 0.5m ² (s ³) (IEC 68-2-64)
Shock	15g (6ms), 10g (11ms), IEC 68-2-27
Degree of pollution	2 (EN 60950)
Overvoltage category	II (IEC 60950) III (EN 50178)

Electromagnetic Compatibility (EMC)

Emissions	EN 61000-6-3 (also includes EN 61000-6-4) Class B (EN 55011, EN 55022) EN 61000-3-2 and EN 61000-3-3
Immunity	EN 61000-6-2 (also includes EN 61000-6-1), EN 61000-4-2, Level 4 (withstands 8 kV direct discharge, 15 kV air discharge)
• Electrostatic Discharge (ESD)	EN 61000-4-3, Level 3 (10 V/m) ENV 50204 (10 V/m)
• Electromagnetic radiated fields	EN 61000-4-4, Level 4 (4 kV) Level 3 (2 kV)
• Burst, coupled to: – ACin lines – DCout lines	EN 61000-4-5, Installation class 4 (4 kV)
• Surge transients – Differential mode (L → PE) – Common mode (L → N)	EN 61000-4-6, Level 3 (10V, 150 kHz-80 MHz)
• Conducted noise immunity	EN 61000-4-11
• Voltage dips	Transient resistance acc. to VDE 0160 / W2 over entire load range
• Transient immunity	

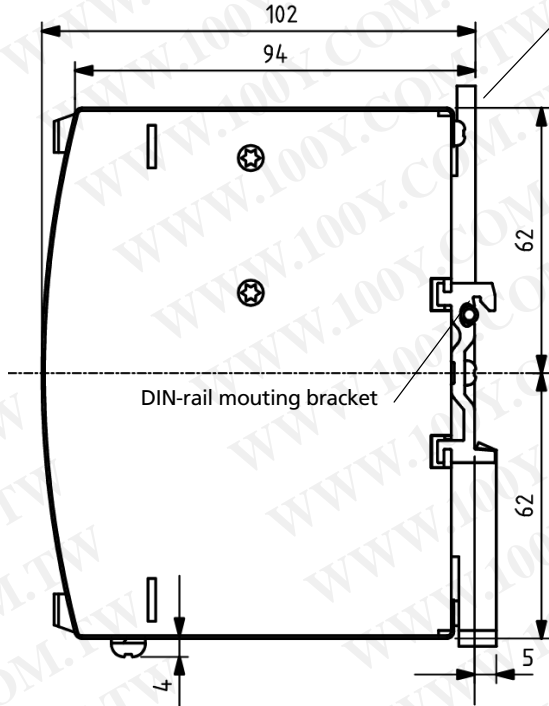
Schematic



Operating indicators and elements

Plastic slider:

- Mounting: Place the unit onto the DIN-rail and push it downwards and against the lower front edge until it snaps into place.
- Detachment: Push downwards and detach the unit from its DIN-rail mounting bracket.



Output terminals:

Dual terminals for AS-Interface + and AS-Interface -

Green LED:

ON: AS-Interface voltage is within the limits.
OFF: at overload or missing input voltage

Plug-in jumper:

Pos. 1-2: regular AS-Interface communication
Pos. 2-3: Data communication is interrupted. IR-addressing can be carried out

Red LED:

ON: Jumper position 2-3
OFF: Jumper position 1-2

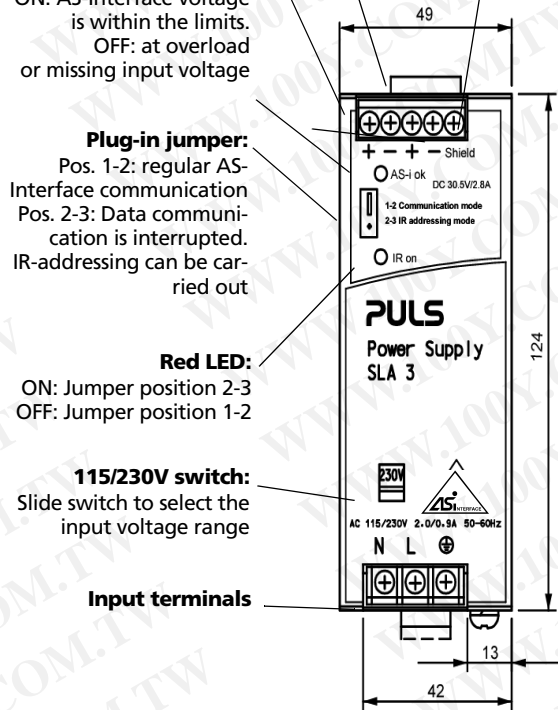
115/230V switch:

Slide switch to select the input voltage range

Input terminals

Plastic slider

Machine ground connection



Connectors and terminals

Terminals	Fingertouch-proof terminals with captive screws for 5.5 mm slotted screwdriver or Philips cross-recessed screwdriver No. 2
Position	Easy to reach terminals on the front panel; input and output clearly separate from each other
Tightening torque	0.8 Nm
Wire gauge	
• flexible cable	0.5-4mm ² (20-10AWG)
• solid cable	0.5-6mm ² (20-10AWG)
Ferrules	admissible
Stripping length	7mm

Front elements

⊕	PE terminal
N	Input neutral
L	Input phase
⊕ brown	Positive AS-Interface output voltage (twice)
⊖ blue	Negative AS-Interface output voltage (twice)
Shield	Connection of machine ground. (Functional earth for balancing the AS-Interface output. Connection is recommended for EMC)

Construction / Mechanics

Housing	Robust metal housing for built-in installation
Degree of protection	IP20 (EN 60529)
Class of protection	1 (IEC 60536); do not use without protective earth (PE)
Width w	49mm
Height h	124mm
Depth d	102mm (without DIN rail)
Weight	appr. 500g

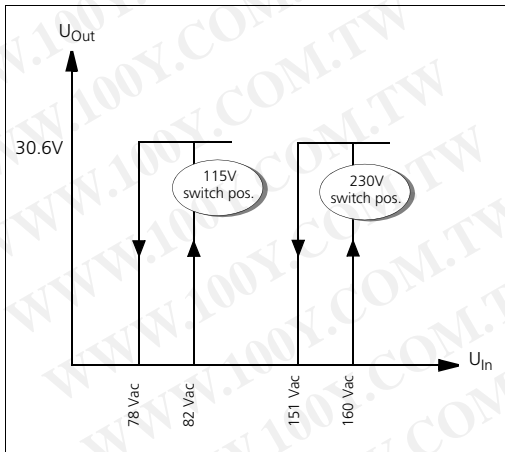
Installation notes

External fusing	<ul style="list-style-type: none"> • not necessary (internal fuse) • observe national regulations • circuit breaker with B-characteristic min. 6A or slower action, or alternatively 16A HBC fuse recommended
Mounting position	vertical; input below, output above
Free space for cooling	above / below 25mm recommended left / right 15mm recommended
Always connect PE before operating the unit!	

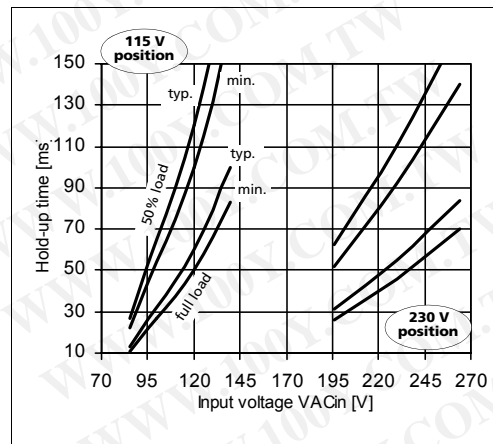
Operation without AS-Interface: This AS-Interface PSU has an inductive output. When operating without AS-Interface structure (e.g. in a laboratory test) you should connect a 470µF / 35V capacitor between AS-Interface + and AS-Interface - as commercial electronic loads in combination with the data decoupling often tend to oscillate, and the oscillation may exceed the permitted modulation voltage. Otherwise, equipment may be destroyed.

Functional diagrams

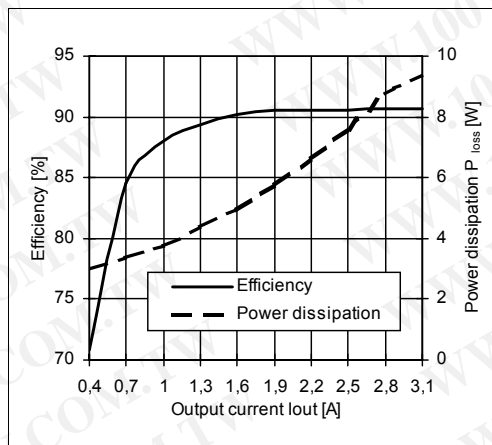
Start behaviour



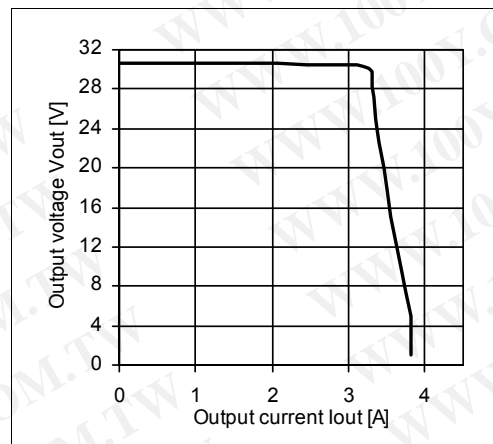
Hold-up time



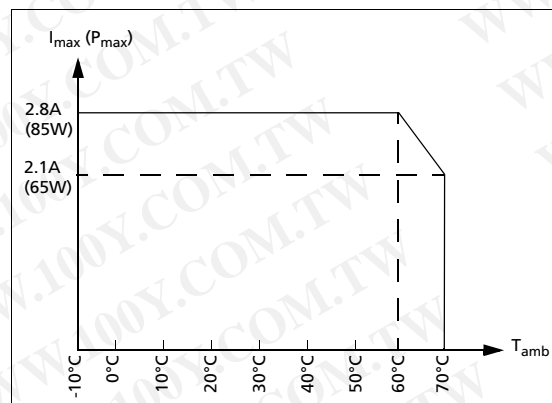
Efficiency / Power dissipation



Output characteristic / Overload behaviour



Derating



Unless otherwise stated, specifications are valid for AC 230V input voltage, +25°C ambient temperature, and 5 min. run-in time. They are subject to change without prior notice.

Your partner in power supply:



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