Switching power supplies

- Versions: modular and 35mm DIN rail mount
- Output voltage adjustment by front potentiometer
- Short-circuit protection
- Built-in input voltage surge suppressor
- Used as power supply for DC electromechanical and electronic equipment
- Redundancy modules

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POWER SUPPLIES DIN RAIL MOUNT MODULAR VERSION

- Single phase
- Output voltage: 12 or 24VDC
- Output power: 10...100W.

Page 23-2

POWER SUPPLIES DIN RAIL MOUNT COMPACT VERSION

- Single phase
- Output voltage: 24VDC
- Output power: 30...120W.

Page 23-3

POWER SUPPLIES DIN RAIL MOUNT VERSION

- Single, two and three phase
- Output voltage: 24 or 48VDC
- Output power: 5...960W.

Page 23-3

REDUNDANCY MODULES

- Modular and 35mm DIN rail mount
- Output voltage: 12 or 24VDC
- Output current: 10 or 20A.

Modular version

PSL1M010...

PSL1M03312
PSL1M03624

Order code	Rated output voltage	Rated output current	Output power	Qty per pkg	Wt
	[V]	[A]	[W]	n°	[kg]
Single phase.					
PSL1M01012	12VDC	0.83	10	1	0.065
PSL1M02412		2	24	1	0.130
PSL1M03312		2.75	33	1	0.190
PSL1M05412		4.5	54	1	0.250
PSL1M07212		6	72	1	0.380
PSL1M01024	24VDC	0.42	10	1	0.065
PSL1M02424		1	24	1	0.130
PSL1M03624		1.5	36	1	0.190
PSL1M06024		2.5	60	1	0.250
PSL1M10024		4.2	100	1	0.380

General characteristics
Switching power supplies transform an AC input voltage into a DC output one. This type of equipment is used in industrial and domestic automation fields. The power supplies are equipped with switching technology offering very high efficiency in an extremely compact size. Dimensions are compatible with modular consumer panels and its plastic housing is suitable for building automation installations as well as industrial automation applications.
The wide range of power supply voltages and the choice of DC current outputs provide for the best adaptability to supply voltage needs of the most common electronic and electromechanical devices.

Protections:
– Short circuit
– Overload
– Input voltage peaks.

Indications:
– LED indicator for low voltage conditions
– LED indicator for power on.

Operational characteristics
– Rated supply voltage: 100...240VAC
– Rated output voltage: 12VDC for PSL1M...12 types; 24VDC for PSL1M...24 types
– Mains frequency: 50/60Hz
– Output voltage adjustment by front potentiometer (except for PSL1M010...)
– High efficiency up to 89%
– 35mm DIN rail (IEC/EN/BS 60715) mounting
– Screw connection terminals
– Modular DIN 43880 housing; number of modules:
  • 1 for PSL1M010...
  • 2 for PSL1M024...
  • 3 for PSL1M03312 and PSL1M03624
  • 4 for PSL1M05412 and PSL1M06024
  • 5 for PSL1M07212 and PSL1M10024
– IEC degree of protection: IP20 on terminals.

Certifications and compliance
Certifications obtained: UL Listed for USA and Canada (cULus-File E318016) as Power Supplies in power circuit and motor-mounted apparatus category; EAC, RCM.
Compliant with standards: IEC/EN/BS 62368-1, IEC/EN/BS 61000-6-2, IEC/EN/BS 61000-6-3, UL508, CSA C22.2 n° 107-1.

Compact DIN rail mount version

PSE1...

new

Order code	Rated output voltage	Rated output current	Output power	Qty per pkg	Wt
	[V]	[A]	[W]	n°	[kg]
Single phase.					
PSE103024	24VDC	1.25	30	1	0.140
PSE105024		2.1	50	1	0.200
PSE107224		3	72	1	0.250
PSE110024		4.2	100	1	0.350
PSE112024		5	120	1	0.610

General characteristics
The PSE1... power supplies have compact dimensions and are DIN rail mountable. They are used to supply electromechanical and electronic devices with DC control, such as contactors, time relays, sensors, PLCs, DC motors, displays, SSRs and other equipment normally found in automation systems.

Protections:
– Short circuit
– Overload
– Input voltage peaks.

Indications:
– LED indicator for power on.

Operational characteristics
– Rated supply voltage: 100...240VAC
– Rated output voltage: 24VDC
– Mains frequency: 50/60Hz
– Output voltage adjustment by front potentiometer
– High efficiency up to 89%
– 35mm DIN rail (IEC/EN/BS 60715) mounting
– Screw connection terminals
– IEC degree of protection: IP20 on terminals.

Certifications and Compliance
Certifications obtained: cULus (pending for PSE112024), EAC, RCM.
Compliant with standards: IEC/EN/BS 62368-1, IEC/EN/BS 61000-6-2, IEC/EN/BS 61000-6-3, UL508, CSA C22.2 No. 107.1.

DIN Rail mount version


PSL100524
PSL101024
PSL101824

PSL1030…
PSL1060…


PSL1100…

PSL1240…
PSL1300…

PSL148024
PSL148048

PSL3960…

Order code	Rated output voltage	Rated output current	Output power	Qty per pkg	Wt
	[V]	[A]	[W]	n°	[kg]
Single phase.					
PSL100524	24VDC	0.21	5	1	0.120
PSL101024		0.42	10	1	0.120
PSL101824		0.75	18	1	0.150
PSL103024		1.25	30	1	0.270
PSL106024		2.5	60	1	0.340
PSL110024		4.2	100	1	0.430
PSL112024		5	120	1	0.920
PSL124024		10	240	1	1.380
PSL130024		12.5	300	1	1.400
PSL148024		20	480	1	1.920
PSL103048	48VDC	0.625	30	1	0.270
PSL106048		1.25	60	1	0.340
PSL110048		2.1	100	1	0.430
PSL112048		2.5	120	1	0.920
PSL124048		5	240	1	1.380
PSL130048		6.25	300	1	1.400
PSL148048		10	480	1	1.920
Two phase.					
PSL210024	24VDC	4.2	100	1	0.500
PSL210048	48VDC	2.1	100	1	0.500
Three phase❶.					
PSL312024	24VDC	5	120	1	0.800
PSL324024		10	240❶	1	1.100
PSL348024		20	480❶	1	1.720
PSL396024		40	960❶	1	3.400
PSL324048	48VDC	5	240❶	1	1.100
PSL348048		10	480❶	1	1.720
PSL396048		20	960❶	1	3.400

❶ Two-phase connection is admissible with a 25% output power derating.

General characteristics
This type of equipment is used to power supply electromechanical and electronic devices with DC control, such as contactors, time relays, sensors, PLCs, DC motors, displays, SSRs and other equipment normally found in automation systems and networks.

Protections:
– Short circuit
– Overload
– Input voltage peaks.

Indications:
– LED indicator for low voltage conditions
– LED indicator for power on.

Operational characteristics
– Rated supply voltage:
  100...240VAC (PSL1005...PSL1100...)
  115/230VAC self-configurable (PSL1120...PSL1480...)
  400...500VAC (PSL2... and PSL3...❶)
– Rated output voltage: 24VDC (PSL...24) / 48VDC (PSL...48)
– Mains frequency: 50/60Hz
– Output voltage adjustment by front potentiometer
– PFC function for types:
  PSL112024...PSL396024
  PSL112048...PSL396048
– Parallel connection for types: PSL1100...PSL3960... (except for PSL312024)
– High efficiency up to 93%
– 35mm DIN rail (IEC/EN/BS 60715) mounting
– Screw connection terminals
– Plastic or metal housing depending on type
– IEC degree of protection: IP20 on terminals.

Certifications and compliance
Certifications obtained: UL Listed for USA and Canada (cULus-File E318016) as Power Supplies in power circuit and motor-mounted apparatus category; EAC, RCM.
Compliant with standards: IEC/EN/BS 62368-1, IEC/EN/BS 61000-6-2, IEC/EN/BS 61000-6-3, UL508, CSA C22.2 n° 107.1.

Redundancy modules

PSLRM1024

PSLR2024

Order code	Rated voltage	Rated output current	Qty per pkg	Wt
	[V]	[A]	n°	[kg]
Modular version DIN rail mount version.				
PSLRM1024	12...24VDC	10	1	0.075
DIN rail mount version.				
PSLR2024	24VDC	20	1	0.210

Indications (PSLR2024)

Input voltage A	Input voltage B	LED A	LED B	Relay A	Relay B
Within limits	Within limits	ON	ON	Energ.	Energ.
Within limits	<MIN or >MAX	ON	OFF	Energ.	De-energ.
<MIN or >MAX	Within limits	OFF	ON	De-energ.	Energ.
<MIN or >MAX	<MIN or >MAX	OFF	OFF	De-energ.	De-energ.

General characteristics
They are used for the redundancy connection of two or more power supplies to enhance the reliability of the DC supply. The redundancy modules ensure a perfect insulation between the power supplies connected.

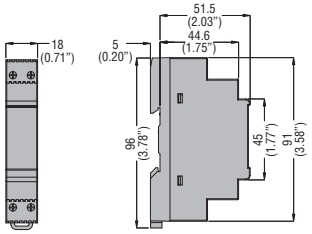
Indications (only for PSLR2024):
– LED indicator for DC voltage within limit
– Alarm relay.

Operational characteristics
– Rated input voltage:
  12...24VDC (PSLRM1024)
  24VDC (PSLR2024)
– Rated input current:
  10A (PSLRM1024)
  20A (PSLR2024)
– Rated output current :
  10A (PSLRM1024)
  20A (PSLR2024)
– Maximum output current:
  16A per 300s (PSLRM1024)
  30A per 300s (PSLR2024)
– Modular housing DIN 43880 2 modules (PSLRM1024)
– 35mm DIN rail mounting (IEC/EN/BS 60715)
– Screw connection terminals
– Plastic housing
– IEC degree of protection: IP20 on terminals.

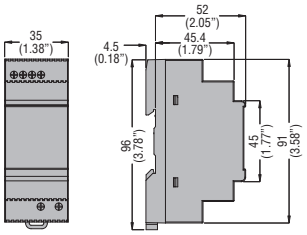
Certifications and compliance
Certifications obtained: cULus (only for PSLR2024), EAC, RCM.
Compliant with standards: IEC/EN/BS 62368-1 (only for PSLR2024), IEC/EN/BS 61000-6-2, IEC/EN/BS 61000-6-3, UL508 (only for PSLR2024), CSA C22.2 n°107.1 (only for PSLR2024).

MODULAR SWITCHING POWER SUPPLIES

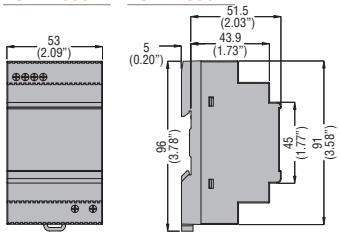
PSL1M010...



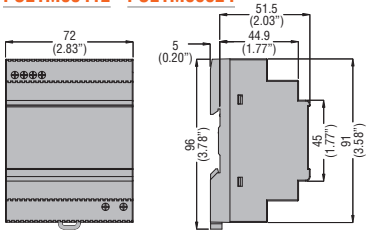
PSL1M024...



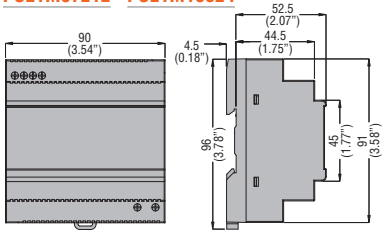
PSL1M03312 - PSL1M03624



PSL1M05412 - PSL1M06024

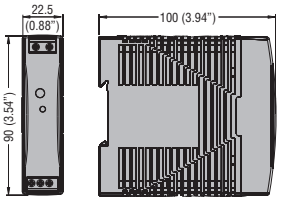


PSL1M07212 - PSL1M10024



COMPACT DIN RAIL MOUNT SWITCHING POWER SUPPLIES

PSE103024



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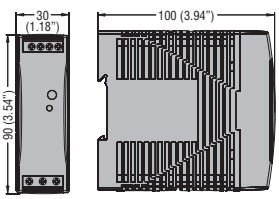

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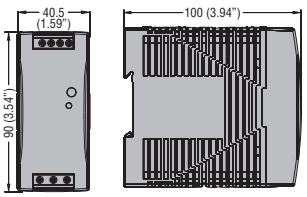
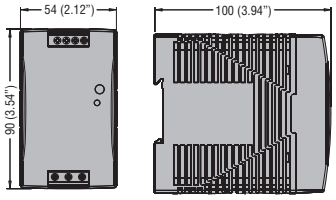
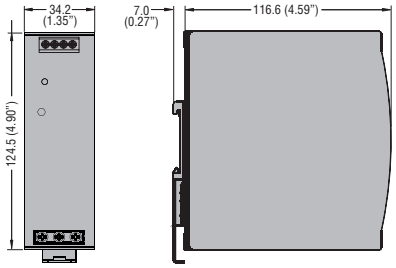


PSE110024

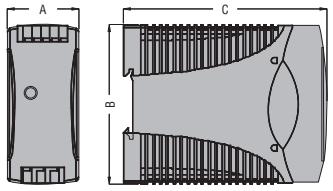


PSE112024



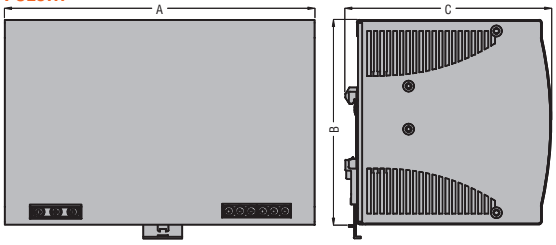
DIN RAIL MOUNT SWITCHING POWER SUPPLIES

PSL100524...PSL110048
PSL2100...



TYPE	A	B	C
PSL100524	22.5 (0.88")	90 (3.54")	115 (4.53")
PSL101024	22.5 (0.88")	90 (3.54")	115 (4.53")
PSL101824	22.5 (0.88")	90 (3.54")	115 (4.53")
PSL1030...	40.5 (1.59")	90 (3.54")	115 (4.53")
PSL1060...	40.5 (1.59")	90 (3.54")	115 (4.53")
PSL1100...	54 (2.12")	90 (3.54")	115 (4.53")
PSL2100...	54 (2.12")	90 (3.54")	115 (4.53")

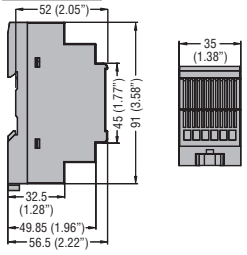
PSL112024...PSL148048
PSL3...



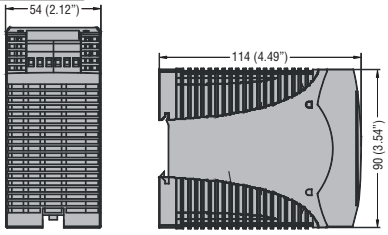
TYPE	A	B	C
PSL1120...	64 (2.52")	124.5 (4.90")	123.6 (4.87")
PSL1240...	83.5 (3.29")	124.5 (4.90")	123.6 (4.87")
PSL1300...	83.5 (3.29")	124.5 (4.90")	123.6 (4.87")
PSL1480...	175.5 (6.91")	124.5 (4.90")	125 (4.92")
PSL312024	74.3 (2.92")	124 (4.88")	118.8 (4.68")
PSL3240...	89 (3.50")	124 (4.88")	118.8 (4.68")
PSL3480...	150 (5.90")	124 (4.88")	118.8 (4.68")
PSL3960...	275.8 (10.86")	125.9 (4.96")	120.9 (4.76")

REDUNDANCY MODULES

PSLRM1024

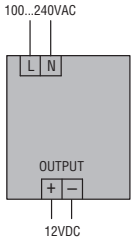


PSLR2024

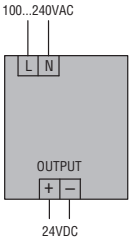


MODULAR SWITCHING POWER SUPPLIES

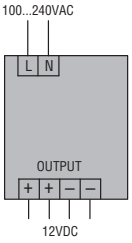
PSL1M01012



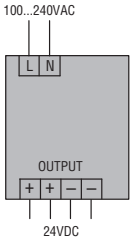
PSL1M01024



PSL1M02412 - PSL1M03312
PSL1M05412 - PSL1M07212

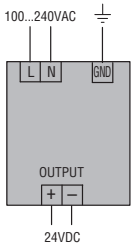


PSL1M02424 - PSL1M03624
PSL1M06024 - PSL1M10024

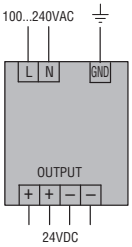


COMPACT DIN RAIL MOUNT SWITCHING POWER SUPPLIES

PSE103024

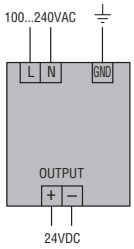


PSE105024 - PSE107224
PSE110024 - PSE112024

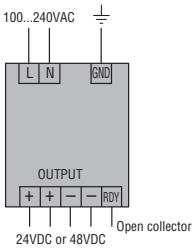


DIN RAIL MOUNT SWITCHING POWER SUPPLIES

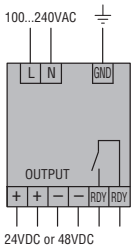
PSL100524
PSL101024
PSL101824



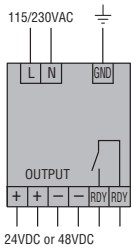
PSL1030...
PSL1060...



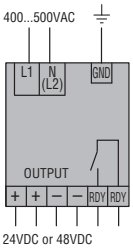
PSL1100...



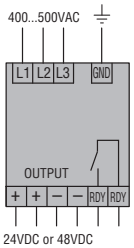
PSL1120...
PSL1240... - PSL1300...
PSL1480...



PSL2100...



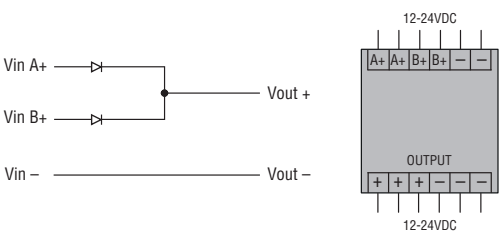
PSL312024 - PSL3240...❶
PSL3480...❶ - PSL3960...❶



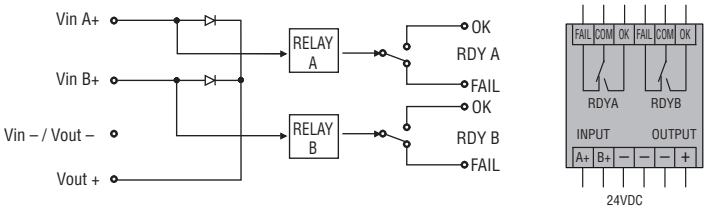
❶ Two-phase connection is permissible with a 25% output power derating.

REDUNDANCY MODULES

PSLRM1024



PSLR2024



MODULAR SWITCHING POWER SUPPLIES **PSL1M...** TYPES

TYPE Single phase	PSL1M01012 - PSL1M01024	PSL1M02412 - PSL1M02424	PSL1M03312 - PSL1M03624	PSL1M05412 - PSL1M06024	PSL1M07212 - PSL1M10024
INPUT CHARACTERITICS					
Rated supply voltage	Multivoltage 100...240VAC				
Operating range	90...264VAC / 120...375VDC				
Consumption (max)	300mA	600mA	900mA	1.5A	1.7/2.2A
Frequency range	47...63Hz				
PFC	—				
Insulation voltage Input/output	3000VAC (4242VDC)				
Internal fuse ❶	T1A 250VAC	T2A 250VAC			T3A 250VAC
OUTPUT CHARACTERISTICS					
Voltage	12VDC (PSL1M...12); 24VDC (PSL1M...24)				
Voltage trimming (potentiometer)	—	12...14VDC (PSL1M...12) 24...28VDC (PSL1M...24)			
Current	0.83A (PSL1M...12) 0.42A (PSL1M...24)	2A (PSL1M...12) 1A (PSL1M...24)	2.75A (PSL1M...12) 1.5A (PSL1M...24)	4.5A (PSL1M...12) 2.5A (PSL1M...24)	6A (PSL1M...12) 4.2A (PSL1M...24)
Temperature coefficient	±0.03%/°C				
Line adjustment	±1%				
Load adjustment	±1%				
Efficiency	78% (PSL1M...12) 80% (PSL1M...24)	84% (PSL1M...12) 85%(PSL1M...24)	83% (PSL1M...12) 84% (PSL1M...24)	84% (PSL1M...12) 86% (PSL1M...24)	86% (PSL1M...12) 89% (PSL1M...24)
Overload protection	125...185%	120...160%	110...150%	110...150%	110...150%
Short-circuit protection	Hiccup	Hiccup	Fold forward		
Ripple noise	50mV				
Parallel connection (n° of units)❷	—				
INDICATIONS					
LED indicator for power on	Yes				
LED indicator for low voltage	Yes				
Power Rdy (Ready) output	—				
AMBIENT CONDITIONS					
Operating temperature ❸	-40...+71°C				
Derating of the output power	from +61°C to +71°C by 2.5%/°C		from +56°C to +71°C by 2.5%/°C		from +61°C to +71°C by 2.5%/°C
Storage temperature	-40...+85°C				
HOUSING					
Material	Plastic				

❶ No replacement by user.
❷ Minimum load of 150mA.
❸ Maximum surrounding temperature of 50°C for use according to UL508.

COMPACT DIN RAIL MOUNT SWITCHING POWER SUPPLIES **PSE1...** TYPES

	PSE103024	PSE105024	PSE107224	PSE110024	PSE112024
	Multivoltage 100...240VAC				
	85...264VAC / 120...375VDC				
	750mA	1.3A	1.7A	2.3A	2.9A
	47...63Hz				
	–				
	3000VAC (4242VDC)				
	T2A 250VAC	T2A 250VAC	T3.15A 250VAC	T3.15A 250VAC	T4A 250VAC
	24VDC				
	22.5...28.5VDC				
	1.25A	2,1A	3A	4,2A	5A
	±0.03%°C				
	±1%				
	±1%				
	Up to 86%	Up to 87%	Up to 89%	Up to 88%	Up to 89%
	140%				
	Hiccup				
	100mV				
	–				
	Yes				
	–				
	–				
	-25...+71°C				
	from +51°C (+46°C for PSE110024) to +71°C by 2.5%/°C				
	-40...+85°C				
	Plastic				Metallic

DIN RAIL MOUNT SWITCHING POWER SUPPLIES **PSL...** TYPES

TYPE								
	Single phase	**PSL100524**	**PSL101024**	**PSL101824**	**PSL103024 PSL103048**	**PSL106024 PSL106048**	**PSL110024 PSL110048**	
	Two phase	—	—	—	—	—	—	
	Three phase	—	—	—	—	—	—	
INPUT CHARACTERITICS								
Rated supply voltage		Multivoltage 100...240VAC						
Operating range			90...264VAC / 120...375VDC		85...264VAC / 90..375VDC		90...264VAC 120...375VDC	
Consumption (max)		200mA	300mA	500mA	800mA	1.5A	2.4A	
Frequency range		47...63Hz						
PFC		—						
Insulation voltage Input/output		3000VAC (4242VDC)						
Internal fuse ❶		T2A 250VAC					T3.15A 250VAC	
OUTPUT CHARACTERISTICS								
Voltage		24VDC (PSL...24); 48VDC (PSL...48)						
Voltage trimming (potentiometer)			21.6...28.8VDC		24...28VDC 48...55VDC		22.5...28.5VDC 47...56VDC	
Current		0.21A	0.42A	0.75A	1.25A 0.625A	2.5A 1.25A	4.2A 2.1A	
Temperature coefficient		±0.03%/°C						
Line adjustment			±1%		±0.5%		±1%	
Load adjustment			±2%		±0.5%		±1%	
Efficiency		72%	76%	77%	86%	89%	86% 88%	
Overload protection			110...165%		110...150%		110...140%	
Short-circuit protection			Hiccup		Fold forward			
Ripple & noise		50mV						
Parallel connection (n° of units)❸		—					3	
INDICATIONS								
LED indicator for power on		Yes						
LED indicator for low voltage			Yes		—	—	Yes	
Power Rdy (Ready) output			—		Yes		Yes	
AMBIENT CONDITIONS								
Operating temperature ❹			-20...+71°C		-40...+71°C		-35...+71°C	
Storage temperature			-25...+85°C		-40...+85°C			
Derating of the output power		from +61°C to +71°C by 2.5%/°C						
HOUSING								
Material		Plastic						

❶ No replacement by user.
❷ Two-phase connection is possible with 25% power derating, except types PSL2100... and PSL312024.
❸ Minimum load of 150mA.
❹ Maximum surrounding temperature of 50°C for use according to UL508.

PSL112024 PSL112048	**PSL124024 PSL124048**	**PSL130024 PSL130048**	**PSL148024 PSL148048**	—	—	—	—	—
—	—	—	—	**PSL210024 PSL210048**	—	—	—	—
—	—	—	—	—	**PSL312024**	**PSL324024 PSL324048**	**PSL348024 PSL348048**	**PSL396024 PSL396048**
Self-configurable 115/230VAC				Multivoltage 400...500VAC ❷				
90...132VAC / 180...264VAC 210...375VDC			90...264VAC 120...375VDC	340...575VAC 480...820VDC				
2.8A	5.4A	6A	7A	750mA	500mA	850mA	1.4A	2.4A
47...63Hz								
0.7	0.75		0.97	0.55			0.65	0.8
3000VAC (4242VDC)								
T3.15A 250VAC	T6.3A 250VAC	T8A 250VAC	T10A 250VAC	T2A 600VAC			T3.15A 500VAC	T5A 500VAC
24VDC (PSL...24); 48VDC (PSL...48)								
22.5...28.5VDC 47...56VDC				22.5...28.5 VDC		22.5...28.5VDC 47...56VDC		
5A 2.5A	10A 5A	12.5A 6.25A	20A 10A	4.2A 2.1A	5A	10A 5A	20A 10A	40A 20A
0.03%/°C								
±0.5%				±1%				
±1%								
86% 87%	89% 90%		89% 90%	87% 89%	89%	90% 91%	90% 91%	92% 93%
110...145%	120...145%		110...140%	115...135%		120...140%	110...135%	
Fold forward				Hiccup			Fold forward	Hiccup
50mV	100mV			50mV	100mV			80mV
3				2	—	2	2	3
Yes								
Yes								
Yes								
-35...+71°C	-40...+71°C	-30...+71°C	-40...+71°C				-30...+71°C	-40...+71°C
-40...+85°C								
from +61°C to +71°C by 2.5%/°C		from +56°C to +71°C by 2.5%/°C		from +61°C to +71°C by 2.5%/°C				3.5%/°C (>60°C)
Metal				Plastic	Metal			

REDUNDANCY MODULES **PSLR...**

TYPE	**PSLRM1024**	**PSLR2024**
INPUTS CHARACTERISTICS		
Rated input voltage	12-24VDC	24VDC
Operating range	9...35VDC	21...28VDC
Number of input	2	2
Rated input current	10A	20A
Maximum input current (for channel)	8A for 300s	15A for 300s
OUTPUTS CHARACTERISTICS		
Output voltage drop	0.5V	0.5V
Rated output current	10A	20A
Maximum reverse voltage	35V	30V
Maximum output current	16A for 300s	30A for 300s
INDICATIONS		
DC ON indicator for input A	-	Yes
DC ON indicator for input B	-	Yes
Power Rdy (Ready) output	-	Ok if input >20V (±5%) or <30V(±5%) Fail if input <20V (±5%) or >30V(±5%) Rating 1A 30VDC
AMBIENT CONDITIONS		
Operating temperature / Storage temperature	-40...+71°C / -40...+85°C	
HOUSING		
Material	Plastic	Plastic