

Linear power supplies systron® PS-L

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systron® PS-L

This product range provides safety isolation and very precise voltage regulation. The systron® PS-L linear power supplies can be used in applications requiring very low output ripple voltage.

systron® PS-L provides the following advantages:

- Linear power supplies
- Excellent regulation +/- 5 %
- Very low ripple voltage +/- 1%
- Safety isolation acc. to EN 60950, EN 50178/VDE0160
- 4 kV isolation between primary / secondary
- Double terminal for power supply and output
- 115/ 230 V AC power supplies
- Power supply status indicated by an LED
- DIN rail mount
- UL listed, CSA certified, and CE marked

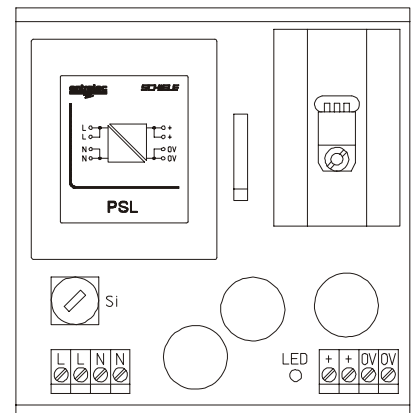
Linear power supply applications:

The systron® PS-L linear power supplies can be used to power electronic control devices including measuring or regulating equipment which require very precise voltage and very low EMC disturbances, for example, medical equipment.

An integral input fuse makes these power supplies safe; an additional external fuse is not needed.

The new systron® PS-L power supplies easily snap onto a 35 mm DIN rail. They provide safety isolation according to EN 60950; electrical safety meets EN50178/VDE0160.

Separate windings with double or reinforced insulation between primary and secondary provide these power supplies with an isolation voltage of 4 kV.



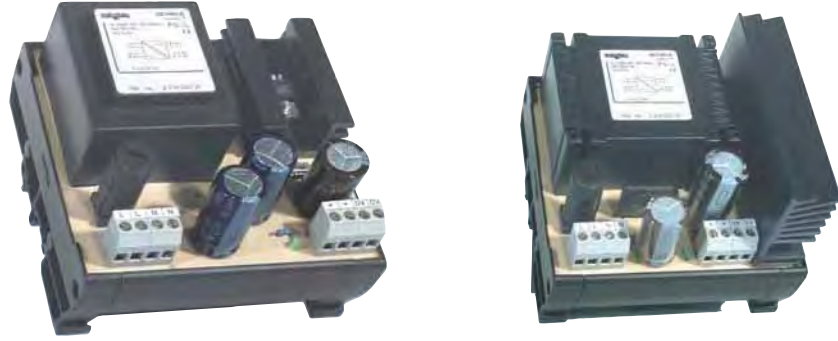
The double input terminals allow easy wiring of the power supplies. Some power supplies also offer a dual +/- output voltage.

systron® PS-L

Linear Power Supplies

Entrelec's Linear Power Supply range, with a universal DIN rail foot, allows the supplies to snap onto all available DIN/EN rails (EN 50035 and EN 50045).

- Double terminals for input and output voltage allow additional connections to be made.
- Dual (+/-) output voltage stabilized and precisely regulated.
- All power supplies are available with 230 V AC or 115 V AC input voltage and deliver a stabilized and precisely regulated DC output voltage with very low residual ripple.
- The output is short-circuit and overload protected.
- An LED gives operational status



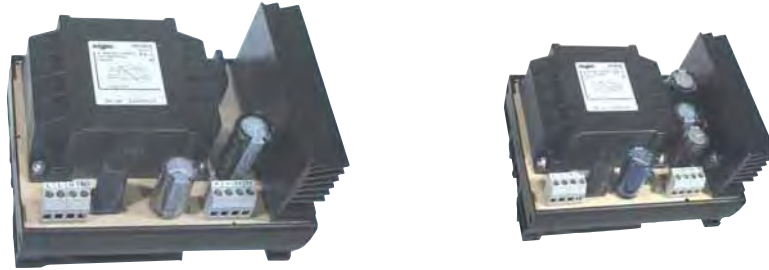
	5 V DC - Regulated		12 V DC - Regulated		15 V DC - Regulated	
	systron® PS-L	P/N:	systron® PS-L	P/N:	systron® PS-L	P/N:
	5 V DC / 1A 115 V AC 5 V DC / 1A 230 V AC	2 419 500 30 2 419 500 31	12 V DC / 0.5A 115 V AC 12 V DC / 0.5A 230 V AC 12 V DC / 1A 115 V AC 12 V DC / 1A 230 V DC	2 419 501 10 2 419 501 11 2 419 501 30 2 419 501 31	15 V DC / 0.5A 115 V AC 15 V DC / 0.5A 230 V AC 15 V DC / 1A 115 V AC 15 V DC / 1A 230 V DC	2 419 502 10 2 419 502 11 2 419 502 30 2 419 502 31
Approvals						
Technical data	115 V AC	230 V AC	115 V AC	230 V AC	115 V AC	230 V AC
Input						
Supply voltage range	115 VAC ± 10%	230 V AC ± 10%	115 VAC ± 10%	230 V AC ± 10%	115 VAC ± 10%	230 V AC ± 10%
Frequency AC input	47 ... 63 Hz		47 ... 63 Hz		47 ... 63 Hz	
Output load hold time with input voltage drop out	min 5 ms with 100% load		min 5 ms with 100% load		min 5 ms with 100% load	
Input current at nominal load 0.25A						
Input current at nominal load 0.5A			typ. 0.14 A	typ. 0.07 A	typ. 0.14 A	typ. 0.07 A
Input current at nominal load 0.75A						
Input current at nominal load 1.0A	typ. 0.16A	typ. 0.08A	0.32 A	typ. 0.16 A	typ. 0.35 A	typ. 0.175 A
Internal input fuse 0.25 A						
Internal input fuse 0.5A			0.4 A (slow blow)	0.2 A (slow blow)	0.4 A (slow blow)	0.2 A (slow blow)
Internal input fuse 0.75A						
Internal input fuse 1A	0.2A (slow blow)	0.125A (slow blow)	0.315 A (slow blow)	0.2 A (slow blow)	0.4 A (slow blow)	0.2 A (slow blow)
Output						
Output voltage	5 V DC ± 5%		12 V DC ± 5%		15 V DC ± 5%	
Output current	1A		0.5 / 1A		0.5 / 1A	
Residual ripple/noise	max. ± 1%	max. ± 1%	max. ± 1%	max. ± 1%	max. ± 1%	max. ± 1%
Short-circuit protection	overcurrent switch off with automatic restart		overcurrent switch off with automatic restart		overcurrent switch off with automatic restart	
Overload protection	overcurrent and overtemperature switch off		overcurrent and overtemperature switch off		overcurrent and overtemperature switch off	
Reset after thermal overload	automatic after cooling		automatic after cooling		automatic after cooling	
Standards, approvals						
Electrical safety standards, approvals	EN 50178 (VDE 0160)		EN 50178 (VDE 0160)		EN 50178 (VDE 0160)	
Galvanic isolation	isolation acc. to EN 60950		isolation acc. to EN 60950		isolation acc. to EN 60950	
Voltage withstand input<->output	4kV AC, 4kV AC test		4kV AC, 4kV AC test		4kV AC, 4kV AC test	
Clearance and creepage distances according to:	overvoltage category III pollution degree 2		overvoltage category III pollution degree 2		overvoltage category III pollution degree 2	
Electromagnetic immunity (EMC) in acc. with EN 50082-2	ESD: EN 61000-4-2, level 3(6/8kV) HF fields: EN 61000-4-3, level (10V/m); Burst: EN 610004-4, level 3(2kV); Surge: EN 61000-4-5, level 3(2kV); Conducted RF: EN 61000-4-6, level 3 (10V)		ESD: EN 61000-4-2, level 3(6/8kV) HF fields: EN 61000-4-3, level (10V/m); Burst: EN 610004-4, level 3(2kV); Surge: EN 61000-4-5, level 3(2kV); Conducted RF: EN 61000-4-6, level 3 (10V)		ESD: EN 61000-4-2, level 3(6/8kV) HF fields: EN 61000-4-3, level (10V/m); Burst: EN 610004-4, level 3(2kV); Surge: EN 61000-4-5, level 3(2kV); Conducted RF: EN 61000-4-6, level 3 (10V)	
Input current harmonics	no limitations		no limitations		no limitations	
Protection against contact	Terminal	IP 20	Terminal	IP 20	Terminal	IP 20
	Housing	IP 20	Housing	IP 20	Housing	IP 20
Protection class	2, with external product protection		2, with external product protection		2, with external product protection	
General characteristics						
Status indication	Green LED		Green LED		Green LED	
Operating temperature	-20 ... +50°C		-20 ... +50°C		-20 ... +50°C	
Storage temperature	-40 ... +80°C		-40 ... +80°C		-40 ... +80°C	
Terminals	screw terminals, 14 AWG (2.5 mm ²)		screw terminals, 14 AWG (2.5 mm ²)		screw terminals, 14 AWG (2.5 mm ²)	
Dimensions LxHxW, 0.25A						
Dimensions LxHxW, 0.5A: 100 x 104 x 79 mm			3.94 x 4.09 x 3.11 in	3.94 x 4.09 x 3.11 in	3.94 x 4.09 x 3.11 in	3.94 x 4.09 x 3.11 in
Dimensions LxHxW, 0.75A						
Dimensions LxHxW, 1 A: 100 x 104 x 79/90 mm	3.94 x 4.09 x 3.11 in	3.94 x 4.09 x 3.11 in	3.94 x 4.09 x 3.54 in	3.94 x 4.09 x 3.54 in	3.94 x 4.09 x 3.54 in	3.94 x 4.09 x 3.54 in
Weight, 0.25A-0.5A, approximately			1.37 lb. (0.62kg)	1.37 lb. (0.62kg)	1.37 lb. (0.62kg)	1.37 lb. (0.62kg)
Weight, 0.75A, approximately						
Weight, 1A, approximately	1.37 lb. (0.62kg)	1.37 lb. (0.62kg)	1.72 lb. (0.78kg)	1.72 lb. (0.78kg)	1.72 lb. (0.78kg)	1.72 lb. (0.78kg)
Mounting information	Normal position: horizontal onto DIN rail. Spacing to other modules: upper 100 mm, lower 50 mm, sides 20 mm		Normal position: horizontal onto DIN rail. Spacing to other modules: upper 100 mm, lower 50 mm, sides 20 mm		Normal position: horizontal onto DIN rail. Spacing to other modules: upper 100 mm, lower 50 mm, sides 20 mm	

systron® PS-L

Linear Power Supplies

Entelec's Linear Power Supply range, with a universal DIN rail foot, allows the supplies to snap onto all available DIN/EN rails (EN 50035 and EN 50045).

- Double terminals for input and output voltage allow additional connections to be made.
- Dual (+/-) output voltage stabilized and precisely regulated.
- All power supplies are available with 230 V AC or 115 V AC input voltage and deliver a stabilized and precisely regulated DC output voltage with very low residual ripple.
- The output is short-circuit and overload protected.
- An LED gives operational status



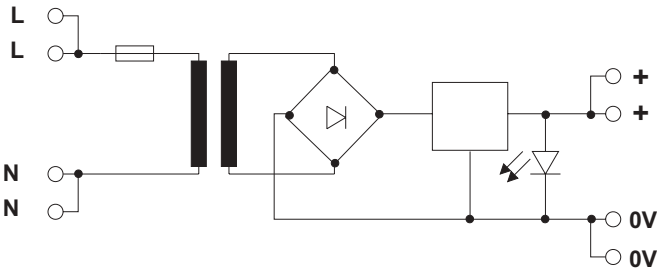
	24 V DC - Regulated		±12 V DC - Regulated		±15 V DC - Regulated	
	systron® PS-L	P/N:	systron® PS-L	P/N:	systron® PS-L	P/N:
	24 V DC / 0.25A 115 V AC 24 V DC / 0.25A 230 V AC 24 V DC / 0.75A 115 V AC 24 V DC / 0.75A 230 V DC	2 419 503 00 2 419 503 01 2 419 503 20 2 419 503 21	± 12 V DC / 0.5A 115 V AC ± 12 V DC / 0.5A 230 V AC	2 419 511 10 2 419 511 11	± 15 V DC / 0.5A 115 V AC ± 15 V DC / 0.5A 230 V AC	2 419 512 10 2 419 512 11
Approvals						
Technical data	115 V AC	230 V AC	115 V AC	230 V AC	115 V AC	230 V AC
Input						
Supply voltage range	115 VAC ± 10%	230 V AC ± 10%	115 VAC ± 10%	230 V AC ± 10%	115 VAC ± 10%	230 V AC ± 10%
Frequency AC input	47 ... 63 Hz		47 ... 63 Hz		47 ... 63 Hz	
Output load hold time with input voltage drop out	min 5 ms with 100% load		min 5 ms with 100% load		min 5 ms with 100% load	
Input current at nominal load 0.25A	typ. 0.14 A		typ. 0.07 A		typ. 0.07 A	
Input current at nominal load 0.5A			typ. 0.32 A	typ. 0.16 A	typ. 0.35 A	typ. 0.175 A
Input current at nominal load 0.75A	typ. 0.35 A		typ. 0.175 A			
Input current at nominal load 1.0A						
Internal input fuse 0.25	0.4 A (slow blow)	0.16 A (slow blow)				
Internal input fuse 0.5A			0.315 A (slow blow)	0.2 A (slow blow)	0.4 A (slow blow)	0.2 A (slow blow)
Internal input fuse 0.75A	0.4 A (slow blow)	0.2 A (slow blow)				
Internal input fuse 1A						
Output						
Output voltage	24 V DC ± 5%		12 V DC ± 5%		15 V DC ± 5%	
Output current	0.25 A / 0.75 A		0.5 A		0.5 A	
Residual ripple/noise	max. ± 1%	max. ± 1%	max. ± 1%	max. ± 1%	max. ± 1%	max. ± 1%
Short-circuit protection	overcurrent switch off with automatic restart		overcurrent switch off with automatic restart		overcurrent switch off with automatic restart	
Overload protection	overcurrent and overtemperature switch off		overcurrent and overtemperature switch off		overcurrent and overtemperature switch off	
Reset after thermal overload	automatic after cooling		automatic after cooling		automatic after cooling	
Standards, approvals						
Electrical safety standards, approvals	EN 50178 (VDE 0160)		EN 50178 (VDE 0160)		EN 50178 (VDE 0160)	
Galvanic isolation	isolation acc. to EN 60950		isolation acc. to EN 60950		isolation acc. to EN 60950	
Voltage withstand input<->output	4kV AC, 4kV AC test		4kV AC, 4kV AC test		4kV AC, 4kV AC test	
Clearance and creepage distances according to:	overvoltage category III		overvoltage category III		overvoltage category III	
	pollution degree 2		pollution degree 2		pollution degree 2	
Electromagnetic immunity (EMC) in acc. with EN 50082-2	ESD: EN 61000-4-2, level 3(6/8kV) HF fields: EN 61000-4-3, level (10V/m); Burst: EN 610004-4, level 3(2kV); Surge: EN 61000-4-5, level 3(2kV); Conducted RF: EN 61000-4-6, level 3 (10V)		ESD: EN 61000-4-2, level 3(6/8kV) HF fields: EN 61000-4-3, level (10V/m); Burst: EN 610004-4, level 3(2kV); Surge: EN 61000-4-5, level 3(2kV); Conducted RF: EN 61000-4-6, level 3 (10V)		ESD: EN 61000-4-2, level 3(6/8kV) HF fields: EN 61000-4-3, level (10V/m); Burst: EN 610004-4, level 3(2kV); Surge: EN 61000-4-5, level 3(2kV); Conducted RF: EN 61000-4-6, level 3 (10V)	
Input current harmonics	no limitations		no limitations		no limitations	
Protection against contact	Terminal	IP 20	Terminal	IP 20	Housing	IP 20
	Housing	IP 20	Housing	IP 20		IP 20
Protection class	2, with external product protection		2, with external product protection		2, with external product protection	
General characteristics						
Status indication	Green LED		Green LED		Green LED	
Operating temperature	-20 ... +50°C		-20 ... +50°C		-20 ... +50°C	
Storage temperature	-40 ... +80°C		-40 ... +80°C		-40 ... +80°C	
Terminals	screw terminals, 14 AWG (2.5 mm ²)		screw terminals, 14 AWG (2.5 mm ²)		screw terminals, 14 AWG (2.5 mm ²)	
Dimensions LxHxW, 0.25A: 100 x 104 x 79 mm	3.94 x 4.09 x 3.11 in	3.94 x 4.09 x 3.11 in				
Dimensions LxHxW, 0.5A: 135 x 104 x 90 mm			5.31 x 4.09 x 3.54 in	5.31 x 4.09 x 3.54 in	5.31 x 4.09 x 3.54 in	5.31 x 4.09 x 3.54 in
Dimensions LxHxW, 0.75A: 135 x 104 x 90 mm	5.31 x 4.09 x 3.54 in	5.31 x 4.09 x 3.54 in				
Dimensions LxHxW, 1A						
Weight, 0.25A-0.5A, approximately	1.37 lb. (0.62kg)	1.37 lb. (0.62kg)	2.36 lb. (1.07kg)	2.36 lb. (1.07kg)	2.36 lb. (1.07kg)	2.36 lb. (1.07kg)
Weight, 0.75A, approximately	2.31 lb. (1.05kg)	2.31 lb. (1.05kg)				
Weight, 1A, approximately						
Mounting information	Normal position: horizontal onto DIN rail. Spacing to other modules: upper 100 mm, lower 50 mm, sides 20 mm		Normal position: horizontal onto DIN rail. Spacing to other modules: upper 100 mm, lower 50 mm, sides 20 mm		Normal position: horizontal onto DIN rail. Spacing to other modules: upper 100 mm, lower 50 mm, sides 20 mm	

Product overview

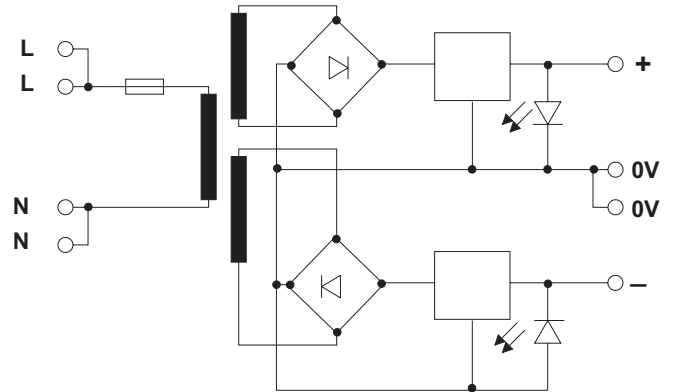
Output voltage \ Input voltage	5 V DC 1 A	12 V DC 0.5 A	12 V DC 1 A	15 V DC 0.5 A	15 V DC 1 A	24 V DC 0.25 A	24 V DC 0.75 A	+/-12 V DC 0.5 A	+/-15 V DC 0.5 A
115 V AC	2 419 500 30	2 419 501 10	2 419 501 30	2 419 502 10	2 419 502 30	2 419 503 00	2 419 503 20	2 419 511 10	2 419 512 10
230 V AC	2 419 500 31	2 419 501 11	2 419 501 31	2 419 502 11	2 419 502 31	2 419 503 01	2 419 503 21	2 419 511 11	2 419 512 11

Function diagrams:

Unipolar output products



Bipolar (+/-) output products

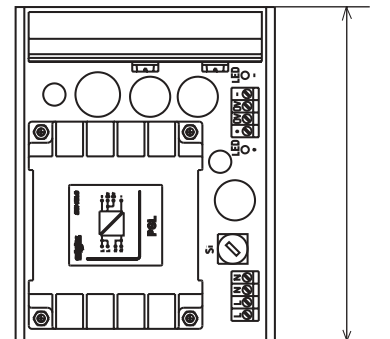
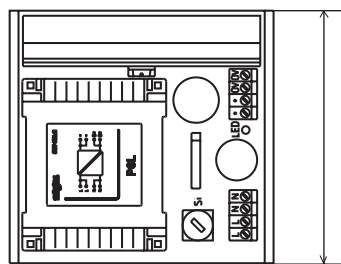
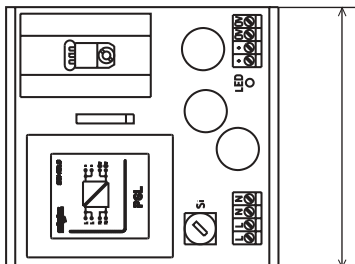
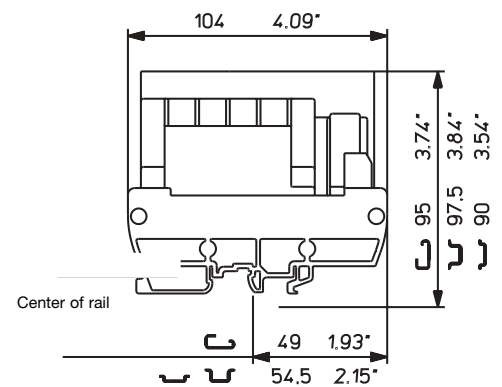
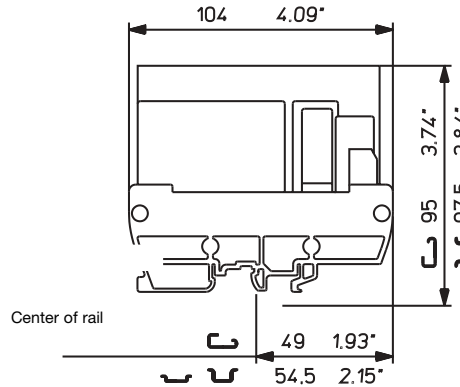
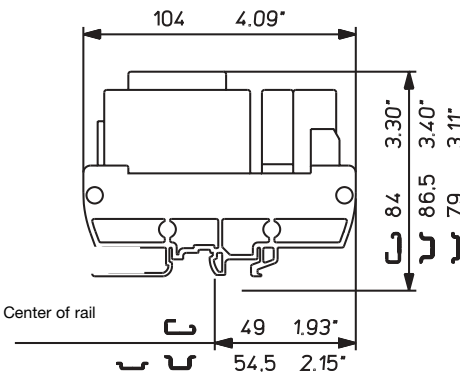


Dimensions of the PS-L:

systron® PS-L 5V/1A, 12V/0.5A, 15V/0.5A, 24V/0.25A

systron® PS-L 12V/1A, 15V/1A

systron® PS-L +/-12V/0.5A, +/-15V/0.5A, 24V/0.75A



Regulator

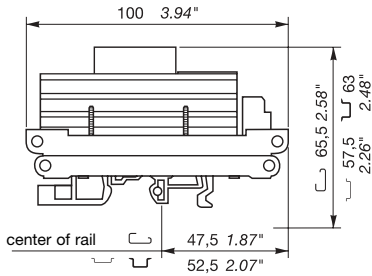
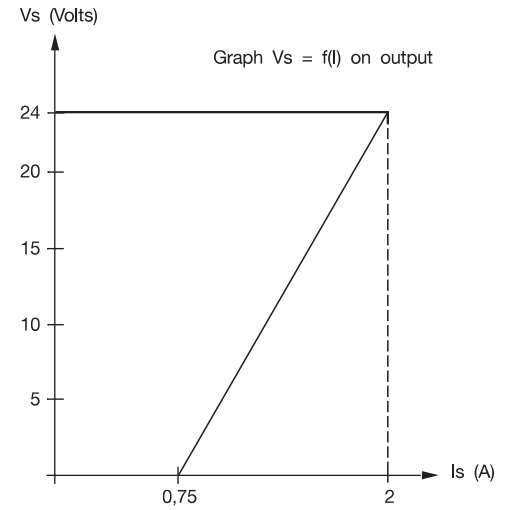
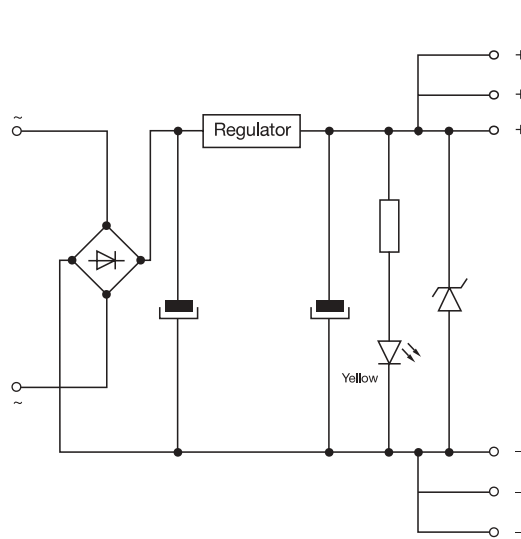
Series 20 000

DIN 1 - 3

24 V AC to 24 V DC / 1 A Regulator

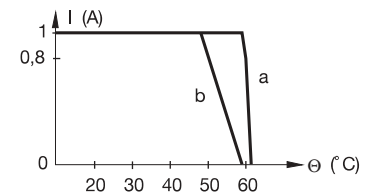
AL 24-24/1

Spacing 104,1 mm 4.1"



Change a 24 V AC signal into a regulated and filtered 24 V DC voltage

Ambient temperature derating curve



a : horizontal position
b : vertical position

Part numbers

Type	P/N
AL 24-24/1	0020 457.25

Approvals (Contact Entrelec)



Characteristics

INPUT	
Input voltage	24 V +10%, -5%
Frequency	50 or 60 Hz
Rated power supply	40 VA
Visualization	yellow LED
OUTPUT	
Output voltage	24 V DC ± 4%
Max. current	1 A
Peak ripple voltage	< 50 mV
TEMPERATURE	
Storage temperature	- 40°C to + 80°C
Operating temperature	- 20°C to + 61°C

Accessories, marking, wire size : see related sections.