

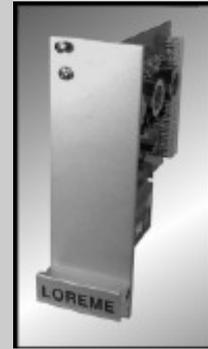
# Instrumentation 24Vdc power supply for 4-20mA loop current. Rack 19" mounting ALR20 and AL100



- **Linear or SMPS version**
- **Total protection**  
short-circuits, overload, thermal
- **1 to 8 insulated outputs AL100**
- **1 to 4 insulated outputs ALR20**
- **small footprint**  
SMPS version 23 mm  
linear version 35 mm
- **Applications**  
4..20 mA loop power supply,  
instrumentation, sensors,....



ALR20



AL100

These supplies are available in 1 to 8 outputs and are particularly suitable for the implementation of converters in two wires technology (loop powered 4 ... 20mA). The isolation between each output eliminates ground loop problems that may affect the measurement. Each output being independent and of low power, the risk of damage to the material is discarded compared to the use of a single high output power supply. The independence of each loop greatly increases the reliability of the system. The outputs allow all wiring combinations to suit specific needs, their use in serial or parallel can achieve balanced output, increase the output current or voltage.

**Description:**

- The SMPS version allow high power density without heating due to its high efficiency. It also adapts to a wide range of input voltage (AC or DC)
- The linear version is particularly suitable for applications requiring a very stable output voltage or noise-free.

**specifications:**

- 1 to 8 isolated channels allowing coupling the outputs in series or parallel, thereby obtaining exotic or symmetric output voltages, or to increase the available output current,
- 24 Vdc output voltage typical,
- Any output voltage available on request from 0 to 24Vdc,
- Permanent protection against short circuits,
- Overload protection,
- Thermal protection (output power limitation),
- Convection cooling,
- Embedded EMC filter in accordance with EN55022 class A,
- Regulated output voltage,
- Protection against output transient by 24V clipper.

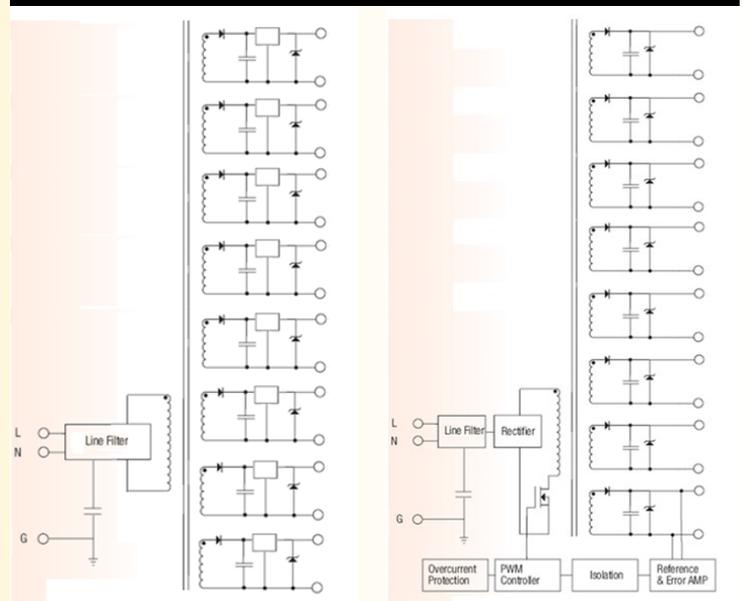
**Realization:**

- 19" rack mounting, 3U height
- ALR20:** - Format Eurocard 160 x 100 x 4TE width (20mm)
- 1 to 4 outputs, default voltage 24 Vdc, 30 mA.
- ALR100:** - Format Eurocard 160 x 100 x 8TE width (40mm)
- 1 to 8 outputs, default voltage 24 Vdc, 30 mA.
- DIN 41612 connector, any type H11, H15 ...
- Conformal coating,
- Green primary voltage presence LED,
- Connection by screw terminals, wire section up to 2.5 mm<sup>2</sup>.

**Implementation and installation recommendations:**

- primary protection with fuse (delayed 2A) recommended.

**Bloc diagram**



**Version and order code:**

[Request a quote](#)

**Linear or SMPS versions:**

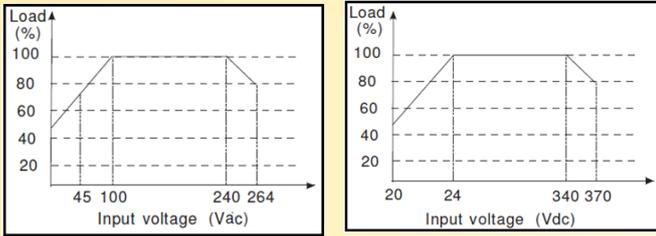
- ALR20-n :** n : number of 24V 30mA (maximum 4)  
input 230Vac or 115Vac  
others output voltage available on request  
Format Eurocard 160 x 100 x 4TE width (20mm)
- AL100-n :** n : number of 24V 30mA (maximum 8) outputs  
input 20...265 Vac-dc  
others output voltage available on request  
Format Eurocard 160 x 100 x 8TE width (40mm)

**Power Supply**

**SMPS version:**

Input voltage 45...265VAC / 20...370VDC  
 Input frequency 47...440Hz  
 Typical efficiency 85%  
 Inrush current 2A typical

Output power characteristics as a function of the input voltage



**Linear version:**

Input voltage 230VAC ou 115Vac +/-15%  
 Input frequency 45...65Hz

**Outputs**

**SMPS version:**  
 Accuracy ±2% max. (no load)  
 Regulation -5% max. (full load)  
 Ripple < 1% Vout max (limited to 20MHz)  
 Continuous short circuit protection, automatic restart.  
 Overload protection 110% typ.  
 Switching frequency 100kHz typ.  
 Output hold time Typical 50 ms.

**Linear version:**

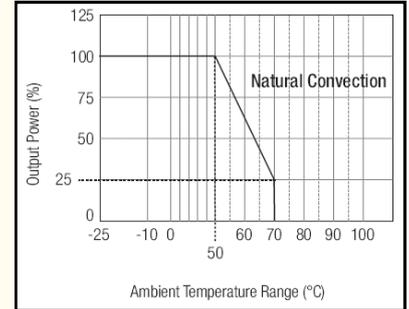
Voltage (standard) 24 Vdc (+/- 2 %)  
 Output current 30 mA max (at 24V)  
 the output current is a function of the voltage  
 the maximum power per output is 1Watt

Load influence 0.1 % max 0.001 % typ.  
 noise < 20 mV p. to p.  
 Thermal drift 1 mV / °C

**RECOMMENDED OPERATING CONDITIONS**

Operating temperature -10 °C to 60 °C (natural convection)  
 Thermal protection 100 °C internal  
 Storage -20 °C to 105 °C  
 Relative humidity 85 % (not condensed)  
 Temperature coefficient ±0.02%/°C typical  
 Insulation resistance 100 MΩ min.  
 Dielectric strength 2000VAC (input / output)  
 Weight 100 g to 400 g model dependant  
 MTBF (+25°C) > 700 000 hours

Output power vs ambient temperature characteristics



**Electromagnetic compatibility**

Generic standards: **NFEN50081-2 /NFEN50082-2**



<b>EN55011</b>	meet	group 1 / classe A	
<b>EN61000-4-2</b>	no influence	B	<b>EN61000-4-3</b> < +/- 5 % A
<b>EN61000-4-4</b>	< +/- 5 %	B	<b>EN61000-4-6</b> < +/- 5 % A
<b>EN61000-4-5</b>	< +/- 5 %	B	
<b>EN61000-4-8</b>	no influence	A	
<b>EN61000-4-11</b>	< +/- 5 %	B	<b>DBT 2006/95/CE</b>

**WIRING AND OUTLINE DIMENSIONS:**

