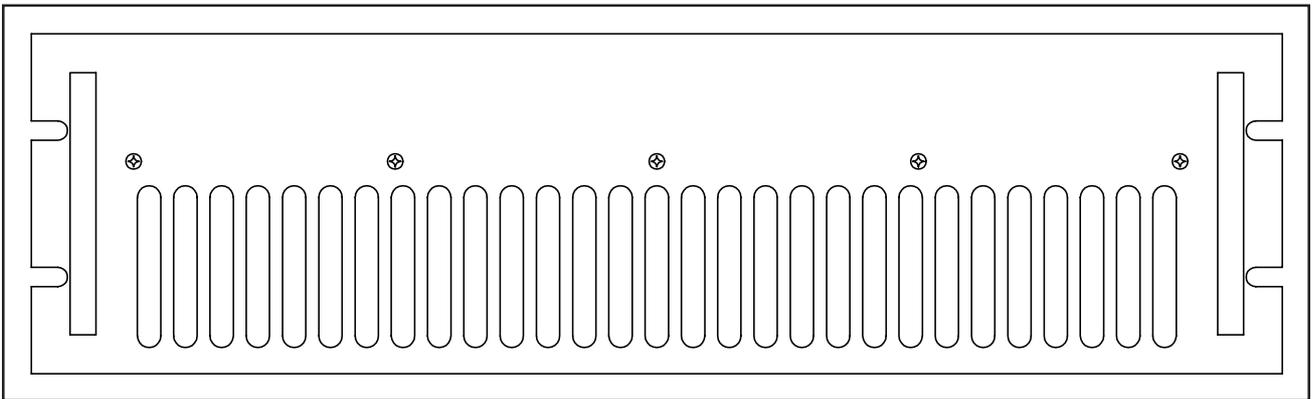

EDL1000-FM



User manual

Manufactured by  Italy



Table of contents

1.	Introduction	1
2.	Working principle	1
3.	External description	2
4.	Power derating	2
5.	Technical specifications	3
4.	Schematics and images	3

1. Introduction

The **EDL1000-FM** is a *dummy load* produced by RVR Elettronica SpA to be used with FM transmitter with nominal power up to 1000 W.

Dummy loads are mainly used as laboratory test devices and are often included in redundant (1+1 or N+1) transmission systems, in which the output of the spare transmitter is normally connected to the dummy load for test purposes.

The **EDL1000-FM** is particularly suited for the use in transmission systems, thanks to its form-factor (rack mountable in standard 19" racks) and the availability of interlock connectors to link it with the changeover unit.

2. Working principle

Simply speaking, the **EDL1000-FM** is just a 50 Ω resistive load, optimized to work in the audio FM band.

The applied power is dissipated by four 50 Ω power resistors connected in a series/parallel configuration (see the enclosed schematic). Three inductors are used to compensate the parasitic capacitance of the resistors, to obtain a return loss better than 20 dB on the whole 87.5 - 108 MHz band.

The resistors are fixed on a metal heatsink, and three fans generate the air flow to let the heat pass to the environment.

The fans are activated by a thermal bimetallic switch, that is normally opened and will close as soon as the heatsink's temperature surpasses 50 °C.

Another thermal bimetallic switch, normally closed, opens as soon as the temperature surpasses 90 °C. The status of this switch has the meaning of an "interlock", and is available on two connectors, a DB25 and a BNC.



WARNING: Always connect the power source (the transmitter) using the interlock connectors, to avoid the possibility of an excessive temperature rise that could damage the dummy load and even the transmitter itself!

3. External description

The front panel of the EDL1000-FM only contains the grid for the airflow.



WARNING: don't cover the airflow grid, to ensure proper functioning of the device.

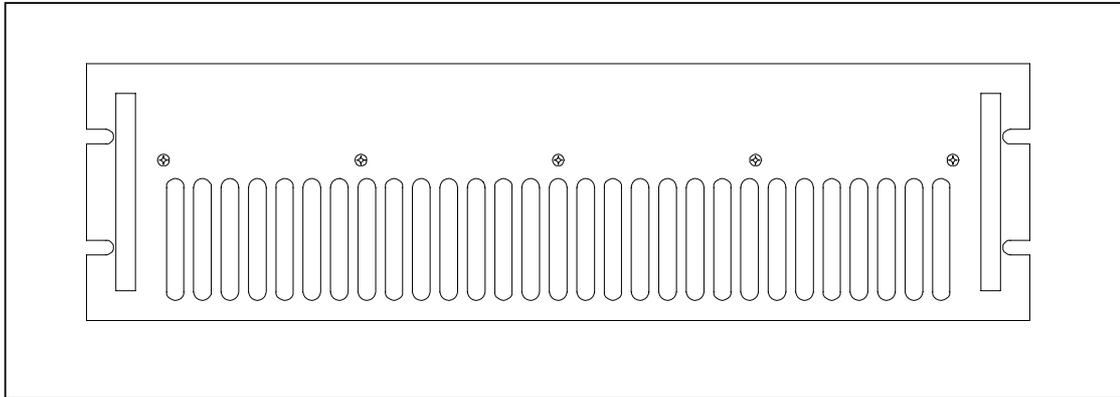


Figure 1: Front panel

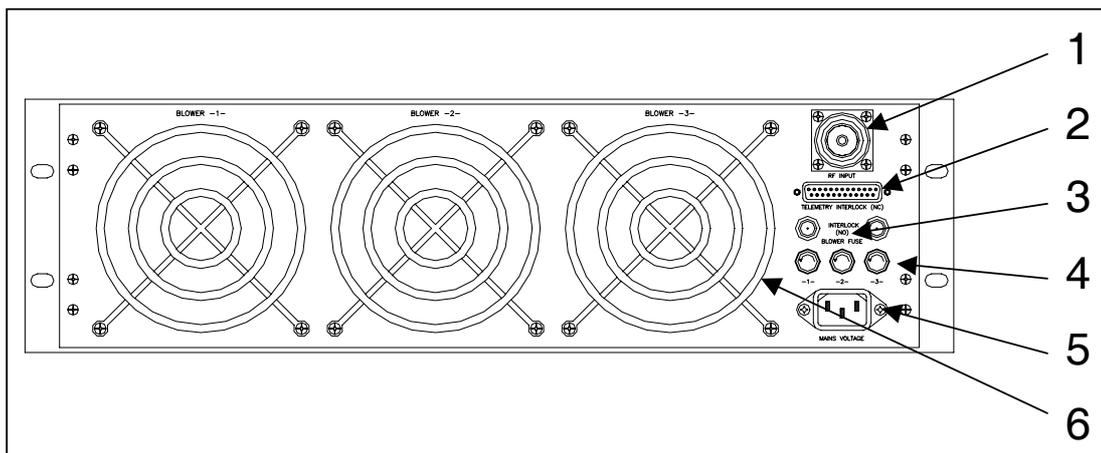


Figura 2: Rear panel

- [1] Input connector (7/16")
- [2] Interlock connector. DB25 with pin 17 normally connected to ground, floating in case of interlock
- [3] Interlock connectors. BNC with inner normally grounded, floating in case of interlock
- [4] Mains fuses for the fans (1A rapid each)
- [5] VDE plug for mains supply (220 AC)
- [6] Fans

4. Power derating

The power that the EDL1000-FM can continuously dissipate depends on the temperature of the environment.

Since the dummy load can work at a temperature up to 90 °C before the protection device is triggered, figure 2 gives the acceptable working area of the device.



WARNING: Please remember that it is essential to link the transmitter to the interlock connectors of the EDL1000-FM, to avoid the risk of damaging it.

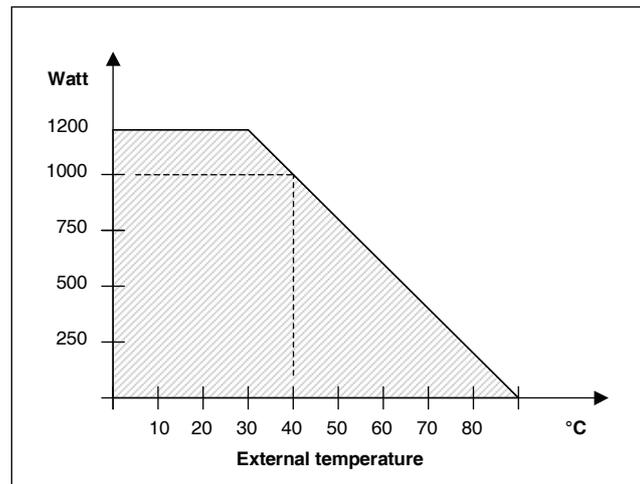


Figure 3: Working area

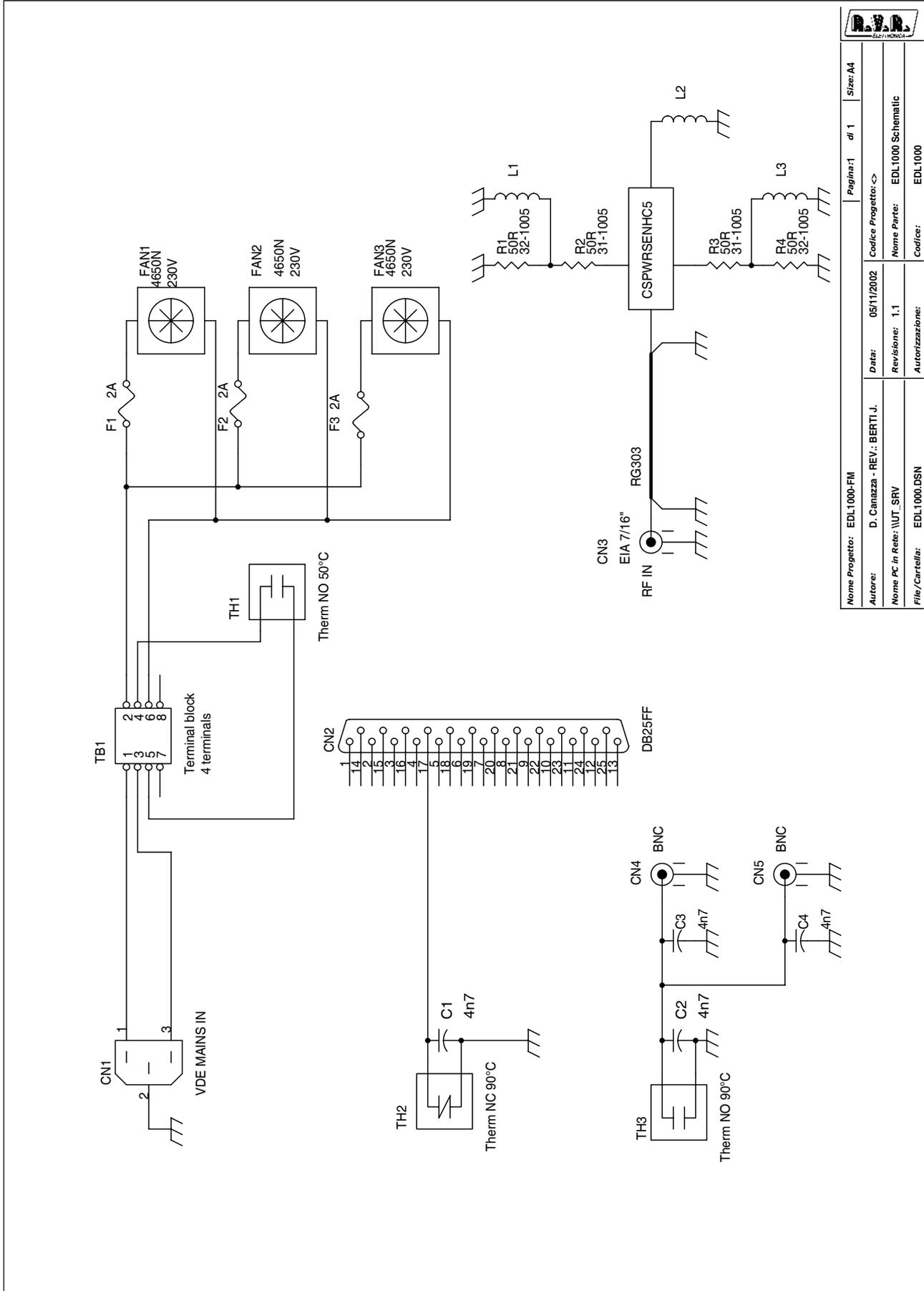
5. Technical specifications

Frequency band	87.5 - 108.0 MHz
Nominal power at 40°C	1000 W
Power derating at t > 40 °C	2 W/°C
Return loss	> 20 dB
Power supply	220V ac +/- 10%
Fuse	2 A
Size	(L x H x D) 483 x 132 x 510 mm
Weight	19 kg

6. Schematics and images

This chapter contains the schematic of the EDL1000-FM, and some image of the internal of the device

In Figure 3, please nothe the two thermal switches. The upper one, protected by a plate to avoid hazardous contact with the ac voltage, is used to switch on the fans. The second switch is the interlock one.



Nome Progetto: EDL1000-FM	Pagina: 1 di 1	Size: A4
Autore: D. Canazza - REV.: BERTI J.	Date: 05/11/2002	Codice Progetto: <>
Nome PC in Rete: \UT_SRV	Revisione: 1.1	Nome Parte: EDL1000 Schematic
File/Cartella: EDL1000.DSN	Autore: BERTI J.	Codice: EDL1000

Bill Of Materials

Item	Q.ty	Ref	Description
1	1	CN1	VDE MAINS IN
2	1	CN2	DB25FF
3	1	CN3	EIA 7/16"
4	2	CN4, CN5	BNC_IS90
5	4	C1, C2, C3, C4	4n7
6	1	FAN1	4650N 220V
7	2	FAN2, FAN3	FAN
8	3	F1, F2, F3	2A
9	3	L1, L2, L3	IND
10	4	R1, R2, R3, R4	50R
11	1	TB1	STM08D
12	1	TH1	Therm NO 50°C
13	1	TH2	Therm NC 90°C
14	1	TH3	Therm NO 90°C

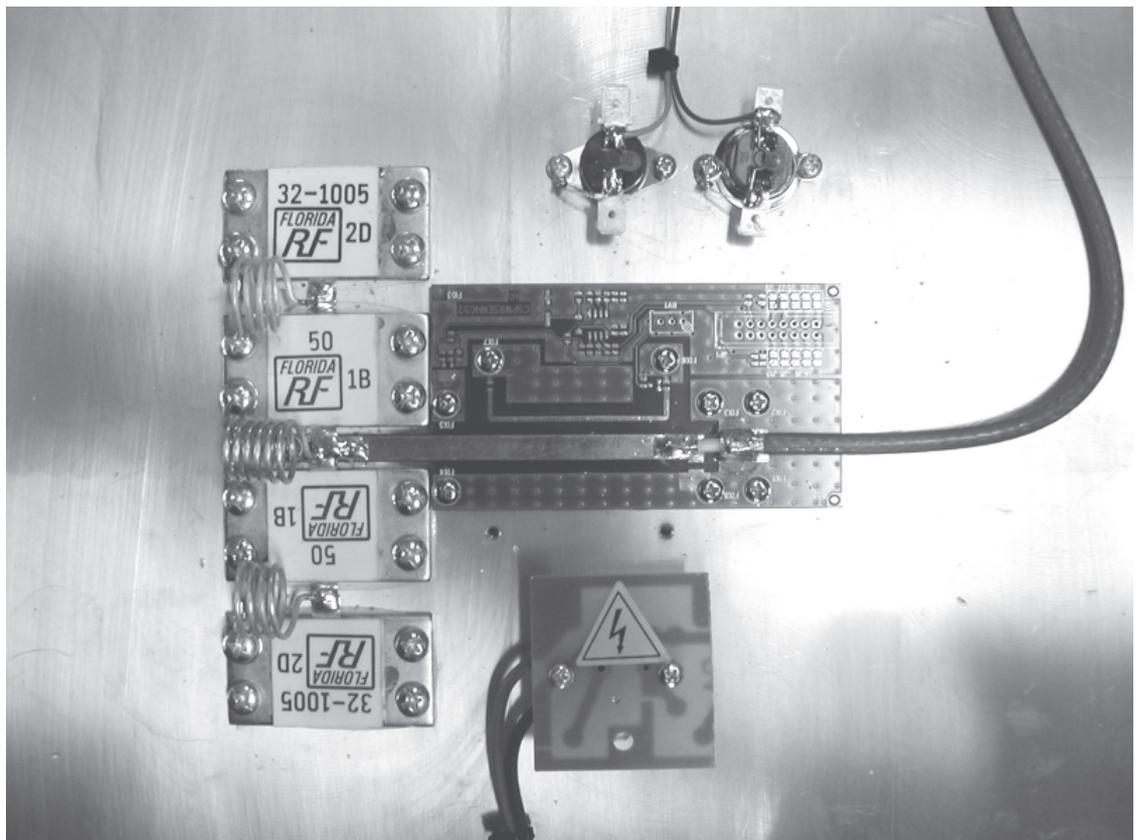


Figure 4 - Power resistors and thermal switches



This page was intentionally left blank