

# MULTICHANNEL AMPLIFIERS SA91L, SA91DL

## PRODUCT DESCRIPTION

Multichannel amplifiers SA91L, SA91DL are parts of medium or large SMATV networks.

SA91L is designed as a launch amplifier and usually is installed at the beginning of network. Its main purposes are:

- to equalize the power of signals in different lines;
- to make amplitude pre-correction of signal for compensation its loss in network;
- to supply voltage to LNB converters and other network elements like interstage amplifiers SA91DL, MV series multiswitches, terrestrial path amplifiers and so on.

SA91DL is designed as interstage amplifier with remote powering. Generally it is installed inside cascaded type networks to compensate signal loss in trunk lines. It could be used as a launch amplifier if additional power supply is plugged to relative connector.

Suitable for moderate and tropical climates.

The amplifiers are intended for indoor use only.

## SAFETY INSTRUCTIONS

Installation of the amplifiers must be done according IEC60728-11 and national safety standards.

Amplifier SA91L is powered from mains 230 V~ (this voltage is dangerous to life) and SA91DL - from line 12...20 V DC through input connectors or auxiliary DC input.

Any repairs must be done by a qualified personnel.

Amplifier SA91L is double isolated from mains 230 V~.

To avoid the electric shock follow these instructions:

Do not remove the cover of the power supply section, without disconnecting the amplifier from the mains supply.

Do not plug the amplifier into the mains supply if the power cord or plug is damaged.

Do not plug the amplifier SA91L into the mains supply until all cables have been connected correctly.

To disconnect the amplifier SA91L completely - disconnect plug from the mains socket.

The mains socket must be easily accessible.

To disconnect the amplifier SA91DL completely from supply voltage, disconnect the cable from input connector.

The amplifiers shall not be exposed to dripping or splashing water and no objects filled with liquids, such as vases, shall be placed on it.

Avoid placing amplifier next to central heating components, near highly combustible materials and in areas of high humidity.

No naked flame sources, such as lighted candles, should be placed on amplifiers.

If the amplifier has been kept in cold conditions for a long time, keep it in a warm room no less than 2 hours before plugging into the mains.

Do not insert any objects into ventilation openings.

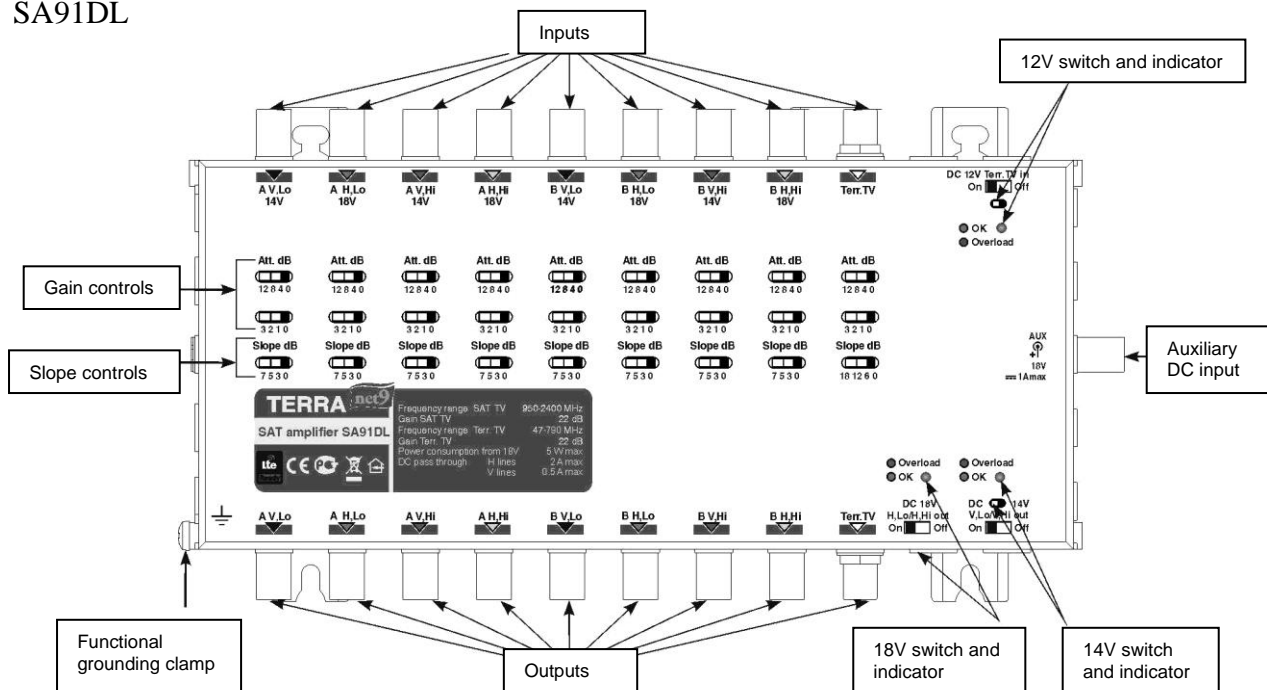
The ventilation should not be impeded by covering the ventilation openings with items, such as newspapers, table-cloths, curtains.

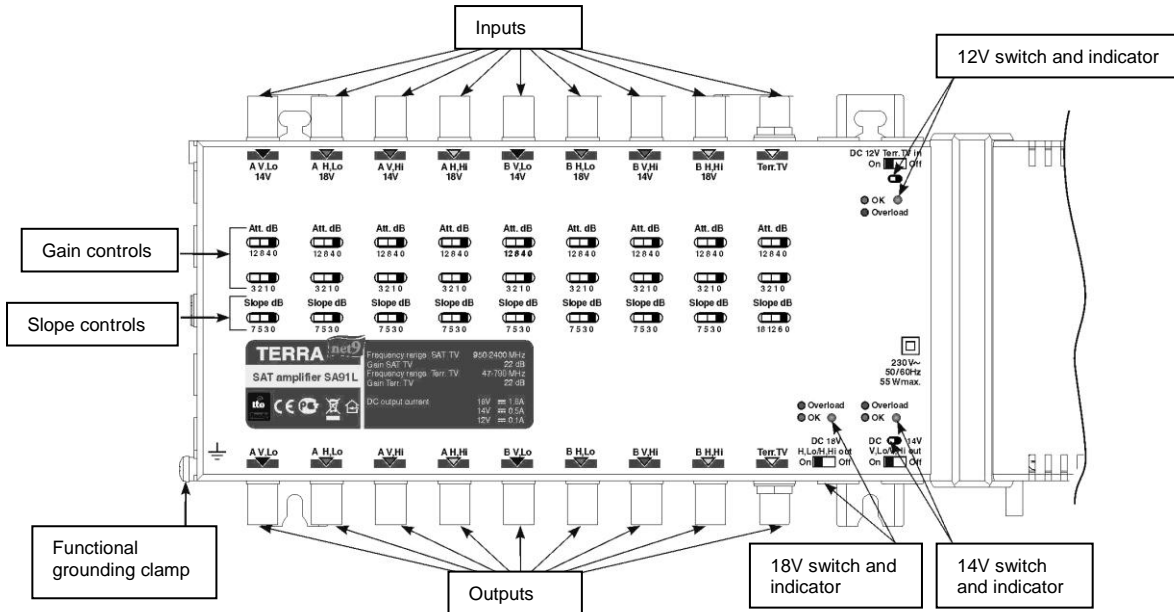
Mount the amplifier on not flammable wall or in not flammable installation box in vertical position (SA91L) with power supply unit on the right side.

From top, front and bottom of installed amplifier must be at least 10 cm free space.

## EXTERNAL VIEW

### SA91DL





**OPERATING**

A multichannel amplifier consists of highly isolated individual amplifiers for every incoming line. Gain and slope controls of each amplifier are located between input and output connectors of corresponding line.

Gain regulation is performed by two step attenuators. The first rough control attenuator has 4 positions with 4 dB steps and the second fine control attenuator has 4 positions with 1 dB steps. The gain of amplifier is defined by subtracting joint attenuation of both attenuators from maximum gain.

Slope control has 4 positions. The value of each position determines the difference of gain at highest and lowest frequencies.

Amplifier SA91L provides voltages 18 V to all horizontal polarization connectors, 14 V to all vertical polarization connectors and 12 V to Terrestrial TV input connector. The switches on the output side allows disconnect voltages of 18 V and 14 V from output connectors. This is usefull in large networks for prevention of interference between power supply units, when several of them are incorporated. The switch on the input side allows disconnecting of voltage 12 V from terrestrial TV input line to avoid short-circuiting of power supply if terrestrial amplifier with remote powering is not installed. All voltage sources have short circuit protection with LED indicators. Green light indicates normal operation. The red light signals that short-circuit emerged in corresponding line or power supply is overloaded (in the case of overloading 18 V red light will be intermittent). After that amplifier SA91L must unplugged from mains and network must be repaired. Allow at least 30 sec. before connecting to the mains again.

Amplifier SA91DL is powered from central network power supply (for example SA91L) through horizontal polarization lines. Both lines regarding DC are interconnected to minimize voltage loss in lines. It consumes up to 0.3 A from 18 V power supply. Amplifier has connector for auxiliary power supply if voltage from central power supply is not accessible. If it is plugged voltage is distributed to horizontal polarization lines in the same way as SA91L. In every case presence of voltage in lines will be indicated by green LEDs near the corresponding switch. Voltage 12 V in the input connector of Terrestrial path will be only if 18 V is present in horizontal polarization lines.

Both amplifiers SA91L and SA91DL has DC through path in every Satellite TV line. It provides flexibility for installation of power supply units inside the network.

**TECHNICAL CHARACTERISTICS**

Type	SA91L	SA91DL
Frequency range SAT IF		950-2400 MHz
Terr. TV		47-790 MHz
Gain SAT IF, adjustable	22 dB (0 ÷ -15 dB) by 1 dB step	
Terr. TV, adjustable	22 dB (0 ÷ -15 dB) by 1 dB step	
Slope SAT IF, switchable	0/3/5/7 dB	
Terr. TV, switchable	0/6/12/18 dB	
Isolation SAT/SAT	30 dB	
SAT/Terr. TV	30 dB	
Noise figure, typical		≤ 9 dB
Output level IMD3=60 dB Terr. TV****		109 dBμV
Output level IMD3=35 dB SAT IF****		114 dBμV
External equipment powering through V lines	14 V 0.5 A max. (switchable)	-
through H lines	18 V 1.8 A* max. (switchable)	-
through Terr line	12 V 0.1 A max. (switchable)	-
DC pass through, switchable through H lines	2 A* max.	
Supply voltage limit values, power consumption	198-250 V~ 50/60 Hz 7 W**	DC 9-18 V 5 W***
Operating temperature range		-20° ÷ + 50° C
Dimensions/Weight (packed)	335x135x52 mm/1.18 kg	255x135x32 mm/0.9 kg

\* 1 A max. through one line

\*\* without external DC loading; with maximal external DC load - 55 W

\*\*\* in line powering of SA91DL through H lines

\*\*\*\* measured using 2 equal signals; output level by DIN45004B - add 3 dB to mentioned above value

## APPLICATION DIAGRAM

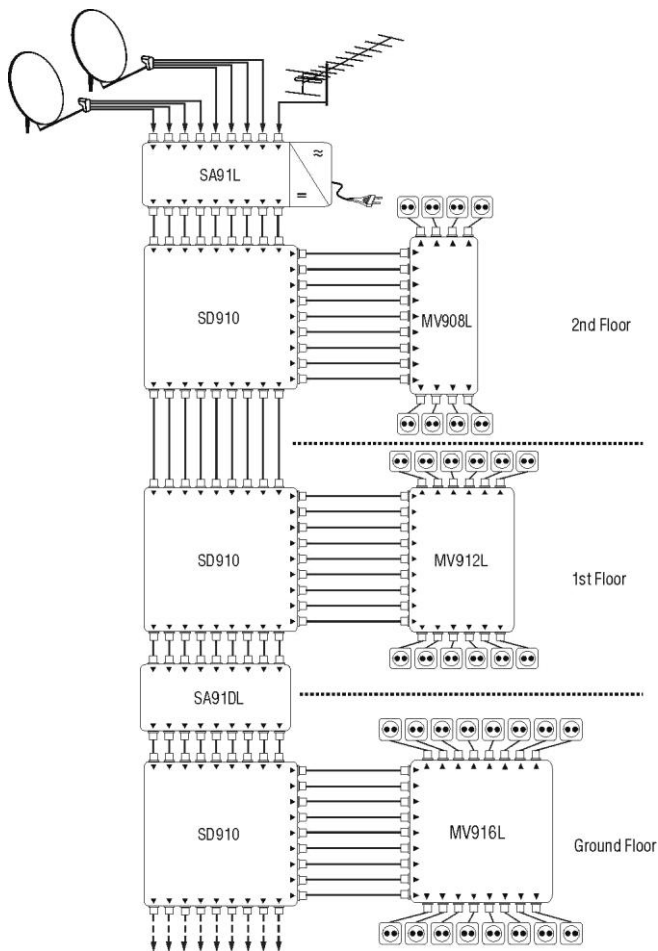











Figure 1. Floor by floor installation powered from SA91L.

-  Caution.
-  Risk of electric shock.
-  This product complies with the relevant clauses of the European Directive 2002/96/EC. The unit must be recycled or discarded according to applicable local and national regulations.
-  The device has integrated LTE filter.
-  Equipment intended for indoor usage only.
-  Apparatus is double insulated from the mains.
-  Functional grounding. Connect to the main potential equalization.
-  TERRA confirms, that this product is in accordance to following norms of EU EMC norm EN50083-2, safety norm EN60065, RoHS norm EN50581.
-  TERRA confirms, that this product is in accordance to following norms of Russian Federation: EMC ГOCT P 51318.22-2006, ГOCT P 51318.24-99, ГOCT P 51317.3.2-2006, ГOCT P 51317.3.3-2008 and safety norm ГOCT IEC 60950-1-2011.