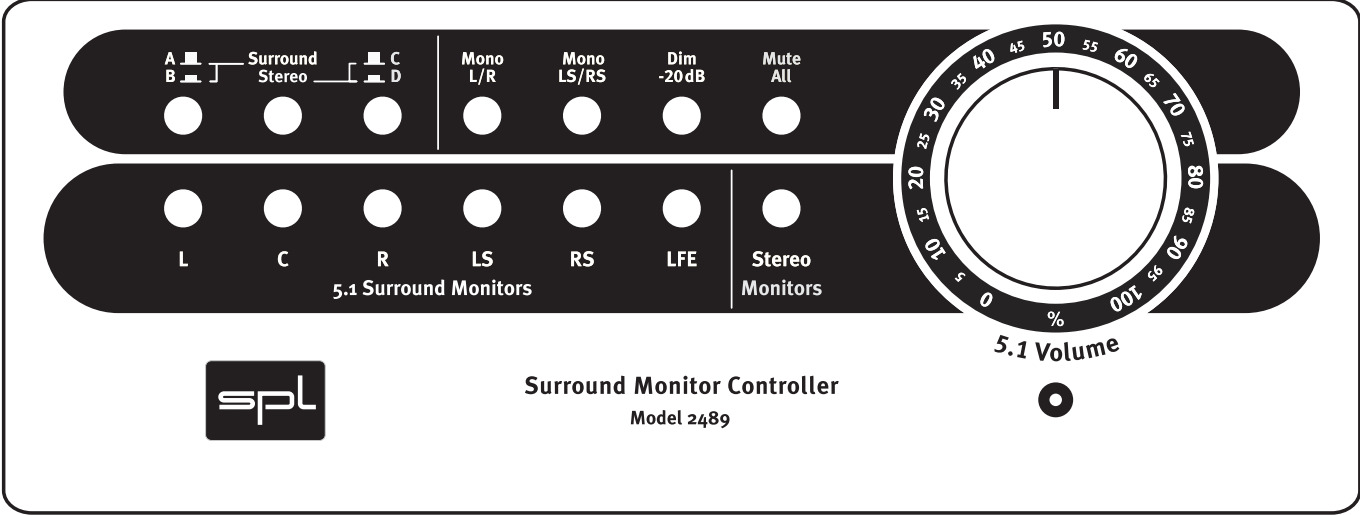




Manual



Surround Monitor Controller

Model 2489

One-point stereo and 5.1 volume control, source and speaker management

Version 1.0 – 6/2004

R &D: Wolfgang Neumann

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SPL electronics GmbH
Sohlweg 55
41372 Niederkruechten
Tel. +49 (0) 216 398 340
Fax +49 (0) 216 398 3420
E-Mail: info@soundperformancelab.com
www.soundperformancelab.com



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The SPL Surround Monitor Controller (SMC) is a one-point analog volume control and switching matrix for system-independent 5.1 surround and stereo monitoring. Designed to provide only the necessary functions with excellent audio quality, the SMC offers a uniquely cost-effective stereo and surround speaker and source management solution for essentially any audio application:

- Surround and stereo production
- DVD-V, DVD-A, SACD and DTS authoring
- Film and video postproduction
- Video and game production
- A/V and multimedia production
- Audiophile home entertainment systems

The advantages of the SMC become especially apparent in combination with modern audio and video production tools such as ProTools™, Nuendo™, Cubase™, Logic™, Deck™ etc. Monitor levels and source management can be handled independently of the software and with virtually no loss in quality. You no longer need to set up additional aux sends or an alternative surround master for monitoring. In addition, you won't have to worry about over- or underdriving the converters due to monitor levels.

One of the SMC's biggest advantages is the possibility to manage several input sources: comparing and monitoring SACD or DVD material is much easier than having to import all of your audio files and set up monitor mixes – not to mention the conversion of multichannel audio.

Standard A/V receivers are often used for this task. The problem with this is that the audio has to be either AD/DA converted or manipulated by signal-degenerating control circuitry (VCA's, DAC's etc.) for volume control, so you never hear the unadulterated audio – especially frustrating when you're working on SACD or DVD-A projects.

In addition to a surround speaker set, a stereo pair can be connected to and managed by the SMC. A Sub-D input connector provides six surround and two stereo input channels. Eight additional RCA connectors allow easy connection of SACD, DVD, CD or DAT players. A slave output allows the stereo or surround input signal to be routed directly to a recording device. Volume control is handled by a discrete six-layer potentiometer and all switching functions by extremely durable precision pushbuttons.

SPL's renowned electronic balancing circuitry forms the basis for the SMC's I/O architecture. Its extended frequency range up to 100 kHz, exceptional dynamic spectrum and excellent common mode rejection ensure specs that exceed SACD standards, as only highest quality analog circuitry can provide.

Last but not least, the SMC's rugged and ergonomic steel-blue desktop enclosure with its slanted front panel harmonizes perfectly with the desktop production environment.

Before you begin

IMPORTANT: Before connecting the SMC or any other equipment turn off all power at all units.

It makes good sense to think about where you place your SMC before connecting it. It should be positioned so that you can easily reach it, but there are other considerations. Try not to place it near heat sources or in direct sunlight, and avoid exposure to excessive vibrations, dust, heat, cold or moisture. It should also be kept away from transformers, motors, power amplifiers and digital processors. In addition, please:

- Do not open the case. You may risk electric shock and damage to your equipment.
- Leave repairs and maintenance to a qualified service technician. Should foreign objects fall inside the case, contact your authorized dealer or support person.
- To avoid electric shock or fire hazards, do not expose your unit to rain or moisture.
- In case of lightning, unplug the unit. Always unplug the cable by pulling on the plug only; never pull on the cable.
- Never force a switch or knob.
- Use a soft, lint-free cloth to clean the case. Avoid cleaning agents as they may damage the unit.



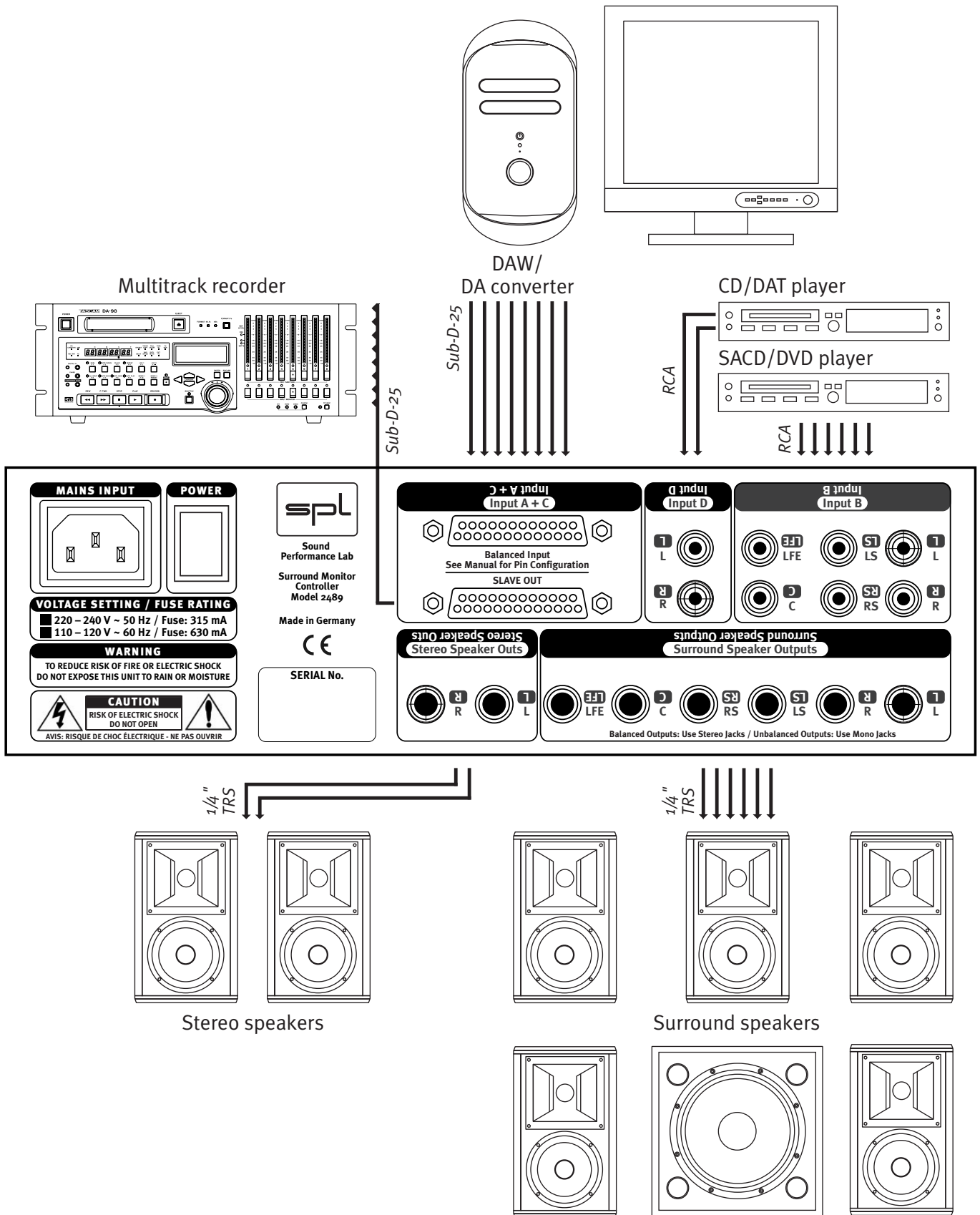
Power Supply

The SMC's power supply was carefully engineered to provide clean and consistent current – an important prerequisite for excellent audio. Built around a toroidal transformer, the power supply generates a minimal electromagnetic field with no hum or mechanical noise. The output side is filtered by an RC circuit to extract noise and hums inherent in commercial AC power.

All audio-related components are fed by two separate voltage regulators to minimize disturbance from other components.

An AC power cord is included for connection to the standard 3-prong IEC connector. The transformer, power cord and IEC connector are VDE, UL and CSA approved. The AC fuse is rated at 315 mA (230V version) or 630 mA (115V version).

Rear panel/connections



Vector graphics courtesy of TASCAM Germany (www.tascam.de) and Christian Preissig, media dell' arte - text&ton, E-Mail: media_dell_arte@mac.com



The SMC enclosure is EMC-safe and effectively shielded against HF interference. Nonetheless, you should carefully consider where you place the unit to avoid electrical disturbances. The SMC and all devices to be connected should be turned off before connections are made. Always turn volume down or mute your speakers when disconnecting or repatching audio cables to avoid damage to your speakers and ears.

Inputs and outputs

INPUTs A & C (Sub-D 25; analog)

This Sub-D connector provides balanced connections for INPUTs A & C (INPUT A for six surround channels, INPUT C for two stereo channels). Use this connector for your multichannel source, i.e. DAW or DA converter.

SLAVE OUT (Sub-D 25; analog)

The SLAVE OUT provides a direct output of the INPUT A & C signals for connection to external equipment e.g. recorders, leaving the converter outputs free.

INPUTs B & D (RCA)

Eight RCA input connectors are available for six surround channels and two stereo channels. INPUT B provides surround connection for SACD or DVD players, while INPUT D provides connection for stereo sources such as DAT or CD players.

Tip: If a recording device is connected to the SLAVE OUT, its outputs can be connected to INPUT B for tape monitoring purposes.

SURROUND and SPEAKER OUTPUTS (1/4" TRS)

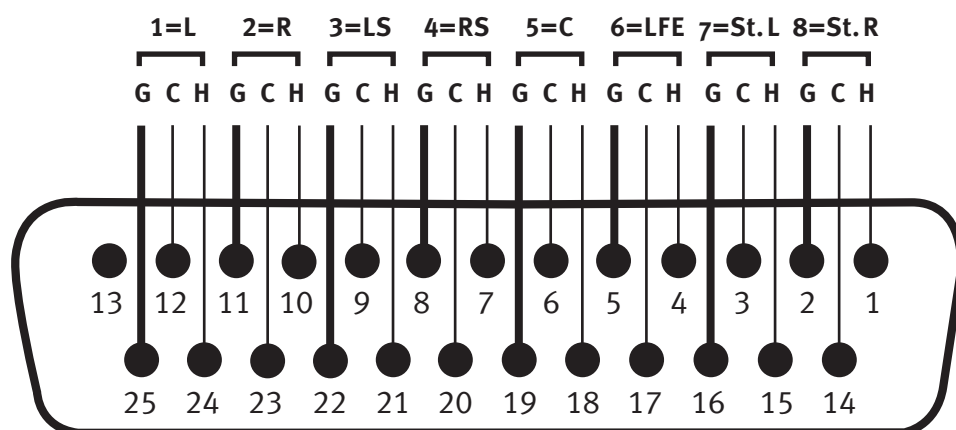
Eight balanced 1/4" TRS connectors allow connection of a six-channel surround speaker set and a stereo speaker pair.

For unbalanced connections, use standard mono 1/4" plugs.



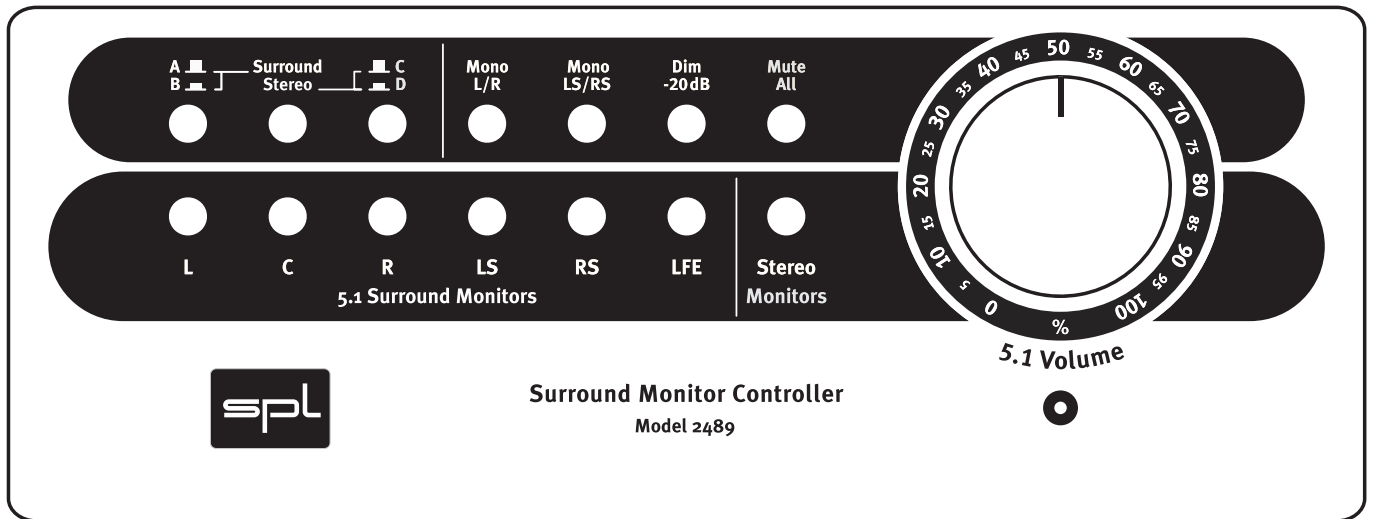
Sub-D 25 connector pin configuration

The pin configuration complies with the TASCAM standard.



G = Ground, C = cold (-), H = hot (+)

Operation



Volume control

The volume is centrally controlled for all channels via a discrete six-level potentiometer with an extremely linear curve. The potentiometer controls the audio signals directly without any signal-degenerating circuitry such as VCA's or DAC's, which tend to create excessive tolerances between channels as well as distortion. The white circle with the potency scale can be easily marked using a pencil.

Source

The SOURCE buttons allow easy switching between surround and stereo sources (inputs). Two surround and two stereo sources are available.

The middle button selects between surround and stereo sources. When depressed (in), the stereo sources are active; when not depressed (out) the surround sources are selected.

The left button selects either surround source A (out) and B (in), while the right button selects either stereo source C (out) or D (in).

Monitor Mode

The MONITOR MODE buttons provide various monitoring functions: MONO L/R, MONO LS/RS, DIM -20 and MUTE ALL.

MONO L/R and MONO LS/RS switches the front L and R channels and the rear LS and RS channels to mono, respectively, and can be used to check phase correlation. The MONO LS/RS mode has no effect when a stereo speaker pair is selected.

DIM lowers the monitor volume by -20 dB without changing the volume pot setting, for example to control a mix at low volume (or to answer the phone...).

MUTE ALL does exactly what it says: it mutes all speaker outputs.

Speakers On

The SPEAKERS ON buttons enable each surround speaker output (L, C, R, LS, RS, LFE) and the stereo pair to be switched on and off independently.

Tip: If you are not using a surround speaker set, you can connect two stereo speaker pairs to the SMC. Simply connect one pair to the STEREO SPEAKER OUTPUTS and the second pair to the SURROUND SPEAKER OUTPUTS L and R.



Technical Specifications

Input impedance	
Balanced (Sub-D)	50 kOhms
Unbalanced (RCA)	>10 kOhms
Output impedance	
Balanced (1/4" TRS)	<600 Ohms
THD+N	
-10 dB (Input level)	0.04 %
0 dB	0.01 %
+10 dB	0.006 %
+18 dB	0.002 %
+22 dB	0.1 %
Noise, A-weighted	-98 dB
Maximum input level	+22 dB
Dynamic response	120 dB
Common mode rejection	
@ 100 Hz	>70 dBu
@ 1 kHz	>70 dBu
@ 10 kHz	>60 dBu
@ 100 kHz	>50 dBu
Frequency response	10 Hz-100 kHz (-3 dB)
Phase	-36° (10-120 kHz, -3 dB center frequency)
Phase, linear	20 Hz-100 kHz
Dimensions H x W x D:	91 x 272 x 220 mm (3 9/16" x 10 11/16" x 8 21/32")
Weight	2.3 kg (5 lbs)

SPL reserves the right to make technical changes without prior notice.

Warranty

SPL electronics GmbH (hereafter called SPL) products are warranted only in the country where purchased, through the authorized SPL distributor in that country, against defects in material or workmanship. The specific period of this limited warranty shall be that which is described to the original retail purchaser by the authorized SPL dealer or distributor at the time of purchase.

SPL does not, however, warrant its products against any and all defects:

- 1) arising out of materials or workmanship not provided or furnished by SPL, or
- 2) resulting from abnormal use of the product or use in violation of instructions, or
- 3) in products repaired or serviced by other than authorized SPL repair facilities, or
- 4) in products with removed or defaced serial numbers, or
- 5) in components or parts or products expressly warranted by another manufacturer.

SPL agrees, through the applicable authorized distributor, to repair or replace defects covered by this limited warranty with parts or products of original or improved design, at its option in each respect, if the defective product is shipped prior to the end of the warranty period to the designated authorized SPL warranty repair facility in the country where purchased, or to the SPL factory in Germany, in the original packaging or a replacement supplied by SPL, with all transportation costs and full insurance paid each way by the purchaser or owner.

All remedies and the measure of damages are limited to the above services and descriptions. It is possible that economic loss or injury to person or property may result from the failure of the product; however, even if SPL has been advised of this possibility, this limited warranty does not cover any such consequential or incidental damages. Some states or countries do not allow the limitations or exclusion of incidental or consequential damages, so the above limitation may not apply to you.

Any and all warranties, express or implied, arising by law, course of dealing, course of performance, usage of trade, or otherwise, including but not limited to implied warranties of merchantability and fitness for particular use, are limited to a period of 1 (one) year from either the date of purchase or the manufacturing date. Some states or countries do not allow limitations on how long an implied warranty lasts, so the above limitations may not apply to you.

This limited warranty gives you specific legal rights, and you may also have other rights, which vary from state to state and country to country.

SPL electronics GmbH, 41372 Niederkruechten, Germany



❖ Owners Manual SMC, Model 2489

