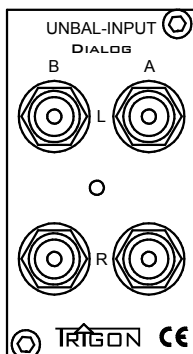


4 MODULES

The entire audio range of DIALOG is built with modules. This way you can compose your own ideas for preamplifier. Example, if you prefer a purely symmetrical preamplifier, so you just use only symmetric input and output modules. You can also freely mix, for example, or if you need a preamp with five outputs, this is also feasible. As mentioned elsewhere, you must comply with only one condition: at least one input module and output module must be used, otherwise denied the DIALOG service. Currently we offer four different modules (see below). The concept of DIALOG is so designed that we already have more of **TRIGON** modules in the design and the fact DIALOG with each new module is always interesting.

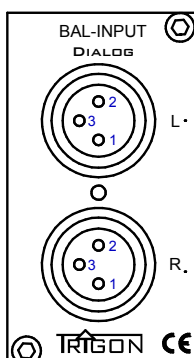
For this reason, we have the manual and designed so that you get when purchasing a new module, a new chapter 4.x, you can then attach these instructions. For new modules can be of troubles, replace the control software with a new software so that the DIALOG this new module can also operate. Therefore, is located on the back of DIALOG a USB socket (17), which you can connect to a computer to update to the latest "firmware" (software mode) in the DIALOG. The software is provided free download at our website for available.

4.1 UNBAL-INPUT module



The UNBAL-INPUT module has two single-ended stereo inputs. Each input can be trimmed independently to match the level of other sources/inputs to avoid large jumps in volume when changing inputs.

4.2 BAL-INPUT module

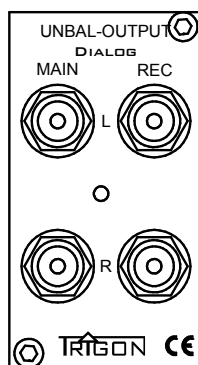


The INPUT BAL module is a balanced stereo line level input. This input can be trimmed independently to match the level of other sources/inputs to avoid large jumps in volume when changing inputs.

Die PIN-out:
Pin-1 = Ground
Pin-2 = Signal +
Pin-3 = Signal –

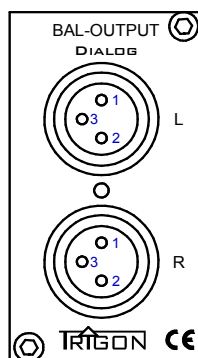
Up to seven **BAL-INPUT** modules can be used in one **DIALOG**. Together with one **BAL-OUTPUT** module the DIALOG becomes a fully balanced preamplifier.

4.3 UNBAL-OUTPUT module



This module contains one single-ended MAIN preamplifier output with adjustable volume and a RECORD output to connect a recording device. The MAIN output is typically connected to a power amplifier or a loudspeaker amplifier with active electronics. The output impedance is 47 ohms, i.e. low enough that even long interconnect cables (up to 8 meters) can be used.

4.4 BAL-OUTPUT module



The module BAL- OUTPUT contains a balanced amplifier whose output is also capable of driving longer cables without significant quality loss. This output is connected to the balanced input of a power amplifier or active speaker. Balanced connections have the advantage that noise and interference with the signal are effectively suppressed.

Several BAL OUTPUT modules can be used in one DIALOG preamplifier. The volume of all output modules is controlled by the master volume control designated in the SET menu. However, it is possible to trim the relative output level for each module. The individual outputs are electronically separated from each other.

4.5 PHONO Module

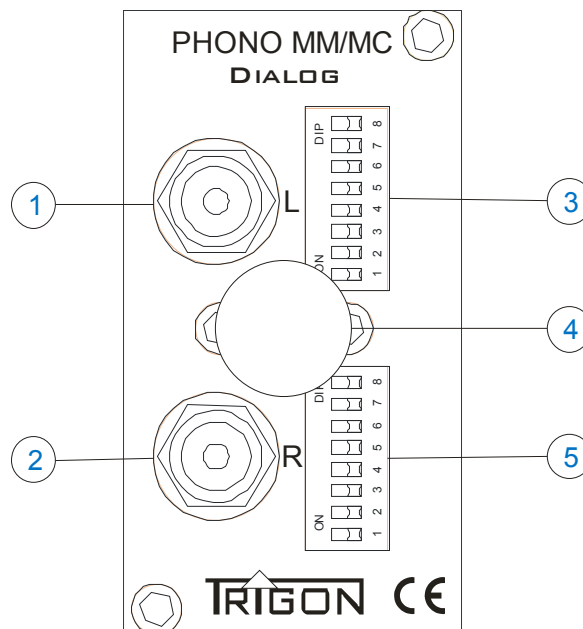
The PHONO module can be connected to a turntable with MM or MC pickup. The impedance matching of the pickup is made on the rear of the module by subminiature switches. Please refer to the tables [A] and [B] for the adjustable values.

Also, the gain of the PHONO module must be adapted to the used pickup. This setting is made on the front of the DIALOG. Up to seven PHONO modules can be installed in the DIALOG.

4.5.1 The Necessary Software

To operate the PHONO module, the DIALOG requires the firmware with the version V0.10 or higher. If the installed firmware is "older" than V1.34 (the number is less than 1.34), so you need only perform an update. (See section 4.1)

4.5.2 The connectors on the back



To the RCA connectors [1] and [2] the record player are connected. Normally turntables have a separate ground wire. This cable must be connected to the screw terminal [4] (Ground socket).

The two switch banks [3] and [5] are used to separate channel impedance matching of the connected pickup. Each switch bank has 2 switches for capacitive adaptation of a MM pickup and 6 switches for adjusting a MC pickup.

4.5.3 The settings and menus

The module PHONO can be optimally adjusted to the used pickup of the turntable. The value can be taken from the operating instructions manual of the pickup. The available adjustment values are listed in Tables [A] and [B].

Table [A] shows the values for a capacitive adjustment, as is required for MM cartridges. Table [B] shows the values for impedance matching, as is required for MC cartridges.

MM-Cartridges:

The switches **S1** and **S2** are for adapting to MM cartridges. S3 to S8 are normally not necessary for MM and are switched off.

4.5.4 Table A of the switch settings for the input capacitance

S1	S2	S3	S4	S5	S6	S7	S8	Input Capacitance	Input Impedance Ohm
0	1	0	0	0	0	0	0	47pF	47000,0
1	0	0	0	0	0	0	0	100pF	47000,0
1	1	0	0	0	0	0	0	147pF	47000,0

The input capacitance without connected capacity of the module PHONO is 60 - 100pF. Each capacitor that is connected must be added to the input capacitance.

The interconnection cable capacitance and the capacitance of the arm tube of the turntable have to be added, too. In this way, often more than 200pF - 300pF capacity is added without any additional capacitors.

Should be noted, however, that deviations from the recommended cartridge manufacturer adaptive capacity, on the order 20-30% are acceptable, as in the production of pickups often similar tolerances occur.

MC-Cartridges: The switches **S1** and **S2** have no meaning in MC and should remain in the neutral position. Switches **S3** to **S8**, are matching the impedance of a connected MC system. The value can be taken from the operating instructions manual of the pickup. Table **[B]** shows all the possible values for this module and associated switch positions.

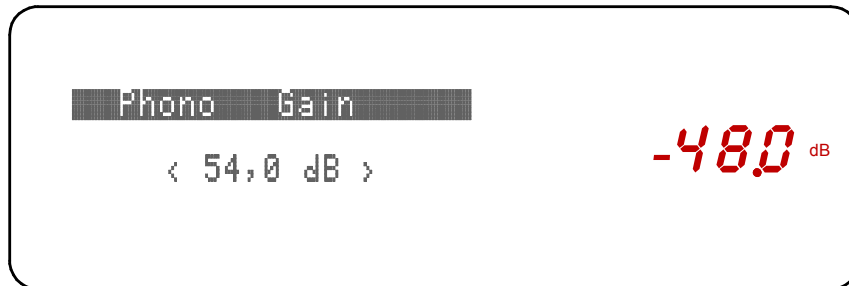
It is also possible to set the switches like you want, because it may happen that different input impedance sounds better than the proposed values. Consequently, quite a few pick-up manufacturers also give a very wide range of adjustment for your pickup to (eg 200 Ohm to 47 KOhm). So try out different settings and set the value that comes closest to your ideal sound. Nothing can go wrong. Please set the volume low every time you do a switching process between the Switches **S1** to **S8** to avoid any switching noises.

4.5.5 Table B Switch settings for the input resistors

100p	47p	1800	1000	470	220	100	47	
S1	S2	S3	S4	S5	S6	S7	S8	Input resistance calculated in Ohm
0	0	0	0	0	0	0	0	47000,0
0	0	1	0	0	0	0	0	1733,6
0	0	0	1	0	0	0	0	979,2
0	0	1	1	0	0	0	0	634,2
0	0	0	0	1	0	0	0	465,3
0	0	1	0	1	0	0	0	369,8
0	0	0	1	1	0	0	0	317,6
0	0	1	1	1	0	0	0	269,9
0	0	0	0	0	1	0	0	219,0
0	0	1	0	0	1	0	0	195,2
0	0	0	1	0	1	0	0	179,6
0	0	1	1	0	1	0	0	163,3
0	0	0	0	1	1	0	0	149,4
0	0	1	0	1	1	0	0	137,9
0	0	0	1	1	1	0	0	130,0
0	0	1	1	1	1	0	0	121,2
0	0	0	0	0	0	1	0	99,8
0	0	1	0	0	0	1	0	94,5
0	0	0	1	0	0	1	0	90,7
0	0	1	1	0	0	1	0	86,4
0	0	0	0	1	0	1	0	82,3
0	0	1	0	1	0	1	0	78,7
0	0	0	1	1	0	1	0	76,1
0	0	1	1	1	0	1	0	73,0
0	0	0	0	0	0	1	1	68,6
0	0	1	0	0	1	1	0	66,1
0	0	0	1	0	1	1	0	64,2
0	0	1	1	0	1	1	0	62,0
0	0	0	0	0	1	1	1	59,9
0	0	1	0	1	1	1	0	58,0
0	0	0	1	1	1	1	0	56,5
0	0	1	1	1	1	1	0	54,8
0	0	0	0	0	0	0	1	47,0
0	0	1	0	0	0	0	1	45,8
0	0	0	1	0	0	0	1	44,8
0	0	1	1	0	0	0	1	43,8
0	0	0	0	1	0	0	1	42,7
0	0	1	0	1	0	0	1	41,7
0	0	0	1	1	0	0	1	40,9
0	0	1	1	1	0	0	1	40,0
0	0	0	0	0	1	0	1	38,7
0	0	1	0	0	1	0	1	37,9
0	0	0	1	0	1	0	1	37,3
0	0	1	1	0	1	0	1	36,5
0	0	0	0	1	1	0	1	35,8
0	0	1	0	1	1	0	1	35,1
0	0	0	1	1	1	0	1	34,5
0	0	1	1	1	1	0	1	33,9
0	0	0	0	0	0	1	1	32,0
0	0	1	0	0	0	1	1	31,4
0	0	0	1	0	0	1	1	31,0
0	0	1	1	0	0	1	1	30,4
0	0	0	0	0	1	0	1	29,9
0	0	1	0	1	0	1	1	29,4
0	0	0	1	1	0	1	1	29,0
0	0	1	1	1	0	1	1	28,6
0	0	0	0	0	1	1	1	27,9
0	0	1	0	0	1	1	1	27,5
0	0	0	1	0	1	1	1	27,1
0	0	1	1	0	1	1	1	26,7
0	0	0	0	1	1	1	1	26,3
0	0	1	0	1	1	1	1	26,0
0	0	0	1	1	1	1	1	25,7
0	0	1	1	1	1	1	1	25,3

A 1 means switch is set to ON
A 0 means switch is set to OFF

Because different pickups provide different output voltages, it is necessary to adjust the gain of the Phono module to the respective pickup. To access the menu for the gain setting, you select the Phono module with the input selector buttons and then press the button (10) of the DIALOG. Now you should see the following screen.



Display menu Phono gain (54dB here are just set)

The gain adjustment is on the DIALOG with the arrow keys (11) and (12). Table (C) also provides you again a few benchmarks. In the User s instruction usually the value of the output voltage of the pickup is specified. Select a value for the gain, where the output voltage of your system is the closest. Press button (13) on the DIALOG you leave the Gain menu.

4.5.6 Table [C] Gain Adjustment

Gain In dB	For cartridges with these levels
42	4mV
47,5	2,1mv
51,3	1,4mV
54	1,0mV
55	0,89mV
56,5	0,75mV
58,5	0,60mV
59,5	0,53mV
62,5	0,38mV
63	0,35mV
64	0,32mV
64,5	0,3mV
65	0,29mV
65,5	0,28mV
66	0,25mV
66,5	0.24mV

With the settings specified in table [C] you get a preamp output voltage of 500 mV.

Cartridge manufacturer often offer the output voltage of their pickups as follows:

Output voltage = 0,4mV at 3,54cm/s

The normalized output voltage usually refers to a reference of 5.6 cm / s. In our case, therefore, results in the output voltage to:

$$V_{out} = \frac{0,4mV}{3,54cm/s} * 5,6cm/s$$

Thus, there is an output voltage of about 0.63 mV, ie. you should set a gain of about 58.5 dB.

4.5.7 Technical Data PHONO Module

Input	: 2x Cinch
Distortion (THD + N)	: < 0.03%
Frequency response	: 20 Hz – 20 kHz (+-1dB)
S/N	: -86 dB
Weight	: ca. 350g
Dimensions	: 40 x 73,5 x 173,5 mm (BxHxT)

4.6 DAC Modul

Four digital source devices can be connected to a DAC module. Use the arrow keys (11) and (12) on the front panel of the DIALOG to choose the input. Following inputs are available:

2x Coax (Cinch) SPDIF
1x Toslink
1x USB

If this is four digital inputs are not enough, further DAC Modules can be installed. Seven DAC modules are possible so that you get 28 digital inputs!

The DAC module translates the digital music information into analog audio signals that can then be processed in the DIALOG. The maximum resolution of the DAC module is 24 bits and 192 kHz (compared to CD players have a resolution of 16 bits and 44.1 kHz). The maximum resolution of the USB input is 24 bits at 96 kHz. The DAC module automatically adjusts to the required resolution.

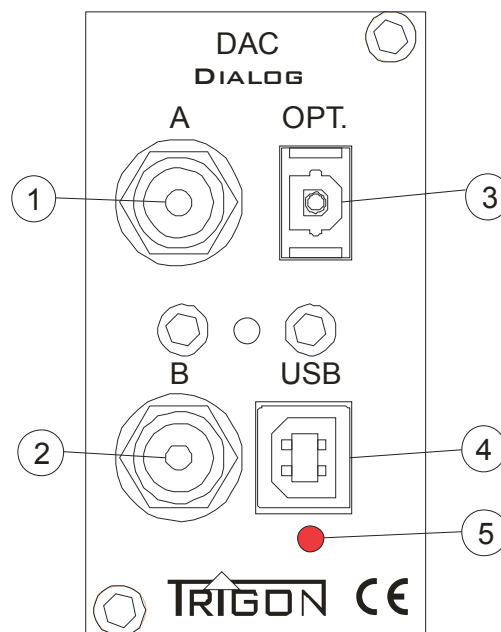
All inputs are galvanically isolated, i.e. the DAC is connected to an input transformer or optically coupled to the source equipment. In this way, any hum are (keyword ground loop) effectively prevented.

To avoid damage to the DIALOG to your system, please connect only digital source devices to the DAC module! The module can not handle analog signals at the inputs, and also the source device could suffer damage.

4.6.1 The necessary Software

To drive the DAC module DIALOG needs firmware version V1.36 or higher. If the installed firmware is "older" than V1.36 (the number is less than 1.36), so you need only perform an update. (See section 4.1)

4.6.2 The connectors on the back



[1] and [2] A and B

The RCA jacks A (1) and B (2) are the two coaxial SPDIF inputs. Here, all devices can be connected, which have a standards-compliant SPDIF output.

[3] OPT.

To the optical fiber input OPT. (3) can be connected to a source device with a Toslink optical cable. The data format is also SPDIF.

[4] USB

To the USB port (4) a computer can be connected. If the computer is the first time connected to the epilogue, it takes a moment for the computer to install the required default drivers. The computer treats the DIALOG now as a separate USB sound card. The maximum resolution is 24-bit 96 KHz at this entry.