

TT+ HIGH DEFINITION
TOURING AND THEATRE

RCF

TT S18A TT S28A

PROFESSIONAL ACTIVE SPEAKER SYSTEMS



"HIGH OUTPUT AT PREMIUM SOUND QUALITY"

We started the design of our TT+ compact speakers with a clear idea in mind: maximum high quality audio SPL in the smallest weight and size. Thanks to our state of the art neodymium transducers, premium quality analog processing and powerful class D amplifiers we reached and surpassed our original goals.

IMPORTANT NOTES

Before connecting and using the amplifier, please read this instruction manual carefully and keep it on hand for future reference. The manual is to be considered an integral part of the product and must accompany the amplifier when it changes ownership as a reference for correct installation and use as well as for the safety precautions. RCF Spa. will not assume any responsibility for the incorrect installation and/or use of the product.



WARNING: To prevent the risk of fire or elect , never expose this equipment to rain or humidity.

SAFETY PRECAUTIONS

1. All the precautions, in particular the safety ones, must be read with special attention, as they provide important information.
2. The power supply voltage of this equipment is sufficiently high to involve a risk of electrocution; therefore, never install or connect the product with the power supply switched on.
3. Before powering up the amplifier, make sure that all the connections have been made correctly and that the voltage of your power mains corresponds to the voltage shown on the rating plate on the unit; if it does not, please contact your RCF dealer.
4. The metallic parts of the unit are earthed by means of the power cable. In the event that the current outlet used for power does not provide the earth connection, contact a qualified electrician to earth the equipment using the dedicated terminal.
5. To protect the power cable from damage, make sure that it is positioned so that it cannot be stepped on or crushed by objects.
6. To prevent the risk of electric shock, never open the amplifier. There are no parts on the inside that the user needs to access.
7. Make sure that no objects or liquids can get into the amplifier, as this may cause a short circuit.
8. Never attempt to carry out any operations, modifications, or repairs that are not expressly described in this manual.
Contact your authorized service centre or qualified personnel should any of the following occur:
 - the amplifier does not function (or functions in an anomalous way);
 - the power supply cable has been damaged;
 - objects or liquids have got into the unit;
 - the amplifier has been subject to heavy impact.
9. When the amplifier is not to be used for long periods of time, switch it off and disconnect the power cable.
10. If the amplifier begins to emit any strange odours or smoke, switch it off immediately and disconnect the power supply cable.
11. Do not connect this product to any equipment or accessories not specified.
For suspended installation, only use the dedicated anchoring points and do not try to hang this product using HANDLES or elements that are unsuitable or not specific for this purpose.
Also check the suitability of the support surface to which the product is anchored (wall, ceiling, structure, etc.), and the components used for attachment (screw anchors, screws, brackets not supplied by RCF etc.), which must guarantee the security of the system/installation over time, also considering, for example, the mechanical vibrations normally generated by the transducer.
To prevent the risk of falling equipment, do not stack multiple units of this product unless this possibility is specified in the instruction manual.
12. RCF Spa strongly recommends this product is installed by professional qualified installers (or specialised companies) who can ensure correct installation and certify it according to the regulations in force.
The entire audio system must comply with the current standards and regulations regarding electrical systems.
13. SUPPORTS AND TROLLEYS
The equipment should only be used on trolleys or supports, where necessary, that are recommended by the manufacturer. The equipment/support/trolley assembly must be moved with extreme caution. Sudden stops, excessive pushing force and uneven floors may cause the assembly to overturn.
14. There are numerous mechanical and electrical factors to be considered when installing a professional audio system (in addition to those which are strictly acoustic, such as sound pressure, angles of coverage, frequency response, etc.).
15. HEARING LOSS
Exposure to high sound levels can cause permanent hearing loss. The acoustic pressure level that leads to hearing loss is different from person to person and depends on the duration of exposure. To prevent potentially dangerous exposure to high levels of acoustic pressure, anyone who is exposed to these levels should use adequate protection devices. When a transducer capable of producing high sound levels is being used, it is therefore necessary to wear ear plugs or protective earphones.
See the technical specifications in the instruction manual for the maximum sound pressure the loudspeaker is capable of producing.

IMPORTANT NOTES

To prevent the occurrence of noise on the cables that carries microphone signals or line signals (for example, 0 dB), only use screened cables and avoid running them in the vicinity of:

- equipment that produces high-intensity electromagnetic fields (for example, high power transformers);
- mains cables;
- lines that supply loudspeakers.

OPERATING PRECAUTIONS

- Do not obstruct the ventilation grilles of the unit. Situate this product far from any heat sources and always ensure adequate air circulation around the ventilation grilles.
- Do not overload this product for extended periods of time.
- Never force the control elements (keys, knobs, etc.).
- Do not use solvents, alcohol, benzene or other volatile substances for cleaning the external parts of this product.

TT+ HIGH DEFINITION TOURING AND THEATRE

RCF TT+ represents another prominent chapter in the long history of RCF Sound Systems.

Whether a speaker system is designed for live sound or large concert situations as well as permanent installed theatre sound applications, the paying customer now expects a level of audio fidelity and intelligibility of such a standard unsurpassed by previous generations.

This requirement has fostered the need for Audio Professionals to be able to offer a range of speaker systems combined with dedicated Processing and Amplification Technologies that are superior in Acoustic Performance and Control Technology.

RCF TT+ offers ready to use solutions and tools in true active high definition speaker systems.

INNOVATION INTEGRATION INTENSITY

INNOVATION. Our research and engineering faculty can today offer innovative projects with finite control of each detail, from the loudspeaker voice coil wire to the highly efficient extended dynamic amplifier topology.

There are many different ingredients that go into creating quality products and systems. These include computer aided simulation software to assist the understanding of transducer behaviour and amplifier operation and the relationship of dynamics and transient response. RCF utilise over thirty state of the art software packages to identify magnetic circuits, voice coil dynamics, suspension linearity, horn dispersion simulation, crossover filters, amplifier thermal behaviour etc.

INTEGRATION. RCF is one of only a few loudspeaker manufacturers worldwide who have the ability to completely design and manufactures transducers, speaker systems and amplification and control electronics. Our 50 plus years heritage in Audio combined with our state of the art research and development and manufacturing processes allows us to seamlessly integrate all the ingredients to design and build TT+

INTENSITY. The design philosophy for the new TT+ series is based upon offering the sound engineer solutions and tools that are ready to use. Key factors are the ability to sustain very high power with highly efficient sound pressure levels. Intense sound levels are created with extremely high definition and extended dynamic range. Modern construction materials result in mechanical weight ratios that are light for practical flying and portability.

TTS18-A AND TTS28-A, HIGH OUTPUT SUBWOOFERS MODULES

The TTS18a and TTS28a are high power, high output active subwoofer systems that sets a new standard in the touring and theatre sound reinforcement. Each transducer has been specifically designed for the application. The woofer provides large excursion and very light weight.

The TTS18a and TTS28a woofer features:

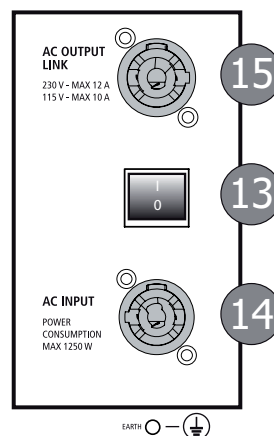
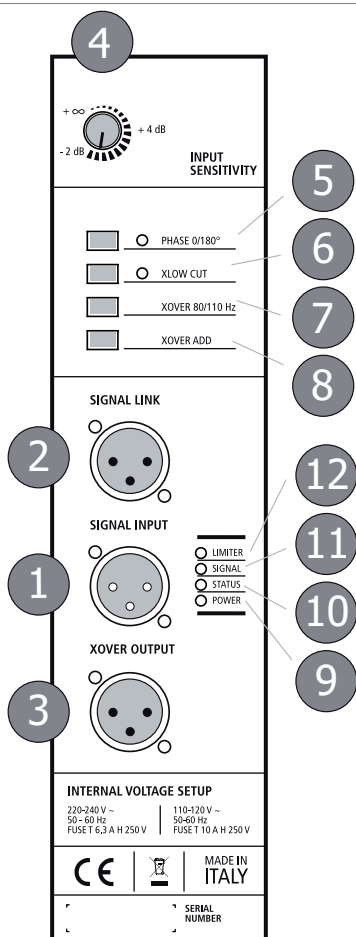
- lightweight, high force, neodymium magnet assembly
- 100 mm diameter, 25 mm length, inside-outside copper voice coil
- silicon double spiders
- water resistant treated cone
- magnet assembly complex ventilation for minimum power compression

The input section provides:

- In/Out XLR connectors
- Crossover Out XLR connector
- system sensitivity control (linear potentiometer)
- crossover set-up (80 Hz – 100 Hz – crossover add)
- very low frequencies high pass (45 Hz)
- 4 status LEDs

The TTS18a amplifier section features 1 x 1000 Watt low frequency digital amplifier module, the TTS28a amplifier section features 2 x 1000 Watt low frequency digital amplifier modules.

REAR PANEL FEATURES AND CONTROLS



- 1 MAIN SIGNAL XLR INPUT (BAL/UNBAL).
The system accept female XLR input connectors and line-level signals from a mixing console or other signal source.
- 2 SIGNAL LINK XLR OUTPUT.
The outale connector provides a loop trough for speakers daisy chaining.
- 3 XOVER SIGNAL OUTPUT.
The output XLR male connector provides a crossover high passed signal (24 dB/octave) for satellites speakers.
- 4 INPUT SENSITIVITY.
Controls the overall signal level at the input to the power amplifier. The control ranges from + (maximum attenuation) to the -2 dBu sensitivity (maximum input gain). The centre detent is +4 dBu (nominal level required to drive the amplifier at maximum power).
- 5 PHASE 0/180°.
This switch invert the phase of the system 180°.
- 6 XLOW CUT.
This switch provides an high pass 24 dB/octave filtering at 45 Hz. This is really useful for indoor situations (no very low frequencies that can create resonant sound) or when all the power shall be used in the 45 Hz – 100 Hz range.
- 7 XOVER 80/110 HZ.
Provides 24 dB/octave low-pass filtering at 80 Hz if released, at 110 Hz if pressed. The same crossover frequency in high-pass is available from XOVER OUTPUT XLR.
- 8 XOVER ADD.
Pressing this switch the satellite crossover output filtering is kept at 80 Hz while the subwoofer low pass filtering is at 120 Hz. This is really useful when subwoofer an satellite are far from each other and is difficult the alignment: the satellite provides “full range” signals and the subwoofers are properly extended. THIS SWITCH REVERSE THE SATELLITE PHASE.
- 9 POWER INDICATOR.
Power on indicator. When the power cord is connected and the power switch is turned on this indicator lights green.
- 10 STATUS INDICATOR.
The status indicator lights orange if the main amplifier or power supply is in faulty condition. If the status indicator lights orange, switch off the amplifier and call the closest RCF SERVICE CENTRE.
- 11 SIGNAL INDICATOR.
The signal indicator lights green if there is signal present on the main XLR input.
- 12 LIMIT INDICATOR.
The amplifier has a built in limiter circuit to prevent clipping of the amplifiers or overdriving the transducers. When the soft clipping circuit is active the LED blinks orange. It is okay if the limit LED blinks occasionally. If the LED blinks frequently or lights continuously, turn down the signal level. The amplifier has a built in RMS limiter. If the RMS limiter is active the LED lights red. The RMS limiter has the purpose to prevent damages the transducers. The speaker shall never be used with the limit indicator red, continuous operation with the RMS protection active can cause damages to the speaker.
- 13 POWER MAIN SWITCH.
The power switch turns the AC power ON and OFF. Make sure that the sensitivity is set to + when you turn on the speaker.
- 14 AC POWERCON RECEPTACLE. RCF TT+ series uses a POWERCON locking 3-pole AC mains. Always use the specific power cord provided in the package.
- 15 AC POWERCON LINK RECEPTACLE.
Use this receptacle to link one or more units. Always make sure that the maximum current requirement does not exceed the maximum admitted POWERCON current. In case of doubt call the closest RCF SERVICE CENTRE.

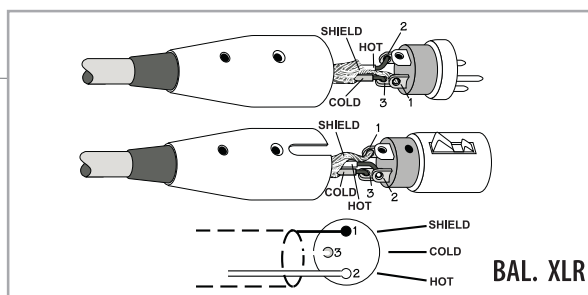
CONNECTIONS

The XLR connectors use the following AES standard:

PIN 1 = GROUND (SHIELD)

PIN 2 = HOT (+)

PIN 3 = COLD (-)



BEFORE TURNING ON THE SPEAKER

At this point you can connect the power supply cable and the signal cable, but before turning on the speaker make sure that the volume control is at the minimum level (even on the mixer output). It is important that the mixer is already ON before turning on the speaker. This will avoid damage to the speakers and noisy “bumps” due to turning on parts on the audio chain. It is a good practice to always turn on speakers at last and turn them off immediately after the show.

Now you can turn ON the speaker and adjust the volume control to a proper level.

INSTALLATION

A close socket for mounting the loudspeaker on a speaker stand is provided in the top of the cabinet. It is possible to remove the close socket and mount a pole mount (or M20) adapter.

Always make sure that the pole mount that is used is able to sustain the speaker weight with a proper safety factor.

On the side of the cabinet there are 4 (four) QUICK LOCK PINS mounting points. This are used to secure the TTL33a fly-bar in case of line array stack mounting. Always refer to the line array manual for this application.

It is possible to suspend TT+ subwoofers using the proper rigging hardware. TT+ speakers MUST be suspended only with approved RCF rigging hardware. Call the closest RCF SERVICE CENTRE in case you want suspend a TT+ subwoofer.



WARNING: Never suspend TT+ speakers by there handles. Handles are intended for transportation, not for rigging.



WARNING: Always make sure that the maximum current requirement does not exceed the maximum admitted POWERCON current. In case of doubt call the closest RCF SERVICE CENTRE.

VOLTAGE SETUP (RESERVED TO THE RCF SERVICE CENTRE)

TTS18-A

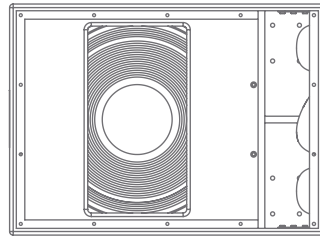
230 Volt, 50 Hz SETUP : FUSE VALUE T 6.3 A H 250 V

115 Volt, 60 Hz SETUP : FUSE VALUE T 10 A H 250 V

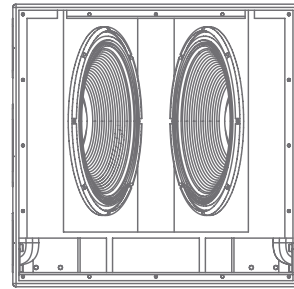
TTS28-A

230 Volt, 50 Hz SETUP : 2 x FUSE VALUE T 6.3 A H 250 V

115 Volt, 60 Hz SETUP : 2 x FUSE VALUE T 10 A H 250 V



TTS18



TTS28

ACOUSTICAL SPECIFICATIONS

Frequency Response	35 Hz - 120 Hz	30 Hz - 110 Hz
SPL peak	136 dB	139 dB
Sensitivity	x	x
Horizontal coverage angle	x	x
Vertical coverage angle	x	x
Compression Driver	x	x
Midrange	x	x
Woofers	18"neo, 100 mm voice coil	2 x 18"neo, 100 mm voice coil

INPUT SECTION

Input signal	bal/unbal	bal/unbal
Input connector	xlr	xlr
Output signal connector	xlr	xlr
Input sensitivity	- 2 dBu / + 4 dBu	- 2 dBu / + 4 dBu

PROCESSOR SECTION

Crossover frequencies	80 Hz /110 Hz	81 Hz /110 Hz
Protections	thermal, hf	thermal, hf
Sensitivity control	yes	yes
Limiter	fast limiter	fast limiter
Phase switch	x	x
High pass	yes, 45 Hz	yes, 45 Hz
Controls	80/110/add crossover	80/110/add crossover

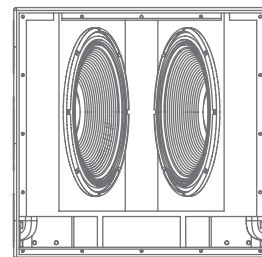
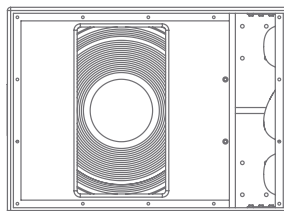
AMPLIFIER

Power supply	Switching 1000 Watt	Switching 2000 Watt
High frequencies	x	x
Mid frequencies	x	D / 2000 Watt
Low frequencies	D / 1000 Watt	convection
Cooling	convection	powercon in/out
Connection	powercon in/out	

PHISICAL SPECIFICATIONS

Height	520 mm	700 mm
Width	700 mm	700 mm
Depth	860 mm	920 mm
Weight	48 Kg	73 Kg
Cabinet	baltic birch	baltic birch
Hardware	fittings ready	fittings ready
Handles	6 on side	6 on side
Pole Mount/Cap	x	x
Colour	Black	Black

RF+ HIGH DEFINITION TOURING AND THEATRE



Except possible errors and omissions.
RCF S.p.A. reserves the right to make modifications without prior notice.

Salvo eventuali errori ed omissioni.
RCF S.p.A. si riserva il diritto di apportare modifiche senza preavviso.

RCF SpA

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