

SMT

Sound module for
model vehicles

Included

- 1 x SMT module with cable and volume controller
- 1 x Manual Software V104

Specifications

Battery voltage:	7,2 to 12 V from main battery or auxiliary
Output power:	at 7,2V 4,5W at 4 Ohm at 12V 8W at 8 Ohm
Standby-current draw:	ca. 15mA
Current draw (without sound):	ca. 50mA
max. current draw:	ca. 2A peak
Connector system:	UNI
Signal format:	positive impulses
Signaltiming:	1 to 2ms at 40 to 60Hz
Connection cable:	ca. 30cm
Operating temperature:	0 ... 40°C
Dimensions:	ca. 70x43x15mm

Functions

The SMT sound module for trucks and functional models uses modern wavetable synthesis for sound generation, as is also common in music synthesizers today. Original recordings of the engine noise of a truck, a truck horn and other typical noises are digitally stored and reproduced by the sound module in high quality.

A special feature of the Servonaut sound module is the very realistic adaptation of the engine noise to the engine speed and the driving situation. This also changes the sound and volume of the noise. In addition, the reproduction differs when accelerating/accelerating and braking. Thanks to the sophisticated electronics and a powerful signal processor, all changes in the sound remain "seamless" without audible transitions or steps. The SMT sound module offers

- Starting for any length of time
- Simulation of starting problems possible
- Dynamic engine sound
- Two sound variants USA/Europe (jumper A)
- Stopping sound
- Two sound variants of a truck horn (jumper B)
- reversing warning sound (only on Servonaut controllers with Euro sound)
- Air release

When using the SMT on Servonaut speed controllers of types K and F, further extensive setting options are available via their on-board computer. In addition, a realistic engine sound is also produced when shifting gears.

Battery

The SMT can be powered either by the drive battery or a separate battery. If only the receiver power supply is switched off, the sound module automatically goes into standby mode with a current consumption of only 15mA. The traction battery therefore only needs to be disconnected during longer driving breaks or during transportation and overnight. However, this is generally recommended for safety reasons.

Note: The motor noise is switched on and off via a switching channel on the transmitter! The red cable is connected to the positive terminal of the battery, the black cable to the negative terminal.

Loudspeaker

Use speakers with an impedance of at least 8 ohms for a 12V supply. 4 Ohm speakers may only be connected for 7.2V operation. The sound module has a particularly powerful output stage. Therefore, pay attention to the load capacity of the loudspeaker. Speakers with less than 8W for 12V operation and less than 5W for 7.2V operation can be damaged if the volume is too high. Special care should be taken with miniature loudspeakers.

For optimum sound, the speaker should be as large as possible. Installation in a sufficiently large closed box (loudspeaker box) is ideal, but unfortunately rarely feasible in practice. Installation in the cab under the roof or as high up in the rear wall as possible is recommended.

Volume control

The volume control is best installed in the model in a concealed but easily accessible location. The cable should not be routed directly along the motor or the motor connection cables, otherwise interference may be audible. To adjust the volume, first switch on the motor sound on the remote control!

Indicator LED

A green LED is installed next to the connection cables to check the function. The LED flickers as soon as signals are received from the Servonaut speed controller or the receiver. The module goes into standby mode when the speed controller or receiver is switched off. In this mode, the LED flashes at longer intervals.

Starter/horn switching channel

The starter and horn are operated via an extra switching channel. A free channel with a joystick or a switch can be used on the transmitter for this purpose. The switch must have three positions; a switch type with a neutral position in the middle and a push-button function in both directions is best suited.

Caution: The channel only switches the engine noise on or off in one direction when the engine is at a standstill or at low speed (!). The starter can be operated for any length of time, but the engine will only actually start if it is operated briefly. This also makes it possible to simulate starting problems. If the channel is switched while the engine is running, the switch-off sound is emitted. Compressed air is only released when the stick is released or when switching back to the center position.

The horn is triggered when the stick or switch is operated in the other direction. The truck horn can sound for any length of time and can also be heard at the same time as the reversing warning.

Caution: For the switching channel, all additional functions such as "Dual-Rate", "Expo", trim, servo travel etc. must be switched off or set to the normal setting on the transmitter, if available. The assignment of the switching channel can be reversed with "Servo reverse" or by reconnecting it in the transmitter (depending on the make). If there are problems with the switching channel, please connect a servo to check: the servo center position and both full deflections must be selectable accordingly.

Jumpers

Three jumpers A, B, C for the following setting options are located under or next to the connection cables for the channels and the volume control:

The logo for Servonaut, featuring the word "Servonaut" in a stylized, blue, 3D-effect font with a white outline, oriented vertically.

- USA/Euro When jumper A is inserted, the engine noise is lower and the idling speed is lower, as is usual in US trucks with a large displacement. The maximum speed is also lowered. If jumper A (Euro sound) is removed, the prescribed warning tone also sounds when reversing or when reverse gear is engaged (only with Servonaut speed controllers, not with the E20).
- Horn1/Horn2 Jumper B offers a choice of two sound variants for the truck horn.
- ServoN/Andere For operation of the SMT with Servonaut speed controllers (except E20), jumper C must be inserted; for operation with other speed controllers, it must be removed.

Note: When operating the SMT with a Servonaut K or F controller, the bridges for USA/Euro or Horn are only functional if a 0 is set for Extra6 in the Extra menu!

Connection to conventional speed controllers

In this case, the SMT sound module is looped in between the receiver and speed controller. The "ServoN/Gas" connection cable is plugged into the receiver channel instead of the speed controller and the speed controller is plugged into the "AIR/Controller" connector underneath. The module is designed for operation with forward/reverse speed controllers that do not have a separate braking range. Jumper C "ServoN/Other" must be removed. Set the trim of the speed channel so that the motor noise is at minimum speed in the center position and then adjust the speed controller to this setting.

Connection to Servonaut speed controller

In this case, the SMT sound module is operated directly on the Servonaut speed controller. The "ServoN/Gas" connection cable is plugged into the "AIR Sound" or "Sound" speed controller output. Please ensure correct polarity! Any existing AIR transmitter for the AMO trailer module can now be operated at the "AIR/controller" socket of the SMT. Jumper C "ServoN/Other" must be plugged in.

The on-board computer of the Servonaut multifunction modules of the K and F series provides further setting options via the extra menu:

- Extra 1 = Air release (0..3 = on, 4..7 = off)
- Extra 2 = Idle speed (8 levels)
- Extra 3 = Maximum speed (8 levels)
- Extra 4 = Basic sound (99 levels)
- Extra 5 = Sound change acceleration/deceleration (99 levels)
- Extra 6 = Options (see table)

There are also two other sound variants for the horn to choose from. Important note: Air release is automatically suppressed when using the T20 trial controller and the M212T or M220 dual controller.

On delivery, Extra2 to Extra6 are each set to 0, which means that default settings are used according to the jumpers on the SMT (see table). If the values are not 0, the USA/Euro and Horn jumpers have no function.

Start-up

The remote control transmitter must always be switched on first, followed by the model electronics with the SMT to prevent the SMT from responding unintentionally. Before starting up for the first time, set the volume control almost to the left stop and only increase the volume after the motor noise has been switched on. Ensure that Extra2 to 6 are initially set to 0 on Servonaut controllers via the on-board computer.

Warning notices

Protect the module against moisture, humidity and dirt. Do not surround with foam, the heat must be able to dissipate. Always disconnect the battery from the model electronics and the sound module after operation and when charging!

Liability

As we are unable to monitor the proper and correct operation of our assemblies, our liability is in any case limited to the purchase price. Liability for consequential damage (especially to loudspeakers) is excluded. Please observe the obligatory safety recommendations for model building during operation.

Vorgabe	US-Truck	Euro-LKW
Extra2	2	4
Extra3	3	5
Extra4	90	40
Extra5	80	60

Extra 6	Motorklang	Rückwärts- warnton	Anlasser- klang	Signal
1	US	nein	tief	Horn1
2	US	nein	tief	Horn2
3	US	nein	hoch	Horn1
4	US	nein	hoch	Horn2
5	US	ja	tief	Horn1
6	US	ja	tief	Horn2
7	US	ja	hoch	Horn1
8	US	ja	hoch	Horn2
9	EURO	nein	tief	Horn1
10	EURO	nein	tief	Horn2
11	EURO	nein	hoch	Horn1
12	EURO	nein	hoch	Horn2
13	EURO	ja	tief	Horn1
14	EURO	ja	tief	Horn2
15	EURO	ja	hoch	Horn1
16	EURO	ja	hoch	Horn2
s.o. + 16	s.o.	s.o.	s.o.	Horn3+4

