

RF Transmitter Type HFS..

Order information

Name	Type	Part No.
RF Transmitter 27 MHz	HFS27	133 010 01 AX
RF Transmitter 35 MHz	HFS35	133 010 02 AX



- **RF transmitter for hazardous areas**
- **It is used for wireless radio connections in MR90 systems in underground pit area**
- **Explosion protection category / mode: I M1 EEx ia I**

Description

The RF transmitter type HFS.. is part of the intrinsically safe underground radio system MR90 and is used for frequency modulation with the LF signal input.

The HFS27 is a frequency modulated RF transmitter with a transmitter frequency range of 26,5 to 27,5 MHz. There are 21 transmit channels selectable. The channel spacing is 50 kHz. It is used for the mobile station of the MR90 radio system.

The HFS35 also is a frequency modulated RF transmitter.

Both transmitters are in principle equal in mechanical and electrical construction. The transmitter circuit is redesigned merely for an operation in the 35 MHz band. Here are also 21 transmit channels selectable with a channel spacing of 50 kHz. The HFS35 is used for the base station.

The RF transmitters are clip-on modules, which for themselves have no independent function.

An electric connection to the corresponding LF Interface NFT01 or the data radio modem MOD02 is made by a 8-wire connection cable which has to be plugged on the 8-pole pin contact strip of the HFS.. transmitter. The module is powered via this strip.

Also the LF signal is transmitted and the "Transmitter-ON signal" ("S_{ein}") are supplied over it.

Through a limiting amplifier and a low-pass filter the LF signal is led to a voltage-controlled oscillator.

A oscillator signal derived from a quartz is connected to a PLL circuit over a scaler chain set to a divisor according to the selected channel.

Depending on the PLL lock-in frequency and the "SEIN" signal on the interface, a post-connected frequency-doubler and the output driver are activated.

Two transmitter band-pass filters suppress spurious signals outside the transmit band. The output signal is available at the coax-socket (ST-HF1) for a connection to the antenna-interface (AANT01) or the leaky-feeder-interface (ASK01).

Beside the 8-pole pin strip exists a 2-pole pin strip, on which the signal "TX" (TTL-level) is emitted if the RF transmitter is active.

For energy saving reasons in a pure speech radio mobile station, the TX signal can be used to activate the output amplifier in the antenna-interface only when the microphone key is pressed.

This makes a longer operation time out of the vehicles battery possible.

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Zur Stromersparnis kann in einer reinen Sprechfunk-Mobilstation das TX-Signal dazu verwendet werden, den Ausgangsverstärker in der Antennenanpassung erst dann einzuschalten, wenn die Mikrofontaste betätigt wird.

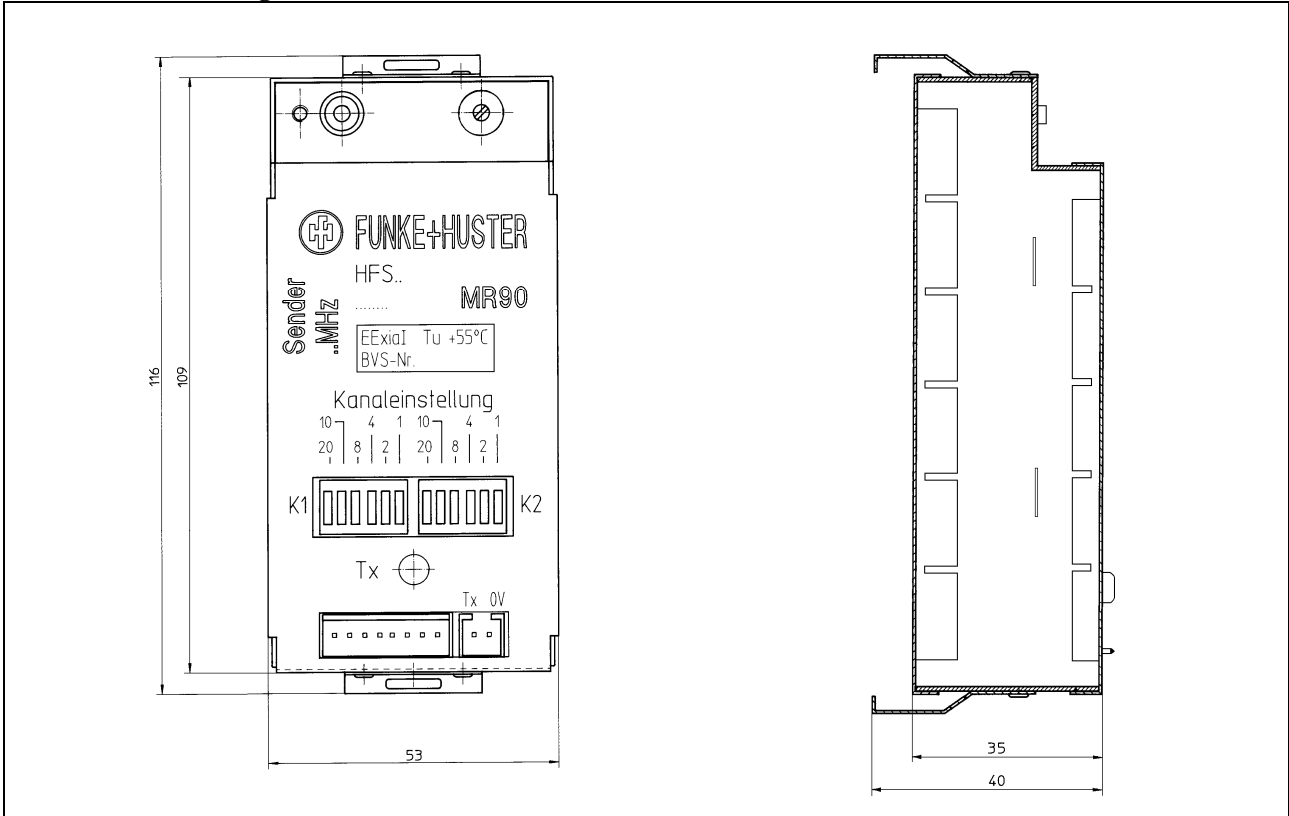
Damit wird eine längere Betriebsdauer aus der Fahrzeugbatterie ermöglicht.

Construction

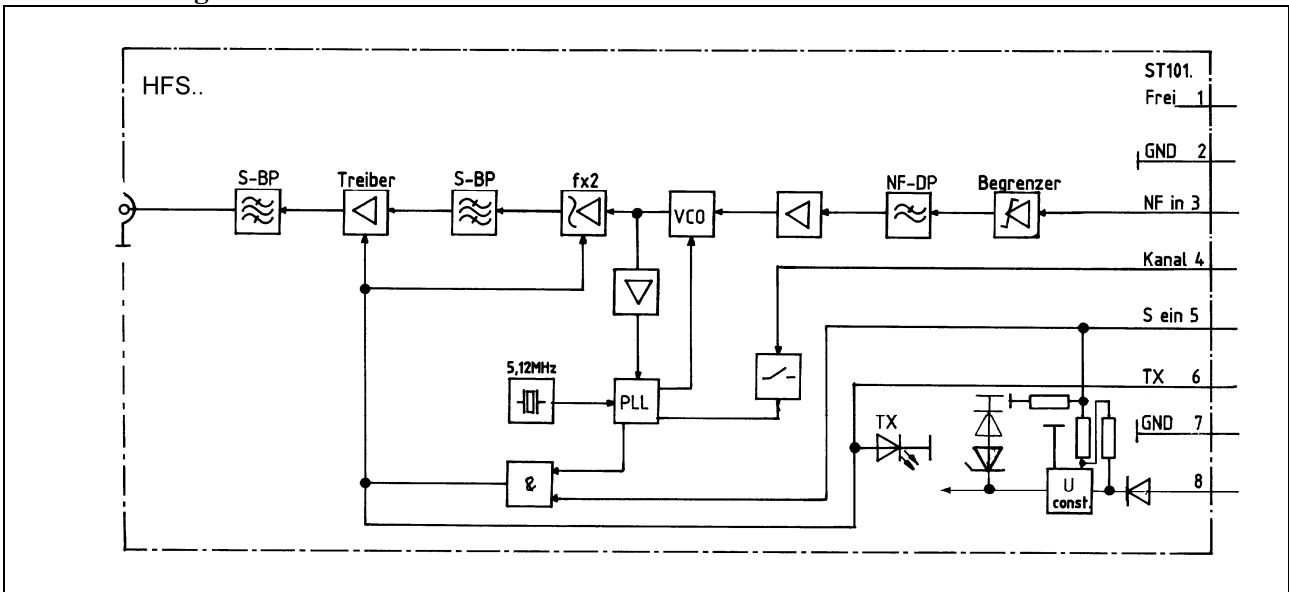
The module has a tin plate housing. The electronics inside is placed on two

printed circuit boards. It is mainly fabricated in SMD technology. At the front-sides of the modules there are two clips to fasten the transmitter on the corresponding LF interface module NFT01 or data radio modem MOD02.

Dimensional drawing



Connection diagram



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