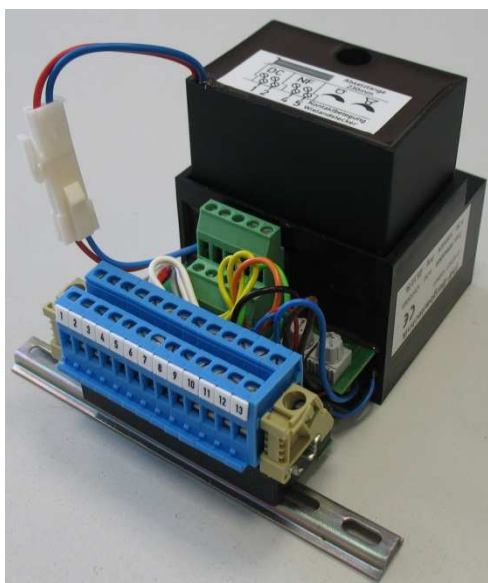


Electronics module LV30 FTS* for FTS installations

*) FTS=Voice and Signal Communication from/to the Cage

Ordering data

Designation	Type	Item no.
Electronics module LV30 with storage battery for FTS	LV30 FTS	125 300 95
Electronics module LV30 without storage battery for FTS	LV30 FTS	125 300 95 01



- **Connection via terminal strip**
- **Reliable intercommunication and signalling at high volume**
- **Emergency operation (intercommunication) in case of mains failure by means of storage batteries installed in each LV30 FTS**
- **Rechargeable NiMH battery (8.4V / 200MmAh)**
- **Connection of DC wires: protected against polarity reversal**
- **Connection of WL wires: protected against polarity reversal**

Configuration

The electronics produced in SMD technology is installed and sealed in a plastic housing and consists of two modules. In the bottom housing, the battery charging circuit, the loud-speaker amplifier and the microphone amplifier. are installed The top housing contains the plug-in rechargeable NiMH battery pack. On the one hand, the installed battery enables a high volume at a low power consumption, and on the other hand, it enables the temporary emergency operation of the electronics module after shutdown of the mains voltage or in the event of a mains voltage failure.

Functional description

The electronics module LV30 FTS is used e.g. in control desks and control cabinets for signalling or communication.

The connections of the electronics module are routed to a terminal strip which enables the further wiring.

Connection of a microphone and the related talk key to the terminals of the electronics module LV30 FTS is possible.

The microphone is activated by pressing the talk key. The downstream connected microphone amplifier boosts the signals recorded via the microphone to such an extent that afterwards they are input into the WL (LF)-wire pair at a nominal level of -6dB. A potentiometer installed right beside the connecting terminals allows varying the microphone sensitivity. In as-supplied condition, this potentiometer is set to the centre position.

In addition to the talk key connection, the LV30 FTS electronics module is

Electronics module LV30 FTS

equipped with a connection for the signal key and the control room alert key (dispatcher call key).

When the signal key is pressed, a signal tone of 1980 Hz (-6dB) is output, when the control room alert key is pressed, a the control room alert tone 420 Hz (-6dB) is output onto the WL (LF)-wire pair. While the signal tone is intended for signalling purposes, the control room alert tone can be used as a call tone e.g. to call a WL200 switchboard by activating this key in a previously defined sequence.

As a function check, the signal tone will also be emitted for a short time

(approx. 100ms) through the device-own loudspeaker connection after the signal key has been pressed (1980 Hz). The output stage for activating the loudspeaker connected to the LV30 FTS electronics module is controlled through a speech detector. This device features a transformer-decoupled connection to the WL (LF)-wire pair of the connecting line.

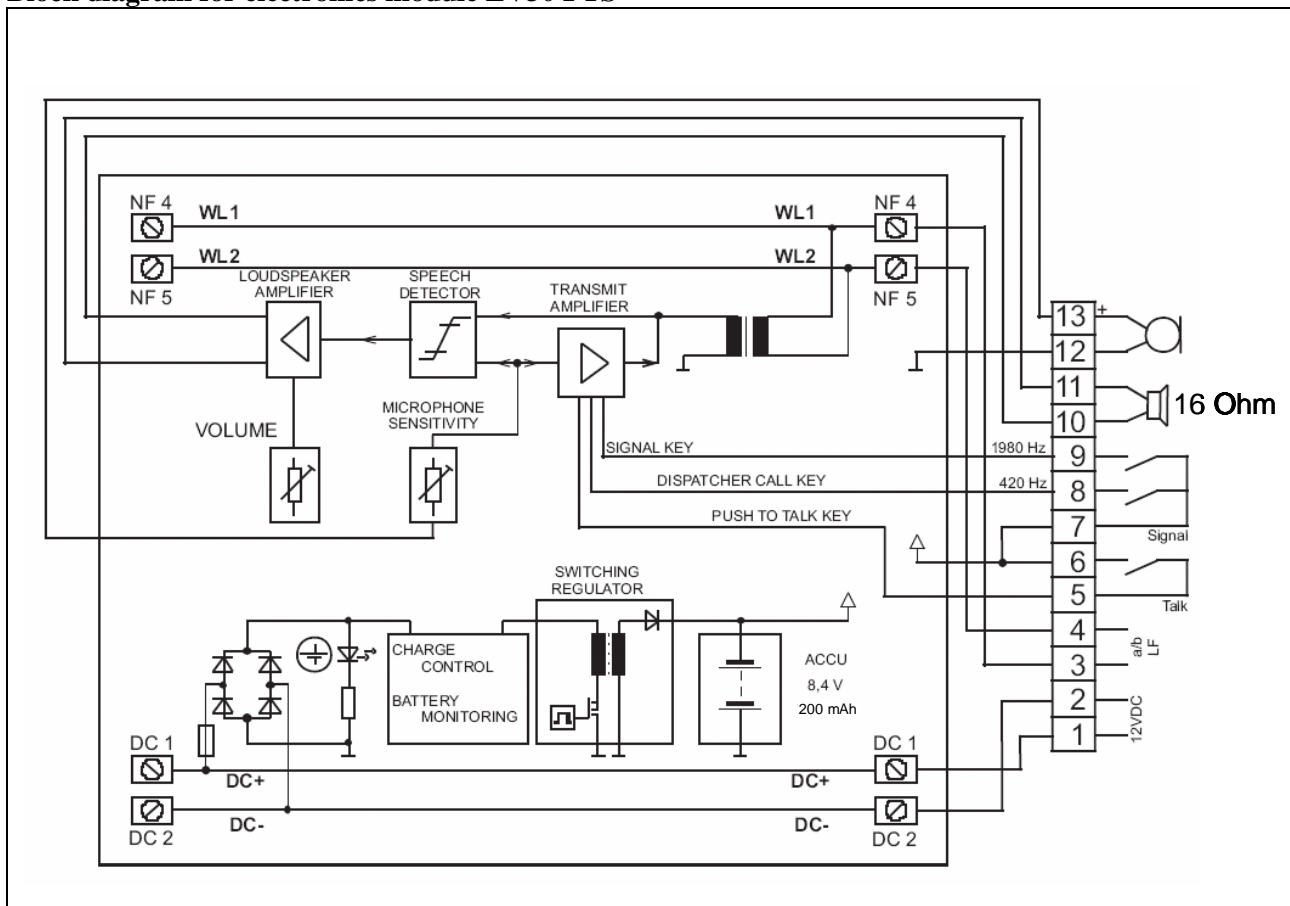
In the case of AC levels with a value of > 60 mV on the WL (LF)-wire pair of the connecting line, the speech detector responds and activates the output amplifier of the LV30 FTS electronics module.

With signal levels < 40 mV, the speech detector is deactivated and shuts down the output amplifier with an OFF delay (OFF delay approx. 1 s).

A potentiometer installed right beside the connecting terminals allows the volume adjustment. In as-supplied condition, this potentiometer is set to maximum volume.

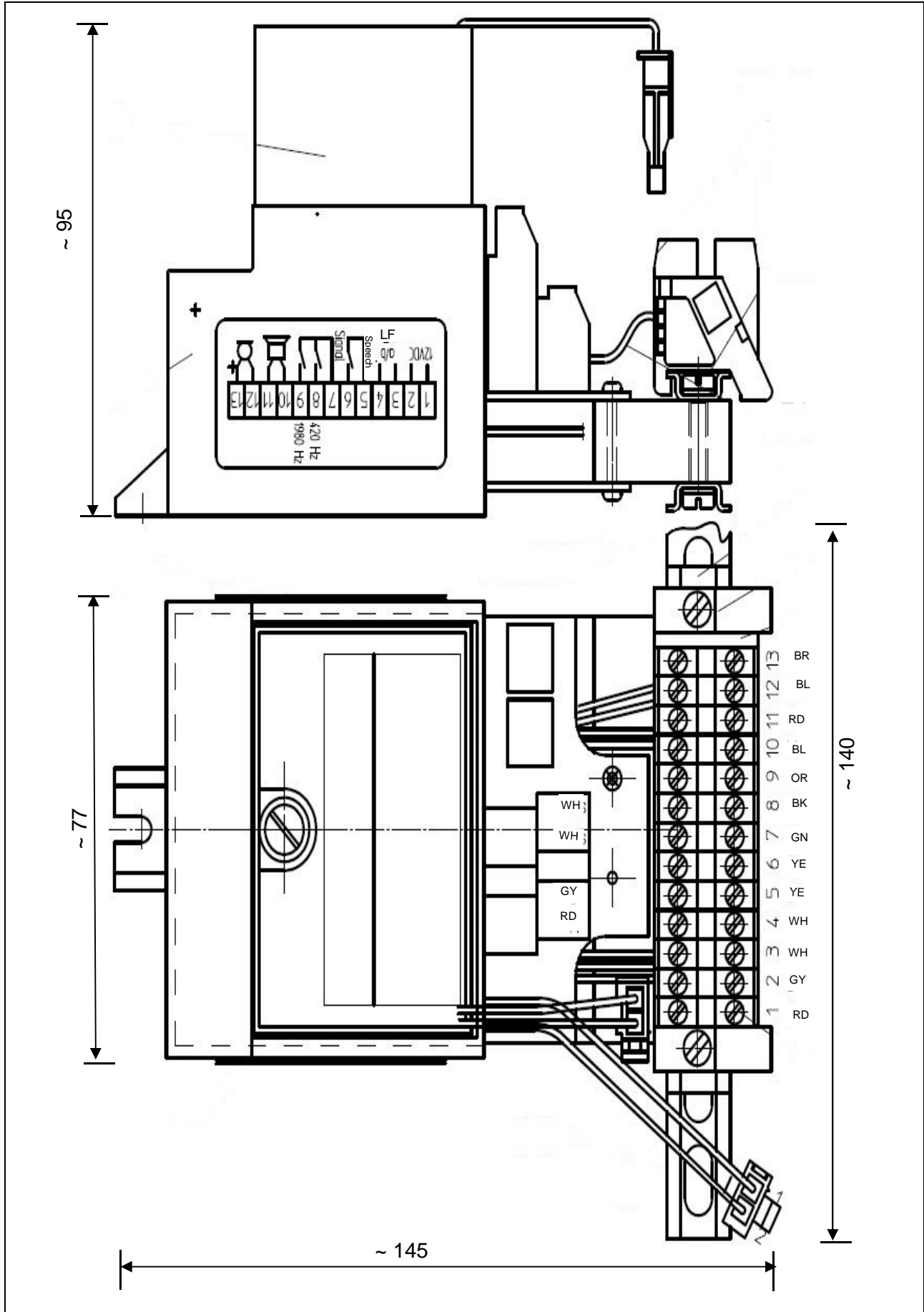
The battery of the electronics module is charged through an internal switching converter with constant energy which is drawn from the supply voltage (8 to 12V) energizing the DC input terminals.

Block diagram for electronics module LV30 FTS

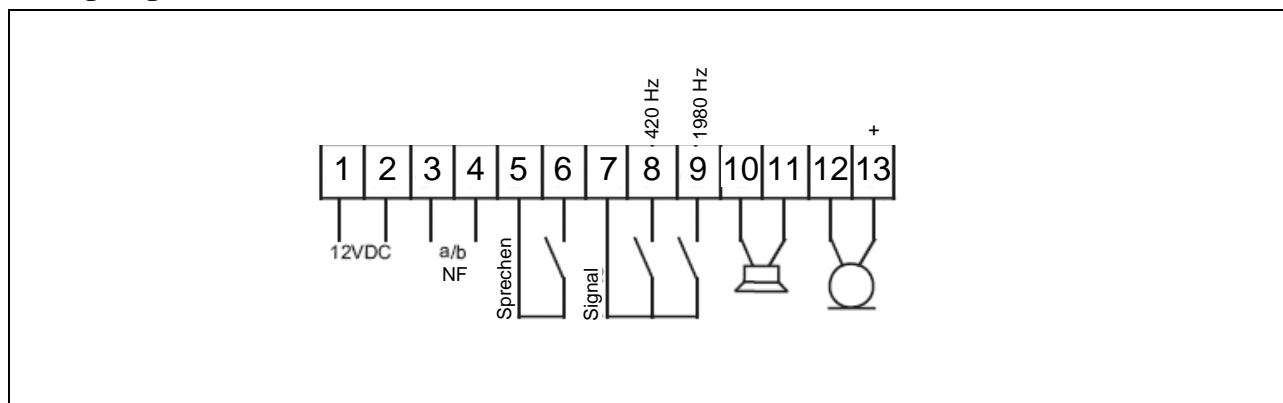


Electronics module LV30 FTS

Dimensional drawing for electronics module LV30 FTS



Wiring diagram for electronics module LV30 FTS



Technical data

Designation	Electronics module	
Type	LV30 FTS	
Power supply circuit (DC wire pair)		
Nominal values:		
Terminal DC 1	+ 12 V _{DC} to +8 V _{DC} connecting terminals for the DC	
terminal DC 2	0 V _{DC} wires of the connecting line	
Note:		
The connection of the DC wires is configured such that it offers reverse polarity protection.		
The interchanging of terminal DC1 with terminal DC2 or of connection 1 with connection 2 is permitted.		
LF circuit (WL(LF)-wire pair)		
Nominal voltage	385mV at 600Ω (-6dBm)	
Terminal 3 a LF	WL1	Connecting terminals for the
terminal 4 b LF	WL2	WL-wires of the connecting line
Note:		
The connection of the WL wires is configured such that it offers reverse polarity protection.		
The interchanging of terminal NF 4 with terminal NF 5 or of connection 4 with connection 5 is permitted.		
Transmission level	-6 dBm (± 1 dB) at 600 Ω on WL(LF)-wire pair for speech, signal and control room alert	
Frequencies		
Speech	300 Hz to 10 kHz	
Signal tone	1980 Hz	
Control room alert	420 Hz	
Speech detector		
Speech detector activated	Signal voltage ≥ 60 mV	Signal voltage on the WL(LF)-wire pair of the connecting line
Speech detector deactivated	Signal voltage < 40 mV	
OFF delay for the output amplifier approx.	1s	
Battery		
- NiMH battery	8.4V / 200mAh	
- Power consumption	< 30 μA in idle state from the battery approx. 300 mA with loudspeaker activated	

Technical data (continued)

Terminal 1/2:	12 V _{DC} speech, signal tone and control room alert tone
Terminal 3/4:	a/b LF
Terminal 5/6:	Talk key
Terminal 7/8:	Control room alert tone
Terminal 7/9:	Signal tone
Terminal 10/11:	Loudspeaker (nominal impedance 16 Ω)
Terminal 12/13:	Microphone
Operating mode	100 % ON-time
Service position	at choice
Operating conditions	Outside mining areas susceptible to fire-damp
Temperature range	
Operation	0 to +40°C
Storage	-25 to +50°C
Dimensions	see dimensional drawing
Weight	approx. 0.8 kg
Company	FHF Bergbautechnik 42551 Velbert Germany
Type	8084A800
Item No.	12530095 CE 0158
	F. No. Test (short sign, month/year)

Storage:

The storage battery installed in the LV30 FTS electronics modules is subject to self-discharge. After a longer storage period, the battery should be charged to ensure that the LV30 FTS electronics module will be immediately ready for operation after its installation.

Warnings & Safety Advice

<p>Connection and installation of the equipment item has to be carried out by instructed qualified personnel in due consideration of the specified regulations for installation.</p>
<p>The device may only be connected and operated with the specified voltage. Any polarity specifications have to be observed.</p>
<p>Make sure to avoid any damage to the housing. Devices with damaged housing must not be operated and have to be put out of service immediately.</p>
<p>For the operation of the device in industrial facilities, the accident prevention regulations of the employer's liability insurance association for electrical installations and equipment have to be observed.</p>
<p>The device must only be operated under the indicated ambient conditions. Harsh ambient conditions can result in damage to the device and therefore lead to a possible risk for the life of the user. Harsh ambient conditions can be:</p> <ul style="list-style-type: none"> • moisture, dusts (pay attention to degree of protection). • combustible gases, vapours, solvents which the type of protection does not cover. • excessively high ambient temperatures (>+40°C) • excessively low ambient temperatures (<-0°C)
<p>The ambient temperature range specified for the device must neither be exceeded nor fallen short of during operation (0°C to +40°C), storage and transport (-25°C to +50°C).</p>
<p>Only the cable and line entry parts specified by the manufacturer must be used.</p>
<p>Defective parts shall only be replaced by corresponding original spare parts.</p>
<p>Repairs must only be carried out by the manufacturer or a person committed by the manufacturer for this work.</p>
<p>Ensure that the keys are easily accessible and talking into the microphone is possible without difficulty.</p>
<p>The device can generate a high output volume, therefore do not come too close to a connected loudspeaker to avoid any hearing damage.</p>
<p>Make sure to replace any defective connecting cable at the device.</p>
<p>Attachment or installation of further parts is prohibited.</p>
<p>In case of transport and storage as well as when not in use the devices and components have to be protected against damage and ingress of dirt.</p>

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