

FSP 100

User Manual



Telegärtner Elektronik GmbH

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Read the following precautions before you install the fire lift phone.

IMPORTANT SAFETY INSTRUCTIONS

SAVE THESE INSTRUCTIONS. This manual contains important instructions that you should follow during installation and maintenance of the lift phone and batteries. Please read all instructions before operating the equipment and save the manual for future reference.

Inhaltsverzeichnis

General Information	3
Technical Data FSP 100	5
Main Unit	5
Handsfree Unit	5
Telephone-Adapter.....	5
Installation Instructions	6
Main Unit	6
Telephone Adapter	7
Handsfree Unit	8
First Start	9
First Start	10
Configuration Hints	11
Main Menu Overview	11
Configuration: Identification	12
Configuration: Loudspeaker	12
Configuration: Microphone	12
Configuration: Line Adjustment	13
Configuration: Language (Sprache)	13
Configuration: Hands-Free (Freisprechen)	14
Main Menu: Format All? (Formatieren).....	14
Usage Restrictions	15
Communication Modes	16
Legal Information	18

General Information

The Firebrigade-Lift-Phone FSP100 provides up to max. 3 stations with handsfree communication units.

Communication is possible with all connected units in different communication modes simplex and duplex (handsfree).

A main unit is located in the engine-room, and supply the handsfree units with power and audio via a 2-wire line.

It is also possible to connect a simple analog telephone-set to the system by use of an adapter. After going off-hook the operator may participate on the communication.

To configure the FSP100 system you have to connect a PRG100 programming terminal to the handsfree units, which provides an special interface.

In addition, there is the possibility to configure other handsfree-units by a remote option, using DTMF tones for a simple data transfer. But keep in mind that this option is not recommended if you use the units in duplex mode.

Special Features

- up to 3 units, optional telephone-set with special adapter possible
- system ready after switch on the main-unit's power supply
- special input provides the possibility to disable a handsfree-unit, e.g. to prevent of acoustic feedback while the lift is located in the main-entry area
- special input provides selection of different communication modes (simplex, duplex, mixed)
- lamp or LED output for operation indication
- multiple configuration possibilities available by PRG100 terminal adapter
- different languages selectable for configuration menu

Technical Data FSP 100

Main Unit

Supply Voltage	230V AC, 50 Hz, 48 VA
Case:	
Protection	IP65
Dimensions	(160 x 250 x 90) mm
Weight	2,20 Kg

Handsfree Unit

a/b Terminals:	
Voltage	approx. 11 V
Current	25 mA const.
c/d Terminals:	
Voltage	approx. 18 V
Current	approx. 1,3 A Peak
Power	max. 10 W
Case:	
Protection	IP65
Dimensions	(160 x 120 x 90) mm
Weight	0,45 Kg

Telephone-Adapter

a/b-Terminals:	
Voltage	approx. 10 V
Current	25 mA const.
c/d-Terminals:	
Voltage	15 V
Case:	
Protection	none
Dimensions	(105 x 80 x 27) mm
Weight	0,10 Kg

Installation Instructions

WARNING



Mind your safety when you are installing the lift phone. You must never work in an open lift shaft without a safety harness. Be extremely careful or break the current if you have to work close to a voltage of 110 - 400 V, e.g. in the lift engine room. Never disconnect a cable before you have made sure that it is dead.

Main Unit

1. The main unit is normally located in the engine-room, with maximum distance to interference sources.
2. Connecting the 230V-terminal have to be done by an authorized person only. Please consider your local regulations.
An earth-ground connection is needed for lightning protection only.
The wire should be 1,5 – 2,5 mm².
3. You have to connect the main unit in a way, that it is **powered only if the firebrigade switch on the system** with their special key in the main entry. Don't forget that the whole system needs an power backup-system.
4. Every handsfree unit is connected to one of the 3 terminals of the main unit by an at least 4-wire, shielded cable (e.g. J-Y(St)Y).
A wire diameter of at least 0,6mm have to be used.

Terminal	Description
a	2-wire line +
b	2-wire line -
c	Power for Amplifier, app. 18 V DC
d	Power for Amplifier, Ground

5. All terminals of the main unit has to be connected either to a handsfree unit or a telephone adapter. Otherwise there is no function!

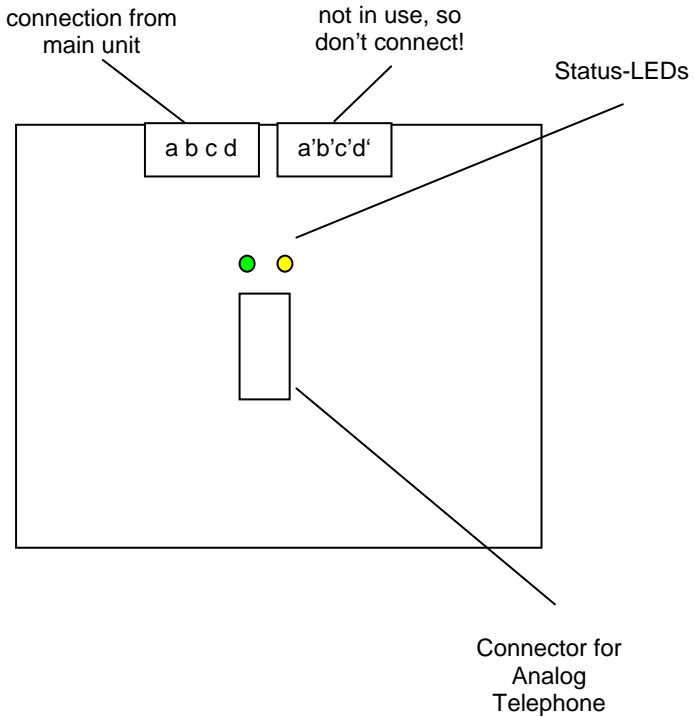
IMPORTANT



Because the system is realized as one behind the other (in series) all connections has to be done very carefully. If one connection fails, the whole system will be failed!

Telephone Adapter

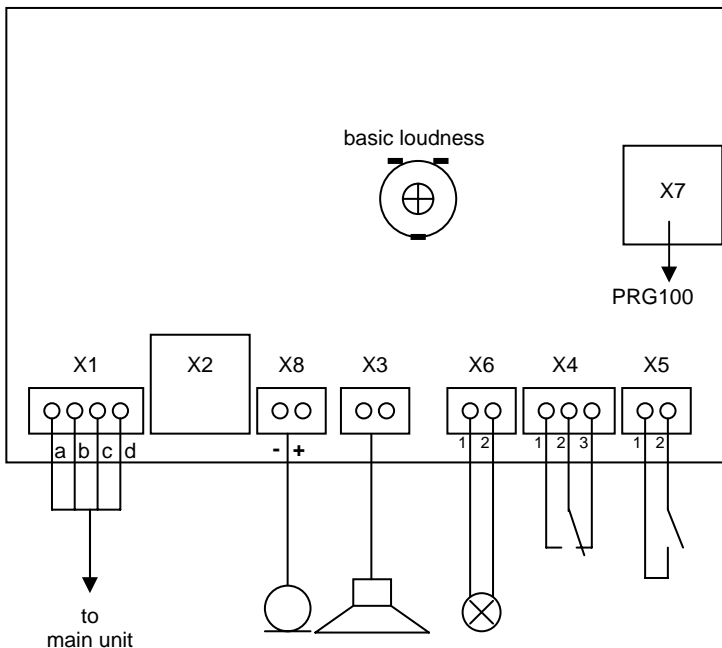
1. Instead of a handsfree unit you may connect an analog telephone-set to the system by use of this special adapter.
2. See the adapter's backside of how to mount it on the wall.
3. Two LEDs indicates the operation state of this adapter:
yellow = Amplifier Voltage c/d exist, green = line a/b busy



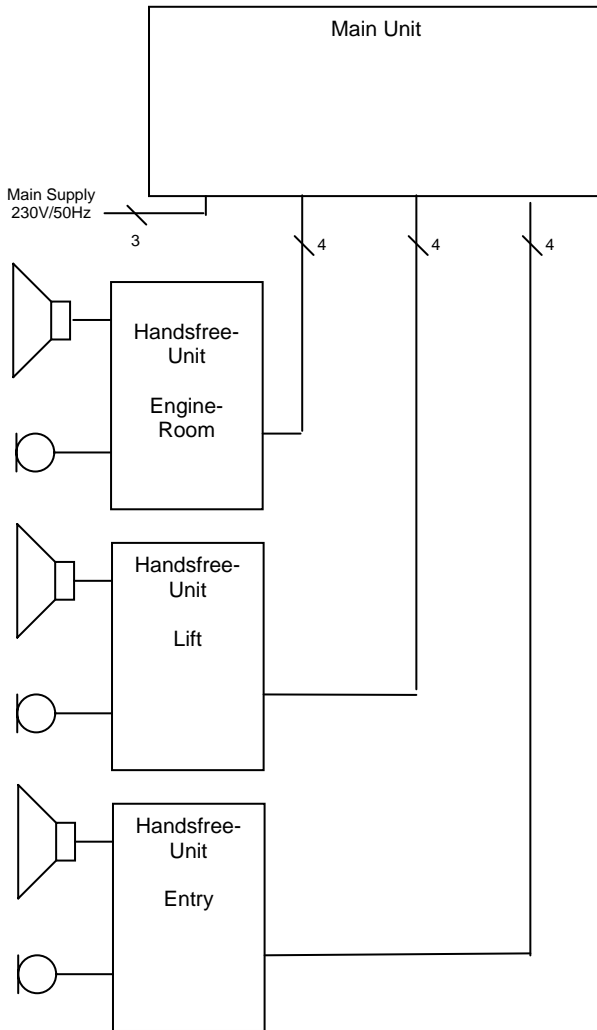
Handsfree Unit

1. The handsfree unit's location has to be selected in a way that connection to loudspeaker and microphone is as short as possible.
2. Connect the loudspeaker (recommended max. 10 Watt/ 4 Ohm) to the terminal connector X3.
3. Connect the microphone to terminal connector X8.
- Important: Consider the right polarity!**
4. You may connect a lamp or LED (with extra resistor) at connector X6. (Output app. 18V DC, maximum 50mA).
5. To prevent acoustic feedback if the lift enters the main entry you can deactivate the unit. Just connect a galvanic isolated switch to connector X5. The unit is deactivated while the switch at X5 is closed.
6. The connector X4 selects the communication mode. Please refer to chapter "Communication Modes" for further informations.

Connection on X4	Effect
1 - 2	speak while in simplex-mode
2 - 3	listen while in simplex-mode
1 - 2, 2 - 3	speak while in simplex-mode, because speak mode input has higher priority if both connections done
open	duplex-mode (handsfree-talking)



System Overview:



First Start

After the system has been installed completely as described before, you may check the function step by step as follows:

1. **Test the units:**

At delivery state all units use the same initial state which is good enough to test the system. Please check if the loudspeaker and microphone is working (tip with the finger on the microphone and you should hear it out of your loudspeaker).

If a telephone adapter is in use, go off-hook and check the function too.

2. **Automatic line adjustment:**

Because line length and other line parameters influence the handsfree quality, a line adjustment has to be done for every handsfree unit. Please select Configuration->this unit?->Line Adjustment with the PRG100.

See chapter "Configuration Hints" for further details.

3. **Identification**

For remote configuration it is necessary that every handsfree unit has its unique identification. By Configuration->this unit?->Identification? you may select the location of this unit as an identification (Cabine, Engine-Room, Entry).

See chapter "Configuration Hints" for further details.

4. **Adjust microphone and loudspeaker settings:**

Select the loudspeaker's and microphone's settings carefully.

We recommend a loudspeaker volume setting of 50% and a maximum microphone setting of 75% in duplex communication.

Take care that the lift is not located close to another unit.

If an acoustic feedback happens, reduce either microphone or loudspeaker setting.

For best results microphone and loudspeaker should be on maximum distance.



NOTE Microphone settings are only valid in duplex communication mode. In simplex communication the microphone will always be used with maximum sensitivity.

Configuration Hints

You need an PRG100 terminal device to configure the handsfree units. Always do first switch on the PRG100 and then connect it to the terminal connector X7.

To switch on the PRG 100 please press the OK-button ✓ until PRG100 switch on, showing name and firmware release.

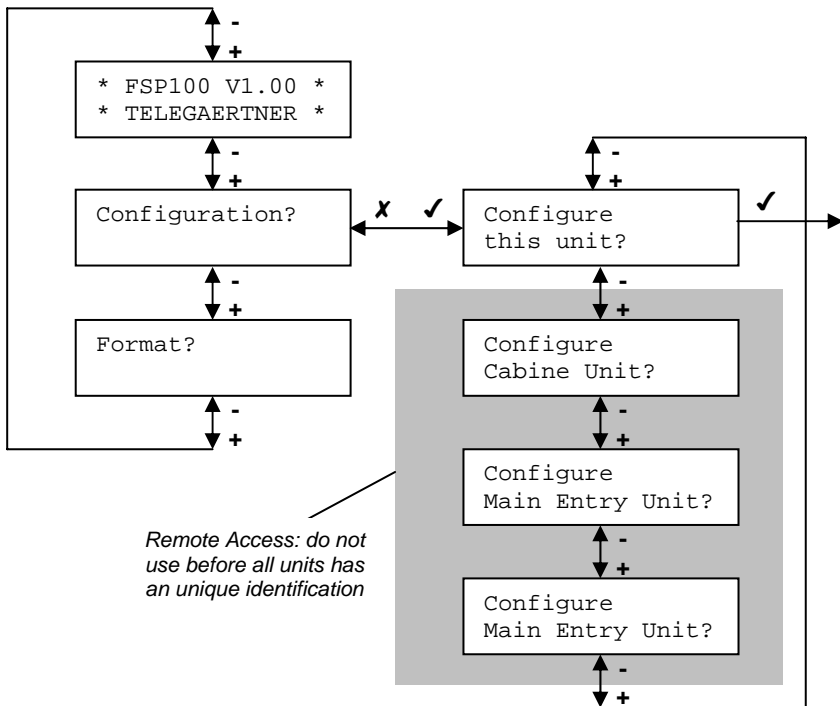
If not already done, switch on the main power supply for the FSP100 main unit. After power on, the handsfree unit should answer with:

If FSP100 was already powered on, just press PLUS-button + several times.

Important Note: Terminal device PRG 100 has to be powered on if connected to a handsfree unit. Otherwise there is some noise which causes malfunction (but no harm) to any of the devices.

Main Menu Overview

From main menu you can select either configuration or format submenu:



Configuration: Identification

For remote configuration it is necessary that every handsfree unit has a unique identification. Because there is a maximum of 3 handsfree units you may select one of 3 identifications:

- cabine (Kabine)
- entry (Zugang)
- engine-room (Maschinenraum)

At delivery state there is no identification selected so you have to configure every unit at place. Select Configuration->this unit?.

With OK-Button ✓ you enter the configuration menu of the current plugged unit and may now select the identification:

Identification:
please select...

Take care that every handsfree unit gets a different identification!

Press OK-button ✓ to enter selection mode (Cursor flashing at first character in second line).

Select identification with button + or – and select the desired Identification with OK-button ✓ . With ESCAPE-button ✕ you cancel the selection without saving the selected item.

After selecting an identification you may configure this unit from other units by remote configuration. There is no difference between direct configuration and remote configuration except some time delay caused by the data transfer.

Configuration: Loudspeaker

The loudspeaker's volume may changed in 32 steps from 3.125 to 100 percent.

Loudspeaker :
50.0%

We recommend to maintain the delivery value of 50% and select the basic volume on board with the variable resistor.

Configuration: Microphone

The microphone's sensitivity may changed in 4 steps between 25 and 100 percent.

Microphone :
75.0%

We recommend not to exceed a maximum value of 75% in duplex communication because every small noise may cause trouble.

Configuration: Line Adjustment

Because handsfree communication depends on line parameters we offer you a fast and easy way to adjust these line parameters automatically.

```
Line Adjustment :  
P=10 S=0 LF=07
```

While adjustment is in progress you hear a tone signal fed into the line. The adjustment duration is about 20 seconds. The values are stored automatically.

Configuration: Language (Sprache)

The menu language is selectable by this menu. At this time German (Deutsch) and English are available.

```
Language :  
English
```

Configuration: Hands-Free (Freisprechen)

To realize duplex (handsfree) communication we use a special voice balance circuit, as used in handsfree telephones.

There are many parameters available via this menu, but these parameters should be changed by experienced persons only.

So we decided to select a most fit configuration instead. But if you have trouble with background noise, you can try to change this setting to 4-point sensing which may provide better noise suppression.

```
Hands-Free:
2-point sensing
```

All further parameters, which are adjustable by this menu, are not described here because of the mentioned reasons above.

Main Menu: Format All? (Formatieren)

If you changed too many parameters and nothing works, you may restore all settings to the delivery state.

```
Format All?
```

In order to prevent an unintentional formatting, a safety inquiry is inserted.

```
Format All?
Are you sure?
```


Usage Restrictions

We want to refer here expressly when the system FSP100 pushes to its technical borders, so that in planning necessary measures can be already considered:

- Occasionally arising noises (e.g. evacuation loudspeaker announcements) are recognized by the system as speech, and lead to switching in speak direction.
Remedy: Switch off announcement loudspeakers near handsfree units, when fire-brigade arrives.
- Constant interferences (e.g. positive pressure ventilation) can be partly compensated. However, if normal people-to-people communication is locally hardly possible by loud noise, our system cannot do this as well.
Remedy: Acoustic insulation or use of simplex or mixed communication mode.

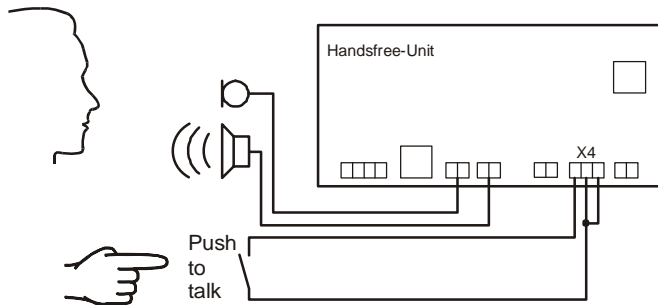
Communication Modes

There are two basic communication modes available, which can be combined as well:

- **Simplex Communication Mode**

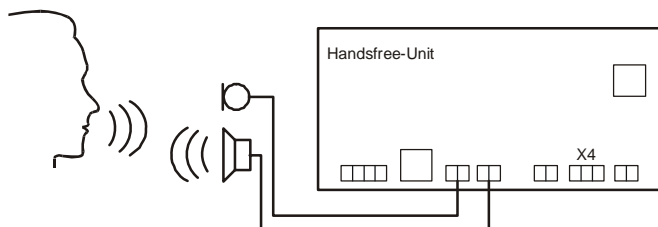
This means that you either listen or speak. In this mode you have to select the speech direction with a push-button connected to X4.

Simplex mode ensures best possible communication in noisy environment.



- **Duplex Communication Mode**

Of course it is not real duplex because it is realized with a special voice balance circuit. That means that speech direction is switched from listen to speak if enough speech is detected. This mode is selected if connector X4 is not closed.

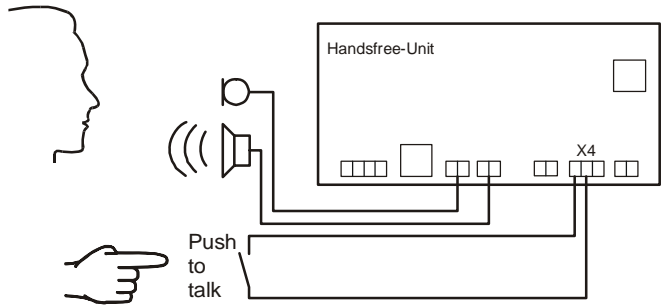


If all handsfree units use duplex communication, the most powerful speaker gets the attention of the other. But this may cause also trouble, e.g. if engine noise, alarm signals or other sources are too loud.

In this case you either reduce microphone's sensitivity or use simplex or mixed communication.

- **Mixed Communication Mode**

By wiring X4 as shown below you may use a combination of both modes if necessary, e.g. use duplex mode, but force system to speak in simplex mode if communication is not possible because of noisy environment.



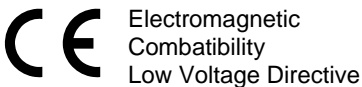
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