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# Operating instructions for the LKS 25 (S)

## 1. Introduction

This counter intercom has been developed for and is ideally suited for all counter, service desk and reception uses and other situations in which an intercom system is essential. This LKS 25(S) is a very user-friendly system that provides you with clear interactive communication.

Three mode settings (only useable for type LKS 25) allow you to select the best sound quality. If the background noise changes, you can easily select a different mode so that you can always communicate in the most optimum way.

In addition to the standard functionality of this counter intercom, several options are available to expand the functionality. For example, an additional facility is available for those who are hard of hearing and there is the option of a separate paging tone so that counter staff can be paged if not present at the counter. Furthermore, it is possible to connect an external audio source that is constantly audible on the customer side. In medical environments for example, this function allows a computer to pass on instructions to patients.

### 1.1 Note

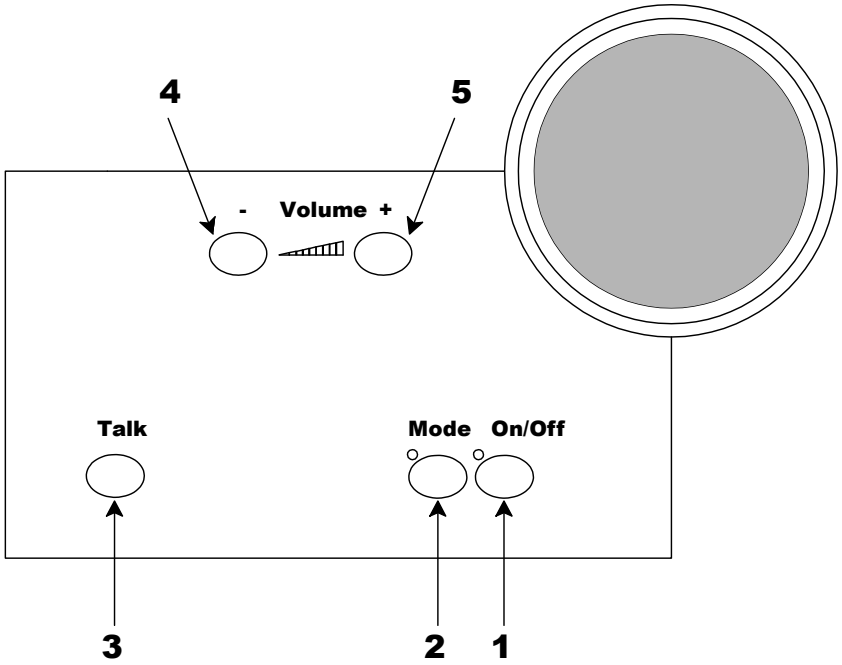
This user guide is suitable for two types of intercoms, type LKS 25 and LKS 25S. The LKS 25S is a simplex model. The “mode” key on the LKS 25S does not have a function. De led lights up red to show you the simplex mode is active. With the LKS 25 it is possible to switch modes. The user guide will tell you witch function you can use with witch type intercom.

# 2. Controls

1. *On/Off:*
   - Switches the counter intercom on and off.
   - Switches on the timer function.

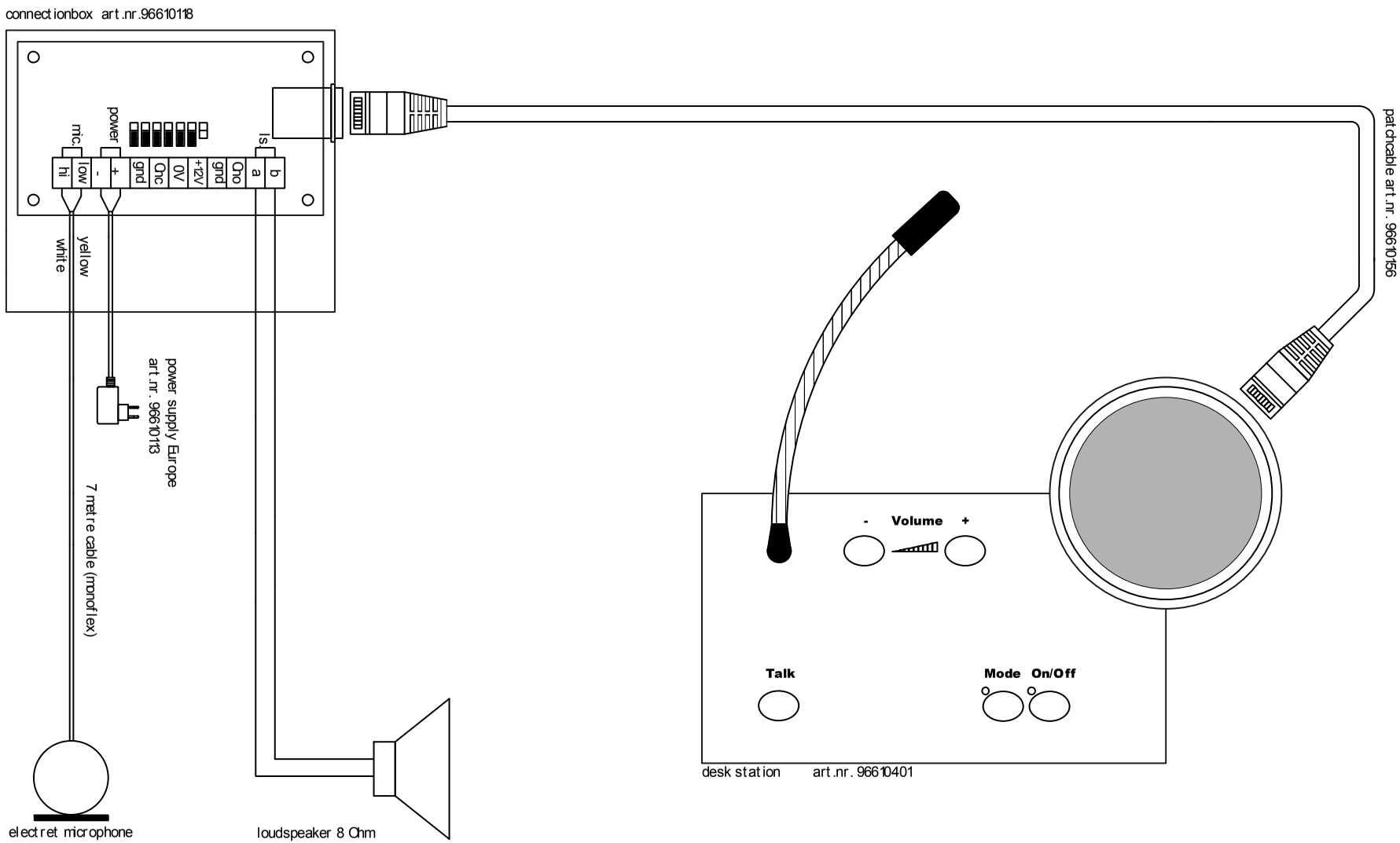
2. *Mode* (*selecting various mode settings):*
   - Simplex (type LKS 25 and type LKS 25S)
   - Duplex (type LKS 25)
   - Switched duplex (type LKS 25)

3. *Talk:*
   - Sets the speech direction.
   - Amplifies external communication.
   - Cancels standby mode.
   - Adjusts external volume when used in conjunction with one of the two volume keys.
   - Restores factory setting when used in conjunction with both volume keys.

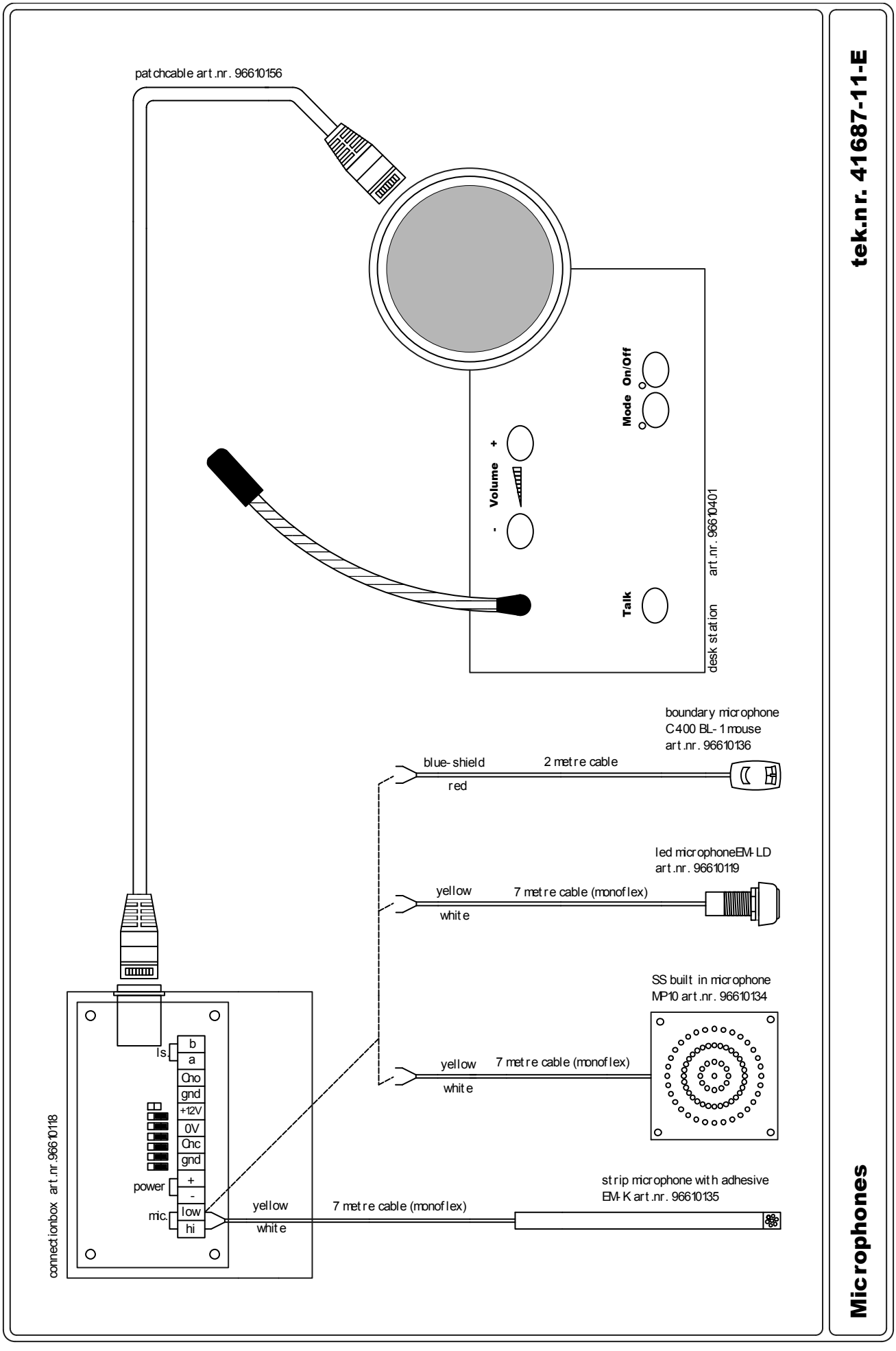


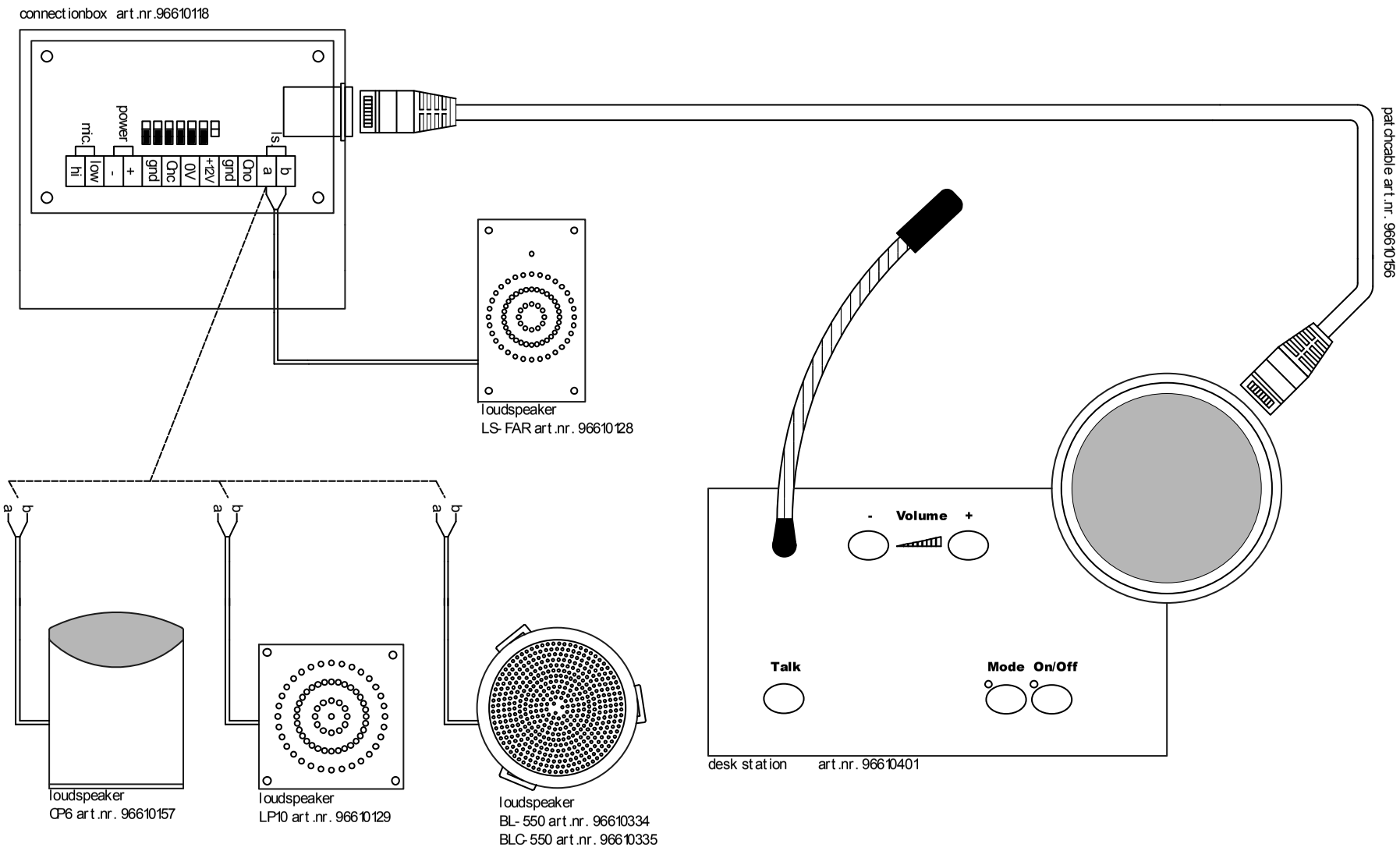

4. *Volume:*
   - Decreases the volume.
   - Adjusts external volume when used in conjunction with the "Talk" key.
   - Restores factory setting when used in conjunction with the "Talk" key.

5. *Volume:*
   - Increases the volume.
   - Adjusts external volume when used in conjunction with the "Talk" key.
   - Restores factory setting when used in conjunction with the "Talk" key.

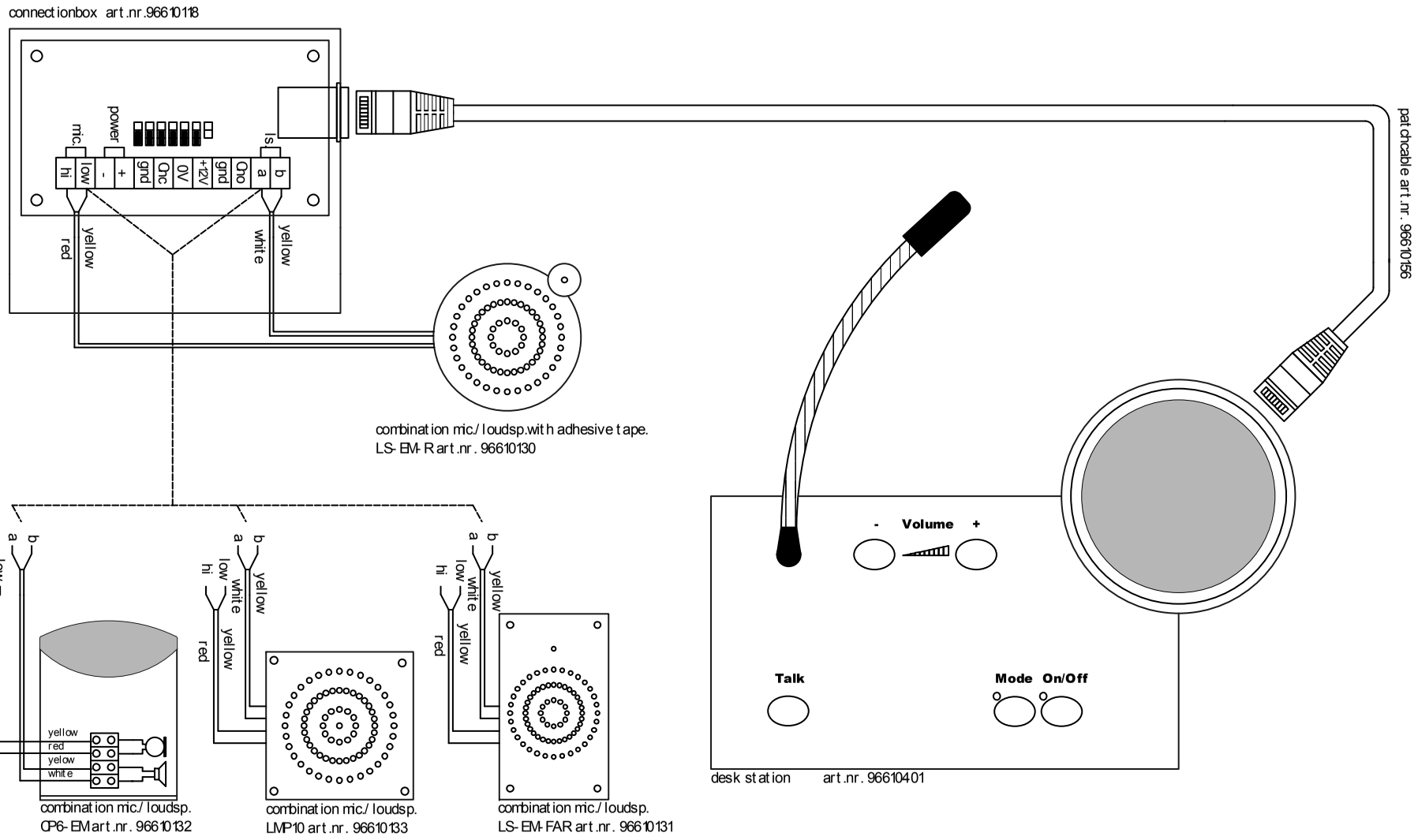



**Block diagram connections** **tek.nr. 41687-10-E**

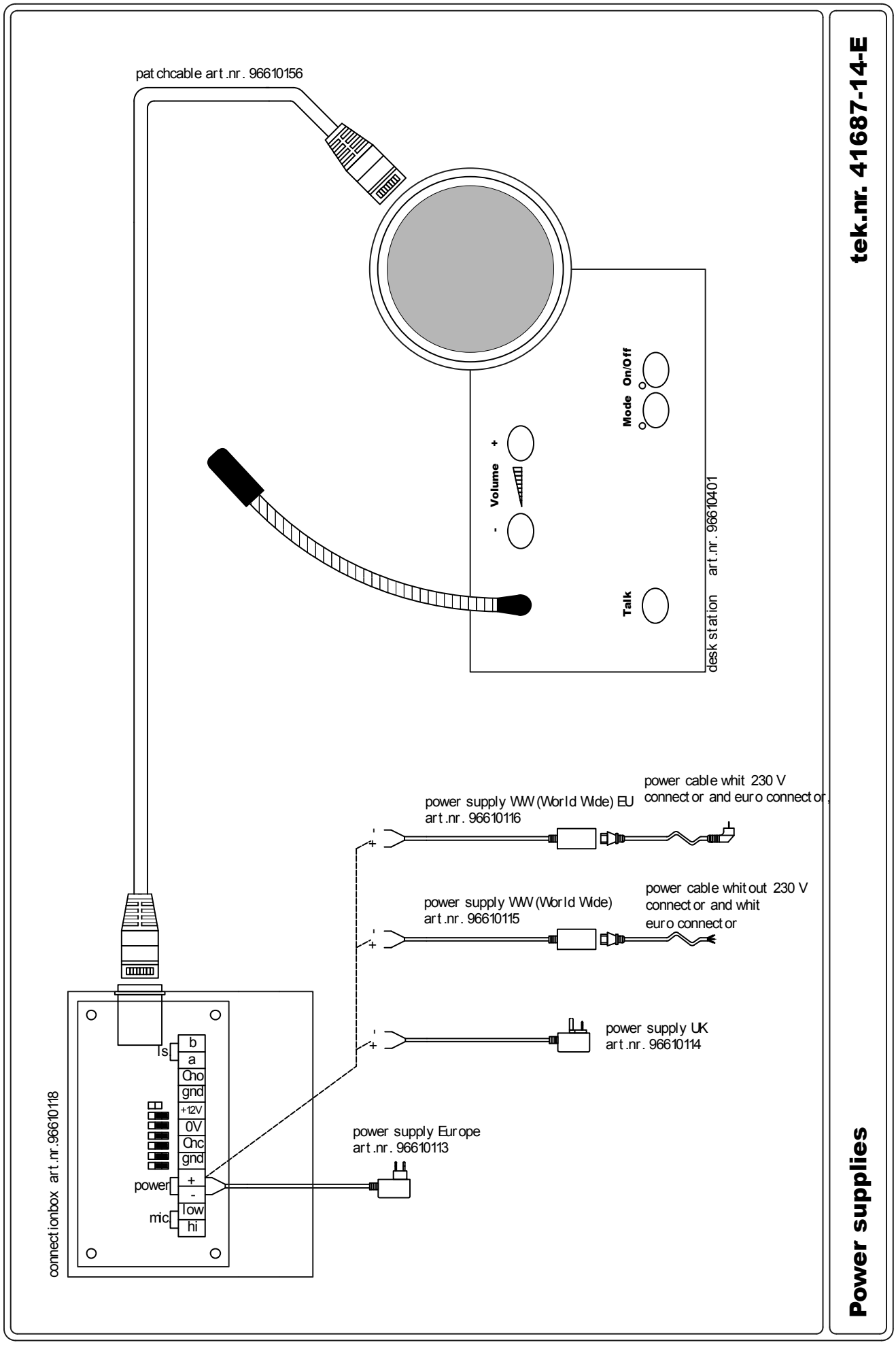

tek.nr. 41687-11-E
Microphones
patchcable art.nr. 96610156
Mode On/Off
Volume +
-
Talk
art.nr. 96610401
desk station
boundary microphone
C400 BL-1 mouse
art.nr. 96610136
blue-shield
red
2 metre cable
led microphone EM-LD
art.nr. 96610119
yellow
white
7 metre cable (monoflex)
SS built in microphone
MP10 art.nr. 96610134
yellow
white
7 metre cable (monoflex)
strip microphone with adhesive
EM-K art.nr. 96610135
yellow
white
7 metre cable (monoflex)
connectionbox art.nr. 96610118
ls.
b
a
Cho
gnd
+12V
0V
Chc
gnd
power
+
-
mic.
low
hi




**Loudspeakers** **tek.nr. 41687-12-E**




**Combinations microphone / loudspeaker** **tek.nr. 41687-13-E**


tek.nr. 41687-14-E
Power supplies
patchcable art.nr. 96610156
Mode On/Off
Volume + -
Talk
desk station art.nr. 96610401
power cable whit 230 V
connector and euro connector
power supply WW (World Wide) EU
art.nr. 96610116
power cable whitout 230 V
connector and whit
euro connector
power supply WW (World Wide)
art.nr. 96610115
power supply UK
art.nr. 96610114
power supply Europe
art.nr. 96610113
connectionbox art.nr.96610118
ls
b
a
Cho
gnd
+12V
0V
Chc
gnd
power
+
-
mic
low
hi

# 8. Mode settings

The LKS 25 features three different mode settings. These settings determine the type of communication. The construction of the counter and the environment in which it is located will determine which of these settings is to be used.

## *8.1 Simplex: (type LKS 25 and LKS 25S)*

The simplex mode is a setting that allows one-way communication. This means that the counter staff select the communication direction. If it is deemed unadvisable that the customer can hear the counter staff continuously, the simplex mode is the right choice.
If the speaker and the microphone are located close to each other on the customer side, then the simplex mode is the only choice because there is a risk of feedback in the other mode settings (a whistling tone).

## *8.2 Duplex: (type LKS 25)*

The duplex mode is a setting that is frequently used.
The major advantage of this is that, without additional operation, it is possible to undertake hands-free communication with the customer. However, you must remember that when the LKS 25 is not in the timer mode the customer will always be able to hear what the counter staff are saying. A precondition for the duplex mode is that the microphone and speaker on the customer side are located with adequate in-between distance.

## *8.3 Switched duplex: (type LKS 25)*

The difference with the standard duplex is that the communication direction is determined by the side from which the sound is the loudest. In addition, the counter staff always have the possibility of determining the communication direction themselves. The switched duplex mode can be used in situations in which there is little background noise. This mode also allows hands-free operation. If the counter intercom is switched on but is not activated, the customer is unable to hear what the counter staff are saying. Proper operation of the switched duplex mode depends on the arrangement of the microphone and speaker on the customer side and the acoustics of the room.

# 9. Factory settings

The LKS 25 (S) is supplied with the following standard factory settings:

- Simplex volume. *(type LKS 25 and LKS 25S)*
  Internal and external speaker, 25 steps up from minimum level.

- Duplex volume.
  Internal and external speaker, 25 steps up from minimum level.

- Switched duplex volume.
  Internal and external speaker, 13 steps up from minimum level.

- Headset volume.
  Headset speaker and external speaker, 25 steps up from minimum level.

- Amplifier circuit off (option, see page 17).
- Internal audio input without activation off (option, see page 16).
- Paging tone off (option, see page 18).

*9.1 Restoring factory settings:*

To restore the factory settings, press and hold the "Talk", Volume "Up" and Volume "Down" keys simultaneously for 8 seconds. When the LKS 25(S) is switched on after restoring the factory settings, it will start in simplex mode.

*9.1 Power down:*

When the LKS 25(S) has a temporary power down, it will reboot with the same settings it had before the power down. If the timer function was active before the power down it will restart after the power comes back.

# 10. Using the counter intercom

The LKS 25(S) is ready for use as soon as it has been installed.

*10.1 On/Off:*

To switch the LKS 25(S) on and off, press the "On/Off" key briefly. The light above the key will illuminate green when it is “On” and will be extinguished when it is “Off”.
The required mode setting can be selected once the counter intercom has been switched on (only type LKS 25).

**Mode settings:**

*10.2 Simplex: (type LKS 25 and LKS 25S)*

When the LKS 25(S) is switched on for the first time, it will be in simplex mode. After pressing the "On/Off" key, the light above the "Mode" key will illuminate red (simplex).
The communication direction is now from external (customer) to internal (counter staff). The counter staff can hear the customer side via the speaker. In order to speak to the customer the counter staff must press and hold the "Talk" key in order to change the communication direction from internal to external, so that the customer can hear the counter staff. When the counter staff release the "Talk" key, the communication direction will change again from external to internal.
If a foot switch is fitted (option) then this can be used instead of the "Talk" key.

*10.3 Duplex: (type LKS 25)*

To select the duplex mode, press the "Mode" key several times until the light illuminates green (duplex). The counter staff and the customer can now speak simultaneously. By pressing the "Talk" key the counter staff can temporarily amplify their communication to the customer. In other words, a temporary simplex mode situation will be created for as long as the "Talk" key is pressed.
If a foot switch is fitted (option) then this can be used instead of the "Talk" key.

*10.4 Switched duplex: (type LKS 25)*

To select the switched duplex mode, press the "Mode" key several times until the light illuminates orange (switched duplex). When the counter staff speak to the customer, the LKS 25 will automatically open the internal to external communication direction. The light above the "Mode" key will flash. When the customer speaks, the communication direction will switch back automatically. The light will stop flashing. A precondition for this mode setting is that there is limited background noise. If it is noisy then it is possible that the LKS 25 switches over too quickly as a result of which the quality of communication will decrease.
By pressing the "Talk" key the counter staff can temporarily amplify their communication to the customer. In other words, a temporary simplex mode situation will be created for as long as the "Talk" key is pressed.
If a foot switch is fitted (option) then this can be used instead of the "Talk" key.

*Attention:*

If a headset is connected, it will not be possible to select a different mode. The headset always operates in duplex mode (see page 19).

If the internal audio input is active, it will not be possible to select a different mode. In this situation the LKS 25 will always be in simplex mode (see page 16).

# 11. Volume

The volume of the LKS 25(S) can be adjusted using the "Volume Up" and "Volume Down" keys. The required volume can be set by pressing the keys several times.

*11.1 Internal volume*

For each step you hear a bleep and the "On/Off" light flashes briefly. When the minimum or maximum level is reached, you no longer will hear a bleep and the "On/Off" key light will stop flashing.

*11.2 External volume:*

This is adjusted using the "Talk" key and the "Volume Up" and "Volume Down" keys. Press and hold the "Talk" key and press the "Volume Up" or "Volume Down" key simultaneously. For each step the "On/Off" light flashes briefly. When the minimum or maximum level is reached, the "On/Off" light will stop flashing.

*11.3 Volume range:*

Each mode has a volume range of 0 to 70 steps.

*11.4 Volume control:*

The external volume of the LKS 25(S) can be switched on or off in any mode setting.
It is recommended to adjust all volumes of all mode settings first because all volume settings will be switched on or off in one go.
The internal volume can not be switched off.

*11.5 External volume off:*

In order to switch off the external volume, press and hold the “Volume Up” and “Volume Down” keys simultaneously for 0.5 seconds until you hear a short bleep. ***This is not mode dependent***.

*11.6 External volume on:*

In order to switch on the external volume, press and hold the "Volume Up" and "Volume Down" keys simultaneously for 7 seconds until you hear a second short bleep.

# 12. Timer

The LKS 25 (S) has a timer function that allows the counter intercom to enter a temporary standby mode. The advantage of this is that the counter staff will not constantly hear sound from the customer side.

*12.1 Timer function:*

To activate the timer function, press and hold the "On/Off" key for a minimum of 2 seconds (from a switched off situation), after which the light will illuminate red.
If you wish to select a different mode, press the “Mode” key one or several times (only type LKS 25).

*12.2 Standby mode:*

When the timer function is activated, the LKS 25 (S) will enter standby mode after approximately 2 minutes and the "On/Off" light will flash red.
This means that no sound is reproduced. The LKS 25(S) has not been switched off.
The timer will be restarted by pressing the "Talk" key or by activation of a movement sensor or brief operation of the foot switch, if fitted. If the "On/Off" key is pressed, the timer function will have to be reactivated.

# 13. Internal audio input (optional)

If the LKS 25 (S) is supplied with an internal audio input by means of an additional connection on the rear of the unit, it is only possible to use it in simplex mode. The "Mode" key light will illuminate red.

*13.1 Audio input:*

The LKS 25 (S) is supplied with a 5 metre long cable. On one end this cable is fitted with a 9-pole sub-D connector and the other end has two pre-soldered wires.
The sub-D connector is connected to the rear of the LKS 25(S) and the other end of the cable is connected to an audio source. The LKS 25(S) has a symmetric 0 dB audio input.

*13.2 Audio input activation:*

If the external audio source is active and the LKS 25(S) is switched on, an audio signal from this external source will be reproduced. This signal is reproduced via the speaker on the customer side.
Because the microphone is also active in simplex mode, the signal from the audio source will also be reproduced on the counter staff side. This means that if the volume is increased on the customer side the audio source will also be louder on the counter staff side. Correct adjustment of both volumes is therefore important.

*13.3 Audio input volume:*

The audio signal from the external audio source can be adjusted using a small volume control on the printed circuit board.
As standard this is set to the default volumes of the LKS 25(S). This can be adjusted in the event that, in practice, the signal is too strong or too weak in relation to the volume values of the LKS 25 (S). To do this, it will be necessary to unscrew the bottom of the LKS 25(S). The volume control with the text "Inp gain" can be adjusted using a small screwdriver (see figure "LKS 25 printed circuit board" drawing number 41687-16-E, page 21).

*13.4 Mute function:*

If audio input is being supplied from a constant audio source (for example background music), this can be muted during a conversation by means of a contact on the terminal box (see figure "Options" drawing number 41687-15-E, page 20). The contact will be switched on when the "Talk" key is operated.

# 14. Amplifier circuit (optional)

If the LKS 25(S) is supplied with an internal amplifier circuit, the rear of the unit will be fitted with an additional connection and the unit will also have been programmed for this.
This option allows people with a hearing aid to hear the communication from the counter staff better.

*14.1 Intercom LoopPad:*

The LKS 25(S) is supplied with an inductive loop (also known as a LoopPad) which is provided with a 7 metre long cable. This cable is fitted with a 9-pole sub-D connector which is connected to the rear of the LKS 25(S).

*14.2 Intercom LoopPad activation:*

The amplifier circuit is activated as soon as the LKS 25(S) is switched on. When the counter staff speak, the person who is hard of hearing will hear the communication better via their hearing aid. If the timer function is switched on and the LKS 25(S) is in standby mode, the amplifier circuit is not active. This is only reactivated after the timer function has been restarted.

*14.3 Intercom LoopPad volume:*

The audio signal from the LKS 25(S) to the inductive loop can be adjusted using a small volume control on the printed circuit board. As standard this is set to the default volumes of the LKS 25(S). This can be adjusted in the event that, in practice, the signal is too strong or too weak. To do this, it will be necessary to unscrew the bottom of the LKS 25(S). The volume control with the text "RL Gain" can be adjusted using a small screwdriver (see figure "LKS 25 printed circuit board" drawing number 41687-16-E, page 21).

# 15. Foot switch (optional)

By using the optional foot switch, the counter staff can operate the counter intercom hands-free in simplex mode. In the other mode settings the foot switch can also be used to amplify the communication to the customer. The foot switch is connected to the terminal box (see drawing number 41687-16-E, page 21).

# 16. Internal paging tone (optional)

If the LKS 25(S) is supplied with an internal paging tone, the rear of the unit will be fitted with an additional connection. This option is ideal if the counter staff are regularly away from the counter. The customer can announce his/her presence by using the internal paging tone.

*16.1 Paging tone:*

The LKS 25(S) is supplied with a 7 metre long cable. One end of this cable is fitted with a 9-pole sub-D connector and the other end has two pre-soldered wires.
The sub-D connector is connected to the rear of the LKS 25(S) and the other end is connected to a separate push button.

*16.2 Paging tone activation:*

When this button is pressed, the counter staff will hear the paging tone via the speaker. The paging tone is active when the timer function is switched on and the LKS 25(S) is in standby mode. When the paging tone is activated, the timer function will also be started simultaneously.

*16.3 Paging tone volume:*

The volume of the paging tone can be adjusted.
This can be adjusted in the event that, in practice, the signal is too strong or too weak. To do this, it will be necessary to unscrew the bottom of the LKS 25(S). The volume control with the text "Oproeptoon" (Paging tone) can be adjusted using a small screwdriver (see figure "LKS 25 printed circuit board" drawing number 41687-16-E, page 21).

# 17. Infra-red movement sensor (optional)

If the LKS 25(S) is supplied with an infra-red movement sensor, the system can be switched on automatically if it is in standby mode. Instead of operating the "Talk" key or the foot switch, the function is controlled by the movement sensor.

*17.1* Once the customer is within range of the movement sensor, this will energise a contact as a result of which the timer will be re-started.

# 18. Headset (optional)

If the LKS 25(S) is supplied with a headset, the rear of the unit will be fitted with an additional connection.

*18.1 Headset:*

The LKS 25(S) is supplied with a standard RJ 12 connector and connection cable. One end of this cable is fitted with an RJ 12 plug and the other end with a headset connector. The RJ 12 plug is connected to the rear of the counter intercom.

*18.2 Headset activation:*

When the headset RJ 12 plug is connected, the counter intercom immediately enters duplex mode.
The microphone and the speaker of the LKS 25(S) are now switched off. If the timer function is switched on and the LKS 25(S) is in standby mode, the headset volume will be switched off.
This will only be re-activated after the timer function has been restarted. After the headset plug has been removed, the counter intercom will automatically revert to the last mode selected.

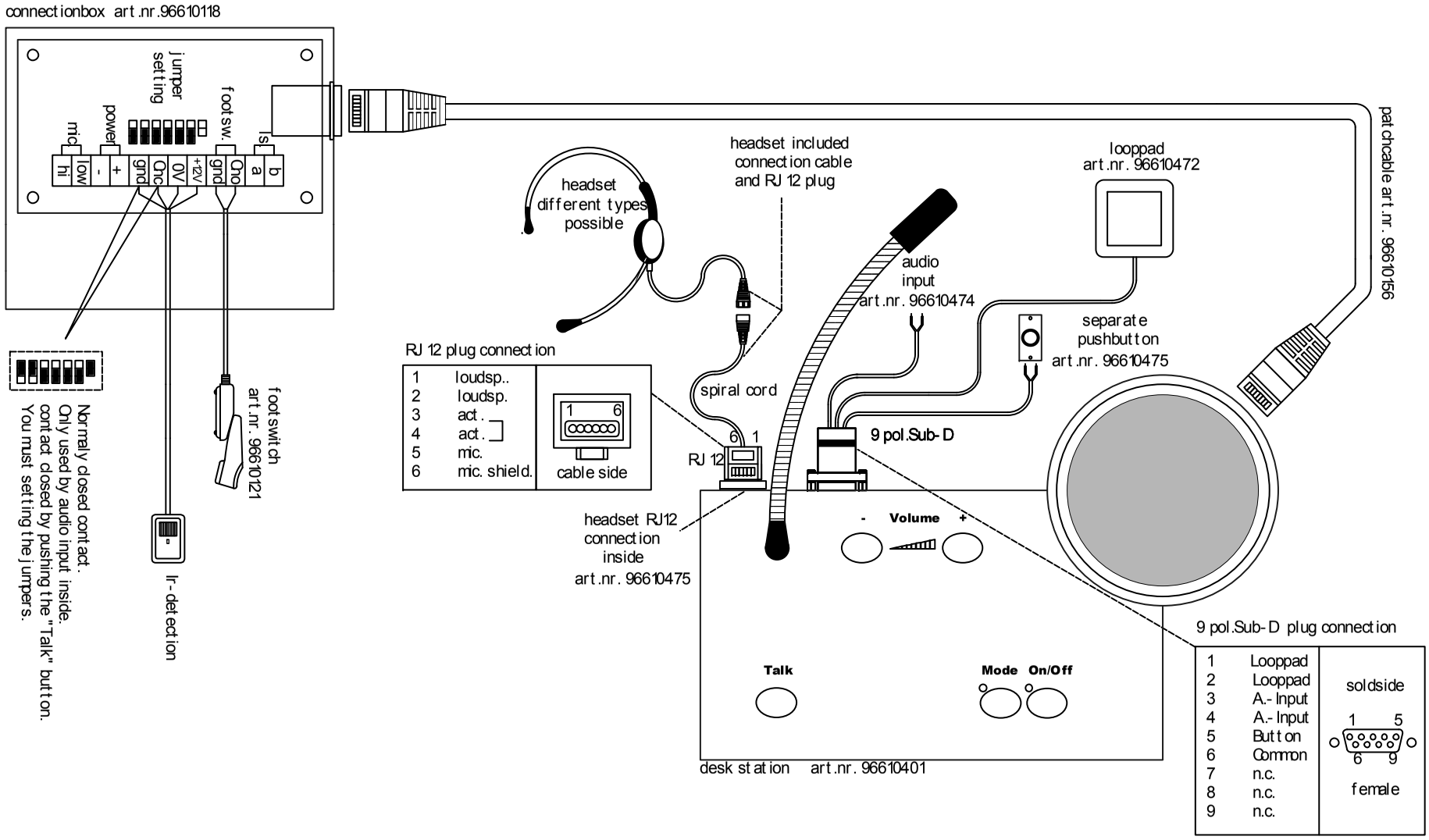
*18.3 Headset volume:*

There are three ways of adjusting the headset volume:

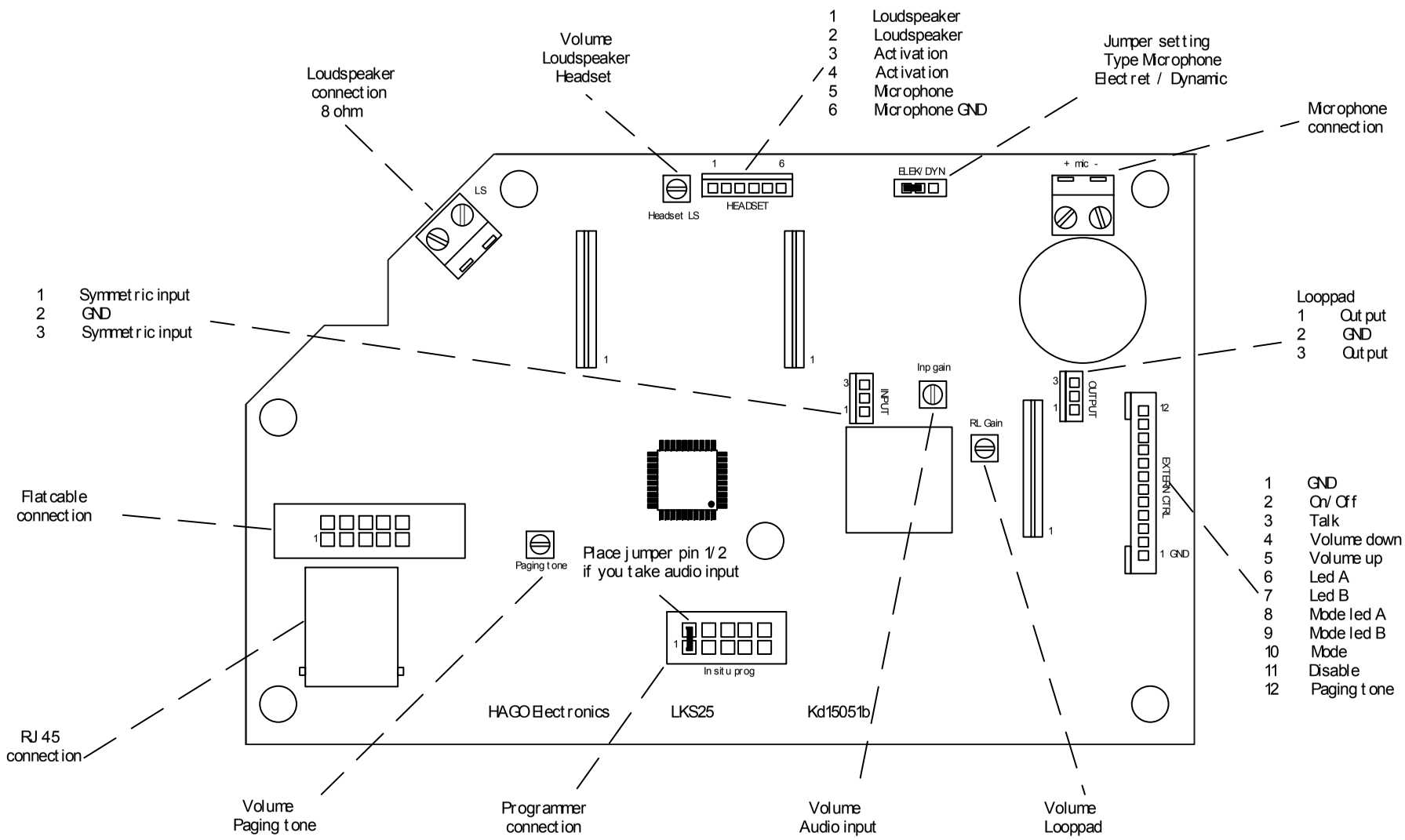
1. via the counter intercom:
   For each step you hear a short bleep and the "On/Off" light flashes briefly. When the minimum or maximum level is reached, you no longer will hear a bleep and the "On/Off" light will stop flashing.

2. via the LKS 25 printed circuit board:
   To do this, it will be necessary to unscrew the bottom of the LKS 25(S). The volume control with the text "Headset LS" can be adjusted using a small screwdriver (see figure "LKS 25 printed circuit board" drawing number 41687-16-E, page 21).

3. via the headset:
   In many cases a headset is fitted with a speaker and microphone volume control. Consult the headset operating instructions for this.




**Options** **tek.nr. 41687-15-E**




**LKS 25 Printed circuit board** **tek.nr. 41687-16-E**

## 21. Specifications

*Desktop device:*

| | |
|---|---|
| Typ | LKS 25(S) |
| Art.nr. | 96610401 |
| Dim. | 227 x 110 x 116 mm. (l x w x h) |

*Connection cable:*

| | |
|---|---|
| Typ | RJ45 cable |
| Art.nr. | 96610156 |
| Length | 2.5 metre |

*Terminal box:*

| | |
|---|---|
| Typ | LKS-A |
| Art.nr. | 96610118 |
| Dim. | 100 x 90 x 31 mm. (l x w x h) |

*Mains adapters:*

| | |
|---|---|
| Typ | Net adapter Europe |
| Art.nr. | 96610113 |
| Input | 100-240V 0,4 A 47-63 Hz. |
| Output | 18V DC 0,55 A. |

| | |
|---|---|
| Typ | Net adapter UK |
| Art.nr. | 96610114 |
| Input | 100-240V 0,4 A 47-63 Hz. |
| Output | 18V DC 0,55 A. |

| | |
|---|---|
| Typ | Net adapter WW (required when using LoopPad). |
| Art.nr. | 96610115 |
| Input | 100-240V 0,4 A 47-63 Hz. |
| Output | 15V DC 1A. |

*Microphones:*

| | |
|---|---|
| Typ | EM-K |
| Art.nr. | 96610135 |
| Cable | 7 metre monoflex |
| Dim. | 1000 x 12 x 8 mm. (l x w x h) |
| Power | 1,5-10V 0,5 mA. |

| | |
|---|---|
| Typ | MP-10 |
| Art.nr. | 96610134 |
| Cable | 7 metre monoflex |
| Dim. | 100 x 100 x 25 mm. (l x w x d) |

| | |
|---|---|
| Power | 1,5-10V 0,5 mA. |
| Typ | EM-LD |
| Art.nr. | 96610119 |
| Cable | 7 metre monoflex |
| Dim. | l-21mm diameter 13 mm. |
| Drill hole | 8 mm. Material diameter up to 7mm. |
| Power | 1,5-10V 0,5 mA. |

| | |
|---|---|
| Typ | C400 BL1 |
| Art.nr. | 96610136 |
| Cable | 2 metre microphone cable. |
| Dim. | 42 x 23 x 12 mm. (l x w x d) |
| Power | 9-52V DC. |

*Speakers:*

| | |
|---|---|
| Typ | CP-6 |
| Art.nr. | 96610157 |
| Dim. | 195 x 150 x 70 mm. (l x w x h) |
| Imp. | 8 Ohm |
| Power | 6 Watt |

| | |
|---|---|
| Typ | LP-10 |
| Art.nr. | 96610129 |
| Dim. | 100 x 100 x 55 mm. (l x w x h) |
| Imp. | 8 Ohm |
| Power | 1 Watt |

| | |
|---|---|
| Typ | LS-Far |
| Art.nr. | 96610128 |
| Dim. | SS front 153 x 85 mm. (l x w)<br>Housing:127 x 85 x 130 mm. (l x w x d) |
| Imp. | 8 Ohm |
| Power | 1 Watt |

| | |
|---|---|
| Typ | BL-550 |
| Art.nr. | 96610334 |
| Dim. | Diameter 160 mm. Depth 53 mm. |
| Drill hole | 142 mm. |
| Imp. | 8 Ohm |
| Power | 6 Watt |

| | |
|---|---|
| Typ | BLC-550 |
| Art.nr. | 96610335 |
| Dim. | 206 x 85 mm. (w x d) |
| Imp. | 8 Ohm |
| Power | 6 Watt |

*Combinations:*

| | |
|---|---|
| Typ | LS-EM-R |
| Art.nr. | 96610130 |
| Cable | 7 metre stereoflex |
| Dim. | Diameter 100 mm. Height 36 mm.<br>Maximum height 48 mm. |
| Ls.Imp. | 8 Ohm |
| Ls.Power | 1 Watt |
| Mic. | Electret 1,5-10V 0,5 mA. |

| | |
|---|---|
| Typ | CP6-EM |
| Art.nr. | 96610132 |
| Cable | 7 metre stereoflex |
| Dim. | 195 x 150 x 70 mm. (l x w x h) |
| Ls.Imp. | 8 Ohm |
| Ls.Power | 6 Watt |
| Mic. | Electret 1,5-10V 0,5 mA. |

| | |
|---|---|
| Typ | LMP-10 |
| Art.nr. | 96610133 |
| Cable | 7 metre stereoflex |
| Dim. | 100 x 100 x 55 mm. (l x w x d) |
| Ls.Imp. | 8 Ohm |
| Ls.Power | 1 Watt |
| Mic. | Electret 1,5-10V 0,5 mA. |

| | |
|---|---|
| Typ | LS-EM-FAR |
| Art.nr. | 96610131 |
| Cable | 7 metre stereoflex |
| Dim. | SS front 153 x 85 mm. (l x w)<br>Housing: 127 x 85 x 130 mm. (l x w x d) |
| Ls.Imp. | 8 Ohm |
| Ls.Verm. | 1 Watt |
| Mic. | Electret 1,5-10 |