Safety Instructions

Please read this technical manual through completely before beginning installation.

Non-professional installation can endanger the operational safety of your vehicle.

Make sure the housing of the ZSE-VE is safely connected to vehicle ground!

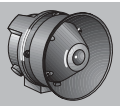
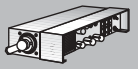
Note that a sound level of > 90 dB (A) is achieved even during test operation!

Contents

Brief instructions Hella ZSE-SL/VE

in connection with,
for example:

1

 2x Hella loudspeakers „tonal sequence signal”, 1x Hella loudspeaker „spoken messages”	 Hella KL/KLX 5000	 Hella BSX Micro	 Hella-AZD	 Hella rod microphone	 Radio concept 2000

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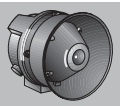
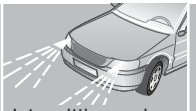
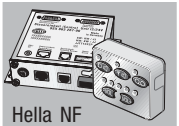
2

 2x Hella loudspeakers „tonal sequence signal”, 1x Hella loudspeaker „spoken messages”	 Hella KL/KLX 5000	 Intermitting main beam light	 Hella individual switch	 Hella NF switch unit	 Radio units FuG 8a, 8b or FuG 7b

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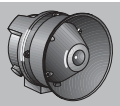
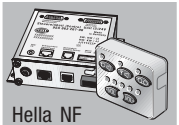
3

 2x Hella loudspeakers „tonal sequence signal”, 1x Hella loudspeaker „spoken messages”	 Hella KL/KLX 5000		 Hella eAZD	 Hella NF switch unit	 Radio units FuG 8a, 8b or FuG 7b

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General information

The complex RTK technology has been reduced to an absolute minimum to able to fulfil the special requirements of concealed installation.

This means that the device concept is suitable not only for installation in passenger and commercial vehicles but also for motorbikes.

The connection possibilities for lighting and the acoustic fittings have been considerably improved in comparison to the predecessor model.
The extensive range of tonal sequences facilitates the international use of this component system group.

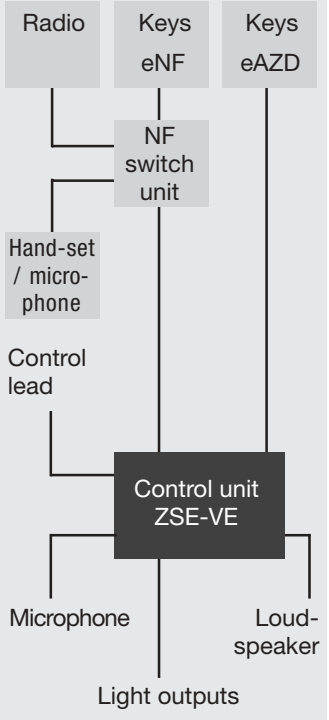
The RTK-VE system is an acoustic warning system for non-marked police vehicles, or vehicles belonging to CID departments or border guards as well as for official vehicles belonging to the fire brigade, rescue services and doctors on emergency duty.

This warning system can easily combined with all Hella rotating beacons, strobe-type beacons and optical warning systems.

The central control unit RTK-VE may only be operated with two or three loudspeakers 9MM 863 164-01.

Thanks to its compact design it can be integrated into any vehicle.

Summary of the RTK-VE system



Technical possibilities

- Possible to connect 3 loudspeakers
- Emission of continuous tonal sequences and one-off tonal sequences
- Test operation at reduced volume
- Can be switched between urban/rural signal
- Microphone / radio keying (PTT, e.g. front key of motorbike)
- Connection: intermitting main beam
- Special combination of tonal sequence, spoken message and beacon can be set using the coding switch
- Under-voltage and excess voltage cut-out
- Powerful NF-amplifier for clear vocal messages
- Connection to accident recorder
- Connection to CD player or tape recording equipment or 2 microphones / radio units
- Connection to various control lamps
- 3 load outputs, each can be designed static or intermitting
- Switch elements e.g. possible for:
  - DIN / HiLo, peak and hold, airhorn, wail, yelp, manual siren, horn pushbutton (**HDK**) (independent switch input), cross-signal button (**KSK**), grill, urban/rural switching
  - 2 main beacons
  - 1 auxiliary beacon

Depending on the device coding, not all the signals are necessarily available at the same time.

Country-specific tonal sequences

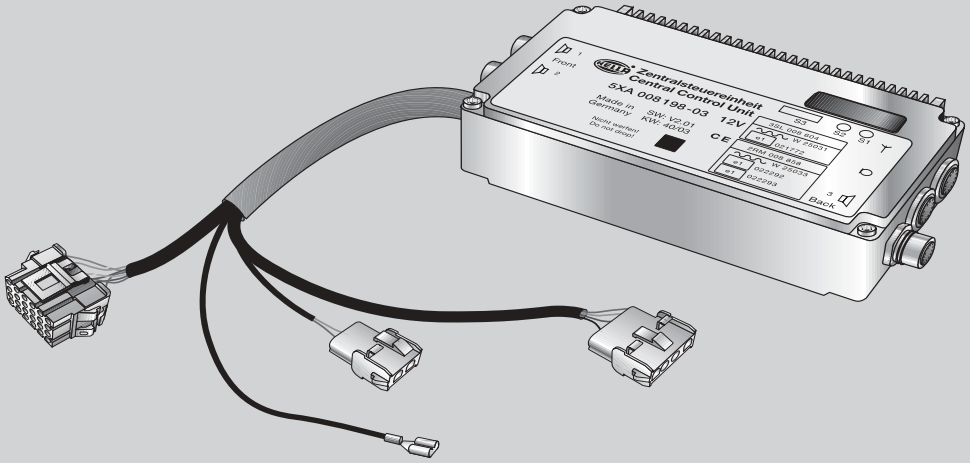
(can be coded using switch S2)

- DIN 14610 Germany / Switzerland
- Sweden
- Italy Police
- Italy Fire Brigade
- South Africa 3-tone
- Holland 3-tone
- Austria Rescue
- Austria Vienna Rescue
- Austria Gendarmerie
- France Police
- France Rescue
- France Gendarmerie
- HiLo - US

Each country-specific tonal sequence signal can be extended by siren signals (e.g. Yelp, Wail).

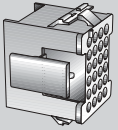
Scope of supply

Basic system
RTK-SL/VE 12V
Approval number:
W 25031
e1 021772
CE

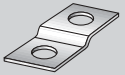


1 x central control unit for concealed installation **(ZSE-VE)** 12V
5XA 008 198-031

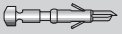
1 x plug housing
24-channel



4 x bracket

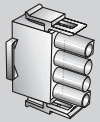


30 x MR pin contact
(miniature rectangular)



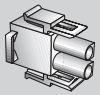
8 x self-tapping screw

1 x plug housing
4-channel



8 x tooth lock washer

1 x plug housing
2-channel



1 x screw plug

5 x UMNL jack contact
(universal MATE-N-LOK)

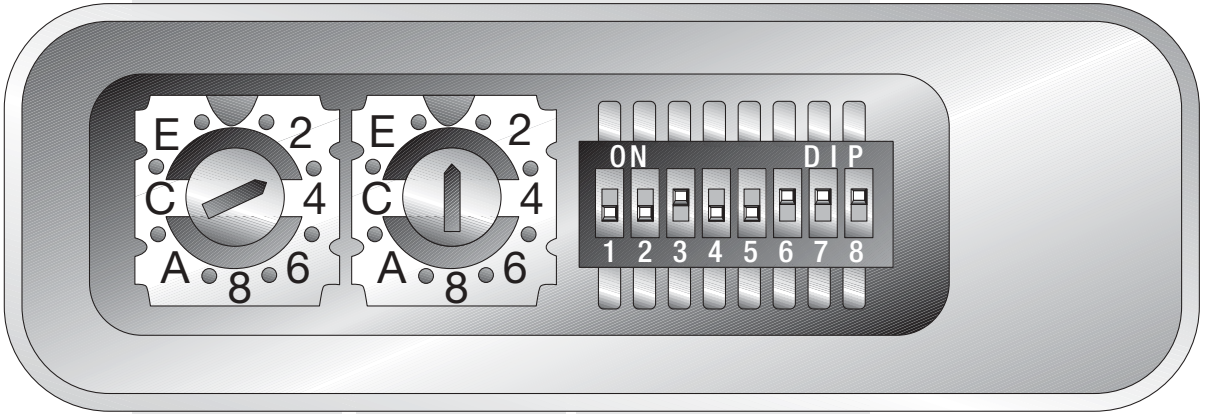
2 x plug

5 x UMNL pin contact
(universal MATE-N-LOK)

2 x plain connector (6.3mm)

Coding and functions

Switch functions:



The ZSE-VE has been pre-adjusted in the factory.
For factory setting refer to the table on page 45.

Important:
The printing on switches S1 and S2 can deviate from the illustration!
(Note zero point!)

Switch S1:

Coding of the beacon operating modes (equipment)

Switch S2:

Coding of the country-specific tonal sequences

Switch S3:

Coding of the combination of tonal sequence, spoken message and beacons

Illustration:
Factory setting

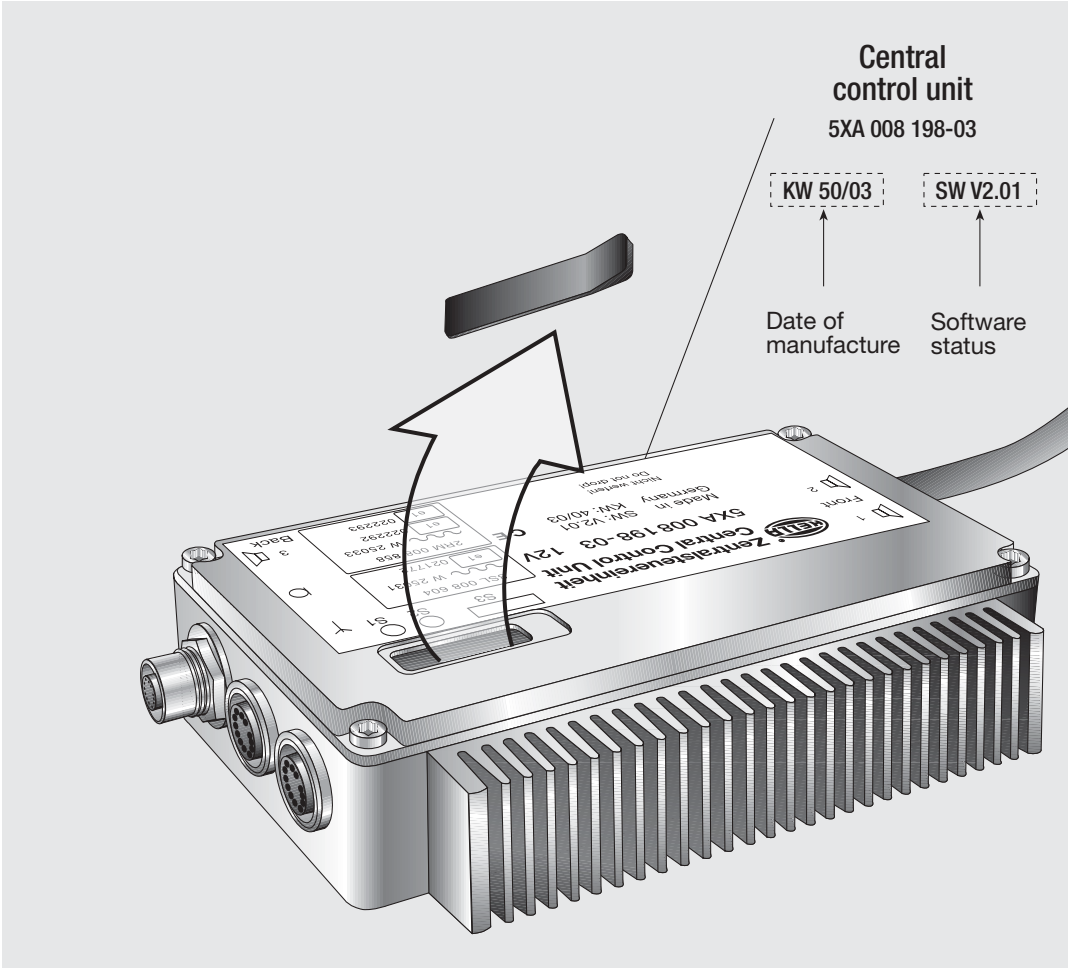
Condition on leaving the plant with factory setting

Coding function	***Switch***	***Setting***	***Effect***
Beacons **(KL)** – operating modes	**S1**	3	1 x main beacon **(HKL)** to HKL connection KL 1 and 1 x KL2 1 x xenon power unit **(VSE-X)** to auxiliary beacon **(NKL)** connection KL3. Operation of auxiliary beacon either in position 1 not locked or position 3 locked.
Tonal sequence **(KLF)** signals	**S2**	0	DIN (Germany)
Universal signal **(US)** / Individual signal **(ES)** version	**S3** -1	OFF	ES version
Motorbike / car version	**S3** -2	OFF	Car operation
Terminal 15 (ignition)	**S3** -3	ON	Tonal sequence only if terminal 15 is switched on.
Swiss main beacons	**S3** -4	OFF	Failure of one main beacon has no effect on the other beacons.
Swiss tonal sequence	**S3** -5	OFF	If one loudspeaker fails the second one remains active. The sound pressure level necessary according to DIN 14610 is no longer achieved.
Tonal sequence locking	**S3** -6	ON	Tonal sequences only possible when main beacon(s) operate without failure.
Spoken message priority	**S3** -7	ON	Spoken message has priority above tonal sequence.
Tonal sequence / stand-by of tonal sequence with beacon	**S3** -8	ON	The control lead(s) for tonal sequence switch the tonal sequence and the main beacons on.

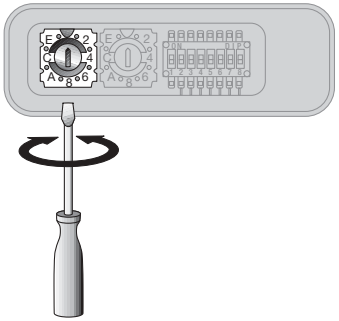
Coding functions

Individual settings

- Encode the control unit **before** installation if possible.
- Loosen the rubber cover on the control unit. Set the code using a precision screwdriver or needle depending on the switch.
- Changes in the settings only become active if the onboard mains has been switched off for at least 5 seconds.
- After encoding is complete, replace the rubber cover.



Switch 1



Changes in the settings only become active if the on-board mains has been switched off for at least 5 seconds.

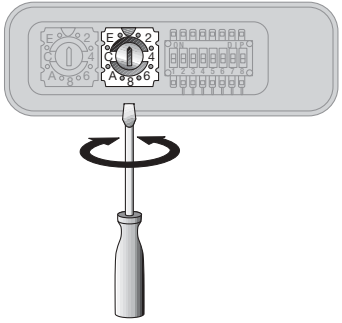
Setting	Equipment	Function Beacon 1	Funkcion Beacon 2	Function Beacon 3
0	1 HKL + NKL	KL/KLX with/without tonal sequence	-	KL/KLX, BSX-Micro without KL 1/2 lock
1	2 HKL + NKL	KL/KLX with/without tonal sequence	KL/KLX with/without tonal sequence	KL/KLX, BSX-Micro without KL 1/2 lock
2	1 HKL + NKL	KL/KLX with/without tonal sequence	-	KL/KLX, BSX-Micro with KL 1/2 lock
3	2 HKL + NKL	KL/KLX with/without tonal sequence	KL/KLX with/without tonal sequence	KL/KLX, BSX-Micro with KL 1/2 lock
4	1 HKL + intermitting main beam via external relay at KL terminal 3	KL/KLX with/without tonal sequence	-	Intermitting main beam via relay f = 1 Hz, with KL 1/2 lock
5	2 HKL + intermitting main beam via external relay at KL terminal 3	KL/KLX with/without tonal sequence	KL/KLX with/without tonal sequence	Intermitting main beam via relay f = 1 Hz, with KL 1/2 lock
6	1 HKL + intermitting main beam via external flasher relay at KL terminal 3	KL/KLX with/without tonal sequence	-	Intermitting main beam via relay f = 0 Hz, with KL 1/2 lock
7	2 HKL + intermitting main beam via external flasher relay at KL terminal 3	KL/KLX with/without tonal sequence	KL/KLX with/without tonal sequence	Intermitting main beam via relay f = 0 Hz, with KL 1/2 lock

0 to 3: fault monitoring at KL 1, KL 2 and KL 3
4 to 7: fault monitoring at KL 1 and KL 2

Coding functions

Individual settings

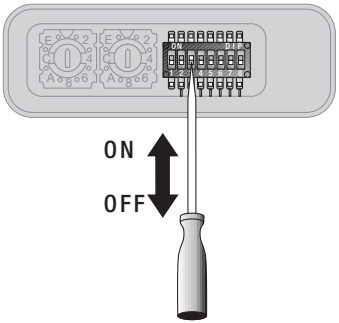
Switch 2



Changes in the settings only become active if the on-board mains has been switched off for at least 5 seconds.

Setting	Coding function
0	DIN 14610 Germany / Switzerland
1	Sweden
2	Italy Police
3	Italy Fire Brigade
4	South Africa 3-tone
5	Holland 3-tone
6	Austria Rescue
7	Austria Vienna Rescue
8	Austria Gendarmerie
9	France Police
A	France Rescue
B	France Gendarmerie
C	HiLo-US

Switch 3



Changes in the settings only become active if the on-board mains has been switched off for at least 5 seconds.

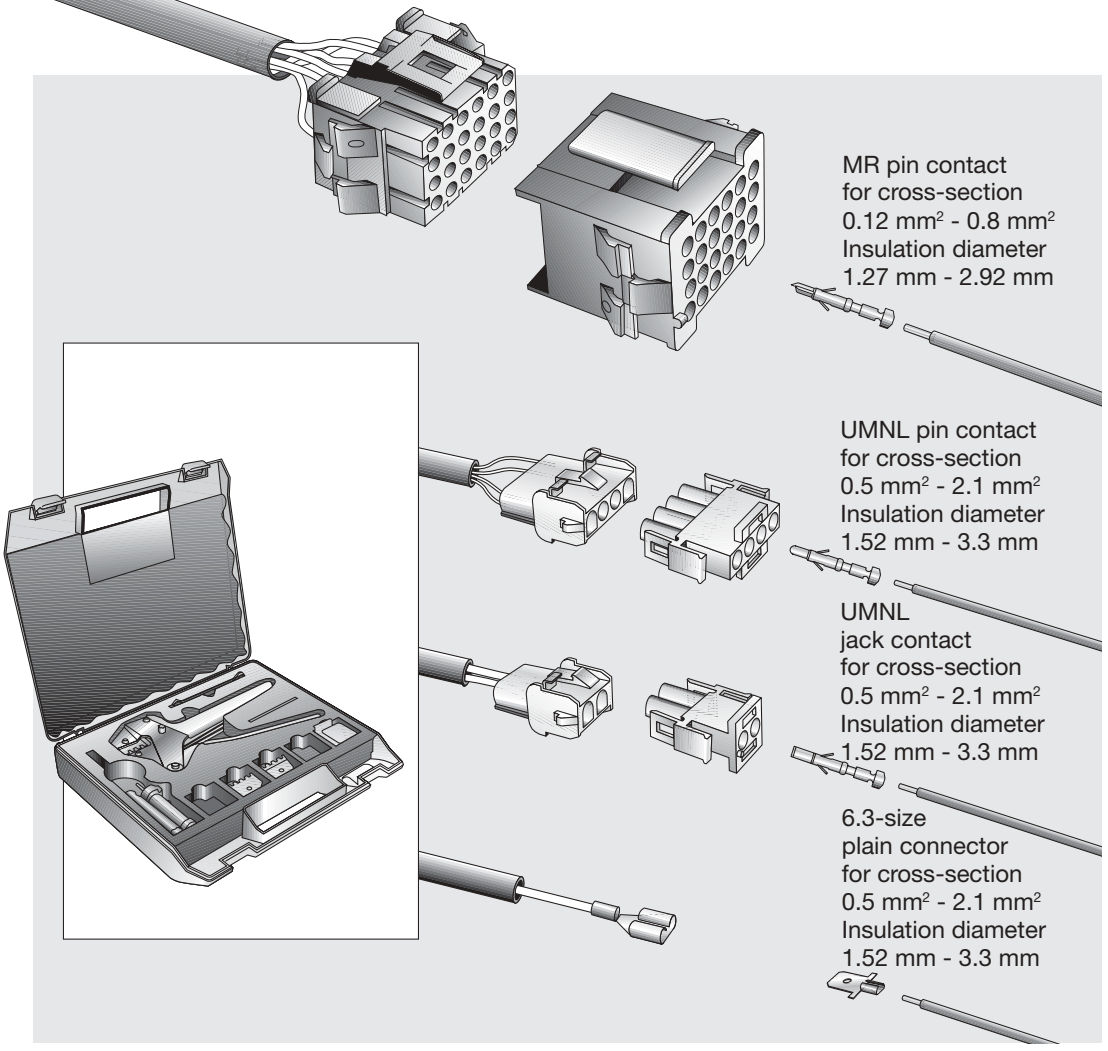
Switch row	*Position*	*Coding function*	*Effect*
1	ON OFF	US/ES version	US version ES version
2	ON OFF	Motorbike/car version	Motorbike operation Car operation
3	ON OFF	Terminal 15 (ignition)	Tonal sequence only when terminal 15 is connected Tonal sequence without terminal 15
4	ON OFF	Swiss main beacons	Failure of one active beacon switches off all active beacons Failure of one beacon has no effect on the other beacons
5	ON OFF	Swiss tonal sequence	If one tonal sequence loudspeaker system fails, the second tonal sequence loudspeaker is also switched off. If one loudspeaker fails, the second remains active. The sound pressure level according to DIN 14610 is no longer achieved.
6	ON OFF	Tonal sequence locking	Tonal sequences only possible when main beacon(s) operate without failure Tonal sequence always possible (even without beacon(s))
7	ON OFF	Spoken message priority	Spoken message has priority above tonal sequence Tonal sequence has priority over spoken message
8	ON OFF	Tonal sequence/ tonal sequence stand-by with beacon	The main beacon(s) is/are switched on via the control lead(s) for tonal sequence The control lead(s) for tonal sequence only switch on the tonal sequence

Terminal connections

- IIndividual terminal connection of the 24-channel plug.
- The 24-channel plug has been completely pre-cabled in the factory.
  Use the table to select the connections your require and insert the appropriate pin contacts into the free plug housing as required.
- Connect enclosed pin contacts and insulated lead using crimping tool.

We recommend:
Hella installation accessories
Crimping tool
No. 8XS 008 633-001

Complete in a hand case
- Hand pincer frame
- „MR" changing matrix insert
- „UMNL" changing matrix insert
- „MR" dismantling set
- „UMNL" dismantling set



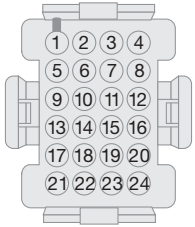
MR pin contact
for cross-section
0.12 mm^2 - 0.8 mm^2
Insulation diameter
1.27 mm - 2.92 mm

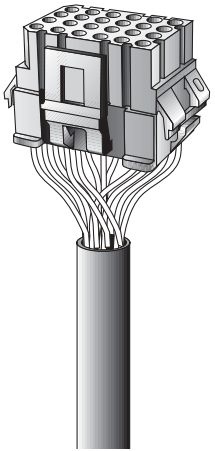
UMNL pin contact
for cross-section
0.5 mm^2 - 2.1 mm^2
Insulation diameter
1.52 mm - 3.3 mm

UMNL
jack contact
for cross-section
0.5 mm^2 - 2.1 mm^2
Insulation diameter
1.52 mm - 3.3 mm

6.3-size
plain connector
for cross-section
0.5 mm^2 - 2.1 mm^2
Insulation diameter
1.52 mm - 3.3 mm

Lead
24-channel plug

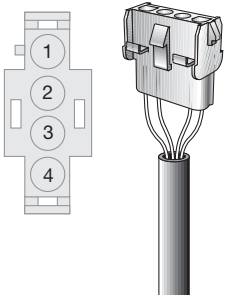




Pin	***Function***	***Colour of lead***
1	Beacons 1/2	blue
2	Manual siren, tonal sequence stand-by	white-yellow
3	Control beacon 1 (switched plus)	white-green
4	Airhorn	white-brown
5	Beacon 3	grey
6	Test operation (at volume reduced)	black
7	Control beacon 3 (switched plus)	pink
8	Cross-signal grill	white-grey
9	Urban / rural signal	brown-green
10	Country-specific signal (see switch 2)	brown-yellow
11	Control tonal sequence	violet
12	Yelp signal	white-black
13	Push to talk (**PTT**)	brown-pink
14	Terminal 15	brown-grey
15	Control beacon 2 (switched plus)	red
16	Wail signal	white-blue
17	Accident data recorder (**UDS**) output KL	brown
18	HDK plus	green
19	Control 1 / 2 (switched minus)	white-pink
20	unoccupied	
21	UDS output tonal sequence	yellow
22	HDK minus	white
23	Control beacon 3 (switched minus)	white-red
24	unoccupied	
Pin 9 open:	Rural signal	
Pin 9 GND:	Urban signal	

Terminal connection

4-channel lead Loud outputs

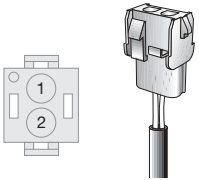


Pin	Function	Colour of lead
1	Load beacon 3	black-brown
2	Function input	blue-yellow
3	Load beacon 2	black-green
4	Load beacon 1	black-yellow

1-channel lead Device (-)

1	Minus (GND)	brown-white
	The lead resistance from the battery (plus) to the ZSE-VE has to be ≤ 30 mΩ. The minus connection also has to be low-impedance. (≤ 20 mΩ) **Lead resistance:** **1.5 mm² = approx. 12 mΩ/m** **2.5 mm² = approx. 7 mΩ/m**	

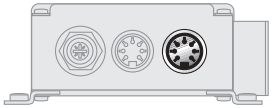
2-channel lead 12V input



Pin	*Function*	*Colour of lead*
1	plus (+12V) light modules **fuse max. 20A***	red-green
2	plus (+12V) amplifier **fuse 10A**	red-white

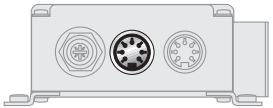
* The fuse chosen depends on the max. number of beacons that can be connected

Radio unit/ NF switch unit



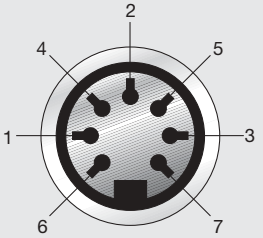
7	+ Ub
6	PTT radio plus active
5	PTT radio Minus active
4	NF hot 4 mV radio
3	NF hot 450 mV radio
2	NF cold radio
1	GND radio
Housing	Shield

Microphone

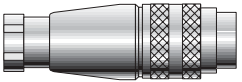


7	+ Ub
6	PTT microphone plus active
5	PTT microphone Minus active
4	NF hot 4 mV microphone
3	NF hot 450 mV microphone
2	NF cold microphone
1	GND microphone
Housing	Shield

Terminal connection: Radio unit / microphone / NF switch unit



For the connection of these devices the following plug-type connector (DIN 7-channel) is required.



Terminal connection

Alarm pull and turn switch (AZD) to 24-channel plug

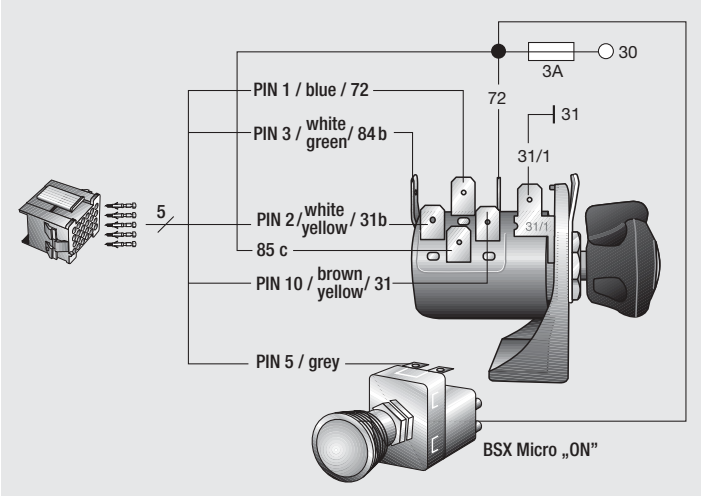
Police:
Hella part number:
001 759-051

Alarm pull and turn switch
to 24-channel plug

Fire brigade:
Hella part number:
001 759-071

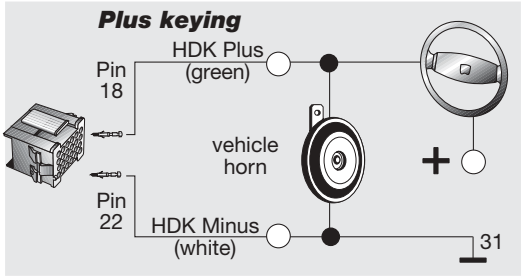
Terminal AZD	*Function*	*Connection*
31	DIN signal	to 24-channel plug / pin 10 / brown-yellow
31b	Tonal sequence stand-by	to 24-channel plug / pin 2 / white-yellow
72	Beacons 1/2	to 24-channel plug / pin 1 / blue
85c	Plus input	battery +30 (fused)
72	Plus input	battery +30 (fused)
84b	Control beacon 1 (switched plus)	to 24-channel plug / pin 3 / white-green
31/1	Minus input	battery - (31)

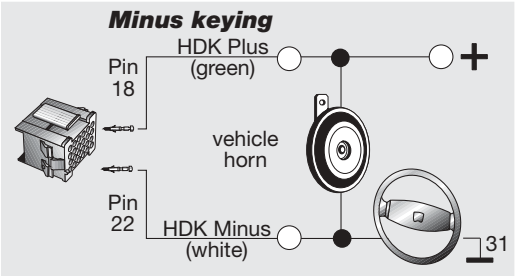
The method of connection is identical for both AZDs. When a 2nd or 3rd beacons are connected, separate control lamps are required! (Users from the fire brigade DIN 14630).



Terminal connection Horn pushbutton (HDK)

To activate the function „HDK", pin number 2 of the 24-channel plug (manual siren, tonal sequence stand-by) white-yellow must be connected to +12V.



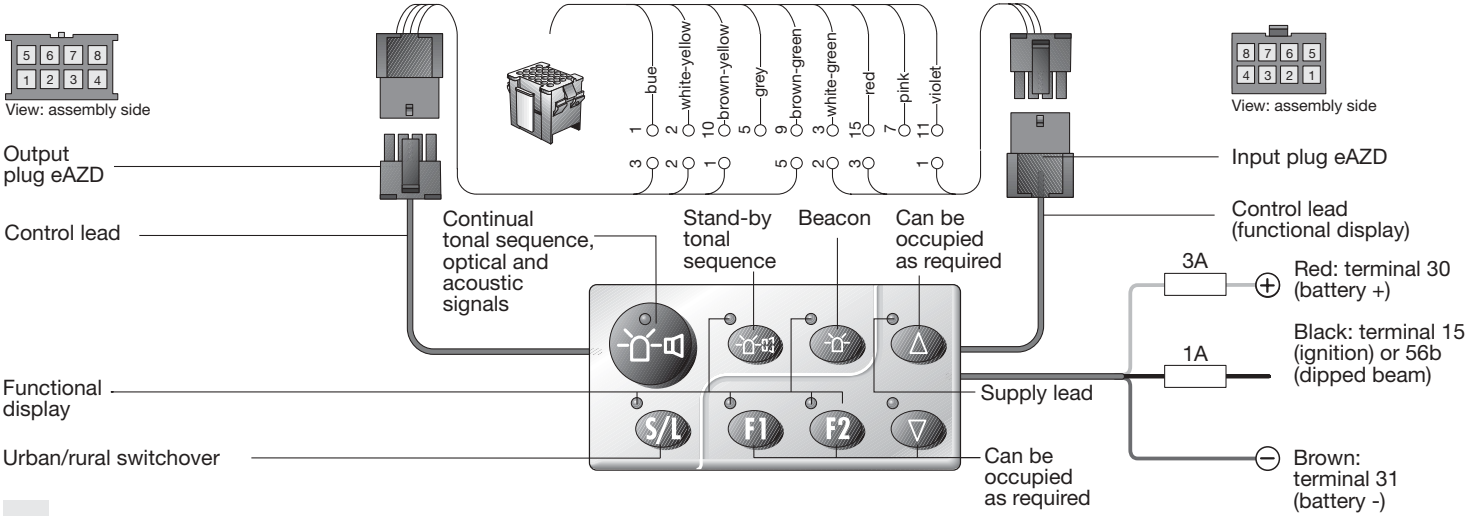


Terminal connection eADZ RTK-5/VE

to 24-channel plug

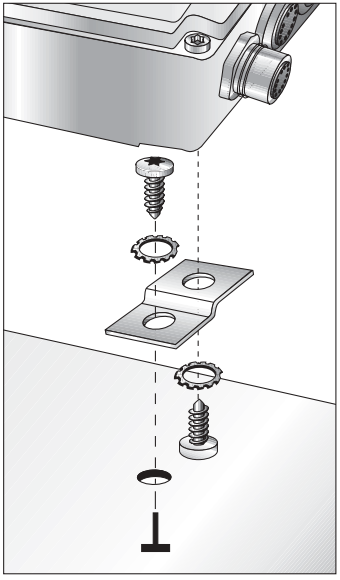
PIN	Function
1	Output country-spec. tonal sequence signal
2	Output stand-by tonal sequence
3	Output beacon (KL) 1/2
5	Output urban/rural signal

PIN	Function
1	Control tonal sequence (KLF)
2	Control beacon (KL) 1
3	Control beacon (KL) 3



Installation

Installation of the ZSE-VE

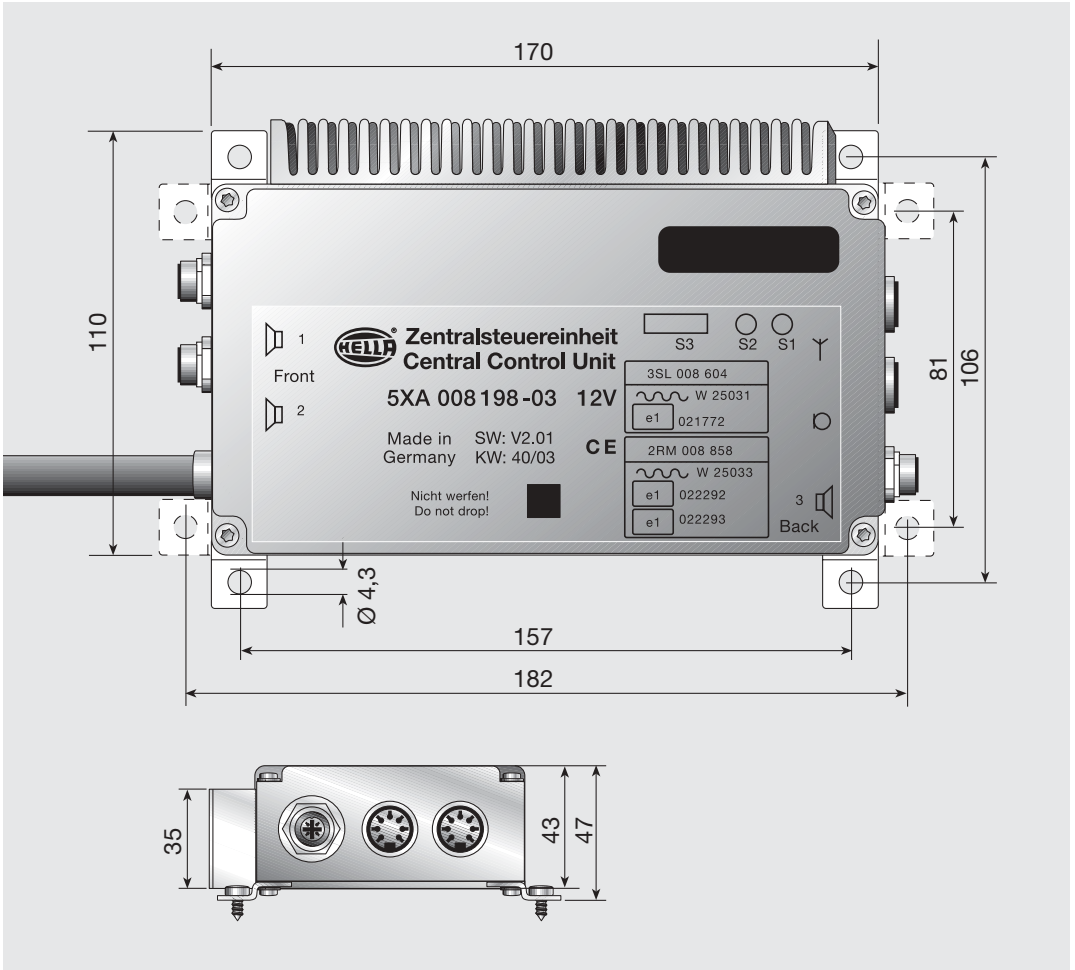


- The installation of the ZSE-VE takes place after coding has been completed. Pre-mount four retaining brackets on the ZSE-VE and align them depending on the installation location.
- The ZSE-VE is fixed to a splashproof position inside the vehicle, not in the engine compartment. Metal parts with bore holes must be sealed using rust protection.
- The installation of the ZSE-VE and the laying of the cables must be carried out by a **specialist vehicle-specific workshop.**
- The vehicle battery must be disconnected before beginning installation.
  The housing of the control unit has to be connected expertly and permanently with the vehicle ground.
- Installation position horizontally flat with the fins exposed (do not thermally cover the fins).
  If the device is installed vertically, the ribs must always point upwards.
- Do **not** kink or pinch the cables. It is not necessary to open the ZSE-VE for installation.
- Inputs and outputs not used (3rd loudspeaker, radio, microphone) must be closed using the enclosed protective caps.

The line resistance from the battery (plus) to the ZSE-VE must be ≤ 30 mΩ. The minus connection must also be connected at low impedance.

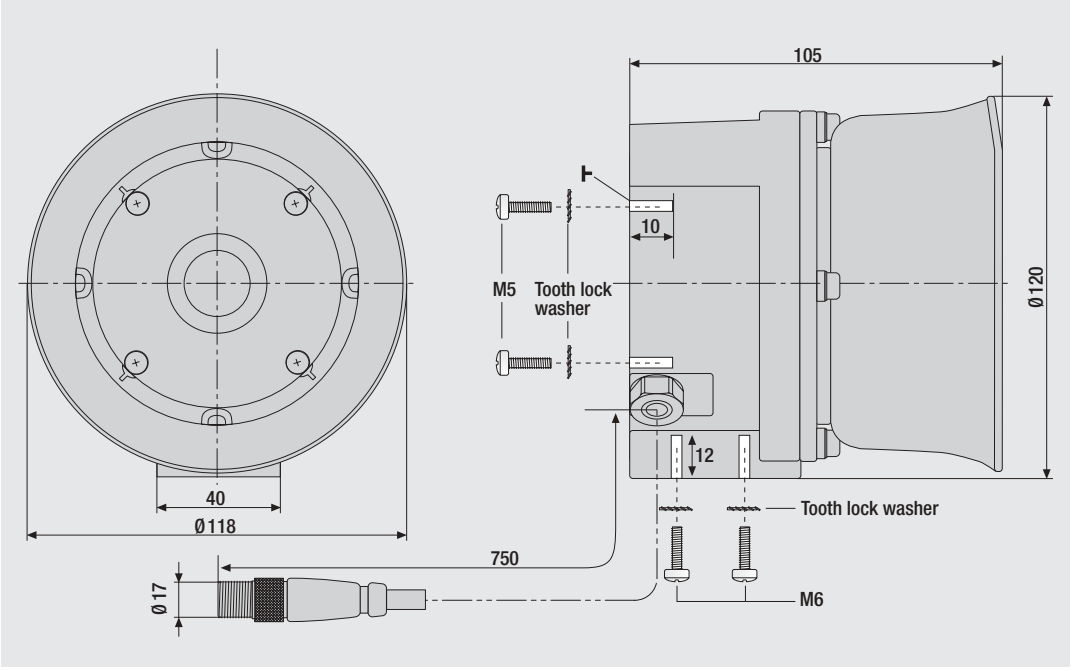
Line resistances:
1.5 mm^2 = approx. 12 mΩ/m
2.5 mm^2 = approx. 7 mΩ/m

Dimensional drawing
ZSE-VE



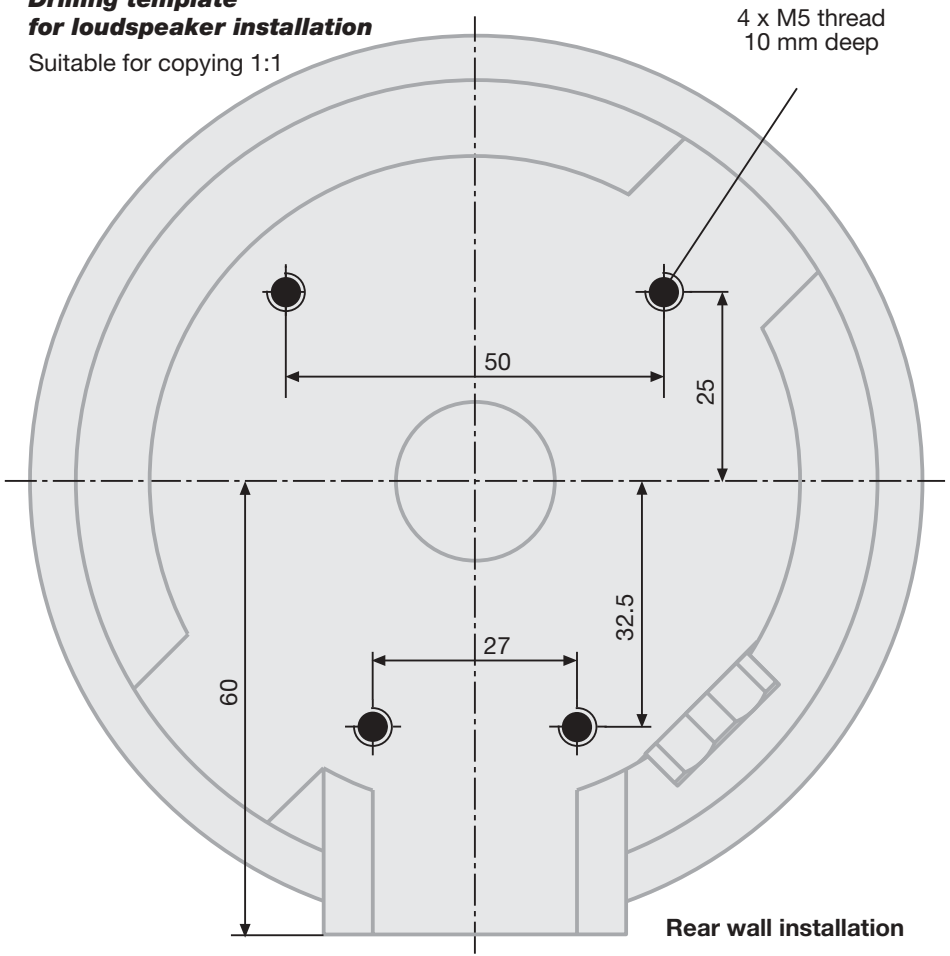
Installing the loudspeakers
9MM 863 164-01

- Determine the installation location.
- Loudspeakers are always installed in a vertical position! (Attachment base with ventilation and draining holes must be pointing downwards). In case of deviation from the recommended installation position, the ventilation hole must be protected from humidity penetration by suitable measures (see page 59 – “Drilling template for loudspeaker installation”).
- Do not kink or pinch the cables. Smallest bending radius > 40 mm.
- Only tighten the plug screw connection on the loudspeaker and central control unit by hand.
- Align the loudspeaker along the vehicle axis in such a way that it can radiate freely forwards.
- Distance between the loudspeakers 400 mm maximum.
- If this is not heeded, it is possible that the sound level according to DIN 14610 may not be achieved.
- Screw the loudspeakers firmly in place on the vehicle using the drilling template accordingly, depending on the vehicle and installation position.
  Make sure the device is connected to ground.
- Seal drilled metal parts with rust protection.

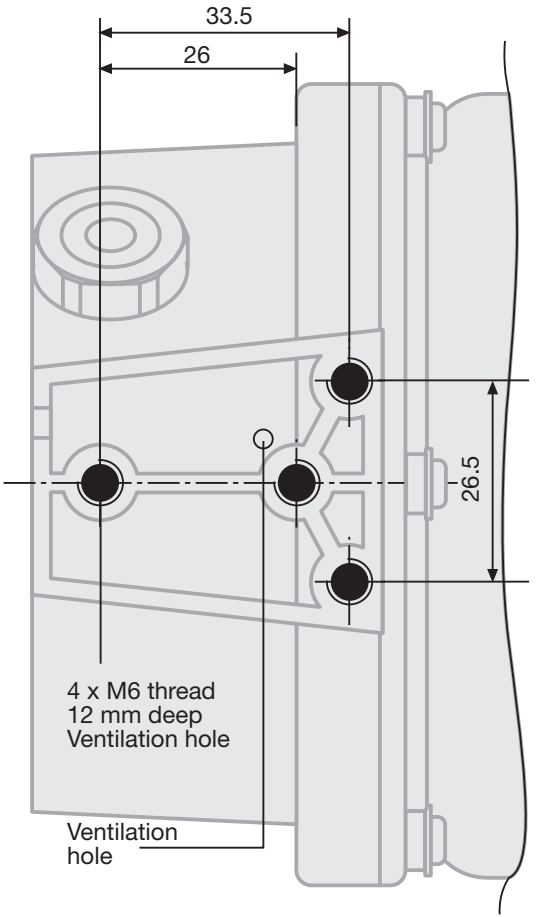


Drilling template
for loudspeaker installation

Suitable for copying 1:1



Rear wall installation

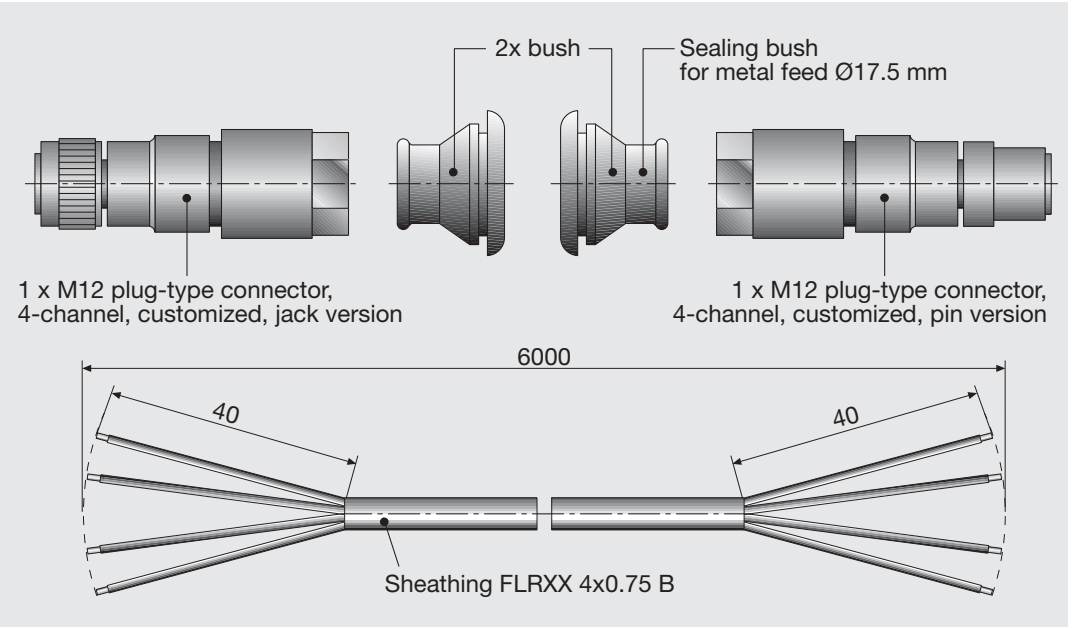


Base installation

Accessories

Customized:
Loudspeaker lead
(non-shielded)
Lead assembly
8KB 863 514-001

see the separate mounting instructions included with the product

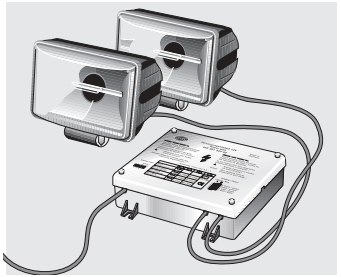


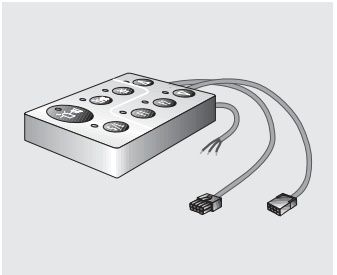
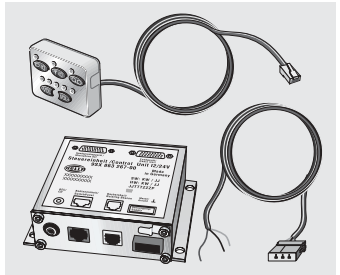
Connection Loudspeaker		***Connection ZSE-RTK-5/VE***
Pin	***Wire colour***	***Pin***
1	red	1
2	brown	2
3	green	3
4	white	4

Accessories

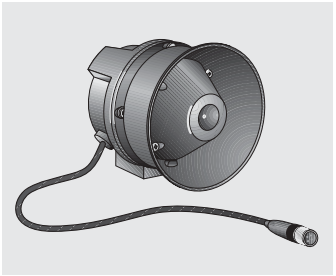
KL 5000 M:
2RL 008 364-021
Rotary mirror lamp, 12V, blue
Twin-belt drive
Magnetic three-point attachment
Height 170 mm, diameter 108 mm
e1 021774
E1 001289 CE

KLX 5000 M:
2RL 008 366-021
Beacon, 12V, blue
Magnetic three-point attachment
Height 170 mm, diameter 108 mm
Flashing frequency 2.1 Hz
e1 021775
E1 001290 CE

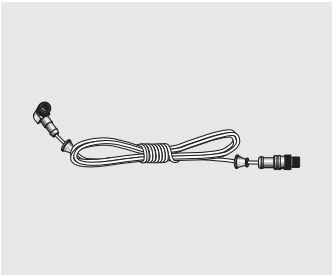


BSX-Micro 12 V
2XD 007 854-801
Direct connection to ZSE-VE
1 x supply unit VSE-X 12 V
2 x BSX-Micro, with 5.0 m cable
e1 021773
~~~ K45 CE

FWL-LED:
2XD 008 597-001
Front warning lamp, LED technology.
For use behind the windscreen.
Dimensions: 135 x 115 mm. Low current consumption of only 0.5 A.
Legal regulations must be observed!
Use as a third beacon with coding via positions 1, 6 or 7. CE



eAZD RTK-5/VE
9SX 008 902-011



NF switch unit
9SX 863 114-001
~~~

Accessories

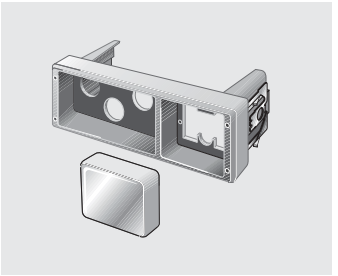


Loudspeaker
9MM 863 164-011
Cable length: 0.75 m



Loudspeaker cable, shielded
8KB 862 346-001
Length: 2 m

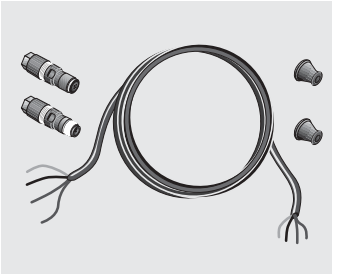
Loudspeaker cable, shielded
8KB 008 346-011
Length: 4 m



Mounting bracket
8HG 863 383-001

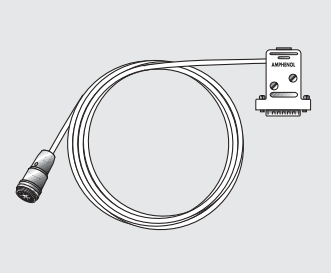
Alarm pull and turn switch Police
6ZE 001 759-051
12 V

Alarm pull and turn switch Fire brigade/ Rescue
6ZE 001 759-071
12 V

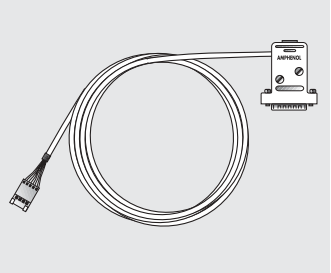


Loudspeaker cable, non-shielded / customized
8KB 863 514-001
Length: 6 m

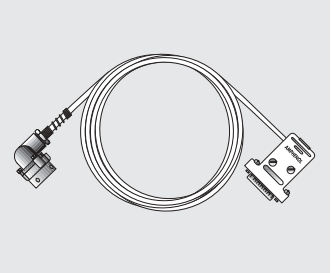
Microphone adapter lead
8KB 862 689-001
Length: 1 m
For direct connection to ZSE-VE



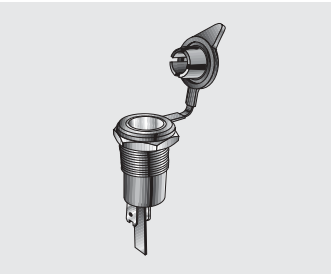
Adapter lead for rod microphone or hand-set with potentiometer
863 324-001 (length: 1 m)
Connection to NF switch unit



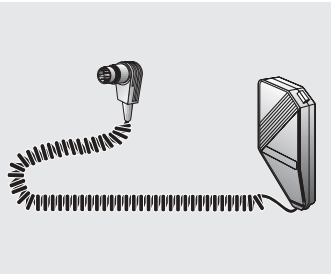
Teledux FuG-9 with hand-held operating unit
863 325-001 (length: 1,5m)
Connection to NF switch unit



Adapter lead for standardised radio unit FuG 7/8
863 323-001 (length: 1m)
Connection to NF switch unit

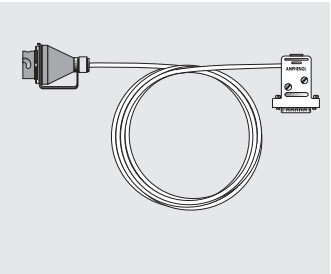


DIN-ISO on-board socket
8JB 004 777-001



Hand-set with potentiometer including bracket
859 358-801
For direct connection to ZSE-VE via adapter lead or NF switch unit via adapter lead

Rod microphone with potentiometer including bracket
862 358-801
For direct connection to ZSE-VE via adapter lead or NF switch unit via adapter lead



Adapter lead Hand-held device (FMS-)
863 322-001 (length: 1m)
Connection to NF switch unit

Technical data

Central control unit (ZSE-VE)

Nominal voltage:	12V
Operating voltage range:	10.8V – 15V
Functional voltage range:	9V - 16V
Operating temperature range:	-40°C to +85°C
Interference suppression:	according to VDE 0879 part 2 (lead-conducted) e1 021772 according to 94/245 EC
Static current consumption per load output:	max. 6A
Dynamic current consumption per load output:	max. 8.5 A (at 2 Hz flashing frequency)
Max. total current consumption:	max. 20 A (with 3 beacons and tonal sequence)
Idling current consumption:	≤ 1.0 mA
Output power of amplifier:	44 W (22W per loudspeaker) for tonal sequence signal
Sound pressure level:	≥ 112 dB (A) according to DIN 14610 measured without echo ∿∿ W 25031
Frequency, DIN, urban signal:	410 Hz (low), 547 Hz (high)
Frequency, DIN, rural signal:	362 Hz (low), 483 Hz (high). Further country-specific frequencies have been programmed.
Protective rating:	IP5K
Dimensions (LxWxH)	170 mm x 110 mm x 43 mm (without plug and leads)
Weight:	1080 g

Loudspeaker

Nominal power:	22W
Operating temperature range:	-40°C to +60°C
Impedance:	8 Ohm
Protective rating:	IP5K4K and IPX9K
Dimensions (LxWxH):	100 mm x 125 mm x Ø 117 mm (without lead)
Weight	1150 g (including lead)

The following functional conditions or faults can be indicated (e.g. using LED with series resistor or bulbs):

Beacon 1:	Function (static on) and fault (quick flashing cycle 4 Hz)
Beacon 2:	Function (static on) and fault (quick flashing cycle 4 Hz)
Beacon 3:	Function (static on) and fault (quick flashing cycle 4 Hz)
Tonal sequence:	Function (static on) and fault (quick flashing cycle 4 Hz)
Urban/rural:	Display above switch position

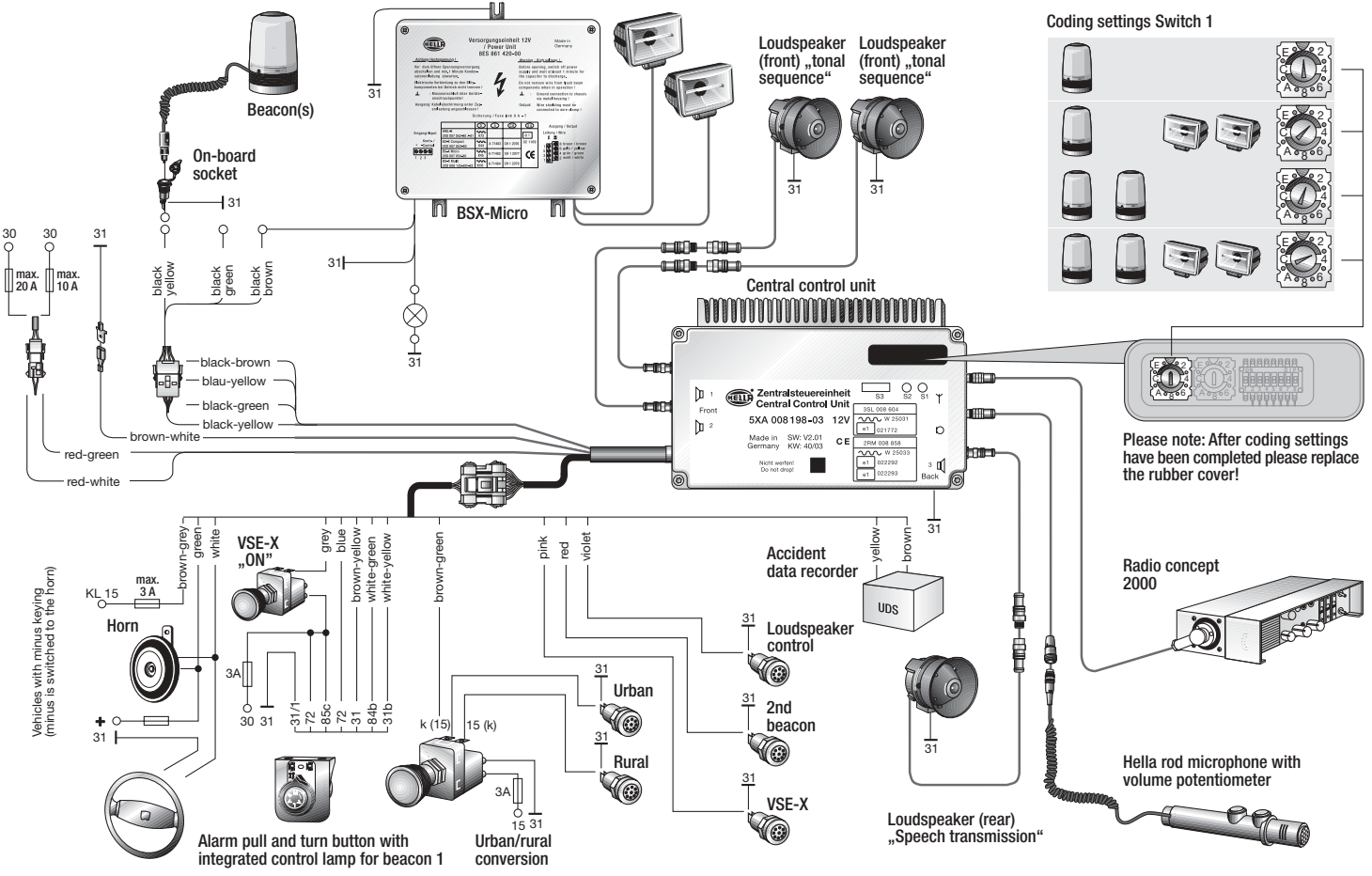
The display outputs are short-circuit-proof.
If under-voltage or excess voltage monitoring has been triggered (under 10.5 V or over 15.6 V) , all the control lamps flash at 1 Hz and all the functions are switched off to protect the components and the vehicle.

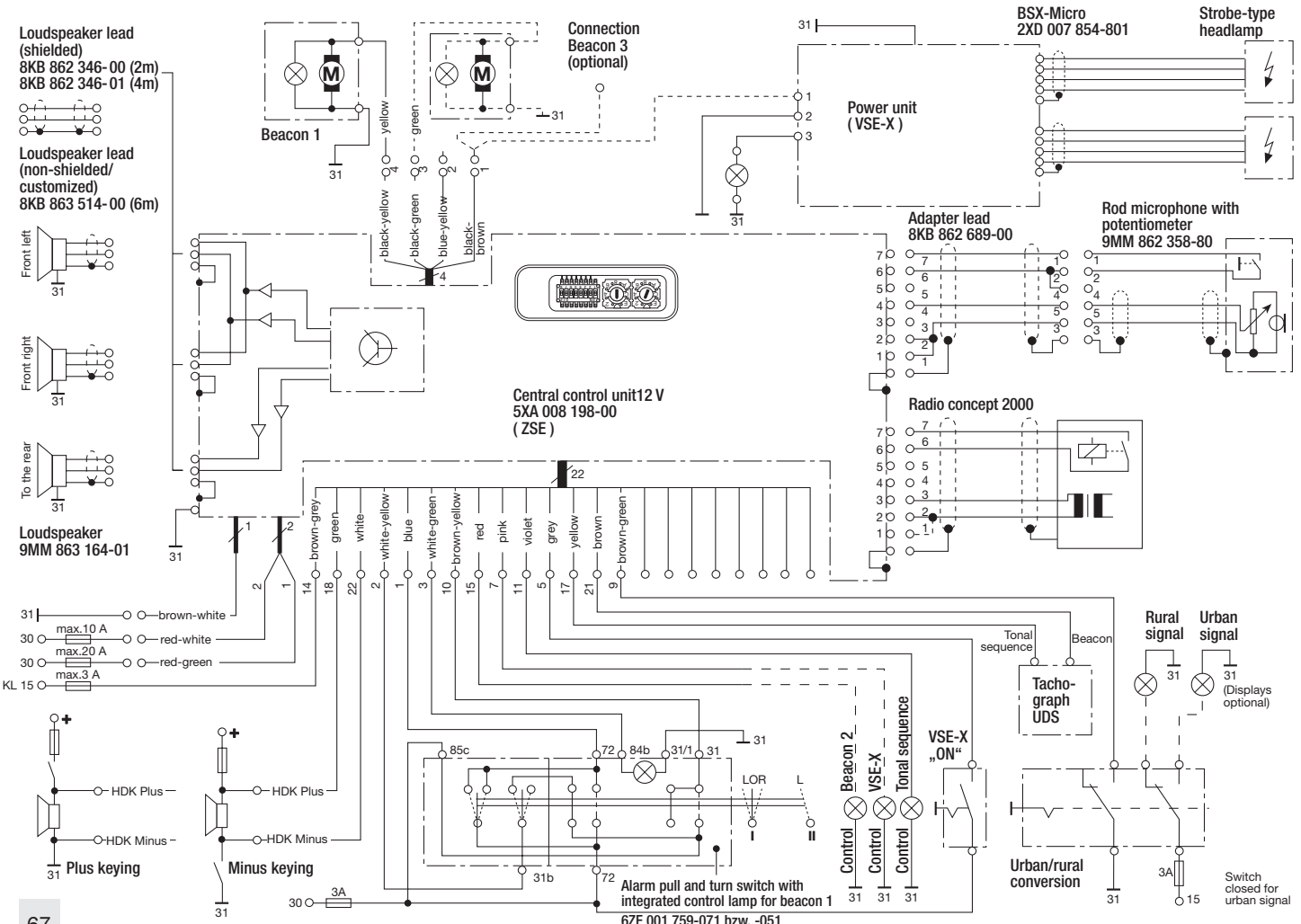
Brief periodic flashing of all the control lamps (with the ignition switched off) indicates an active switch which cannot be carried out due to locking.

Note:	The connection of Hella combination rear lamps in LED technology (HWL-LED) has to be made at load output 3. The unit must then be coded to intermitting main beam light using S1 (position 6 or position 7, see coding switch 1).

Brief instructions/Circuit diagram 1:

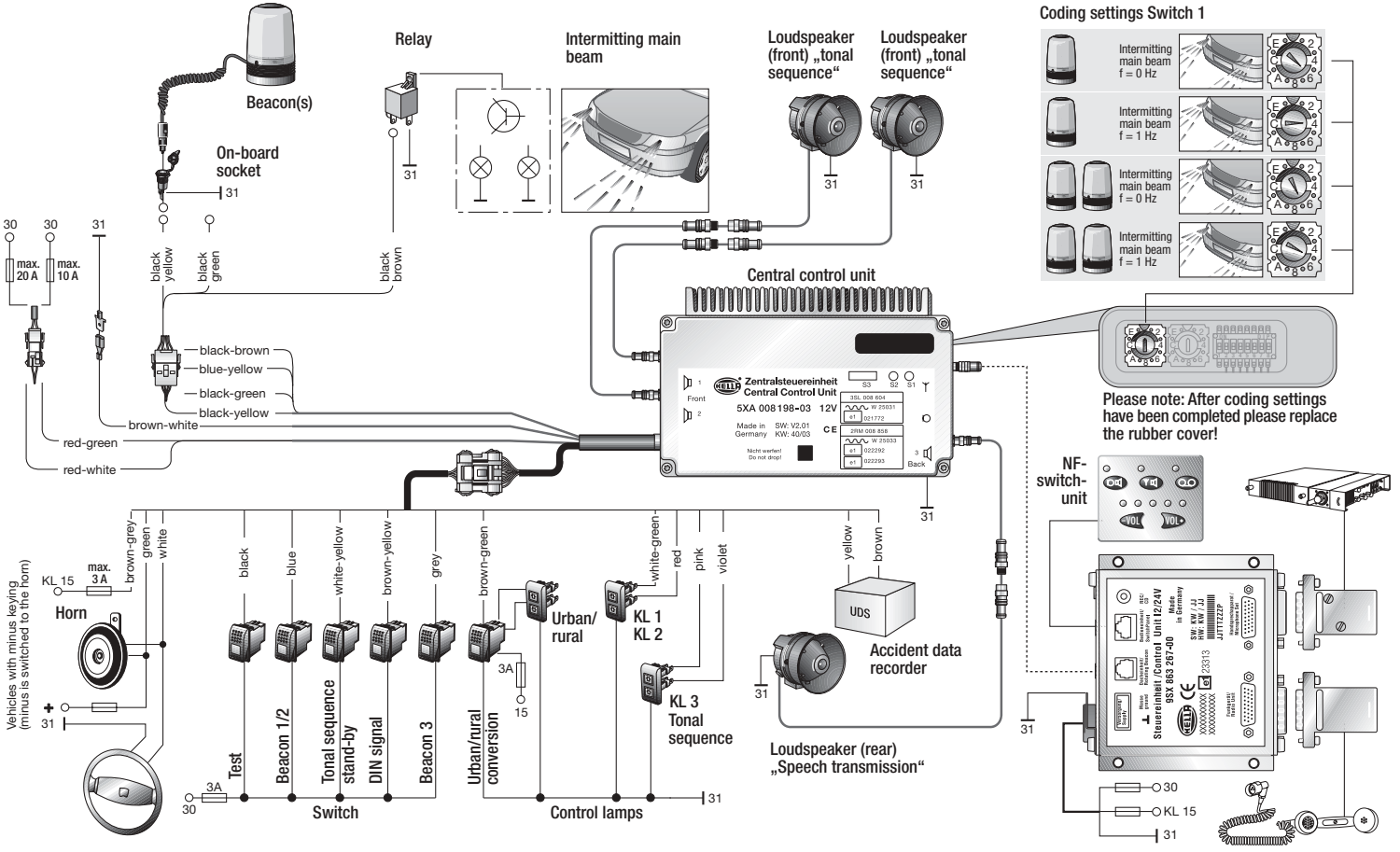
Hella ZSE-SL/VE in connection with e.g.: 2x Hella loudspeakers “tonal sequence signal”, 1x Hella loudspeaker “spoken messages”, Hella KL/KLX 5000, Hella BSX-Micro, Hella AZD, Hella rod microphone, radio concept 2000

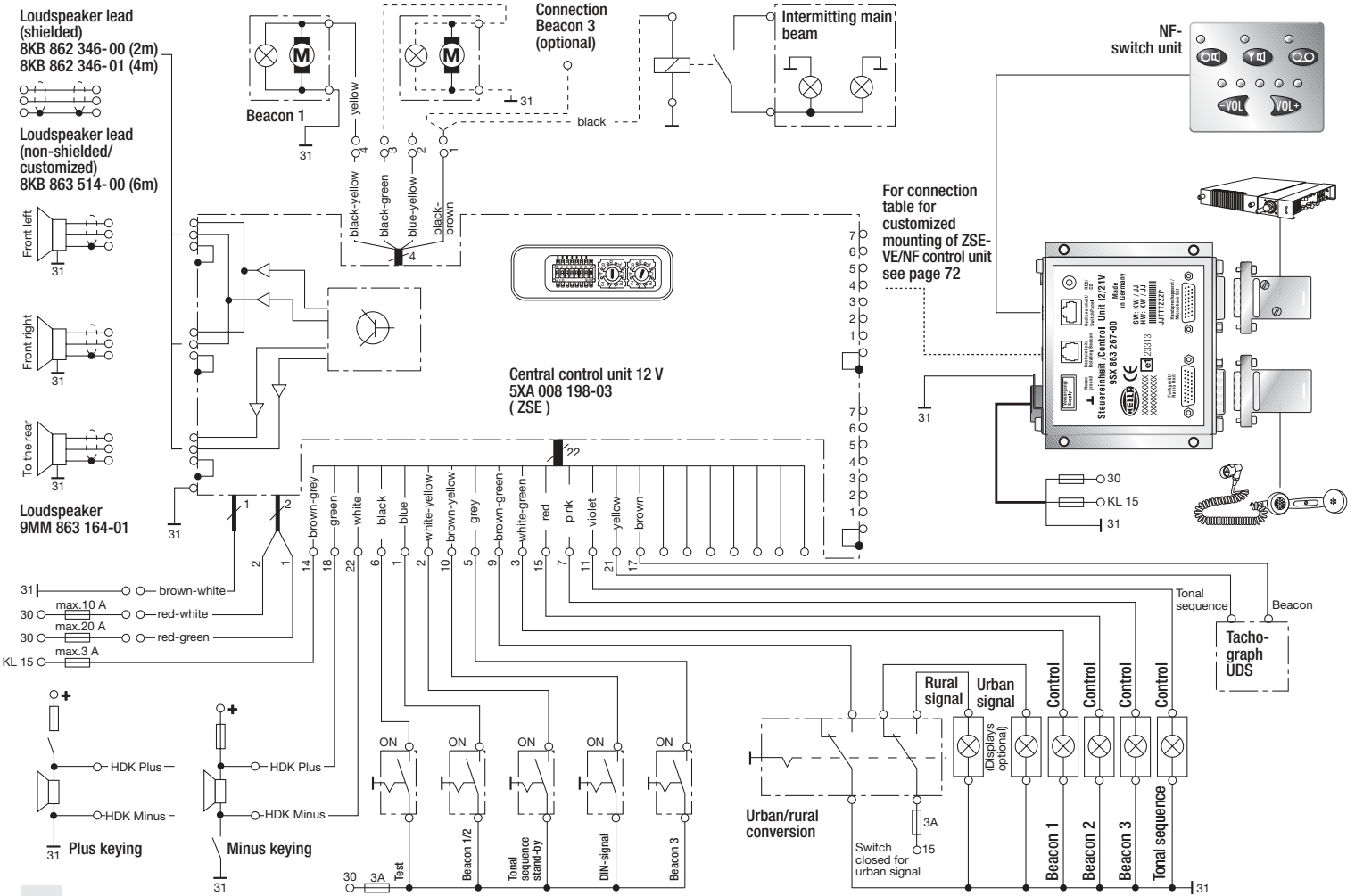



Loudspeaker lead (shielded) 8KB 862 346-00 (2m) 8KB 862 346-01 (4m)
Loudspeaker lead (non-shielded/ customized) 8KB 863 514-00 (6m)
Front left
Front right
To the rear
Loudspeaker 9MM 863 164-01
Beacon 1
Connection Beacon 3 (optional)
BSX-Micro 2XD 007 854-801
Strobe-type headlamp
Power unit (VSE-X)
Adapter lead 8KB 862 689-00
Rod microphone with potentiometer 9MM 862 358-80
Central control unit12 V 5XA 008 198-00 (ZSE)
Radio concept 2000
yellow
green
black-yellow
black-green
blue-yellow
black-brown
brown-grey
green
white
white-yellow
blue
white-green
brown-yellow
red
pink
violet
grey
yellow
brown
brown-green
brown-white
red-white
red-green
max.10 A
max.20 A
max.3 A
KL 15
Tonal sequence
Beacon
Tacho-graph UDS
Rural signal
Urban signal
(Displays optional)
HDK Plus
HDK Minus
Plus keying
Minus keying
85c
72
84b
31/1
LOR
L
Beacon 2
VSE-X
Tonal sequence
Control
VSE-X „ON“
Urban/rural conversion
Switch closed for urban signal
31b
Alarm pull and turn switch with integrated control lamp for beacon 1
6ZE 001 759-071 bzw. -051

Brief instructions/Circuit diagram 2:

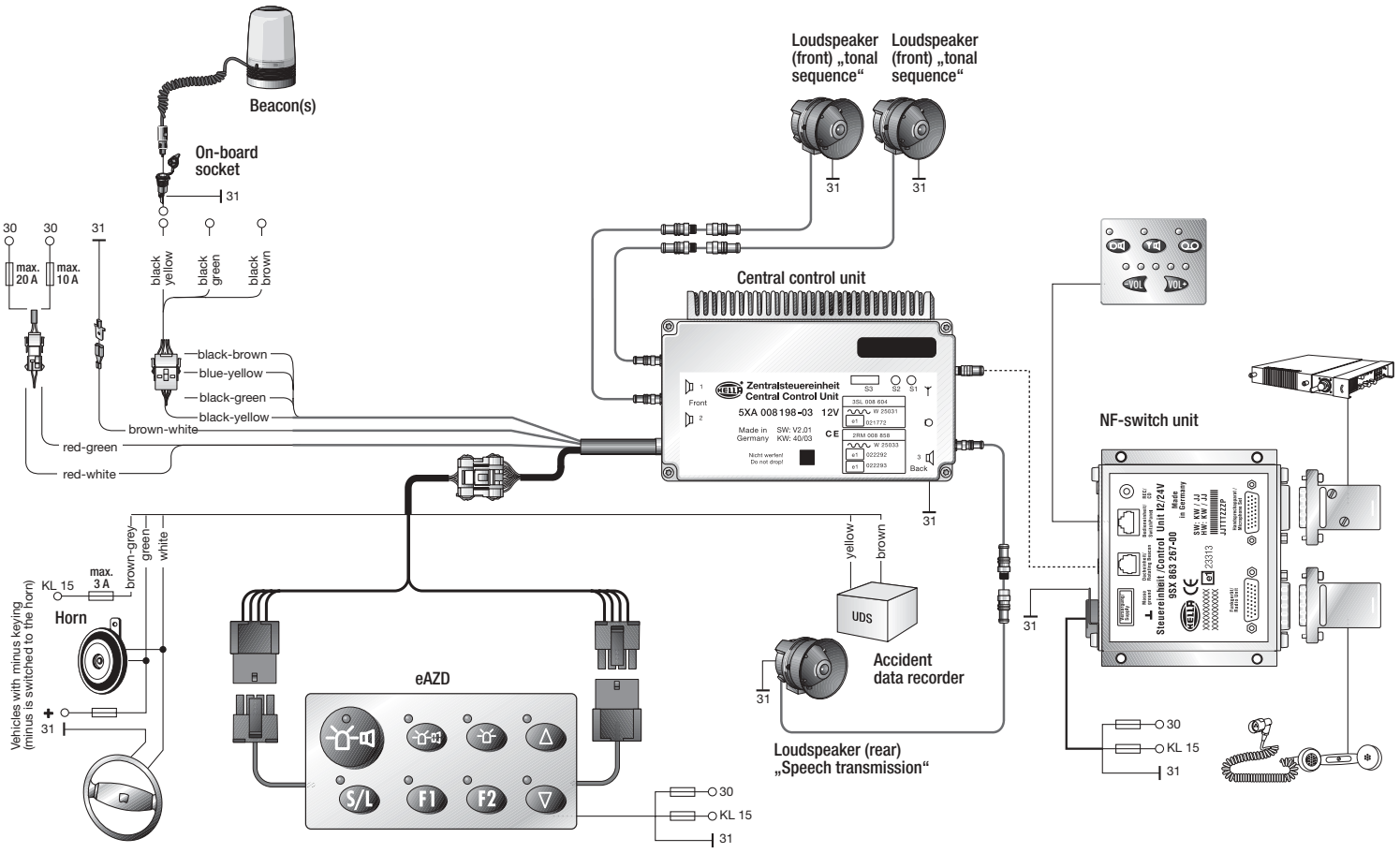
Hella ZSE-SL/VE in connection with e.g.: 2x Hella loudspeakers “tonal sequence signal”, 1x Hella loudspeaker “spoken messages”, Hella KL/KLX 5000, intermitting main beam, Hella individual switch, Hella NF switch unit and FuG 8a, 8b or FuG 7b

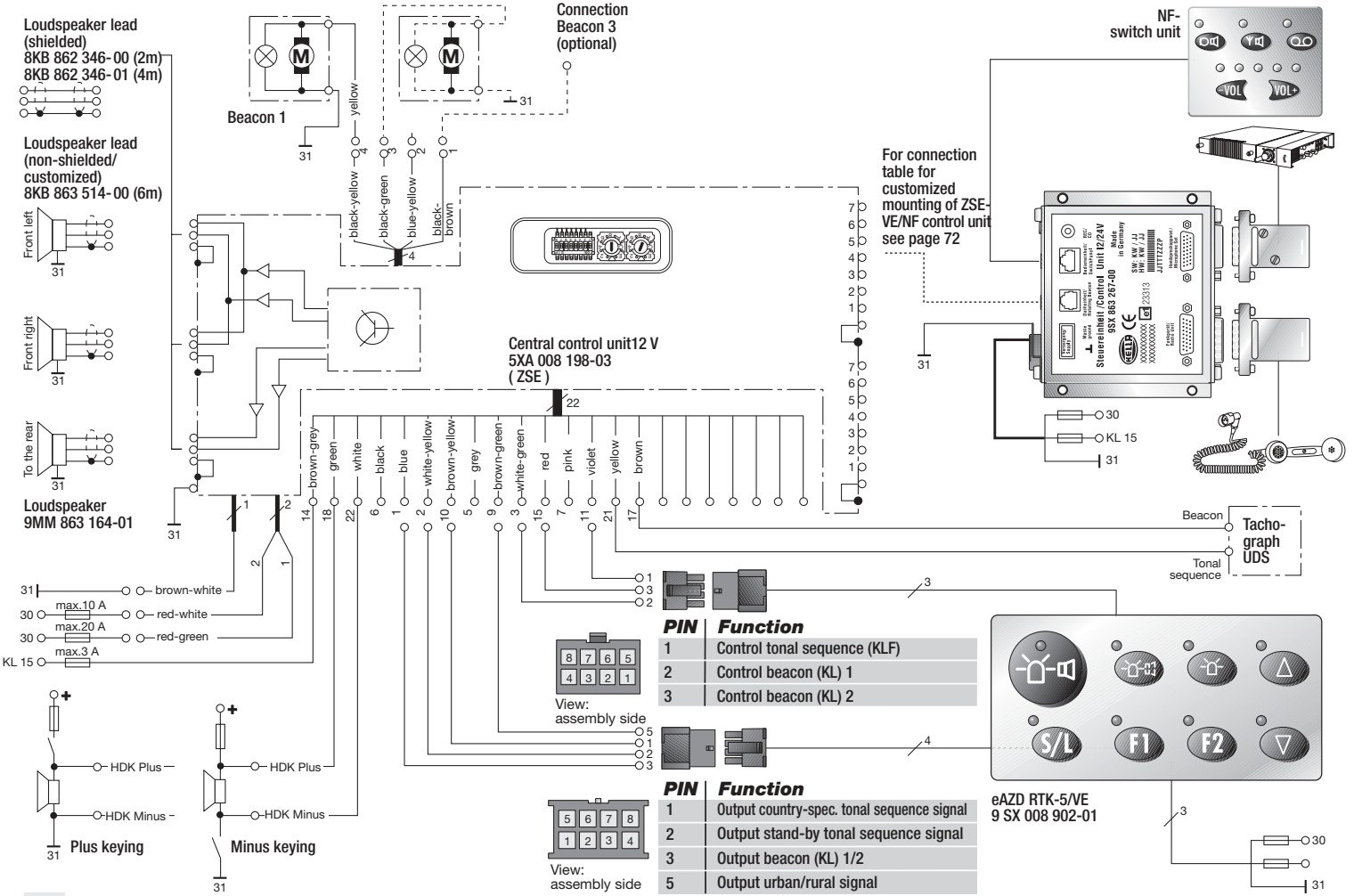



Loudspeaker lead (shielded) 8KB 862 346-00 (2m) 8KB 862 346-01 (4m)
Loudspeaker lead (non-shielded/ customized) 8KB 863 514-00 (6m)
Front left
Front right
To the rear
Loudspeaker 9MM 863 164-01
Beacon 1
Connection Beacon 3 (optional)
Intermitting main beam
NF-switch unit
For connection table for customized mounting of ZSE-VE/NF control unit see page 72
Central control unit 12 V 5XA 008 198-03 (ZSE)
Steuereinheit/Control Unit 12/24V
SSX 863 267-00
brown-white
red-white
red-green
max.10 A
max.20 A
max.3 A
Tonal sequence
Beacon
Tacho-graph UDS
HDK Plus
HDK Minus
Plus keying
Minus keying
Test
Beacon 1/2
Tonal sequence stand-by
DIN-signal
Beacon 3
Urban/rural conversion
Rural signal
Urban signal
(Displays optional)
Switch closed for urban signal
Beacon 1
Beacon 2
Beacon 3
Tonal sequence

Brief instructions/Circuit diagram 3:

Hella ZSE-SL/VE in connection with e.g.: 2x Hella loudspeakers “tonal sequence signal”, 1x Hella loudspeaker “spoken messages”, Hella KL/KLX 5000, Hella eAZD, Hella NF switch unit and FuG 8a, 8b or FuG 7b




Loudspeaker lead (shielded) 8KB 862 346-00 (2m) 8KB 862 346-01 (4m)
Loudspeaker lead (non-shielded/ customized) 8KB 863 514-00 (6m)
Front left
Front right
To the rear
Loudspeaker 9MM 863 164-01
Beacon 1
Connection Beacon 3 (optional)
yellow
black-yellow
black-green
blue-yellow
black-brown
Central control unit12 V 5XA 008 198-03 (ZSE)
brown-grey
green
white
black
blue
white-yellow
brown-yellow
grey
brown-green
white-green
red
pink
violet
yellow
brown
NF- switch unit
VOL-
VOL+
For connection table for customized mounting of ZSE-VE/NF control unit see page 72
Steuereinheit /Control Unit 12/24V
9SX 863 267-00
30
KL 15
Beacon
Tacho- graph UDS
Tonal sequence
brown-white
red-white
red-green
max.10 A
max.20 A
max.3 A
HDK Plus
HDK Minus
Plus keying
Minus keying
View: assembly side
PIN Function
1 Control tonal sequence (KLF)
2 Control beacon (KL) 1
3 Control beacon (KL) 2
PIN Function
1 Output country-spec. tonal sequence signal
2 Output stand-by tonal sequence signal
3 Output beacon (KL) 1/2
5 Output urban/rural signal
eAZD RTK-5/VE
9 SX 008 902-01
S/L
F1
F2

Connection table ZSE-VE/NF control unit

To connect the NF control unit to the ZSE-VE, connect the 7-channel lead socket of the ZSE-VE to the RJ12 lead socket according to the following connection table. (Plugs and leads are not included in the scope of supply).

Plug ZSE-VE Lead plug (DIN 7-channel)			***Plug NF control unit*** Plug 6-channel, such as Hirose RJ12 6/, shielded, HRS no. CL222-2149-9-03 Part no. TMIIP-66P(03)	
PIN	**Function**	**e.g. Colour of lead**	**PIN**	**Function**
1	GND	brown	-	
2	NF cold	grey	2	NF cold
3	NF hot 450 mV	blue	1	NF hot
4	NF hot 4 mV	white	-	-
5	PTT minus active	pink	-	-
6	PTT plus active	green	5/6	PTT plus active, 5 & 6 bridged
7	Ub	yellow	-	-

If you have any questions or problems with installation, please contact your Hella stockist.

Hella KGaA Hueck & Co.
Rixbecker Straße 75

59552 Lippstadt

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