



Audible and visual signalling device

Series YL60/2

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1 General information

1.1 Manufacturer

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1.2 Information regarding the operating instructions

ID no.: 276786 / YL6060300190
Publication code: 2022-03-17-BA00-III-en-01

The original instructions are the English version.
They are legally binding in all legal affairs.

1.3 Further documents

- Data sheet
- For documents in other languages, see r-stahl.com.

1.4 Conformity with standards and regulations

IECEX, ATEX, EU Declaration of Conformity and further national certificates can be downloaded via the following link: <https://r-stahl.com/en/global/support/downloads/>.
IECEX is also available at: <http://iecex.iec.ch/>

2 Explanation of symbols

2.1 Symbols used in these operating instructions

Symbol	Meaning
	Tips and recommendations on the use of the device
	General danger
	Danger due to explosive atmosphere






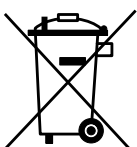
2.2 Warning notes

Warning notes must be observed under all circumstances, in order to minimise the risk resulting from design engineering and operation. The warning notes have the following structure:

- Signalling word: DANGER, WARNING, CAUTION, NOTICE
- Type and source of danger/damage
- Consequences of hazard
- Taking countermeasures to avoid the danger or damage

	DANGER
	Danger to persons Non-compliance with the instruction results in severe or fatal injuries to persons.
	WARNING
	Danger to persons Non-compliance with the instruction can result in severe or fatal injuries to persons.
	CAUTION
	Danger to persons Non-compliance with the instruction can result in light injuries to persons.
NOTE	
Avoiding material damage Non-compliance with the instruction can result in material damage to the device and/or its environment.	

2.3 Symbols on the device

Symbol	Meaning
 05594E00	CE marking according to the current applicable directive.
 02198E00	Device certified for hazardous areas according to the marking.
 15649E00	Input
 15648E00	Output
 11048E00	Safety notes that must always be observed: The corresponding data and/or safety-related instructions contained in the operating instructions must be followed for devices with this symbol!
 20690E00	Marking according to WEEE directive 2012/19/EU

3 Safety information

3.1 Operating instructions storage

- Carefully read the operating instructions.
- Store the operating instructions at the mounting location of the device.
- Observe applicable documents and operating instructions of the devices to be connected.

3.2 Personnel qualification

Qualified specialist personnel is required to perform the activities described in these operating instructions. This primarily applies to work in the following areas:

- Project engineering
- Mounting/dismounting the device
- (Electrical) Installation
- Commissioning
- Maintenance, repair, cleaning

Specialists who perform these tasks must have a level of knowledge that meets applicable national standards and regulations.

Additional knowledge is required for activities in hazardous areas!

R. STAHL recommends having a level of knowledge equal to that described in the following standards:

- IEC/EN 60079-14 (Electrical installations design, selection and erection)
- IEC/EN 60079-17 (Inspection and maintenance of electrical installations)
- IEC/EN 60079-19 (Equipment repair, overhaul and reclamation)

3.3 Safe use

Before installation

- Read and observe the safety notes in these operating instructions!
- Ensure that the contents of these operating instructions are fully understood by the personnel in charge.
- Use the device in accordance with its intended and approved purpose only.
- Always consult R. STAHL Schaltgeräte GmbH if using the device under operating conditions which are not covered by the technical data.
- Make sure that the device is not damaged.
- We cannot be held liable for damage to the device caused by incorrect or unauthorised use or non-compliance with these operating instructions.



For mounting and installation

- Have mounting and installation performed only by qualified and authorised persons (see chapter "Qualification of the personnel").
- The device is only to be installed in areas for which it is suited based on its marking.
- During installation and operation observe the information (characteristic values and rated operating conditions) on the rating and data plates as well as the information plates located on the device.
- Before installation, make sure that the device is not damaged.


Commissioning, maintenance, repair

- Only have commissioning and repairs performed by qualified and authorised persons (see "Qualification of the personnel" section).
- Before commissioning, make sure that the device is not damaged.
- Perform only maintenance work described in these operating instructions.

3.4 Modifications and alterations

	<p style="text-align: center;">DANGER</p> <p>Explosion hazard due to modifications and alterations to the device! Non-compliance results in severe or fatal injuries.</p> <ul style="list-style-type: none"> • Do not modify or change the device.
	<p>No liability or warranty for damage resulting from modifications and alterations.</p>

4 Function and device design

	<p style="text-align: center;">DANGER</p> <p>Explosion hazard due to improper use! Non-compliance results in severe or fatal injuries.</p> <ul style="list-style-type: none"> • Use the device only according to the operating conditions described in these operating instructions. • Use the device only for the intended purpose specified in these operating instructions.
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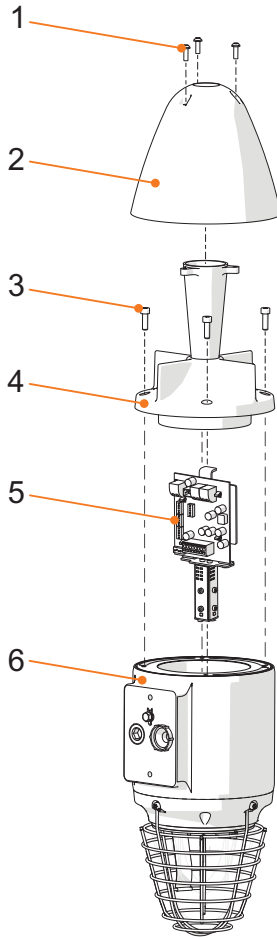
4.1 Function**Application range**

The series YL60/2 signalling device is intended for use in explosive or harsh environments. It is used in gas hazardous areas in Zones 1 and 2, as well as in dust hazardous areas in Zones 21 and 22.

Mode of operation

When activated, the signalling device emits a visible and audible signal, depending on the configuration and device version.

4.2 Device design



15256E00

- | | | | |
|---|--------------------|---|-------------|
| 1 | Screws | 4 | Horn flange |
| 2 | Horn cover | 5 | PCB |
| 3 | Cheese head screws | 6 | Enclosure |

5 Technical data

Explosion protection

Global (IECEX)

Gas and dust | IECEx EPS 20.0037X
 Ex db IIC T.*) Gb
 Ex tb IIIC T... °C*) Db

Europe (ATEX)

Gas and dust | EPS 20 ATEX 1 077 X
 Ⓢ II 2 G Ex db IIC T.*) Gb
 Ⓢ II 2 D Ex tb IIIC T... °C*) Db

*) Temperature class	T6	T4
Max. surface temperature (tb)	T80 °C	T100 °C
Ambient temperature range (db)	-45 to +50 °C ¹⁾	-45 to +70 °C ²⁾
Ambient temperature range (tb)	-35 to +50 °C ¹⁾	-35 to +70 °C ²⁾

¹⁾ Loop in/loop out wiring up to max. 10 A

²⁾ Loop in/loop out wiring up to max. 10 A, connection line and cable entries with permissible operating temperature ≥ +90 °C required

Special conditions "X"

Repair work on flameproof joints is only permissible in accordance with the values specified by the manufacturer.
 The protective covers and loudspeaker trumpets must be installed so that they are protected against electrostatic charge.
 The ambient temperature range for dust applications is max. -35 to +50 °C or +70 °C.
 For gas Ex applications, the ambient temperature can be as low as -45 °C.
 The strength class of the screws used must be at least A2-70.

Certifications and certificates

Certificates | IECEx, ATEX

Technical data

Technical data

Product weight | 6 kg

Electrical data

Rated operating voltage | 21.1 to 24 V DC

Average input power/max. current consumption	Max. current consumption [mA]	Average power [W]
Horn	300	6
XENON 5J	350	6.5
LED	400	6.5
In flash mode	1200	6.5
Horn – XENON 5J	650	12.5
Horn – LED	700	12.5
In flash mode	1500	12.5

Ambient conditions

Functional ambient temperature range | min. -40 °C
max. ambient temperature see certificate

Mechanical data

Degree of protection | IP66 (IEC/EN 60529)

Material

Enclosure | Aluminium 6005A – T6, seawater-resistant

Horn | ABS, flame retardant

Calotte covering | Polycarbonate

Fastening | Stainless steel

Cable entries | 2 cable entries, equipped with:
1 x Exd M20 stopping plug, red
1 x dust cap M20, red

Technical data

Acoustic data

Volume

≤ 110 dB(A) @ 1 m

Calculated max. range

Inform [80 dB(A)]

15 m

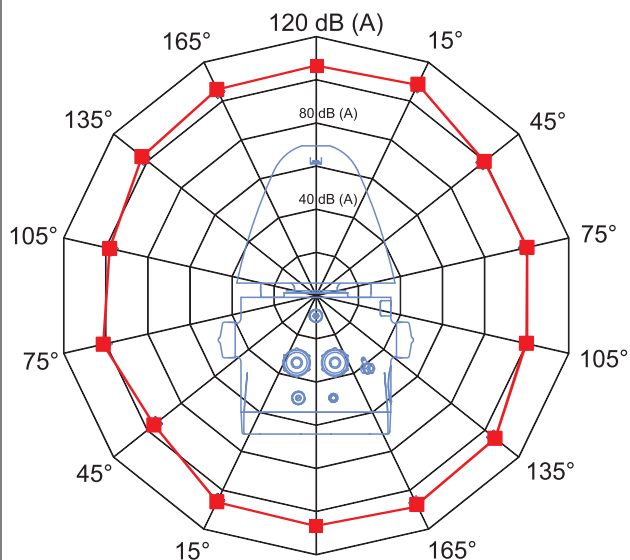
Warn [85 dB(A)]

8 m

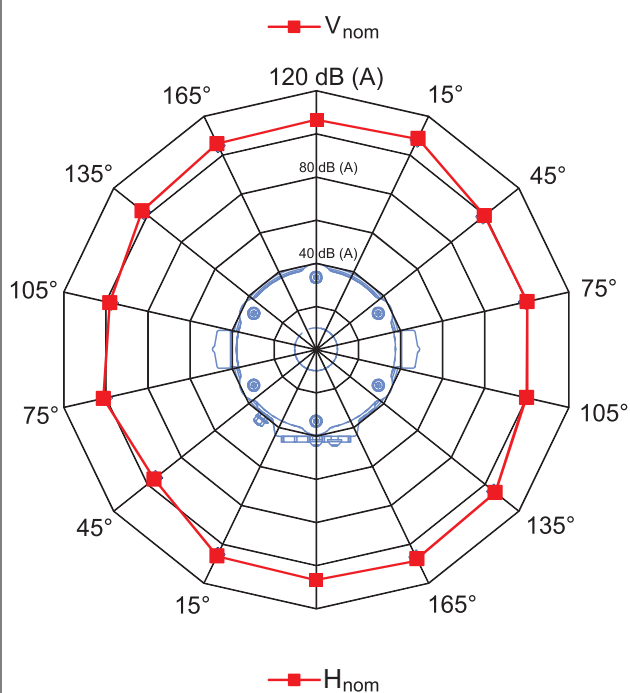
Alarm [90 dB(A)]

4 m

Pole diagram



15288E00



22495E00

Technical data

Optical data

Calculated max. range

LED disc:

Function		Inform		Alarm	
		Flashing 1 Hz	Blinking 1 Hz	Flashing 1 Hz	Blinking 1 Hz
Colour	Red	45 m	58 m	10 m	13 m
	Amber	69 m	89 m	15 m	20 m
	Blue	38 m	48 m	8 m	11 m
	Green	36 m	46 m	8 m	10 m
	Clear	86 m	111 m	19 m	25 m
	Opal	74 m	94 m	16 m	21 m
	Yellow	83 m	106 m	19 m	24 m
	Magenta	19 m	25 m	4 m	6 m

LED tower:

Function		Inform		Alarm	
		Flashing 1 Hz	Blinking 1 Hz	Flashing 1 Hz	Blinking 1 Hz
Colour	Red	52 m	67 m	12 m	15 m
	Amber	87 m	111 m	19 m	25 m
	Blue	47 m	61 m	11 m	14 m
	Green	45 m	57 m	10 m	13 m
	Clear	109 m	139 m	24 m	31 m
	Opal	92 m	118 m	21 m	26 m
	Yellow	104 m	133 m	23 m	30 m
	Magenta	24 m	31 m	5 m	7 m

XENON:

Function		Inform		Alarm	
		Flashing 1 Hz		Flashing 1 Hz	
Colour	Red	35 m		8 m	
	Amber	62 m		14 m	
	Blue	32 m		7 m	
	Green	32 m		7 m	
	Clear	82 m		18 m	
	Opal	57 m		13 m	
	Yellow	77 m		17 m	
	Magenta	21 m		5 m	

Technical data

Luminous characteristics

Effective luminous intensity

Type		LED disc		LED tower		XENON
Function		Flashing 1 Hz	Blinking 1 Hz	Flashing 1 Hz	Blinking 1 Hz	Flashing 1 Hz
Colour	Red	41 cd	67 cd	55 cd	90 cd	24 cd
	Amber	96 cd	157 cd	151 cd	248 cd	76 cd
	Blue	28 cd	47 cd	45 cd	74 cd	20 cd
	Green	25 cd	42 cd	40 cd	66 cd	21 cd
	Clear	150 cd	245 cd	236 cd	387 cd	136 cd
	Opal	108 cd	178 cd	171 cd	280 cd	66 cd
	Yellow	138 cd	226 cd	217 cd	356 cd	119 cd
	Magenta	7 cd	12 cd	12 cd	19 cd	9 cd

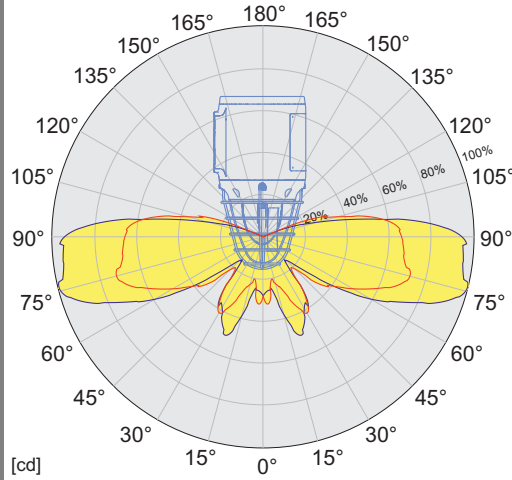
Luminous flux

Type		LED disc	LED tower
Function		Continuous light	Continuous light
Colour	Red	99 lm	236 lm
	Amber	233 lm	573 lm
	Blue	69 lm	170 lm
	Green	62 lm	152 lm
	Clear	365 lm	895 lm
	Opal	264 lm	648 lm
	Yellow	335 lm	824 lm
	Magenta	18 lm	45 lm

Technical data

Pole diagram

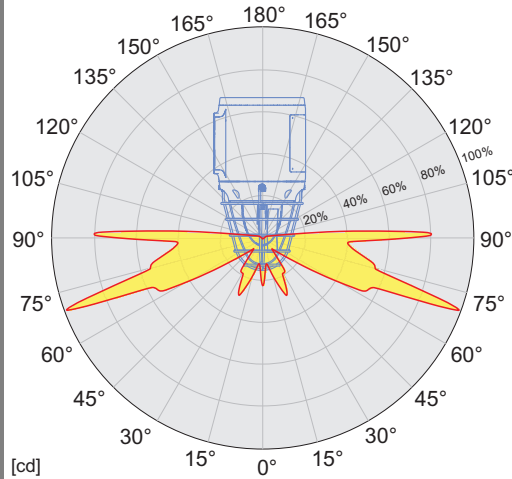
XENON:



— C0 - C180 — C90 - C270

22498E00

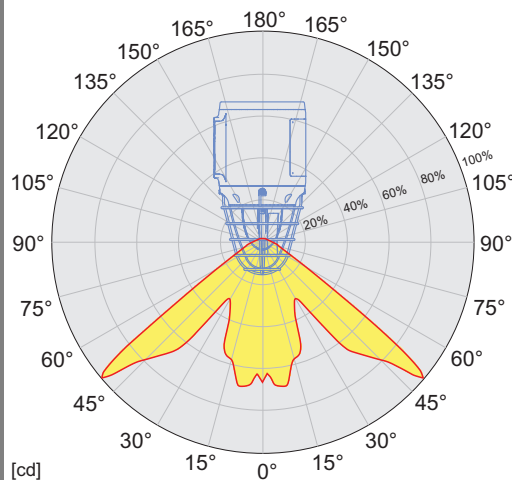
LED tower:



— C0 - C90 - C180 - C270

22497E00

LED disc:



— C0 - C90 - C180 - C270

22496E00

Technical data

Flash energy	XENON: 5 J
Signal function	LED: - Continuous light (maximum, dimmed) - Flashing light, (single flash, double flash, triple flash 1 Hz/2 Hz/ 3 Hz) - Blinking light (1 Hz/1.5 Hz/2 Hz) - Rotating light (90 rpm, 120 rpm, 180 rpm) - Chaos light XENON: - Flashing light (single flash 1 Hz)
Mounting/installation	
Scope of delivery	- Signalling device according to configuration - L-bracket - Dust caps

For further technical data, see r-stahl.com.

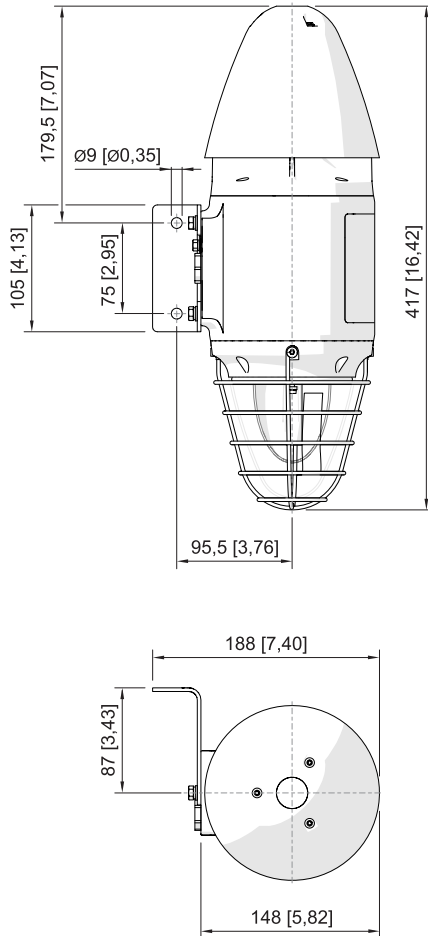
6 Transport and storage

- Transport and store the device only in the original packaging.
- Store the device in a dry place (no condensation) free of vibrations.
- Do not drop the device.

7 Mounting and installation




7.1 Dimensions/Fastening dimensions

Dimensional drawings (all dimensions in mm [inches]) – Subject to change



18380E00

7.2 Mounting/dismounting, operating position

	<p style="text-align: center;">DANGER</p> <p>Explosion hazard due to improper mounting! Non-compliance results in severe or fatal injuries.</p> <ul style="list-style-type: none"> • Only operate the device if it is not damaged. If the thread is damaged, replace the device immediately. • Only install the device in a clean and dry operating environment. • Only mount the device on a wall or on a suitable surface. • Carefully protect exposed joint surfaces from damage, dust and dirt. • Install end flanges without applying force (without hammer and tool) in straight alignment. • If necessary, fit core end sleeves gas-tight and using a suitable tool.
	<p style="text-align: center;">DANGER</p> <p>Explosion hazard due to electrostatic discharge! Non-compliance results in severe or fatal injuries.</p> <p>Do not use the device in strong charge-generating environments.</p> <p>The following processes/activities should be avoided:</p> <ul style="list-style-type: none"> • Accidental friction • Particle flows
	<p style="text-align: center;">DANGER</p> <p>Explosion hazard due to open holes, unused cable entries and cable glands! Non-compliance results in severe or fatal injuries.</p> <ul style="list-style-type: none"> • Only use cable entries and stopping plugs that have been separately checked and certified in accordance with Directive 2014/34/EU (ATEX) and IECEx (CoC), and which technically correspond to the state of technology given in the certificate. • The IP level of protection of the cable entries and stopping plugs must at least correspond to the IP level of protection of the device (see marking on the device). • When selecting cable glands, observe the thread type and thread size in the component documentation. • Seal the thread with non-curing thread sealant in order to guarantee the IP66 degree of protection. • Always close unused holes, cable entries and cable glands using approved stopping plugs or plugs. Observe IEC/EN 60079-14 for this. • Installation of the cable gland must be performed in accordance with the manufacturer's instructions. • The cable entry temperature may exceed 70 °C.

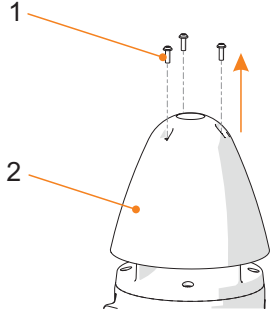
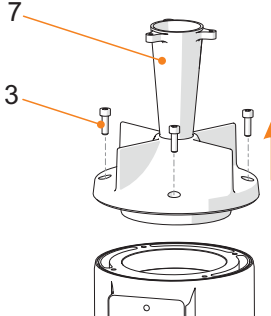
- Select a mounting location that is suitable for the signal effect of the device, as well as the required mounting and installation parameters (see "Technical data" section).
- Mount the device on a flat surface using the L-bracket and screw holes.
- Mount suitable approved electrical lines (see "Technical data" chapter) using a suitable flameproof cable entry.
- Close unused entries using certified, flameproof stopping plugs.

7.3 Installation

The electrical installation and configuration of the device is performed in the following sequence:


- Dismounting the device (see Section 7.3.1)
- Electrical connections (see Section 7.3.2)
- Configuration (see Section 7.3.3)
- Mounting the device (see Section 7.3.4)
- Mounting the earth connection (see Section 7.3.5)

7.3.1 Dismounting the device

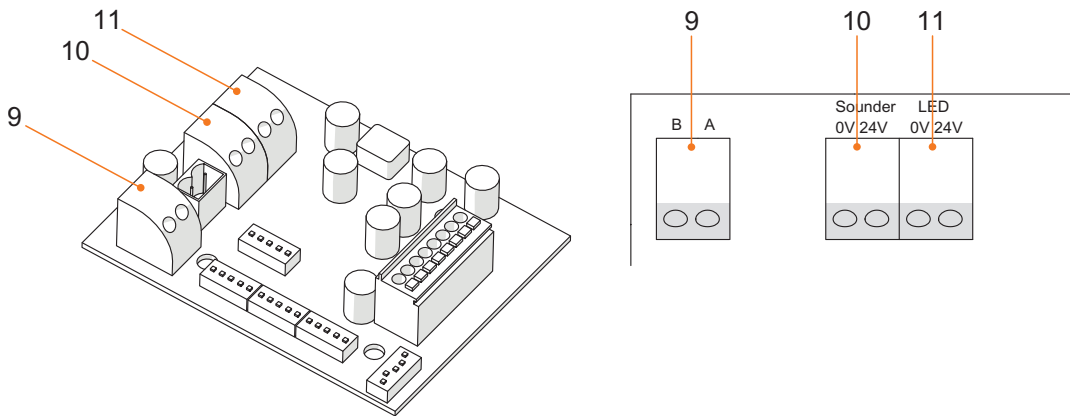
 <p>22499E00</p>	<ul style="list-style-type: none"> • Loosen the 3 PT screws (4.0 x 12) (1) and remove the trumpet cover (2).
 <p>22500E00</p>	<ul style="list-style-type: none"> • Loosen the 4 cheese-head screws (M5 x 16) (3) and remove the horn flange (7).

<p>Diagram showing the disconnection of the plug connector between the horn flange (7) and the PCB (8). The horn flange (7) is shown above the PCB (8), with an arrow pointing to the connector on the PCB.</p> <p>22501E00</p>	<ul style="list-style-type: none"> • Disconnect the plug connector between the horn flange (7) and PCB (8).
<p>Diagram showing the removal of the PCB (8) from the enclosure (6). The PCB (8) is shown above the enclosure (6), with an arrow pointing upwards from the enclosure towards the PCB.</p> <p>22502E00</p>	<ul style="list-style-type: none"> • Remove the PCB (8) from the enclosure (6).

7.3.2 Electrical connections

	DANGER
	<p>Explosion hazard due to insufficient protective measures! Non-compliance results in severe or fatal injuries.</p> <ul style="list-style-type: none"> Select suitable cables to ensure that the maximum permissible conductor temperatures are not exceeded. When using core end sleeves, attach them using a suitable tool. The conductor insulation must be touching the terminal. Do not damage the conductor (e.g. nicking) when stripping it. Finally, check the conductor to ensure that it is secure (fixed).

- Lay the pre-installed cabling in the intended electrical connections – see figure.



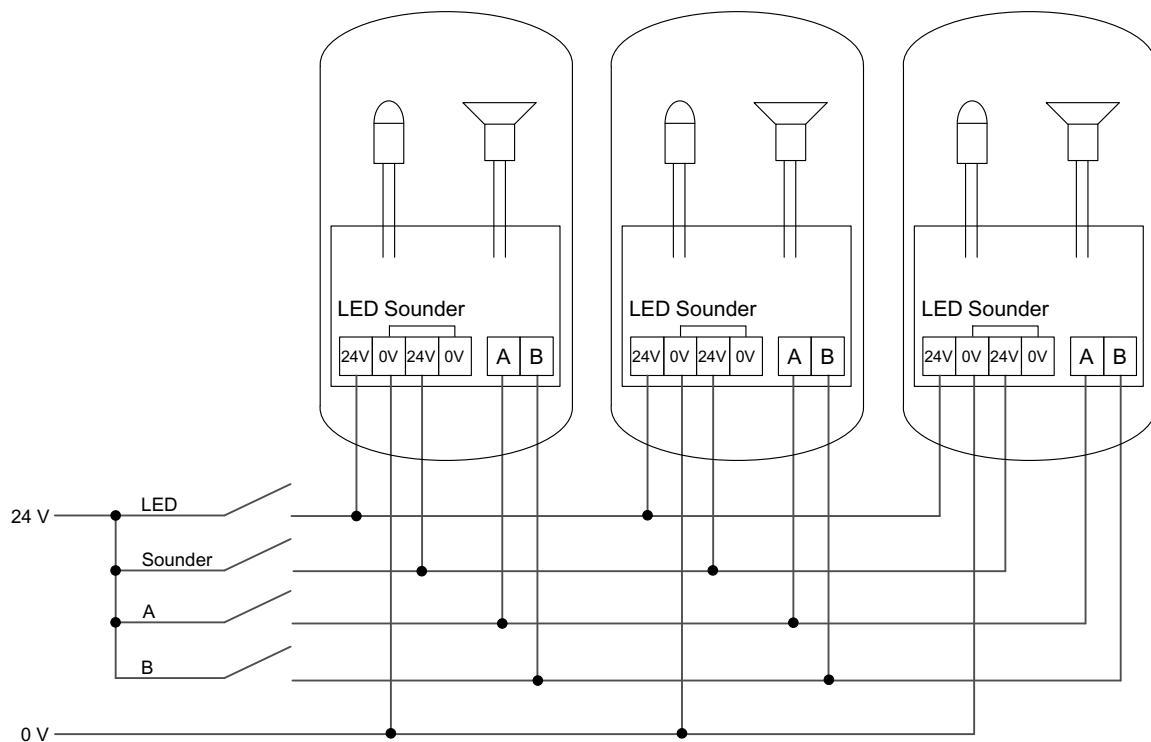
22504E00

22503E00

9 Control (A/B signal)

11 Power supply audible signal

10 Power supply visual signal



22129E00

Example: Connection diagram for combining multiple devices

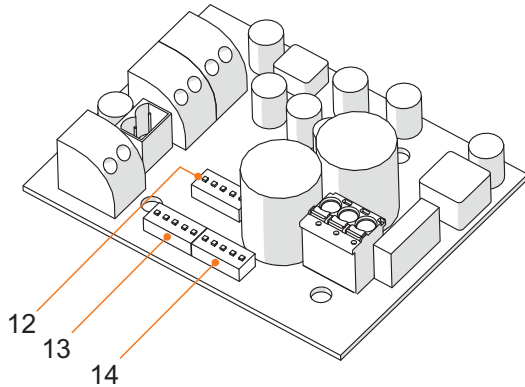
When doing so:

- Observe the maximum permissible single wire cross-sections for the connection terminals – see "Technical data" section.
- Select cable entries and electrical lines in accordance with nationally and locally applicable regulations and statutory regulations. IEC/EN 60079 can be used as a guideline.
- Use electrical lines with a minimum length of 3 m or a cable gland with compound.

7.3.3 Configuration

The configuration of the device is performed by adjusting the DIP switch on the PCB. The following general audible/visual configuration options are available:

XENON horn circuit board



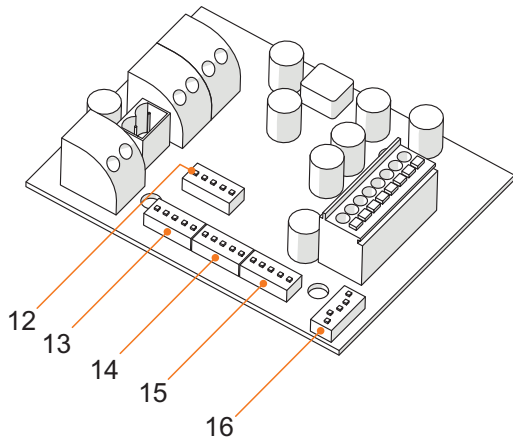
22599E00

	DIP switch designation	Function
12	OPTIONS	General settings
13	SW1	Audible settings for sound level 1
14	SW2	Audible settings for sound level 2

"OPTIONS" DIP switch

1	2	3	4	5	
			ON	ON	Sound volume reduced by up to 18 dB(A)
			ON	OFF	Sound volume reduced by up to 12 dB(A)
			OFF	ON	Sound volume reduced by up to 6 dB(A)
			OFF	OFF	Max. sound volume
		ON			Reserved
		OFF			Reserved
	ON				Activating SOUND STAGES 3, 4 via input A, B
	OFF				Deactivating SOUND STAGES 3, 4 via inputs A, B
ON					RI = 1, Switching on/off via input B
OFF					RI = 0, Input B normal switching function

LED horn circuit board



22505E00

	DIP switch designation	Function
12	OPTIONS	General settings
13	SW1	Audible settings for sound level 1
14	SW2	Audible settings for sound level 2
15	SW3	Visual functions
16	SW4	General settings 2

General settings
"OPTIONS" DIP switch

1	2	3	4	5	
			ON	ON	Sound volume reduced by up to 18 dB(A)
			ON	OFF	Sound volume reduced by up to 12 dB(A)
			OFF	ON	Sound volume reduced by up to 6 dB(A)
			OFF	OFF	Max. sound volume
		ON			Reserved
		OFF			Reserved
	ON				Activating SOUND STAGES 3, 4 via input A, B
	OFF				Deactivating SOUND STAGES 3, 4 via inputs A, B
ON					Reserved
OFF					Reserved

"OPTIONS 2 and inputs A/B" DIP switch

Inputs		OFF	ON	
A	B			SW3
0	0	Sound1 (SW1)		LED prog.1
1	0	Sound2 (SW2)		LED prog.2
0	1	Sound1 (SW1)	Sound3 (SW3)	LED prog.3
1	1	Sound2 (SW2)	Sound4 (SW4)	LED prog.4
B = RI/TI				
0	0	OFF		OFF
0	1	OFF		OFF
1	0	Sound1 (SW1)		LED prog.1
1	1	Sound2 (SW2)		LED prog.2

"SW4" DIP switch

1	2	3	4	5	
				ON	Max. LED current/2
				OFF	Max. LED current
			ON		LED disc:
			OFF		LED tower:
		ON			Reserved
		OFF			Reserved
	ON				Reserved
	OFF				Reserved
ON					RI = 1, switching on/off via input B
OFF					RI = 0, input B normal switching function

Visual settings

DIP switch "SW3" function tower, monochrome

					LED prog1		LED prog2		LED prog3		LED prog4	
SW3					A	B	A	B	A	B	A	B
1	2	3	4	5	0	0	1	0	0	1	1	1
0	0	0	0	0	Continuous light		Double flash 1 Hz		Blinking light 1 Hz		Rotating light 120 rpm	
1	0	0	0	0	Blinking light 1 Hz		Continuous light (dimmed)		Blinking light 1.5 Hz		Blinking light 2 Hz	
0	1	0	0	0	Blinking light 1.5 Hz		Continuous light		Blinking light 1 Hz		Triple flash 1 Hz	
1	1	0	0	0	Blinking light 2 Hz		Continuous light		Blinking light 1 Hz		Triple flash 1 Hz	
0	0	1	0	0	Single flash 1 Hz		Continuous light		Double flash 1 Hz		Triple flash 1 Hz	
1	0	1	0	0	Double flash 1 Hz		Continuous light		Triple flash 1 Hz		Triple flash 2 Hz	
0	1	1	0	0	Triple flash 1 Hz		Continuous light		Triple flash 2 Hz		Single flash 1 Hz	
1	1	1	0	0	Single flash 2 Hz		Continuous light		Double flash 2 Hz		Triple flash 2 Hz	
0	0	0	1	0	Continuous light		Rotating light 90 rpm		Rotating light 120 rpm		Rotating light 180 rpm	
1	0	0	1	0	Continuous light		Rotating light 90 rpm		Blinking light 1 Hz		Blinking light 2 Hz	
0	1	0	1	0	Continuous light		Rotating light 120 rpm		Blinking light 1 Hz		Blinking light 2 Hz	
1	1	0	1	0	Continuous light		Rotating light 180 rpm		Blinking light 1 Hz		Blinking light 2 Hz	
0	0	1	1	0	Continuous light		Rotating light 90 rpm		Single flash 1 Hz		Triple flash 1 Hz	
1	0	1	1	0	Continuous light		Rotating light 120 rpm		Single flash 1 Hz		Triple flash 1 Hz	
0	1	1	1	0	Continuous light		Rotating light 180 rpm		Single flash 1 Hz		Triple flash 1 Hz	
1	1	1	1	0	Continuous light		Rotating light 90 rpm		Triple flash 1 Hz		Chaos light	

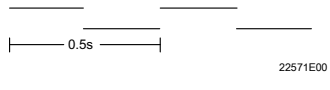
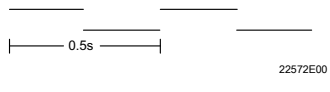
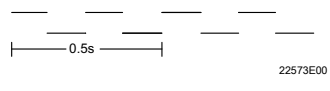
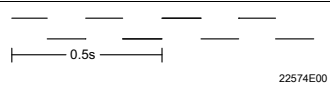
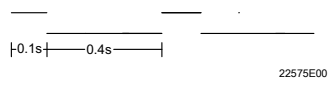
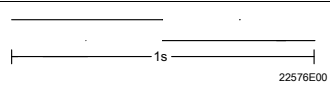
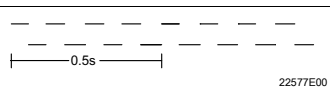
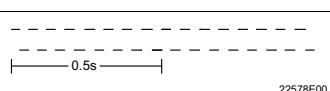
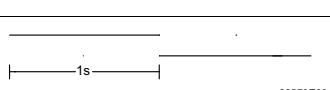
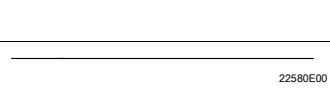
					B = RI/TI	
SW1/SW3					A	A
1	2	3	4	5	0	1
0	0	0	0	0	Continuous light	
1	0	0	0	0	Blinking light 1 Hz	
0	1	0	0	0	Blinking light 1.5 Hz	
1	1	0	0	0	Blinking light 2 Hz	
0	0	1	0	0	Single flash 1 Hz	
1	0	1	0	0	Double flash 1 Hz	
0	1	1	0	0	Triple flash 1 Hz	
1	1	1	0	0	Single flash 2 Hz	
0	0	0	1	0	Continuous light	
1	0	0	1	0	Continuous light	
0	1	0	1	0	Continuous light	
1	1	0	1	0	Continuous light	
0	0	1	1	0	Continuous light	
1	0	1	1	0	Continuous light	
0	1	1	1	0	Continuous light	
1	1	1	1	0	Continuous light	

DIP switch "SW3" function disc, monochrome

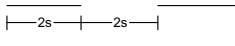
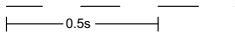
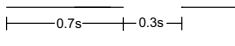
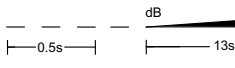
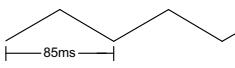
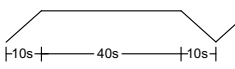
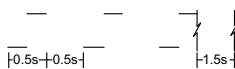
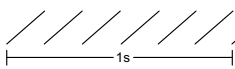
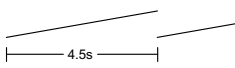
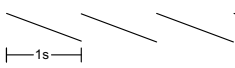
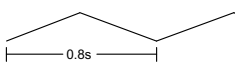
					LED prog1		LED prog2		LED prog3		LED prog4	
SW3					A	B	A	B	A	B	A	B
1	2	3	4	5	0	0	1	0	0	1	1	1
0	0	0	0	0	Continuous light		Double flash 1 Hz		Blinking light 1 Hz		Continuous light (dimmed)	
1	0	0	0	0	Blinking light 1 Hz		Continuous light (dimmed)		Blinking light 1.5 Hz		Blinking light 2 Hz	
0	1	0	0	0	Blinking light 1.5 Hz		Continuous light		Blinking light 1 Hz		Triple flash 1 Hz	
1	1	0	0	0	Blinking light 2 Hz		Continuous light		Blinking light 1 Hz		Triple flash 1 Hz	
0	0	1	0	0	Single flash 1 Hz		Continuous light		Double flash 1 Hz		Triple flash 1 Hz	
1	0	1	0	0	Double flash 1 Hz		Continuous light		Triple flash 1 Hz		Triple flash 2 Hz	
0	1	1	0	0	Triple flash 1 Hz		Continuous light		Triple flash 2 Hz		Single flash 1 Hz	
1	1	1	0	0	Single flash 2 Hz		Continuous light		Double flash 2 Hz		Triple flash 2 Hz	

					B = RI/TI	
SW1/SW3					A	A
1	2	3	4	5	0	1
0	0	0	0	0	Continuous light	
1	0	0	0	0	Blinking light 1 Hz	
0	1	0	0	0	Blinking light 1.5 Hz	
1	1	0	0	0	Blinking light 2 Hz	
0	0	1	0	0	Single flash 1 Hz	
1	0	1	0	0	Double flash 1 Hz	
0	1	1	0	0	Triple flash 1 Hz	
1	1	1	0	0	Single flash 2 Hz	

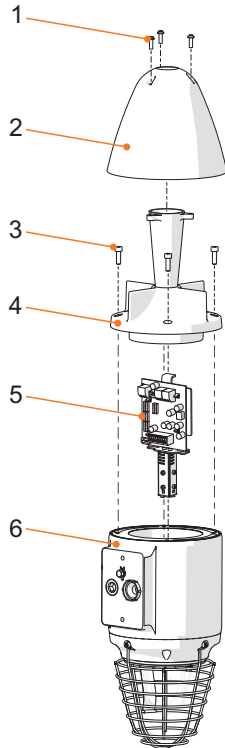
Audible settings

Sound no.	SW1/SW2					Frequency	Sound description	Special application	Sound level			
	SW x.1	SW x.2	SW x.3	SW x.4	SW x.5				1	2	3	4
									Sound no.	Sound no.	Sound no.	Sound no.
01	0	0	0	0	0	1000 Hz 800 Hz		Changing sound UK BS5839-1 (fire alarm, level crossing)	01	SW2	05	11
02	1	0	0	0	0	3100 Hz 2500 Hz		Safety alarm	02	SW2	04	11
03	0	1	0	0	0	1000 Hz 800 Hz		Increased urgency, level crossing	03	SW2	05	11
04	1	1	0	0	0	3100 Hz 2500 Hz		Security deterrent	04	SW2	02	11
05	0	0	1	0	0	554 Hz 440 Hz		AFNOR (France)	05	SW2	01	14
06	1	0	1	0	0	470 Hz 430 Hz			06	SW2	01	11
07	0	1	1	0	0	1000 Hz 800 Hz			07	SW2	28	11
08	1	1	1	0	0	3200 Hz 2500 Hz			08	SW2	07	11
09	0	0	0	1	0	554 Hz 440 Hz		Form emergency lane (Sweden, SS 031711)	09	SW2	01	11
10	1	0	0	1	0	700 Hz		All clear, (Sweden, SS 031711)	10	SW2	01	11

Sound no.	SW1/SW2					Frequency	Sound description	Special application	Sound level			
	SW x.1	SW x.2	SW x.3	SW x.4	SW x.5				1	2	3	4
	Sound no.	Sound no.	Sound no.	Sound no.	Sound no.							
11	0	1	0	1	0	1000 Hz			11	SW2	31	15
12	1	1	0	1	0	2040 Hz 1632 Hz			12	SW2	01	11
13	0	0	1	1	0	2300 Hz			13	SW2	01	14
14	1	0	1	1	0	440 Hz			14	SW2	01	11
15	0	1	1	1	0	1000 Hz			15	SW2	31	11
16	1	1	1	1	0	420 Hz		AS2220, AS1610, AS1670 (Australia)	16	SW2	01	11
17	0	0	0	0	1	1000 Hz			17	SW2	31	11
18	1	0	0	0	1	2500 Hz			18	SW2	10	11
19	0	1	0	0	1	2500 Hz			19	SW2	28	11
20	1	1	0	0	1	700 Hz		Important message (Sweden)	20	SW2	08	11
21	0	0	1	0	1	1000 Hz			21	SW2	28	11

Sound no.	SW1/SW2					Frequency	Sound description	Special application	Sound level			
	SW x.1	SW x.2	SW x.3	SW x.4	SW x.5				1	2	3	4
									Sound no.	Sound no.	Sound no.	Sound no.
22	1	0	1	0	1	700 Hz	 22588E00	Air raid alarm (Sweden)	22	SW2	01	11
23	0	1	1	0	1	700 Hz	 22584E00	Local warning (Sweden)	23	SW2	22	11
24	1	1	1	0	1	720 Hz	 22589E00	Industrial alarm (Germany)	24	SW2	08	11
25	0	0	0	1	1	1400 Hz	 22590E00		25	SW2	22	11
26	1	0	0	1	1	1200 Hz 250 Hz	 22592E00		26	SW2	07	11
27	0	1	0	1	1	1000 Hz 250 Hz	 22593E00		27	SW2	31	15
28	1	1	0	1	1	1000 Hz 800 Hz	 22594E00	ISO 8201 (int. evacuation alarm)	28	SW2	08	11
29	0	0	1	1	1	1000 Hz 420 Hz	 22595E00		29	SW2	01	11
30	1	0	1	1	1	1200 Hz 500 Hz	 22596E00	Evacuation, Netherlands	30	SW2	26	11
31	0	1	1	1	1	2500 Hz 500 Hz	 22597E00	DIN 33404 fire alarm (Germany)	31	SW2	15	11
32	1	1	1	1	1	1200 Hz 250 Hz	 22598E00		32	SW2	01	11

7.3.4 Mounting the device



15256E00

- | | | | |
|---|--------------------|---|-------------|
| 1 | Screws | 4 | Horn flange |
| 2 | Horn cover | 5 | PCB |
| 3 | Cheese head screws | 6 | Enclosure |

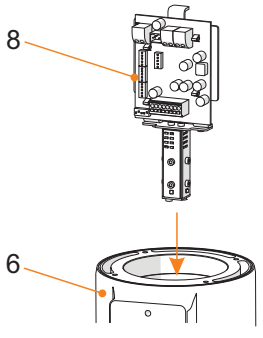
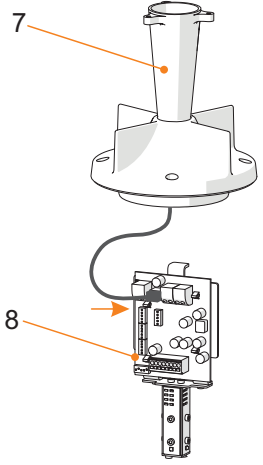
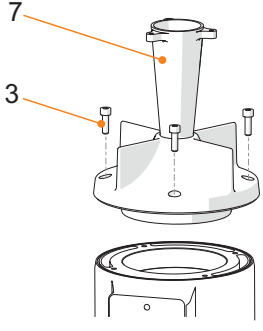
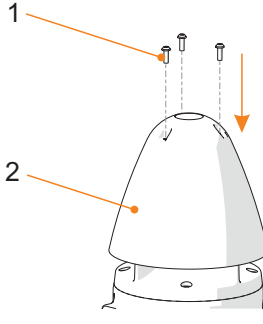
i

Screws and seals

The cheese-head screws are delivered with Nyltite seals.

- Before mounting, check the seals for damage.
- Replace damaged seals.
- Use seals a maximum of 5 times.
- When using screws on a flat surface, note the seal on the screw head – see figure.

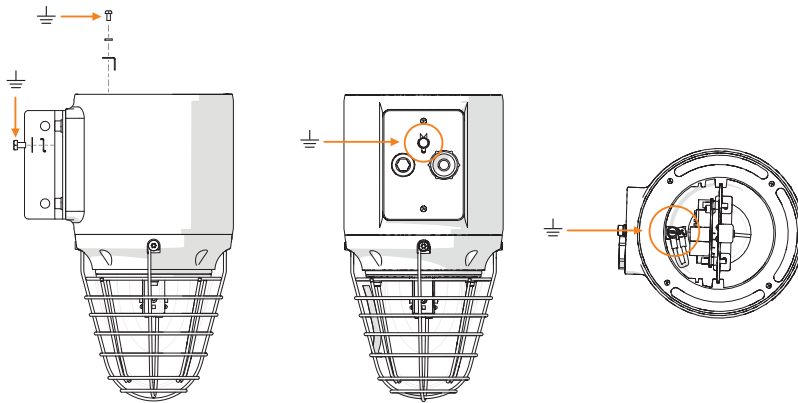
15748E00

 <p>22507E00</p>	<ul style="list-style-type: none"> • Insert the PCB (8) into the enclosure (6).
 <p>22508E00</p>	<ul style="list-style-type: none"> • Connect the plug connector between the horn flange (7) and PCB (8).
 <p>22509E00</p>	<ul style="list-style-type: none"> • Fit the horn flange (7) and mount using 4 cheese-head screws (M5 x 16) (3) (tightening torque 4 Nm).
 <p>22510E00</p>	<ul style="list-style-type: none"> • Fit the trumpet cover (2) and mount using 3 PT screws (4.0 x 12) (1) (tightening torque 0.4 Nm).

7.3.5 Mounting the earth connection

- Connect the internal earth connection as the primary connection point.


i The external connection can be used as an additional equipotential bonding conductor, provided that it is permissible or required in accordance with local regulations or by the authorities.



15265E00

8 Commissioning

8.1 Prerequisites

	DANGER
	<p>Explosion hazard due to incorrect installation! Non-compliance results in severe or fatal injuries.</p> <ul style="list-style-type: none"> • Check the device for proper installation before commissioning. • Comply with national regulations.

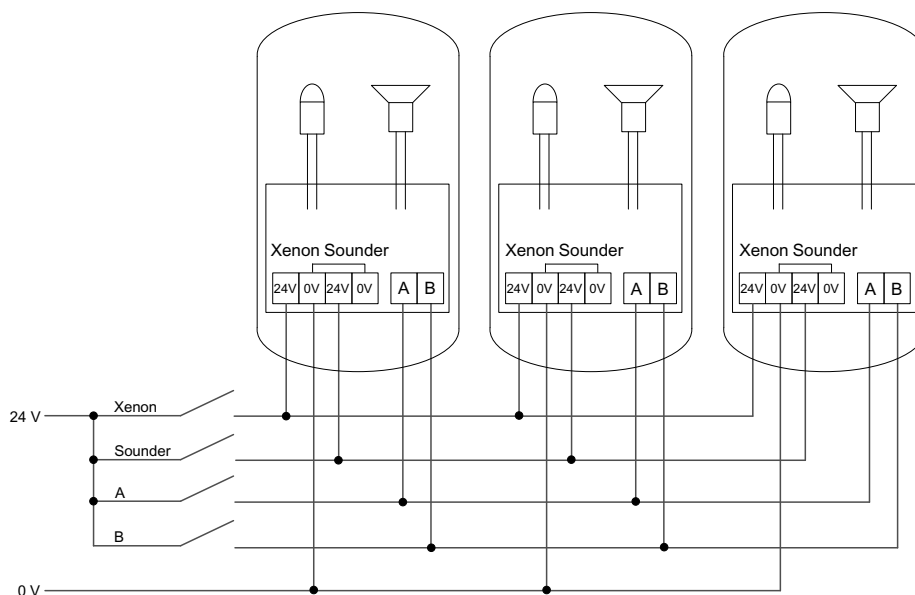
Before commissioning, make sure that:

- the device has been installed according to regulations.
- the line voltage and the rated operational voltage are consistent.
- the permissible cable diameter for the cable entries has been used.
- the cable entries and stopping plugs have been securely tightened.
- the electrical lines have been connected correctly.
- the connection has been performed correctly.
- all screws and nuts are tightened in accordance with the regulations.
- the connection chamber is clean.
- the device is not damaged.
- there are no foreign objects inside the device.
- the device is closed according to regulations.

8.2 Testing

For commissioning, the line voltage must correspond to the rated operational voltage. When doing so, the following pre-configured functions can be tested, see figure:

- Audible signal
- Visible signal
- Control functions (A/B signal)



22130E00

9 Operation

The device is used to warn and alert by means of

- an audible signal.
- a visual signal.

9.1 Troubleshooting

If the error cannot be eliminated using the specified procedures:

- Contact R. STAHL Schaltgeräte GmbH.


For fast processing, have the following information ready:

- Type and serial number of the device
- Purchase information
- Error description
- Intended purpose (especially input/output circuit)

10 Maintenance, overhaul, repair

10.1 Maintenance and overhaul


- Consult the relevant national regulations to determine the type and extent of inspections.
- Tailor inspection intervals to the operating conditions.
- Perform maintenance and repair work in accordance with IEC 60079-17 and IEC 60079-19.

	Observe the relevant national regulations in the country of use.
---	--

At a minimum, check the following points during maintenance on the device:

- Whether the conductors are clamped securely
- Whether the device has cracks or other visible signs of damage
- Whether the seals have aged or been damaged
- Compliance with the permissible temperatures (according to EN 60079)
- Whether the device is used as intended and functions properly

10.2 Repair

	DANGER
	<p>Explosion hazard due to improper repair! Non-compliance results in severe or fatal injuries.</p> <ul style="list-style-type: none"> • Repair work on the devices must be performed only by R.STAHL Schaltgeräte GmbH.

10.3 Returning the device

- Only return or package the devices after consulting R. STAHL!
Contact the responsible representative from R. STAHL.

R. STAHL's customer service is available to handle returns if repair or service is required.

- Contact customer service personally.

or

- Go to the r-stahl.com website.
- Under "Support" > "RMA" > select "RMA-REQUEST".
- Fill out the form and send it.
You will automatically receive an RMA form via email. Please print this file off.
- Send the device along with the RMA form in the packaging to
R. STAHL Schaltgeräte GmbH (refer to chapter 1.1 for the address).

11 Cleaning

- Devices located in hazardous areas may only be cleaned with a damp cloth to avoid electrostatic charge.
- When cleaning with a damp cloth, use water or mild, non-abrasive, non-scratching cleaning agents.
- Do not use abrasive cleaning agents or solvents.
- Never clean the device with a strong water jet, e.g. a pressure washer!

12 Disposal

- Observe national, local and statutory regulations regarding disposal.
- Separate materials for recycling.
- Ensure environmentally friendly disposal of all components according to statutory regulations.

13 Accessories and spare parts

NOTE

Errors or damage to the device due to the use of non-original components.
Non-compliance may lead to material damage!

- Use only original accessories and spare parts from R. STAHL Schaltgeräte GmbH.



For accessories and spare parts, see the data sheet on our website at r-stahl.com.

EU-Konformitätserklärung
EU Declaration of Conformity
Déclaration de Conformité UE



R. STAHL Schaltgeräte GmbH • Am Bahnhof 30 • 74638 Waldenburg, Germany
 erklärt in alleiniger Verantwortung, *declares in its sole responsibility, déclare sous sa seule responsabilité,*

dass das Produkt: **Akustische und optische Signalgeräte**
that the product: *Audible and visual signalling devices*
que le produit: *Appareil de signalisation sonore et lumineux*

Typ(en), type(s), type(s): **YL60/2, YA60/2, FL60/2**

mit den Anforderungen der folgenden Richtlinien und Normen übereinstimmt.
is in conformity with the requirements of the following directives and standards.
est conforme aux exigences des directives et des normes suivantes.

Richtlinie(n) / Directive(s) / Directive(s)		Norm(en) / Standard(s) / Norme(s)
2014/34/EU	ATEX-Richtlinie	EN IEC 60079-0:2018
2014/34/EU	<i>ATEX Directive</i>	EN 60079-1:2014
2014/34/UE	<i>Directive ATEX</i>	EN 60079-31:2014

Kennzeichnung, marking, marquage:  **II 2 G Ex db IIC T6/T4 Gb**  **0158**
II 2 D Ex tb IIIC T 80 °C/T100 °C Db

EU-Baumusterprüfbescheinigung: **EPS 20 ATEX 1077 X**
EU Type Examination Certificate: *(Bureau Veritas Consumer Products Services Germany GmbH,*
Attestation d'examen UE de type: *Businesspark A96, 86842 Tuerkheim, Germany)*

Produktnormen nach Niederspannungsrichtlinie: EN 60598-1:2015/ A1:2018
Product standards according to Low Voltage Directive: EN 62471:2008
Normes des produit pour la Directive Basse Tension:

2014/30/EU	EMV-Richtlinie	EN 50130-4:2011/ A1:2014
2014/30/EU	<i>EMC Directive</i>	EN 61000-6-3:2007/+ A1:2011/ AC:2012
2014/30/UE	<i>Directive CEM</i>	

2011/65/EU	RoHS-Richtlinie	EN 50581:2012
2011/65/EU	<i>RoHS Directive</i>	
2011/65/UE	<i>Directive RoHS</i>	

Waldenburg, 2021-06-11

Ort und Datum
Place and date
Lieu et date

i.V.


Dr. C. Chevalier
Vice President BU Lighting & Signalling
Vice-Président BU Eclairage & Appareils de signalisation

i.V.


J. Freimüller
Vice President global Quality Management
Vice-Président globale Gestion de Qualité