



GRP Flameproof Combination Signal - 110 dB(A) / 5 Joule

Series YL6S



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1 General Information

1.1 Manufacturer

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E-mail: info@stahl.de

1.2 Information regarding the operating instructions

ID-No.: 221664 / YL6S60300010
 Publication Code: 2018-05-24·BA00·III·en·03

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

1.3 Further documents

- Data sheet





For documents in additional languages, see www.r-stahl.com.









1.4 Conformity with standards and regulations

See certificates and EC Declaration of Conformity: www.r-stahl.com.
 The device has IECEx approval. For certificate please refer to the IECEx homepage:
<http://iecex.iec.ch/>

2 Explanation of the symbols

2.1 Symbols in these operating instructions




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

	= Strobe
	= Sounder
	= Earth
	= Sounder Stage 1
	= Sounder Stage 2
	= Sounder Stage 3
	= Sounder Tone
	= Telephone initiate





2.2 Warning notes

Warnings must be observed under all circumstances, in order to minimize the risk due to construction and operation. The warning notes have the following structure:

- Signalling word: DANGER, WARNING, CAUTION, NOTICE
- Type and source of danger/damage
- Consequences of danger
- 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.
NOTICE	
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	According to marking, device certified for hazardous areas.
 15649E00	Input
 15648E00	Output

3 Safety notes



3.1 Operating instructions storage

- Read the operating instructions carefully and store them at the mounting location of the device.
- Observe applicable documents and operating instructions of the devices to be connected.

3.2 Safe use


- Read and observe the safety notes in these operating instructions!
- Observe characteristic values and rated operating conditions on the rating and data plates!
- Observe additional information plates on the device!
- Use the device in accordance with its intended and approved purpose only!
- We cannot be held liable for damage caused by incorrect or unauthorized use or by non-compliance with these operating instructions.
- Before installation and commissioning, make sure that the device is not damaged!
- Work on the device (installation, maintenance, overhaul, repair) may only be carried out by appropriately authorized and trained personnel.

3.3 Modifications and alterations

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

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4 Function and device design



DANGER

Explosion hazard due to improper use!
Non-compliance results in severe or fatal injuries.

- Use the device only according to the operating conditions described in these operating instructions.

4.1 Function

Product Series YL6S is designed to provide both an audible and visual alarm which can be used to alert, warn or draw attention to machine malfunction/start up or any number of safety related issues. The audible and visual signals can be operated independently or as a combination unit. Corrosion resistance is a key feature of the device which is ideally suited for applications in the harshest of environments both onshore and offshore. The optical element of the device must be regarded as a supplementary alarm indicator when used for alerting/evacuating the occupants of the buildings/structures.

In hazardous areas the devices have explosion protection for ATEX/IECEx Zones 1 & 2 for gas and 21 & 22 for dust. Gas groups covered are IIB & IIC, dust protection for IIIC.

The device is not intended for continuous use.

The life of the xenon flash tube is guaranteed for the following number of flashes:

Variant	Number of flashes
5 J	2 million

5 Technical data

Explosion Protection	
Global (IECEx)	
Gas and dust	IECEx BAS 14.0064 IEC 60079-0: 2011 / IEC 60079-1: 2007 / IEC 60079-31: 2013 Ex d IIB T* Ta -** ... +** °C Gb Ex d IIC T* Ta -** ... +** °C Gb Ex tb IIIC T*** °C Ta -** ... +** °C Db IP66
Europe (ATEX)	
Gas and dust	Baseefa14ATEX0126 EN 60079-0: 2012 / EN 60079-1: 2007 / EN 60079-31: 2009 (IEC 60079-31: 2013) ⊕ II 2 G Ex d IIB T* Ta -** ... Ta +** °C Gb ⊕ II 2 G Ex d IIC T* Ta -** ... Ta +** °C Gb ⊕ II 2 D Ex tb IIIC T*** °C Ta -** ... +** °C Db IP66



Explosion Protection

EN

Product variant table

Certified hazardous area protection temperatures

Power and voltage	Temperature class	Max. surface temperature	Ambient temperature range
5 J 24 V DC	T5	T95 °C	-60 to +40 °C
	T4	T110 °C	-60 to +55 °C
5 J 48 V DC	T5	T95 °C	-60 to +40 °C
	T4	T110 °C	-60 to +55 °C
5 J 115 V AC	T5	T95 °C	-60 to +40 °C
	T4	T110 °C	-60 to +55 °C
5 J 230 V AC	T5	T95 °C	-60 to +40 °C
	T4	T110 °C	-60 to +55 °C

Certifications and certificates

Certificates | IECEx, ATEX, Kazakhstan (TR), Russia (TR), Belarus (TR)

Ambient conditions

Operating temperature range	24/48 V DC	-50 to +55 °C
	115 V AC	-40 to +45 °C
	230 V AC	-40 to +55 °C

Technical Data

Electrical data

Rated operational voltage	24 or 48 V DC 115 or 230 V AC					
Current consumption	24 V DC	600 mA				
	48 V DC	420 mA				
	115 V AC	280 mA				
	230 V AC	115 mA				
		* tone 1				
Operational parameters	+/-10 %					
Line monitoring	yes					
Inrush current	24 V / 48 V DC		115 V AC		230 V AC	
	I _{max}	duration	I _{max}	duration	I _{max}	duration
	17.7 A	220 μs	21 A	500 μs	33 A	310 μs
	Calculated figures. Combination signal consists of two separate circuits.					

Calculated figures. Combination signal consists of two separate circuits.

Technical Data

Acoustic data

Volume	max. 110 dB(A)
Volume control	18 dB(A) adjustment
Sound stages	24 / 48 V DC 3 115 / 230 VAC 2
Sound selection	via DIL switch

Luminous characteristics

Light source	Xenon flash tube		
Flash energy	5 J		
Flash rate	1/s		
Light intensity		Effective candela (cd)	Luminous flux (lm)
	clear	62	12.5
Lens colour	amber, red, green, opal, blue, clear, yellow, magenta		

Mechanical data

Material	
Enclosure	glass reinforced polyester
Horn and trumpet	flame retardant ABS
Lens cover	polycarbonate
Wire guard	stainless steel
Assembly parts	stainless steel
Bracket	stainless steel
Labels	polyester foil, adhesive
Degree of protection	IP66 / IP67 acc. to IEC 60529

Mounting / Installation

Connection	2.5 mm ² terminals
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For further technical data, see www.r-stahl.com.

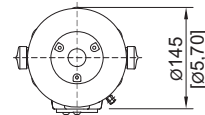
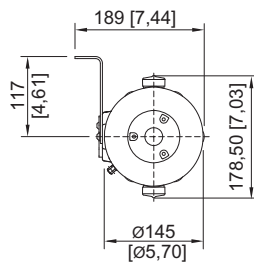
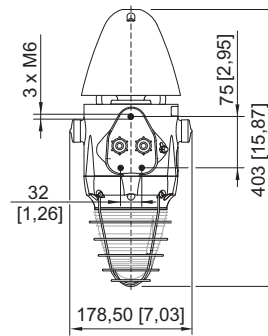
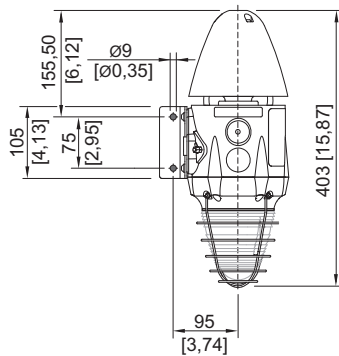
6 Transport and storage

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

7 Mounting and installation

7.1 Dimensions / fastening dimensions

Dimensional Drawings (All Dimensions in mm [inches]) - Subject to Alterations

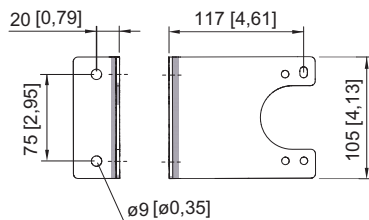


17151E00

17148E00

**GRP Combination Signal Series YL6S
with L-Bracket**



**GRP Combination Signal Series YL6S
without L-Bracket**



17150E00



L-Bracket

7.2 Mounting / dismounting, operating position

	<p style="text-align: center;">DANGER</p> <p>Risk of explosion! Risk of injuries and material damage!</p> <ul style="list-style-type: none"> Terminal sleeves are fitted, they must be gas-tight and applied with a suitable tool.
	<p style="text-align: center;">DANGER</p> <p>Explosion hazard! Risk of injuries and material damage!</p> <ul style="list-style-type: none"> Carefully remove or replace the components. Exposed joint surfaces must not be damaged and must be protected from dust and dirt. Install the end flanges squarely without applying any force. Do not use a hammer or other tools when working on the flanges and do not use the fixing screws to pull down the flanges.

- Mount the device on a flat surface suitable for its weight.
- Insert the cables using certified and flameproof cable glands which are suitable for the gas group.
- Close unused entries using certified and flameproof stopping plugs.

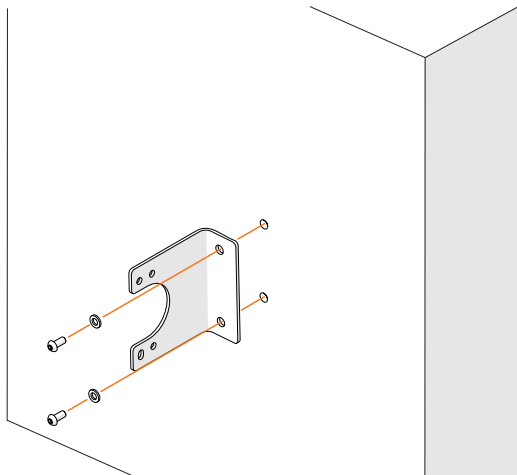
7.2.1 Installation Conditions for Electrical Connection

	<p style="text-align: center;">DANGER</p> <p>Explosion hazard! Risk of injuries and material damage!</p> <ul style="list-style-type: none"> Only use cable glands with corresponding certificate. The cable glands must be flameproof (Ex d) and suitable for the type of cable used. Close unused open holes in the enclosure with flameproof stopping plugs. Close unused cable glands using flameproof plugs. Cable glands, stopping plugs and plugs must meet the requirements of IEC/EN 60079-14. Installation of the cable gland must be performed in accordance with the manufacturer's instructions. Cable entry temperature may reach 70 °C. To ensure degree of protection IP 66, a non-hardening sealant must be applied to the threads.
	<p style="text-align: center;">DANGER</p> <p>Danger due to energised parts! Risk of death or severe injuries!</p> <ul style="list-style-type: none"> Before opening and dismounting the device, disconnect it from the power supply. Secure the device against unauthorized switching.

7.2.2 Installation with mounting bracket

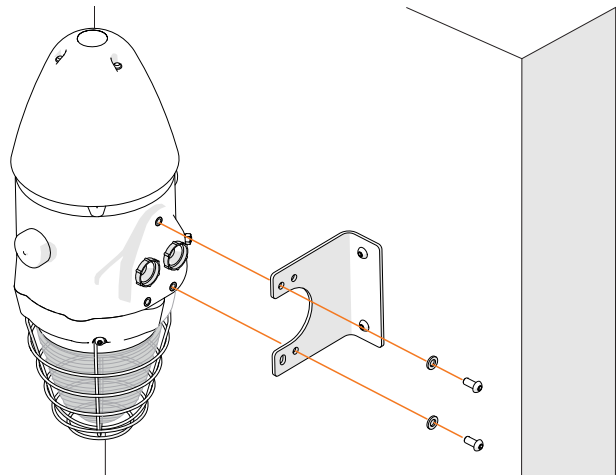
EN

- Fix bracket to wall

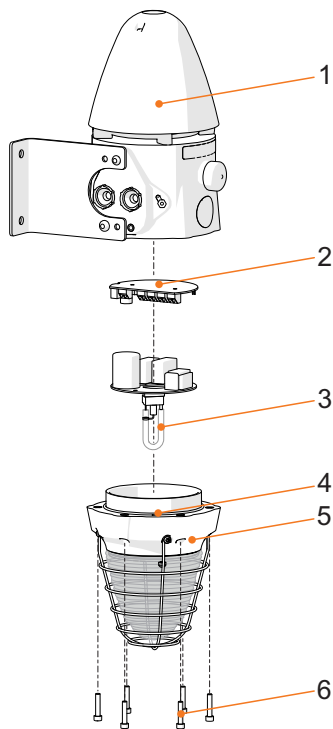


17161E00

- Attach device



17162E00



17158E00

- 1 Horn
- 2 PCB
- 3 Xenon flash tube
- 4 Seal
- 5 Strobe flange
- 6 Cheese-head screws M5 x 25

- Loosen 6 x cheese head screws (6) and remove strobe flange 6 x M5 (5)



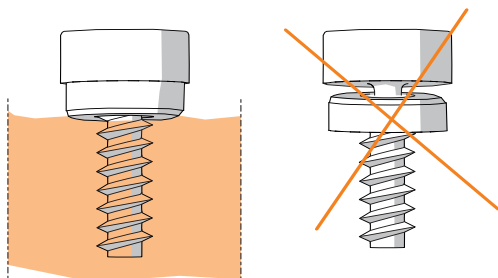
Access to the M5 cheese head screws is obscured by the wire guard. Use a ball end Allen key to allow for the off-axis angle which is required.

- Prepare cable gland
- Ensure earth connection
- Install cable gland
- Connect cables (see electrical connection)

7.2.3 Reassembly of Enclosure

- Lift strobe flange towards device.
- Connect PCB using the plug.
- Install strobe flange.
- Replace cheese-head screws M5 x 25 (see information below) and tighten the screws with a tightening torque of 4 Nm.

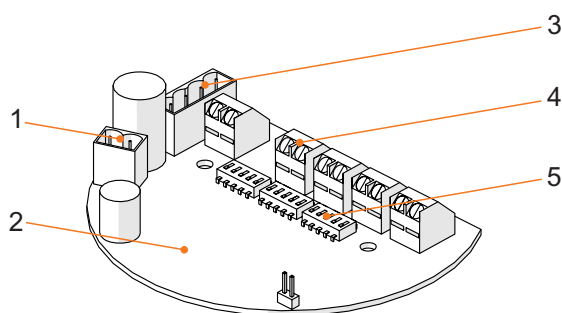
<p>i</p>	<ul style="list-style-type: none"> • Correct reassembly of the unit is required to ensure ingress protection to IP 66. • Cheese-head screws (see chapter Access above) are supplied with Nyltite washers. • Before reassembly inspect Nyltite for damage. • Check orientation is correct as per diagram. • Cheese-head screws should be tightened with correct torque. (see above) • Each Nyltite should not have torque applied more than 5 times.
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15748E00

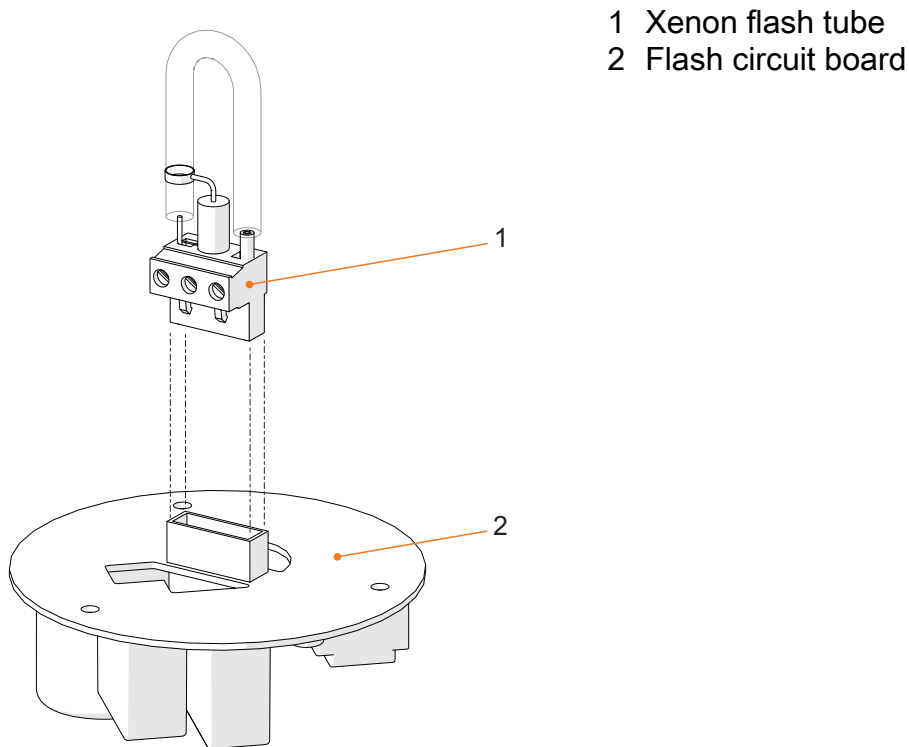
7.2.4 Electrical Connection

Key Components



17163E00

- 1 Plug for sounder
- 2 Connecting circuit board
- 3 Plug for flash circuit board
- 4 Terminal blocks
- 5 Sound selection switch



17164E00

Key components YL6S

<p>i</p>	<ul style="list-style-type: none"> Do not touch the Xenon flash tube at anytime during the installation/assembly of the device.
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Cable Connection

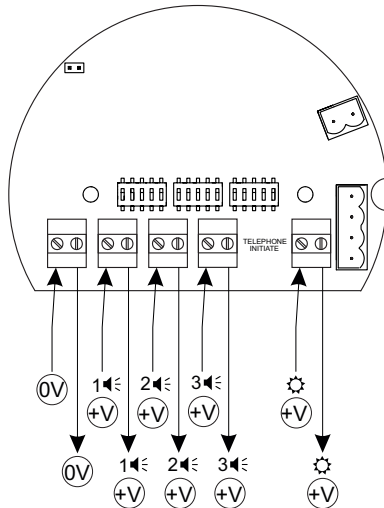
<p>i</p>	<ul style="list-style-type: none"> The terminals accept wires of 2.5 mm² or 14 to 18 AWG.
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Interconnection of devices parallel

Up to 10 devices with common supplies may be connected as a single system loop. See wiring diagrams for further information.

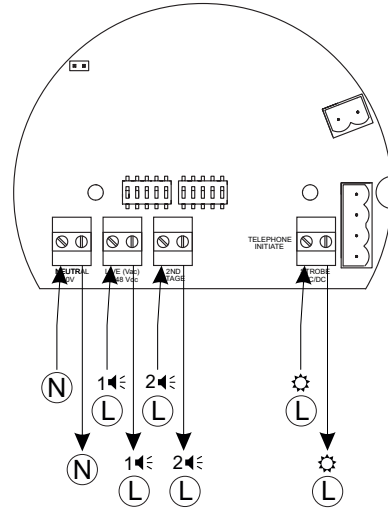
Circuit diagrams

<p>i</p>	<p>Line monitoring for devices with DC</p> <ul style="list-style-type: none"> by reverse polarity by connecting an EOL resistor between 0 V and +V. The resistance value is defined by the system developer.
<p>i</p>	<p>Two signal levels for devices with AC</p> <ul style="list-style-type: none"> by connecting the third wire. <p>Three signal levels for devices with DC</p> <ul style="list-style-type: none"> by connecting the third and fourth wire.



17194E00

Circuit diagram DC voltages

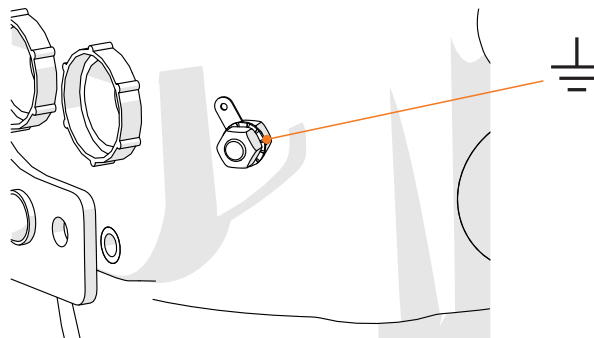


17193E00

Circuit diagram AC voltages

- ⚙ = Strobe
- 1< = Sounder Stage 1
- 2< = Sounder Stage 2
- 3< = Sounder Stage 3

7.2.5 Earth Connection



17191E00

Earth connection

Use of metallic cable glands

A slip on earth tag is provided with each device. This should be connected to the external earth stud detailed above.

Device material

The GRP material used for the device enclosure has electrically conductive properties. The material is antistatic and prevents build-up of electrical charges on its surface. Surface resistivity < $10^8 \Omega$ accordance to IEC 60093

7.2.6 Sound Tone Selection

- For signal tone selection and its switch positions refer to the table below.
- Check if the correct switch positions of the selected signal tones have been selected.
- Do not use tone 12, 14 and 32 for AC variants.

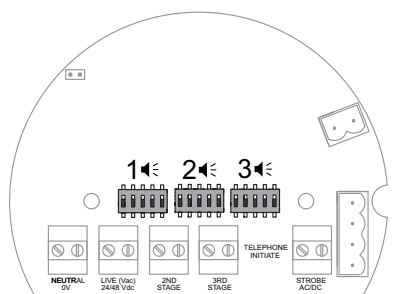
Tone table					
Tone no.	Version	Frequency	Sound selection switch 12345 (ON = 1)	Repetition rate (sec)	Special application
Tone 01	Alternate two-tone	800-1000	11111	0.5	Fire alarms - Level crossing
Tone 02	Alternate two-tone	2500-3100	01111	0.5	Security alarms
Tone 03	Alternate fast two-tone	800-1000	10111	0.25	Increased urgency - Level crossing
Tone 04	Alternate fast two-tone	2500-3100	00111	0.25	Security deterrent
Tone 05	Alternate two-tone	440-554	11011	0.4/0.1	AFNOR, France
Tone 06	Alternate two-tone	430-470	01011	1.0	
Tone 07	Alternate very fast two-tone	800-1000	10011	0.13	
Tone 08	Alternate very fast two-tone	2500-3200	00011	0.07	
Tone 09	Alternate two-tone	440-554	11101	2.0	Turn out, Sweden (SS 031711)
Tone 10	Continuous tone	700	01101		All clear, Sweden (SS 031711)
Tone 11	Continuous tone	1000	10101		
Tone 12	Continuous tone	1000	00101		
Tone 13	Continuous tone	2300	11001		
Tone 14	Continuous tone	440	01001		
Tone 15	Interrupted tone	1000	10001	2.0	
Tone 16	Interrupted tone	420	00001	1.25	AS2220, Australia
Tone 17	Interrupted tone	1000	11110	0.5	
Tone 18	Interrupted tone	2500	01110	0.25	
Tone 19	Interrupted tone	2500	10110	0.5	

Tone table					
Tone 20	Interrupted tone	700	00110	6/12	Important message, Sweden
Tone 21	Interrupted tone	1000	11010	1.0	
Tone 22	Interrupted tone	700	01010	4.0	Air-raid alarm, Sweden
Tone 23	Interrupted tone	700	10010	0.25	Local warning, Sweden
Tone 24	Interrupted tone	720	00010	0.7/0.3	Industrial alarm, Germany
Tone 25	Interrupted, fast, rising volume	1400	11100	0.25	
Tone 26	Fast siren	250-1200	01100	0.085	
Tone 27	Rising constantly, falling	1000	10100	10/40/10	Industrial alarm, Germany
Tone 28	ISO 8201 Evacuation	800-1000	00100	As standard	International evacuation alarm
Tone 29	Fast whoop	500-1000	11000	0.15	
Tone 30	Slow whoop	500-1200	01000	4.5	Evacuation, The Netherlands
Tone 31	Reverse sweep	1200-500	10000	1.0	Fire alarm, Germany (DIN 33404)
Tone 32	Siren	500-1200	00000	3.0	

The PFEER sound signals recommended by UKOOA are:



General alarm	Sound signal 15	Interrupted tone 1000 Hz
PAPA	Sound signal 31	Reverse sweep 1200-500 Hz
Toxic gas	Sound signal 11	Continuous tone 1000 Hz

Details sound selection switch




17192E00

7.3 Installation

	<p style="text-align: center;">WARNING</p> <p>Danger of electric shock due to energised parts! Non-compliance can result in severe or fatal injuries.</p> <ul style="list-style-type: none"> • All connections and wiring must be disconnected from the power supply. • Secure the connections against unauthorized switching.
	<p style="text-align: center;">DANGER</p> <p>Explosion hazard! Risk of injuries and material damage!</p> <ul style="list-style-type: none"> • Operate the device only if it is not damaged. • If the thread is damaged, the device must be replaced immediately. • Handle the device and the components very carefully. • Exposed joint surfaces must be protected from dust, dirt and damage. • Mount the end flanges squarely and do not apply any force. • Do not use a hammer or any other metal instruments to work on the flange. • Do not use the fixing screws to pull down the flange. • Install the device only in a clean and dry operating environment.

8 Commissioning

	<p style="text-align: center;">DANGER</p> <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 and function before commissioning. • Comply with the national regulations.
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Before commissioning, ensure the following:


- the device has been installed according to regulations.
- the power supply voltage and the rated operational voltage are identical.
- the required cable diameter for cable glands has been used.
- the cable entries and stopping plugs have been securely tightened.
- the cables are correctly connected.
- the connection has been performed correctly.
- all screws and nuts are tightened according to regulations.
- the connection chamber is clean.
- the device is not damaged.
- no foreign bodies are inside the device.
- the device is sealed according to regulations.
- flash circuit board is connected.

9 Operation

The device is used to warn and alert by means

- of a sound signal.
- of a visual signal.

24 V DC and 48 V DC voltage variants - visual signal

	<p>At temperatures below -40°C initial start-up and stabilization of flash frequency may be delayed.</p>
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9.1 Troubleshooting

If an error occurs please re-visit the earlier sections of this document.


If the error cannot be eliminated using the mentioned procedures:

- Contact R. STAHL Schaltgeräte GmbH.


For fast processing, have the following information ready:

- Type and serial number
- Purchase information
- Error description
- Intended use (in particular input / output wiring)

10 Maintenance and repair

	WARNING
	<p>Risk of electric shock or malfunctioning of the device due to unauthorized work!</p> <p>Non-compliance can result in severe injuries and material damage.</p> <ul style="list-style-type: none"> • Work performed on the device must only be carried out by appropriately authorized and qualified electricians.

10.1 Maintenance

	Observe the relevant national regulations in the country of use.
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- Determine the type and extent of inspections in compliance with the relevant national regulations.
- Adapt inspection intervals to the operating conditions.

The following tests and measures must be carried out during regular maintenance.

Check

the permissible ambient temperature

the enclosure components for formation of cracks and damage.

its intended use

if the conductors are clamped properly
the cables for ageing and damage

the seals for ageing and damage

Measures

If exceeding the permissible ambient temperature or falling below the device must be taken out of operation.


Replace the exchangeable enclosure components. If the enclosure components are non-exchangeable, the device must be taken out of operation.

If the device is not used according to its intended use, it must be taken out of operation.

clamp loose conductors tightly.
replace damaged or aged cables.

replace damaged, aged and porous seals and completely change enclosure components with foamed seal.

10.2 Repair

	<div data-bbox="841 1411 1013 1451" data-label="Section-Header"> <h3>DANGER</h3> </div> <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.
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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 www.r-stahl.com website.
- Under "Support" > "RMA form", select "Request RMA slip".
- Fill out the form and send it.
Confirmation will be sent. R. STAHL's customer service will contact you.
You will receive an RMA slip after speaking with customer service.
- Send the device along with the RMA slip in the packaging to
R. STAHL Schaltgeräte GmbH (refer to Section 1.1 for the address).

11 Cleaning

- Clean the device only with a cloth, brush, vacuum cleaner or similar items.
- When cleaning with a damp cloth, use water or mild, non-abrasive, non-scratching cleaning agents.
- Do not use aggressive detergents or solvents.

12 Disposal

- Observe national and local regulations and statutory regulation regarding disposal.
- Separate materials when sending it for recycling.
- Ensure environmentally friendly disposal of all components according to the statutory regulations.

13 Accessories and Spare parts

NOTE

Malfunction or damage to the device due to the use of non-original components.
Non-compliance can result in material damage.

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



For accessories and spare parts, see data sheet on our homepage
www.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:
that the product:
que le produit:

Akustische und optische Signalgeräte
Audible and visual signalling devices
Appareil de signalisation sonore et lumineux

Typ(en), type(s), type(s):

YL6S, YA6S, FL6S

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 <i>2014/34/EU</i> <i>2014/34/UE</i>	ATEX-Richtlinie <i>ATEX Directive</i> <i>Directive ATEX</i>	EN 60079-0:2012 + A11:2013 EN 60079-1:2014 IEC 60079-31:2013
Kennzeichnung, marking, marquage:		 II 2 G Ex d IIB/ IIC T6 ... T4 Gb II 2 D Ex tb IIC T73°C ... T113 °C Db  0158
EG-Baumusterprüfbescheinigung: <i>EC Type Examination Certificate:</i> <i>Attestation d'examen CE de type:</i>		Baseefa 14 ATEX 0126 (SGS Fimko Oy, Särkiniementie 3, P.O. Box 30, FI-00211 Helsinki, Finland)
Produktnormen nach Niederspannungsrichtlinie: <i>Product standards according to Low Voltage Directive:</i> <i>Normes des produit pour la Directive Basse Tension:</i>		EN 60598-1:2015 + A1:2018 EN 62471:2008
2014/30/EU <i>2014/30/EU</i> <i>2014/30/UE</i>	EMV-Richtlinie <i>EMC Directive</i> <i>Directive CEM</i>	EN 50130-4:2011 + A1:2014 EN 61000-3-2:2014 EN 61000-3-3:2013 EN 61000-6-3:2007 + A1:2011 + AC:2012
2011/65/EU <i>2011/65/EU</i> <i>2011/65/UE</i>	RoHS-Richtlinie <i>RoHS Directive</i> <i>Directive RoHS</i>	EN IEC 63000:2018

Waldenburg, 2021-02-08

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

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J. Freimüller
Vice President global Quality Management
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