THE WORLD OF R. STAHL

INNOVATIONS 2015

SIGNALLING

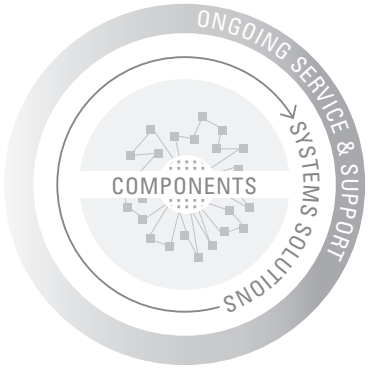
Clifford &Snell

Audible and Visual Signals

Sounders · Beacons

Combinations · Manual Call Points

STAHL



ONE - STOP - SHOP

R. STAHL supplies not only indvidual components, but also complex solutions that provide a smooth and safe process guarantee. We offer products and application solutions for signalling, alarming, automating, operating, monitoring, lighting, installing, switching, distributing.

R. STAHL engineers and service specialists are around the clock accessible to our customers - wherever they are needed. As a leading supplier, R. STAHL guarantees absolute reliability and quality when it comes to safety and explosion protection. Our international organization offers systems solutions and products around the world with the same high objective:
performance excellence for satisfied customers.

Contents

Other Catalogues from R. STAHL

Explosion Protection

Lighting | Installation Equipment | Control Devices | Signalling Devices | Components for Heating Systems | Load Disconnect Switches and Motor Starters | Applications Low Voltage Systems | Components for System Solutions

Automation

Safety Barriers | Isolators | Remote I/O | Fieldbus Technology | Operating and Monitoring System

You will find further information on the Internet · www.stahl.de

General Information

R. STAHL - The Expert in Explosion Protection
R. STAHL is a global provider of products, services and systems in the field of explosion protection. Wherever combustible gases, vapours, mists or dust may be present, products made by R. STAHL are of the finest quality and the number one choice for explosion protection equipment. Industries which include oil & gas, chemical, pharmaceutical, shipbuilding, food and distilleries, as well as biofuel production, all use explosion protection equipment manufactured by R. STAHL.

The product portfolio comprises of simple explosion protected switching products, signalling devices, luminaires, advance technology automation products, through to complex engineered system solutions.

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Clifford & Snell - Brand of the R. STAHL Technology Group
Clifford & Snell is a world leader in the design and development of audible and visual signalling products, which includes a comprehensive range of Industrial and Hazardous area sounders, beacons and combination units.

Established in 1929, Clifford & Snell pioneered many innovative products & system and in 1967, the company was responsible for the introduction of the world's first ever electronic sounder. This break through in technology became the foundation for the development and production of future generations of product.

Clifford & Snell offers a comprehensive range of signalling devices addressing a wide variety of applications and industry sectors, which include hazardous areas, industrial & process control, through to fire protection, security, marine, mass evacuation and transportation.

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Continuous investment into new products is a key component to the future success of the business and an ongoing commitment to our customers worldwide. Innovative feature rich, technically strong and well engineered products are at the heart of the company's development program and with the affiliation to the internationally renowned R. STAHL technology group, Clifford & Snell is well positioned to accelerate this program and promote its products on a global scale.

02204E02

Innovative Technological Leader
R. STAHL always makes state-of-the-art technology available. Customers can be sure that they have chosen a modern and sustainable solution. In order to be able to notice trends early, R. STAHL engineers and developers accompany international research projects. At the same time, the company invests substantially in research and development.

In the last few years R. STAHL became market leader for system solutions in electrical explosion protection. Basis for customer-specific system solutions is the competency to integrate different components to form a solution, besides an extensive product portfolio. The company established an extensive engineering know how and can support customers already during the planning stages to achieve a technically and economically ideal result.

R. STAHL stands for highest quality and sophisticated solutions. International certifications, approvals and patents underline the competency and enable global application of R. STAHL products and systems.

04121E02

Leading Role Worldwide
Besides innovative capacity, the proximity to customers is a decisive competitive advantage. With subsidiaries in more than 20 countries and more than 60 representations around the globe.
So global sales, customer service on site and handling of international projects is guaranteed. Furthermore, the company gets a better sense for the market-specific customer needs and can orient products and services to their requirements.

Terms of Sale and Delivery
All deliveries are subject to our "General Terms of Sale and Delivery".
All data, dimensions, weights, designs and delivery conditions are subject to alteration.
The drawings are subject to modification.The prices of the current price list are effective.

Further information and current data are available on our homepage www.stahl.de

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Pictograms	Application of the Pictograms
	**Ex Symbol** for all devices in explosion-protected design
	**Offshore** for all devices that are suitable for offshore applications. When the materials are selected special importance is put on the harsh conditions of seawater atmosphere.
	**Shipping** for all devices with ship approval
	**Low temperature** for all devices that may be used in temperatures below -20 °C
	**High temperature** for all devices that may be used in temperatures higher than +40 °C

WebCode	Description
WebCode XXXXXXX	By entering the WebCode on our homepage www.stahl.de you will be led directly to the respective documents.

WebCode	Example: Installation Switch Series 8030
WebCode 8030A	

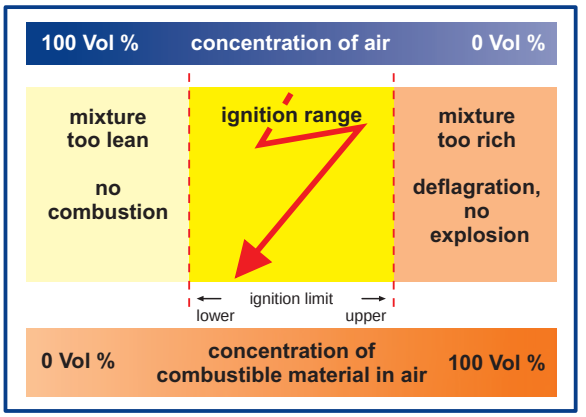
Tone Table

Tone no.	Version	Frequency	Repetition rate (sec)	Special application
Tone 01	Alternate two-tone	800-1000	0.5	Fire alarms - Level crossing
Tone 02	Alternate two-tone	2500-3100	0.5	Security alarms
Tone 03	Alternate fast two-tone	800-1000	0.25	Increased urgency - Level crossing
Tone 04	Alternate fast two-tone	2500-3100	0.25	Security deterrent
Tone 05	Alternate two-tone	440-554	0.4/0.1	AFNOR, France
Tone 06	Alternate two-tone	430-470	1.0	
Tone 07	Alternate very fast two-tone	800-1000	0.13	
Tone 08	Alternate very fast two-tone	2500-3200	0.07	
Tone 09	Alternate two-tone	440-554	2.0	Turn out, Sweden
Tone 10	Continuous note	700		All-clear, Sweden
Tone 11	Continuous note	1000		
Tone 12	Continuous note	1000		
Tone 13	Continuous note	2300		
Tone 14	Continuous note	440		
Tone 15	Interrupted tone	1000	2.0	
Tone 16	Interrupted tone	420	1.25	AS2220, Australia
Tone 17	Interrupted tone	1000	0.5	
Tone 18	Interrupted tone	2500	0.25	
Tone 19	Interrupted tone	2500	0.5	
Tone 20	Interrupted tone	700	6/12	Pre-vital message, Sweden
Tone 21	Interrupted tone	1000	1.0	
Tone 22	Interrupted tone	700	4.0	Air-raid alarm, Sweden
Tone 23	Interrupted tone	700	0.25	Local warning, Sweden
Tone 24	Interrupted tone	720	0.7/0.3	Industrial alarm, Germany
Tone 25	Interrupted, fast, rising volume	1400	0.25	
Tone 26	Fast siren	250-1200	0.085	
Tone 27	Rising constant, fall	1000	10/40/10	Industrial alarm, Germany
Tone 28	ISO 8201 Evacuation	800-1000	As standard	International evacuation alarm
Tone 29	Fast whoop	500-1000	0.15	
Tone 30	Slow whoop	500-1200	4.5	Evacuation, The Netherlands
Tone 31	Reverse sweep	1200-500	1.0	Evacuation, Germany
Tone 32	Siren	500-1200	3.0	

Flammable gases, mists and dusts, together with oxygen, form explosive atmospheres. If such an atmosphere is ignited, an explosion result, which may cause serious damage to personnel and equipment

An explosion can only take place if the following factors are jointly active:
- flammable substance (gas, vapour, mist or dust) in a suitable distribution and concentration
- oxygen (from the air) and
- ignition source

An explosion atmosphere only occurs if the substance-air mixture lies within a certain concentration range, the explosion limits. The explosion limits depend on the ambient pressure and the oxygen concentration of the air.



Explosion Protection

In order to avoid explosions and associated dangers, an operator must incorporate effective explosion protection precautions into his plant.

The principle of integrated explosion requires that explosion protection measures be taken in the following order:
- Measures to prevent formation of a dangerous explosive atmosphere
- Measures which prevent dangerous explosive atmospheres from igniting
- Measures which restrict the effects of an explosion to a safe level

So are distinguished:
- Primary explosion protection:
  all measures which prevent the formation of an explosive atmoshpere
- Secondary explosion protection:
  all measures which restrict the effects of an explosion to an insignificant level
- Explosion-resistant construction
  these are the measures taken to reduce the effects of an explosion to a negligible minimum

Classification of Zones

In most countries hazardous areas are classified into Zones, depending on the composition and presence of an explosive atmosphere. This enables both selection of suitable equipment and appropriate electrical installation.

In Europe electrical equipment for use in hazardous areas is assigned to various categories. The additional character G (gas) or D (dust) specifies whether the electrical equipment may be installed in gas and dust hazardous areas.
In 2007 the equipment protection level (EPL) was introduced by the IEC 60079-0.

Zone in accordance with EC Directive 1999/92/EC	Presence of potentially explosive atmospheres	Safety level of device	Equipment category in accordance with EC Directive 94/9/EC*)	Equipment protection level (EPL) in accordance with IEC 60079-0, 2007 or EN 60079-0, 2009
Zone 0 **Zone 20**	continuously or for long periods or frequently	very high level of protection	**1G** **1D**	**Ga** **Da**
Zone 1 **Zone 21**	occasionally	high level of protection	**2G** **2D**	**Gb** **Db**
Zone 2 **Zone 22**	infrequently and for only a short period	normal level of protection	**3G** **3D**	**Gc** **Dc**

*) will be replaced by EC Directive 2014/34/EU by 20/04/2016

Groups

General

Up to now explosion-protected equipment has been divided in two groups:

Equipment group I:
Equipment for use in firedamp mines,

Equipment group II:
Equipment for use in potentially explosive areas, excluding mines.

Electrical devices for mines, where, additionally to firedamp, proportions of gases other than methane may occur, have to fulfil the requirements for group II as well as those for group I.

Devices of group II are further divided, depending on their intended field of application, into devices for areas that are hazardous because of gases, vapours or mists and those for areas that are hazardous because of dust.

With the publication of IEC 60079-0 in 2007 group III for potentially explosive areas because of dust has been introduced. Group II is reserved for equipment for use in areas with explosive gases.

Group II:
Devices for areas with explosive gases, excluding mines.

Group III:
Devices for areas with combustible dusts, excluding mines.

Contrary to the standard the extension of the groups has not been included in the ATEX-directive.
Marking of the devices for the European market (EU) consist of one part which is exactly specified in Directive EC 94/9/EC and another part which is stipulated in the standard. The old definition is still valid for the first part, with group II standing for areas with explosive gases and dusts. The part of the marking taken from the standard, however, gives a group III for devices intended for use in areas with combustible dust.
Electrical devices of group II (gas) are divided in group IIA, IIB and IIC, depending on the properties of the potentially explosive area they are intended for (see table “Subdivision of Group II“). This classification concerns types of protection Flameproof Enclosure and Intrinsic Safety. For type of protection Flameproof Enclosure it is based on the maximum experimental safe gap (MESG) which is a measure for the discharge behaviour of a hot flame through a narrow gap, and for Intrinsic Safety it is based on the minimum ignition current (MIC), which is a measure for the minimum ignition energy of the gases and vapours that occur.

Devices for areas with combustible dust (group III) are subdivided in groups IIIA, IIIB and IIIC, depending on the type of dust:
IIIA: combustible flyings
IIIB: non-conductive dust
IIIC: conductive dust

Subdivision of Group II

Group	Typical gas	Maximum experimental safe gap (MESG) in mm	Minimum ignition current ratio *(MIC)
IIA	Propane	> 0.9	> 0.8
IIB	Ethylene	0.5 ... 0.9	0.45 ... 0.8
IIC	Hydrogen	< 0.5	< 0.45

* minimum ignition current ratio with regard to methane

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Classification

The substances and thus the explosive areas in which those substances occur are classified in groups according to these criteria. The devices that are used have to be designed to fulfil the requirements of the group, which increase from IIA to IIC and from IIIA to IIIC. A device that fulfils the criteria for IIC can be used in areas that are classified as IIC, IIB and IIA, devices that fufil the criteria for IIB can be used in areas IIB and IIA, while devices for IIA may only be used in area IIA. Devices for groups IIIA, IIIB and IIIC can be handled likewise.

Ignition Temperature and Temperature Classes

General

Ignition temperature of a combustible gas, vapour or dust is the lowest temperature of a heated surface which may ignite the gas/air or vapour/air mixture. It virtually is the lowest temperature at which a hot surface may ignite the respective explosive atmosphere.

Explosive gases

Combustible gases and vapours are classified in temperature classes according to their ease of ignition (see “Temperature Classes“). Maximum surface temperature of an electrical device always has to be lower than the ignition temperature of the gas or vapour/air mixture in which it is used. Of course, equipment that complies with a higher temperature class (e.g. T5) is also permissible for applications for which a lower temperature class is required (e.g. T2 or T3). In North America a system with further division in sub-temperature classes exists.

Temperature Classes

Ignition temperature of gases and vapours in °C	Temperature class	Maximum surface temperature on the equipment in °C
> 450	T1	450
> 300 up to 450	T2	300
> 200 up to 300	T3	200
> 135 up to 200	T4	135
> 100 up to 135	T5	100
> 85 up to 100	T6	85

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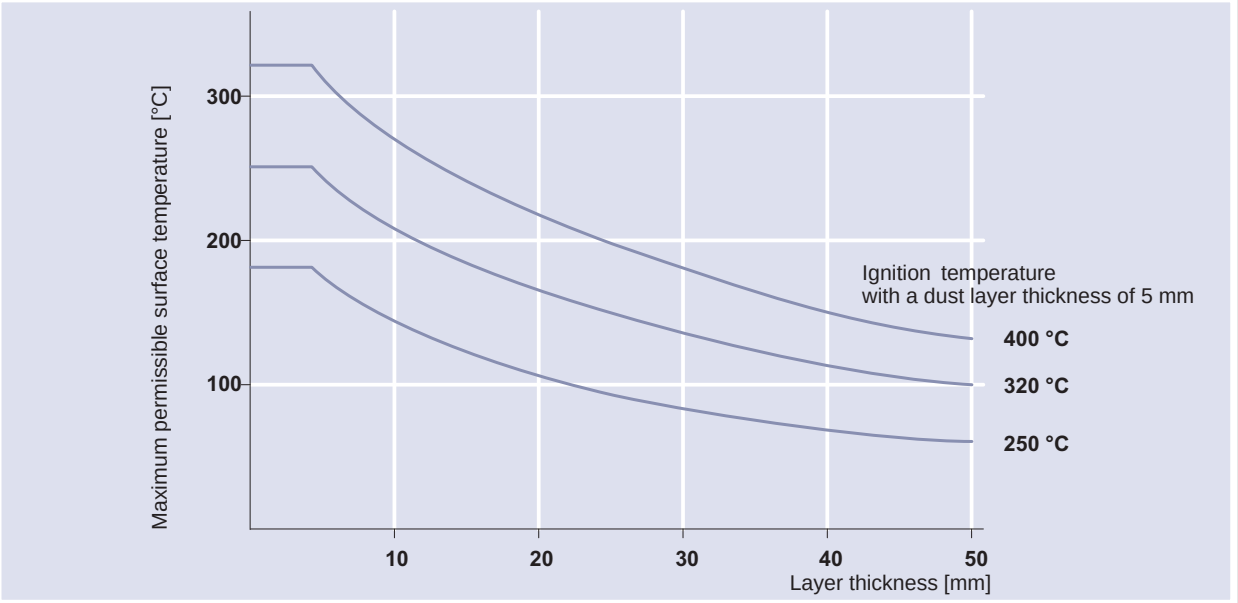
Combustible dusts

Combustible dusts are not classified in temperature classes. Minimum ignition temperature of a dust cloud has to be compared to the maximum surface temperature of the equipment. A safety factor has to be allowed for. The maximum surface temperature of the equipment must not exceed 2/3 of the minimum ignition temperature of the dust cloud. As dusts may also deposit on the equipment, the minimum ignition temperature of the dust layer has to be considered as well. The ignition temperature of a dust layer is the lowest temperature of a hot surface at which a 5 mm dust layer may ignite.

Comparison to the maximum surface temperature of the equipment has to be done with a safety factor of 75 K. Thermal insulation increases with higher layers. That is why a reduced surface temperature on the equipment is permissible. It is determined according to the diagram (see below) (EN 60079-14), When the layer is more than 50 mm thick the ignition temperature of a dust layer has to be determined in a laboratory test. This also applies to a layer thickness of more than 5 mm when the ignition temperature of a dust layer at a layer thickness of 5 mm is lower than 250 °C. Laboratory tests are also required when the equipment is completely covered with combustible dust.



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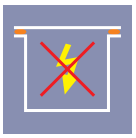
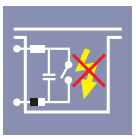
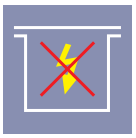
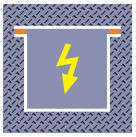
Determination of the maximum surface temperature with dust layers of 5 mm up to 50 mm

Types of Protection

In areas in which an explosive atmosphere may still be expected despite the implementation of prevention measures, only explosion-protected equipment may be used. Electrical explosion-protected equipment can be designed in different types of protection, pursuant to the construction regulations of standard series IEC 60079.
For some types of protection there are several protection levels. These correspond to the equipment categories pursuant to Directive 94/94/EC or to the equipment protection levels EPL according to IEC 60079-1 published in 2007.

So there is design Ex ia for Intrinsic Safety, which is classified as being category 1 or EPL Ga. It can be installed in Zone 0. Design Ex ib corresponds to category 2 or EPL Gb which is suitable for Zone 1. In regard to safety all standardized types of protection within a category or an equipment protection level can be considered as being equal.
The tables show an overview of the standardized types of protection that is used for signalling device.

Types of Protection for Signalling devices in Explosive Atmospheres

Type of protection according to IEC, EN, ISA, and NFPA	Presentation (diagram)	Basic principle	Application area
Increased safety “e“ IEC 60079-7 EN 60079-7 UL 60079-7	 11098E00	Here additional measures are applied to increase the level of safety, thus preventing the possibility of inadmissibly high temperatures and the occurrence of sparks or electric arcs within the enclosure or on exposed parts of electrical equipment, where such ignition sources would not occur in normal service.	Zone 1
Flameproof enclosure “d“ IEC 60079-1 EN 60079-1 UL 60079-1	 11099E00	Parts which can ignite a potentially explosive atmosphere are surrounded by an enclosure which withstands the pressure of an explosive mixture exploding inside the enclosure and prevents the transmission of the explosion to the atmosphere surrounding the enclosure.	Zone 1
Intrinsic Safety “i“ IEC 60079-11 EN 60079-11 UL 60079-11	 11101E00	Equipment that is used in a potentially explosive area only contains intrinsically safe electric circuits. An electric circuit is intrinsically safe if any spark or thermal effect produced under specified test conditions (which include normal operation and specified fault conditions) is not capable of causing ignition of a given explosive atmosphere.	ia = Zone 0, 1, 2, 20, 21, 22 ib = Zone 1, 2, 21, 22 ic = Zone 2, 22 [Ex ib] = associated electrical equipment - installation in the safe area
Encapsulation “m“ IEC 60079-18 EN 60079-18 UL 60079-18	 11104E00	Parts that are capable of igniting an explosive atmosphere are enclosed in a compound in such a way that ignition of an explosive atmosphere is prevented.	ma = Zone 0, 1, 2, 20, 21, 22 mb = Zone 1, 2, 21, 22 mc = Zone 2, 22
Type of protection “n“ IEC 60079-15 EN 60079-15 UL 60079-15	 11105E00	Electrical equipment cannot ignite an explosive atmosphere surrounding it (during normal operation and under defined abnormal operating conditions).	Zone 2 nA = non-sparking apparatus nC = fittings and components nR = restricted breathing
Protection by enclosure “t“ IEC 60079-31 EN 60079-31	 11107E00	Tightness of the enclosure prevents ingress of dust or limits it to a nonhazardous amount. So ignitable equipment can be fitted into the enclosure. The surface temperature of the enclosure must not ignite the surrounding atmosphere.	Zone 20, 21, 22

Marking

IEC

Marking of electric devices is defined in IEC 60079-0. In addition to manufacturer's name or trade mark, type designation, serial number and the test centre with certificate number a special coding is required which describes the intended use of the device:

- Symbol „Ex"
- Symbol of every type of protection that has been applied. The associated electrical devices that are meant to be installed in the hazardous areas, have to be marked with the symbols for the type of protection in squared brackets, e.g. Ex d[ia] IIC T4.
- Group IIA, IIB or IIC for potentially explosive gas atmospheres
- Group IIIA, IIIB or IIIC for potentially explosive dust atmospheres
- Temperature class for areas with potentially explosive gas atmospheres or max. surface temperature in °C for areas in which combustible dusts may be present.
  Examples: Ex d e IIC T4, Ex d [ia] IIB T5
- Equipment protection level (EPL) has to be added
  Example: Ex d e IIC T4 Gb or Ex d [ia Ga] IIB T5 Gb
  or
- The types of protection have to clearly show which level they achieve. Some types of protection already contain the appropriate symbol (e.g. ia). With others the letter a, b or c has to be added d -> db
  Example: Ex db eb IIC T4 or Ex db [ia] IIB T5

Europe

In Europe, in addition to the marking according to the standard, the requirements pursuant to EC-Directive 94/9/EC (ATEX) have to be met as well:

- Manufacturer's address
- Symbol CE and the identification number of the notified body
- Symbol Ex and category 1, 2 or 3 as well as group II and the letter G (gases) or D (dust) Example: Ex 2 II G

In the past „Ex" has been replaced by „EEx" in Europe when the marking has been done pursuant to the standard. Reference has thus been made to the European Standards (EN 50014 ff), which differed from the IEC-standards at that time. With the current editions of the standards this is no longer required, so devices are only marked "Ex" in Europe now as well.

USA

In addition to such data as e.g. manufacturer, type, serial number and electrical data, data concerning explosion protection have to be included in the marking of the equipment. Specifications are given in NEC and the respective construction regulations of the test centres.

Class I, II & III, Division 1 and 2
Approved electrical equipment for Class I, Class II and Class III, Division 1 and Division 2 has to be marked with the following data:
1. Class(es), Division(s) (optional, except for Division 1)
2. Gas-/dust-group(s)
3. Operating temperature or temperature class (optional for T5 and T6) Example: Class I Division 1 Groups C D T4

Class I, Zone 0, 1 and 2
For equipment for use in Class I, Zone 0, Zone 1 or Zone 2 a difference is made between "Division Equipment" and "Zone Equipment".
(1) Division Equipment
Equipment approved for Class I, Division 1 and/or Class I, Division 2 may be marked with the following data:
1. Class I, Zone 1 or Class I, Zone 2
2. Gas group(s) IIA, IIB or IIC
3. Temperature class
4. Types of protection Example: Class I Zone 1 d e IIC T4
(2) Zone Equipment
Equipment complying with several types of protection pursuant to Article 505 of NEC and section 18 of CEC have to be marked as follows:
1. Class
2. Zone
3. Symbol AEx (USA)
4. Symbol of the type(s) of protection that have been applied
5. Group of the electrical equipment II or gas group(s) IIA, IIB or IIC
6. Temperature class Example: Class I Zone 0 AEx ia IIC T6

Russia

Marking of explosion-protected electrical equipment is done according to GOST R 51330.0-99 and according to the standards for the individual types of protection.

Marking of explosion protection contains:

- The level of explosion protection
- Ex-symbol
- Symbol of the types of protections that have been applied
- Equipment group (I, II or IIA, IIB, IIC)
- Temperature class
- Symbol X, when special conditions have to be observed for safe use or if the product is an Ex-component.

Further Information

You can find further information about explosion protection under www.stahl.de WebCode EXB or request our free broschures: "Basics of explosion protection", "Obligations and tasks for operations of electrical equipment in potentially explosive atmospheres".

WebCode EXB

Marking for Electrical Equipment according to the European Directive 94/9/EC (ATEX 95) and the Standard IEC 60079-0

	Type of protection	standard symbol	alternate symbol	Zone	Main application	Standard
	increased safety	e	eb	1	terminal and junction boxes, cage induction motors, light fittings	IEC 60079-7 EN 60079-7
	flameproof enclosures	d	db	1	switchgear, control stations, motors,	IEC 60079-1 EN 60079-1
	pressurized enclosures	px py pz p	pxb pyb pzc pb pc	1 1 2 21 22	switchgear and control cabinets, analysers, large motors	IEC 60079-2 / IEC 61241-4 EN 60079-2 / EN 61241-4
	intrinsic safety	ia ib ic	ia ib ic	0, 20 1, 21 2, 22	instrumentation technology, field-bus technology, sensors, actuators	IEC 60079-11 / IEC 61241-11 EN 60079-11 / EN 61241-11
	oil immersion	o	ob	1	transformers, starting resistors	IEC 60079-6 EN 60079-6
	powder filling	q	qb	1	sensors, electronic ballasts, electronic devices	IEC 60079-5 EN 60079-5
	encapsulation	ma mb mc	ma mb mc	0, 20 1, 21 2, 22	display units, sensors, electronic devices	IEC 60079-18 / IEC 61241-18 EN 60079-18 / EN 61241-18
	type of protection „n"	n_	n_c	2	electrical apparatus for Zone 2	IEC 60079-15 EN 60079-15
	protection by enclosures	ta tb tc	ta tb tc	20 21 22	switchgear and control station, terminal and connection boxes, control boxes, motors, light fittings	IEC 60079-31 / IEC 61241-1 EN 60079-31 / EN 61241-1

Marking of electrical equipment

STAHL

mines		
Group I		Methane
explosive gas atmosphere		
Group II	IIA	Propane
	IIB	Ethylene
	IIC	Hydrogene
explosive dust atmosphere		
Group III	IIIA	combustible flyings
	IIIB	non-conductive dust
	IIIC	conductive dust

Type of protection — Group

ATEX-marking: II 2G Ex db [ia] IIC T6 — max. surface temperature

equipment-group I: mines; equipment-group II: other places

Hazardous places	Zone 0	Zone 20	Zone 1	Zone 21	Zone 2	Zone 22	mines
Dangerous explosive atmosphere	continously or long-term or frequently		likely to occur		not likely to occur or for short period		
equipment category	1G	1D	2G	2D	3G	3D	M1 or M2
EPL* (IEC/EN 60079-0)	Ga	Da	Gb	Db	Gc	Dc	Ma or Mb

* when not using the alternate symbols the EPL shall be specified:: e.g. Ex d [iaGa] IIC T6 Gb

explosive gas atmosphere: temperature classes	
450 °C	T1
300 °C	T2
200 °C	T3
135 °C	T4
100 °C	T5
85 °C	T6
explosive dust atmosphere: surface temperature	
T ...°C (e.g.: T 80°C)	

14090E02




Hazardous Area

Explosion Proof Combination Signal – 110 dB (A) / 5 Joule
Series YL60

14719E00

- Omnidirectional high output sounder 110 dB (A) / 1 m
- 5 Joule xenon strobe
- 2 stage alarm, independently selectable 2nd stage
- IP66 rated as standard
- Aluminium enclosure with stainless steel fasteners
- Flash rate 1 per second
- 32 selectable tones meeting international regulations
- Sound selection via DIL switch
- Lens guard and mounting bracket supplied as standard
- Telephone initiate option available

Yodalex range
Combination audible and visual signal designed for use in hazardous or harsh environments.

	ATEX / IECEx					
Zone	0	1	2	20	21	22
For use in		x	x		x	x

	NEC 505 Class I			NEC 506		
Zone	0	1	2	20	21	22
For use in		x	x		x	x

	NEC 500					
	Class I		Class II		Class III	
Division	1	2	1	2	1	2
For use in	x	x	x	x	x	x

WebCode YL60A

Explosion Protection		
Global (IECEx)		
Gas and dust	IIB+H2	IECEx BAS 05.0087X
	IIB	IECEx BAS 05.0086X
	IIB+H2, IIB	IEC 60079-0: 2011 / IEC 60079-1: 2007-04 / IEC 60079-31: 2008
	IIB+H2	Ex d IIB+H2 T4 Gb (Ta = -20 … +60°C)
		Ex tb IIIC T135°C Db IP 66 (Ta = -20 … +60 °C)
		Ex d IIB+H2 T6 Gb (Ta = -20 … +40 °C)
		Ex tb IIIC T85°C Db IP 66 (Ta = -20 … +40 °C)
	IIB	Ex d IIB T4 Gb (Ta = -35 … +60 °C)
		Ex tb IIIC T135°C Db IP 66 (Ta = -35 … +60 °C)
		Ex d IIB T6 Gb (Ta = -35 … +40 °C)
		Ex tb IIIC T85°C Db IP 66 (Ta = -35 … +40 °C)
Europe (ATEX)		
Gas and dust		
	IIB+H2	Baseefa02ATEX0222X
	IIB	Baseefa02ATEX0212X
	IIB+H2, IIB	EN 60079-0: 2009 / EN 60079-1: 2007 / EN 60079-31: 2009
	IIB+H2	Ⓔx II 2 GD Ex d IIB+H2 T4 Gb (Ta = -20 … +60 °C)
		Ⓔx II 2 GD Ex tb IIIC T135°C Db IP 66 (Ta = -20 … +60 °C)
		Ⓔx II 2 GD Ex d IIB+H2 T6 Gb (Ta = -20 … +40 °C)
		Ⓔx II 2 GD Ex tb IIIC T85°C Db IP 66 (Ta = -20 … +40 °C)
	IIB	Ⓔx II 2 GD Ex d IIB T4 Gb (Ta = -35 … +60 °C)
		Ⓔx II 2 GD Ex tb IIIC T135°C Db IP 66 (Ta = -35 … +60 °C)
		Ⓔx II 2 GD Ex d IIB T6 Gb (Ta = -35 … +40 °C)
		Ⓔx II 2 GD Ex tb IIIC T85°C Db IP 66 (Ta = -35 … +40 °C)
USA and Canada (UL variants)		
Gas and dust	IIB+H2, IIB	E161818
	IIB+H2, IIB	SL: UL 60079-0 / UL 60079-1 / UL 1203 / UL 1638 CSA C22.2 No. 30-M1986 / CSA C22.2 No. 25-M1966 / CSA E60079-0-7 / CSA E60079-1
	IIB+H2	Class I, Div. 1, Groups B, C and D Class I, Div. 2, Groups B, C and D
		Class 1 Zone 1 AEx d IIB + H^2 T4 Class 1 Zone 1 Ex d IIB + H^2 T4
		Operating temperature -25 ... +66 °C Audible signal appliance public mode with supplementary Visual signal appliance private mode
	IIB	Class I, Div. 1, Groups C and D Class I, Div. 2, Groups C and D
		Class 1 Zone 1 AEx d IIB T4 Class 1 Zone 1 Ex d IIB T4
		Operating temperature -35 ... +66 ºC Audible signal appliance public mode with supplementary Visual signal appliance private mode
Russia (GOST R)		
Gas	Marking and certification based on and line with the ATEX product.	
Certifications and certificates		
Certificates	IECEx, ATEX, Brazil (INMETRO), India (PESO), Kazakhstan (GOST K), Russia (GOST R), Taiwan (ITRI), USA (UL)	

Technical Data

Electrical data

Rated operational voltage	24 V DC, 48 V DC, 115 V AC and 230 V AC operational parameters + or -10 %	
Rated operational current	24 V DC	570 mA
	48 V DC	435 mA
	115 V AC	200 mA
	230 V AC	100 mA

Acoustic data

Volume	110 db (A) / 1 m
Sound selection	via DIL-switch

Luminous characteristics

Effective candela	**5 J**	
	Clear	30 cd
	Yellow	29 cd
	Amber	17 cd
	Red	9 cd
	Blue	6 cd
	Green	7 cd
	No figures for Magenta or Opal lens	
Flash energy	5 J	
Flash rate	60 FPM	

Ambient conditions

Operating temperature range	version			
	IIB	Europe	T4	- 35 ... + 60 °C
			T6	- 35 ... + 40 °C
	IIB + H_2	Europe	T4	- 20 ... + 60 °C
			T6	- 20 ... + 40 °C
	IIB	USA	T4	- 35 ... + 66 °C
	IIB + H_2	USA	T4	- 25 ... + 66 °C

Mechanical data

Material	
Enclosure	aluminium, seawater resistant
Horn	ABS, flame retardant
Lens cover	polycarbonate
Fixings	stainless steel
Mounting bracket	mild steel with black polyester powder coat finish; supplied as standard
Product label	metalised polyester UL certified variants supplied with stainless steel label
Degree of protection	IP66 – IEC 60529 NEMA 4X – UL 50
Cable entries	2 cable entries, equipped with stopping plug (1x) and dust cap (1x) UL devices: equipped with M20 / 1/2 ’’ adaptors (2x)

Selection Table

Version	Group	Flash energy	Rated operational voltage	Lens colour	Order number	Art. no.	Weight kg
YL60 Sounder/Strobe, ATEX certification, standard devices	IIB + H_2	5 Joule	24 V DC	amber	**YL60/C/D50/A/EU**	**205250**	6.000
				red	**YL60/C/D50/R/EU**	**205257**	6.000
			115 V AC	amber	**YL60/C/L50/A/EU**	**205267**	6.000
				red	**YL60/C/L50/R/EU**	**205271**	6.000
			230 V AC	amber	**YL60/C/N50/A/EU**	**205273**	6.000
				red	**YL60/C/N50/R/EU**	**205282**	6.000
YL60 Sounder/Strobe, UL certification, standard devices	B, C, D	5 Joule	24 V DC	amber	**YL60/B/D50/A/UL**	**205287**	6.000
				red	**YL60/B/D50/R/UL**	**205293**	6.000
			115 V AC	amber	**YL60/B/L50/A/UL**	**205568**	6.000
				red	**YL60/B/L50/R/UL**	**205299**	6.000
			230 V AC	amber	**YL60/B/N50/A/UL**	**205301**	6.000
				red	**YL60/B/N50/R/UL**	**212386**	6.000
YL60 Sounder/Strobe, IECEx certification, standard devices	IIB + H_2	5 Joule	24 V DC	amber	**YL60/C/D50/A/IN**	**210791**	6.000
				red	**YL60/C/D50/R/IN**	**209605**	6.000
			115 V AC	amber	**YL60/C/L50/A/IN**	**212387**	6.000
				red	**YL60/C/L50/R/IN**	**212388**	6.000
			230 V AC	amber	**YL60/C/N50/A/IN**	**205276**	6.000
				red	**YL60/C/N50/R/IN**	**205284**	6.000
YL60 Sounder/Strobe, GOST R certification, standard devices	IIB + H_2	5 Joule	24 V DC	amber	**YL60/C/D50/A/RU**	**212389**	6.000
				red	**YL60/C/D50/R/RU**	**205265**	6.000
			115 V AC	amber	**YL60/C/L50/A/RU**	**212390**	6.000
				red	**YL60/C/L50/R/RU**	**205272**	6.000
			230 V AC	amber	**YL60/C/N50/A/RU**	**212391**	6.000
				red	**YL60/C/N50/R/RU**	**212392**	6.000
Note	Variations in gas group, flash energy, voltage and lens colour are available, please use the Selection Table						

Selection Table

Version

YL60 Sounder/Strobe combination, devices acc. to specification

Variations
Type code: please fill in fields

Order Number
YL60 / _ / _ _ / _ / _ / _

Gas group			
	EU, IN and RU units	IIB	**B**
		IIB + H2	**C**
	UL units	C, D gas groups	**C**
		B, C, D gas groups	**B**
Rated operational voltage			
	24 V DC		**D**
	48 V DC		**F**
	115 V AC		**L**
	230 V AC		**N**
Flash energy			
	5 Joule		**50**
Lens colour			
	amber		**A**
	red		**R**
	green		**G**
	opal		**O**
	blue		**B**
	clear		**C**
	yellow		**Y**
Certification			
	ATEX		**EU**
	UL		**UL**
	IECEx		**IN**
	GOST-R		**RU**
Additions			
	activation	telephone initiate	**TI**
	additional approvals		**L**

Note	Duty + tag labels are available on request. Please contact your local sales office for more details.

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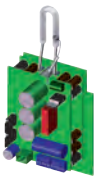
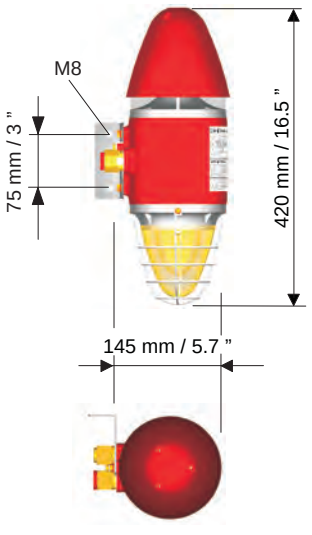
Accessories and Spare Parts

Designation	Figure	Description	Group	Order number	Art. no.	WebCode
Cable gland	 14976E00	Compound Barrier Cable Glands Ex d and Ex e for all Types of Unarmoured Cables	IIB + H_2 and IIC	**8163/2-20-PXSS2K-M20**	**138888**	8163J
	 14742E00	Compound Barrier Cable Glands Ex d and Ex e for all Types of Armoured Cables	IIB + H_2 and IIC	**8163/2-20-PX2K-M20**	**138875**	8163I
	 14977E00	Cable Glands Ex d and Ex e for Unarmoured Cables	IIB	**8163/2-20-A2F-M20**	**138772**	8163A
	 14978E00	Triton CDS Cable Glands Ex d and Ex e for all Types of Armoured Cables	IIB	**8163/2-20-T3CDS-M20**	**138902**	8163K
Note	Approvals of cable entries have to be observed.					

Accessories and Spare Parts

Designation	Figure	Description	Art. no.
Mounting bracket	 15795E00	stainless steel bracket fixing kit accessories	**210794**
Replacement PCB assembly	 16672E00	24 V DC / 5 J	**222970**
	 16675E00	115...230 V AC / 5 J	**209522**
Sound reduction kit		sound reduction kit reduce dB output to 75 dB (A) 24 V DC variants	**229983**

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



13977E00

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05517E00

- Max sound output 105 dB (A) / 1 m
- 8 LED array flashing beacon
- 32 selectable tones meeting international regulations
- Sound selection via DIL switch
- Stainless steel fixings
- Monitoring facility
- Flame retardant ABS enclosure

Yodalex range
Combination audible and visual signal designed for use in hazardous environments. This product series can be powered using a combined supply through a single barrier or the sounder and beacon can be wired independently using two single barriers or one dual channel barrier.

	ATEX					
Zone	0	1	2	20	21	22
For use in	x	x	x	x	x	x

Explosion Protection	
Europe (ATEX)	
Gas and dust	Baseefa08ATEX0194X Ex II 1 G Ex ia IIC T4 Ga Ex II 1 D Ex ia IIIC T190°C Da
Certifications and certificates	
Certificates	ATEX, India (PESO)

WebCode YL5ISA

Selection Table

Version	Enclosure colour	Safety barrier	Temperature class	Lens colour	Order number	Art. no.	Weight kg
YL5IS Sounder/Strobe, ATEX certification, standard devices	red flame (RF)	ISC	T4	amber	**YL5/ISC/T4/A/RF**	**204795**	1.090
				red	**YL5/ISC/T4/R/RF**	**204796**	1.090
				green	**YL5/ISC/T4/G/RF**	**212415**	1.090
				opal	**YL5/ISC/T4/O/RF**	**212416**	1.090
				blue	**YL5/ISC/T4/B/RF**	**212417**	1.090
				klar	**YL5/ISC/T4/C/RF**	**212418**	1.090

Technical Data

Electrical data

Rated operational voltage: 16.2 ... 26.4 V

Current consumption

Power supply	Certified barrier / isolator parameters	Current consumption tone 1*)	Sound output dB (A) / 1 m
24 V DC	28 V / 300 Ω	24 mA	100 dB (A) / 1 m
18 V DC	28 V / 300 Ω	33 mA	97 dB (A) / 1 m

*) combined supply

Certified input parameters

Independent wiring

	beacon	sounder
U_i =	30 V	30 V
I_i =	200 mA	133 mA
P_i =	0.7 W	0.7 W
C_i =	0	0
L_i =	0	0

Combined supply

U_i = 30 V
I_i = 133 mA
P_i = 0.7 W
C_i = 0
L_i = 0

Line monitoring: yes

Acoustic data

Volume: max. 105 dB(A) / 1 m
Volume control: 15 dB (A) adjustment (T4 models only)
Sound stages: 2
Sound selection: via DIL-switch

Luminous characteristics

Light source: 8 array LED
Flash rate: 1/s
Lens colour: amber, red, green, opal, blue, clear

Ambient conditions

Operating temperature range: -25 ... +40 °C
Storage temperature: -40 ... +70 °C
Max. relative humidity: 95 % at 40 °C

Mechanical data

Cable entries: 1 x M20
Material
- Enclosure: ABS, flame retardant
- Lens: polycarbonate, flame retardant
- Assembly parts: stainless steel fixings
- Labels: polyester foil, adhesive

Degree of protection: IP56 acc. IEC 60529

Mounting / Installation

Mounting: Should be mounted to a reasonably flat wall or bulkhead of suitable material using the lugs projecting from the side of the case. The lugs are bored 8 mm on 153 mm centres. The minimum recommended length of fixing screws is 25 mm. To maintain the integrity of the weather seal, the cable entry must be fitted using a suitable sealed gland.

Connection: Independent wiring or combined supply
2.5 mm^2 terminals

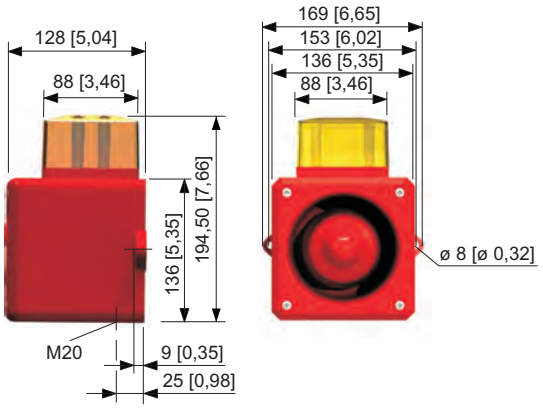
Accessories and Spare Parts

Designation	Figure	Description	Order number	Art. no.	WebCode
Safety barrier	 02326E00	single channel	**9001/01-280-085-101**	**158351**	9001A
		dual channel	**9002/11-280-186-001**	**158848**	9002A
Galvanic isolator	 12530E00	**9176/1x-15-xx (1 channel)** single channel	**9176/10-15-00s**	**160472**	9176A
		9176/2x-15-xx (2 channels) dual channel	**9176/20-15-15-00s**	**165567**	9176A
Cable gland	 13027E00	8161/8 Ex i (black with blue cap nut) 8161/8-M20-1304 4 ... 13 mm² 50 pieces (delivery lot*))	**8161/8-M20-1304**	**239164**	8161A

*) Purchase order quantity in [pieces], the delivery quantity is automatically rounded to the delivery lot.

E5

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



14002E00

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Intrinsically Safe Combination Signal - 100 dB (A) / LED Beacon
Series YL4IS

14767E00

- Max sound output 100 dB (A) / 1 m
- 8 LED array flashing beacon
- 32 selectable tones meeting international regulations
- Sound selection via DIL switch
- Stainless steel fixings
- Monitoring facility
- Flame retardant ABS enclosure

www.stahl.de

Yodalex range
Combination audible and visual signal designed for use in hazardous environments. This product series can be powered using a combined supply through a single barrier or the sounder and beacon can be wired independently using two single barriers or one dual channel barrier.

	ATEX					
Zone	0	1	2	20	21	22
For use in	x	x	x	x	x	x

Explosion Protection	
Europe (ATEX)	
Gas and dust	Baseefa08ATEX0194X II 1 G Ex ia IIC T4 Ga II 1 D Ex ia IIIC T190°C Da
Certifications and certificates	
Certificates	ATEX, India (PESO)

WebCode YL4ISA

Selection Table

Version	Enclosure colour	Safety barrier	Temperature class	Lens colour	Order number	Art. no.	Weight kg
YL4IS Sounder/Strobe, ATEX certification, standard devices	red normal (RN)	ISC	T4	amber	**YL4/ISC/T4/A/RN**	**211533**	0.640
				red	**YL4/ISC/T4/R/RN**	**205450**	0.640
				green	**YL4/ISC/T4/G/RN**	**212118**	0.640
				opal	**YL4/ISC/T4/O/RN**	**212120**	0.640
				blue	**YL4/ISC/T4/B/RN**	**212142**	0.640
				clear	**YL4/ISC/T4/C/RN**	**212119**	0.640

Technical Data

Electrical data

Rated operational voltage: 16.2 ... 26.4 V

Current consumption

Power supply	Certified barrier / isolator parameters	Current consumption tone 1*)	Sound output dB (A) / 1 m
24 V DC	28 V / 300 Ω	24 mA	99 dB (A) / 1 m
18 V DC	28 V / 300 Ω	33 mA	94 dB (A) / 1 m

*) combined supply

Certified input parameters

Independent wiring

		beacon	sounder
U_i	=	30 V	30 V
I_i	=	200 mA	133 mA
P_i	=	0.7 W	0.7 W
C_i	=	0	0
L_i	=	0	0

Combined supply

U_i = 30 V
I_i = 133 mA
P_i = 0.7 W
C_i = 0
L_i = 0

Line monitoring: yes

Acoustic data

Volume: max. 100 dB(A) / 1 m

Volume control: 15 dB (A) adjustment (T4 Models only)

Sound stages: 2

Sound selection: via DIL-switch

Luminous characteristics

Light source: 8 array LED

Flash rate: 1/s

Lens colour: amber, red, green, opal, blue, clear

Ambient conditions

Operating temperature range: -25 ... +40 °C

Storage temperature: -40 ... +70 °C

Max. relative humidity: 95 % at 40 °C

Mechanical data

Cable entries: 1 x M20

Material

Enclosure: ABS, flame retardant

Lens: polycarbonate, flame retardant

Assembly parts: stainless steel fixings

Labels: polyester foil, adhesive

Degree of protection: IP55 acc. to IEC 60529

Mounting / Installation

Mounting: Should be mounted to a reasonably flat wall or bulkhead of suitable material using the lugs projecting from the side of the enclosure. The minimum recommended length of fixing screws is 25 mm. To maintain the integrity of the weather seal the cable entry must be fitted using a suitable sealed gland.

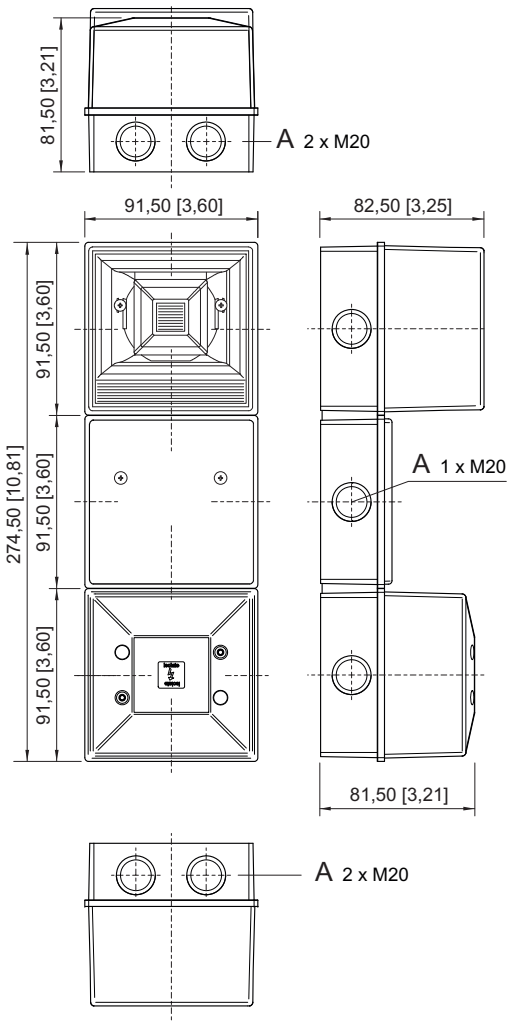
Connection: Independent wiring or combined supply
2.5 mm^2 terminals

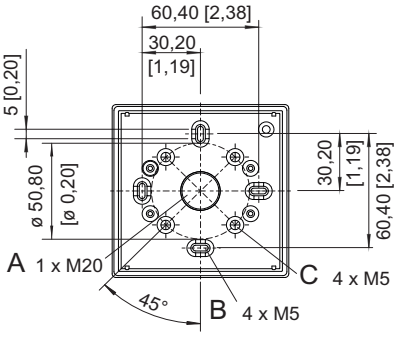
Accessories and Spare Parts

Designation	Figure	Description	Order number	Art. no.	WebCode
Safety barrier	 02326E00	single channel	**9001/01-280-085-101**	**158351**	9001A
		dual channel	**9002/11-280-186-001**	**158848**	9002A
Galvanic isolator	 12530E00	**9176/1x-15-xx (1 channel)** single channel	**9176/10-15-00s**	**160472**	9176A
		9176/2x-15-xx (2 channels) dual channel	**9176/20-15-00s**	**165567**	9176A
Cable gland	 13027E00	8161/8 Ex i (black with blue cap nut) 8161/8-M20-1304 4 ... 13 mm² 50 pieces (delivery lot*))	**8161/8-M20-1304**	**239164**	8161A

*) Purchase order quantity in [pieces], the delivery quantity is automatically rounded to the delivery lot.

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





A = knockout hole
B = drill hole
C = knockout hole

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Flameproof Audible Signal – 115 dB (A)
Series YA90

13912E00

- Max sound output 115 dB (A) / 1 m
- 2 stage alarm, independently selectable 2nd stage
- IP66 rated as standard
- 32 selectable tones meeting international regulations
- Light weight glass reinforced polyester (GRP) Ex enclosure
- Sound selection via 5 way DIL switch
- Adjustable stainless steel ratchet bracket providing positive setting
- Enclosure finished in red high performance paint with ABS flare
- Monitoring facility (DC voltages only)
- Dual 20 mm gland entries as standard

Yodalex range
Directional audible signal designed for use in hazardous or harsh environments.

	ATEX / IECEx					
Zone	0	1	2	20	21	22
For use in		x	x		x	x

	NEC 500					
	Class I		Class II		Class III	
Division	1	2	1	2	1	2
For use in		x				

WebCode YA90A

Explosion Protection		
Global (IECEx)		
Gas and dust	YA90/B versions: YA90/C versions: YA90/B+C versions:	IECEx BAS 08.0062X IECEx BAS 08.0061X EN 60079-0:2009, EN 60079-1:2007-04, EN 60079-31:2008
	YA90/B versions:	Ex d IIB T6 Ta -60 ... +60ºC Gb
	YA90/C versions:	Ex d IIC T6 Ta -60 ... +60ºC Gb
	YA90/B+C versions:	Ex tb IIIC T85ºC Ta -60 ... +60ºC Db IP66
Europe (ATEX)		
Gas and dust	YA90/B versions: YA90/C versions: YA90/B+C versions:	Baseefa 08 ATEX 0191 X Baseefa 08 ATEX 0189 X EN 60079-0:2009, EN 60079-1:2007, EN 60079-31:2009
	YA90/B versions:	Ⓔx II 2 G Ex d IIB T6 Ta -60 ... +60ºC Gb
	YA90/C versions:	Ⓔx II 2 G Ex d IIC T6 Ta -60 ... +60ºC Gb
	YA90/B+C versions:	Ⓔx II 2 D Ex tb IIIC T85ºC Ta -60 ... +60ºC Db IP66
USA and Canada (UL variants)		
Gas and dust	YA90/B+C versions:	E161818 USL: UL 464 / ISA 12.12.01-2007 CNL: CAN/ULC-S525-07, Edition 3 2007 / CSA C22.2 No. 213
	YA90/B versions:	USL, CNL - Class I, Div. 2, Groups A, B, C, and D Hazardous Locations Operating temperature -60 ... +66 ºC Audible signal appliance, fire alarm service private mode
	YA90/C versions:	USL, CNL - Class I, Div. 2, Groups C and D Hazardous Locations Operating temperature -60 ... +66 ºC Audible signal appliance, fire alarm service private mode
Russia (GOST R)		
Gas and dust	B01836 Marking and certification based on and in line with the ATEX product.	
Certifications and certificates		
Certificates	IECEx, ATEX, Brazil (INMETRO), China (China Ex), India (PESO), Korea (KGs), Russia (GOST R), USA (UL)	

Selection Table

Version	Group	Rated operational voltage	Order number	Art. no.	Weight kg
YA90 Sounder, ATEX certification, standard devices	IIC	24 V DC	**YA90/C/D/EU**	**205209**	4.500
		230 V AC	**YA90/C/N/EU**	**205214**	4.500
		115 V AC	**YA90/C/L/EU**	**206770**	4.500
YA90 Sounder, UL certification, standard devices	IIC	24 V DC	**YA90/C/D/UL**	**205365**	4.500
		115 V AC	**YA90/C/L/UL**	**205366**	4.500
		230 V AC	**YA90/C/N/UL**	**212397**	4.500
YA90 Sounder, IECEx certification, standard devices	IIC	24 V DC	**YA90/C/D/IN**	**205212**	4.500
		115 V AC	**YA90/C/L/IN**	**208871**	4.500
		230 V AC	**YA90/C/N/IN**	**212398**	4.500
YA90 Sounder, GOST R certification, standard devices	IIC	24 V DC	**YA90/C/D/RU**	**206661**	4.500
		115 V AC	**YA90/C/L/RU**	**212399**	4.500
		230 V AC	**YA90/C/N/RU**	**205217**	4.500
Note	Variations in gas group, voltage and certification are available Tag labels can be added, please contact your local sales office for more details				

Technical Data

Electrical data

Rated operational voltage	24 V DC, 48 V DC, 115 V AC and 230 V AC operational parameters + or -10 %	
Rated operational current	24 V DC	300 mA
	48 V DC	160 mA
	115 V AC	80 mA
	230 V AC	45 mA
	UL calculate the current using RMS Root mean square which gives the following measurement and is the figure reported on UL variant product labels:	
	24 V DC	500 mA
	48 V DC	not available UL certified variants
	115 V AC	130 mA
	230 V AC	90 mA

Mechanical data

Material	
Enclosure	GRP
Horn	ABS Flame retardant
Fixings	stainless steel
Degree of protection	IP66 – BS EN 60529 NEMA 4X – UL 50
Enclosure entries	2 x M20 cable entries equipped with 1 x stopping plug & 1 x dust cover UL Product variants supplied with 2 x M20 / 1/2' adaptors

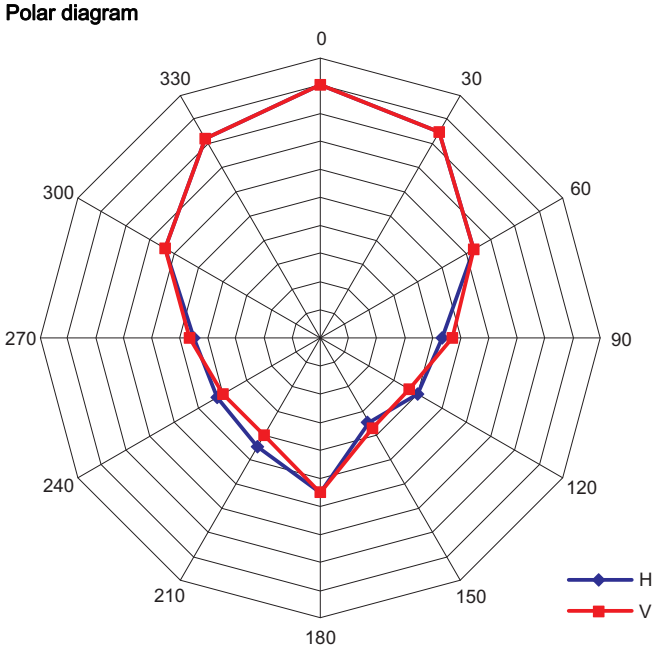
Ambient conditions

Ambient temperature	ATEX / IECEx: -60 ... +60 °C UL & ULC: -60 ... +66 °C
Max. relative humidity	95 % at 40 °C

Acoustic data

Volume	115 dB(A) / 1 m Sound output for products gas groups IIC

Polar diagram



Alarm stages	2 stage alarm
Sound selection	via DIL switch
Sound signal selection	32 All sounders have 32 sound signal selections. From the 32 sound signals, any signal may be chosen as the first stage alarm and any signal for the second stage alarm. Sound output level and current consumption depends upon the signal selected.

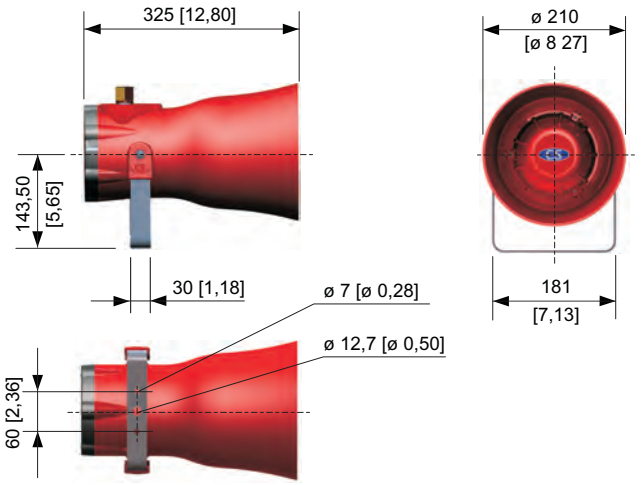
Mounting / Installation

Assembly	stainless steel mounting bracket provided, holes to suit M6, pitch 60 mm

Accessories and Spare Parts

Designation	Figure	Description	Group	Order number	Art. no.	WebCode
Cable gland	 14976E00	Compound Barrier Cable Glands Ex d and Ex e for all Types of Unarmoured Cables	IIB + H_2 and IIC	**8163/2-20-PXSS2K-M20**	**138888**	8163J
	 14742E00	Compound Barrier Cable Glands Ex d and Ex e for all Types of Armoured Cables	IIB + H_2 and IIC	**8163/2-20-PX2K-M20**	**138875**	8163I
	 14977E00	Cable Glands Ex d and Ex e for Unarmoured Cables	IIB	**8163/2-20-A2F-M20**	**138772**	8163A
	 14978E00	Triton CDS Cable Glands Ex d and Ex e for all Types of Armoured Cables	IIB	**8163/2-20-T3CDS-M20**	**138902**	8163K
Note	Approvals of cable entries have to be observed.					

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



13971E00

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Explosion Proof Audible Signal - 110 dB(A)
Series YA60

14718E00

- Omnidirectional high output sounder 110 dB (A) / 1 m
- 2 stage alarm, independently selectable 2nd stage
- IP66 rated as standard
- Aluminium enclosure with stainless steel fasteners
- 32 selectable tones meeting international regulations
- Sound selection via DIL switch
- Telephone initiate option available

Yodalex range
Omnidirectional audible signal designed for use in hazardous or harsh environments.

	ATEX / IECEx					
Zone	0	1	2	20	21	22
For use in		x	x		x	x

	NEC 505 Class I			NEC 506		
Zone	0	1	2	20	21	22
For use in		x	x		x	x

	NEC 500					
	Class I		Class II		Class III	
Division	1	2	1	2	1	2
For use in	x	x	x	x	x	x

WebCode YA60A

Explosion Protection		
Global (IECEx)		
Gas and dust	IIB+H2	IECEx BAS 05.0087X
	IIB	IECEx BAS 05.0086X
	IIB+H2, IIB	IEC 60079-0: 2011 / IEC 60079-1: 2007-04 / IEC 60079-31: 2008
	IIB+H2	Ex d IIB+H2 T4 Gb (Ta = -20 … +60°C)
		Ex tb IIIC T135°C Db IP 66 (Ta = -20 … +60 °C)
		Ex d IIB+H2 T6 Gb (Ta = -20 … +40 °C)
		Ex tb IIIC T85°C Db IP 66 (Ta = -20 … +40 °C)
	IIB	Ex d IIB T4 Gb (Ta = -35 … +60 °C)
		Ex tb IIIC T135°C Db IP 66 (Ta = -35 … +60 °C)
		Ex d IIB T6 Gb (Ta = -35 … +40 °C)
		Ex tb IIIC T85°C Db IP 66 (Ta = -35 … +40 °C)
Europe (ATEX)		
Gas and dust	IIB+H2	Baseefa02ATEX0222X
	IIB	Baseefa02ATEX0212X
	IIB+H2, IIB	EN 60079-0: 2009 / EN 60079-1: 2007 / EN 60079-31: 2009
	IIB+H2	Ⓔx II 2 GD Ex d IIB+H2 T4 Gb (Ta = -20 … +60 °C)
		Ⓔx II 2 GD Ex tb IIIC T135°C Db IP 66 (Ta = -20 … +60 °C)
		Ⓔx II 2 GD Ex d IIB+H2 T6 Gb (Ta = -20 … +40 °C)
		Ⓔx II 2 GD Ex tb IIIC T85°C Db IP 66 (Ta = -20 … +40 °C)
	IIB	Ⓔx II 2 GD Ex d IIB T4 Gb (Ta = -35 … +60 °C)
		Ⓔx II 2 GD Ex tb IIIC T135°C Db IP 66 (Ta = -35 … +60 °C)
		Ⓔx II 2 GD Ex d IIB T6 Gb (Ta = -35 … +40 °C)
		Ⓔx II 2 GD Ex tb IIIC T85°C Db IP 66 (Ta = -35 … +40 °C)
USA and Canada (UL variants)		
Gas and dust	IIB+H2, IIB	E161818
	IIB+H2, IIB	USL: UL 60079-0 / UL 60079-1 / UL 1203 / UL 1638
		CNL: CSA C22.2 No. 30-M1986 / CSA C22.2 No. 25-M1966 / CSA E60079-0-7 / CSA E60079-1
	IIB+H2	Class I, Div. 1, Groups B, C and D Class I, Div. 2, Groups B, C and D
		Class 1 Zone 1 AEx d IIB + H^2 T4 Class 1 Zone 1 Ex d IIB + H^2 T4
		Operating temperature -25 ... +66 °C Audible signal appliance fire alarm service private mode
	IIB	Class I, Div. 1, Groups B, C and D Class I, Div. 2, Groups B, C and D
		Class 1 Zone 1 AEx d IIB T4 Class 1 Zone 1 Ex d IIB T4
		Operating temperature -35 ... +66 ºC Audible signal appliance fire alarm service private mode
Russia (GOST R)		
Gas and dust	Marking and certification based on and line with the ATEX product.	
Certifications and certificates		
Certificates	IECEx, ATEX, Brazil (INMETRO), India (PESO), Kazakhstan (GOST K), Russia (GOST R), Taiwan (ITRI), USA (UL)	

Technical Data

Electrical data

Rated operational voltage	24 V DC, 48 V DC, 115 V AC and 230 V AC operational parameters + or -10 %	
Rated operational current	24 V DC	350 mA
	48 V DC	300 mA
	115 V AC	110 mA
	230 V AC	55 mA

Acoustic data

Volume	110 db (A) / 1 m
Sound selection	via DIL-switch

Ambient conditions

Operating temperature range				
	version			
	IIB	Europe	T4	- 35 ... + 60 °C
			T6	- 35 ... + 40 °C
	IIB + H_2	Europe	T4	- 20 ... + 60 °C
			T6	- 20 ... + 40 °C
	IIB	USA	T4	- 35 ... + 66 °C
	IIB + H_2	USA	T4	- 25 ... + 66 °C

Mechanical data

Material	
Enclosure	aluminium, seawater resistant
Horn	ABS, flame retardant
Fixings	stainless steel
Mounting bracket	mild steel with black polyester powder coat finish; supplied as standard
Product label	metalised polyester UL certified variants supplied with stainless steel label
Degree of protection	IP66 – IEC 60529 NEMA 4X – UL 50
Cable entries	2 cable entries, equipped with stopping plug (1x) and dust cap (1x) UL devices: equipped with M20 / 1/2 ’’ adaptors (2x)

Selection Table

Version	Group	Rated operational voltage	Order number	Art. no.	Weight kg
YA60 Sounder, ATEX certification, standard devices	IIB + H_2	24 V DC	**YA60/C/D/EU**	**205191**	5.400
		115 V AC	**YA60/C/L/EU**	**205199**	5.400
		230 V AC	**YA60/C/N/EU**	**205200**	5.400
YA60 Sounder, UL certification, standard devices	B, C, D	24 V DC	**YA60/B/D/UL**	**205202**	5.400
		115 V AC	**YA60/B/L/UL**	**205204**	5.400
		230 V AC	**YA60/B/N/UL**	**207054**	5.400
YA60 Sounder, IECEx certification, standard devices	IIB + H_2	24 V DC	**YA60/C/D/IN**	**205197**	5.400
		115 V AC	**YA60/C/L/IN**	**212393**	5.400
		230 V AC	**YA60/C/N/IN**	**212394**	5.400
YA60 Sounder, GOST R certification, standard devices	IIB + H_2	24 V DC	**YA60/C/D/RU**	**205198**	5.400
		115 V AC	**YA60/C/L/RU**	**212395**	5.400
		230 V AC	**YA60/C/N/RU**	**212396**	5.400
Note	Variations in gas group, flash energy, voltage and lens colour are available, please use the Selection Table				

Selection Table

Version	
YA60 Sounder, devices acc. to specification	**Variations** **Type code:** please fill in fields

Order Number
YA60 / _ / _ / _ / _

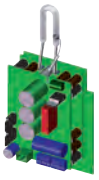
Gas group			
	EU, IN and RU units	IIB	**B**
		IIB + H2	**C**
	UL units	C, D gas groups	**C**
		B gas groups	**B**
Rated Operational Voltage			
	24 V DC		**D**
	48 V DC		**F**
	115 V AC		**L**
	230 V AC		**N**
Certification			
	ATEX		**EU**
	UL		**UL**
	IECEx		**IN**
	GOST-R		**RU**
Additions			
	activation	telephone initiate	**TI**
	additional approvals		**L**

Note	Duty + tag labels are available on request. Please contact your local sales office for more details.

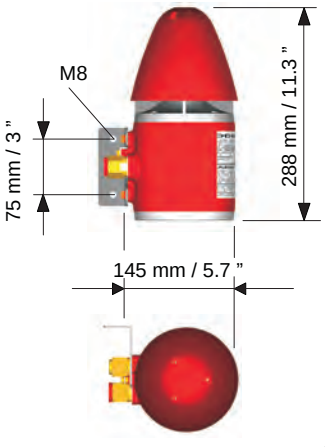
Accessories and Spare Parts

Designation	Figure	Description	Group	Order number	Art. no.	WebCode
Cable gland	 14976E00	Compound Barrier Cable Glands Ex d and Ex e for all Types of Unarmoured Cables	IIB + H_2 and IIC	**8163/2-20-PXSS2K-M20**	**138888**	8163J
	 14742E00	Compound Barrier Cable Glands Ex d and Ex e for all Types of Armoured Cables	IIB + H_2 and IIC	**8163/2-20-PX2K-M20**	**138875**	8163I
	 14977E00	Cable Glands Ex d and Ex e for Unarmoured Cables	IIB	**8163/2-20-A2F-M20**	**138772**	8163A
	 14978E00	Triton CDS Cable Glands Ex d and Ex e for all Types of Armoured Cables	IIB	**8163/2-20-T3CDS-M20**	**138902**	8163K
Note	Approvals of cable entries have to be observed.					

Accessories and Spare Parts

Designation	Figure	Description	Art. no.
Mounting bracket	 15795E00	stainless steel bracket fixing kit accessories	**210794**
Replacement PCB assembly	 16674E00	24 V DC	**222969**
	 16675E00	115 ... 230 V AC	**209515**

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



13975E00

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E5

Hazardous Area Audible Signal - 100 dB (A)
Series YA11

Clifford &Snell

14821E00

- Max sound output 100 dB (A) / 1 m
- IP66, NEMA 4X rated as standard
- Single stage alarm
- 32 sound tones available meeting international regulations
- Low profile (28 mm) light weight aluminium enclosure
- 3 metre (118”) 2 core pre wired cable fitted and prepared ready for installation
- Panel sealing gasket and fixings provided
- Low current consumption
- High performance red paint finish as standard

www.stahl.de

Yodalex range
Panel mount audible signal designed for use in hazardous or harsh environments

	ATEX / IECEx					
Zone	0	1	2	20	21	22
For use in			x			x

	Class I (NEC 505)			(NEC 506)		
Zone	0	1	2	20	21	22
For use in			x			x

	Class I		Class II		Class III	
Division	1	2	1	2	1	2
For use in		x		x	x	x

Explosion Protection	
Global (IECEx)	
Gas and dust	IECEx BAS 11.0058X Ex nA IIC T4 Gc Ex tc IIIC T90°C Dc IP66 (-40 °C ≤Ta ≤+70 °C)
Europe (ATEX)	
Gas and dust	Baseefa 10 ATEX 0252X Ⓔx II 3 GD Ex nA IIC T4 Gc Ex tc IIIC T90°C Dc (-40 °C ≤ Ta ≤ +70 °C)
Certifications and certificates	
Certificate	IECEx, ATEX, Canada (cUL), USA (UL)
Ship approval	Lloyds Register

WebCode YA11A

Selection Table

Version	Enclosure colour	Rated operational voltage	Order number	Art. no.	Weight kg
YA11 Sounder, standard devices	red standard (R)	18 ... 32 V DC	**YA11/1-D-. . .-RN**	**211439**	1.700
Note	Customer must specify the required sound tone at the point of ordering. The sound tone cannot be changed by the customer. There are 32 tones available, please see the order number supplement below, for example if tone 18 is required please use the order number YA11/1-D-18-RN				

Tone Table

Tone no.	Version	Frequency	Repetition rate (sec)	Special application
Tone 01	Alternate two-tone	800-1000	0.5	Fire alarms - Level crossing
Tone 02	Alternate two-tone	2500-3100	0.5	Security alarms
Tone 03	Alternate fast two-tone	800-1000	0.25	Increased urgency - Level crossing
Tone 04	Alternate fast two-tone	2500-3100	0.25	Security deterrent
Tone 05	Alternate two-tone	440-554	0.4/0.1	AFNOR, France
Tone 06	Alternate two-tone	430-470	1.0	
Tone 07	Alternate very fast two-tone	800-1000	0.13	
Tone 08	Alternate very fast two-tone	2500-3200	0.07	
Tone 09	Alternate two-tone	440-554	2.0	Turn out, Sweden
Tone 10	Continuous note	700		All-clear, Sweden
Tone 11	Continuous note	1000		
Tone 12	Continuous note	1000		
Tone 13	Continuous note	2300		
Tone 14	Continuous note	440		
Tone 15	Interrupted tone	1000	2.0	
Tone 16	Interrupted tone	420	1.25	AS2220, Australia
Tone 17	Interrupted tone	1000	0.5	
Tone 18	Interrupted tone	2500	0.25	
Tone 19	Interrupted tone	2500	0.5	
Tone 20	Interrupted tone	700	6/12	Pre-vital message, Sweden
Tone 21	Interrupted tone	1000	1.0	
Tone 22	Interrupted tone	700	4.0	Air-raid alarm, Sweden
Tone 23	Interrupted tone	700	0.25	Local warning, Sweden
Tone 24	Interrupted tone	720	0.7/0.3	Industrial alarm, Germany
Tone 25	Interrupted, fast, rising volume	1400	0.25	
Tone 26	Fast siren	250-1200	0.085	
Tone 27	Rising constant, fall	1000	10/40/10	Industrial alarm, Germany
Tone 28	ISO 8201 Evacuation	800-1000	As standard	International evacuation alarm
Tone 29	Fast whoop	500-1000	0.15	
Tone 30	Slow whoop	500-1200	4.5	Evacuation, The Netherlands
Tone 31	Reverse sweep	1200-500	1.0	Evacuation, Germany
Tone 32	Siren	500-1200	3.0	

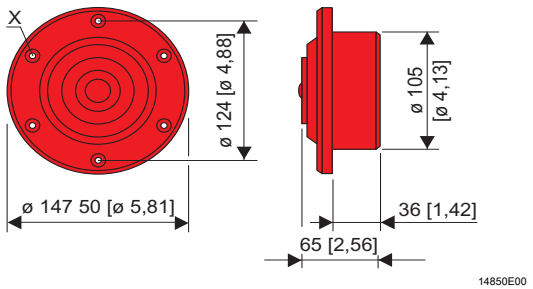
Technical Data

Electrical data	
Rated operational voltage	24 V DC (18 ... 32 V DC)
Current consumption	70 mA
Acoustic data	
Volume	100 dB(A) / 1 m
Ambient conditions	
Operating temperature range	-40 ... +70 °C
Mechanical data	
Material	
Enclosure	aluminium / ABS
Assembly parts	stainless steel fixings and foam sealing gasket
Degree of protection	IP66, NEMA 4X
Mounting / Installation	
Assembly	3 metre (118”) 2 core pre wired cable fitted and prepared ready for installation to ensure the integrity of seal between the sounder and panel is maintained, the neoprene sponge gasket should be fitted and a torque value of 2.2 to 2.6 Nm (19.5 to 23.0 lbs ins) applied to each screw and nut panel mount via 6 holes on 124 mm (4.9”) PCD at 60° spacing Panel cut out 109 mm (4.3”) panel sealing gasket supplied mounting hardware supplied screws are designed to fit a panel thickness of 4 mm max.

Accessories and Spare Parts

Designation	Description	Art. no.	Weight kg
Replacement installation kit	gasket, screws, nuts, locking devices and washers	**212184**	0.040

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



X = 6 x holes dia 5.3 mm (0.2") and c'bored 10.2 mm (0.4") equispaced on a 124 mm (4.9") PCD

Intrinsically Safe Audible Signal - 105 dB (A)
Series YO5IS

06496E00

- Max sound output 105 dB (A) / 1 m
- IP56 rated as standard
- 32 selectable tones meeting international regulations
- Sound selection via DIL switch
- Stainless steel fixings
- Monitoring facility
- Flame retardant ABS enclosure

www.stahl.de

E5

Yodalex range
Audible signal designed for use in hazardous environments.

	ATEX					
Zone	0	1	2	20	21	22
For use in	x	x	x	x	x	x

Explosion Protection		
Europe (ATEX)		
Gas and dust	BAS02ATEX1190X	
	YO*/IS*/T4	II 1 G Ex ia IIC T4 Ga II 1 D Ex ia IIIC T190°C Da
	YO*/IS*/T6	II 1 G Ex ia IIC T6 Ga II 1 D Ex ia IIIC T75°C Da
Certifications and certificates		
Certificates	ATEX, India (PESO)	

WebCode YO5ISA

Selection Table

Version	Enclosure colour	Safety barrier	Temperature class	Order number	Art. no.	Weight kg
YO5IS Sounder, ATEX certification, standard devices	red flame (RF)	ISC	T4	**YO5/ISC/T4**	**205312**	0.810
			T6	**YO5/ISC/T6**	**205315**	0.810

Technical Data

Electrical data

Rated operational voltage	16.2 ... 26.4 V			
Current consumption	Power supply	Certified barrier / isolator parameters	Current consumption	Sound output dB (A) / 1 m
	24 V DC	28 V / 300 Ω	28 mA	103 dB (A) / 1 m
	18 V DC	28 V / 300 Ω	21 mA	99 dB (A) / 1 m
Certified input parameters	U_i = 30 V			
	I_i = 133 mA			
	P_i = 0.7 W			
	C_i = 0			
	L_i = 0			
Line monitoring	yes			

Acoustic data

Volume	max. 105 dB(A) / 1 m
Volume control	15 dB (A) adjustment (T4 Models only)
Sound stages	2
Sound selection	via DIL-switch

Ambient conditions

Operating temperature range	-25 ... +40 °C
Storage temperature	-40 ... +70 °C
Max. relative humidity	95 % at 40 °C

Mechanical data

Cable entries	1 x M20
Material	
Enclosure	ABS, flame retardant
Assembly parts	stainless steel fixings
Labels	polyester foil, adhesive
Degree of protection	IP56 acc. to IEC 60529

Mounting / Installation

Mounting	Should be mounted to a reasonably flat wall or bulkhead of suitable material using the lugs projecting from the side of the enclosure. The minimum recommended length of fixing screws is 25 mm. To maintain the integrity of the weather seal, the cable entry must be fitted using a suitable sealed gland.
Connection	Each sounder should be wired independently. 2.5 mm^2 terminals

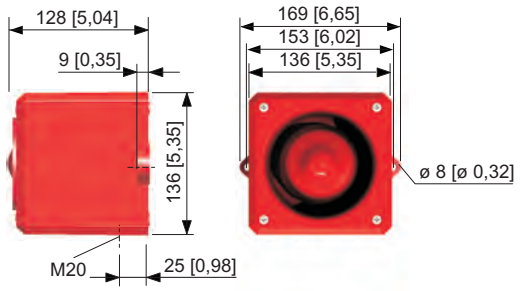
Accessories and Spare Parts

Designation	Figure	Description	Order number	Art. no.	WebCode
Safety barrier	 02326E00	single channel	**9001/01-280-085-101**	**158351**	9001A
		dual channel	**9002/11-280-186-001**	**158848**	9002A
Galvanic isolator	 12530E00	**9176/1x-15-xx (1 channel)** single channel	**9176/10-15-00s**	**160472**	9176A
		9176/2x-15-xx (2 channels) dual channel	**9176/20-15-15-00s**	**165567**	9176A
Cable gland	 13027E00	8161/8 Ex i (black with blue cap nut) 8161/8-M20-1304 4 ... 13 mm² 50 pieces (delivery lot*))	**8161/8-M20-1304**	**239164**	8161A

*) Purchase order quantity in [pieces], the delivery quantity is automatically rounded to the delivery lot.

E5

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



14011E00

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Intrinsically Safe Audible Signal - 100 dB (A)
Series YO4IS

Clifford &Snell

14765E00

- Max sound output 100 dB (A) / 1 m
- IP55 rated as standard
- 32 selectable tones meeting international regulations
- Sound selection via DIL switch
- Stainless steel fixings
- Monitoring facility
- Flame retardant ABS enclosure

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Yodalex range
Audible signal designed for use in hazardous environments.

	ATEX					
Zone	0	1	2	20	21	22
For use in	x	x	x	x	x	x

Explosion Protection		
Europe (ATEX)		
Gas and dust	BAS02ATEX1190X	
	YO*/IS*/T4	II 1 G Ex ia IIC T4 Ga II 1 D Ex ia IIIC T190°C Da
	YO*/IS*/T6	II 1 G Ex ia IIC T6 Ga II 1 D Ex ia IIIC T75°C Da
Certifications and certificates		
Certificates	ATEX, India (PESO)	

WebCode YO4ISA

Selection Table

Version	Enclosure colour	Safety barrier	Temperature class	Order number	Art. no.	Weight kg
YO4IS Sounder, ATEX certification, standard devices	red normal (RN)	ISC	T4	**YO4/ISC/T4**	**205310**	0.490
			T6	**YO4/ISC/T6**	**205311**	0.490

Technical Data

Electrical data

Rated operational voltage	16.2 ... 26.4 V			
Current consumption	Power supply	Certified barrier / isolator parameters	Current consumption	Sound output dB (A) / 1 m
	24 V DC	28 V / 300 Ω	25 mA	100 dB (A) / 1 m
	18 V DC	28 V / 300 Ω	20 mA	98 dB (A) / 1 m
Certified input parameters	U_i = 30 V			
	I_i = 133 mA			
	P_i = 0.7 W			
	C_i = 0			
	L_i = 0			
Line monitoring	yes			

Acoustic data

Volume	max. 100 dB(A) / 1 m
Volume control	15 dB (A) adjustment (T4 Models only)
Sound stages	2
Sound selection	via DIL-switch

Ambient conditions

Operating temperature range	-25 ... +40 °C
Storage temperature	-40 ... +70 °C
Max. relative humidity	95 % at 40 °C

Mechanical data

Cable entries	1 x M20
Material	
Enclosure	ABS, flame retardant
Assembly parts	stainless steel fixings
Labels	polyester foil, adhesive
Degree of protection	IP55 acc. to IEC 60529

Mounting / Installation

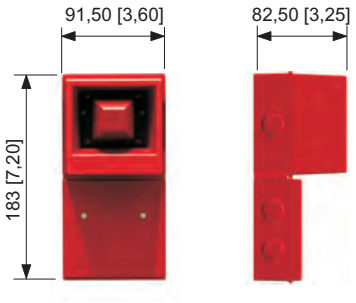
Mounting	Should be mounted to a reasonably flat wall or bulkhead of suitable material using the lugs projecting from the side of the case. The lugs are bored 8 mm on 153 mm centres. The minimum recommended length of fixing screws is 25 mm. To maintain the integrity of the weather seal, the cable entry must be fitted using a suitable sealed gland.
Connection	Each sounder should be wired independently. 2.5 mm^2 terminals

Accessories and Spare Parts

Designation	Figure	Description	Order number	Art. no.	WebCode
Safety barrier	 02326E00	single channel	**9001/01-280-085-101**	**158351**	9001A
		dual channel	**9002/11-280-186-001**	**158848**	9002A
Galvanic isolator	 12530E00	**9176/1x-15-xx (1 channel)** single channel	**9176/10-15-00s**	**160472**	9176A
		9176/2x-15-xx (2 channels) dual channel	**9176/20-15-00s**	**165567**	9176A
Cable gland	 13027E00	8161/8 Ex i (black with blue cap nut) 8161/8-M20-1304 50 pieces 4 ... 13 mm² (delivery lot*))	**8161/8-M20-1304**	**239164**	8161A

*) Purchase order quantity in [pieces], the delivery quantity is automatically rounded to the delivery lot.

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



13999E00

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Intrinsically Safe Audible Signal - 100 dB (A)
Series YO3IS

14575E00

- Max sound output 100 dB (A) / 1 m
- IP55 rated as standard
- 32 selectable tones meeting international regulations
- Sound selection via DIL switch
- Stainless steel fixings
- Monitoring facility
- Flame retardant ABS enclosure

www.stahl.de

E5

Yodalex range
Audible signal designed for use in hazardous environments.

	ATEX					
Zone	0	1	2	20	21	22
For use in	x	x	x	x	x	x

Explosion Protection		
Europe (ATEX)		
Gas and dust	BAS02ATEX1190X	
	YO*/IS*/T4	Ex II 1 G Ex ia IIC T4 Ga Ex II 1 D Ex ia IIIC T190°C Da
	YO*/IS*/T6	Ex II 1 G Ex ia IIC T6 Ga Ex II 1 D Ex ia IIIC T75°C Da
Certifications and certificates		
Certificates	ATEX, India (PESO)	

WebCode YO3ISA

Selection Table

Version	Enclosure colour	Safety barrier	Temperature class	Order number	Art. no.	Weight kg
YO3IS Sounder, ATEX certification, standard devices	red flame (RF)	ISC	T4	**YO3/ISC/T4**	**205308**	0.390
			T6	**YO3/ISC/T6**	**207019**	0.390

Technical Data

Electrical data

Rated operational voltage	16.2 ... 26.4 V			
Current consumption	Power supply	Certified barrier / isolator parameters	Current consumption	Sound output dB (A) / 1 m
	24 V DC	28 V / 300 Ω	25 mA	100 dB (A) / 1 m
	18 V DC	28 V / 300 Ω	19 mA	98 dB (A) / 1 m
Certified input parameters	U_i = 30 V			
	I_i = 133 mA			
	P_i = 0.7 W			
	C_i = 0			
	L_i = 0			
Line monitoring	yes			

Acoustic data

Volume	max. 100 dB(A) / 1 m
Volume control	15 dB (A) adjustment (T4 Models only)
Sound stages	2
Sound selection	via DIL-switch

Ambient conditions

Operating temperature range	-25 ... +40 °C
Storage temperature	-40 ... +70 °C
Max. relative humidity	95 % at 40 °C

Mechanical data

Cable entries	1 x M20
Material	
Enclosure	ABS, flame retardant
Assembly parts	stainless steel fixings
Labels	polyester foil, adhesive
Degree of protection	IP55 acc. to IEC 60529

Mounting / Installation

Mounting	Should be mounted to a reasonably flat wall or bulkhead of suitable material using the lugs projecting from the side of the enclosure. The minimum recommended length of fixing screws is 25 mm. To maintain the integrity of the weather seal, the cable entry must be fitted using a suitable sealed gland.
Connection	Each sounder should be wired independently. 2.5 mm^2 terminals

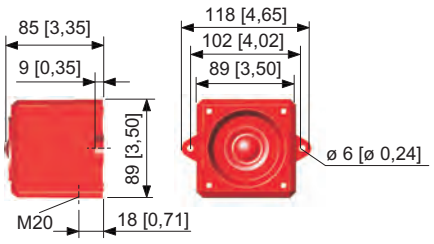
Accessories and Spare Parts

Designation	Figure	Description	Order number	Art. no.	WebCode
Safety barrier	 02326E00	single channel	**9001/01-280-085-101**	**158351**	9001A
		dual channel	**9002/11-280-186-001**	**158848**	9002A
Galvanic isolator	 12530E00	**9176/1x-15-xx (1 channel)** single channel	**9176/10-15-00s**	**160472**	9176A
		9176/2x-15-xx (2 channels) dual channel	**9176/20-15-00s**	**165567**	9176A
Cable gland	 13027E00	8161/8 Ex i (black with blue cap nut) 8161/8-M20-1304 50 pieces 4 ... 13 mm² (delivery lot*))	**8161/8-M20-1304**	**239164**	8161A

*) Purchase order quantity in [pieces], the delivery quantity is automatically rounded to the delivery lot.

E5

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



14001E00

We reserve the right to make alterations to the technical data, dimensions, weights, designs and products available without notice. The illustrations cannot be considered binding.

Signal Horn 105 dB (A)
Series 8491/1, 8491/2

10616E00

- Fixed signal tone
- Volume max. 105 db (A) / 1 m
- Installation by means of angle mounting
- AC and DC versions
- **Signal horn Series 8491/1**
  - with trumpet and connection cable
- **Signal horn Series 8491/2**
  - compact design with connection chamber and cable gland

The signal horns Series 8491 are audio signalling devices designed to warn, call and indicate in hazardous areas. They are made of a robust PC/ABS blend. The horns generate a sound level of approximately 105 db (A) at a distance of 1 m. Installation is realised by means of angle mounting.
The versions of Series 8491/1 have been developed for use in areas with an explosive gas atmosphere. They have a trumpet for optimum sound concentration as well as a connection cable.
The compact signal horns Series 8491/2 have a connection chamber and can be used indoors and outdoors in areas with explosive gas atmosphere.

	ATEX					
Zone	0	1	2	20	21	22
8491/1: For use in		x	x			
8491/2: For use in		x	x		x	x

WebCode 8491A

Selection Table

Version	Rated operational voltage	Order number	Art. no.	Weight kg
 00446E00	24 V AC, 50 Hz	**8491/11-024**	**145276**	1.450
	42 ... 48 V AC, 50 Hz	**8491/11-042**	**145278**	1.450
	115 V AC, 50 / 60 Hz 120 V AC, 60 Hz	**8491/11-115**	**145279**	1.450
	230 V AC, 50 Hz	**8491/11-230**	**145280**	1.450
	24 V DC	**8491/15-024**	**145275**	1.450
 10614E00	24 V AC, 50 Hz	**8491/21-024**	**145282**	1.500
	42 ... 48 V AC, 50 Hz	**8491/21-042**	**145283**	1.500
	115 V AC, 50 / 60 Hz 120 V AC, 60 Hz	**8491/21-115**	**145284**	1.500
	230 V AC, 50 Hz	**8491/21-230**	**145285**	1.500
	24 V DC	**8491/25-024**	**145281**	1.500

Explosion Protection

	8491/1	8491/2
Europe (ATEX)		
Gas and dust	BVS 03 ATEX E 159 X EN60079-0:2012 EN60079-18:2009 ⟨Ex⟩ II 2 G Ex mb IIC T5 Gb - -	BVS 03 ATEX E 159 X EN60079-0:2012 EN60079-7:2007 EN60079-18:2009 EN60079-31:2009 ⟨Ex⟩ II 2 G Ex e mb IIC T5 Gb ⟨Ex⟩ II 2 D Ex tb IIIC T70°C Db IP65
Certifications and certificates		
Certificates	ATEX, China (China-Ex), India (PESO), Kazakhstan (operating authorisation), Russia (GOST R), Ukraine (TR), Belarus (operating authorisation)	ATEX, China (China-Ex), Kazakhstan (operating authorisation), Ukraine (TR), Belarus (operating authorisation)

Technical Data

Electrical data

Rated operational voltage: see selection table

Back-up fuse

at rated operational voltage	fuse nominal value	rated operational current	back-up fuse type 8560*
24 V AC, 50 Hz	630 mA	450 mA	8560/51-4153
42 ... 48 V AC, 50 Hz	315 mA	200 mA	8560/51-4153
115 V AC, 50 / 60 Hz	315 mA	205 mA	8560/51-4113
120 V AC, 60 Hz	315 mA	220 mA	8560/51-4113
230 V AC, 50 Hz	125 mA	70 mA	8560/51-4073
24 V DC	500 mA	350 mA	8560/51-4143

* to be installed into an Ex e enclosure "Increased safety", for example type 8118/113-303

Duty cycle: 70 %

Acoustic data

Volume: max. 105 dB (A) / 1 m

Ambiant conditions

Ambient temperature: -40 ... +50 °C

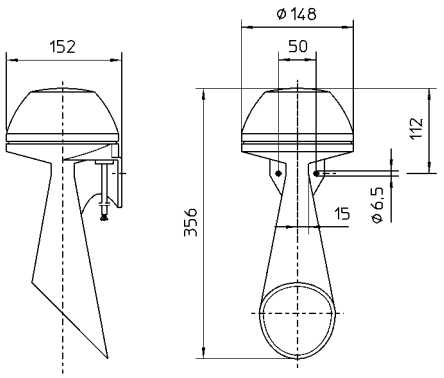
Mechanical data

	8491/1	8491/2
Degree of protection	IP55	IP65
Material		
Enclosure	PC/ABS, black	PC/ABS, black
Connection type	LAPPTHERM 145, 2 x 0.75 mm², 3 m	screw terminal in the connectin chamber max. connection cross-section 2.5 mm² 1 x M16 cable gland 6.5 ... 9.5 mm cable dia. range

Mounting / Installation

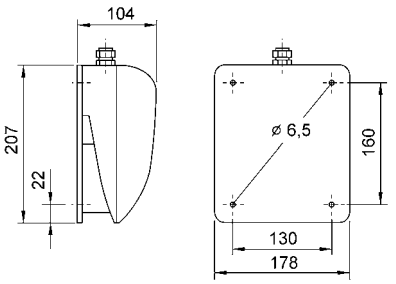
	8491/1	8491/2
Mounting orientation	sound direction downwards	optional (exception: sound direction not upwards)

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



03540E00

Signal horn with trumpet
Series 8491/1



10617E00

Signal horn, compact design with connection chamber
Series 8491/2

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15567E00

- Suitable for offshore / onshore & harsh environments
- Corrosion resistant light weight GRP enclosure
- Stainless steel fixings and guard
- High ingress protection IP66 & IP67
- Extreme temperature range -55 ... +70 °C
- Flexible mounting options
- Light enhancing lens design

Yodalex range
Flashing visual signal, GRP enclosure designed for use in hazardous and harsh environments.

	ATEX / IECEx					
Zone	0	1	2	20	21	22
For use in		x	x		x	x

WebCode FX15A

Explosion Protection

Global (IECEx)

Gas and dust	IIB	IECEx BAS 13.0005X
	IIC	IECEx BAS 13.0003
	IIB, IIC	IEC 60079-0: 2011 / IEC 60079-1: 2007-04 / IEC 60079-31: 2008
	IIB	Ex d IIB T* Gb (Ta = -60 … +** °C)
		Ex tb IIIC T***°C Db IP 66 (Ta = -60 … +** °C)
	IIC	Ex d IIC T* Gb (Ta = -60 … +** °C)
		Ex tb IIIC T***°C Db IP 66 (Ta = -60 … +** °C)

* temperature class on the table

Europe (ATEX)

Gas and dust	IIB	Baseefa13ATEX0007X
	IIC	Baseefa13ATEX0006
	IIB, IIC	EN 60079-0: 2012 / EN 60079-1: 2007 / EN 60079-31: 2009
	IIB	Ex II 2 G Ex d IIB T* Gb (Ta = -60 … +** °C)
		Ex II 2 D Ex tb IIIC T***°C Db IP 66 (Ta = -60 … +** °C)
	IIC	Ex II 2 G Ex d IIC T* Gb (Ta = -60 … +** °C)
		Ex II 2 D Ex tb IIIC T***°C Db IP 66 (Ta = -60 … +** °C)

* temperature class on the table

Product variant table

Power and voltage	Temperature class	Max. surface temperature	Ambient temperature range
5 J 24 V DC	T6	T73 °C	-60 … +40 °C
	T5	T88 °C	-60 … +55 °C
	T4	T103 °C	-60 … +70 °C
5 J 48 V DC	T6	T73 °C	-60 … +40 °C
	T5	T88 °C	-60 … +55 °C
	T4	T103 °C	-60 … +70 °C
5 J 115 V AC	T5	T83 °C	-60 … +40 °C
	T4	T113 °C	-60 … +55 °C
5 J 230 V AC	T6	T75 °C	-60 … +40 °C
	T5	T90 °C	-60 … +55 °C
	T4	T105 °C	-60 … +70 °C

Certifications and certificates

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

Technical Data

Electrical data

Rated operational voltage	24 V DC, 48 V DC, 115 V AC and 230 V AC operational parameters + or -10 %	
Rated operational current	24 V DC	300 mA
	48 V DC	185 mA
	115 V AC	140 mA
	230 V AC	75 mA
Start-up current	24 V DC	500 mA
	48 V DC	250 mA
	115 V AC	900 mA
	230 V AC	100 mA

Luminous Characteristics

Effective candela	49 cd Clear lens
Candela seconds	9.96 cds
Flash energy	5 J
Flash rate	1 per second

Operating temperature range

24 & 48 V DC -50 ... +70 °C
115 V AC -55 ... +55 °C
230 V AC -55 ... +70 °C

Mechanical data

Material	
Enclosure	GRP
Lens cover	polycarbonate
Wire guard	stainless steel
Degree of protection	IP66 & IP67 IEC 60529
Cable entries	3 x M20, product supplied with 3 x dust cover
Weight	2.4 kg

Selection table

Version	Group	Rated operational voltage	Lens colour	Order number	Art. no.	Weight kg
ATEX & IECEx standard variants	IIC	24 V DC	red	**FX15/C-D-050-R-EN-SF-A**	**217971**	2.230
			amber	**FX15/C-D-050-A-EN-SF-A**	**217979**	2.230
			clear	**FX15/C-D-050-C-EN-SF-A**	**217989**	2.230
		115 V AC	red	**FX15/C-L-050-R-EN-SF-A**	**217973**	2.250
			amber	**FX15/C-L-050-A-EN-SF-A**	**217981**	2.250
			clear	**FX15/C-L-050-C-EN-SF-A**	**217983**	2.250
		230 V AC	red	**FX15/C-N-050-R-EN-SF-A**	**217974**	2.250
			amber	**FX15/C-N-050-A-EN-SF-A**	**217982**	2.250
			clear	**FX15/C-N-050-C-EN-SF-A**	**217995**	2.250

Type Code

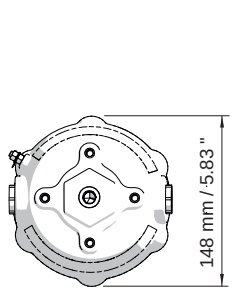
Variant	Option	Code	**FX15 / C - . - 050 - . - .. - .. - A - ..**
Gas group	IIC	C	
Supply voltage	24 V DC	D	
	48 V DC	F	
	115 V AC	L	
	230 V AC	N	
Light output	5 Joule	050	
Lens colour	Red	R	
	Amber	A	
	Clear	C	
	Blue	B	
	Green	G	
	Yellow	Y	
	Magenta	M	
	Opal	O	
Certification	ATEX & IECEx	EN	
	EAC (TR)	RU	
Body colour	Standard black	SF	
	Red	RN	
	Yellow	YE	
	Blue	BL	
Cable entries	3 x M20	A	
Optional extras	Telephone initiate	TI	
	Duty label	D	
	Tag label	TL	
	Local Approval	L	

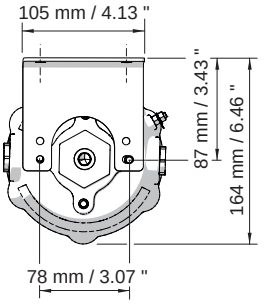
Note FX15 Beacons are supplied without a bracket. These must be ordered separately (see accessories table).

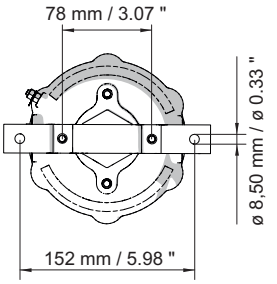
Accessories and Spare Parts

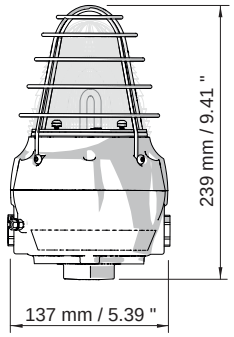
Designation	Figure	Description	Art. no.	WebCode
Mounting brackets	 15795E00	Stainless steel L-bracket - see dimensional drawings	**221711**	– –
	 15794E00	Stainless steel backstrap mounting bracket - see dimensional drawings	**221712**	– –
Cable glands	 14976E00	Compound barrier cable glands Ex d and Ex e for all types of unarmoured cables Group IIB + H2 and IIC	**138888**	8163J
	 14742E00	Compound barrier cable glands Ex d and Ex e for all types of armoured cables Group IIB + H2 and IIC	**138875**	8163I
Xenon tube	 15798E00	Xenon tube assembly	**223636**	– –
PCB	 15786E00	PCB assembly 24 V DC 5J	**223635**	– –
		PCB assembly 48 V DC 5J	**223634**	– –
		PCB assembly 110 V AC 5J	**223632**	– –
		PCB assembly 230 V AC 5J	**223580**	– –
PCB termination	 15785E00	PCB assembly termination	**223579**	– –
Flange	 15796E00	Flange assembly standard - specify lens colour acc. to type code	**223578**	– –

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



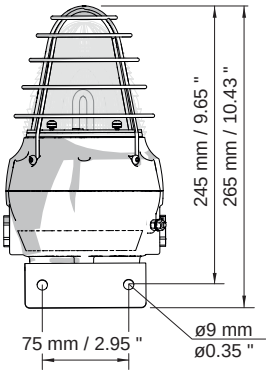






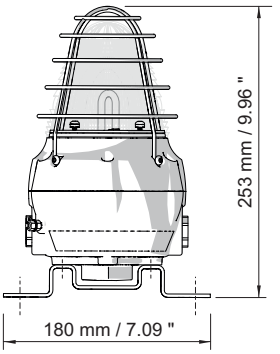
15739E00

FX15 Beacon



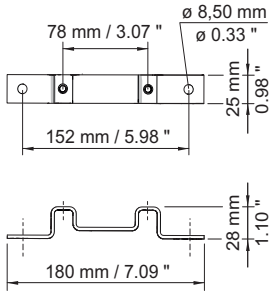
15738E00

FX15 Beacon with 'L' bracket

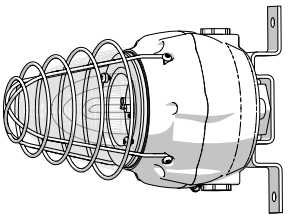


15737E00

FX15 Beacon with backstrap bracket

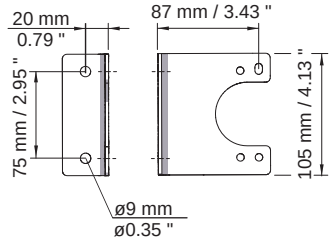


15743E00

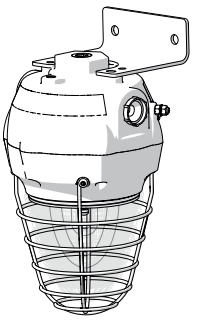


15763E00

Backstrap bracket



15742E00



15762E00

L-shaped bracket

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Explosion Proof Visual Signal 5, 10 or 20 Joule
Series FL60

Clifford &Snell

13914E00

- 5, 10 or 20 Joule xenon strobe
- Lens available in seven different colours
- IP66 rated as standard
- Aluminium enclosure with stainless steel fasteners
- Flash rate 1 per second
- Lens guard and mounting bracket supplied as standard
- Telephone initiate option available

www.stahl.de

Yodalex range
Visual signal designed for use in hazardous or harsh environments.

	ATEX / IECEx					
Zone	0	1	2	20	21	22
For use in		x	x		x	x

	NEC 505 Class I			NEC 506		
Zone	0	1	2	20	21	22
For use in		x	x		x	x

	NEC 500					
	Class I		Class II		Class III	
Division	1	2	1	2	1	2
For use in	x	x	x	x	x	x

WebCode FL60B

Explosion Protection		
Global (IECEx)		
Gas and dust	IIB+H2	IECEx BAS 05.0087X
	IIB	IECEx BAS 05.0086X
	IIB+H2, IIB	IEC 60079-0: 2011 / IEC 60079-1: 2007-04 / IEC 60079-31: 2008
	IIB+H2	Ex d IIB+H2 T4 Gb (Ta = -20 … +60°C)
		Ex tb IIIC T135°C Db IP 66 (Ta = -20 … +60 °C)
		Ex d IIB+H2 T6 Gb (Ta = -20 … +40 °C)
		Ex tb IIIC T85°C Db IP 66 (Ta = -20 … +40 °C)
	IIB	Ex d IIB T4 Gb (Ta = -35 … +60 °C)
		Ex tb IIIC T135°C Db IP 66 (Ta = -35 … +60 °C)
		Ex d IIB T6 Gb (Ta = -35 … +40 °C)
		Ex tb IIIC T85°C Db IP 66 (Ta = -35 … +40 °C)
Europe (ATEX)		
Gas and dust	IIB+H2	Baseefa02ATEX0222X
	IIB	Baseefa02ATEX0212X
	IIB+H2, IIB	EN 60079-0: 2009 / EN 60079-1: 2007 / EN 60079-31: 2009
	IIB+H2	Ⓔx II 2 GD Ex d IIB+H2 T4 Gb (Ta = -20 … +60 °C)
		Ⓔx II 2 GD Ex tb IIIC T135°C Db IP 66 (Ta = -20 … +60 °C)
		Ⓔx II 2 GD Ex d IIB+H2 T6 Gb (Ta = -20 … +40 °C)
		Ⓔx II 2 GD Ex tb IIIC T85°C Db IP 66 (Ta = -20 … +40 °C)
	IIB	Ⓔx II 2 GD Ex d IIB T4 Gb (Ta = -35 … +60 °C)
		Ⓔx II 2 GD Ex tb IIIC T135°C Db IP 66 (Ta = -35 … +60 °C)
		Ⓔx II 2 GD Ex d IIB T6 Gb (Ta = -35 … +40 °C)
		Ⓔx II 2 GD Ex tb IIIC T85°C Db IP 66 (Ta = -35 … +40 °C)
USA and Canada (UL variants)		
Gas and dust	IIB+H2, IIB	E168831
	IIB+H2, IIB	USL: UL 60079-0 / UL 60079-1 / UL 1203 / UL 1638
		CNL: CSA C22.2 No. 30-M1986 / CSA C22.2 No. 25-M1966 / CSA E60079-0-7 / CSA E60079-1
	IIB+H2	Class I, Div. 1, Groups B, C and D Class I, Div. 2, Groups B, C and D
		Class 1 Zone 1 AEx d IIB + H^2 T4 Class 1 Zone 1 Ex d IIB + H^2 T4
		Operating temperature -25 ... +66 °C Visual signal appliance private mode
	IIB	Class I, Div. 1, Groups B, C and D Class I, Div. 2, Groups B, C and D
		Class 1 Zone 1 AEx d IIB T4 Class 1 Zone 1 Ex d IIB T4
		Operating temperature -35 ... +66 ºC Visual signal appliance private mode
Russia (GOST R)		
Gas and dust	Marking and certification based on and line with the ATEX product.	
Certifications and certificates		
Certificates	IECEx, ATEX, Brazil (INMETRO), India (PESO), Kazakhstan (GOST K), Russia (GOST R), Taiwan (ITRI), USA (UL)	
Functional safety (IEC 61508)		
Test report	SIL 1 IEC61508-2:2010	

Technical Data

Electrical data

Rated operational voltage	24 V DC, 48 V DC, 115 V AC and 230 V AC operational parameters + or -10 %		
Rated operational current	24 V DC	5 J	220 mA
		10 J	500 mA
		20 J	1100 mA
	48 V DC	5 J	135 mA
		10 J	300 mA
		20 J	560 mA
	115 V AC	5 J	90 mA
		10 J	105 mA
		20 J	260 mA
	230 V AC	5 J	45 mA
		10 J	53 mA
		20 J	107 mA

Luminous characteristics

Effective candela	**5 J**		
	Clear lens	30 cd	
	Yellow lens	29 cd	
	Amber lens	17 cd	
	Red lens	9 cd	
	Blue lens	6 cd	
	Green lens	7 cd	
	10 J		
	Clear lens	96.02 cd	
	20 J		
	Clear lens	301 cd	
	No figures for Magenta lens		
Candela seconds	5 J	5.90	Clear Lens
	10 J	19.23	Clear Lens
	20 J	60.38	Clear Lens
Flash energy	5, 10 or 20 J		
Flash rate	60 FPM		

Ambient conditions

Operating temperature range	version			
	IIB	Europe	T4	- 35 ... + 60 °C
			T6	- 35 ... + 40 °C
	IIB + H_2	Europe	T4	- 20 ... + 60 °C
			T6	- 20 ... + 40 °C
	IIB	USA	T4	- 35 ... + 66 °C
	IIB + H_2	USA	T4	- 25 ... + 66 °C

Mechanical data

Material	
Enclosure	aluminium, seawater resistant
Lens cover	polycarbonate
Fixings	stainless steel
Mounting bracket	mild steel with black polyester powder coat finish; supplied as standard
Product label	metalised polyester UL certified variants supplied with stainless steel label
Degree of protection	IP66 – IEC 60529 NEMA 4X – UL 50
Cable entries	2 cable entries, equipped with stopping plug (1x) and dust cap (1x) UL devices: equipped with M20 / 1/2 ” adaptors (2x)

Selection Table

Version	Group	Flash energy	Rated operational voltage	Lens colour	Order number	Art. no.	Weight kg
FL60 Strobe, ATEX certification, standard devices	IIB + H_2	5 Joule	24 V DC	amber	**FL60/C/D50/A/EU**	**205129**	5.080
				red	**FL60/C/D50/R/EU**	**205133**	5.080
			115 V AC	amber	**FL60/C/L50/A/EU**	**212366**	5.080
				red	**FL60/C/L50/R/EU**	**205145**	5.080
			230 V AC	amber	**FL60/C/N50/A/EU**	**205150**	5.080
				red	**FL60/C/N50/R/EU**	**205153**	5.080
FL60 Strobe, UL certification, standard devices	B	5 Joule	24 V DC	amber	**FL60/B/D50/A/UL**	**205156**	5.080
				red	**FL60/B/D50/R/UL**	**205160**	5.080
			115 V AC	amber	**FL60/B/L50/A/UL**	**205163**	5.080
				red	**FL60/B/L50/R/UL**	**205165**	5.080
			230 V AC	amber	**FL60/B/N50/A/UL**	**212367**	5.080
				red	**FL60/B/N50/R/UL**	**211406**	5.000
FL60 Strobe, IECEx certification, standard devices	IIB + H_2	5 Joule	24 V DC	amber	**FL60/C/D50/A/IN**	**212368**	5.080
				red	**FL60/C/D50/R/IN**	**205139**	5.080
			115 V AC	amber	**FL60/C/L50/A/IN**	**212369**	5.080
				red	**FL60/C/L50/R/IN**	**212370**	5.080
			230 V AC	amber	**FL60/C/N50/A/IN**	**212371**	5.080
				red	**FL60/C/N50/R/IN**	**211551**	5.080
FL60 Strobe, GOST R certification, standard devices	IIB + H_2	5 Joule	24 V DC	amber	**FL60/C/D50/A/RU**	**206976**	5.080
				red	**FL60/C/D50/R/RU**	**212381**	5.080
Note	Variations in gas group, flash energy, voltage and lens colour are available, please use the Selection Table						

Selection Table

Version

FL60 Strobe, devices acc. to specification

Variations Type code: please fill in fields

Order Number: FL60 / _ / _ _ / _ / _ / _ / _

Gas group			
	EU, IN and RU units	IIB	**B**
		IIB + H2	**C**
	UL units	C, D gas groups	**C**
		B gas groups	**B**
Rated operational voltage			
	24 V DC		**D**
	48 V DC		**F**
	115 V AC		**L**
	230 V AC		**N**
Flash energy			
	5 Joule		**50**
	10 Joule		**100**
	20 Joule		**200**
Lens colour			
	amber		**A**
	red		**R**
	green		**G**
	opal		**O**
	blue		**B**
	clear		**C**
	yellow		**Y**
Certification			
	ATEX		**EU**
	UL		**UL**
	IECEx		**IN**
	GOST R		**RU**
Additions			
	activation	telephone initiate	**TI**
	additional approvals		**L**

Note: Duty + tag labels are available on request.
Please contact your local sales office for more details.

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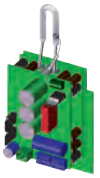
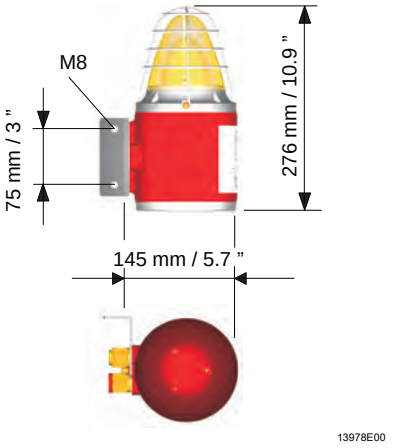
Accessories and Spare Parts

Designation	Figure	Description	Group	Order number	Art. no.	WebCode
Cable gland	 14976E00	Compound Barrier Cable Glands Ex d and Ex e for all Types of Unarmoured Cables	IIB + H_2 and IIC	**8163/2-20-PXSS2K-M20**	**138888**	8163J
	 14742E00	Compound Barrier Cable Glands Ex d and Ex e for all Types of Armoured Cables	IIB + H_2 and IIC	**8163/2-20-PX2K-M20**	**138875**	8163I
	 14977E00	Cable Glands Ex d and Ex e for Unarmoured Cables	IIB	**8163/2-20-A2F-M20**	**138772**	8163A
	 14978E00	Triton CDS Cable Glands Ex d and Ex e for all Types of Armoured Cables	IIB	**8163/2-20-T3CDS-M20**	**138902**	8163K
Note	Approvals of cable entries have to be observed.					

Accessories and Spare Parts

Designation	Figure	Description	Art. no.
Mounting bracket	 15795E00	stainless steel bracket fixing kit accessories	**210794**
Replacement PCB assembly	 16672E00	24 V DC / 5 J	**222971**
		48 V DC / 5 J	**223072**
	 16675E00	115...230 V AC / 5 J	**209503**
	 16676E00	24 V DC / 10 J	**209508**
		48 V DC / 10 J	**209509**
		115 V AC / 10 J	**209506**
		230 V AC / 10 J	**209507**
	 16673E00	24 V DC / 20 J	**209512**
		48 V DC / 20 J	**209513**
		115 V AC / 20 J	**209510**
		230 V AC / 20 J	**209511**

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



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01817E00

- Robust, seawater resistant aluminium enclosure
- Flashing frequency 1 Hz
- Flashing energy 5 Joules
- Integrated Ex e connection chamber
- Light dome available in: signal yellow, red, orange, green, blue and clear
- Steady beacon in LED technology
- Extreme temperature range -40 ... +50 °C

The flashing beacons and steady beacons of Series 6161 are installed to provide optical signals in explosive gas atmospheres and areas with combustible dust.

	ATEX / IECEx					
Zone	0	1	2	20	21	22
For use in		x	x		x	x

WebCode 6161A

Selection Table

Version	Rated operational voltage	Order number	Weight kg
 09344E00 **6161/2 Flashing Beacon**	230 V AC, 50 ... 60 Hz	**6161/2-11-.21-0**	1.500
	110 ... 127 V AC, 50 ... 60 Hz	**6161/2-31-.21-0**	1.500
	24 ... 42 V AC, 50 ... 60 Hz and 12 ... 48 V DC	**6161/2-61-.21-0**	1.500
	60 ... 80 V DC	**6161/2-41-.21-0**	1.500
 09344E00 **6161/3 Continuous Beacon**	230 V AC, 50 ... 60 Hz	**6161/3-10-.21-0**	1.400
	24 V AC / DC, 0 Hz, 50 ... 60 Hz	**6161/3-70-.21-0**	1.400

Order Number Supplement

Colour of glass	signal yellow	**6161/.-...-1..**	
	clear	**6161/.-...-2..**	
	red	**6161/.-...-3..**	
	blue	**6161/.-...-4..**	
	green	**6161/.-...-5..**	
	orange	**6161/.-...-6..**	
Note	The optical beacons are supplied without attachment materials and wire guard. These must be ordered separately!		

Explosion Protection

Global (IECEx)

Gas and dust	IECEx LCI 08.0032X Ex d e IIC T* Gb -40°C T_{amb} +**°C Ex tb IIIC T* Db IP66 -40°C T_{amb} +**°C IEC 60079-0 : 2011 IEC 60079-1 : 2007-04 IEC 60079-7 : 2006-07 IEC 60079-31 : 2008 ** see ambient conditions for the temperature class

Europe (ATEX)

Gas and dust	LCIE 02 ATEX 6062 X Ⓔx II 2 G Ex d e IIC T* Gb -40°C T_{amb} +**°C Ⓔx II 2 D Ex tb IIIC T* Db IP66 -40°C T_{amb} +**°C EN 60079-0 : 2012 EN 60079-1 : 2007 EN 60079-7 : 2007 EN 60079-31 : 2009 **Conditions of certificate:** If wire guard is not installed, the apparatus shall be submitted to low mechanical impact only. ** see ambient conditions for the temperature class

Certifications and certificates

Version	6161/2 Flashing Beacon	6161/3 Continuous Beacon
Certificates	IECEx, ATEX, China (China-Ex), India (PESO), Kazakhstan (GOST K), Russia (GOST R), Serbia (SRPS), Ukraine (TR), Belarus (operating authorisation)	IECEx, ATEX, China (China-Ex), Kazakhstan (GOST K), Serbia (SRPS), Ukraine (TR), Belarus (operating authorisation)
Ship approval	GL, RS	– –
Conformity	CE 0158 according to 94/9/CE	CE 0158 according to 94/9/CE

Technical Data

Electrical data

Version	**6161/2 Flashing Beacon**			**6161/3 Continuous Beacon**		
Rated values	24 ... 42 V AC	50 ... 60 Hz	0.5 ... 0.3 A	24 V AC / DC	0 Hz, 50 ... 60 Hz	0.12 A
	110 ... 127 V AC	50 ... 60 Hz	0.11 A	230 V AC	50 ... 60 Hz	0.02 A
	230 V AC	50 ... 60 Hz	0.08 A			
	12 ... 48 V DC		0.5 ... 0.3 A			
	60 ... 80 V DC		0.13 ... 0.11 A			
Back-up fuse	4 AT (Fuse slow-blow or automatic circuit breaker C characteristic)					

Luminous characteristics

Version	**6161/2 Flashing Beacon**	**6161/3 Continuous Beacon**
Flashing energy	5 Joules	– –
Flashing frequency	1 Hz	– –
Duty cycle	100 %	100 %
Service life	6 x 10^6 flashes	– –

Ambient conditions

Ambient temperature	** Temperature Class				** Temperature Class			
	Type	T_{amb}	Gas	Dust	Type	T_{amb}	Gas	Dust
	6121/2	+40 °C	T6	T85 °C	6121/3	+40 °C	T6	T65 °C
		+50 °C	T5	T100 °C		+50 °C	T6	T75 °C

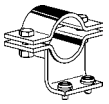
Mechanical data

Degree of protection	IP66 according to IEC/EN 60529
Protection class	I (internal and external PE connection terminal according to IEC/EN 60598)
Material	
Enclosure	aluminium alloy copper-free, yellow/black powder-coated
Light dome	polycarbonate, prismatic
Wire guard	stainless steel
Fixing elements	stainless steel
Sealing ring	NBR-O-ring seal
Special lock	Ex d enclosure; M4 hexagon socket stud

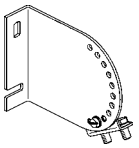
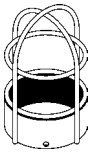
Mounting / Installation

Cable entries	1 x M20 x 1.5 stopping plug 1 x M20 x 1.5 cable gland metal cable gland on request
Clamping range	4 ... 13 mm
Connection type	screw terminal block, 3-pole
Marking	L1 + N + PE
Connection cross-section	
solid	2 x 4 mm^2
finely stranded	2 x 2.5 mm^2
Protective conductor connection	
Inside	max. 6 mm^2
Outside	max. 2.5 mm^2 flexible / 4 mm^2 rigid

Accessories and Spare Parts

Designation	Figure	Description		Art. no.	Weight kg
Mounting plate	 04279E00	material: stainless steel, includes mounting screws, for wall or floor mounting		**120821**	0.170
Pipe clamp	 09349E00	material: stainless steel includes mounting screws			
			R 1 1/4 “	**120812**	0.500
			R 1 1/2 “	**120819**	0.470
			R 2 “	**120823**	0.500

Accessories and Spare Parts

Designation	Figure	Description		Art. no.	Weight kg
Ceiling or wall-mounting bracket	 09350E00	material: stainless steel includes mounting screws		**120826**	0.480
Wire guard	 09351E00	material: stainless steel		**120818**	0.260
Cable gland	 05864E00	8161/7-M20-1304 4 ... 13 mm²	50 pieces (delivery lot*))	**239156**	0.012
Stopping plug	 04840E00	8290/3-M20	1 piece	**143522**	0.005
		8290/3-M20	100 pieces	**143543**	0.500

*) Purchase order quantity in [pieces], the delivery quantity is automatically rounded to the delivery lot.

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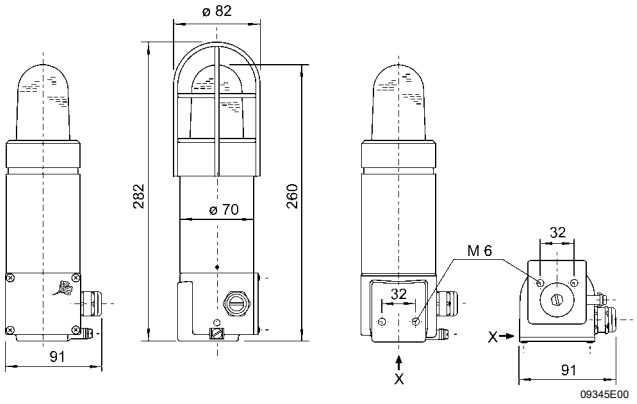
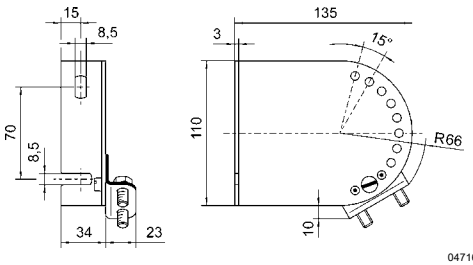
Dimensional Drawings (All Dimensions in mm) - Subject to Alterations

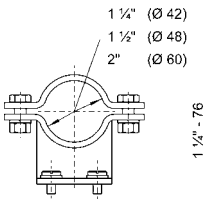


Optical beacon 6161

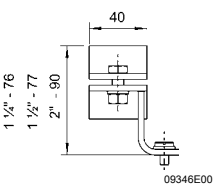
Mounting accessories

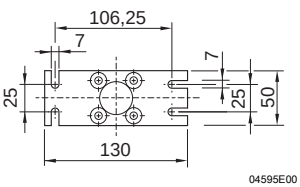


Ceiling and wall-mounting bracket



Pipe clamp





Mounting plate

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06147E00

- Versions
  - rotating mirror beacon
  - rotating beacon
  - beacon with double flash (9 + 5 J)
  - flashing beacon (15 J)
  - LED-continuous beacon
  - LED-rotating beacon
- Seawater resistant aluminium enclosure with glass dome
- Integrated Ex e connection chamber
- Glass dome available in: signal yellow, red, orange and blue respc. clear
- Available with
  - 20 W / 35 W halogen bulb or as
  - LED-continuous beacon / LED-rotating beacon

The R. STAHL Signal Beacon Series 6162 is approved for use in Ex Zones 1, 2, 21 and 22. All models feature an integrated "increased safety" wiring space. The rotating mirror beacons and the rotating beacons have an integrated wear resistant friction gear which creates 180 light signals per minute.
The wear-free LED beacons ensure an extremely high service life of up to 50,000 hours due to the innovative LED technology. In addition to the LED-continuous beacon, a LED-rotating beacon is also available. This LED-rotating beacon is maintenance-free thanks to the absence of any moving components.
The robust, seawater resistant aluminium enclosure ensures IP66 protection for all models.

	ATEX / IECEx					
Zone	0	1	2	20	21	22
For use in		x	x		x	x

WebCode 6162A

Selection Table

Version	Rated operational voltage	Lamp wattage	Temperature class	Max. surface temperature	Max. ambient temperature	Order number	Art. no.	Weight kg
 06128E00 Rotating mirror beacon	24 V AC / DC, 50 ... 60 Hz	20 W	T4 T4	105 °C 115 °C	40 °C 50 °C	**6162/17-61-.11**	**120872**	5.600
		35 W	T3 T3	150 °C 160 °C	40 °C 50 °C	**6162/17-62-.11**	**120863**	5.600
	115 V AC, 50 ... 60 Hz	35 W	T3 T3	150 °C 160 °C	40 °C 50 °C	**6162/17-32-.11**	**120866**	5.600
	230 V AC, 50 ... 60 Hz	20 W	T4 T4	105 °C 115 °C	40 °C 50 °C	**6162/17-11-.11**	**120871**	5.600
		35 W	T3 T3	150 °C 160 °C	40 °C 50 °C	**6162/17-12-.11**	**120869**	5.600
 05759E00 Rotating beacon	24 V AC / DC, 50 ... 60 Hz	20 W	T6 T5	80 °C 90 °C	40 °C 50 °C	**6162/18-61-.11**	**120874**	5.600
		35 W	T4 T4	105 °C 115 °C	40 °C 50 °C	**6162/18-62-.11**	**120864**	5.600
	115 V AC, 50 ... 60 Hz	35 W	T4 T4	105 °C 115 °C	40 °C 50 °C	**6162/18-32-.11**	**120867**	5.600
	230 V AC, 50 ... 60 Hz	20 W	T6 T5	80 °C 90 °C	40 °C 50 °C	**6162/18-11-.11**	**120873**	5.600
		35 W	T4 T4	105 °C 115 °C	40 °C 50 °C	**6162/18-12-.11**	**120870**	5.600
 05759E00 Beacon with double flash	24 V DC	9 + 5 J	T5 T5	85 °C 95 °C	40 °C 50 °C	**6162/16-53-.11**	**120861**	5.600
	115 V AC, 50 ... 60 Hz	9 + 5 J	T5 T4	90 °C 100 °C	40 °C 50 °C	**6162/16-23-.11**	**120865**	5.600
	230 V AC, 50 ... 60 Hz	9 + 5 J	T5 T5	85 °C 95 °C	40 °C 50 °C	**6162/16-13-.11**	**120868**	5.600
 05759E00 Flashing beacon	24 V AC / DC (± 15 %), 50 ... 60 Hz	15 J	T6 T6	75 °C 75 °C	40 °C 50 °C	**6162/15-64-.11**	**120877**	5.600
	110 ... 127 V AC, 50 ... 60 Hz	15 J	T5 T4	95 °C 105 °C	40 °C 50 °C	**6162/15-44-.11**	**120875**	5.600
	230 ... 240 V AC, 50 ... 60 Hz	15 J	T6 T6	80 °C 80 °C	40 °C 50 °C	**6162/15-74-.11**	**120876**	5.600

Order Number Supplement

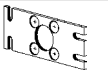
Colour of glass	signal yellow	**6162/..-...-1..**	
	clear	**6162/..-...-2..**	
	red	**6162/..-...-3..**	
	blue	**6162/..-...-4..**	
	orange	**6162/..-...-6..**	
Note	The optical beacons are supplied without mounting accessories and wire guard. These must be ordered separately!		

Selection Table

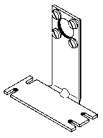
Version	Colour of glass	Rated operational voltage	Lamp wattage	Temperature class	Max. surface temperature	Max. ambient temperature	Order number	Art. no.	Weight kg
 12628E00 LED-continuous beacon	signal yellow	24 V DC	5 W	T6 T6 T5	70 °C 80 °C 90 °C	40 °C 50 °C 60 °C	**6162/19-55-111**	**201879**	5.300
		115 ... 230 V AC, 50 ... 60 Hz	5 W	T6 T6 T5	70 °C 80 °C 90 °C	40 °C 50 °C 60 °C	**6162/19-95-111**	**201901**	5.300
 12629E00 LED-continuous beacon	red	24 V DC	5 W	T6 T6 T5	70 °C 80 °C 90 °C	40 °C 50 °C 60 °C	**6162/19-55-311**	**201880**	5.300
		115 ... 230 V AC, 50 ... 60 Hz	5 W	T6 T6 T5	70 °C 80 °C 90 °C	40 °C 50 °C 60 °C	**6162/19-95-311**	**201902**	5.300
 12696E00 LED-continuous beacon	orange	24 V DC	5 W	T6 T6 T5	70 °C 80 °C 90 °C	40 °C 50 °C 60 °C	**6162/19-55-611**	**203036**	5.300
		115 ... 230 V AC, 50 ... 60 Hz	5 W	T6 T6 T5	70 °C 80 °C 90 °C	40 °C 50 °C 60 °C	**6162/19-95-611**	**203037**	5.300
 12628E00 LED-rotating beacon	signal yellow	24 V DC	3.6 W	T6 T6 T5	70 °C 80 °C 90 °C	40 °C 50 °C 60 °C	**6162/18-55-111**	**201905**	5.300
		115 ... 230 V AC, 50 ... 60 Hz	3.6 W	T6 T6 T5	70 °C 80 °C 90 °C	40 °C 50 °C 60 °C	**6162/18-95-111**	**201903**	5.300
 12629E00 LED-rotating beacon	red	24 V DC	3.6 W	T6 T6 T5	70 °C 80 °C 90 °C	40 °C 50 °C 60 °C	**6162/18-55-311**	**201906**	5.300
	red	115 ... 230 V AC, 50 ... 60 Hz	3.6 W	T6 T6 T5	70 °C 80 °C 90 °C	40 °C 50 °C 60 °C	**6162/18-95-311**	**201904**	5.300
 12696E00 LED-rotating beacon	orange	24 V DC	3.6 W	T6 T6 T5	70 °C 80 °C 90 °C	40 °C 50 °C 60 °C	**6162/18-55-611**	**203034**	5.300
	orange	115 ... 230 V AC, 50 ... 60 Hz	3.6 W	T6 T6 T5	70 °C 80 °C 90 °C	40 °C 50 °C 60 °C	**6162/18-95-611**	**203035**	5.300
Note	The optical beacons are supplied without mounting accessories and wire guard. These must be ordered separately!								

Explosion Protection		
Global (IECEx)		
Gas and dust	IECEx PTB 06.0078 Ex de IIC T3 ... T6 Ex tD A21 IP66 T80 °C ... T160 °C	
Europe (ATEX)		
Gas and dust	PTB 06 ATEX 1037 ⟨Ex⟩ II 2 G Ex de IIC T* ⟨Ex⟩ II 2 D Ex tD A21 IP 66 T* * Temperature classes are dependent on lamp wattage (see selection table)	
Certifications and certificates		
Certificates	IECEx, ATEX, Kazakhstan (TR), Russia (TR), Serbia (SRPS), Ukraine (TR), Belarus (TR)	
Technical Data		
Electrical data		
Rated operational voltage	see selection table	
Luminous characteristics		
Lamp wattage	see selection table	
Rotation speed	rotating mirror beacon:	180 rpm
	rotating beacon:	60 rpm
Duty cycle	100 %	
Service life	rotating mirror beacon	5000 h (drive)
	rotating beacon	5000 h (drive)
	beacon with double flash	$4x10^6$ flashes
	flashing beacon	$4x10^6$ flashes
	LED-rotating beacon	max. 50 000 h
	LED-continuous beacon	max. 50 000 h
Ambient conditions		
Ambient temperature	see selection table	
Mechanical data		
Degree of protection	IP66	
Protection class	I (acc. to IEC/EN 60598)	
Material		
Enclosure	aluminium powder coated, seawater resistant	
Light dome	glass, resistant to thermal shocks	
Wire guard	stainless steel	
Seal	NBR O-ring	
Mounting / Installation		
Cable entries	1 x M20 x 1.5 (⌀ 4 ... 13 mm) 1 x M20 x 1.5 stopping plug metal cable gland on request	
Connection cross-section		
L1, N, PE	2.5 mm^2 finely-stranded 4 mm^2 solid	

Accessories and Spare Parts

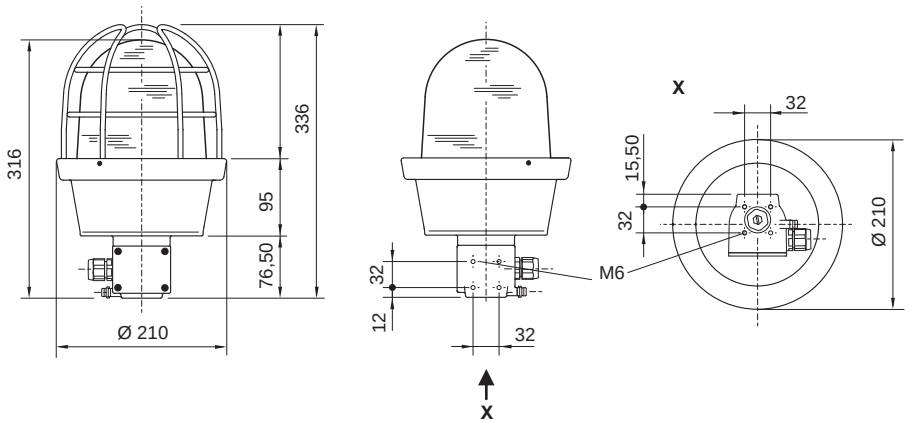
Designation	Figure	Description		Art. no.	Weight kg
Halogen lamp G6.35	 05003E00	20 W / 12 V	2 pc	**120933**	0.001
		20 W / 24 V	2 pc	**120934**	0.001
		35 W / 12 V	2 pc	**120935**	0.001
		35 W / 24 V	2 pc	**120936**	0.001
Mounting plate	 04279E00	material: stainless steel, includes mounting screws, for wall or floor mounting		**120821**	0.170

Accessories and Spare Parts

Designation	Figure	Description		Art. no.	Weight kg
Pipe clamp	 04223E00		R 2“	**120921**	0.600
			R $1^1/_2$“	**120920**	0.560
			R $1^1/_4$“	**120919**	0.520
Mounting bracket	 04281E00	material: stainless steel, includes mounting screws		**120930**	0.450
Wire guard	 10289E00	material: stainless steel, includes mounting screws		**120917**	0.540
Cable gland	 05864E00	8161/7-M20-1304 4 ... 13 mm²	50 pieces (delivery lot*))	**239156**	0.012
Stopping plug	 04840E00	8290/3-M20	1 piece	**143522**	0.005
		8290/3-M20	100 pieces	**143543**	0.500

*) Purchase order quantity in [pieces], the delivery quantity is automatically rounded to the delivery lot.

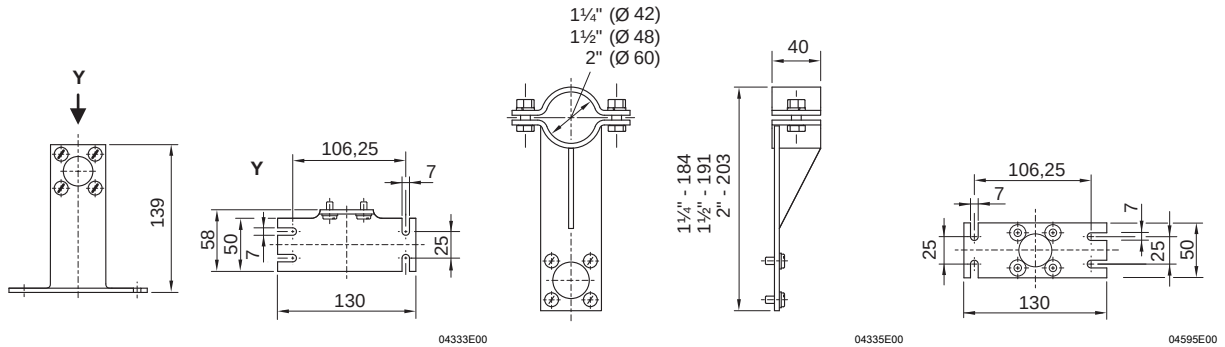
Dimensional Drawings (All Dimensions in mm) - Subject to Alterations



04282E00

Signal beacon Series 6162

Mounting accessories



04333E00 04335E00 04595E00

Mounting bracket | Pipe clamp | Mounting plate

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08470E00

- Complies with: ICAO annex 14 vol. 1 CH. 6, low intensity type B
- Integrated terminal box
- Low maintenance
- Rugged construction
- Low power consumption
- Resistant to vibrations
- Very long operating life

	ATEX / IECEx					
Zone	0	1	2	20	21	22
For use in		x	x			

Applications

- Obstruction light

WebCode T2430B

Selection Table

Version	Light intensity	Voltage	Order number	Art. no.
Luminaire Red LED Omni-directional	32 cd.	220 - 254 V AC	**TEF2430160**	**170631**
		110 - 120 V AC	**TEF2430161**	**170632**
		24 V AC / DC	**TEF2430162**	**170633**

Explosion Protection

Global (IECEx)

Gas	IECEx DNV 13.0016X Ex d e op is IIB T5 Gb

Europe (ATEX)

Gas	NEMKO 03 ATEX 064 Ⓔx II 2 G Ex d e op is IIB T5 Gb

Certifications and certificates

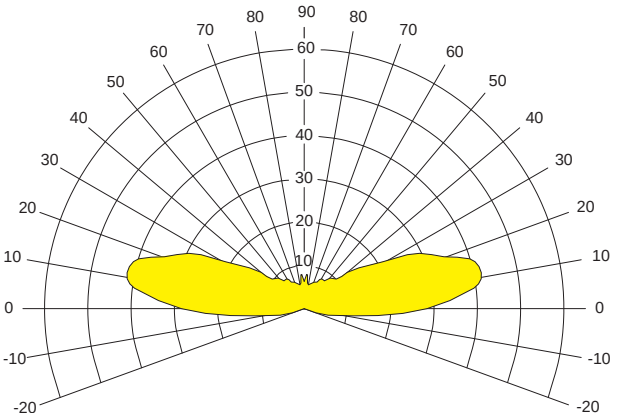
Certificates	IECEx, ATEX, Canada (CSA), USA

Technical Data

Electrical data

Rated voltage	220 / 254 V AC 50 / 60 Hz 110 / 120 V AC 50 / 60 Hz 24 V AC / DC
Power consumption	max. 10.5 W
Service life	min. 50,000 working hours

Luminous characteristics

Light intensity	> 32 cd. according to ICAO annex 14 vol. I Ch. 6 low intensity type B
Luminous intensity distribution	 08472E00

Ambient conditions

Ambient temperature	- 30 ... + 50 °C

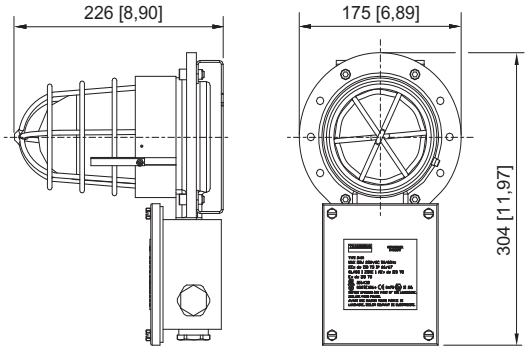
Mechanical data

Degree of protection	IP66 / 67 without breathing gland IP54 with breathing gland
Material	lamphousing: cast copper alloy junction box: AISI 316L globe: polycarbonate (lexan)
Cable glands	4 x M25 cable gland delivered with: 2 x M25 stopping plugs 2 x M25 cable glands

Accessories and Spare Parts

Designation	Description	Order number	Art. no.
Globe	globe with guard, LED´s and LED driver	**TEF4545**	**170634**
Mounting plate	complete with transformer 110 - 254 V AC	**TEF4236**	**170635**
O-Ring	for globe / guard ring	**TEF50008009**	**170679**
Cable gland	cable gland, M25	**TEF9147200**	**165825**
Stopping plug	drain plug EEx e M25	**TEF7302101**	**169899**
	stopping plug EEx e, M25	**TEF7947304**	**165845**

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



08471E00

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Signal Beacon
Series TEF 2430

08470E00

- Rugged and low profile
- Easy to install and maintain
- Degree of protection IP66 / IP67
- Long lamp life due to compact fluorescent tube
- Wide range of coloured globes
- Short ignition time at low temperatures
- Resistant to vibration

	ATEX / IECEx					
Zone	0	1	2	20	21	22
For use in		x	x			

Applications

- General lighting
- Signal light
- Deck light
- Obstacle marking

WebCode T2430C

Selection Table

Version	Lamps	Voltage	Colour	Order number	Art. no.
Luminaire	2 x 7 W	230 V	clear	**TEF2430000**	**170654**
			green	**TEF2430100**	**170655**
			red	**TEF2430200**	**170656**
			yellow	**TEF2430301**	**170657**
	1 x 13 W	120 V	clear	**TEF2430005**	**170658**
			green	**TEF2430105**	**170659**
			red	**TEF2430205**	**170660**
			yellow	**TEF2430306**	**170661**
	1 x 10 W	24 V DC	clear	**TEF2430232**	**170664**
			green	**TEF2430233**	**170665**
			red	**TEF2430230**	**170662**
			yellow	**TEF2430231**	**170663**
			blue	**TEF2430234**	**170666**
			amber	**TEF2430235**	**170667**

Explosion Protection

Global (IECEx)	
Gas	IECEx DNV 13.0016X Ex d e IIB T5 Gb
Europe (ATEX)	
Gas	NEMKO 03 ATEX 064 ⟨Ex⟩ II 2 G Ex d e IIB T5 Gb
Certifications and certificates	
Certificates	IECEx, ATEX, Canada (CSA), USA

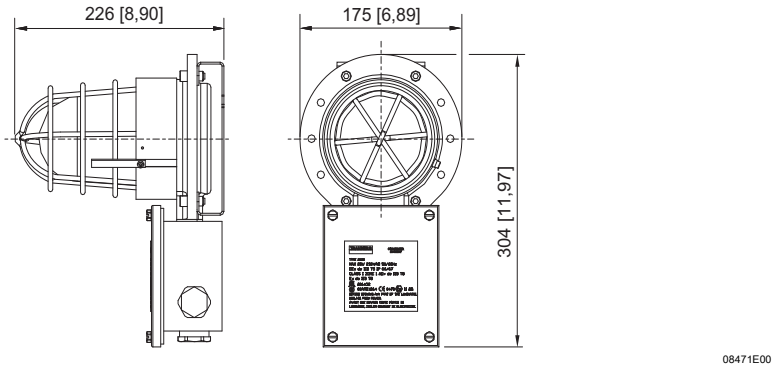
Technical Data

Electrical data	
Rated voltage	120 V AC 60 Hz 230 V AC 50 Hz 24 V DC
Power consumption	R7S max. 20 W
Luminous characteristics	
Light intensity	> 10 candela red > 70 candela yellow > 80 candela white
Ambient conditions	
Ambient temperature	-30 ... +40 °C
Mechanical data	
Degree of protection	IP66 / IP67
Material	cast copper alloy globe: polycarbonate lexan
Cable glands	4 x M25 stopping gland 1 x M25 cable glands

Accessories and Spare Parts

Designation	Description	Order number	Art. no.
Fluorescent tube	7 W	**TEF9400032**	**165826**
	PLC 13 W 120 V	**TEF9400064**	**165848**
	PLC 10 W / 827 G24, 24 V	**TEF9400071**	**170668**
Light fitting insert	230 V, complete	**TEF1671**	**170669**
	120 V AC, complete	**TEF3059**	**170670**
	24 V DC, complete	**TEF3191**	**170671**
Lamp holder	G23	**TEF50880031**	**170672**
Globe	clear	**TEF1223**	**170673**
	green	**TEF1224**	**170674**
	red	**TEF1225**	**170675**
	yellow	**TEF1226**	**170676**
	blue	**TEF1227**	**170677**
	yellow amber	**TEF2036**	**170678**
O-Ring	for globe / guard ring	**TEF50008009**	**170679**
Cable gland	cable gland, M25	**TEF9147200**	**165825**
Reactor	fluor. tube 2 x 7 W, 230 V / 240 V 50 / 60 Hz	**TEF50860035**	**165823**
	fluor. tube 2 x 7 W, 230 V / 240 V 50 / 60 Hz	**TEF50860031**	**170680**

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



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16776E00

- Rugged construction
- Complies with: ICAO Annex 14 Vol. 1 Ch. 6 Low Intensity Type B
- Low maintenance
- Low power consumption
- Resistant to vibrations
- Long lifetime expectary
- Integrated drain plug

	ATEX					
Zone	0	1	2	20	21	22
For use in			x			

Applications

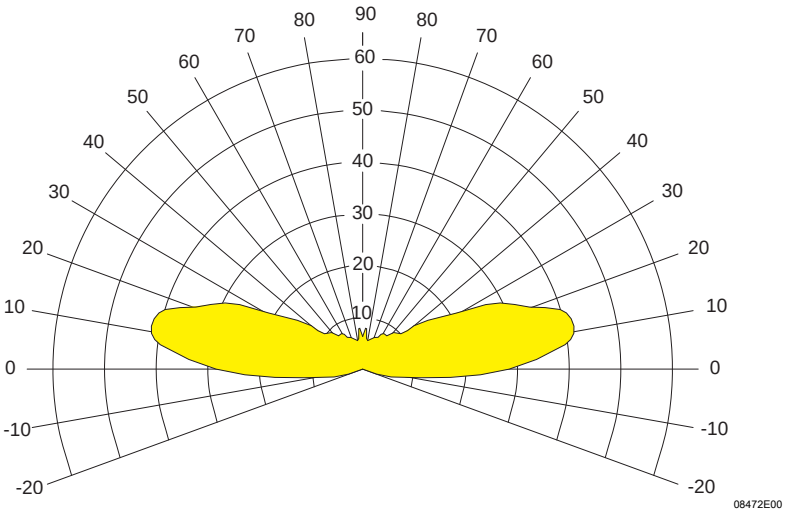
- Aircraft obstruction light
- Marker / warning light
- Cranes

Selection Table

Version	Rated voltage	Colour of glass	Order number	Art. no.
Red obstruction light Series TEF 2440 LED	230 V AC	red	**TEF2440160**	**170636**
	120 V AC	red	**TEF2440161**	**170637**
	24 V AC / DC	red	**TEF2440162**	**170638**

WebCode T2440B

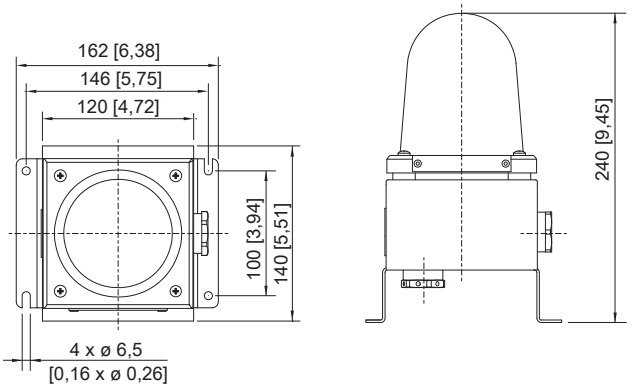
Technical Data

Electrical data	
Rated voltage	24 V AC / DC, 120 V AC, 230 V AC
Power consumption	max. 10 W
Luminous characteristics	
Light intensity	32 cd.
Luminous intensity distribution	
Ambient conditions	
Ambient temperature	-30 ... +45 °C
Mechanical data	
Degree of protection	IP66
Service life	light source: min. 50,000 working hours
Material	
Enclosure	acid proof stainless steel, powder coated (RAL 9002)
Globe	polycarbonate
Colour of glass	red
Cable entries	2 x M 25, delivered with 2 x cable glands M 25

Accessories and Spare Parts

Designation	Description	Order number	Art. no.	Weight kg
Globe	Red globe with LED's, without gasket	**TEF4417**	**170639**	0.750
LED driver	LED driver 230 V AC	**TEF50860079**	**165834**	1.300
	LED driver 120 V AC	**TEF50860089**	**165835**	1.300
	LED driver 24 V AC / DC	**TEF4399**	**165831**	0.150
Cable gland	cable gland, M25	**TEF9147200**	**165825**	0.970
	stopping plug EEx e, M25	**TEF7947304**	**165845**	0.600

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



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06432E00

- Application
  - deck lighting
  - signal lighting
  - obstacle marking
- Rugged construction
- Easy to install and maintain
- Degree of protection IP66 / IP67
- Long lamp life due to compact fluorescent tube
- Versatility offering variable mounting positions
- Optional internal lamp reflector
- Wide range of coloured globes available
- Short ignition time at low temperatures
- Resistant to vibrations

	ATEX					
Zone	0	1	2	20	21	22
For use in			x			

Applications

- Deck lighting
- Signal lighting
- Obstacle marking
- Zone 2 and safe area

WebCode T2440A

Selection Table

Version	Lamps	Rated voltage	Colour of glass	Order number	Art. no.	Weight kg
Signal light Series TEF 2440	1 x 13 W	230 V AC	clear	**TEF2440000**	**165849**	1.900
			green	**TEF2440001**	**165850**	1.900
			red	**TEF2440002**	**165851**	1.900
			amber	**TEF2440003**	**165836**	1.900
			blue	**TEF2440004**	**165837**	1.900
			yellow	**TEF2440103**	**165854**	1.900
		120 V AC	clear	**TEF2440017**	**165853**	1.900
			red	**TEF2440016**	**165852**	1.900
			amber	**TEF2440015**	**165838**	1.900
			blue	**TEF2440018**	**165839**	1.900

Explosion Protection

Europe (ATEX)	
Gas	NEMKO 03ATEX3336 Ⓔx II 3 G EEx nA II T3/T4
Certifications and certificates	
Certificates	ATEX

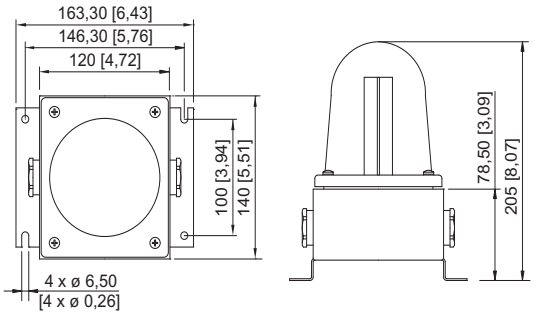
Technical Data

Electrical data	
Rated voltage	230 V AC 50/60 Hz 120 V AC 60 Hz
Power consumption	18 W
Luminous characteristics	
Lamp version	PL-C compact fluorescent tube, max. 13 W
Lamp holder	G 24 D / 1
Light intensity	> 10 cd red > 80 cd yellow > 90 cd white
Ambient conditions	
Ambient temperature	-25 ... +45 °C
Mechanical data	
Degree of protection	IP66 / IP67
Material	
Enclosure	acid proof stainless steel, powder coated (RAL 9002)
Globe	polycarbonate
Colour of glass	white, yellow, red, blue, green and amber
Cable entries	1 x cable gland M25 1 x stopping plug M25

Accessories and Spare Parts

Designation	Description	Order number	Art. no.	Weight kg
Globe	clear, spare part kit	**TEF2548**	**165855**	0.180
	green, spare part kit	**TEF2592**	**165857**	0.180
	red, spare part kit	**TEF2553**	**165856**	0.180
	yellow amber, spare part kit	**TEF2593**	**165842**	1.800
	blue, spare part kit	**TEF2604**	**165858**	0.180
Ballast	ballast and lamp holder, spare part kit	**TEF2510**	**165840**	3.980
Fluorescent lamps	PLC 13 W / 84 230 V	**TEF9400060**	**165846**	0.060
	PLC 10 W / 84 230 V	**TEF9400062**	**165847**	0.060
	PLC 13 W 120 V	**TEF9400064**	**165848**	0.060

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



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Obstruction Light LED
Series TEF 2460

TRANBERG®

16760E00

- Complies with: ICAO Annex 14 Vol. 1 Ch. 6, Low intensity type A or B
- Integrated terminal box with drain plug/breather
- Low maintenance
- Rugged construction
- Encapsulated electronics. No risk of water intrusion to LED's and electronics
- Instant light
- Resistant to vibrations

www.stahl.de

	ATEX / IECEx					
Zone	0	1	2	20	21	22
For use in		x	x			

Applications

- Obstruction light
- General marking / warning light
- Zone 1, zone 2 and safe area

WebCode T2460A

Selection Table

Version	Lamps	Light intensity	Voltage	Order number	Art. no.
Obstruction Light LED Series TEF 2460	red LED	10 cd	24 V DC ± 30%	**TEF2460166**	**240990**
			100 - 254 V AC	**TEF2460165**	**240989**
		32 cd	24 V DC ± 30%	**TEF2460162**	**240988**
			100 - 254 V AC	**TEF2460160**	**241027**
	red + IR version is NVG compatible	10 cd	24 V DC ± 30%	**TEF2460168**	**241032**
		32 cd	24 V DC ± 30%	**TEF2460167**	**241031**

Explosion Protection

Global (IECEx)	
Gas	IECEx Pre 14.0009 Ex e mb op is IIC T5 Gb
Europe (ATEX)	
Gas	PRESAFE 14 ATEX 4571
Certifications and certificates	
Certificates	IECEx, ATEX

Technical Data

Electrical data	
Rated voltage	100 - 254 V AC 24 V DC ± 30%
Power consumption	4 - 10 W (depending on the version)
Service life	Min. 50,000 working hours
Luminous characteristics	
Light intensity	> 32 cd and 10 cd versions, according ICAO Annex 14 Vol. I, low intensity type A and B
Ambient conditions	
Ambient temperature	-55 ... +55 °C
Operating temperature	-40 ... +55 °C
Mechanical data	
Degree of protection	IP66
Cable glands	2 x M25 x 1.5

Accessories and Spare Parts

Designation	Description	Order number	Art. no.
Dome with gasket	– –	**TEF5631**	**241040**
Screw	M5x16 red. shank	**TEF51013028**	**241045**
Drain plug	M25 - 9 mm	**TEF7302101**	**169899**
Stopping plugs	M25	**TEF6502500**	**241043**
Cable glands	M25 ∅11-15/15-20 mm	**TEF6222502**	**241042**
Terminal insert	– –	**TEF5632**	**241041**

13913E00

- 8 LED array flashing or status beacon
- High light intensity
- Long life LED design
- Available in six different colours
- Flame retardant ABS enclosure
- Up to 4 modules in any combination of colours

Visual signal designed for use in hazardous environments. Product series FD40IS is a flashing signal. Product series SD40IS provides a steady signal for status indication.

	ATEX					
Zone	0	1	2	20	21	22
For use in	x	x	x	x	x	x

Explosion Protection	
Europe (ATEX)	
Gas and dust	Baseefa05ATEX0075 II 1G Ex ia IIC T4 Ga II 1D Ex ia IIIC T190°C Da
Certifications and certificates	
Certificates	ATEX, India (PESO)

WebCode FD_SD40ISA

Selection Table

Version	Base colour	Rated operational voltage	Lens colour	Order number	Art. no.	Weight kg
Instrinsically Safe LED Visual Flashing Signal FD40IS signal, ATEX certification, standard single module devices	red normal (RN)	16.2 ... 26.4 V	amber	**FD40IS/X/A/RN**	**207067**	0.150
			red	**FD40IS/X/R/RN**	**205111**	0.150
			green	**FD40IS/X/G/RN**	**212407**	0.150
			opal	**FD40IS/X/O/RN**	**212408**	0.150
			blue	**FD40IS/X/B/RN**	**212409**	0.150
			clear	**FD40IS/X/C/RN**	**212410**	0.150
Instrinsically Safe LED Visual Status Signal SD40IS signal, ATEX certification, standard single module devices	red normal (RN)	16.2 ... 26.4 V	amber	**SD40IS/X/A/RN**	**212403**	0.150
			red	**SD40IS/X/R/RN**	**205460**	0.150
			green	**SD40IS/X/G/RN**	**209638**	0.150
			opal	**SD40IS/X/O/RN**	**212404**	0.150
			blue	**SD40IS/X/B/RN**	**212405**	0.150
			clear	**SD40IS/X/C/RN**	**212406**	0.150

Selection Table

Version

FD/SD40IS signal, devices according to specification

Type code:
please fill in lens colour

- single device
- double device
- triple device
- quadruple device

lens colour					
= amber	= red	= green	= opal	= blue	= clear
A	R	G	O	B	C
A	R	G	O	B	C
A	R	G	O	B	C
A	R	G	O	B	C

Ordering code

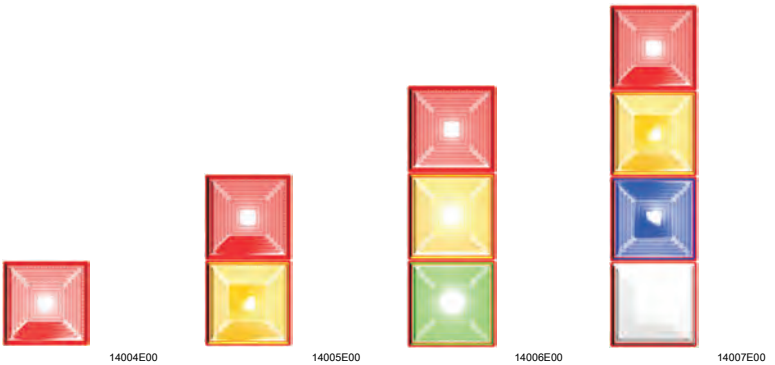
FD/SD40IS/X/ _ / **RN**
FD/SD40IS/2/X/ _ / _ / **RN**
FD/SD40IS/3/X/ _ / _ / _ / **RN**
FD/SD40IS/4/X/ _ / _ / _ / _ / **RN**

module (1)
module (2)
module (3)
module (4)

Note

Multiple module units are available. Contact your local sales office for details.

example module combinations



	Single device	Double device	Triple device	Quadruple device
base colour	red normal (RN)			

Technical Data

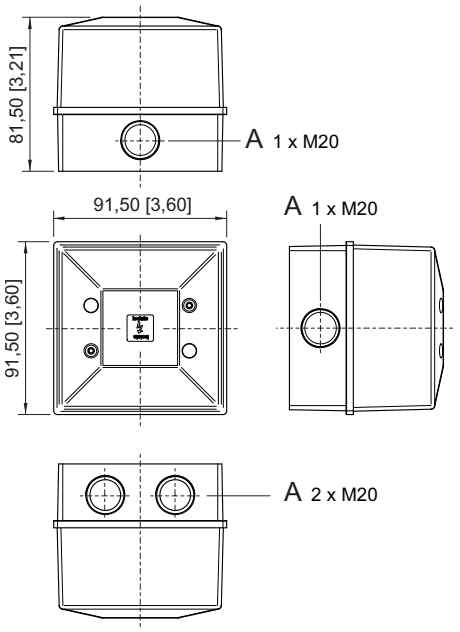
Electrical data			
Rated operational voltage	16.2 ... 26.4 V		
Current consumption	Power supply	Certified barrier / isolator parameters	Current consumption
	24 V DC	28 V / 300 Ω	22 mA
	18 V DC*)	28 V / 300 Ω	14 mA
	*) Light output reduced		
Certified input parameters	U_i = 30 V		
	I_i = 200 mA		
	P_i = 0.7 W		
	C_i = 0		
	L_i = 0		
Line monitoring	yes		
Luminous characteristics			
Light source	8 array LED		
Flash rate	1/s (FD40IS only)		
Lens colour	amber, red, green, opal, blue, clear		
Ambient conditions			
Operating temperature range	-25 ... +40 °C		
Storage temperature	-40 ... +70 °C		
Max. relative humidity	90 % at 40 °C		
Mechanical data			
Cable entries	1 x M20		
Material			
Enclosure	ABS, flame retardant		
Lens	polycarbonate, flame retardant		
Assembly parts	stainless steel fixings		
Labels	polyester foil, adhesive		
Degree of protection	IP65 acc. to IEC 60529		
Mounting / Installation			
Mounting	All units are supplied separately from the base for ease of installation. The base should be mounted to a reasonably flat surface or bulkhead. A gasket is supplied, should the surface be uneven, or if the unit is to be used in wet conditions. The installation is completed by fitting the beacon onto the base by means of the supplied screws.		
Connection	Each beacon should be wired independently. 2.5 mm^2 terminals		

Accessories and Spare Parts

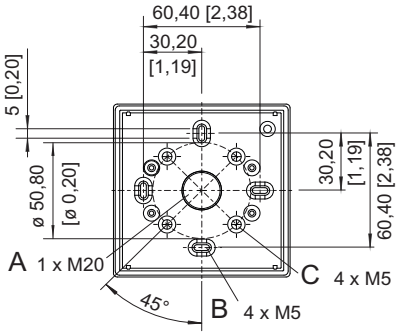
Designation	Figure	Description	Order number	Art. no.	WebCode
Safety barrier	 02326E00	single channel	**9001/01-280-085-101**	**158351**	9001A
		dual channel	**9002/11-280-186-001**	**158848**	9002A
Galvanic isolator	 12530E00	**9176/1x-15-xx (1 channel)** single channel	**9176/10-15-00s**	**160472**	9176A
		9176/2x-15-xx (2 channels) dual channel	**9176/20-15-00s**	**165567**	9176A
Cabel gland	 13027E00	8161/8-M20-1304 4 ... 13 mm^2 50 pieces (delivery lot*))	**8161/8-M20-1304**	**239164**	8161A

*) Purchase order quantity in [pieces], the delivery quantity is automatically rounded to the delivery lot.

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



13984E



16547E00

A = knockout hole
B = drill hole
C = knockout hole

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E5

13915E00

- Light weight glass reinforced polyester (GRP) Ex d enclosure
- Weather resistant high performance red paint finish as standard
- Break glass version supplied with test key
- Push button version supplied with reset key and lift flap
- Optional extras include stainless steel lift flap, duty and tag labels

www.stahl.de

Yodalex range
Manual call points designed for use in hazardous or harsh environments

	ATEX / IECEx					
Zone	0	1	2	20	21	22
For use in		x	x		x	x

Explosion Protection	
Global (IECEx)	
Gas and dust	IECEx BAS 08.0089X IEC 60079-0: 2011 / IEC 60079-1: 2007-04 / IEC 60079-31: 2008 Ex d IIC T6 Ta -55 ... +70°C Gb Ex tb IIIC T85°C Ta -55 ... +70°C Db IP66
Europe (ATEX)	
Gas and dust	Baseefa 08ATEX0269X EN 60079-0: 2009 / EN 60079-1: 2007 / EN 60079-31: 2009 Ⓔx II 2 G Ex d IIC T6 Ta -55 ... +70°C Gb Ⓔx II 2 D Ex tb IIIC T85°C Ta -55 ...+70°C Db IP66
Certifications and certificates	
Certificates	IECEx, ATEX, Brazil (INMETRO), India (PESO), Kazakhstan (GOST K), Russia (GOST R)

WebCode MCPA

Versions

14716E00

Break Glass (BG)

04035E00

Push Button (PB)

Selection Table

Version	Version	Enclosure colour	Order number	Art. no.	Weight kg
MCP Manual Call Points, ATEX certification, standard devices	Break Glass (BG)	red normal (R)	**MCP / BG / SP / Ex / A+B+C+D / EU / R**	**205324**	1.000
	Push Button (PB)	red normal (R)	**MCP / PB / SP / Ex / A+B+C+D / EU / R**	**205334**	1.000
MCP Manual Call Points, IECEx certification, standard devices	Break Glass (BG)	red normal (R)	**MCP / BG / SP / EX / A+B+C+D / IN / R**	**212400**	1.000
	Push Button (PB)	red normal (R)	**MCP / PB / SP / Ex / A+B+C+D / IN / R**	**212401**	1.000
MCP Manual Call Points, GOST R certification, standard devices	Break Glass (BG)	red normal (R)	**MCP / BG / SP / EX / A+B+C+D / RU / R**	**212402**	1.000
	Push Button (PB)	red normal (R)	**MCP / PB / SP / Ex / A+B+C+D / RU / R**	**206660**	1.000
Note	Accessories, variations and different unit colours are available, to order these please use the table below				

Type Code

Variations			MCP / _ / _ / _ / _ / _ / _ / _ / _ / _ / _ / _ / _
Version	break glass	BG	
	push button	PB	
Contacts	1 change over	SP	
	2 change over	DP	
Explosion protection	standard	Ex	
Cable entries	standard 4 x M20 with 3 x Ex d stopping plugs and 1 x dust cap glands to be ordered separately	A+B+C+D	
Certification	ATEX	EU	
	IECEx	IN	
	GOST R	RU	
Colour	red	R	
	blue	B	
	green	G	
	yellow	Y	
	black	BK	
	yellow / black stripe	YB	
Accessories	lift flap (break glass version only)	LF	
	end of line resistor	EOL	
	inline resistor	IL	
	end of line and Inline resistor	ILEOL	
	LED signal	LED	
Labels (please specify wording)	duty label	D	
	tag label	T	
Additional approvals		L	

Technical Data

Electrical data	
Rated operational voltage	12 ... 50 V DC, 12 ... 250 V AC
Switching capacity	DC 12 ... 30 V 3 A 30 ... 50 V 1 A AC 12 ... 250 V 5 A
Contact element	standard: 1 change-over contact optional: 2 change-over contacts
Switch	NO or NC
System test	Test key provided
Ambient conditions	
Operating temperature range	-40 ... +70 °C
Mechanical data	
Material	
Enclosure material	glass fibre reinforced polyester (GRP)
Surface finish	two pack, acrylic polyurethane, various colour options
Degree of protection	IP66 acc. to IEC 60529
Cable entries	4 cable entries, supplied with (3x) Ex d stopping plugs and (1x) dust cap
Position of cable entries	

13952E00

Break glass call point

Break glass call point with lift flap

16555E00 13951E00

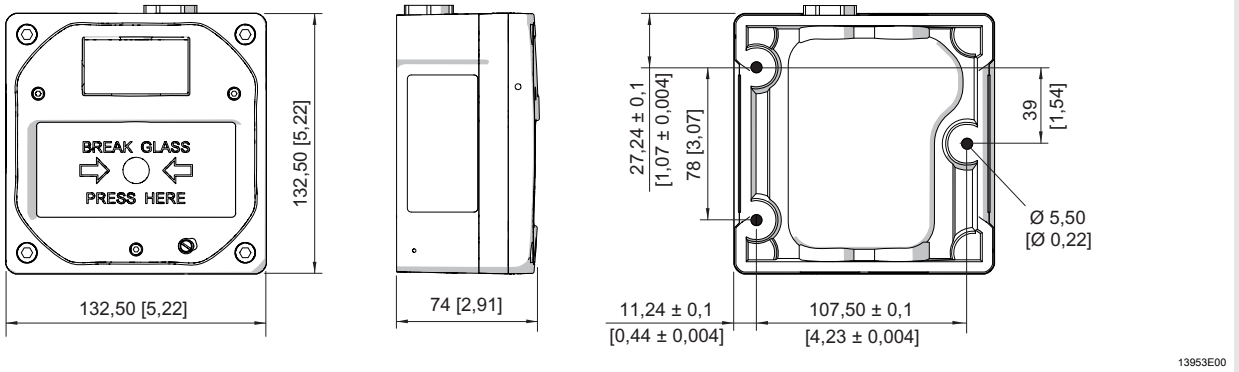
Push button call point

Connection	
Terminals	7 way terminal block., 4 mm^2
Earth connection	provided as standard
Accessories	
LED status indication	optional: red LED status indication (up to 24 V DC)
Lift flap	stainless steel (break glass version only)
Duty label	Metalised polyester, customer to specify wording / symbols (see main picture for example)
Tag label	Stainless steel tag with polyester label, customer to specify max 9 characters
Resistors	Customer to specify value
Mounting / Installation	
Assembly	via holes through the back box see operating instruction for full details

Accessories and Spare Parts

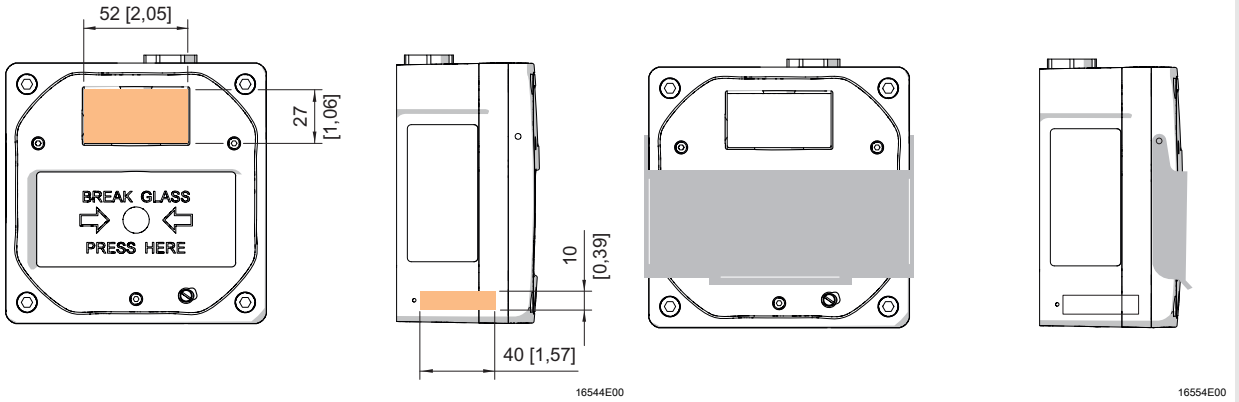
Designation	Figure	Description	Group	Order number	Art. no.	WebCode
Cable gland	 14976E00	Compound Barrier Cable Glands Ex d and Ex e for all Types of Unarmoured Cables	IIB + H_2 and IIC	**8163/2-20-PXSS2K-M20**	**138888**	8163J
	 14742E00	Compound Barrier Cable Glands Ex d and Ex e for all Types of Armoured Cables	IIB + H_2 and IIC	**8163/2-20-PX2K-M20**	**138875**	8163I
Note	Approvals of cable entries have to be observed.					

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



Break glass manual call point

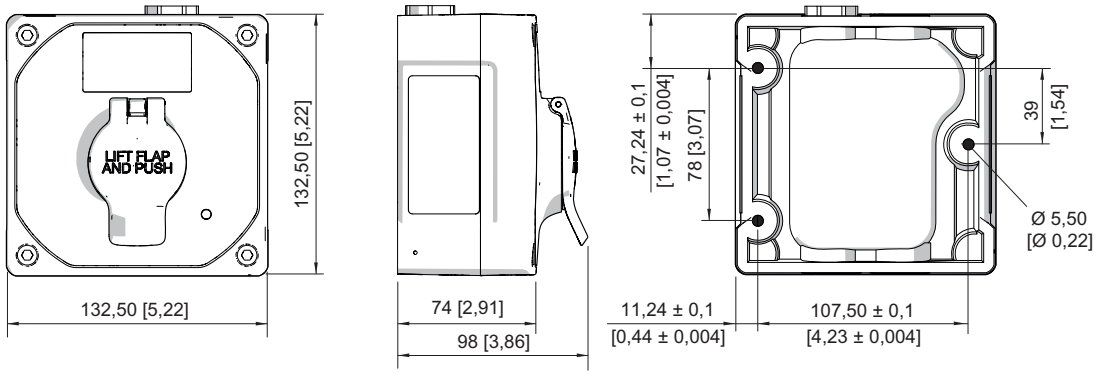
Accessories



Duty label | Tag label | Lift flap

E5

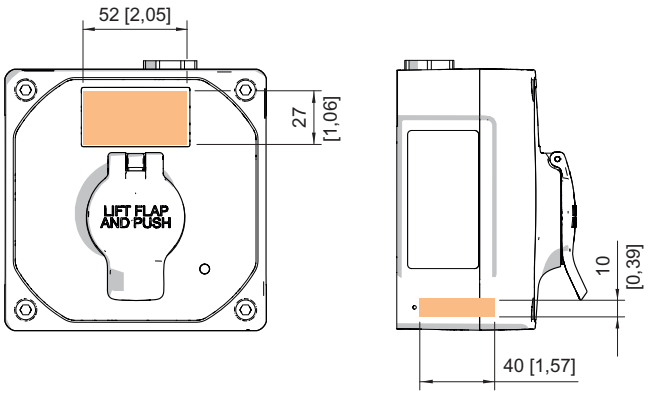
Dimensional Drawings (All Dimensions in mm [inches]) - Subject to Alterations



13954E00

Push button manual call point

Accessories



16545E00

Duty label

Tag label

We reserve the right to make alterations to the technical data, dimensions, weights, designs and products available without notice. The illustrations cannot be considered binding.

00944E00

- Fire alarm stations with emergency hammer
- Three versions are available
  - with break glass mushroom stay-put button
  - with break glass mushroom stay-put button with key lock
  - with break glass mushroom pushbutton
- Enclosure made of glass fibre reinforced polyester resin
- Colour red (RAL 3000)

The fire alarm station Series 8146/5052 is used for manual alarm triggering in hazardous areas. The enclosure is made of robust glass fibre reinforced polyester. The emergency hammer positioned at the side can be used to break the glass pane quickly in case of emergency and trigger the alarm. In total, three versions are available.
With mushroom stay-put button: To trigger alarm, break the glass pane and press the button. To disable alarm, turn the button.
With mushroom stay-put button with key lock: To trigger alarm, break the glass pane and press the button. To disable alarm, turn the key.
With mushroom button: Automatic alarm triggering by means of the preloaded mushroom button after breaking the glass pane. The subsequent installation of a resistor module Series 8208 allows short-circuit protection and open-circuit monitoring for this model.

	ATEX / IECEx					
Zone	0	1	2	20	21	22
For use in		x	x		x	x

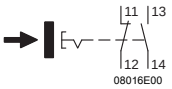
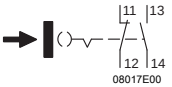
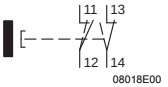
	Class I (NEC 505)			(NEC 506)		
Zone	0	1	2	20	21	22
For use in		x	x			

	Class I		Class II		Class III	
Division	1	2	1	2	1	2
For use in		x		x	x	x

WebCode 8146G

Clifford &Snell

Selection Table

Version	Schematic	Description	Order number	Art. no.	Weight kg
Break glass mushroom stay-put button	 08016E00	press to activate, turn to reset	**8146/5052-C796**	**136126**	2.270
Break glass mushroom stay-put button with key lock	 08017E00	press to activate, turn the key to reset	**8146/5052-C797**	**136128**	2.270
Break glass mushroom pushbutton	 08018E00	activates the alarm automatically after the glass pane has been broken	**8146/5052-C814**	**136137**	2.270

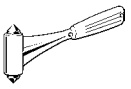
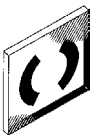
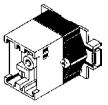
Explosion Protection

Global (IECEx)	
Gas and dust	IECEx PTB 06.0025 Ex d e ia ib [ia Ga] mb q IIA, IIB, IIC, T6, T5, T4 Gb Ex tb IIIC T80°C, T95°C, T130°C Db
Europe (ATEX)	
Gas and dust	PTB 01 ATEX 1105 ⟨Ex⟩ II 2 G Ex d e ia ib [ia Ga] mb q IIA, IIB, IIC, T6, T5, T4 Gb ⟨Ex⟩ II 2 D Ex tb IIIC T80°C, T95°C, T130°C Db
Certifications and certificates	
Certificates	IECEx, ATEX, Brazil (INMETRO), China (China-Ex), Canada (CSA), Kazakhstan (operating license), Russia (GOST R), Ukraine (TR), USA (UL), Belarus (GOST B)

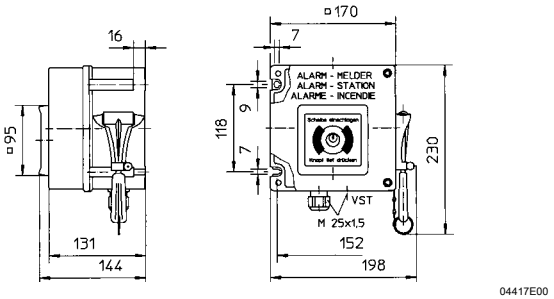
Technical Data

Device version	
Design	according to DIN 14678 (non-automatic alarm station K)
Electrical data	
Rated operational voltage	max. 500 V
Rated operational power according to utilization category	AC-15: max. 400 V, max. 6 A, max. 1000 VA DC-13: max. 110 V, max. 6 A, max. 110 W
Switching capacity	see technical data of the contact element 8082/3
Contacts	1 NC + 1 NO
Ambient conditions	
Ambient temperature	-20 ... +40 °C (-40 ... +60 °C on request)
Mechanical data	
Degree of protection	IP66 acc. IEC/EN 60529
Material	
Enclosure	Glass fibre reinforced polyester resin, red (RAL 3000)
Cover lock	captive triangle head bolts made of stainless steel, thread M6, wrench M4
Connection type	2.5 mm^2 finely stranded
Mounting / Installation	
Cable glands	1 x M25 x 1.5
Clamping range	7 ... 17 mm
Resistor module	Complete retrofit kit in the control unit 8208 with integrated resistors for open-circuit monitoring and short-circuit protection. Resistance values according to order (adaptation to the signalling system)

Accessories and Spare Parts

Designation	Figure	Description	Art. no.	Weight kg
Emergency hammer	 08983E00	for breaking the glass pane in case of emergency	**163079**	0.070
Glass pane	 05551E00	for 8146/5052-C...	**155971**	0.034
Key	 10545E00	standard locking MS1	**107109**	0.008
Adhesive label	 05124E00	text "Fire service" according to DIN 14678	**137569**	0.001
Resistor module	 05552E00	Retrofit kit in the control unit 8208 equipped with 2 resistors according to customer request; e.g. 3.3 kΩ open-circuit monitoring 4.7 kΩ short-circuit protection	**157015**	0.100
Triangular socket wrench	 14845E00	special wrench for triangle head bolts	**140482**	0.044

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



8146/5052-C796, -C797 and -C814 fire alarm stations

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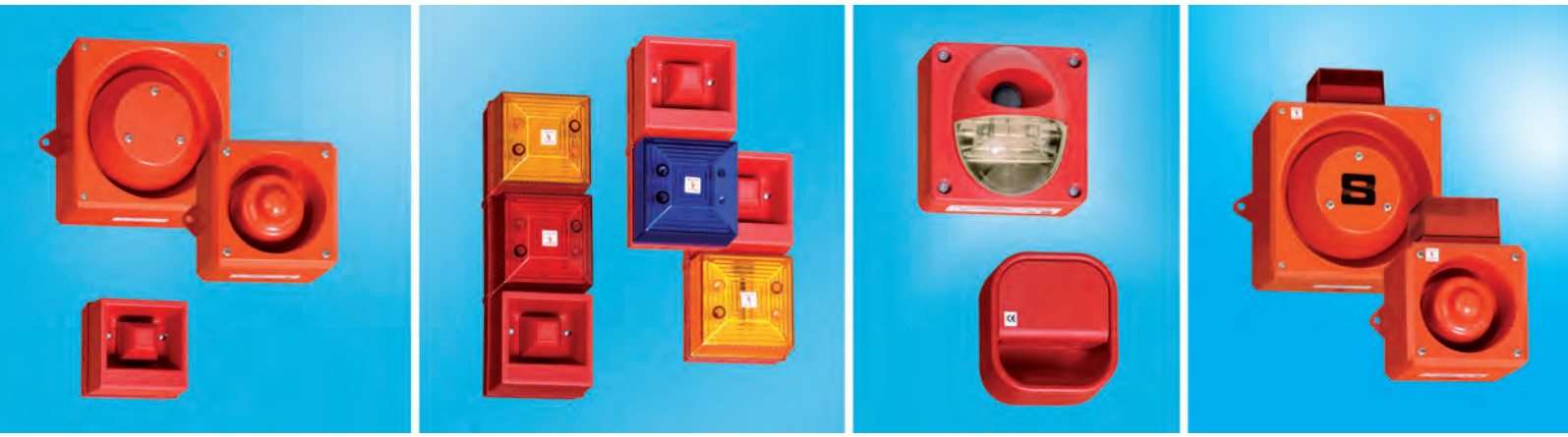
E5



Industrial Area

Industrial Combination Signal 120 dB (A) / 5 Joule
Series YL80 Super

Clifford &Snell

14599E00

- Max sound output 120 db (A) / 1 m
- IP65 rated as standard
- 5 Joule strobe
- 32 selectable tones meeting international regulations
- Flame retardant ABS enclosure
- Stainless steel fixings
- 2 stage alarm
- Independently selectable second stage
- Lens available in six different colours
- Low current consumption

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Yodalight range
120 dB multi-purpose audible and visual signalling device designed for use in industrial applications.

Approvals

Certificates	UL LISTED 5N93	UL 1638, UL 464
	CE 0086-CPD-96705	BS EN 54-3 : 2001 incorporates amendment A 1 : 2002 + A2: 2006
	KM 91259	BS EN 54-3 : 2001 incorporates amendment A 1 : 2002 + A2: 2006
	Note	**Information for European users of the YL80 Super combination device:** The optical device/beacon cannot be used as part of a fire alarm system. Only the sounder has been certified to the relevant EN54 standard.

WebCode YL80SuperA

Selection Table

Version	Enclosure colour	Flash energy	Rated operational voltage	Lens colour	Order number	Art. no.	Weight kg
YL80 Super Sounder/ Strobe combination, BS EN 54-3, standard devices	red flame (RF)	5 J	24 V DC	amber	**YL80/D50/A/RF/SU/WR**	**204675**	3.210
				red	**YL80/D50/R/RF/SU/WR**	**204695**	3.210
				green	**YL80/D50/G/RF/SU/WR**	**212083**	3.210
				opal	**YL80/D50/O/RF/SU/WR**	**212084**	3.210
				blue	**YL80/D50/B/RF/SU/WR**	**210182**	3.210
				clear	**YL80/D50/C/RF/SU/WR**	**212085**	3.210
			115 V AC	amber	**YL80/L50/A/RF/SU/WR**	**212086**	3.580
				red	**YL80/L50/R/RF/SU/WR**	**211033**	3.580
				green	**YL80/L50/G/RF/SU/WR**	**212087**	3.580
				opal	**YL80/L50/O/RF/SU/WR**	**212088**	3.580
				blue	**YL80/L50/B/RF/SU/WR**	**212089**	3.580
				clear	**YL80/L50/C/RF/SU/WR**	**212090**	3.580
			230 V AC	amber	**YL80/N50/A/RF/SU/WR**	**204717**	3.580
				red	**YL80/N50/R/RF/SU/WR**	**204735**	3.580
				green	**YL80/N50/G/RF/SU/WR**	**212091**	3.580
				opal	**YL80/N50/O/RF/SU/WR**	**212092**	3.580
				blue	**YL80/N50/B/RF/SU/WR**	**205458**	3.280
				clear	**YL80/N50/C/RF/SU/WR**	**212365**	3.580
Note	Other voltages and variants are available. Please contact your local sales office for more details						

Technical Data

Electrical data

Rated operational voltage	24 or 48 V DC 115 or 230 V AC	
Current consumption	24 V DC	847 mA
	230 V AC	172 mA
		at tone 1
Operational parameters	+ or - 10% of nominal	
Line monitoring	3 wire, 2 stage or 2 wire, single stage: monitor via reverse polarity 2 wire, 2 stage i.e. bi-polar inputs: monitor via threshold (applied voltage < 1 V)	

Acoustic data

Volume	Max. 120 dB (A)
Sound stages	2 independantly selectable
Sound selection	via DIL switch

Luminous characteristics

Light source	Xenon flash tube
Flash energy	5 J
Flash rate	1 per second

Light intensity

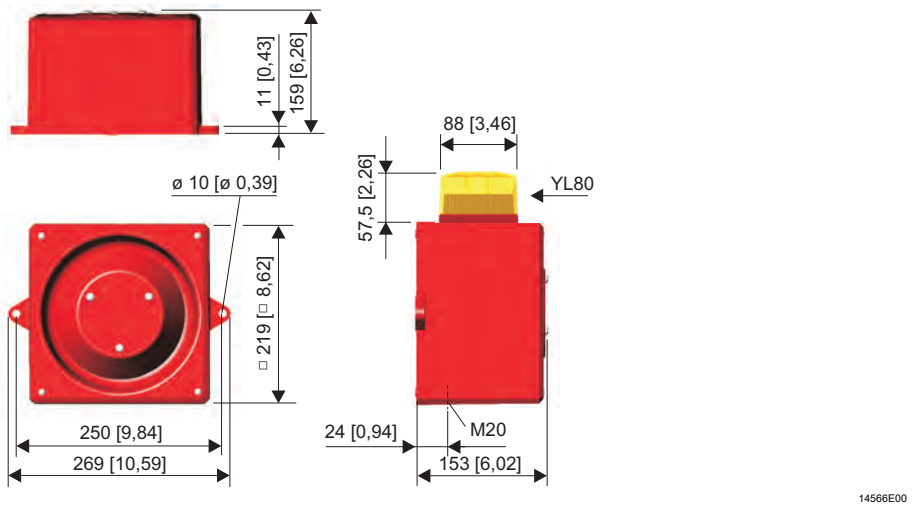
	Effective candela (cd)	Candela Seconds
clear	72.10	14.44
red	8.92	1.186
amber	25.52	5.111
blue	14.09	2.82
green	29.70	5.946
opal	65.78	13.17

Lens colour	amber, red, green, opal, blue, clear

Technical Data

Ambient conditions		
Operating temperature range	Standard variants:	-25 ... +55 °C
	UL certified variants:	-35 ... +66 °C
Storage temperature	- 40 ... + 70 °C	
Max. relative humidity	93% ± 3 at 40 °C	
Mechanical data		
Material		
Enclosure	flame retardant ABS	
Lens cover	Polycarbonate, flame retardant	
Assembly parts	stainless steel fixings	
Labels	polyester foil, adhesive	
Degree of protection	IP65 (IEC60529)	
Mounting / Installation		
Assembly	Should be mounted to a reasonably flat wall or bulkhead of suitable material using the lugs projecting from the side of the case. The lugs are bored 10 mm on 250 mm centres. The minimum recommended length of fixing screws is 30 mm. To maintain the integrity of the weather seal, the cable entry must be fitted using a suitable sealed gland.	
Connection	V DC variants separate input and output 2,5 mm^2 terminals V AC variants 2,5 mm^2 terminals	

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



We reserve the right to make alterations to the technical data, dimensions, weights, designs and products available without notice. The illustrations cannot be considered binding.

Industrial Combination Signal 116 dB (A) / 5 Joule
Series YL80

14709E00

- Max sound output 116 db (A) / 1 m
- IP65 rated as standard
- 5 Joule strobe
- 32 selectable tones meeting international regulations
- Flame retardant ABS enclosure
- Stainless steel fixings
- 2 stage alarm
- Independently selectable second stage
- Lens available in six different colours
- Low current consumption

Yodalight range
High output multi-purpose audible and visual signalling device designed for use in industrial applications.

Approvals

Certificates	LISTED 5N93	UL 1638, UL 464
	0086-CPD-96705	BS EN 54-3 : 2001 incorporates amendment A 1 : 2002 + A2 : 2006
	KM 91259	BS EN 54-3 : 2001 incorporates amendment A 1 : 2002 + A2 : 2006
	Note	**Information for European users of the YL80 combination device:** The optical device/beacon cannot be used as part of a fire alarm system. Only the sounder has been certified to the relevant EN54 standard.

WebCode YL80A

Selection Table

Version	Enclosure colour	Flash energy	Rated operational voltage	Lens colour	Order number	Art. no.	Weight kg
YL80 Sounder/ Strobe combination, BS EN 54-3, standards devices	red flame (RF)	5 J	24 V DC	amber	**YL80/D50/A/RF/WR**	**204678**	3.210
				red	**YL80/D50/R/RF/WR**	**204697**	3.210
				green	**YL80/D50/G/RF/WR**	**212022**	3.210
				opal	**YL80/D50/O/RF/WR**	**212024**	3.210
				blue	**YL80/D50/B/RF/WR**	**204684**	3.210
				clear	**YL80/D50/C/RF/WR**	**212025**	3.210
			115 V AC	amber	**YL80/L50/A/RF/WR**	**204703**	3.580
				red	**YL80/L50/R/RF/WR**	**204711**	3.580
				green	**YL80/L50/G/RF/WR**	**212026**	3.580
				opal	**YL80/L50/O/RF/WR**	**212027**	3.580
				blue	**YL80/L50/B/RF/WR**	**212028**	3.580
				clear	**YL80/L50/C/RF/WR**	**212029**	3.580
			230 V AC	amber	**YL80/N50/A/RF/WR**	**204720**	3.580
				red	**YL80/N50/R/RF/WR**	**204738**	3.580
				green	**YL80/N50/G/RF/WR**	**212030**	3.580
				opal	**YL80/N50/O/RF/WR**	**212061**	3.580
				blue	**YL80/N50/B/RF/WR**	**212062**	3.580
				clear	**YL80/N50/C/RF/WR**	**212063**	3.580
YL80 Sounder/ Strobe combination, UL certification	red flame (RF)	5 J	24 V DC	amber	**YL80/D50/A/RF/UL**	**204742**	3.210
				red	**YL80/D50/R/RF/UL**	**204743**	3.210
				green	**YL80/D50/G/RF/UL**	**212064**	3.210
				opal	**YL80/D50/O/RF/UL**	**212065**	3.210
				blue	**YL80/D50/B/RF/UL**	**212066**	3.210
				clear	**YL80/D50/C/RF/UL**	**212067**	3.210
			115 V AC	amber	**YL80/L50/A/RF/UL**	**204744**	3.580
				red	**YL80/L50/R/RF/UL**	**212068**	3.580
				green	**YL80/L50/G/RF/UL**	**212069**	3.580
				opal	**YL80/L50/O/RF/UL**	**212070**	3.580
				blue	**YL80/L50/B/RF/UL**	**212071**	3.580
				clear	**YL80/L50/C/RF/UL**	**212072**	3.580
			230 V AC	amber	**YL80/N50/A/RF/UL**	**209673**	3.580
				red	**YL80/N50/R/RF/UL**	**209674**	3.580
				green	**YL80/N50/G/RF/UL**	**212073**	3.580
				opal	**YL80/N50/O/RF/UL**	**212074**	3.580
				blue	**YL80/N50/B/RF/UL**	**212075**	3.580
				clear	**YL80/N50/C/RF/UL**	**212076**	3.580
Note	Other voltages and variants are available. Please contact your local sales office for more details						

Technical Data

Electrical data

Rated operational voltage	24 or 48 V DC 115 or 230 V AC	
Current consumption	24 V DC	615 mA
	115 V AC	218 mA
	230 V AC	167 mA
		at tone 1
Operational parameters	+ or - 10% of nominal	
Line monitoring	3 wire, 2 stage or 2 wire, single stage: monitor via reverse polarity 2 wire, 2 stage i.e. bi-polar inputs: monitor via threshold (applied voltage < 1 V)	

Acoustic data

Volume	max. 116 dB (A)
Sound stages	2 independently selectable
Sound selection	via DIL switch

Luminous characteristics

Light source	Xenon flash tube
Flash energy	5 J
Flash rate	1 per second

Light intensity

	Effective candela (cd)	Candela Seconds
clear	72.10	14.44
red	8.92	1.186
amber	25.52	5.111
blue	14.09	2.82
green	29.70	5.946
opal	65.78	13.17

Lens colour	amber, red, green, opal, blue, clear

Ambient conditions

Operating temperature range	Standard variants:	-25 ... +55 °C
	UL certified variants:	-35 ... +66 °C
Storage temperature	- 40 ... + 70 °C	
Max. relative humidity	93% ± 3 at 40 °C	

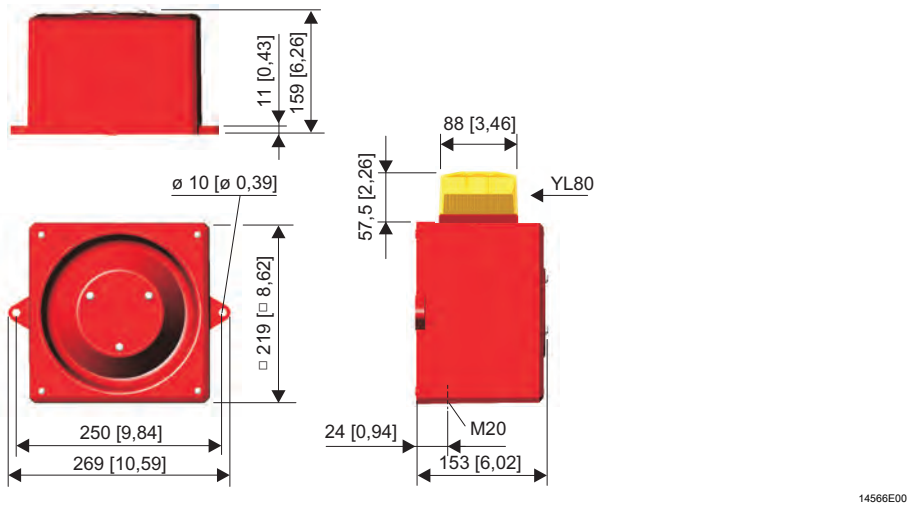
Mechanical data

Material	
Enclosure	flame retardant ABS
Lens cover	polycarbonate, flame retardant
Assembly parts	stainless steel fixings
Labels	polyester foil, adhesive
Degree of protection	IP65 (IEC60529)

Mounting / Installation

Assembly	Should be mounted to a reasonably flat wall or bulkhead of suitable material using the lugs projecting from the side of the case. The lugs are bored 10 mm on 250 mm centres. The minimum recommended length of fixing screws is 30 mm. To maintain the integrity of the weather seal, the cable entry must be fitted using a suitable sealed gland.
Connection	V DC variants separate input and output 2,5 mm^2 terminals V AC variants 2,5 mm^2 terminals

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



We reserve the right to make alterations to the technical data, dimensions, weights, designs and products available without notice. The illustrations cannot be considered binding.

05517E00

- Max sound output 110 db (A) / 1 m
- IP65 rated as standard
- 5 Joule strobe
- 32 selectable tones meeting international regulations
- Flame retardant ABS enclosure
- Stainless steel fixings
- 2 stage alarm
- Independently selectable second stage
- Lens available in six different colours
- Low current consumption

Yodalight range
Multi-purpose audible and visual signalling device designed for use in industrial applications.

Approvals

Certificates	UL LISTED 5N93	UL 1638, UL 464
	CE 0086-CPD-96705	BS EN 54-3 : 2001 incorporates amendment A 1 : 2002 + A2 : 2006
	KM 91259	BS EN 54-3 : 2001 incorporates amendment A 1 : 2002 +A2 : 2006
	VdS	EN54-3 : 2001 + A1 : 2002 + A2 : 2006 VdS 2504 (12/96), VdS 2203 (03/01), VdS 2344 (12/05), Cert No. G28702
		Marine Equipment Directive MED Module B BSI/MED/A.1/3.53/590299, Module D BSI/MED/PC/590302
	Note	**Information for European users of the YL50 combination device:** The optical device/beacon cannot be used as part of a fire alarm system. Only the sounder has been certified to the relevant EN54 standard.

WebCode YL50A

Clifford &Snell

Selection Table

Version	Enclosure colour	Flash energy	Rated operational voltage	Lens colour	Order number	Art. no.	Weight kg
YL50 Sounder/Strobe combination, BS EN 54-3 + MED, standard devices	red flame (RF)	5 J	24 V DC	amber	**YL50/D50/A/RF/WR**	**204815**	1.010
				red	**YL50/D50/R/RF/WR**	**204835**	1.010
				green	**YL50/D50/G/RF/WR**	**204825**	1.010
				opal	**YL50/D50/O/RF/WR**	**212038**	1.010
				blue	**YL50/D50/B/RF/WR**	**204821**	1.010
				clear	**YL50/D50/C/RF/WR**	**204823**	1.010
			115 V AC	amber	**YL50/L50/A/RF/WR**	**204609**	1.090
				red	**YL50/L50/R/RF/WR**	**204619**	1.010
				green	**YL50/L50/G/RF/WR**	**212039**	1.090
				opal	**YL50/L50/O/RF/WR**	**212040**	1.010
				blue	**YL50/L50/B/RF/WR**	**204613**	1.090
				clear	**YL50/L50/C/RF/WR**	**212041**	1.010
			230 V AC	amber	**YL50/N50/A/RF/WR**	**204627**	1.090
				red	**YL50/N50/R/RF/WR**	**204646**	1.010
				green	**YL50/N50/G/RF/WR**	**212042**	1.010
				opal	**YL50/N50/O/RF/WR**	**204639**	1.090
				blue	**YL50/N50/B/RF/WR**	**204633**	1.090
				clear	**YL50/N50/C/RF/WR**	**204635**	1.090
YL50 Sounder/Strobe combination, UL certification	red flame (RF)	5 J	24 V DC	amber	**YL50/D50/A/RF/UL**	**204656**	1.010
				red	**YL50/D50/R/RF/UL**	**204660**	1.010
				green	**YL50/D50/G/RF/UL**	**209662**	1.010
				opal	**YL50/D50/O/RF/UL**	**212043**	1.010
				blue	**YL50/D50/B/RF/UL**	**204658**	1.010
				clear	**YL50/D50/C/RF/UL**	**204659**	1.010
			115 V AC	amber	**YL50/L50/A/RF/UL**	**204662**	1.090
				red	**YL50/L50/R/RF/UL**	**204663**	1.010
				green	**YL50/L50/G/RF/UL**	**212044**	1.010
				opal	**YL50/L50/O/RF/UL**	**212045**	1.010
				blue	**YL50/L50/B/RF/UL**	**212046**	1.010
				clear	**YL50/L50/C/RF/UL**	**205456**	1.090
			230 V AC	amber	**YL50/N50/A/RF/UL**	**204664**	1.090
				red	**YL50/N50/R/RF/UL**	**204666**	1.010
				green	**YL50/N50/G/RF/UL**	**209669**	1.010
				opal	**YL50/N50/O/RF/UL**	**212047**	1.010
				blue	**YL50/N50/B/RF/UL**	**209667**	1.010
				clear	**YL50/N50/C/RF/UL**	**204665**	1.090
YL50 Sounder/Strobe combination, VDS certification	red flame (RF)	5 J	24 V DC	amber	**YL50/D50/A/RF/WR/VDS**	**212048**	1.010
				red	**YL50/D50/R/RF/WR/VDS**	**212049**	1.010
				opal	**YL50/D50/O/RF/WR/VDS**	**212051**	1.010
				clear	**YL50/D50/C/RF/WR/VDS**	**212053**	1.010
Note	Other voltages and variants are available. Please contact your local sales office for more details						

Technical Data

Electrical data

Rated operational voltage	24 or 48 V DC 115 or 230 V AC	
Current consumption	24 V DC	345 mA
	115 V AC	123 mA
	230 V AC	113 mA
		at tone 1
Operational parameters	+ or - 10% of nominal	
Line monitoring	line monitoring excludes additional voltage options: 3 wire, 2 stage or 2 wire, single stage: monitor via reverse polarity 2 wire, 2 stage i.e. bi-polar inputs: monitor via threshold (applied voltage < 1 V)	

Acoustic data

Volume	max. 110 dB (A)
Volume control	18 dB (A) adjustment
Sound stages	2 independantly selectable
Sound selection	via DIL switch

Luminous characteristics

Light source	Xenon flash tube
Flash energy	5 J
Flash rate	1 per second

Light intensity

	Effective candela (cd)	Candela Seconds
clear	72.10	14.44
red	8.92	1.186
amber	25.52	5.111
blue	14.09	2.82
green	29.70	5.946
opal	65.78	13.17

Lens colour: amber, red, green, opal, blue, clear

Ambient conditions

Operating temperature range	Standard variants:	-25 ... +55 °C
	VDS certified variants:	-25 ... +40 °C
	UL certified variants:	-35 ... +66 °C
Storage temperature	- 40 ... + 70 °C	
Max. relative humidity	93% ± 3 at 40 °C	

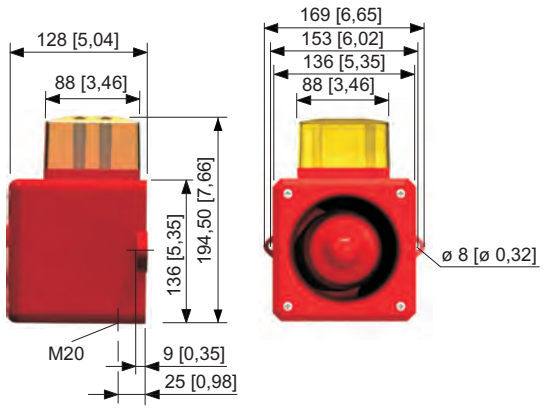
Mechanical data

Material	
Enclosure	flame retardant ABS
Lens cover	polycarbonate, flame retardant
Assembly parts	stainless steel fixings
Labels	polyester foil, adhesive
Degree of protection	IP65 (IEC60529)

Mounting / Installation

Assembly	Should be mounted to a reasonably flat wall or bulkhead of suitable material using the lugs projecting from the side of the case. The lugs are bored 8 mm on 153 mm centres. The minimum recommended length of fixing screws is 25 mm. To maintain the integrity of the weather seal, the cable entry must be fitted using a suitable sealed gland.
Connection	V DC variants separate input and output 2,5 mm^2 terminals V AC variants 2,5 mm^2 terminals

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



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14670E00

- Max sound output 106 db (A) / 1 m
- IP65 rated as standard
- 5 Joule strobe
- 32 selectable tones meeting international regulations
- Flame retardant ABS enclosure
- Stainless steel fixings
- 2 stage alarm
- Independently selectable second stage
- Lens available in six different colours
- Low current consumption

Yodalight range
Compact multi-purpose audible and visual signalling device designed for use in industrial applications.

Approvals

Certificates	UL LISTED 5N93	UL 1638, UL 464
	CE 0086-CPD-96705	BS EN 54-3 : 2001 incorporates amendment A 1 : 2002 + A2 : 2006
	KM 91259	BS EN 54-3 : 2001 incorporates amendment A 1 : 2002 + A2 : 2006
	VdS	EN54-3 : 2001 + A1 : 2002 + A2 : 2006 VdS 2504 (12/96), VdS 2203 (03/01), VdS 2344 (12/05), Cert No. G28702
		Marine Equipment Directive MED Module B BSI/MED/A.1/3.53/590299, Module D BSI/MED/PC/590302
	Note	**Information for European users of the YL40 combination device:** The optical device/beacon cannot be used as part of a fire alarm system. Only the sounder has been certified to the relevant EN54 standard.

WebCode YL40A

Clifford &Snell

Selection Table

Version	Enclosure colour	Flash energy	Rated operational voltage	Lens colour	Order number	Art. no.	Weight kg
YL40 Sounder/Strobe combination, BS EN 54-3 + MED, standard devices	red normal (RN)	5 J	24 V DC	amber	**YL40/D50/A/RN/WR**	**204507**	0.510
				red	**YL40/D50/R/RN/WR**	**204540**	0.510
				green	**YL40/D50/G/RN/WR**	**211992**	0.510
				opal	**YL40/D50/O/RN/WR**	**204527**	0.510
				blue	**YL40/D50/B/RN/WR**	**204518**	0.510
				clear	**YL40/D50/C/RN/WR**	**211993**	0.510
			115 V AC	amber	**YL40/L50/A/RN/WR**	**204552**	0.570
				red	**YL40/L50/R/RN/WR**	**204562**	0.570
				green	**YL40/L50/G/RN/WR**	**204557**	0.570
				opal	**YL40/L50/O/RN/WR**	**211994**	0.570
				blue	**YL40/L50/B/RN/WR**	**211995**	0.570
				clear	**YL40/L50/C/RN/WR**	**211996**	0.570
			230 V AC	amber	**YL40/N50/A/RN/WR**	**204570**	0.570
				red	**YL40/N50/R/RN/WR**	**204588**	0.570
				green	**YL40/N50/G/RN/WR**	**211997**	0.570
				opal	**YL40/N50/O/RN/WR**	**211998**	0.570
				blue	**YL40/N50/B/RN/WR**	**211999**	0.570
				clear	**YL40/N50/C/RN/WR**	**212000**	0.570
YL40 Sounder/Strobe combination, UL certification	red normal (RN)	5 J	24 V DC	amber	**YL40/D50/A/RN/UL**	**204595**	0.510
				red	**YL40/D50/R/RN/UL**	**204599**	0.510
				green	**YL40/D50/G/RN/UL**	**212001**	0.510
				opal	**YL40/D50/O/RN/UL**	**212002**	0.510
				blue	**YL40/D50/B/RN/UL**	**212003**	0.510
				clear	**YL40/D50/C/RN/UL**	**212004**	0.510
			115 V AC	amber	**YL40/L50/A/RN/UL**	**204600**	0.570
				red	**YL40/L50/R/RN/UL**	**204788**	0.570
				green	**YL40/L50/G/RN/UL**	**212005**	0.570
				opal	**YL40/L50/O/RN/UL**	**212006**	0.570
				blue	**YL40/L50/B/RN/UL**	**212007**	0.570
				clear	**YL40/L50/C/RN/UL**	**212008**	0.570
			230 V AC	amber	**YL40/N50/A/RN/UL**	**212009**	0.570
				red	**YL40/N50/R/RN/UL**	**210155**	0.570
				green	**YL40/N50/G/RN/UL**	**212010**	0.570
				opal	**YL40/N50/O/RN/UL**	**212011**	0.570
				blue	**YL40/N50/B/RN/UL**	**212012**	0.570
				clear	**YL40/N50/C/RN/UL**	**212013**	0.570
YL40 Sounder/Strobe combination, VDS certification	red normal (RN)	5 J	24 V DC	amber	**YL40/D50/A/RN/WR/VDS**	**212014**	0.510
				red	**YL40/D50/R/RN/WR/VDS**	**212015**	0.510
				opal	**YL40/D50/O/RN/WR/VDS**	**212017**	0.510
				clear	**YL40/D50/C/RN/WR/VDS**	**212019**	0.510
Note	Other voltages and variants are available. Please contact your local sales office for more details						

Technical Data

Electrical data

Rated operational voltage	24 or 48 V DC 115 or 230 V AC	
Current consumption	24 V DC	343 mA
	48 V DC	187 mA
	115 V AC	127 mA
	230 V AC	118 mA
		at tone 1
Operational parameters	+ or - 10% of nominal	
Line monitoring	line monitoring excludes additional voltage options: 3 wire, 2 stage or 2 wire, single stage: monitor via reverse polarity 2 wire, 2 stage i.e. bi-polar inputs: monitor via threshold (applied voltage < 1 V) monitor via reverse polarity	

Acoustic data

Volume	max. 106 dB (A)
Volume control	18 dB (A) adjustment
Sound stages	2 independantly selectable
Sound selection	via DIL switch

Luminous characteristics

Light source	Xenon flash tube
Flash energy	5 J
Flash rate	1 per second

Light intensity

	Effective candela (cd)	Candela Seconds
clear	72.10	14.44
red	8.92	1.186
amber	25.52	5.111
blue	14.09	2.82
green	29.70	5.946
opal	65.78	13.17

Lens colour: amber, red, green, opal, blue, clear

Ambient conditions

Operating temperature range	Standard variants:	-25 ... +55 °C
	VDS certified variants:	-25 ... +40 °C
	UL certified variants:	-35 ... +66 °C
Storage temperature	- 40 ... + 70 °C	
Max. relative humidity	93% ± 3 at 40 °C	

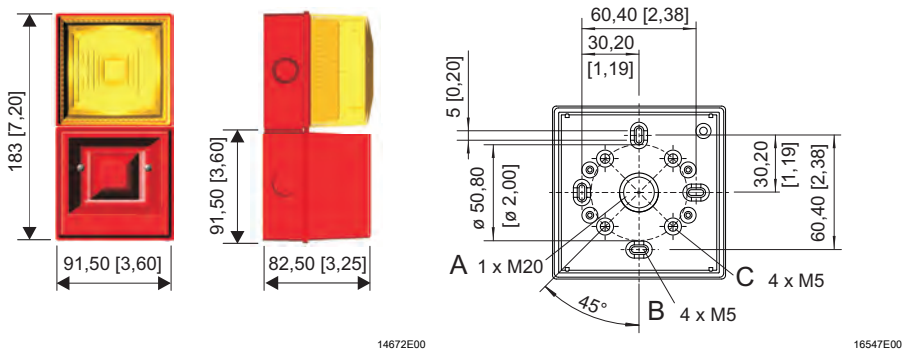
Mechanical data

Material	
Enclosure	flame retardant ABS
Lens cover	polycarbonate, flame retardant
Assembly parts	stainless steel fixings
Labels	polyester foil, adhesive
Degree of protection	IP65 (IEC60529)

Mounting / Installation

Assembly	Should be mounted to a reasonably flat wall or bulkhead of suitable material using the internal fixing holes. The recommended fixing screws are dia. 4.5 mm max. x 20 mm long. To maintain the integrity of the weather seal, the cable entry must be fitted using a suitable sealed gland.
Connection	V DC variants separate input and output 2,5 mm^2 terminals V AC variants 2,5 mm^2 terminals

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



A = knockout hole
B = drill hole
C = knockout hole

general dimensions **mounting dimensions**

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14618E00

- Max sound output 100 db (A) / 1 m
- Parabolic reflector produces high intensity light output (3 J)
- Fully integrated sounder strobe combination unit
- 32 selectable tones meeting international regulations
- Volume control as standard
- Separate light, sound or combination function
- Single stage alarm
- Unique compact design

Yodalight range
Multi-purpose audible and visual signalling device designed for indoor industrial applications.

Approvals

Certificates	CE 0086-CPD-96705	BS EN 54-3 : 2001 incorporates amendment A 1 : 2002 + A2 : 2006
	KM 91259	BS EN 54-3 : 2001 incorporates amendment A 1 : 2002 + A2 : 2006

Selection Table

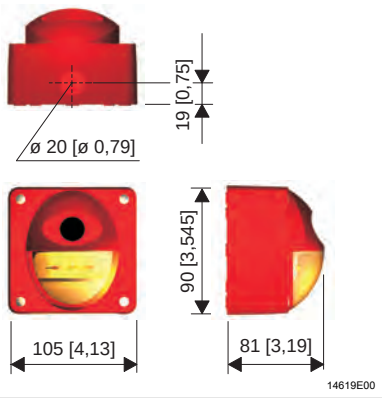
Version	Enclosure colour	Rated operational voltage	Lens colour	Order number	Art. no.	Weight kg
YL20 Sounder/ Strobe combination, standard devices	red normal (RN)	24 V DC	amber	**YL20/D10/A/RN**	**204445**	0.290
			red	**YL20/D10/R/RN**	**204453**	0.290
			clear	**YL20/D10/C/RN**	**204451**	0.290
	white (WN)	24 V DC	amber	**YL20/D10/A/WN**	**204448**	0.290
			red	**YL20/D10/R/WN**	**204457**	0.290
			clear	**YL20/D10/C/WN**	**204452**	0.290
Note	for indoor use only					

WebCode YL20A

Technical Data

Electrical data			
Rated operational voltage	24 V DC		
Current consumption	24 V DC	Sounder	Strobe
		33 mA at Tone 1	min. 60 mA
Operational parameters	+ or - 10% of nominal		
Acoustic data			
Volume	max. 100 dB (A)		
Sound stages	1		
Sound selection	via DIL switch		
Luminous characteristics			
Light source	Xenon flash tube		
Flash energy	3 J		
Flash rate	1 per second		
Lens colour	amber, red, clear		
Ambient conditions			
Operating temperature range	-25 ... +55 °C		
Storage temperature	- 40 ... + 70 °C		
Max. relative humidity	90 % at 40 °C		
Mechanical data			
Material			
Enclosure	flame retardant ABS		
Lens cover	polycarbonate		
Assembly parts	stainless steel fixings		
Labels	polyester foil, adhesive		
Degree of protection	IP21C		
Mounting / Installation			
Assembly	Should be mounted to a reasonably flat wall or bulkhead of suitable material using the internal fixing holes. The installation is completed by fitting the unit onto the back box by means of the screws provided.		
Connection	V DC variants separate input and output 2,5 mm^2 terminals V AC variants 2,5 mm^2 terminals		

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



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Industrial Audible Signal 120 dB (A)
Series YA80 Super

14594E00

- Max sound output 120 db (A) / 1 m
- IP65 rated as standard
- 32 selectable tones meeting international regulations
- Flame retardant ABS enclosure
- Stainless steel fixings
- 2 stage alarm
- Independently selectable second stage
- Sound selection via 5 way DIL switch
- Low current consumption
- Robust, reliable and simple to install

Yodalarm range
120 dB multi-purpose audible signalling device designed for use in industrial applications.

Approvals

Certificates	c UL us LISTED 5N93	UL 464
	c UL us LISTED 5N93	C22.2 No. 205-M1983
	CE 0086-CPD-96705	BS EN 54-3 : 2001 incorporates amendment A 1 : 2002 + A 2 : 2006
	KM 91259	BS EN 54-3 : 2001 incorporates amendment A 1 : 2002 + A2 : 2006

WebCode YA80SuperA

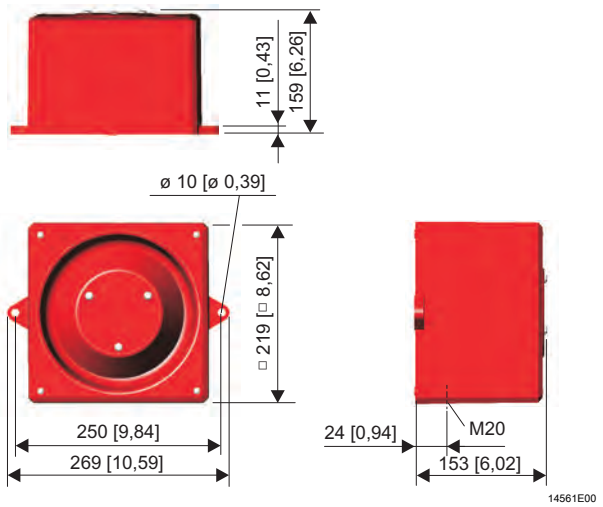
Selection Table

Version	Enclosure colour	Rated operational voltage	Type	Art. no.	Weight kg
YA80 Super Sounder, BS EN 54-3, standard devices	red flame (RF)	24 V DC	**YA80/D/RF/SU/WR**	**204404**	2.900
		115 V AC	**YA80/L/RF/SU/WR**	**204420**	3.280
		230 V AC	**YA80/N/RF/SU/WR**	**204434**	3.280
YA80 Super Sounder, UL certification	red flame (RF)	24 V DC	**YA80/D/RF/SU/UL**	**204440**	2.900
		115 V AC	**YA80/L/RF/SU/UL**	**204442**	3.280
		230 V AC	**YA80/N/RF/SU/UL**	**209649**	3.280
Note	Other voltages and variants are available. Please contact your local sales office for more details				

Technical Data

Electrical data		
Rated operational voltage	24 or 48 V DC 115 or 230 V AC	
Current consumption	24 V DC	541 mA
	230 V AC	74 mA
		at tone 1
Operational parameters	+ or - 10% of nominal	
Line monitoring	3 wire, 2 stage or 2 wire, single stage: monitor via reverse polarity 2 wire, 2 stage i.e. bi-polar inputs: monitor via threshold (applied voltage < 1 V)	
Acoustic data		
Volume	max. 120 dB (A)	
Sound stages	2 independently selectable	
Sound selection	via DIL switch	
Ambient conditions		
Operating temperature range	Standard variants:	-25 ... +55 °C
	UL certified variants:	-35 ... +66 °C
Storage temperature	-40 ... +70 °C	
Max. relative humidity	93% ± 3 at 40 °C	
Mechanical data		
Material		
Enclosure	flame retardant ABS	
Assembly parts	stainless steel fixings	
Labels	polyester foil, adhesive	
Degree of protection	IP65 (IEC60529)	
Mounting / Installation		
Assembly	Should be mounted to a reasonably flat wall or bulkhead of suitable material using the lugs projecting from the side of the case. The lugs are bored 10 mm on 250 mm centres. The minimum recommended length of fixing screws is 30 mm. To maintain the integrity of the weather seal, the cable entry must be fitted using a suitable sealed gland.	
Connection	V DC variants separate input and output 2,5 mm^2 terminals V AC variants 2,5 mm^2 terminals	

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



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E5

Industrial Audible Signal 116 dB (A)
Series YA80

Clifford &Snell

14593E00

- Max sound output 116 db (A) / 1 m
- IP65 rated as standard
- 32 selectable tones meeting international regulations
- Flame retardant ABS enclosure
- Stainless steel fixings
- 2 stage alarm
- Independently selectable second stage
- Low current consumption
- Robust, reliable and simple to install

www.stahl.de

Yodalarm range
High output multi-purpose audible signalling device designed for use in industrial applications.

Approvals

Certificates	c UL us LISTED 5N93	UL 464
	c UL us LISTED 5N93	C22.2 No. 205-M1983
	CE 0086-CPD-96705	BS EN 54-3 : 2001 incorporates amendment A 1 : 2002 + A 2 : 2006
	KM 91259	BS EN 54-3 : 2001 incorporates amendment A 1 : 2002 + A 2 : 2006

WebCode YA80A

Selection Table

Version	Enclosure colour	Rated operational voltage	Order number	Art. no.	Weight kg
YA80 Sounder, standard devices	red flame (RF)	24 V DC	**YA80/D/RF/WR**	**204407**	2.900
		115 V AC	**YA80/L/RF/WR**	**204422**	3.280
		230 V AC	**YA80/N/RF/WR**	**204436**	3.280
YA80 Sounder, UL certification	red flame (RF)	24 V DC	**YA80/D/RF/UL**	**204441**	2.900
		115 V AC	**YA80/L/RF/UL**	**204443**	3.280
		230 V AC	**YA80/N/RF/UL**	**204444**	3.280
Note	Other voltages and variants are available. Please contact your local sales office for more details				

Technical Data

Electrical data

Rated operational voltage	24 or 48 V DC 115 or 230 V AC	
Current consumption	24 V DC	309 mA
	115 V AC	118 mA
	230 V AC	59 mA
		at tone 1
Operational parameters	+ or - 10% of nominal	
Line monitoring	3 wire, 2 stage or 2 wire, single stage: monitor via reverse polarity 2 wire, 2 stage i.e. bi-polar inputs: monitor via threshold (applied voltage < 1 V)	

Acoustic data

Volume	max. 116 dB (A)
Sound stages	2 independently selectable
Sound selection	via DIL switch

Ambient conditions

Operating temperature range	Standard variants:	-25 ... +55 °C
	UL certified variants:	-35 ... +66 °C
Storage temperature	-40 ... +70 °C	
Max. relative humidity	93% ± 3 at 40 °C	

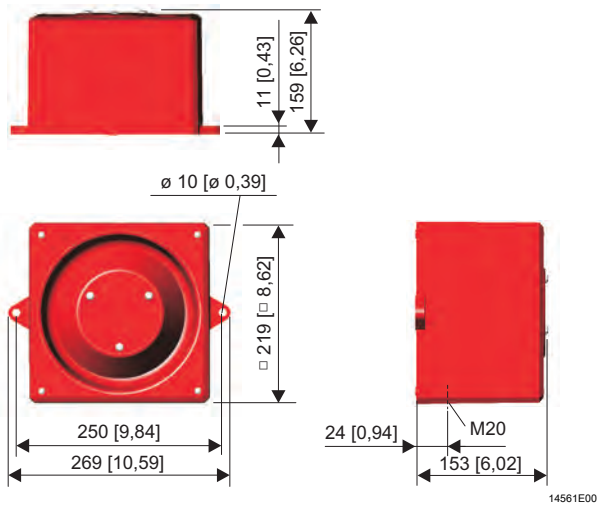
Mechanical data

Material	
Enclosure	flame retardant ABS
Assembly parts	stainless steel fixings
Labels	polyester foil, adhesive
Degree of protection	IP65 (IEC60529)

Mounting / Installation

Assembly	Should be mounted to a reasonably flat wall or bulkhead of suitable material using the lugs projecting from the side of the case. The lugs are bored 10 mm on 250 mm centres. The minimum recommended length of fixing screws is 30 mm. To maintain the integrity of the weather seal, the cable entry must be fitted using a suitable sealed gland.
Connection	V DC variants separate input and output 2,5 mm^2 terminals V AC variants 2,5 mm^2 terminals

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



We reserve the right to make alterations to the technical data, dimensions, weights, designs and products available without notice. The illustrations cannot be considered binding.

Industrial Audible Signal 110 dB (A)
Series YA50

Clifford &Snell

STAHL

06496E00

- Max sound output 110 db (A) / 1 m
- IP65 rated as standard
- 32 selectable tones meeting international regulations
- Flame retardant ABS enclosure
- Stainless steel fixings
- 2 stage alarm
- Independently selectable second stage
- Low current consumption
- Robust, reliable and simple to install

www.stahl.de

E5

Yodalarm range
Multi-purpose audible signalling device designed for use in industrial applications.

Approvals

Certificates	c UL us LISTED 5N93	UL 464
	c UL us LISTED 5N93	C22.2 No. 205-M1983
	CE 0086-CPD-96705	BS EN 54-3 : 2001 incorporates amendment A 1 : 2002 + A 2 : 2006
	KM 91259	BS EN 54-3 : 2001 incorporates amendment A 1 : 2002+ A 2 : 2006
	VdS	EN54-3 : 2001 + A1 : 2002 + A2 : 2006 VdS 2504 (12/96), VdS 2203 (03/01), VdS 2344 (12/05), Cert No. G28702
		Marine Equipment Directive MED Module B BSI/MED/A.1/3.53/590299, Module D BSI/MED/PC/590302

WebCode YA50A

Selection Table

Version	Enclosure colour	Rated operational voltage	Order number	Art. no.	Weight kg
YA50 Sounder, BS EN 54-3 + MED, standard devices	red flame (RF)	24 V DC	**YA50/D/RF/WR**	**204881**	0.710
		115 V AC	**YA50/L/RF/WR**	**204374**	0.810
		230 V AC	**YA50/N/RF/WR**	**204382**	0.810
YA50 Sounder, UL certification	red flame (RF)	24 V DC	**YA50/D/RF/UL**	**204387**	0.710
		115 V AC	**YA50/L/RF/UL**	**204388**	0.810
		230 V AC	**YA50/N/RF/UL**	**204389**	0.810
YA50 Sounder, VDS certification	red flame (RF)	24 V DC	**YA50/D/RF/WR/VDS**	**212037**	0.710
Note	Other voltages and variants are available. Please contact your local sales office for more details				

Technical Data

Electrical data

Rated operational voltage	24 or 48 V DC 115 or 230 V AC	
Current consumption	24 V DC	39 mA
	115 V AC	23 mA
	230 V AC	15 mA
		at tone 1
Operational parameters	+ or - 10% of nominal	
Line monitoring	3 wire, 2 stage or 2 wire, single stage: monitor via reverse polarity 2 wire, 2 stage i.e. bi-polar inputs: monitor via threshold (applied voltage < 1 V)	

Acoustic data

Volume	max. 110 dB (A)	
Volume control	18 dB (A) adjustment	
Sound stages	2 independently selectable	
Sound selection	via DIL switch	

Ambient conditions

Operating temperature range	Standard variants:	-25 ... +55 °C
	VDS certified variants:	-25 ... +40 °C
	UL certified variants:	-35 ... +66 °C
Storage temperature	-40 ... +70 °C	
Max. relative humidity	93% ± 3 at 40 °C	

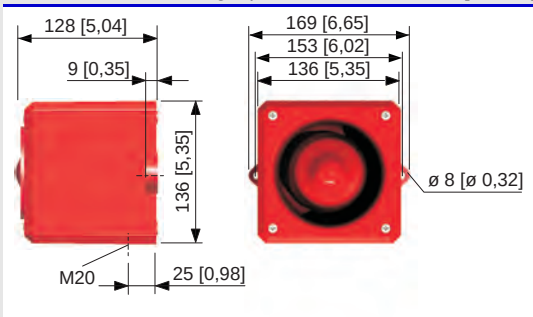
Mechanical data

Material	
Enclosure	flame retardant ABS
Assembly parts	stainless steel fixings
Labels	polyester foil, adhesive
Degree of protection	IP65 (IEC60529)

Mounting / Installation

Assembly	Should be mounted to a reasonably flat wall or bulkhead of suitable material using the lugs projecting from the side of the case. The lugs are bored 8 mm on 153 mm centres. The minimum recommended length of fixing screws is 25 mm. To maintain the integrity of the weather seal, the cable entry must be fitted using a suitable sealed gland.
Connection	V DC variants separate input and output 2,5mm^2 terminals V AC variants 2,5mm^2 terminals

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



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Industrial Audible Signal 106 dB (A)
Series YA40

14569E00

- Max sound output 106 db (A) / 1 m
- IP65 rated as standard
- 32 selectable tones meeting international regulations
- Flame retardant ABS enclosure
- Stainless steel fixings
- 2 stage alarm
- Independently selectable second stage
- Low current consumption
- Robust, reliable and simple to install

Yodalarm range
Compact multi-purpose audible signalling device designed for use in industrial applications.

Approvals

Certificates	c UL us LISTED 5N93	UL 464
	c UL us LISTED 5N93	C22.2 No. 205-M1983
	CE 0086-CPD-96705	BS EN 54-3 : 2001 incorporates amendment A 1 : 2002 + A 2 : 2006
	KM 91259	BS EN 54-3 : 2001 incorporates amendment A 1 : 2002 + A 2 : 2006
	VdS	EN54-3 : 2001 + A1 : 2002 + A2 : 2006 VdS 2504 (12/96), VdS 2203 (03/01), VdS 2344 (12/05), Cert No. G28702
		Marine Equipment Directive MED Module B BSI/MED/A.1/3.53/590299, Module D BSI/MED/PC/590302

WebCode YA40A

Clifford &Snell

Selection Table

Version	Enclosure colour	Rated operational voltage	Order number	Art. no.	Weight kg
YA40 Sounder, BS EN 54-3 + MED, standard devices	red normal (RN)	24 V DC	**YA40/D/RN/WR**	**204330**	0.250
		115 V AC	**YA40/L/RN/WR**	**204354**	0.350
		230 V AC	**YA40/N/RN/WR**	**204364**	0.350
YA40 Sounder, UL certification	red normal (RN)	24 V DC	**YA40/D/RN/UL**	**204869**	0.250
		115 V AC	**YA40/L/RN/UL**	**211983**	0.350
		230 V AC	**YA40/N/RN/UL**	**211984**	0.350
YA40 Sounder, VDS certification	red normal (RN)	24 V DC	**YA40/D/RN/WR/VDS**	**211985**	0.250
Note	Other voltages and variants are available. Please contact your local sales office for more details				

Technical Data

Electrical data

Rated operational voltage	24 or 48 V DC 115 or 230 V AC	
Current consumption	24 V DC	37 mA
	48 V DC	30 mA
	115 V AC	27 mA
	230 V AC	21 mA
		at tone 1
Operational parameters	+ or - 10% of nominal	
Line monitoring	3 wire, 2 stage or 2 wire, single stage: monitor via reverse polarity 2 wire, 2 stage i.e. bi-polar inputs: monitor via threshold (applied voltage < 1 V)	

Acoustic data

Volume	max. 106 dB (A)
Volume control	18 dB (A) adjustment
Sound stages	2 independently selectable
Sound selection	via DIL switch

Ambient conditions

Operating temperature range	Standard variants:	-25 ... +55 °C
	VDS certified variants:	-25 ... +40 °C
	UL certified variants:	-35 ... +66 °C
Storage temperature	-40 ... +70 °C	
Max. relative humidity	93% ± 3 at 40 °C	

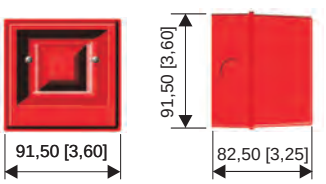
Mechanical data

Material	
Enclosure	flame retardant ABS
Assembly parts	stainless steel fixings
Labels	polyester foil, adhesive
Degree of protection	IP65 (IEC60529)

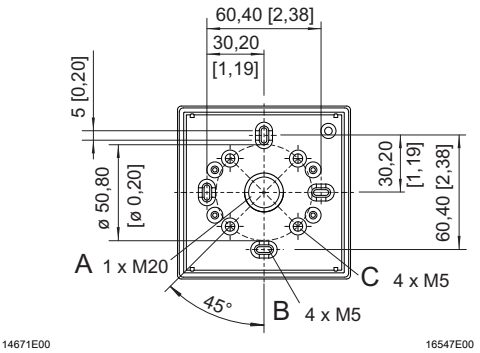
Mounting / Installation

Assembly	Should be mounted to a reasonably flat wall or bulkhead of suitable material using the internal fixing holes. The recommended fixing screws are dia. 4.5 mm max. x 20 mm long. To maintain the integrity of the weather seal, the cable entry must be fitted using a suitable sealed gland.
Connection	V DC variants separate input and output 2,5 mm^2 terminals V AC variants 2,5 mm^2 terminals

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



general dimensions



mounting dimensions

A = knockout hole
B = drill hole
C = knockout hole

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E5

Industrial Audible Signal 100 dB (A)
Series YA30

Clifford &Snell

14575E00

- Max sound output 100 db (A) / 1 m
- IP65 rated as standard
- 32 selectable tones meeting international regulations
- Flame retardant ABS enclosure
- Stainless steel fixings
- 2 stage alarm
- Idependently selectable second stage
- Sound selection via 5 way DIL switch
- Low current consumption
- Robust, reliable and simple to install

www.stahl.de

Yodalarm range
Compact, robust multi-purpose audible signalling device designed for use in industrial applications.

Approvals

Certificates	c UL us LISTED 5N93	UL 464
	c UL us LISTED 5N93	C22.2 No. 205-M1983
	CE 0086-CPD-96705	BS EN 54-3 : 2001 incorporates amendment A 1 : 2002 + A 2 : 2006
	KM 91259	BS EN 54-3 : 2001 incorporates amendment A 1 : 2002 + A 2 : 2006
	VdS	EN54-3 : 2001 + A1 : 2002 + A2 : 2006 VdS 2504 (12/96), VdS 2203 (03/01), VdS 2344 (12/05), Cert No. G28702
		Marine Equipment Directive MED Module B BSI/MED/A.1/3.53/590299, Module D BSI/MED/PC/590302

WebCode YA30A

Selection Table

Version	Enclosure colour	Rated operational voltage	Order number	Art. no.	Weight kg
YA30 Sounder, BS EN 54-3 + MED, standard devices	red flame (RF)	24 V DC	**YA30/D/RF/WR**	**204276**	0.320
		115 V AC	**YA30/L/RF/WR**	**204289**	0.390
		230 V AC	**YA30/N/RF/WR**	**204296**	0.390
YA30 Sounder, UL certification	red flame (RF)	24 V DC	**YA30/D/RF/UL**	**209640**	0.320
		115 V AC	**YA30/L/RF/UL**	**204301**	0.390
		230 V AC	**YA30/N/RF/UL**	**204302**	0.390
YA30 Sounder, VDS certification	red flame (RF)	24 V DC	**YA30/D/RF/WR/VDS**	**211126**	0.320
Note	Other voltages and variants are available. Please contact your local sales office for more details				

Technical Data

Electrical data

Rated operational voltage	24 or 48 V DC 115 or 230 V AC	
Current consumption	24 V DC	37 mA
	115 V AC	27 mA
	230 V AC	20 mA
		at tone 1
Operational parameters	+ or - 10% of nominal	
Line monitoring	line monitoring excludes additional voltage options: 3 wire, 2 stage or 2 wire, single stage: monitor via reverse polarity 2 wire, 2 stage i.e. bi-polar inputs: monitor via threshold (applied voltage < 1 V)	

Acoustic data

Volume	max. 100 dB (A)
Volume control	18 dB (A) adjustment
Sound stages	2 independently selectable
Sound selection	via DIL switch

Ambient conditions

Operating temperature range	Standard variants:	-25 ... +55 °C
	VDS certified variants:	-25 ... +40 °C
	UL certified variants:	-35 ... +66 °C
Storage temperature	-40 ... +70 °C	
Max. relative humidity	93% ± 3 at 40 °C	

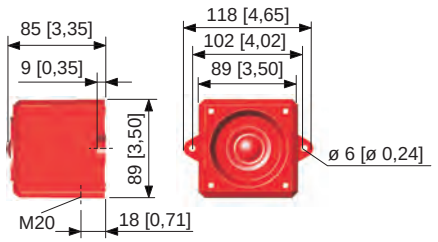
Mechanical data

Material	
Enclosure	flame retardant ABS
Assembly parts	stainless steel fixings
Labels	polyester foil, adhesive
Degree of protection	IP65 (IEC60529)

Mounting / Installation

Assembly	Should be mounted to a reasonably flat wall or bulkhead of suitable material using the lugs projecting from the side of the case. The lugs are bored 6 mm on 102 mm centres. The minimum recommended length of fixing screws is 25 mm. To maintain the integrity of the weather seal, the cable entry must be fitted using a suitable sealed gland.
Connection	V DC variants separate input and output 2,5 mm^2 terminals V AC variants 2,5 mm^2 terminals

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



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Industrial Audible Signal 104 dB (A)
Series CN41

Clifford &Snell

14605E00

- Max sound output 104 dB (A) / 1 m
- 32 selectable tones meeting international regulations
- Flame retardant ABS enclosure
- 2 stage alarm by 2 wire bi-polar and 3 wire polarised control
- Easy installation
- Complies with BS 5839
- Low current consumption
- For 3 wire 2 stage alarm systems, line integrity maybe monitored via reverse polarity
- Continuously rated
- Sound selection via 5 way DIL switch

www.stahl.de

Multi-purpose audible signalling device designed for indoor applications.

Approvals

Certificates	CE 0086-CPD-96705	BS EN 54-3 : 2001 incorporates amendment A 1 : 2002 + A 2 : 2006
	KM 91259	BS EN 54-3 : 2001 incorporates amendment A 1 : 2002 + A 2 : 2006

WebCode CN41A

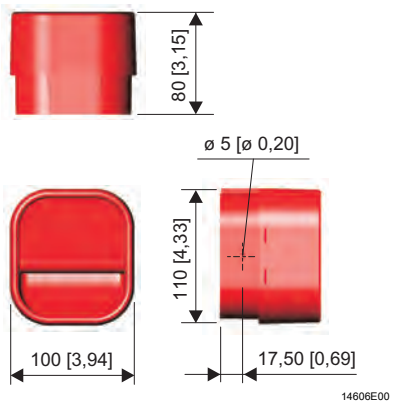
Selection Table

Version	Enclosure colour	Rated operational voltage	Order number	Art. no.	Weight kg
CN41 Sounder, BS EN 54-3, standard devices	red normal (RN)	10 ... 30 V DC	**CN41/D/RN**	**205101**	0.280
Note	for indoor use only				

Technical Data

Electrical data	
Rated operational voltage	10 ... 30 V DC
Current consumption	36 mA Tone 1, 24 V DC
Line monitoring	3 wire, 2 stage or 2 wire, single stage: monitor via reverse polarity 2 wire, 2 stage i.e. bi-polar inputs: monitor via threshold (applied voltage < 1 V)
Acoustic data	
Volume	max. 104 dB (A)
Volume control	18 dB (A) adjustment
Sound stages	2
Sound selection	via DIL switch
Ambient conditions	
Operating temperature range	-25 ... +40 °C
Storage temperature	-40 ... +70 °C
Max. relative humidity	95 % at 40 °C
Mechanical data	
Material	
Enclosure	flame retardant ABS
Assembly parts	stainless steel fixings
Labels	polyester foil, adhesive
Degree of protection	IP21C
Mounting / Installation	
Assembly	Should be mounted to a reasonably flat wall or bulkhead of suitable material using the internal fixing holes (mounting gasket supplied). The recommended fixing screws are dia. 4.5 mm max. x 20 mm long. To maintain the integrity of the weather seal, the cable entry must be fitted using a suitable sealed gland.
Connection	2.5 mm^2 terminals

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



Sound signal selection is made by setting of the PCB mounted switches.

Industrial Visual Flashing Signal - 5 Joule
Series FL40

14598E00

- Strobe available in 5 Joule
- IP65 as standard
- Flame retardant ABS enclosure
- Lens available in six different colours
- 360 degree visibility
- High flash intensity
- Reliable and simple to install
- Complements audible alarm system

Multi-purpose visual signalling device designed for use in industrial applications. Product series FL40 is designed to provide a flashing signal which can be used to alert, warn or draw attention to an event.

Approvals

Certificates	LISTED 7N39	UL 1638

WebCode FL40A

Selection Table

Version	Enclosure colour	Flash energy	Rated operational voltage	Lens colour	Order number	Art. no.	Weight kg
FL40 Xenon Strobe, CE marked, Standard Devices	red normal (RN)	5.0 J	24 V DC	amber	**FL40/D50/A/RN**	**204955**	0.260
				red	**FL40/D50/R/RN**	**204994**	0.260
				green	**FL40/D50/G/RN**	**204984**	0.260
				opal	**FL40/D50/O/RN**	**204989**	0.260
				blue	**FL40/D50/B/RN**	**204969**	0.260
				clear	**FL40/D50/C/RN**	**204976**	0.260
		5.0 J	115 V AC	amber	**FL40/L50/A/RN**	**205012**	0.250
				red	**FL40/L50/R/RN**	**205019**	0.250
				green	**FL40/L50/G/RN**	**212341**	0.250
				opal	**FL40/L50/O/RN**	**212342**	0.250
				blue	**FL40/L50/B/RN**	**212343**	0.250
				clear	**FL40/L50/C/RN**	**212344**	0.250
		5.0 J	230 V AC	amber	**FL40/N50/A/RN**	**205026**	0.250
				red	**FL40/N50/R/RN**	**205047**	0.250
				green	**FL40/N50/G/RN**	**205039**	0.250
				opal	**FL40/N50/O/RN**	**205042**	0.250
				blue	**FL40/N50/B/RN**	**205033**	0.250
				clear	**FL40/N50/C/RN**	**212346**	0.250
FL40 Xenon Strobe, UL certification	red normal (RN)	5.0 J	24 V DC	amber	**FL40/D50/A/RN/UL**	**205058**	0.260
				red	**FL40/D50/R/RN/UL**	**205061**	0.260
				green	**FL40/D50/G/RN/UL**	**212347**	0.260
				opal	**FL40/D50/O/RN/UL**	**212349**	0.260
				blue	**FL40/D50/B/RN/UL**	**212350**	0.260
				clear	**FL40/D50/C/RN/UL**	**212351**	0.260
		5.0 J	115 V AC	amber	**FL40/L50/A/RN/UL**	**205062**	0.250
				red	**FL40/L50/R/RN/UL**	**205064**	0.250
				green	**FL40/L50/G/RN/UL**	**212352**	0.250
				opal	**FL40/L50/O/RN/UL**	**212353**	0.250
				blue	**FL40/L50/B/RN/UL**	**212354**	0.250
				clear	**FL40/L50/C/RN/UL**	**212355**	0.250
		5.0 J	230 V AC	amber	**FL40/N50/A/RN/UL**	**205065**	0.250
				red	**FL40/N50/R/RN/UL**	**212356**	0.250
				green	**FL40/N50/G/RN/UL**	**212357**	0.250
				opal	**FL40/N50/O/RN/UL**	**212358**	0.250
				blue	**FL40/N50/B/RN/UL**	**212359**	0.250
				clear	**FL40/N50/C/RN/UL**	**212360**	0.250
Note	Other voltages and variants are available. Please contact your local sales office for more details						

Technical Data

Electrical data

Rated operational voltage	24 or 48 V DC 115 or 230 V AC
Current consumption	

24 V DC	306 mA
48 V DC	157 mA
115 V AC	100 mA
230 V AC	98 mA

Line monitoring	monitor via reverse polarity

Luminous characteristics

Light source	Xenon flash tube
Flash energy	5 Joule
Flash rate	1/s
Light intensity	

	effective candela	candela seconds
clear	72.10	14.44
red	8.92	1.186
amber	25.52	5.111
blue	14.09	2.82
green	29.70	5.946
opal	65.78	13.17

Lens colour	amber, red, green, opal, blue, clear

Ambient conditions

Operating temperature range	standard variants	-25 ... +55 °C
	UL certified variants	-35 ... +66 °C
Storage temperature	-40 ... +70 °C	
Max. relative humidity	90 % ± 3 % at 40 °C	

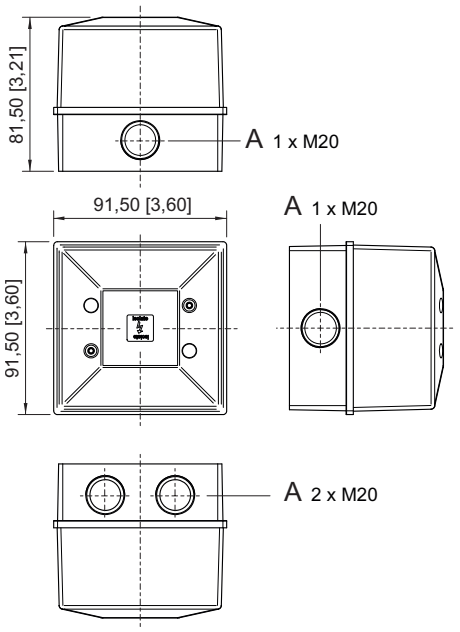
Mechanical data

Material	
Enclosure	ABS, flame retardant
Lens	polycarbonate
Assembly parts	stainless steel fixings
Labels	polyester foil, adhesive
Degree of protection	IP65 acc. IEC 60529

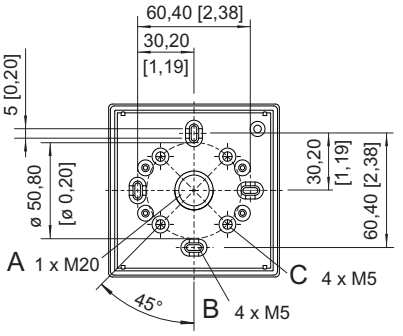
Mounting / Installation

Assembly	All units are supplied separate from the back box for ease of installation. The back box must be mounted with the two cable entries at the top or bottom. The back box should be mounted to a reasonably flat surface or to a standard junction box, using any of the internal mounting holes. A gasket is supplied, should the surface be uneven, or if the unit is to be used in wet conditions. To maintain the integrity of the weather seal, the cable must be fitted using a suitable sealed gland. The installation is completed by fitting the beacon onto the back box by means of the supplied screws.
Connection	2.5 mm^2 terminals

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



13984E



16547E00

A = knockout hole
B = drill hole
C = knockout hole

Steady lamp version available upon request

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Industrial Visual Flashing or Status Signal - LED
Series FD40, SD40

Clifford &Snell

13913E00

- 12 LED array, high light intensity signal
- IP65 rated as standard
- Long life LED design
- Lens available in six different colours
- Flame retardant ABS enclosure
- Up to 4 modules in any combination of lens colours
- Reliable and simple to install
- Modular concept allows unparralled flexibility
- Join up to 4 modules together
- Selectable flash rate

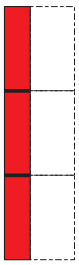
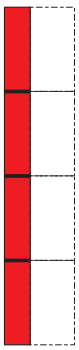
Multi-purpose visual signalling devices designed for use in industrial applications. Product series FD40 is designed to provide a flashing signal which can be used to alert, warn or draw attention to an event. Product series SD40 is designed to provide a steady signal which can be used for status indications.

WebCode FD_SD40A

FD40, SD40 LED Signals are Ordered in Two Stages

Stage 1	choose the number of modules required by selecting a single, double, triple or quadruple back box from selection table 1
Stage 2	choose the coloured beacons or sounder required from selection table 2.
Example	if a triple back box is selected at stage 1 then three modules will have to be selected from selection table 2.

Selection Table

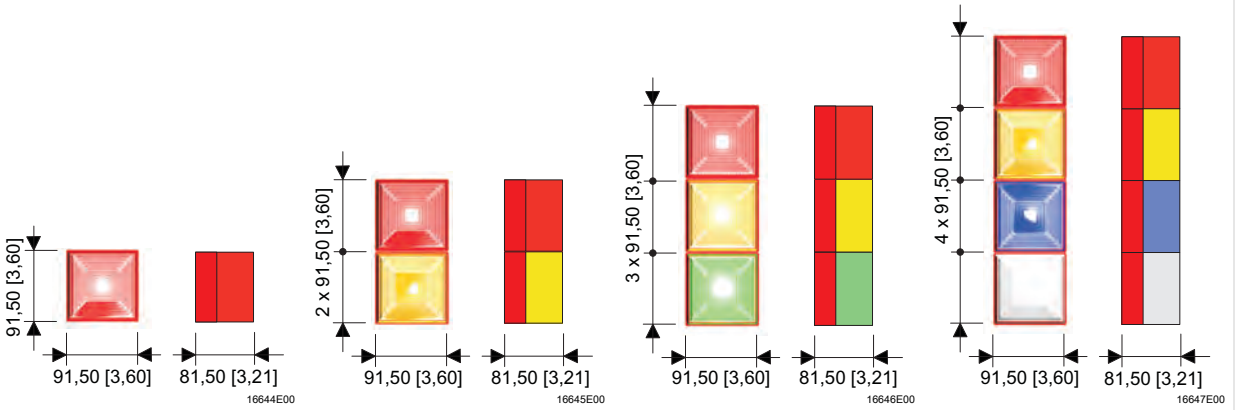
Version	Enclosure colour	Order number	Art. no.	Weight kg
 14729E00 Single	red normal (RN)	**Single Back Box RN**	**212886**	0.054
 14730E00 Double	red normal (RN)	**Double Back Box RN**	**212887**	0.122
 14731E00 Triple	red normal (RN)	**Triple Back Box RN**	**212888**	0.179
 14732E00 Quadruple	red normal (RN)	**Quadruple Back Box RN**	**212889**	0.236

Selection Table

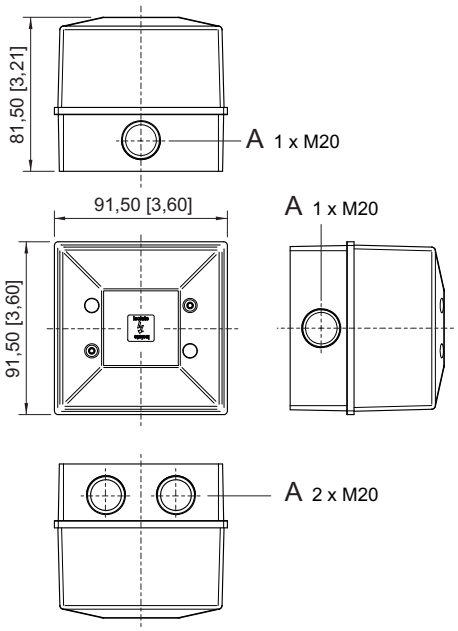
Version	Rated operational voltage	Lens colour	Order number	Art. no.	Weight kg
Visual Flashing Signal - LED Series FD40	24 V DC	amber  14738E00	**FD40/D00/A/12**	**212898**	0.107
		red  14004E00	**FD40/D00/R/12**	**212899**	0.107
		green  14734E00	**FD40/D00/G/12**	**212900**	0.107
		opal  14735E00	**FD40/D00/O/12**	**212896**	0.107
		blue  14740E00	**FD40/D00/B/12**	**212901**	0.107
		clear  14736E00	**FD40/D00/C/12**	**212897**	0.107
Visual Status Signal - LED Series SD40	24 V DC	amber  14738E00	**SD40/D00/A/12**	**212892**	0.107
		red  14004E00	**SD40/D00/R/12**	**212893**	0.107
		green  14734E00	**SD40/D00/G/12**	**212894**	0.107
		opal  14735E00	**SD40/D00/O/12**	**212890**	0.107
		blue  14740E00	**SD40/D00/B/12**	**212895**	0.107
		clear  14736E00	**SD40/D00/C/12**	**212891**	0.107
YA40 Sounder for use in multiple units only	24 V DC	 14846E00	**YA40/D**	**212492**	0.153

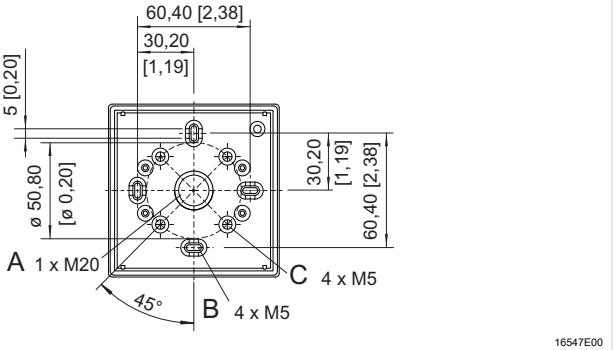
Technical Data	
Electrical data	
Rated operational voltage	24 V DC
Current consumption	34 mA
Line monitoring	monitor via reverse polarity
Luminous characteristics	
Light source	12 array LED
Flash rate	1 or 2/s (user selectable)
Lens colour	amber, red, green, opal, blue, clear
Ambient conditions	
Operating temperature range	-20 ... +40 °C
Storage temperature	-40 ... +70 °C
Max. relative humidity	90 % at 40 °C
Mechanical data	
Material	
Enclosure	ABS, flame retardant
Lens	polycarbonate
Assembly parts	stainless steel fixings
Labels	polyester foil, adhesive
Degree of protection	IP65 acc. IEC 60529
Mounting / Installation	
Mounting	The LED beacons are supplied in 2 parts. The coloured beacons can be screwed into the backbox to create the complete unit. If ordering double, triple or quadruple units the positions/configurations of the coloured beacons are determined by the user at the installation stage. All units are supplied separate from the back box for ease of installation. The back box should be mounted to a reasonably flat surface or bulkhead. A gasket is supplied, should the surface be uneven, or if the unit is to be used in wet conditions. The installation is completed by fitting the beacon onto the back box by means of the supplied screws. Each beacon should be wired independently
Connection	2.5 mm^2 terminals

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



Single device **Double device** **Triple device** **Quadruple device**





A = knockout hole
B = drill hole
C = knockout hole

We reserve the right to make alterations to the technical data, dimensions, weights, designs and products available without notice. The illustrations cannot be considered binding.

16455E00

- CPD approved
- Fully approved to the latest standards
- Enhanced aesthetics
- Unique ‘Plug & Play’ installation concept
- Anti-Tamper facility
- Surface mount
- Approved for EN 54 part 11
- Lift flap available

Product series WCP and MCP conventional manual call points. Certified for use on fire systems. The devices can also be used to provide a manual interface emergency switch for a number of non fire related applications. WCP is supplied with ingress protection IP67, MCP is IP24D. Both product types can be supplied open contact with 470 Ω resistor or open/closed contact.

Approvals

Certificates	LPCB	EN54-11:2001	
	LPCB-BRE	CPR	MCP1A-0832-CPD-0642
			MCP3A-0832-CPD-0648
			WCP1A-0832-CPD-0654
			WCP3A-0832-CPD-0659

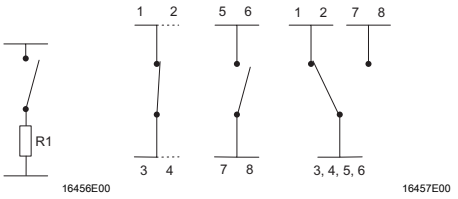
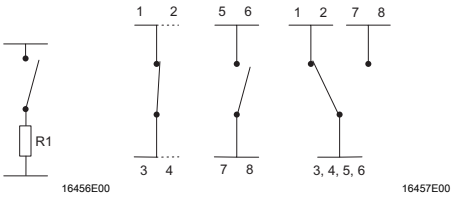
WebCode MCPWCPA

Selection Table

Version	Electrical configuration		Operating element	Order number	Art.no.	Weight
	Resistor	Contacts				kg
 16453E00 Indoor Manual Call Points Series MCP	470 Ω	N/O	flexible	**MCP1A-R470SF-K013-01**	**227329**	0.180
		N/O & N/C	flexible	**MCP3A-R000SF-K013-01**	**227330**	0.180
 16454E00 All Weather Manual Call Points Series WCP	470 Ω	N/O	flexible	**WCP1A-R470SF-K013-01**	**227331**	0.350
		N/O & N/C	flexible	**WCP3A-R000SF-K013-01**	**227332**	0.350
Note	Other variants available on request					

Technical Data

Electrical data

Version	MCP		WCP	
	MCP1	MCP3	WCP1	WCP3
Connection details	 16456E00 16457E00		 16456E00 16457E00	
Connection terminals	0.5 ... 2.5 mm²		0.5 ... 2.5 mm²	
Maximum voltage	30 V DC		30 V DC	
Switch rating	2 A		2 A	

Ambient conditions

Version	MCP	WCP
Operating temperature	-10 ... +55 °C	-25 ... +70 °C
Storage temperature	-10 ... +50 °C	-25 ... +70 °C
Relative humidity	0 ... 93 +/- 3% non-condensing	0 ... 93 +/- 3% non-condensing

Mechanical data

Version	MCP	WCP
Degree of protection	IP24D	IP67
Enclosure		
Enclosure material	PC/ABS	PC/ABS
Enclosure colour	red, RAL 3001	red, RAL 3001

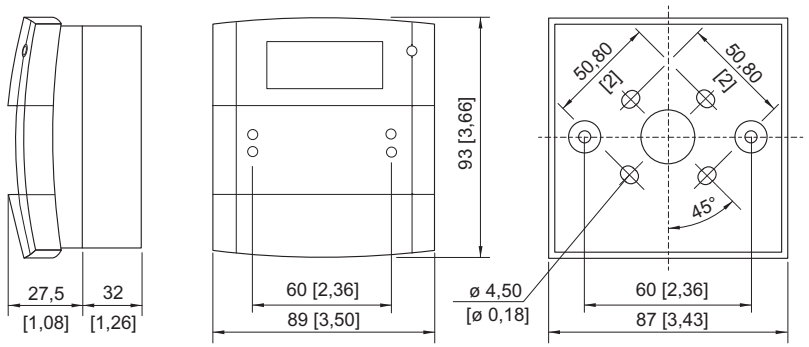
Mounting / Installation

Version	MCP	WCP
Mounting	surface	surface

Accessories and Spare Parts

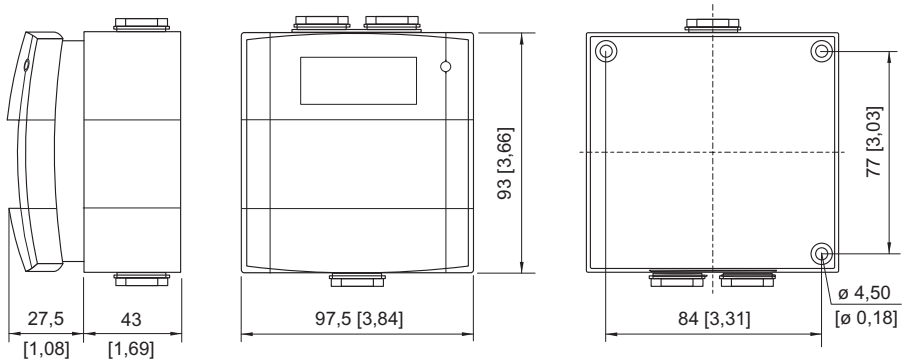
Designation	Description	Packing unit pieces	Art. no.	Weight kg
Test key	Replacement test key	10	**227324**	0.100
Break glass	Replacement break glass	5	**227325**	0.200
Operating element, flexible	Replacement operating element	1	**227326**	0.100
Lift flap	Optional lift flap, plastic	1	**227327**	0.100
Terminal block	Replacement terminal blocks	20	**227328**	0.100

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



16458E00

Series MCP



16459E00

Series WCP

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E5

Type Index

Europa / Mittlerer Osten / Afrika
Europe / Middle East / Africa

Deutschland / *Germany*
R. STAHL Schaltgeräte GmbH
Verkaufsbüro Nord
Heidenkampsweg 100
20097 HAMBURG
T +49 40 736054-0
F +49 40 736054-54
info.nord@stahl.de
www.stahl.de

R. STAHL Schaltgeräte GmbH
Verkaufsbüro Süd
Am Bahnhof 30
74638 WALDENBURG
T +49 7942 943-0
F +49 7942 943-1777
info.sued@stahl.de
www.stahl.de

R. STAHL Schaltgeräte GmbH
Verkaufsbüro West
Brügelmannstr. 5
50679 KÖLN
T +49 221 962569-0
F +49 221 962569-25
info.west@stahl.de
www.stahl.de

R. STAHL HMI Systems GmbH
Im Gewerbegebiet Pesch 14
50767 KÖLN
T +49 221 59808 200
F +49 221 59808 260
office@stahl-hmi.de
www.stahl-hmi.de

Bosnien und Herzegowina/ *Bosnia and Herzegowina*
KOLEKTOR SYNATEC d.o.o.
Dzemala Bijedica 2
71000 SARAJEVO
T +387 33 658-405
F +387 33 658-149
sinabo@kolektor.ba
www.kolektorsinabo.ba

Bulgarien / *Bulgaria*
Bright Engineering Ltd.
173, Prilep str.
Trade Center
Bee Garden, office 10
9010, VARNA
T +359 52 511 213
F +359 52 501 707
office@bright-eng.com
www.bright-eng.com

Dänemark / *Denmark*
MAX FODGAARD A/S
Sydholmen 10
2650 HVIDOVRE
T +45 70 261 700
F +45 70 263 110
max@fodgaard.dk
www.fodgaard.dk

Estland / *Estonia*
ASE-Automatic Systems
Engineering
ul. Narwicka 6
80557 GDANSK
T +370 614 14901
viktoras.malukas@ase-lt.lt
www.ase.com.pl

Großbritannien / *Great Britain*
R. STAHL LTD.
Unit 11 Maybrook
Business Park
Maybrook Road
MINWORTH
BIRMINGHAM B76 1AL
T +44 121 76764-00
F +44 121 76764-90
info@rstahl.co.uk
www.rstahl.co.uk

Italien / *Italy*
R. STAHL s.r.l. socio unico
Via Grandi 27
20068 PESCHIERA
BORROMEO (MI)
T +39 02 5530 8024
F +39 02 5165 0680
info@stahl.it
www.stahl.it

Kasachstan / *Kazakhstan*
TOO Universal
19, Al-Faraby ave., Building
2B, 6th floor
Business Center "Nurly-Tau"
ALMATY 050059
T +7 727 311-05-41
F +7 727 311-05-43
info_universal@eit.kz
www.eit.kz

Kroatien / *Croatia*
Ex-OPREMA j.d.o.o.
Rapska 26/1
10000 ZAGREB
F +385 1 5616 110
F +385 1 5606 185
info@ex-oprema.hr

Niederlande / *Netherlands*
ELECTROMACH B.V.
Jan Tinbergenstraat 193
7559 SP HENGELO
T +31 74 2472 472
F +31 74 2435 925
info@electromach.nl
www.electromach.com

Nigeria
ESACO PTY. LTD.
P. O. Box 3095
1610 EDENVALE/RSA
T +27 87 940 1677
F +27 87 940 1678
rpanis@esaco.co.za

Norwegen / *Norway*
STAHL-Syberg AS
Luhrtoppen 2
1470 LØRENSKOG
T +47 24 08441-0
F +47 24 08441-1
mail@stahl-syberg.no
www.stahl-syberg.no

Tranberg A.S.
Strandsvingen 6, P.O. Box 8033
4068 STAVANGER
T +47 51 5789-00
F +47 51 5789-50
info@tranberg.com
www.tranberg.com

worldwide

R. STAHL
Camera Systems GmbH
Im Gewerbegebiet Pesch 14
50767 KÖLN
T +49 221 59808 300
F +49 221 59808 360
office@stahl-camera.de
www.stahl-camera.de

Ägypten / *Egypt*
EAGLE CO. (S.A.E.)
23, Fawzy Moaaz Str.
ALEXANDRIA 432
T +20 3 42570-11
F +20 3 42570-61
eagle.co@tedata.net.eg

Aserbaidschan / *Azerbaijan*
ATENAU LTD.
27, Heydar Aliyev avenue,
KHIRDALAN AZ0100
T +994 12 3424 468
F +994 12 4470 889
office@atenau-ltd.com
www.atenau-ltd.com

Belgien / *Belgium*
STAHL N.V.
Sint Gillislaan 6, Bus 3
9200 SINT GILLIS-
DENDERMONDE
T +32 52 2113-51
F +32 52 2113-47
info@stahl.be
www.stahl.be

Finnland / *Finland*
EX-TEKNIIKKA OY
Vellamonkatu 30 B
00550 HELSINKI
T +358 207 92079-0
F +358 207 92079-1
ilkka.kilpelainen
@extekniikka.fi
www.extekniikka.fi

Frankreich / *France*
ST Solutions ATEX
Immeuble NAXOS
56, Rue des Hautes Pâtures
92737 NANTERRE CEDEX
T +33 1 4119 485-8
F +33 1 4119 485-9
info@stahl.fr
www.stahl.fr

Georgien / *Georgia*
Insta LLC
8 Zakariadze Str.
0177 TBILISI
T +995 32 2202 020/123
F +995 32 2202 022
sales@insta.ge
www.insta.ge

Griechenland / *Greece*
ADICON
6 Selefkou
13676 THRAKOMAKEDONES/
ATHENS
T +30 210 243-3383
F +30 210 243-5073
tsakarelos@tee.gr
www.adicon.gr

Lettland / *Latvia*
ASE-Automatic Systems
Engineering
ul. Narwicka 6
80557 GDANSK
T +370 614 14901
viktoras.malukas@ase-lt.lt
www.ase.com.pl

Litauen / *Lithuania*
ASE-Automatic Systems
Engineering
ul. Narwicka 6
80557 GDANSK
T +370 614 14901
viktoras.malukas@ase-lt.lt
www.ase.com.pl

Mazedonien / *Macedonia*
KEYING d.o.o.
Vuka Karadžica 79
23300 KIKINDA/SERBIA AND
MONTENEGRO
T +381 230 439 519
F +381 230 401 790
keying@keying.co.rs

Namibia
Seahorse Technology
Ferdinand van Dijk
41 Hebenstreit Street
PO Box 11800
WINDHOEK
T +26 4 61 261 460
F +26 4 61 264 704
rooibok@kpnmail.nl

Österreich / *Austria*
R. STAHL Nissl GmbH
Jochen-Rindt-Str. 41
1230 WIEN
T +43 1 6163 929-0
F +43 1 6163 929-22
office@rstahl-nissl.at
www.rstahl-nissl.at

Polen / *Poland*
ASE-Automatic Systems
Engineering
ul. Narwicka 6
80557 GDANSK
T +48 58 5207 720
F +48 58 3464 344
stahl@ase.com.pl
www.ase.com.pl

Portugal
Industrias Stahl,
SA – Sucursal em Portugal
Taguspark – Edifício Núcleo
Central, Sala 283
2740-122 OEIRAS
T +351 21 414531-5
F +351 21 414531-7
stahl@stahl.pt
www.stahl.es

Rumänien / *Romania*
EXPROOF SOLUTIONS SRL
Calea Grivitei Nr. 228, Bl. 4,
Sc. D, Et. 1, Ap. 8,
Sector 1
010763 BUCURESTI
T +40 735 248 878
doina.lacatusu@exproof.ro

Russland / *Russia*
OOO R. STAHL
Office 609, build. 21/1
Zvyozdnyi boulevard
129085 MOSKAU
T +7 495 6150 473
F +7 495 6163 252
info@stahl.ru.com
http://www.stahl.ru.com

Schweden / *Sweden*
R. STAHL SVENSKA AB
Bagspännarvägan 14
17568 JÄRFÄLLA
T +46 8 3891-00
F +46 8 3891-98
info@rstahl.se

Schweiz / *Switzerland*
R. STAHL Schweiz AG
Brüelstraße 26
4312 MAGDEN
T +41 618 5540-60
F +41 618 5540-80
info@stahl-schweiz.ch
www.stahl-schweiz.ch

Serbien und Montenegro / *Serbia and Montenegro*
KEYING d.o.o
Vuka Karadžica 79
23300 KIKINDA
T +381 230 439 519
F +381 230 401 790
keying@keying.co.rs

Slowakei / *Slovakia*
EX-TECHNIK spol. s.r.o.
Na Peconce 1903/21
710 00 OSTRAVA/
CZECH REPUBLIC
T +420 596 2425-48
F +420 596 2425-51
technik@ex-technik.cz
www.ex-technik.cz

Slowenien / *Slovenia*
KOLEKTOR SYNATEC d.o.o.
Vojkova Ulica 8B
5280 IDRIJA
T +386 5 37206-50
F +386 5 37206-60
bbolko@synatec.si

Spanien / *Spain*
INDUSTRIAS STAHL S.A.
Poligono Industrial
Aragoneses, 2 Acceso 10
28108 ALCOBENDAS (MADRID)
T +34 916 615 500
F +34 916 612 783
stahl@stahl.es
www.stahl.es

Südafrika / *South Africa*
ESACO PTY. LTD.
P. O. Box 3095
1610 EDENVALE
T +27 87 940 1677
F +27 87 940 1678
rpanis@esaco.co.za

Tschech. Republik / *Czech Republic*
EX-TECHNIK spol. s.r.o.
Na Peconce 1903/21
710 00 OSTRAVA
T +420 596 2425-48
F +420 596 2425-51
technik@ex-technik.cz
www.ex-technik.cz

Türkei / *Turkey*
PO-EM Elektrik Malzemeleri
Paz. Dan. ve Eg. Tic. Ltd. Sti.
Nasuh Akar Mah.
1403 Sokak No: 10/3
06550 CANKAYA, ANKARA
T +90 312 287 88 55
F +90 312 287 88 54
info@po-em.com.tr
www.po-em.com.tr

Turkmenistan
Asia Caspian
Engineering Co. LTD
ACECO Group of Companies
Bitaraplyk Avenue 231
Oguzkent Sofitel
Business Center
Room No 201, 2nd floor
ASHGABAT, 744000
T +993 12 44 99 84
M +993 65 09 55 65
nkapoor@acecogrp.com
www.acecogrp.com

Ukraine
Private Joint Stock
Company "DEG"
14 office
3, Peschanaya str.
69089 ZAPOROZHYE
T +380 62 954 36 40
T +380 62 382 84 12
M +380 50 347 96 24
deg@deg.com.ua
www.deg.com.ua

Ungarn / *Hungary*
STAHL Magyarország Kft
17. Maglódi Str., C/I/107
1106 BUDAPEST
T +36 1 433 336-0
F +36 1 433 336-1
rstahl@rstahl.hu
www.rstahl.hu

Usbekistan / *Uzbekistan*
OOO "INKOMKONSALTING"
Mavlyanova str. 48
TASHKENT 100084
T+998 71 235-18-91
F+998 71 234-13-06
emersonuz@inbox.uz

Weißrussland / *Belarus*
ZAO EXIMELEKTRO
Ribalko Str. 26-110
220033 MINSK
T +375 17 2105 390
F +375 17 2984 411 (22)
exstahl@mail.ru

Amerika / *America*

Argentinien / *Argentina*
NAKASE S.R.L.
Calle 49 N° 5764
(B1653AOX) VILLA BALLESTER
PROV. BUENOS AIRES
T +54 11 4768 4242 ext. 122
F +54 11 4768 4849 ext. 111
ccasuscelli@nakase.com.ar

Brasilien / *Brazil*
R. STAHL do Brasil, Ltda.
Rua Barbalha, 303 cjtos. 12 e 13
SAO PAULO / SP 05083-20
T +55 11 3637-0567
F +55 11 3375-8795
vendas@rstahl.com.br
www.rstahl.com.br

Chile
INGENIERIA DESIMAT LTDA.
Av. Puerto Vespucio 9670
9061072 PUDAHUEL SANTIAGO
T +56 2 747 015-2
F +56 2 747 015-3
gdesimat@entelchile.net
www.desimat.com

Kanada / *Canada*
R. STAHL LTD.
7003-56th Avenue
EDMONTON, ALBERTA T6B 3L2
T +1 877 416 4302
F +1 780 489 5525
info-edmonton@rstahl.com
www.rstahl.com

Kolumbien / *Columbia*
AUTOMATIZACION
AVANZADA S.A.
Carrera 97 No 24C-23 Bodega 4
BOGOTA D.C.
T +57 1 5478 510
F +57 1 4132 285
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www.
automatizacionavanzada.com

Kuba / *Cuba*
FONDON REDES Y FLUIDOS, S.L.
C/44 No. 309 e/3ra y 5ta
Miramar, City: LA HABANA
T +537 204 2627 / 204 2384
F +537 204 2664
fondon@fondon.co.cu
www.fondonglobal.com

Mexiko / *Mexico*
ISEL Implementos y Servicios
Electrónicos S.A. de C.V.
Via Lopez Mateos No. 128,
Col. Jocarandas,
TLALNEPANTLA 54050
T +52 55 5398 8088
F +52 55 5397 3985
isel2@prodigy.net.mx
www.isel.com.mx

Panama
FONDON REDES Y FLUIDOS, S.L.
PH Ocean Drive 17B -
Punta Pacifico San Francisco
CIUDAD DE PANAMÁ
T +507 269 8481
F +507 269 8485
comercial.pa@
fondonglobal.com
www.fondonglobal.com

Peru
DIPROSOL PERÚ S.A.C.
Av. Velasco Astete 2371
SANTIAGO DE SURCO
LIMA
T +51 1 275 27 65
F +51 1 275 27 76
ventas@diprosol.com.pe
www.diprosol.com.pe

USA
R. STAHL Inc.
13259 N. Promenade Blvd.
STAFFORD, TX 77477
T +1 800-782-4357
sales@rstahl.com
www.rstahl.com

Venezuela
TEX C. A.
Edificio Lipesa, Piso 3,
Oficina 32
Avenida Orinoco, Bello Monte
CARACAS 1070
T +58 212 9532 769
F +58 212 9521 504
texca-ex@cantv.net
www.texca.com

Asien / *Asia*

Abu Dhabi
SWITCHGEAR
Al Sahwa Trading Co. LLC,
Al Hassan Group of Companies
(Abu Dhabi)
P.O. Box 45491
ABU DHABI
T +971 2 6273270
F +971 2 6270960
M +971 50 8954515
sandeep.rk@al-hassan.com

Abu Dhabi
AUTOMATION
Trizac Abu Dhabi
P.O. Box 4434
ABU DHABI
T +971 2 6330 552
F +971 2 6330 557
trizac@emirates.net.ae

Australien / *Australia*
R. STAHL Australia Pty. Ltd.
Unit 1/91-95 Montague Street
WOLLONGONG NSW 2500
T +61 2 4254 4777
F +61 3 9429 1075
info@stahl.com.au
www.stahl.com.au

Bahrain
Universal Electro
Engineering Co. (UNEECO)
P.O. Box 728
MANAMA
T +973 1782 6644
F +973 1782 7090
uneeco@uneeco.com
www.uneeco.com

China
R. STAHL EX-PROOF CO. LTD.
(Shanghai)
Unit D, 9th Floor, Bldg. No. 4
889 Yishan Road
SHANGHAI 200233
T +86 21 6485-0011
F +86 21 6485-2954
benjamin@rstahl.com.cn

Indien / *India*
R. STAHL (P) LTD.
Plot No. 5 I Malrosapuram Road
Sengundram Indl Area I
Maraimalai Nagar
KANCHEEPURAM DT603 209
T +91 98 4097 3454
sales@rstahl.net

Japan
R. STAHL K.K. Co. Ltd.
Shinyurigaoka City Building 3F
1-1-1 Manpukuji, Asao-Ku
KAWASAKI-SHI,
KANAGAWA 215 0004
T +81 44 9592 612
F +81 44 9592 605
sakae-nishimine@stahl.jp

Kuwait
Rezayat Trading Company
P.O. Box 106
SAFAT 13002
T +965 24816 838
F +965 24831 030
karthik@rezayatkwt.com &
yogesh@rezayatkwt.com
www.rezayatkwt.com

Malaisien und Südostasien / *Malaysia and South East Asia*
R. STAHL Engineering &
Manufacturing SDN. BHD.
Lot 4 (PT 96),
Persiaran Jubli Perak,
Seksyen 22,
40300 SHAH ALAM, SELANGOR,
T +603-51025800
F +603-51025808
office@stahl.my

Neuseeland / *New Zealand*
ELECTROPAR Limited
P. O. Box 58623
GREENMOUNT, AUCKLAND 2141
T +64 9 2742 000
F +64 9 2742 001
mikeb@electropar.co.nz
www.electropar.co.nz

Oman
Al Hassan Group of Companies
P.O. Box 1948, Postal Code 112
RUWI
T +968 248 10575
F +968 248 10287
karthikeyan.s@al-hassan.com &
navin.mk@al-hassan.com
www.al-hassan.com

Pakistan
MAPLE PAKISTAN (PVT.) LTD.
FL-42, Block B Gulshan-e-Jamal
Rashid Minhas Road
KARACHI
T +92 2 1460 2155
F +92 2 1457 5460
pervez@maple.com.pk
www.maple.com.pk

Katar / *Qatar*
Petroleum
Technology Co. W.L.L.
P.O. Box 16069, 8th Floor,
Toyota Tower Airport Road
DOHA
T +974 44419 603
F +974 44419 604
biswadeep@petrotec.com.qa
& nitins@petrotec.com.qa &
latha@petrotec.com.qa
www.petrotec.com.qa

Saudi Arabien / *Saudi Arabia*
SWITCHGEAR
Ali Zaid Al-Quraishi & Partners
Electrical Services
of SA (AQESA)
Al-Quraishi Center,
King Khalid Street
PO Box 7386, DAMMAM 31462
T +966 3 8351155
F +966 3 8352618/8352284
bashara@aqesa.com
www.aqesa.com

AUTOMATION
Arabian Technical Trading Est.
(ATTEST)
PO Box 8415, DAMMAM 31482
T +966 3 8341924
F +966 3 8342071
sheriff@attest.com.sa
www.attest.com.sa

Singapur / *Singapore*
R. STAHL PTE LTD.
10 Jalan Kilang #08-01
Sime Darby Enterprise Centre
SINGAPORE 159410
T +65 62719595
F +65 63770111
rstahl@singnet.com.sg
www.rstahl.com.sg

Südkorea / *South Korea*
R. STAHL CO. LTD.
Suite 1108, Kolon Digital
Tower 1
4 gil 25 Sungsoo-il-ro,
Sungdong-gu SEOUL 133-827
T +82 2 4708 877
F +82 2 4718 285
sales@stahl.co.kr
www.stahl.co.kr

Taiwan
Wan Jiun Technology Co., Ltd.
11 F-1, No. 178, Sec. 4 Cheng Te
Road, Shilin District
TAIPEI CITY 111
T +886 2 2882 2211
F +886 2 2881 7562
ronda@ex.com.tw
www.ex.com.tw

VAE / *UAE*
R. STAHL MIDDLE EAST FZE
P. O. Box 17784
Jebel Ali Free Zone DUBAI
T +971 4 8066 400
F +971 4 8834 685
info@stahl.ae

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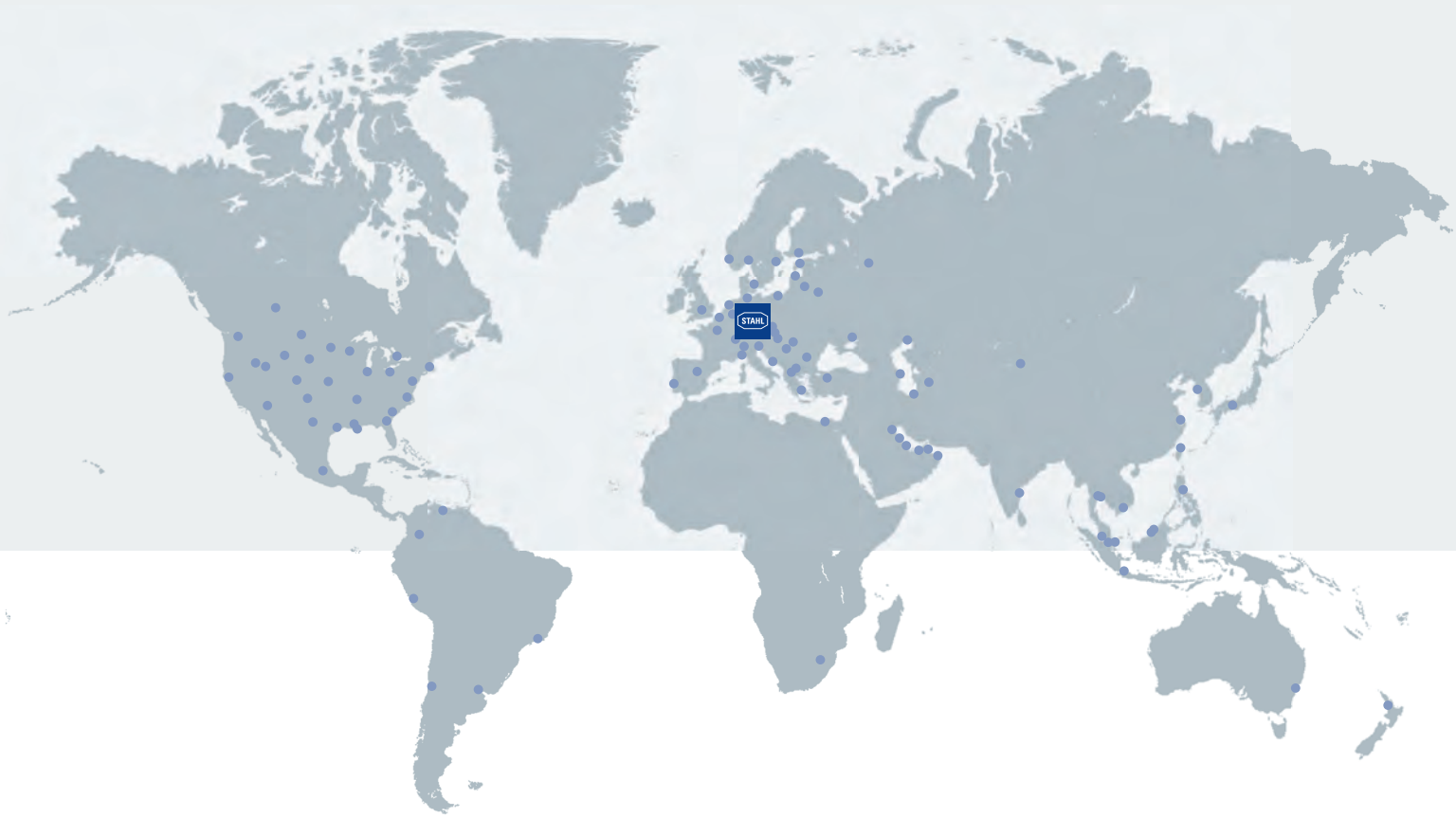

R. STAHL
Am Bahnhof 30,
74638 WALDENBURG · GERMANY
T +49 7942 943-0
F +49 7942 943-4333
info@stahl.de

www.stahl.de

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