Catalogue 2017/2018

WERMA®

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Catalogue 2017/2018

The WERMA product range is completely tailored
to the needs and applications of
our customers from a range of industries.
Compatibility, maintenance and optimisation,
with a unique level of quality:
This is what we call intelligent signal technology.

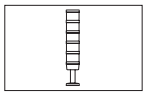
INTELLIGENT SIGNAL TECHNOLOGY

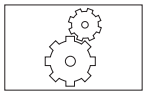
The products and solutions from WERMA make processes safe and keep them running efficiently. This saves you time and money and enables you to sustainably optimise your processes. Customers from various sectors all over the world have benefited from our expertise for years.
Basically, because we offer clever solutions that work.

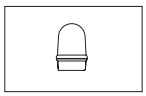

WERMA BENELUX bvba
Wondelgem
WERMA (UK) Ltd.
Wellingborough
WERMA Signaltechnik
Rietheim-Weilheim
WERMA USA Inc.
East Syracuse
WERMA Signaltechnik
Neuhausen a. Rhf.
WERMA SARL
(France)
Mions
WERMA (Shanghai) Co., Ltd
Shanghai

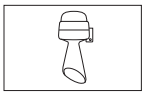
General Information

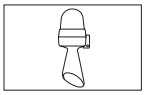
Key to Pictograms "Product Groups"


Product Group
"Signal Towers"


Product Group
"Systems"

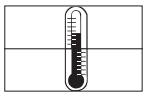

Product Group
"Signal beacons and Traffic lights"


Product Group "Optical-audible combinations"

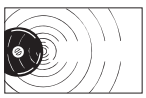

Product Group
"Horns and Sirens"

Key to Pictograms "Product Descriptions"


Protection rating according to
EN 60 529. Explanation page 318

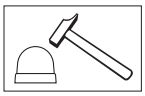

Working temperature in °C,
highest and lowest rating


Net weight excluding packaging,
in grams, ie. kgs


Volume in decibels (dB (A))
measured at 1m distance


Number of possible tones


Flash energy in watt seconds (Joules)


Impact resistance in Joules

PLC
Suitable for triggering via PLC

Key to Pictograms "Marks of conformity and protection types"

CE
All WERMA products bearing the CE mark conform to current EU regulations and are tested for adherence to EMC codes.

AS-Interface
Products in compliance with the AS-Interface specifications (EN 50295, IEC 62026-2) and which have been certified by the AS International Association are marked with the AS-Interface certification logo (shadowed logo).

This mark confirms that the product is suited to the intended application and conforms to the relevant standards and guidelines. In addition, the technical specifications provided by the manufacturer are certified by the TÜV.

Products with this mark have been tested and registered by UL for the North American market. This certification is also valid for Canada. The WERMA production facility is audited by UL.

Products with the addendum "Class 2" may only be used in electric circuits that have been constructed in accordance with UL Class 2.

The aim of EHEDG (European Hygienic Engineering and Design Group) is to prepare and publish guidelines for hygienic engineering in the maufacturing and packaging of foodstuffs. The certification by this consortium confirms compliance with strict design criteria for avoiding weaknesses in construction and for minimising the risk of contamination.

The Fraunhofer Institute certificate for production engineering and automisation (IPA) is a test label for products which have been qualified according to recognised standards and guidelines as to their objective suitablility for use in clean rooms.

Devices bearing this mark and number are authorised for use in hazardous areas. Ex devices guarantee a high level of resistance to extreme conditions.

The VdS guidelines contain the standards which signal devices must fulfil in order to be built into intruder and fire alarm systems.

The Eurasian conformity symbol EAC is granted by the customs union Russia/Bellarussia/Kazakhstan. The EAC symbol confirms that the product has undergone the conformity procedures and has met its technical requirements.

German Lloyd sets technical, quality and safety standards for the industrial and maritime sector.

In addition to the classification of ships of all types, German Lloyd is also active as a world-wide technical monitoring society.

The IECEx certification confirms that the product has been certified as suitable for use in explosion endangered applications. The product has been manufactured at a site which is continuously assessed by the responsible authorities. The certificate is recognised in all countries participating in the IECEx system.

The special organisation of the United Nations has given the ICAO (International Civil Aviation Organisation) the task of establishing and developing uniform regulations governing the safety and economic viability of civil aviation processes. The guidelines of the ICAO will only be applicable to all member states but must also be transferred into local statutes of law.

General Information

General notes on catalogue descriptions

Sound levels and frequencies

The specified sound levels are based on tests carried out in our factory. These levels are typical for the specific products and inevitably subject to variation. Mounting position and/or type can alter specifications.

The rated frequencies of buzzers are also dependent on the tolerances of the individual components and can vary up to 500 Hz from the quoted rating. No frequency rating can be stated for horns as the spectrum is so wide that any stated rating cannot be accurate. The fundamental frequency for AC devices is 100 Hz, for DC devices c. 200 - 500 Hz. This means that they emit a deeper tone than piezo devices which have values typically between 2000 and 3000 Hz.

Current consumption

The current consumption levels quoted are standard values. The ratings are based on the virtual value for AC, i.e. the average value for Dc.

The measured value is normally calculated over a period of 10 seconds. The highest current consumption rating can be considerably higher than the calculated rating.

The starting current of a product can be above the rated current by ten fold.

Assured values

The technical specifications of our products have been rigorously and thoroughly tested. A quality guarantee according to § 463 BGB is however only applicable where expressly stated.

WERMA is only liable for damage arising from the failure of guaranteed properties when the guarantee was expressly intended to protect the customer from this damage.

Measurements, weights, ratings and illustrations are subject to technical amendment.

Product descriptions

The product descriptions found in the price list and on all documents are made up of the following information:

Product type:	**Fixing:**	**Tone type:**	**Voltage:**	**Colour:**
Electronic Buzzer	BM = Base mounting	32 tones	12 V	BK = black
LED Permanent Beacon	BWM = Base/Bracket mounting	4 tones	24 V	BU = blue
etc.	EM = Installation mounting	etc.	115 V	CL = clear
	RM = Tube mounting		230 V	GN = green
	WM = Bracket mounting	alternating cont./pulse	etc.	GY = grey
		continuous pulse		RD = red
				YE = yellow
				WH = white
				MC = multicolour

Examples:
Electr. Buzzer EM Continuous tone 115 V UC
LED Permanent Beacon EM 24 V DC RD

Note: Colour order of a signal tower from the bottom to the top

MTTF values

"MTTF" is the abreviation for **Mean Time To Failure** and is also described as the average life cycle or **"$MTTF_d$"** (= the average time until failure leading to a dangerous situation).

The European Norm **EN ISO 13849-1** has caused a new significance to be attached to "MTTF" values, because they are used to evaluate machine safety within the conformity tests.

The MTTF is a statistical value, which is calculated by **means of testing or experience** of past values. It does not provide a guaranteed life duration or a guaranteed functional period.

MTTF values have been calculated for a variety of **WERMA products**. Please contact us for further details.

Protection ratings

Protection ratings for signal devices: Protection ratings for housings DIN EN 60529 (DIN VDE 0470 IEC 60529).

First digit:
degree of protection against contact with dangerous parts and the intrusion of foreign particles.

IP 0X no protection

IP 1X protection against contact with the back of the hand.

IP 2X protection against finger contact with live or moving parts in the appliance. The test finger with Ø 12 mm and 80 mm length must not come into contact with dangerous parts. A ball of 12.5 mm diameter should not be able to fully penetrate the housing.

IP 3X test bar Ø 2.5 mm may not penetrate the housing.

IP 4X a wire with Ø 1 mm may not penetrate the housing.

IP 5X complete protection against dust cannot be guaranteed, but dust is not able to accumulate in such a way as to impair the operation of the device.

IP 6X total protection against dust (no penetration).

Second digit:
degree of protection against water.

IP X0 no protection

IP X1 protection against vertically falling water drops.

IP X2 protection against water drops so long as the device is tilted to an angle of 15°.

IP X3 protection against water spraying at any angle up to 60° to the vertical.

IP X4 protection against water spraying at any angle.

IP X5 protection against jets of water directed from any angle at the appliance.

IP X6 protection against heavy seas. A strong jet of water may not harm the appliance.

IP X7 protection against occasional immersion.

IP X8 protection against permanent immersion.

IP X9k protection against water during high pressure / steam cleaning.

Comparison between NEMA and IEC protection ratings - classification

NEMA Protection Type Number	Protection	IEC Protection Classification Designation
1	Falling dirt	IP 10
2	Dripping water and falling dirt	IP 11
3	Wind blown dust, rain and hail;	
	no damage due to external ice formation	IP 54
3 R	Rain and hail; no damage due to external ice formation	IP 14
3 S	Wind blown dust, rain and hail;	
	can be operated even with external ice formation	IP 54
4	Wind blown dust, rain, splashes and a direct jet of water;	
	no damage due to external ice formation	IP 56
4 X	Wind blown dust, rain, splashes and a direct jet of water;	
	no damage due to external ice formation, corrosion protection	
5	Dust, falling dirt, dripping non-corrosive liquids	IP 52
6	Direct jet of water, temporary submersion;	
	no damage due to external ice formation	IP 67
6 P	Direct jet of water, longer periods of submersion;	
	no damage due to external ice formation	IP 67
12 and 12 K	Circulating dust, falling dirt, dripping non-corrosive liquids	IP 52
13	Dust, splashes of water, oil, non-corrosive liquids	IP 54

Cannot be used to convert IEC Classification Designations to NEMA Type Numbers.
Note: This comparison is based on tests specified in IEC Publication 60529.

AS-Interface

AS-Interface, the Actuator Sensor Interface and its distinctive 'yellow cable' is one of the most innovative networking solutions in modern automation technology.

Conceived in 1990 as a cost-efficient, feature-rich alternative to conventional hard-wiring, AS-Interface has now been proven in hundreds of thousands of products and applications spanning the entire automation spectrum.

AS-Interface offers many of the benefits of more powerful and expensive fieldbuses, but at much lower cost and at much simpler application. The complete network is controlled automatically by a 'master' which polls the network sending and receiving data from each connected device in turn. It automatically senses and registers any connected devices, thus neither configuration nor application-specific software for the master is necessary.

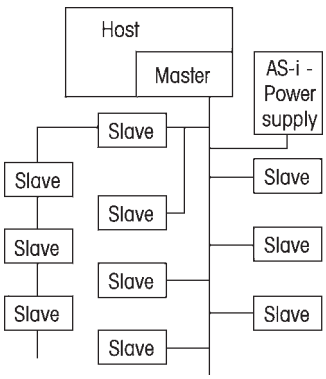
Unique technology

Due to the cable structure, AS-Interface offers a unique mounting technology. Without any cutting or removal of insulation, sharp pins penetrate the cable insulation making the electrical contact as the connection elements are closed. This technology ensures protection up to IP 65.

Cost savings

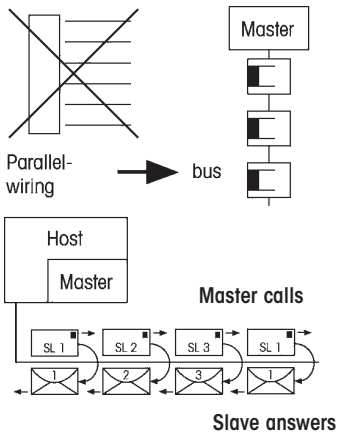
In general, applications from as few as ten sensors and actuators to very large systems can benefit, especially when the whole life cost advantages are taken into account. Distributing the input and output functionality is one starting point for cost savings, enabling point to point wiring systems to be reduced to a single cable, eliminating or reducing cable trees, service cabinets and multiple connectors. The special AS-Interface connection technology replaces labour-intensive wiring. The tree structure permits better optimised system design and improved layouts, bringing easier installation and maintenance. Network configuration is eliminated.

System Survey



- Single master-slave principle
- Up to 62 slaves with one master
- Per slave up to 4 digital inputs + 4 digital outputs
- Max. 248 digital inputs and outputs
- Additional 4 parameter bits/salve
- Also possible: analogue I/O
- Electronic addressing of slaves
- Free structure of the network

How AS-Interface® works



- AS-Interface® - a bus system, which subsitutes parallel wired installation from pic to sensors and actuators
- Data and energy in the same cable
- 1 Master and max. 62 slaves
- Total cycle time < 10 ms - with max. number of 32 slaves
- Master-slave principle: The master calls and the slave answers immediately

Cable power

The yellow cable can carry up to 8 A, which means that no additional wiring is required in typical installations. Several hundred mA may be drawn by a single slave device on the network. Where higher power is needed, or for emergency stop situations, a black secondary DC or AC power cable offers complementary advantages. If round cable is preferred, a wide variety of screw and push-fit termination modules offer this, with no performance compromise.

Products with AS-Interface

WERMA Signaltechnik GmbH & Co. KG has been a member of the AS - Interface® Association since 1996.

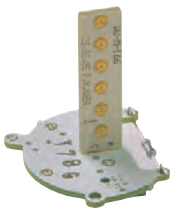
WERMA's product range encompasses the LED Installation Beacon (Multicolour) 239 is available for AS-Interface®. This is suitable for the extended addressing (A/B engineering) of up to 62 modules. This beacon is provided with electircity via the bus.

WERMA's product range also contains products with AS-Interface® for Kombi*SIGN* 71 as well as custo-mised developments. The entire BUS electronic system is integrated in the element placed at the base of the signal tower. The Kombi*SIGN* AS-Interface® elements offer the customer beneficial features such as an addressing socket and status LEDs. A user-friendly sliding switch inside the module can be used to provide the power supply required for the signal towers from an external 24 V auxiliary voltage or via the integrated bus bypass.

The generation of light - a summary of the possibilities

Light can be generated in various ways. In the field of signalling technology LEDs are used in the majority of applications.

LED



Light emitting diodes are constructed using certain semiconductors. Foreign atoms are built into the semiconductor with the purpose of optimising the conductibility. Half of the semiconductor (n-region) is doped with foreign atoms that contain one bonding electron more than the semiconductor atom. This surplus atom can move freely and increases conductibility.
The other half (p-region) is doped with foreign atoms containing one electron less than the semiconductor. When the LED is switched on, these faults ("holes") fill up with free electrons (recombination). Energy in the form of radiant photons is hereby released. The energy and therefore the colour of the light emitted is determined by the material the semiconductor is made of; e.g. GaAsP (Gallium Arsenic Phosphide) results in red light.

Bulbs

A tungsten filament is heated up to a high temperature, so radiating energy over a wide wavelength. This is perceived as light similar to sunlight. The tungsten filament evaporates with time. When the tungsten content falls below a certain level, the maximum life duration of the bulb is reached. As tungsten oxidises quickly and is destroyed when it comes into contact with air, the filament must be kept in a non-oxidising atmosphere such as vacuum. This leads us to the familiar light bulb with its sealed glass body.

Halogen bulbs

These are bulbs wherein the tungsten filament is enclosed by a small amount of halogen.
The resulting chemical reaction has the effect of lengthening the life of the tungsten and stabilising the light output throughout the entire life duration of the bulb.

Electric discharge tubes

Xenon flash tubes are widely used in signalling technology. They consist of a glass tube filled with the inert gas xenon. A sufficiently high voltage leads to a discharge of energy with a spark gap and a flash of high intensity.

Light in Signalling technology

Fundamental units of light magnitude

The fields of lighting and signalling technology differentiate between fundamental units to define light itself. The most important of these are the units Lumen, Candela and Lux.

Lumen (unit lm)

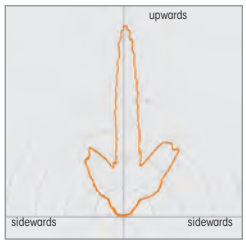
Light current is measured in Lumen; this is the unit for the entire visible light output of a light-emitting source. The light current is defined by the following formula known as the brightness characteristic:

Light current ϕ [in *lm*] = radiation capacity x brightness characteristic V(λ)

The brightness impression upon the human eye is based on a sensitivity curve V(λ) which reproduces the sensation felt by the eye in relation to the wavelength. The maximum point on this curve is at about 555 nm; we see best at this wavelength; V(555 nm) = 1.

Candela (unit cd)

In signalling technology only the part of the light current that is emitted in a certain direction is of importance. This light intensity is measured in Candela. It is defined by the light current of a lamp and the steradian measure .



$$\text{Light intensity [in } cd\text{]} = \frac{\text{Light current } \phi}{\text{Steradian measure } \Omega}$$

A complete sphere has a dihedral angle of $\Omega = 4\ \pi$ sr. sr stands for the steradian and is the unit for the dihedral angle.

Example: a household candle emitting a light intensity of 12,566 Lumen has a light intensity in relation to the steridian measure $\frac{12{,}566\ \text{lm}}{4\pi\ \text{sr}} \approx 1\text{cd}$.

This explains the name: candela is the Latin word for candle.

Lux (unit lx)

Illumination density is an important unit in lighting installations. It is the measure of the brightness with which an area is illuminated. Whereas light intensity (in cd) is a property of a light source, illumination density is calculated in regard to the area to be illuminated.

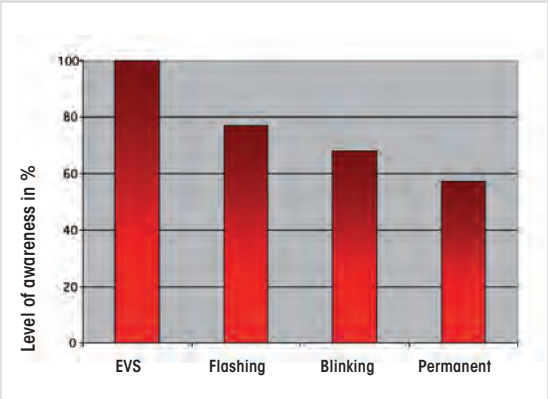
Where the light current emitted is constant, the following formula is applicable:

$$\text{Light density E [in lux]} = \frac{\text{Light current } \phi}{\text{Surface A}}$$

Signalisation Index

The signalisation index provides an easy opportunity to select the correct WERMA product. Derived from the test measurements of the respective products and the subjective signal perception, this index quickly leads you to the appropriate product. In this way you can very easily find the optimal product for your individual application.

Why does WERMA incorporate the subjective signal perception into the signalisation index? ...
... because physical parameters alone are only conditionally comparable with regard to signal effect. For example, a dynamic light is generally more strongly perceived than a static light. A blinking light therefore has a greater signal effect than a permanent light - even though the light output is exactly the same. This effect is even stronger for an EVS/flickering light.



Permanent light and LED Permanent light

With the assistance of a permanent light or an LED permanent light the operator is made aware of a specific condition or is instructed to carry out a certain course of action.

For safety reasons signal beacons are increasingly equipped with light emitting diodes. The failure of optical signal devices is significantly reduced as a result of the longer life duration of LEDs. Furthermore, LEDs offer a range of advantages compared to conventional light bulbs for example lower current consumption, greater resistance to shocks, vibrations and other mechanical stress.

LED Beacons (Multicolour)

As well as offering traditional single coloured beacons, Werma has several multicolour LED products which give the user multiple colour choices in just one beacon.
The 816 LED beacon with USB connection uses RGB LED technology from which you can select up to 200,000 colour variants also in different light effects, such as permanent, blink or special flash.

The LED multicolour beacons 239 and 816 with M12 connectors offer up to 7 colours and enable you to signal several different status conditions with just one beacon.

Optical Signal Devices

Xenon Flashing Light

The deployment of a flashing signal can generate even more attention than a permanent light. The reason for this is to be found in the very short flash duration.

Inside each Xenon flashing beacon there is a capacitor which stores electrical energy. Within the space of a few milliseconds this energy is discharged within the flash tube, generating a very intense light impulse.

The life duration of a flash tube is heavily dependent on the respective load. The average life duration in permanent operation is 4 x 10^6 flashes.

(LED) Flashing or Blinking Light and LED EVS Signal Beacon

The deployment of a flashing or blinking signal can generate even more attention than a permanent light. Blinking and flashing beacons nowadays often employ long-life LED technology which has a significantly longer life duration of up to 50,000 hours with a considerably reduced power consumption.

The stochastic, random flickering light EVS (Enhanced Visibility System) has been developed by WERMA on a neurobiological basis. As deployed in LED Beacons, this technology succeeds in generating an optimal attention level never previously reached by existing signal devices.

WERMA employs LEDs for its EVS system. A microprocessor triggers random light signals, which make the light appear extremely "agitated", thus generating a continuously high attention level amongst those in the vicinity - even when viewed out the corner of the eye.

Rotating Mirror Beacon and LED Rotating Signal Beacon

Inside each rotating mirror beacon is a halogen bulb, and a mirror to deflect the light in one direction. This generates a rotating light beam.

In contrast to conventional Rotating Mirror Beacons, the LED version generates the rotating signal by means of a set of LEDs which are triggered in sequence.

As no mechanical components have been used at all, the beacon is completely maintenance-free.

LED Element „ultrabright“

Good visibility, even in direct sunlight, is a basic precondition for the reliable deployment of signal devices in outdoor areas. This is a standard feature of the signal towers and beacons from WERMA Signaltechnik. There are however applications which place even more extreme demands on the visibility of optical signalling.

Up to 20 times brighter

Thanks to its sophisticated triggering, the innovative LED element "ultrabright" is up to 20 times brighter than conventional LED beacons - making it almost certainly the **brightest permanent light** that the world of signalling technology currently has to offer.

Furthermore, the **intelligent electronics** ensure that the LEDs operate at maximum brightness, depending on the ambient and operating temperatures. The "ultrabright" LED element is therefore always working at its optimum, and the energy-saving LED technology ensures that power consumption is kept to a minimum.

EVS - Enhanced Visibility System

A groundbreaking innovation in LED technology opens up a completely new dimension in optical signalling. Enhanced Visibility System, or the electronic improvement of visibility, EVS for short, is the name WERMA has given to this latest development which promises to bring about a revolution in signal technology.
This technology is generally used when a particularly high level of awareness should be generated.

Irregular light impulses can circumvent the brain's filter function. Random light signals fail to generate an acclimatisation effect and the brain is unable to escape the stimulus, even when the flickering continues for an extended period.

EVS signal devices communicate highly urgent situations

As a result of the extremely powerful signal effect, the EVS light is especially suited to signalling acute or highly important conditions. The EVS element can also be deployed in hazardous situations or in areas where immediate action is required.

Integrated into Kombi*SIGN* Signal Towers, the EVS LED Element generates a highly attention-grabbing signal (see page 32 and 39).

This innovative technology is also used in the 853 (page 165), 280 (page 158) and 829 series (page 148 onwards) and in the optical-audible combinations 444 (page 277 onwards) and 43x (page 270 onwards).

EVS - unique light effect using LED technology

The new EVS LED Element generates a high attention-grabbing signal effect.

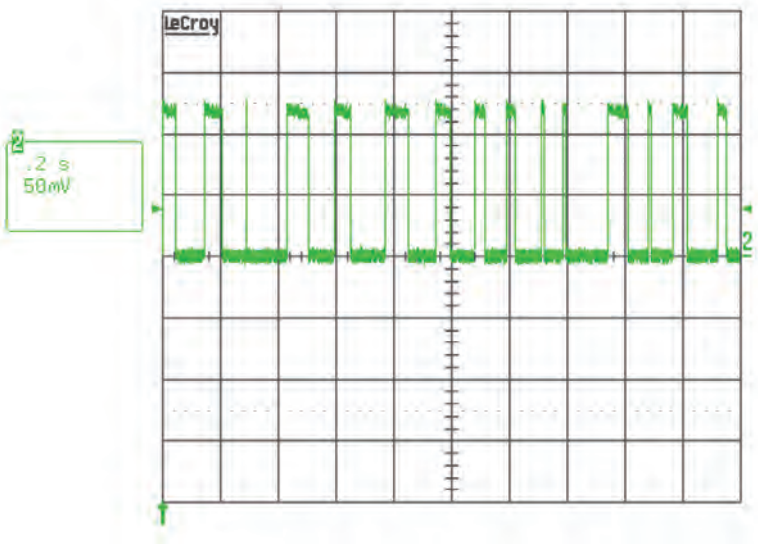
For the EVS system WERMA employs light emitting diodes. A microprocessor generates random light signals.

This gives the light a very "agitated" character which proves highly effective in drawing the atten-tion of those in its vicinity - even when seen out of the corner of the eye.

Up to now LED signal devices have confined themselves to imitating the light effects of light bulbs or xenon flashes, EVS however utilises the strengths of light emitting diodes. LEDs are capable of generating the required high flickering frequency with ease - frequencies which xenon flashes are for example incapable of generating.

Further advantages of LEDs are the resistance to vibration, their long life duration as well as their low current consumption.

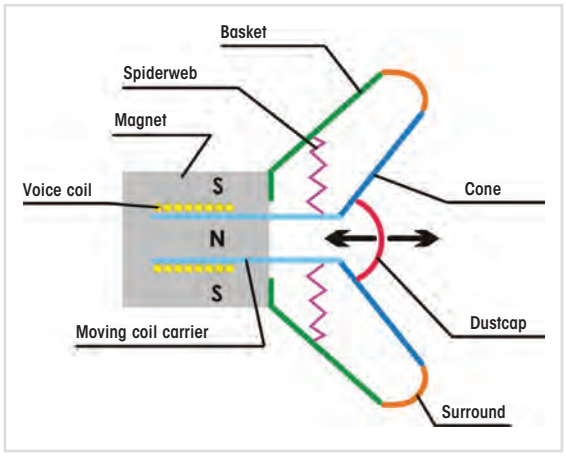
Typical 2 second section of an EVS LED element's illumination sequence



Acoustics in Signalling technology

Loudspeakers (electro-dynamic sound generation)

A loudspeaker converts an alternating electric current into sound waves. This occurs by means of the interaction between the electric current and a permanent magnet. The coil is positioned within the magnetic field of the permanent magnet. When an electric current is applied to the coil, the Lorentz force generated leads to a deflection of the coil, causing the membrane to vibrate.



As a result of the centering spider this proceeds in an up and down motion. It centres the coil and, together with the bead, ensures that it returns to the resting position.

With the use of the appropriate size of membrane and material, as well as different drives (coils and permanent magnets), loudspeakers can be optimised for a variety of different frequency ranges.

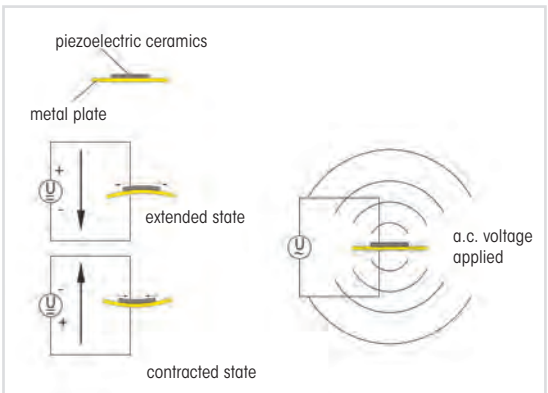
Acoustic capsule (electromagnetic sound generation)

The acoustic capsule belongs to the group of electromagnetic sound generators. This principle was previously used for telephone earpieces. Within the capsule a permanent magnet serves to pre-magnetise the armature which is connected to the membrane. This is made to oscillate and these oscillations are then converted into audible tones. The acoustic capsule is characterized by a relatively simple construction and a compact form and displays a high degree of effectivity.

Piezo disc

Piezoelectricity (also known as the piezoelectric effect, or for short: piezo effect) refers to the interaction of mechanical pressure (Greek piezein = to press) and electrical currents in solid bodies. It describes the phenomenon whereby the deformation of certain materials leads to the generation of an electric charge at the surface (direct piezoelectric effect).

In a reverse process these materials (predominately crystals) deform when a voltage is applied. The deflection is relatively small so they need to be transmitted to a membrane, from where the oscillations excite air molecules which are then perceived as sound.



Principle acoustic parameters

Sound output level

The sound output level L_p refers to the logarithmic relationship of the square of the sound output of an acoustic event to the square of the reference value p_0 = 20 µP. The result is given in decibels (abbreviation dB).

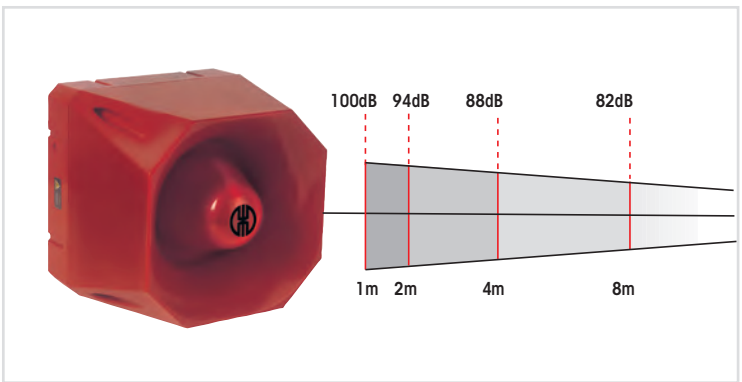
$$L_p = 10 \log_{10}\left(\frac{p_1^2}{p_0^2}\right) \text{dB} = 20 \log_{10}\left(\frac{p_1}{p_0}\right) \text{dB}$$

When indicating an absolute level (with reference to the standardized reference level p_0 the abbreviation "SPL" (sound pressure level) is added.

With intermediate to high levels and frequencies a sound output difference of 10 dB is heard as approximately twice as loud. Differences of 3 dB are clearly audible. The perceived sound level is not just dependent on the sound output level, but also on the spectrum of the sound signal and its temporal progression. Single tones are perceived as being considerably louder than a broadband audible signal with the same sound output level. Audible signals with sharply changing levels are also perceived as being significantly louder than uniform audible signals with the same average level.

Weighting curves (A, B and C according to DIN EN 61672-1, formerly IEC/DIN 651) are the curves from weighting filters that are applied to the sound output signal. They are designed to reproduce a similar frequency response as that of the human ear for a specific sound level. However they are only able to achieve a rough approximation, the values obtained for the weighted sound output measurements do not exactly match those of the human ear.

Weighting levels are indicated by the corresponding letter of the frequency weighting, e.g. a C weighting sound output level is given in dB (C). In the field of technical acoustics the A weighting level is predominately employed. For this reason WERMA specifies levels in dB (A).



The sound output level is always dependent on the distance from the source of the sound. WERMA specifications are always based on a measuring distance of 1 m, unless otherwise stated.

In the case of point sound sources (generally applies for all sources radiating equally in all directions), the sound output level decreases by **6 dB with each doubling of the distance from the source**.

Acoustics in Signalling technology

Environmental factors

In addition to the sound output level, the tone frequency and the distance to the signal device, environmental factors are also decisive for the quality of the signal. Wind, humidity or even rain all have an effect on audibility. A very important factor is the ambient noise level.

In industrial environments in particular, the ambient noise level produced by machines is often very high. Accordingly, the signal devices must produce a sufficiently high sound output in order to be heard.

WERMA has developed loud signal horns and sirens for this purpose. With fluctuating ambient noise levels, the use of a siren with a self-adjusting sound level is recommended - a patented invention from WERMA.

Table of working range

Sound pressure level dB (A)	Distance in m												
	1	2	3	5	10	20	30	50	100	200	300	500	1000
	120	114	110	106	100	94	90	86	80	74	70	66	60
	118	112	108	104	98	92	88	84	78	72	68	64	58
	116	110	106	102	96	90	86	82	76	70	66	62	56
	114	108	104	100	94	88	84	80	74	68	64	60	54
	112	106	102	98	92	86	82	78	72	66	62	58	52
	110	104	100	96	90	84	80	76	70	64	60	56	50
	108	102	98	94	88	82	78	74	68	62	58	54	48
	106	100	96	92	86	80	76	72	66	60	56	52	46
	104	98	94	90	84	78	74	70	64	58	54	50	44
	102	96	92	88	82	76	72	68	62	56	52	48	42
	100	94	90	86	80	74	70	66	60	54	50	46	40
	98	92	88	84	78	72	68	64	58	52	48	44	38
	96	90	86	82	76	70	66	62	56	50	46	42	
	94	88	84	80	74	68	64	60	54	48	44	40	
	92	86	82	78	72	66	62	58	52	46	42	38	
	90	84	80	76	70	64	60	56	50	44	40		
	85	79	75	71	65	59	55	51	45	39			
	80	74	70	66	60	54	50	46	40				
	75	69	65	61	55	49	45	41					
	70	64	60	56	50	44	40	36					
	65	59	55	51	45	39	35						

Signalisation Index

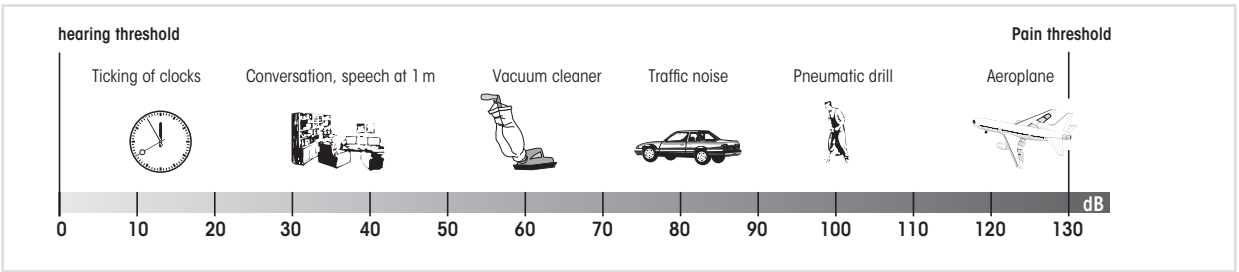
The signalisation index provides an easy opportunity to select the correct WERMA product. Derived from the test measurements of the respective products and the subjective signal perception, this index quickly leads you to the appropriate product. In this way you can very easily find the optimal product for your individual application.

Why does WERMA incorporate the subjective signal perception into the signalisation index? ...
... because physical parameters alone are only conditionally comparable with regard to signal effect. The measured values take the perceptive faculty of the ear into account, but the psychological effect of various of tones and frequencies is not reflected as it cannot be detected by the measuring equipment. This is why WERMA has introduced the signalisation index.

The audibility of an audible signal is dependent on a number of different factors:

- the sound output of the signal (in dB)
- the tone frequency (in Hz)
- the distance between signal device and recipient
- the noise level of the surrounding area
- other influences (for example air humidity, wind direction)

Examples of noise in everyday life



Tone frequency

Sound is a series of fluctuations in the air pressure at different amplitudes occurring at a specific rate per unit of time. This rate is termed frequency and is measured in the unit 1/s = 1Hz (Hertz). It is named after the German physicist Heinrich Rudolf Hertz. A tone is generated by an oscillation at a certain frequency. The musical tone A for example, has a frequency of 440 Hz. Noise is the term used to describe a number of overlapping tones.

The human ear is only capable of hearing tones within a certain frequency range. In the case of children this range is between 20 and 20,000 Hz. This sensitivity declines with increasing age: by the age of 50 the limit is approximately 12,000 Hz, and with advanced age this is often as low as 5,000 Hz.

The human ear hears tones of different frequencies at different relative strengths. The limit of audibility and the pain threshold are therefore dependent on the respective frequency. For this reason audible signal devices generally operate at a frequency between 500 and 3,000 Hz.


WERMA
SIGNALTECHNIK
CE

Signal Towers

Overview Signal Towers

Whether they are used on machinery and equipment, manual workstations or for access control and point-of-sale systems, WERMA signal towers reliably signal different statuses, such as faults or material replenishment requests. Professional signalling provides your application with greater safety and security and considerably reduces response times. The urgency of the signal can be easily increased using different signal elements. This enables employees to immediately react to faults and quickly resolve any problems that arise.

Monitor your processes, make them reliable and keep them running - saving time and money.
We call this intelligent signalling technology.

Overview Signal Towers					
Product type		**modular**	**modular**	**modular**	**pre-assembled**
Technical details	**Product range**	**Kombi*SIGN* 40**	**Kombi*SIGN* 72**	**Kombi*SIGN* 71**	**KOMPAKT 37**
Diameter*		40 mm	70 mm	70 mm	37,5 mm
Dimensions*					
Voltage	12 V				●
	24 V	●	●	●	●
	115 V			●	
	230 V			●	
Protection rating		IP 66	IP 65	IP 65	IP 65
Number of tiers possible		1-5	1-5	1-5	1-6
Optical Signalisation Index**		3-5	4-6	2-6	3
Audible Signalisation Index**		3-5	5-6	3-6	4
Interface			ASi, USB	ASi, USB	
Page		Page 26	Page 32	Page 38	Page 48

* Technical diagrams can be found on the product page

** Signalisation Index – see page 13 + 21

Modular Signal Towers

Optical and audible signal elements can be combined flexibly in the modular signal towers. The modular design also enables customers to add other elements separately when required. The mechanical and electrical connection of the signal tower elements takes mere seconds thanks to the bayonet fitting.

Completely pre-assembled Signal Towers

Completely pre-assembled WERMA Signal Towers can be ordered as a compact unit with a single part number, which reduces ordering and installation effort. Impressive features include their stylish design and diverse installation options, allowing them to be used in a wide range of areas.

					
pre-assembled	pre-assembled	pre-assembled	pre-assembled	pre-assembled	pre-assembled
de*SIGN* 42	Clear*SIGN*	Clean*SIGN*	Flat*SIGN*	Vario*SIGN*	Ex Signal Tower
42 mm	40 mm	70 mm	-	-	37,5 mm
	Ø 104 mm	112 mm x 125 mm	195 mm x 105 mm	62 mm x 90 mm	76 mm x 75 mm
●	●	●	●	●	●
			●		
			●		
IP 65	IP 66	IP 67/IP 69k	IP 65	IP 65	IP 65
2-3	3-4	3	3	3	2-3
3	3-4	3-5	2-3	3-5	3
	3	3	2	3	
	I/O-Link				
Page 52	Page 54	Page 56	Page 58	Page 60	Page 62

Kombi*SIGN* 40 - Modular Signal Tower

Size comparison Kombi*SIGN* 40/72


Signalisation Index			
Optical		**Audible**	
LED Permanent Light	2	Continous tone	3
LED Blinking Light	4	Pulse tone	4
LED Flashing Light	5	Multi tone	5
LED EVS Light	5		

Your benefits

There is no need to compromise with the Kombi*SIGN* 40, because WERMA has combined quick installation, excellent visibility and the highest level of flexibility in this product. This saves time and money with regard to installation and order logistics.

- Save up to 50% on installation time thanks to self-explanatory connections and intuitive mechanics
- Maximum flexibility despite a small number of variants
- Twin*LIGHT* and Twin*FLASH* combine two easily selectable light effects in one element
- In Classic*LOOK* or Design*LOOK* to suit all machine surfaces
- Clearly visible from all positions thanks to the Omni*VIEW* lens with no blind spots
- Completely pre-assembled standard versions are available (common configurations as a complete tower with a single part number)

TwinLIGHT

TwinFLASH

Typical applications

Fault signalling

- on machinery and equipment
- on automated systems
- in assembly plants, for example, in the automotive industry

Installation options

- Base mounting
- Tube mounting
- Single-hole mounting
- Additional Installation options using accessories

Features

- Multicolour element offers up to seven colours in a single element
- High IP66 protection rating prevents ingress of dust and water
- Compact and high-output 95 dB siren
- Optionally available with IO-Link technology

IO-Link

How to assemble your Kombi*SIGN* 40 signal tower

Classic*LOOK*

Design*LOOK*

▸ STEP 1
Select the required optical or audible elements.

Order numbers can be found on page 29.

Audible Signal Element
- 8 tone siren
- 2 tone siren

Optical Signal Elements
- Twin*LIGHT*
- Twin*FLASH*
- LED Permanent light element multicolour

▸ STEP 2
Select the terminal element and appropriate mounting solution for your application.

Terminal element
Order no.
630 800 75

Terminal element
Order no.
630 700 75

▸ STEP 3
Optional:
Where appropriate, select the bracket.

Can be installed between the terminal element and the mounting adapter.

Extension tube
Order no.
960 630 03

Extension tube
Order no.
960 630 07

▸ STEP 4
Select tube extensions as required.

Tube Mounting	Single Hole Mounting	Base Mounting	Tube Mounting	Single Hole Mounting	Base Mounting
					
Adapter for tube mounting Order no. **630 830 00**	Adapter for single hole mounting Order no. **630 820 00**	Adapter for base mounting Order no. **630 810 00**	Adapter for tube mounting Order no. **630 730 00**	Adapter for single hole mounting Order no. **630 720 00**	Adapter for base mounting Order no. **630 710 00**

▸ STEP 5
Where appropriate, select the bracket and the contact box.

			
Bracket for assembly on aluminium profiles Order no. **960 630 02**	Bracket for concealed cable entry Order no. **960 630 01**	Bracket for assembly on aluminium profiles Order no. **960 630 06**	Bracket for concealed cable entry Order no. **960 630 05**

Further accessories can be found in our main catalogue or at **www.werma.com**.

Kombi*SIGN* 40 - Modular Signal Tower

Or use one of our pre-assembled signal towers. With just one part number you can obtain the most popular configurations.

Kombi*SIGN* 40 Signal Tower
in Classic*LOOK*

Kombi*SIGN* 40 Signal Tower
in Design*LOOK*

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

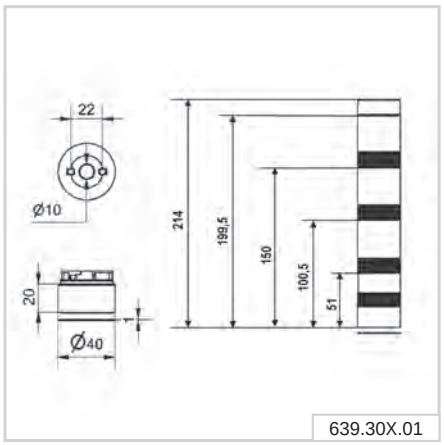
Pre-assembled signal tower	**Classic*LOOK***	**Design*LOOK***
Dimensions (Ø x Height)**:**	40 mm x 214 mm	
Voltage:	24 V AC/DC	
Twin*LIGHT* green/yellow/red	**639 300 01**	**639 301 01**
Consisting of:	 634 110 75 + 634 310 75 + 634 210 75 + 630 800 75 + 630 810 00	 634 130 75 + 634 330 75 + 634 230 75 + 630 700 75 + 630 710 00

Technical details are given on the relevant product page.

ACCESSORIES:

	Classic*LOOK*	Design*LOOK*
Bracket for concealed cable entry	**960 630 01**	**960 630 05**

TECHNICAL DIAGRAMS:



Kombi*SIGN* 40 - Optical Signal Elements

Kombi*SIGN* 40 Signal Tower
in Classic*LOOK*

Kombi*SIGN* 40 Signal Tower
in Design*LOOK*

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

	Classic*LOOK*	Design*LOOK*
Dimensions (Ø x Height):	40 mm x 58,6 mm	
Lens:	PC, transparent	
Life duration:	50,000 hrs	
Twin*LIGHT*		
Light effects:	LED Permanent or Blinking light, adjustable via slide switch	
Voltage:	24 V AC/DC	
Current consumption:	< 50 mA	
red	**634 110 75**	**634 130 75**
green	**634 210 75**	**634 230 75**
yellow	**634 310 75**	**634 330 75**
white	**634 430 75**	**634 430 75**
blue	**634 510 75**	**634 530 75**
Twin*FLASH*		
Light effect:	LED Flash light or EVS, adjustable via DIP-Switch	
Voltage:	24 V DC	
Current consumption:	< 65 mA	
red	**634 120 55**	**634 140 55**
green	**634 220 55**	**634 240 55**
yellow	**634 320 55**	**634 340 55**
white	**634 440 55**	**634 440 55**
blue	**634 520 55**	**634 540 55**
Multicolour		
Light effect:	LED Permanent light	
Colours:	Red, yellow, green, blue, white, violet, turquoise controlled by binary inputs	
Voltage:	24 V DC	
Current consumption:	< 100 mA	
Order No.:	**634 450 55**	**634 450 55**

TECHNICAL DIAGRAMS:

Kombi*SIGN* 40 - Audible Signal Elements

8 tone Kombi*SIGN* 40 siren in Design*LOOK*

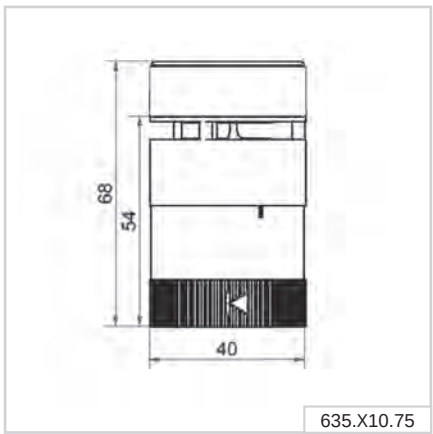
2 tone Kombi*SIGN* 40 siren in Classic*LOOK*

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

	Classic*LOOK*	Design*LOOK*
Housing:	PC	
Life duration:	5,000 hrs	
2 Tone Siren		
Dimensions (Ø x Height)**:**	40 mm x 45 mm	
Sound output:	85 dB (A)	
Tone type:	Continuous or pulse tone, can be set via slide switch	
Voltage:	24 V AC/DC	
Current consumption:	< 80 mA	
Order No.	**635 800 75**	**635 700 75**
8 Tone Siren		
Dimensions (Ø x Height)**:**	40 mm x 68 mm	
Sound output:	89-95 dB (A), can be set via slide switch	
Tone type:	8 tones, can be set via slide switch	
Voltage:	24 V AC/DC	
Current consumption:	< 200 mA	
Order No.	**635 810 75**	**635 710 75**

TECHNICAL DIAGRAMS:

635.X00.75



635.X10.75

635 X00 75 635 X10 75 635 X00 75 635 X10 75

Kombi*SIGN* 40 - Terminal Elements

Kombi*SIGN* 40 Design*LOOK* assembly adapter for single hole mounting

Kombi*SIGN* 40 Classic*LOOK* assembly adapter for base mounting

Kombi*SIGN* 40 Design*LOOK* assembly adapter for tube mounting

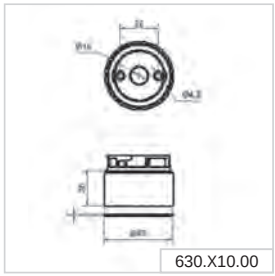
TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

	Classic*LOOK*	Design*LOOK*
Housing:	PC	
Terminal element		
Dimensions (Ø x Height):	40 mm x 40 mm	
Cable entry:	Cable diameter max. 9 mm	
Connection:	Push-in terminal max. 1.5 mm²	
Number of tiers possible:	Max. 5	
Voltage:	24 V AC/DC	
Order No.	**630 800 75**	**630 700 75**
IO Link Terminal element		
Dimensions (Ø x Height):	40 mm x 58.6 mm	
Cable entry:	Cable diameter max. 9mm	
Connection:	Push-in terminal max. 0.75 mm²	
Number of tiers possible:	Max. 5	
Voltage:	24 V via IO-Link	
Current consumption:	10 mA	
Order No.	**631 800 55**	**631 400 55**
Adapter for base mounting		
Dimensions (Ø x Height):	40 mm x 30 mm	
Order No.	**630 810 00**	**630 710 00**
Adapter single hole mounting		
Dimensions (Ø x Height):	40 mm x 54 mm	
Order No.	**630 820 00**	**630 720 00**
Adapter tube mounting		
Dimensions (Ø x Height):	40 mm x 75 mm	
Order No.	**630 830 00**	**630 730 00**

ACCESSORIES: see page 27

TECHNICAL DIAGRAMS:

630.X00.75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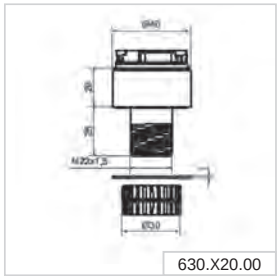
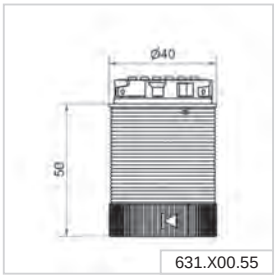

630.X20.00


630.X30.00



631.X00.55

630

630 X00 75 | 630 X10 00 | 630 X20 00 | 630 X30 00

Kombi*SIGN* 72 - Signal Tower

Size comparison Kombi*SIGN* 72 / 40


Signalisation Index			
Optical		**Audible**	105 dB Siren
LED Permanent Light	4	Continuous tone	5
LED Blinking Light	5	Pulse tone	6
LED Flashing Light	6		
LED EVS	6		

Your benefits

There is no need to compromise with the Kombi*SIGN* 72, because this product combines quick installation, excellent visibility and the highest level of flexibility. This saves time and money with regard to installation and order logistics.

- Smooth surfaces prevent dirt gathering and make cleaning easy
- Easy, intuitive installation - incorrect assembly is practically impossible (Poka Yoke)
- High-tech: the Signal Towers can easily be retrofitted with Smart*MONITOR* (smart MDE alternative) or Andon*SPEED* (call for action system)
- Twin*LIGHT* and Twin*FLASH* combine two easily selectable light effects in one element
- In Classic*LOOK* or Design*LOOK* to suit all machine surfaces
- Clearly visible from all positions thanks to the Omni*VIEW* lens with no blind spots
- Completely pre-assembled standard versions are available (common configurations as a complete tower with a single part number)

TwinLIGHT

TwinFLASH

Typical applications

The new definition of the industry standard to signal faults

- on machinery and equipment
- on automated systems
- in assembly plants, for example, in the automotive industry
- on conveyor belts in production and logistics
- at manual workstations as a call for action system
- upgradeable to the wireless-based MDE alternative Smart*MONITOR* or to the call for action system Andon*SPEED* in logistics applications

Installation options

- Base mounting
- Tube mounting
- Additional installation options using accessories

Features

- Combine the Kombi*SIGN* 72 light elements with special controller solutions such as USB or ASi, or integrate one of the versatile audible elements
- Can be combined and retrofitted with all the Kombi*SIGN* 71 elements and accessories, as well as the Smart*MONITOR* and Andon*SPEED* wireless-based systems
- High-output 105 dB siren

How to assemble your Kombi*SIGN* 72 signal tower

Classic*LOOK*

▸ STEP 1
Select the required optical or audible elements in the correct voltage (for details see page 41).

Audible Signal Element
- 2 tone siren

Optical Signal Elements
- Twin*LIGHT*
- Twin*FLASH*

▸ STEP 2
Select the appropriate mounting option for your application.

Base Mounting | **Tube Mounting**

▸ STEP 3
Select the correct terminal element for your mounting option
(for details see page 45).

Terminal element with CAGE CLAMP® technology
Order no. **640 800 00**

Terminal element with CAGE CLAMP® technology
Order no. **640 810 00**

▸ STEP 4
Where appropriate, select a base and the desired tube length (only for tube mounting) (For details see page 64).

Base with integrated tube
Order no. **975 840 10**

Tube Ø 25 mm, all anodized

	Order no.
100 mm long	**975 845 10**
250 mm long	**975 840 25**
400 mm long	**975 840 40**
600 mm long	**975 840 60**
800 mm long	**975 840 80**
1000 mm long	**975 840 03**

Base for Tube, plastic
Order no. **975 840 90**

Base for Tube, metal
Order no. **975 840 91**

▸ STEP 5
Where appropriate, select the bracket and the contact box (for details see page 64).

Bracket for base mounting
Order no. **960 000 02**

Bracket for 1-sided mounting
Order no. **975 840 85**

Bracket for 2-sided mounting
Order no. **975 840 86**

Bracket for base mounting with concealed cable entry
Order no. **960 000 14**

Bracket for tube mounting
Order no. **960 000 01**

Design*LOOK*

Base Mounting | **Tube Mounting**

Terminal element with CAGE CLAMP® technology
Order no. **640 900 00**

Terminal element with CAGE CLAMP® technology
Order no. **640 910 00**

Base with integrated tube
Order no. **960 000 51**

Tube Ø 25 mm, all anodized

	Order no.
100 mm long	**975 845 10**
250 mm long	**975 840 25**
400 mm long	**975 840 40**
600 mm long	**975 840 60**
800 mm long	**975 840 80**
1000 mm long	**975 840 03**

Base for Tube, plastic
Order no. **960 000 50**

Bracket for base mounting
Order no. **960 000 53**

Bracket for 1-sided mounting
Order no. **960 000 52**

Bracket for base mounting with concealed cable entry
Order no. **960 000 55**

Bracket for tube mounting
Order no. **960 000 54**

Look at the signal device section on:
www.werma.com

With the new **signal tower configurator** you can put together your own individual signal tower.

Further accessories can be found in our main catalogue or at **www.werma.com**.

Kombi*SIGN* 72 - Modular Signal Tower

Or use one of our pre-assembled signal towers. With just one part number you can obtain the most popular configurations.

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

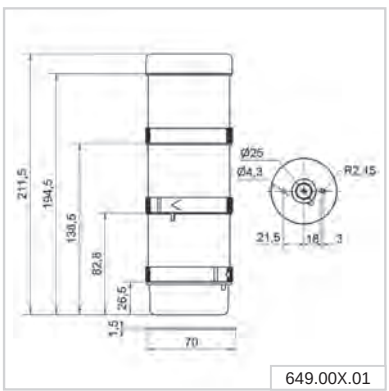
Pre-assembled signal tower	**Classic*LOOK***	**Design*LOOK***
Dimensions (Ø x Height):	70 mm x 211,5 mm	
Voltage:	24 V AC/DC	
Twin*LIGHT* green/yellow/red	**649 000 01**	**649 001 01**
Base/Bracket mounting		
Consisting of:	 647 110 75 + 647 310 75 + 647 210 75 + 640 800 00	 647 130 75 + 647 330 75 + 647 230 75 + 640 900 00
Twin*LIGHT* green/yellow/red	**649 000 02**	**649 001 02**
Dimensions (Ø x Height):	70 mm x 299 mm	
Tube mounting		
Consisting of:	 647 110 75 + 647 310 75 + 647 210 75 + 640 810 00 + 975 840 10	 647 130 75 + 647 330 75 + 647 230 75 + 640 910 00 + 975 000 51

Technical details are given on the relevant product page.

ACCESSORIES:

	Classic*LOOK*	Design*LOOK*
Bracket for 1-sided mounting	**975 840 85**	**960 000 52**
Bracket for base mounting	**960 000 02**	**960 000 53**
Bracket for tube mounting	**960 000 01**	**960 000 54**

TECHNICAL DIAGRAMS:



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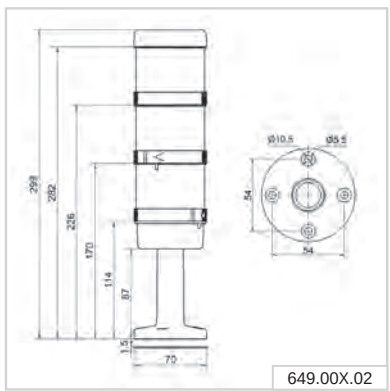


649.00X.02

649 00X 01 649 00X 02

Kombi*SIGN* 72 - Optical Signal Elements

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

	Classic*LOOK*	Design*LOOK*
Dimensions (Ø x Height):	70 mm x 65,5 mm	
Lens:	PC, transparent	
Twin*LIGHT*		
Light effects:	LED Permanent light, LED Blinking light, adjustable via slide switch	
Voltage:	24 V AC/DC	
Current consumption:	< 80 mA	
red	**647 110 75**	**647 130 75**
green	**647 210 75**	**647 230 75**
yellow	**647 310 75**	**647 330 75**
white	**647 430 75**	**647 430 75**
blue	**647 510 75**	**647 530 75**
Twin*FLASH*		
Light effect:	LED Flashing light, LED EVS light, adjustable via slide switch	
Voltage:	24 V DC	
Current consumption:	< 80 mA	
red	**647 120 55**	**647 140 55**
green	**647 220 55**	**647 240 55**
yellow	**647 320 55**	**647 340 55**
white	**647 440 55**	**647 440 55**
blue	**647 520 55**	**647 540 55**

TECHNICAL DIAGRAM:

in preparation

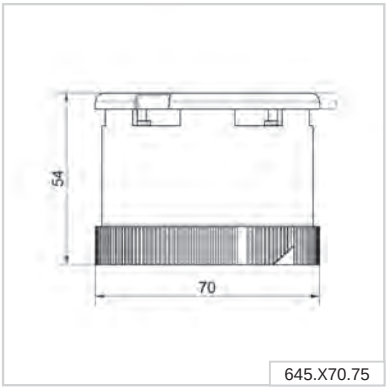
Kombi*SIGN* 72 - Audible Signal Elements

2 tone siren
Kombi*SIGN* 72
Design*LOOK*

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

	Classic*LOOK*	Design*LOOK*
Housing:	PC	
Life duration:	5.000 h	
2 Tone Siren	**645 870 75**	**645 770 75**
Dimensions (Ø x Height)**:**	70 mm x 54 mm	
Sound output:	95-105 dB (A), adjustable by slide switch	
Tone type:	Permanent tone or alternating tone, selectable by slide switch	
Voltage:	24 V AC/DC	
Current consumption:	< 40 mA	

TECHNICAL DIAGRAMS:



in preparation

Kombi*SIGN* 72 - Terminal Elements

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

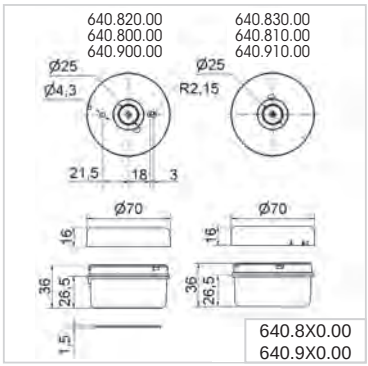
	Classic*LOOK*	Design*LOOK*
Dimensions (Ø x Height):	70 mm x 42,5 mm	
Housing:	Terminal element: PA-GF Cap: PC	
Fixing:	Base mounting, Tube mounting for tube Ø 25 mm (accessory), Bracket mounting (accessory)	
Cable entry:	Cable diameter max. 11 mm	
Connection:	CAGE CLAMP® technology max. 1,5 mm²	
Protection rating:	IP 65	
Number of tiers possible:	Max. 5	
Voltage:	12-230 V AC/DC	
Base mounting	**640 800 00**	**640 900 00**
Tube mounting	**640 810 00**	**640 910 00**

ACCESSORIES:

	Classic*LOOK*	Design*LOOK*
Base with integrated tube	**975 840 10**	**960 000 51**
Bracket for 1-sided mounting	**975 840 85**	**960 000 52**
Bracket for base mounting	**960 000 02**	**960 000 53**
Bracket for tube mounting	**960 000 01**	**960 000 54**
Bracket for base mounting with concealed cable entry	**960 000 14**	**960 000 55**
Base for tube Ø 25 mm, plastic	**975 840 90**	**960 000 50**

Additional accessoires can be found on page 64.

TECHNICAL DIAGRAMS:



640.8X0.00

640.9X0.00 in preparation

Max. 82 g

IP65

+60°C

-30°C

Kombi*SIGN* 71 - Signal Tower

Size comparison Kombi*SIGN* 71/40

Signalisation Index					
Optical		**Audible**	2 tone/8 tone	105 dB Siren	Vocal element
Permanent Light	2	Continuous tone	3	5	
LED Permanent Light	2	Pulse tone	3	6	
LED Blinking Light	3	Multi tone	5		
LED Permanent Light (ultrabright)	4	Vocal element			5
LED Rotating Light	5				
LED Flashing Light	6				
LED EVS Light	6				
Xenon Flash	5				

Your benefits

The Kombi*SIGN* 71 has successfully established itself as the standard in industrial applications over recent years. The patented bayonet mechanism enables elements to be installed or removed in a matter of seconds.

- A wide range of accessories ensures maximum flexibility
- High-tech: The Signal Towers can easily be retrofitted with Smart*MONITOR* (intelligent MDE alternative) or Andon*SPEED* (call for action system)
- Completely pre-assembled standard versions are available (common configurations as a complete tower with a single part number)

Typical applications

Signalling fault messages

- on machinery and equipment
- on automated systems
- in assembly plants, for example, in the automotive industry
- in the building services industry

Installation options

- Base mounting
- Tube mounting
- Additional installation options using accessories

Features

- Different light effects are possible for individual signalling
- The Multicolour element offers up to seven colours in a single element
- The self-adjusting siren element automatically adapts to the ambient noise level
- Vocal element for your own mp3 or wav files
- Combine the Kombi*SIGN* 71 light elements with special controller solutions such as USB or ASi, or integrate one of the versatile audible elements

How to assemble your Kombi*SIGN* 71 signal tower

▸ STEP 1
Select the required optical or audible elements in the correct voltage (for details see page 41).

Audible Signal Elements
- Buzzer element
- Siren element
- Vocal element

Optical Signal Elements
- (LED) Permanent light
- LED Permanent light ultrabright
- (LED) Flashing light
- LED EVS element
- LED Blinking light
- LED Rotating light
- LED Permanent light element multicolour

▸ STEP 2
Select the appropriate mounting option for your application.

▸ STEP 3
Select the correct terminal element for your mounting option
(for details see page 45).

Base Mounting

Terminal element with CAGE CLAMP® technology
Order no. **640 800 00**

Screw terminal
Order no. **640 820 00**

Terminal element M12
Order no. **640 850 55**

Tube Mounting

Terminal element with CAGE CLAMP® technology
Order no. **640 810 00**

Screw terminal
Order no. **640 830 00**

Terminal element M12
Order no. **640 860 55**

▸ STEP 4
Where appropriate, select a base and the desired tube length (only for tube mounting) (For details see page 64).

Tube with clamp
Order no.
960 000 18

Adaptor for single hole mounting
Order no.
960 000 25

Base with integrated tube
Order no.
975 840 10

Tube Ø 25 mm, all anodized

	Order no.
100 mm long	**975 845 10**
250 mm long	**975 840 25**
400 mm long	**975 840 40**
600 mm long	**975 840 60**
800 mm long	**975 840 80**
1000 mm long	**975 840 03**

Base for Tube, plastic
Order no. **975 840 90**

Base for Tube, metal
Order no. **975 840 91**

Foldaway Base
Order no. **960 000 30**

Foldaway Base
Order no. **960 009 12**

Tube Ø 25 mm, plastic, only for Foldaway Base, 45 mm long
Order no. **960 000 31**

▸ STEP 5
Where appropriate, select the bracket and the contact box (for details see page 64).

Look at the signal device section on:
www.werma.com

With thenew **signal tower configurator** you can put together your own individual signal tower.

Contact box for cable exit at side
Order no. **975 840 01**

Bracket for base mounting
Order no. **960 000 02**

Bracket for 1-sided mounting
Order no. **975 840 85**

Bracket for 2-sided mounting
Order no. **975 840 86**

Corner fixing bracket
Order no. **960 000 41**

Contact box for cable exit at side
Order no. **975 840 01**

Contact box with magnetic base and cable exit at side
Order no. **975 840 04**

Bracket for base mounting with concealed cable entry
Order no. **960 000 14**

Bracket for tube mounting
Order no. **960 000 01**

Corner fixing bracket
Order no. **960 000 41**

Kombi*SIGN* 71 - Signal Tower

Or use one of our pre-assembled signal towers. With just one part number you can obtain the most popular configurations.

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

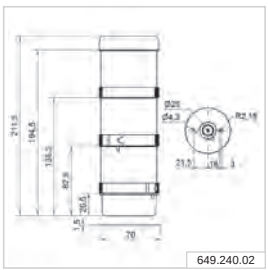
Pre-assembled signal tower	**2 tier**	**3 tier**
Dimensions (Ø x Height):	70 mm x 155 mm	70 mm x 211,5 mm
Voltage:	24 V AC/DC	
LED Permanent Light green/yellow/red	-	**649 240 02**
LED Permanent Light green/red	**649 240 04**	-
Base/Bracket mounting Consisting of:	 644 100 75 + 644 200 75 + 640 800 00	 644 100 75 + 644 300 75 + 644 200 75 + 640 800 00
Dimensions (Ø x Height):	70 mm x 242 mm	70 mm x 299 mm
LED Permanent Light green/yellow/red	-	**649 240 05**
LED Permanent Light green/red	**649 240 06**	-
Tube mounting Consisting of:	 644 100 75 + 644 200 75 + 640 810 00 + 975 840 10	 644 100 75 + 644 300 75 + 644 200 75 + 640 810 00 + 975 840 10

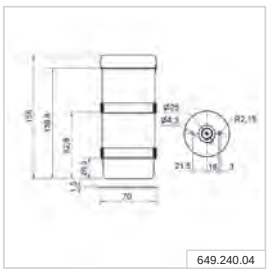
Technical details are given on the relevant product page.

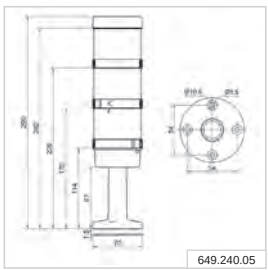
ACCESSORIES:

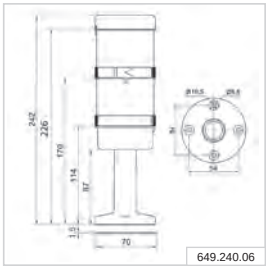
Bracket for 1-sided mounting	**975 840 85**
Bracket for surface mounting	**960 000 02**
Bracket for base mounting	**960 000 01**

TECHNICAL DIAGRAMS:









649 240 04 649 240 06 649 240 02 649 240 05

199 g | 234 g | 256 g | 293 g | IP65 | +50°C -20°C

Kombi*SIGN* 71 - Optical Signal Elements

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (Ø x Height)**:**	70 mm x 65.5 mm			
Lens:	PC, transparent			
Socket:	Bayonet, BA15d, for bulbs max. 5 W			
Protection rating:	IP 65			
Life duration:	50,000 hrs (LED)			
Permanent light element	12-240 V AC/DC			
red	**641 100 00**			
green	**641 100 00**			
yellow	**641 300 00**			
clear	**641 400 00**			
blue	**641 500 00**			
Life duration:	Dependent upon the bulbs used			
Bulb not included in assembly.				
LED Permanent light element	24 V AC/DC	115 V AC	230 V AC	
Current consumption:	< 30 mA	< 30 mA	< 40 mA	
red	**644 100 75**	**644 100 67**	**644 100 68**	
green	**644 200 75**	**644 200 67**	**644 200 68**	
yellow	**644 300 75**	**644 300 67**	**644 300 68**	
clear	**644 400 75**	**644 400 67**	**644 400 68**	
blue	**644 500 75**	**644 500 67**	**644 500 68**	
LED Permanent light element ultrabright	24 V DC			
Current consumption:	< 190 mA			
red	**644 180 55**			
green	**644 280 55**			
yellow	**644 380 55**			
clear	**644 480 55**			
blue	**644 580 55**			
Flashing light element (Xenon)	24 V DC (ASI)	24 V DC	115 V AC	230 V AC
Current consumption:	< 80 mA	< 125 mA	< 22 mA	< 15 mA
red	**643 110 55**	**643 100 55**	**643 100 67**	**643 100 68**
green	**643 210 55**	**643 200 55**	**643 200 67**	**643 200 68**
yellow	**643 310 55**	**643 300 55**	**643 300 67**	**643 300 68**
clear	**643 410 55**	**643 400 55**	**643 400 67**	**643 400 68**
blue	**643 510 55**	**643 500 55**	**643 500 67**	**643 500 68**
Life duration:	4 x 10^6 flashes			
Flash frequency:	C. 1 Hz			
LED Flashing light element	24 V DC			
Current consumption:	< 35 mA			
red	**644 120 55**			
green	**644 220 55**			
yellow	**644 320 55**			
clear	**644 420 55**			
blue	**644 520 55**			
Flash frequency:	C. 1 Hz (Double Flash)			

643 X10 55
Class 2

Max.

24 V

Kombi*SIGN* 71 - Optical Signal Elements

ORDER SPECIFICATIONS OPTICAL ELEMENTS:

LED EVS element	24 V AC/DC		
Current consumption:	350 mA		
red	**644 140 55**		
green	**644 240 55**		
yellow	**644 340 55**		
clear	**644 440 55**		
blue	**644 540 55**		
LED Blinking light element	24 V AC/DC	115 V AC	230 V AC
Current consumption:	< 30 mA	< 30 mA	< 40 mA
red	**644 110 75**	**644 110 67**	**644 110 68**
green	**644 210 75**	**644 210 67**	**644 210 68**
yellow	**644 310 75**	**644 310 67**	**644 310 68**
clear	**644 410 75**	**644 410 67**	**644 410 68**
blau	**644 510 75**	**644 510 67**	**644 510 68**
Blink frequency:	C. 1 Hz		
LED Rotating light element	24 V AC/DC		
Current consumption:	< 40 mA		
red	**644 130 75**		
green	**644 230 75**		
yellow	**644 330 75**		
clear	**644 430 75**		
blue	**644 530 75**		
Rotation frequency:	C. 120 r.p.m.		
LED Permanent light element multicolour	24 V DC		
Current consumption:	< 120 mA		
Multicolour	**644 450 55**		
Possible colours:	Red, yellow, green, white, blue, violet, turquoise controlled by binary inputs		
Number of modules possible:	Max. 3 (including multicolour element)		

Further voltages on request.

TECHNICAL DIAGRAMS:

643 X10 55
Class 2

Max.

24 V

Kombi*SIGN* 71 - Audible Elements

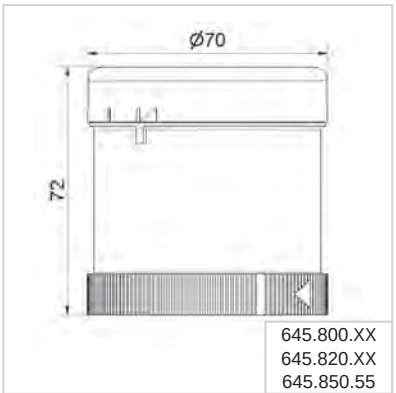
Buzzer element

Siren element

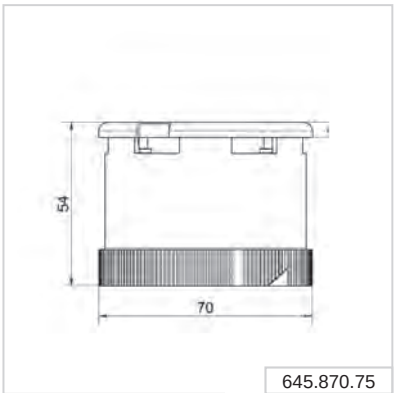
TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (Ø x Height):	See below		
Lens:	PC		
Protection rating:	IP 65		
Life duration:	5,000 hrs		
Buzzer element			
Dimensions (Ø x Height):	70 mm x 72 mm		
Sound output:	85 dB (A)		
Number/Tone type:	Continuous or pulse tone		
Voltage:	24 V AC/DC	115 V AC	230 V AC
Current consumption:	< 35 mA	< 25 mA	< 25 mA
Order no.:	**645 800 75**	**645 800 77**	**645 800 68**
Siren element			
Dimensions (Ø x Height):	70 mm x 54 mm		
Sound output:	95-105 dB (A), adjustable by slide switch		
Number/Tone type:	Continuous tone, alternating tone, selectable by slide switch		
Voltage:	24 V AC/DC		
Current consumption:	< 40 mA		
Order no.:	**645 870 75**		
Multi-functional Siren			
Dimensions (Ø x Height):	70 mm x 72 mm		
Sound output:	100 dB (A), adjustable sound output		
Number/Tone type:	8 tones adjustable		
Voltage:	24 V AC/DC	115 V AC	230 V AC
Current consumption:	< 80 mA	< 40 mA	< 40 mA
Order no.:	**645 820 75**	**645 820 67**	**645 820 68**
Multi-functional Siren, with external control			
Dimensions (Ø x Height):	70 mm x 72 mm		
Sound output:	100 dB (A), adjustable sound output		
Number/Tone type:	Number of tones dependent on the number of optical elements		
Tone triggering:	7 diff. tones can be triggered externally		
Voltage:	24 V DC		
Current consumption:	< 80 mA		
Order no.:	**645 850 55**		

TECHNICAL DIAGRAMS:



645.800.XX
645.820.XX
645.850.55



645.870.75

645.800.XX 645.870.75 645.820.XX 645.850.55 24 V

Kombi*SIGN* 71 - Audible Elements

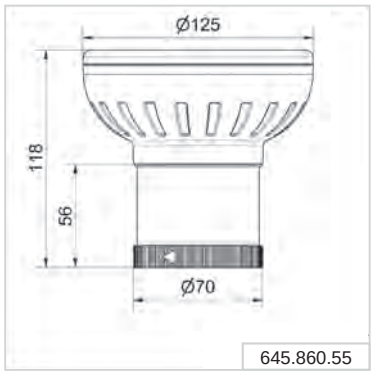
High output vocal element with up to 102 dB

ORDER SPECIFICATIONS AUDIBLE ELEMENTS:

Dimensions (Ø x Height):	See below	
Lens:	PC	
Protection rating:	IP 65	
Life duration:	5,000 hrs	
Siren element with self-adjusting sound output		
Dimensions (Ø x Height):	70 mm x 111 mm	
Voltage:	24 V DC	
Current consumption:	< 150 mA	
Order no.:	**645 810 55**	
Tone type:	Pulse tone	
Tone frequency:	2.5 KHz	
Sound output:	80 dB (A) - max. 100 dB (A)	
Vocal element	**88 dB (A)**	**102 dB (A)**
Dimensions (Ø x Height):	70 mm x 111 mm	125 mm x 118 mm
Voltage:	24 V DC	24 V DC
Current consumption:	< 400 mA	< 400 mA
Order no.:	**645 840 55**	**645 860 55**
Number of tiers:	Max. 4 additional signal elements possible	
Sound output:	Adjustable, up to 88 dB (A)	Adjustable, up to 102 dB
File Transfer:	Via USB connection and provided software	
Possible data format:	Mp3 and wav files	
Number of sequences:	15 files can be remotely triggered depending on the number of signal elements used or one sequence with max. 50 files.	
Suitable for:	Windows®, System requirements – see Handbook	
Assembly:	Vocal element, USB connection cable and software	
Further Information:	No UL approval	

TECHNICAL DIAGRAMS:

645.810.55
645.840.55



645.860.55

645.810.55 645.840.55 645.860.55

121 g | 184 g | 668 g | IP65 | +50°C -20°C | PLC

Kombi*SIGN* 71 - Terminal Elements

Screw terminal with cap

Terminal element with practical M12 connection socket in base

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (Ø x Height):	See below	
Housing:	Terminal element: PA fibreglass Cap: PC	
Fixing:	Base mounting Tube mounting, for tube Ø 25 mm Bracket mounting (accessory)	
Cable entry:	Cable diameter max. 11 mm	
Protection rating:	IP 65	
Number of modules possible:	Max. 5	
	Tube mounting	**Base mounting**
Screw terminal		
Dimensions (Ø x Height):	70 mm x 42.5 mm	
Connection:	Screw terminal max. 1.5 mm²	
Voltage:	12-240 V AC/DC	
Order no.:	**640 830 00**	**640 820 00**
	Incl. cap	Incl. cap and seal
CAGE CLAMP® technology		
Dimensions (Ø x Height):	70 mm x 42.5 mm	
Connection:	CAGE CLAMP® technology max. 1.5 mm²	
Voltage:	12-240 V AC/DC	
Order no.:	**640 810 00**	**640 800 00**
	Incl. cap	Incl. cap and seal
Terminal element M12		
Dimensions (Ø x Height):	70 mm x 56 mm	70 mm x 50 mm
Connection:	M12 connector (8 pole)	
Voltage:	12-24 V DC	
Current carrying capacity:	≤ 2 A	
Order no.:	**640 860 55**	**640 850 55**
	Incl. cap	Incl. cap and seal
	No UL approval	

ACCESSORIES:

Base with integrated tube	**975 840 10**
Base for tube (metal)	**975 840 91**
Tube Ø 25 mm, Aluminium eloxiert	
100 mm long	**975 845 10**
250 mm long	**975 840 25**
400 mm long	**975 840 40**
600 mm long	**975 840 60**
800 mm long	**975 840 80**
1000 mm long	**975 840 03**

Further accessories can be found on page 64.

TECHNICAL DIAGRAMS: see next page

640 8X0 00
x = 0,1,2,3

640.820.00
640.830.00
max. 90 g

640.800.00
640.810.00
max. 82 g

640.860.55
640.850.55
80 g

IP65

+50°C
-20°C

24 V
PLC

Kombi*SIGN* 71 - USB Terminal Element

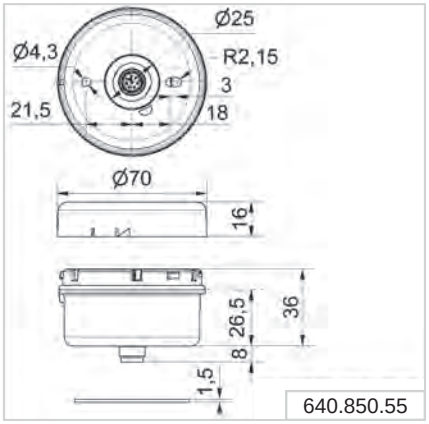
Direct triggering of the signal tower elements via USB Interface

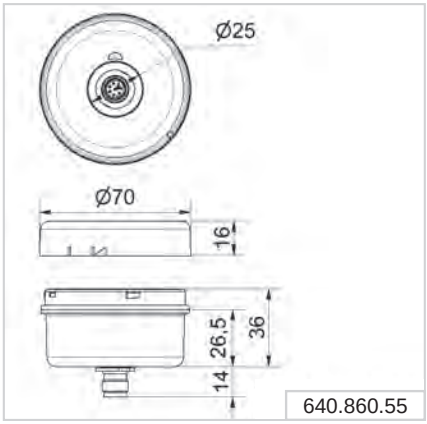
TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

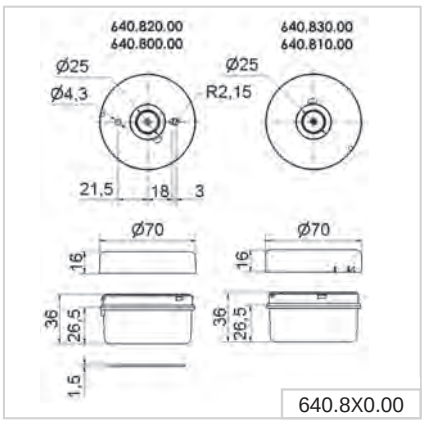
Terminal element with USB Interface	
Dimensions (Ø x Height):	70 mm x 36 mm
Fixing:	Tube mounting
Connection:	Via USB
Voltage:	Terminal element: Via USB (5 V DC)
Voltage:	24 V DC
Current carrying cap. ∑ Imax:	90 mA at 24 V
Order no.:	**640 840 00**
Assembly:	Assembly includes installation software, drivers, handbook and USB connection cable (length 1.8 m)
Suitable for:	Windows®, System requirements – see Handbook

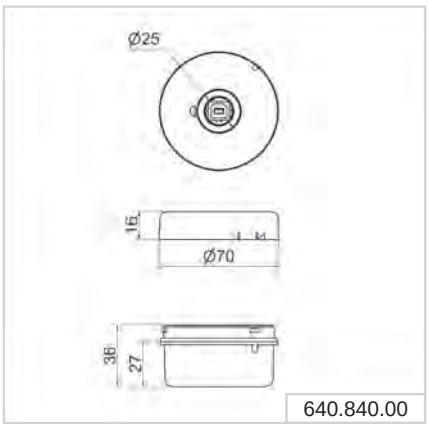
- Direct triggering of signal tower elements via USB Interface
- Actuation via DLL (Dynamic Link Library) or VCP (Virtual-COM-Port)
- Simple integration into any customer-specific software
- No additional power supply or hardware necessary
- Up to five signal towers with a maximum of five tiers each can be connected

TECHNICAL DIAGRAMS:









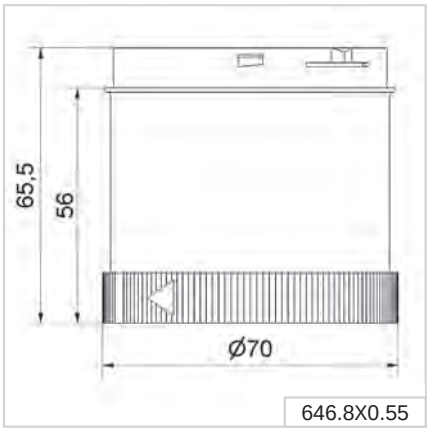
Kombi*SIGN* 71 - Terminal Element AS-Interface Element

Cable not included in assembly

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Specif. Power supply AS-Interface Element:	Via bus conduction	
Operating voltage:	18.5 V … 31.6 V according to the AS-Interface specification	
Reverse battery protection:	Integrated	
Watchdog:	Integrated	
	Standard Slave	**A/B-Slave**
Number of addresses:	Max. 31	Max. 62
Number of tiers:	Max 4	Max. 3
IO-Code:	8_{Hex}	8_{Hex}
ID-Code:	F_{Hex}	A_{Hex}
ID2-Code:	N/A	E_{Hex}
Outputs:	4 semiconductor relays	3 semiconductor relays
Approved in accordance with:	Spec. V 3.0	Spec. V 3.0
Order no.:	**646 830 55**	**646 810 55**
	With internal add. voltage	**With external add. voltage**
Additional external voltage:	24 V DC	
Current carrying cap. ∑ Imax:	200 mA	200 mA per signal
Current consumption max:	210 mA	≤ 50 mA
Voltage at signal element:	20 V ... 30 V DC	24 V +/- 10%
Short circuit/overload protection:	Integrated	Pre-fuse M 1.6 A

TECHNICAL DIAGRAM:



LEDs display the current status

Class 2

Standard Slave A/B-Slave

Approval No. 66301 Approval No. 66202

77 g IP65 +50°C -20°C

KOMPAKT 37 - pre-assembled Signal Tower

Size comparison KOMPAKT 37 / Kombi*SIGN* 40


Signalisation Index			
Optical		**Audible**	
LED Permanent Light	3	Pulse tone	4

Your benefits

The KOMPAKT 37 is a completely pre-assembled signal tower that can be easily ordered under a single part number. With 1-5 visual tiers, the slim signal tower can be installed quickly and easily. The compact and completely enclosed construction is ideal for use in all types of public areas because it is tamper-proof.

- Up to six levels of signal escalation possible – including an audible signal
- In Classic*LOOK* or Design*LOOK* to suit all machine surfaces
- Clearly visible from all positions thanks to the Omni*VIEW* lens with no blind spots

Typical applications

Fault signalling

- on smaller machines and equipment
- on point-of-sale and access control systems

Installation options

- Single-hole mounting
- Additional installation options using accessories

Features

- Pre-assembled with easy cable connection or M12 plug for plug & play use

How to select your KOMPAKT 37 signal tower

▸ STEP 1
Select the signal tower of your choice with or without buzzer, with the appropriate connection, housing colour, voltage and number of tiers.

Part numbers can be found on page 50.

Classic*LOOK*

- 1-5 tiers
- With or without buzzer
- M12 plug or cable
- Black or silver finish

Design*LOOK*

▸ STEP 2
Select up to two extension tubes.

optional:

Extension tube
Order no. **960 698 02**

optional:

Extension tube
Order no. **960 698 04**

▸ STEP 3
Select the appropriate fixing accessories for your application, using for example a tube and base or a bracket mount.

Single Hole Mounting	Bracket Mounting	Base Mounting	Single Hole Mounting	Bracket Mounting	Base Mounting
					
	Bracket for base mounting Order no. **960 630 02**	Base with integrated tube Order no. **960 698 01**		Bracket for base mounting Order no. **960 630 06**	Base with integrated tube Order no. **960 698 03**

▸ STEP 4
Where appropriate, select the bracket and the contact box.

Bracket for base mounting with concealed cable entry
Order no. **960 000 14**

Contact box for cable exit at side
Order no. **975 840 01**

Bracket for tube mounting
Order no. **960 000 01**

Contact box with magnetic base and cable exit at side
Order no. **975 840 04**

Corner fixing bracket
Order no. **960 000 41**

Go to the signal devices page on: www.werma.com
Here you can use the selection tool „Configurator" to select the Kompakt 37 signal tower according to your requirements.
With the help of intuitive questions and pictures you will be able to make your choice with just a few mouse clicks.

KOMPAKT 37 - pre-assembled Signal Tower

Classic*LOOK*

Two tier Kompakt 37 with integral tube and base (accessory)

Three tier Kompakt 37 with bracket (accessory)

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimension (Ø x Height)**:**	1 tier: 37.5 mm x 93,5 mm 2 tier: 37.5 mm x 127.5 mm 3 tier: 37.5 mm x 161.5 mm 4 tier: 37.5 mm x 195.5 mm 5 tier: 37.5 mm x 229.5 mm (Protrusion from panel)
Housing:	PC
Fixing:	Single hole mounting for Ø 22.5 mm (M22 x 1.5 mm) Base or bracket mounting (accessory)
Connection:	Cable connection: Cable, 2 m long, Plug connection: M12 Plug (1/2/3 tier: 5 pole; 4/5 tier: 8 pole)
Current consumption:	50 mA per tier / buzzer 24 V 125 mA per tier / buzzer 12 V

Nut and seal included in assembly.

Classic*LOOK* with buzzer		**Connection**	24 V AC/DC
1 tier	red	Plug	**699 610 75**
	yellow	Plug	**699 630 75**
2 tier	green/red	Cable	**699 120 75**
	yellow/red	Cable	**699 130 75**
	green/red	Plug	**699 220 75**
	yellow/red	Plug	**699 230 75**
3 tier	green/yellow/red	Cable	**699 110 75**
	green/yellow/red	Plug	**699 210 75**
4 tier	clear/green/yellow/red	Cable	**699 140 75**
	blue/green/yellow/red	Cable	**699 150 75**
	clear/green/yellow/red	Plug	**699 240 75**
	blue/green/yellow/red	Plug	**699 250 75**
5 tier	blue/clear/green/yellow/red	Cable	**699 160 75**
	blue/clear/green/yellow/red	Plug	**699 260 75**

Classic*LOOK* without buzzer		**Connection**	24 V AC/DC	12 V AC/DC
2 tier	green/red	Cable	**698 120 75**	**698 120 74**
	yellow/red	Cable	**698 130 75**	-
	green/red	Plug	**698 220 75**	-
	yellow/red	Plug	**698 230 75**	-
3 tier	green/yellow/red	Cable	**698 110 75**	**698 110 74**
	green/yellow/red	Plug	**698 210 75**	-
4 tier	clear/green/yellow/red	Cable	**698 140 75**	-
	blue/green/yellow/red	Cable	**698 150 75**	-
	clear/green/yellow/red	Plug	**698 240 75**	-
	blue/green/yellow/red	Plug	**698 250 75**	-
5 tier	blue/clear/green/yellow/red	Cable	**698 160 75**	-
	blue/clear/green/yellow/red	Plug	**698 260 75**	-

Design*LOOK* with buzzer		**Connection**	24 V AC/DC
1 tier	red	Plug	**699 810 75**
	yellow	Plug	**699 830 75**
2 tier	green/red	Cable	**699 320 75**
	yellow/red	Cable	**699 330 75**
	green/red	Plug	**699 420 75**
	yellow/red	Plug	**699 430 75**
3 tier	green/yellow/red	Cable	**699 310 75**
	green/yellow/red	Plug	**699 410 75**

Design*LOOK*

The height of the KOMPAKT 37 can be increased by max. 160 mm with the use of extension tubes, ensuring optimum visibility

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Design*LOOK* with buzzer		**Connection**	24 V AC/DC
4 tier	clear/green/yellow/red	Cable	**699 340 75**
	blue/green/yellow/red	Cable	**699 350 75**
	clear/green/yellow/red	Plug	**699 440 75**
	blue/green/yellow/red	Plug	**699 450 75**
5 tier	blue/clear/green/yellow/red	Cable	**699 360 75**
	blue/clear/green/yellow/red	Plug	**699 460 75**

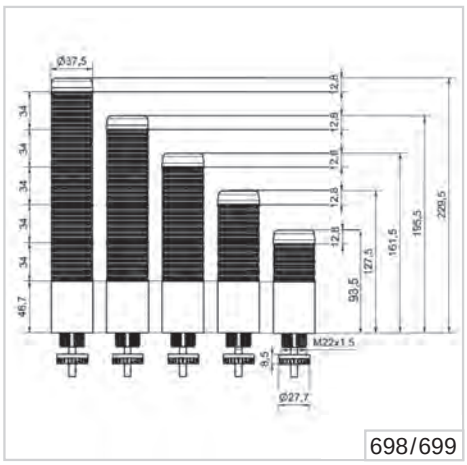
Design*LOOK* without buzzer		**Connection**	24 V AC/DC
2 tier	green/red	Cable	**698 320 75**
	yellow/red	Cable	**698 330 75**
	green/red	Plug	**698 420 75**
	yellow/red	Plug	**698 430 75**
3 tier	green/yellow/red	Cable	**698 310 75**
	green/yellow/red	Plug	**698 410 75**
4 tier	clear/green/yellow/red	Cable	**698 340 75**
	blue/green/yellow/red	Cable	**698 350 75**
	clear/green/yellow/red	Plug	**698 440 75**
	blue/green/yellow/red	Plug	**698 450 75**
5 tier	blue/clear/green/yellow/red	Cable	**698 360 75**
	blue/clear/green/yellow/red	Plug	**698 460 75**

ACCESSORIES:

	Classic*LOOK*	Design*LOOK*
Base with integrated tube	**960 698 01**	**960 698 03**
Extension tube	**960 698 02**	**960 698 04**
Cable 5 m with M12 plug (5 pole)	**960 693 05**	
Cable 5 m with M12 plug (8 pole)	**960 000 47**	
Cable 5 m with M12 connector and plug (8 pole)	**960 000 46**	
Bracket for assembly on aluminium profiles	**960 630 02**	**960 630 06**

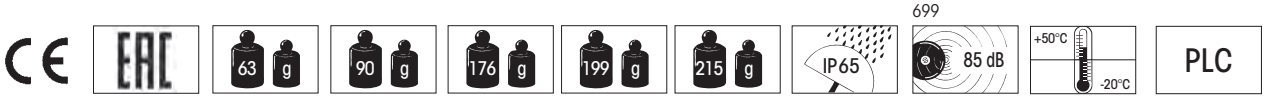
Further accessories can be found on page 64.

TECHNICAL DIAGRAMS:



698/699

699



de*SIGN* 42 - pre-assembled Signal Tower

Size comparison de*SIGN* 42 / Kombi*SIGN* 72


Signalisation Index	
Optical	
LED Permanent Light	3

Your benefits

Thanks to its high-quality stainless steel housing, the de*SIGN* 42 signal tower is an ideal accompaniment to modern, design-oriented assembly lines, production facilities and machinery. The robust housing provides the key benefit of being tamper-proof for installations in public areas.

- Elegant industrial design
- Tamper-proof for public areas

Typical applications

Fault signalling

- on machinery and equipment

Access control

- on control points in public areas

Installation options

- Single-hole mounting
- Bracket mounting using accessories

Features

- High-quality, robust stainless-steel housing
- Award-winning design

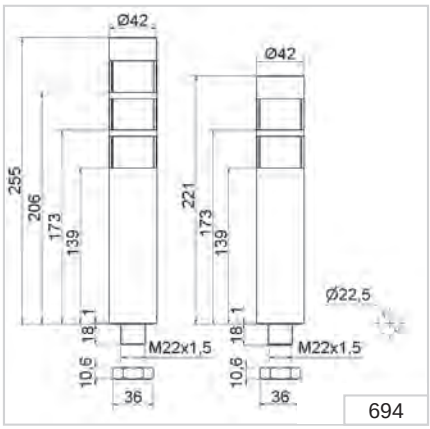
TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

	2 tier	3 tier
Dimensions (Ø x Height):	42 mm x 220 mm	42 mm x 254 mm
Housing:	Stainless steel, brushed	
Fixing:	Installation mounting for Ø 22.5 mm (M22 x 1.5 mm)	
Connection:	Cable, 2 m long, included in assembly	
Voltage:	24 V DC	24 V DC
Current consumption:	50 mA per tier	50 mA per tier
red/green	**694 010 55**	-
red/yellow	**694 020 55**	-
red/yellow/green	-	**694 000 55**

ACCESSORIES:

Surface housing single	**975 109 02**
Bracket, stainless steel (Protection rating IP 33)	**960 694 01**

TECHNICAL DIAGRAMS:



Clear*SIGN* - pre-assembled Signal Tower

Size comparison Clear*SIGN* / Kombi*SIGN* 72


Signalisation Index			
Optical		**Audible**	
LED Permanent Light	3	Continuous tone	3
LED Blinking Light	3		
LED Flashing Light	4		
LED EVS Light	4		

Your benefits

The pre-assembled Clear*SIGN* signal tower combines an appealing industrial design with the latest cutting-edge LED technology and an innovative interface. The version with IO-Link interface offers maximum flexibility and various light effects. The signal tower is ideally suited to modern industrial environments.

- Maximum range of colours using RGB Technology
- Visual display of fill levels and temperature conditions
- Set colours and light effects according to your needs with the IO-Link version

Typical applications

Fault signalling

- on machines and equipment (with optional IO-Link interface)
- on small equipment in production areas or the building services industry

Installation options

- Base mounting
- Bracket mounting using accessories

Features

- IO-Link control enables more than 1 million colours and various light effects
- Available with 3 or 4 tiers

IO-Link

4 tier Clear*SIGN*

3 tier Clear*SIGN*

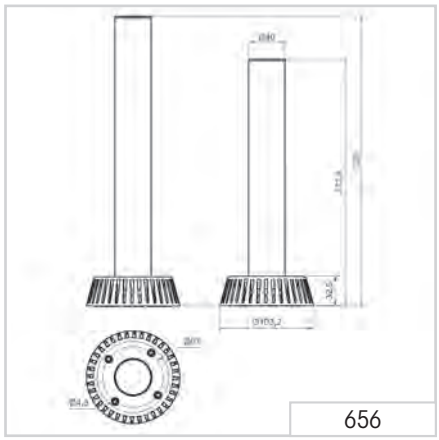
TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

	3 tier	4 tier
Dimensions (Ø x Height):	103,2 mm x 273 mm	103,2 mm x 320 mm
Housing:	PC; PC/ABS	
Fixing:	Base mounting	
Connection:	Push-In terminal max. 0,5 mm² M12 (4 pin) - IO version	
Cable entry:	Cable diameter max. 11 mm	
Light effects:	LED Permanent light or EVS (except RGB Version) or other variants possible with IO Link	
Tone type:	Continuous tone or other variants possible with IO Link	
Voltage:	24 V DC	24 V DC
Current consumption:	105 mA	130 mA
red/yellow/green	**656 000 04**	-
red/yellow/green/blue	-	**656 000 03**
RGB		
Voltage:	-	24 V DC
Current consumption:	-	385 mA
with up to 7 colours per tier	-	**656 100 01**
IO Link without buzzer		
Current consumption:	-	385 mA
Over 1m colour variants possible	-	**656 100 02**
IO Link with buzzer		
Current consumption:	-	425 mA
Over 1m colour variants possible	-	**656 100 03**
Buzzer module		
Sound output:	Max. 85 dB (A)	
Voltage:	24 V DC	
Order no.:	**656 000 55**	

ACCESSORIES:

Bracket for base mounting	**975 656 01**

TECHNICAL DIAGRAMS:



656.000.04	656.000.03	656.100.01	656.100.02	656.100.03	656.000.55
287 g	330 g	310 g	344 g	352 g	30 g

IP66 | 85 dB | +50°C / -20°C

Clean*SIGN* - pre-assembled Signal Tower

Size comparison Clean*SIGN* / Kombi*SIGN* 72


Signalisation Index			
Optical		**Audible**	
LED Permanent Light	3	Continuous tone	3
LED Blinking Light	3		
LED EVS Light	5		

Your benefits

The Clean*SIGN* signal tower has been specifically developed and certified for use in clean rooms, food and hygiene areas as well as the pharmaceutical industry. The signal tower ensures maximum safety in thess environments by reducing the risk of contamination.

- Reliable signalling even in clean rooms
- Easy-to-clean, hygienic design for optimal cleaning and disinfection
- Ensures food safety through the absence of uneven surfaces, elevated or countersunk elements where dirt can accumulate
- Use of food safe materials and resistant to cleaning agents (FDA approved)
- Application-specific selection of colours and light effects for maximum flexibility

Typical applications

Fault signalling

- in clean rooms, e.g. semiconductor and solar industries
- in the food and beverage industry
- in pharmaceutical and cosmetic industries

Installation options

- Base mounting
- Ceiling mounting
- Wall mounting

Features

- EHEDG and Fraunhofer IPA approval
- Bracket mounting fulfills Air Cleanliness Class 1 for Cleanroom applications in accordance with DIN EN ISO 14644-1
- Base or Ceiling mounting fulfills Air Cleanliness Class 1
- Electronic modularity of the individual tiers (colour and light effects individually adjustable/ can be externally triggered)

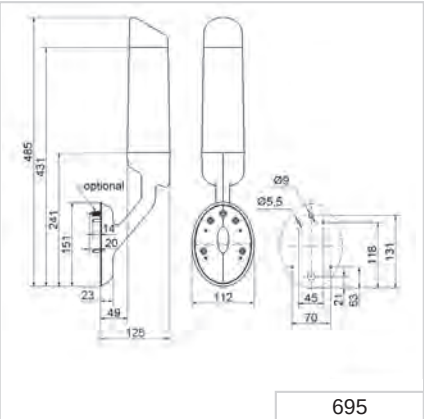
Fixed, three tier colour distribution in red, yellow and green

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

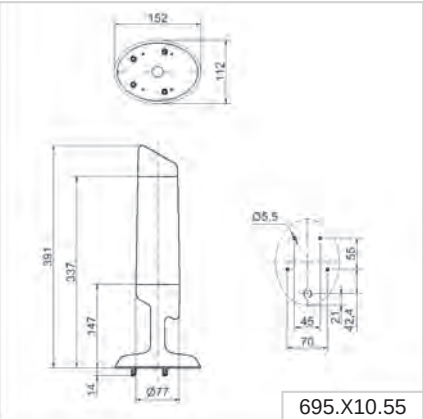
	Wall mounting	Base/Ceiling mounting
Dimensions (L x H x W):	112 mm x 485 mm x 125 mm	112 mm x 391 mm x 125 mm
Housing:	PA, black	
Lens:	PA, transparent	
Fixing:	Wall mounting, integrated mounting bracket Base mounting, Ceiling mounting	
Sound output:	85 dB (A)	
Clean*SIGN* red/green/yellow		
Connection:	Cable, 2 m long, included in the assembly	
Colours:	Pre-set colours: red/yellow/green	
Voltage:	24 V DC	
Current consumption:	Optical: < 120 mA per tier Buzzer: < 20 mA	
Order no.:	**695 300 55**	**695 310 55**
Clean*SIGN* RGY		
Connection:	Screw terminal max. 1.5 mm²	
Colours:	Coulours selectable by dip-switch: red/yellow/green	
Voltage:	24 V DC	
Current consumption:	Optical: < 240 mA Buzzer: < 20 mA	
Order no.:	**695 200 55**	**695 210 55**
Clean*SIGN* RGB		
Connection:	Screw terminal max. 1.5 mm²	
Colours:	Red, yellow, green, white, blue, violet, turquoise Coulours selectable by dip-switch	
Light effects:	Tier-by-tier illumination: Blinking light Complete illumination: EVS	
Voltage:	24 V DC	
Current consumption:	Optical: < 240 mA Buzzer: < 20 mA	
Order no.:	**695 000 55**	**695 010 55**

The "EVS" light effect ensures a maximum attention-grabbing effect (can be set with complete illumination)

TECHNICAL DIAGRAMS:



695



695.X10.55

695.300.55 695.310.55 695.200.55 695.210.55 695.000.55 695.010.55

Flat*SIGN* - pre-assembled Signal Tower

Size comparison Flat*SIGN* / Kombi*SIGN* 72

Signalisation Index			
Optical		**Audible**	
LED Permanent Light	2	Continuous tone	2
LED Blinking Light	3	Multi-tone Sounder	4

Your benefits

The curved front of the Flat*SIGN* signal tower housing enables it to blend in uniformly with machine and building service applications. The 160-degree visibility angle ensures exceptional visibility even from the side.

- Easy to install – also on flush-mount enclosures
- Twin*LIGHT* combines two easily selectable light effects

Typical applications

Fault signalling or Access control

- in building service applications (e.g. server and equipment rooms)
- at access points in public areas

Installation options

- Wall mounting
- Additional installation options using accessories

Features

- Permanent or blinking light selectable
- Available with transparent housing or in metal design
- Optional integrated audible signal

TwinLIGHT

In its inactive state, the signal tower blends into the background thanks to its colourless, translucent housing

Flat*SIGN* in metallic finish

The fixing kit consists of two tube clamps and an adaptor (accessory)

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

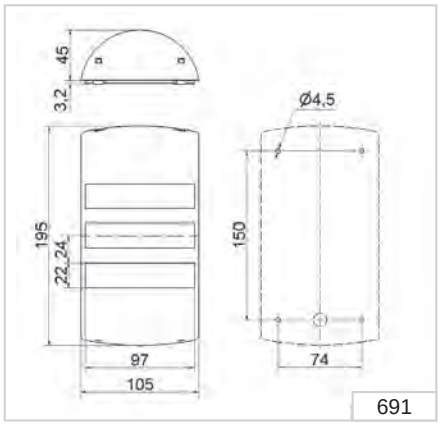
Dimensions (L x H x W):	195 mm x 105 mm x 48,2 mm
Lower part:	PC-ABS, black
Upper part:	PC, transparent or silver
Fixing:	Wall mounting
Cable entry:	Cable diameter max. 11 mm
Connection:	Screw terminal max. 1.5 mm²
Light effects:	Permanent or blinking light selectable
Audible signal:	Buzzer or multi-tone sounder (8 tones)
Sound output:	Max. 80 dB (A)
Colours:	Green, yellow, red

	Multi-tone Sounder	**Buzzer (Continuous tone)**
Voltage:	24 V DC	115-230 V AC
Current consumption:	Optical: 30 mA per tier Audible: 30 mA	
Flat*SIGN* with transparent housing		
Flat*SIGN* without audible signal	**691 100 55**	**691 100 68**
Flat*SIGN* with audible signal	**691 200 55**	**691 200 68**
Flat*SIGN* in Metal Design		
Flat*SIGN* without audible signal	**691 300 55**	**691 300 68**
Flat*SIGN* with audible signal	**691 400 55**	**691 400 68**

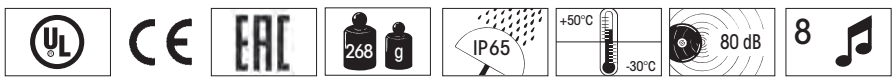
ACCESSORIES:

Fixing kit	**975 691 01**

TECHNICAL DIAGRAM:



Max. 691.X00.55



Vario*SIGN* - pre-assembled Signal Tower

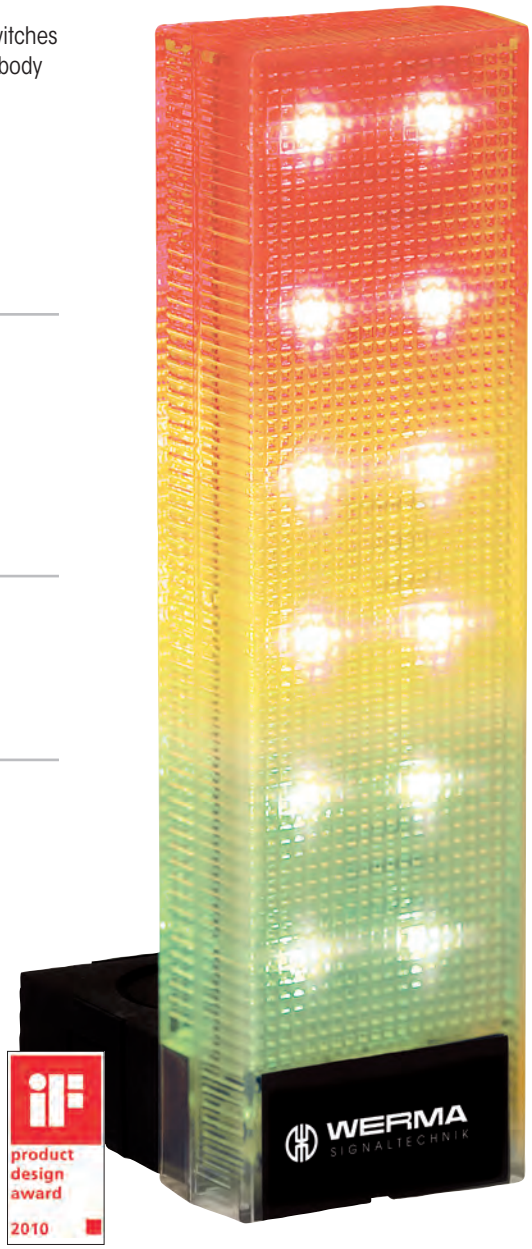
Size comparison Vario*SIGN* / Kombi*SIGN* 72


Signalisation Index			
Optical		**Audible**	
LED Permanent Light	3	Continuous tone	3
LED Blinking Light	3		
LED EVS Light	5		

Your benefits

With the Vario*SIGN* light effects and colours can be individually set and adjusted via dip-switches at any time - depending on the variant. The eye-catching illumination of the entire lighting body ensures an exceptional appearance and visibility.

- Flexible selection of colours and light effects
- Award-winning design



Typical applications

Fault signalling

- on machinery and equipment
- on automation systems

Installation options

- Base mounting

Features

- Optional integrated sounder
- Electronic modularity: i.e. colours and light effects are adjustable for each tier

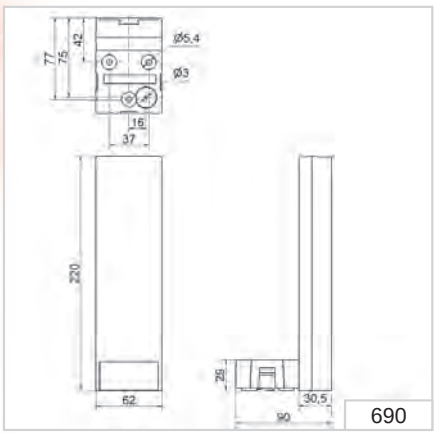
Fixed, three-tier colour distribution in red, yellow and green

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (L x H x W):	62 mm x 220 mm x 90 mm	
Housing:	PC/ABS-Blend, black	
Lens:	PC, transparent	
Fixing:	Base mounting	
Cable entry:	Cable diameter max. 11 mm	
Connection:	Screw terminal max. 1.5 mm²	
Vario*SIGN* - red/yellow/green	**With buzzer**	**Without buzzer**
Colours:	Pre-set colours (red/yellow/green)	
Voltage:	24 V DC	
Current consumption:	Optical: < 55 mA per tier Buzzer: < 20 mA	
2-sided	**690 300 55**	**690 320 55**
Vario*SIGN* - RGY		
Colours:	Red, yellow, green Colours selectable by Dip-switch	
Voltage:	24 V DC	
Current consumption:	Optical: < 120 mA Buzzer: < 20 mA	
2-sided	**690 200 55**	**690 220 55**
Vario*SIGN* - RGB		
Colours:	Red, yellow, green, white, blue, violet, turquoise Colours selectable by Dip-switch	
Light effects:	Tier-by-tier illumination: Flashing light Complete illumination: EVS	
Voltage:	24 V DC	
Current consumption:	Optical: < 300 mA Buzzer: < 20 mA	
2-sided	**690 000 55**	-

The "EVS" light effect ensures a maximum attention-grabbing effect (single colour distribution can be selected)

TECHNICAL DIAGRAM:



690.300.55 690.320.55 690.200.55 690.220.55 690.000.55

240 g | 234 g | 245 g | 237 g | 256 g | IP65 | +50°C -30°C | 85 dB

Ex LED Signal Tower - pre-assembled Signal Tower

Size comparison Ex signal tower / Kombi*SIGN* 72


Signalisation Index			
Optical		**Audible**	
LED Permanent Light	3	Pulse tone	4

Your benefits

The Ex Signal Tower is designed for use in explosive gas and vapour atmospheres (zones 1 and 2). No additional zener barrier is required.

- Light and compact Ex signal tower
- Many years of proven use in Ex-applications

Typical applications

Fault signalling

- in the processing and storage of highly flammable substances

Installation options

- Wall mounting

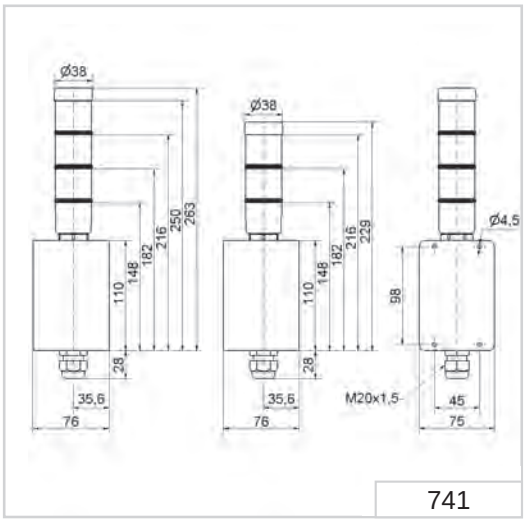
Features

- Combination of encapsulation "m" and intrinsic safety "ib" with connection area "e"
- For Gas applications: Zones 1 and 2

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions of the Zener Barrier (L x H x W):	76 mm x 110 mm x 75 mm
Dimensions total:	2 tier (L x H x W): 76 mm x 229 mm x 75 mm 3 tier (L x H x W): 76 mm x 263 mm x 75 mm
Housing:	Polyamide, black
Signal tower:	PC
Connection:	Screw terminal max. 2.5 mm², incl. approved cable gland "e"
Explosion protection:	Ⓔx II 2G Ex e mb [ib] IIC T6 Gb
Approval:	PTB 06 ATEX 2005
Voltage:	24 V DC
Current consumption:	< 90 mA
red/green	**741 110 55**
red/yellow	**741 120 55**
red/yellow/green	**741 130 55**

TECHNICAL DIAGRAM:



2 tier 3 tier

2 G
Zone 1 + 2
690 g
710 g
IP65
+50°C
-20°C

Overview Accessories for Signal Towers

Overview Accessories for Signal Towers			Classic-*LOOK* 	Design-*LOOK* 	Classic-*LOOK* 	Design-*LOOK* 	Classic-*LOOK* 	Design-*LOOK* 	
Accessory		**Kombi*SIGN* 71**	**Kombi*SIGN* 72**		**Kombi*SIGN* 40**		**KOMPAKT 37**		**Page**
Cable, 5m		●							66
LED Bulb BA15d		●							66
Bulb BA15d		●							66
Bracket for surface mounting, incl. cable grand M16 x 1.5		●	●	●					66 + 68
Bracket for 1-sided mounting, incl. rubber seal		●	●	●					66 + 68
Bracket for 2-sided mounting, incl. rubber seal		●	●						66
Bracket for tube mounting, incl. cable gland M16 x 1.5		●	●	●	●	●	●	●	72 + 73
Bracket for base mounting, with concealed cable entry, incl. rubber seal		●	●	●	●	●	●	●	72 + 73
Corner fixing bracket		●	●		●		●		72
Bracket for assembly on aluminium profiles, incl. cable gland M12 x 1.5					●	●	●	●	74 + 75
Bracket for concealed cable entry					●	●			74
Tube Ø 25 mm plastic, for direct mounting of the terminal element onto the Foldaway Base		●	●						66
Tube Ø 25 mm, all anodized aluminium		●	●	●	●	●			68 + 69
Tube with clamp Ø 25 mm, 250 mm long, incl. cable gland		●	●		●				69
Base with integrated tube Ø 25 mm, 110 mm long, plastic, incl. rubber seal		●	●	●	●	●			69 + 71
Base fot tube Ø 25 mm, plastic, incl. rubber seal		●	●	●	●	●			69 + 71
Base fot tube Ø 25 mm, metal, incl. rubber seal		●	●		●				69
Base with integrated tube							●	●	75

Overview Accessories for Signal Towers







Accessory		Kombi*SIGN* 71	Kombi*SIGN* 72		Kombi*SIGN* 40		KOMPAKT 37		Page
		Classic-*LOOK*	Classic-*LOOK*	Design-*LOOK*	Classic-*LOOK*	Design-*LOOK*	Classic-*LOOK*	Design-*LOOK*	
Cable gland for surface mounting, M16 x 1,5		●	●	●					66 + 68
Adaptor for single hole mounting, Ø 25 mm, M18		●	●	●					66 + 68
Adaptor for tube mounting Ø 25 mm		●	●	●					66 + 68
Indication board		●	●	●					66
Foldaway Base, Signal Tower can be folded away, incl. rubber seal		●	●		●				69
Foldaway Base, Signal Tower can be folded away, incl. rubber seal		●	●		●				69
Contact box for cable exit at side		●	●		●		●		72
Contact box with magnetic base and cable exit at side		●	●		●		●		72
Extension tube							●	●	75

Overview Accessories for Signal Towers



Accessory		de*SIGN* 42	Clear*SIGN*	Flat*SIGN*	Page
Surface housing single		●			76
Bracket, stainless steel		●			76
Bracket for base mounting			●		76
Fixing kit				●	77

Overview Accessories for Signal Towers

Kombi*SIGN* 71

Cable 5 m with M12 connector and plug
Order no. 960 000 46
Cable 5 m with M12 plug
Order no. 960 000 47
Cable 5 m with M12 connector
Order no. 960 860 01

LED bulb BA15d
total length max. 42 mm
Colours: red, yellow, green, clear, blue
Voltage 24 V, 115 V, 230 V
Order specifications see page 133

Bulb BA15d,
total length max. 42 mm

12 V, 5 Watt	**955 840 34**
24 V, 5 Watt	**955 840 35**
30 V, 5 Watt	**955 840 32**
115 V, 5 Watt	**955 840 57**
230 V, 5 Watt	**955 840 38**

Kombi*SIGN* 71 and 72 - Classic*LOOK*

Bracket for surface mounting
incl. cable gland M16 x 1.5
Order no. 960 000 02

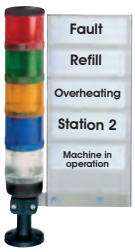
Cable gland for surface
mounting, M16 x 1.5
Order no. 960 000 04

Indication board
(for tube mounting)
Order no. 960 000 05

Dimensions of indication board (W x H):
153 x 345 mm

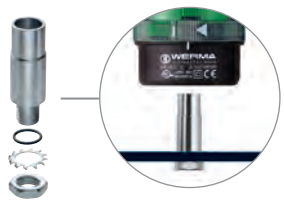
Surface area per section (W x H):
c. 144 x 54 mm, e.g.
Zweckform 3424 (105 x 48 mm),
Herma 4281 (105 x 50.8 mm)
(not included in assembly)

Material: PMMA



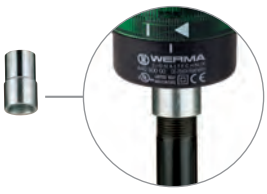
- For one to five modules
- Simple mounting onto signal tower tube
- Ample space for written information
- Simply break off unwanted segments

Adaptor for single hole mounting
Ø 25 mm, M18
Order no. 960 000 25



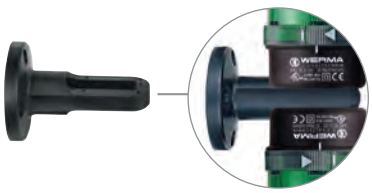
Tube Ø 25 mm, plastic,
45 mm long, for direct mounting
of the Terminal Element onto the
Foldaway Base
(only for Kombi*SIGN* 71 and 72)
Order no. 960 000 31

Adaptor for tube mounting
Ø 25 mm / 1/2" NPT thread
Order no. 975 840 02

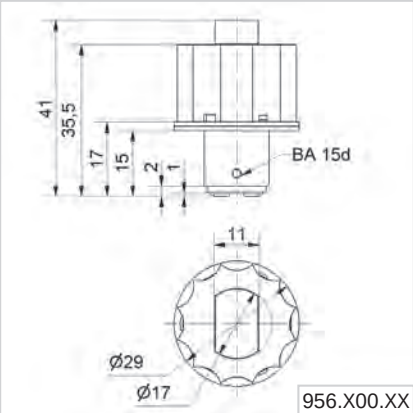


Bracket for 1-sided mounting,
incl. rubber seals
Order no. 975 840 85

Bracket for 2-sided mounting,
incl. rubber seals
Order no. 975 840 86



TECHNICAL DIAGRAMS:



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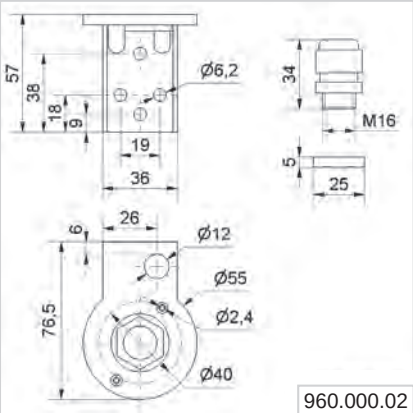

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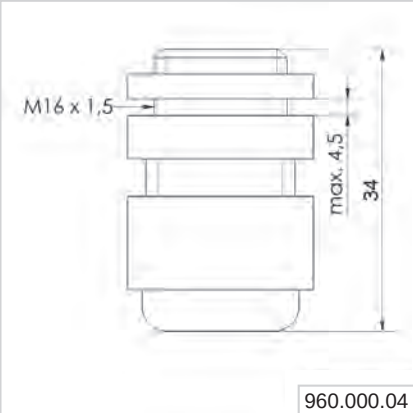

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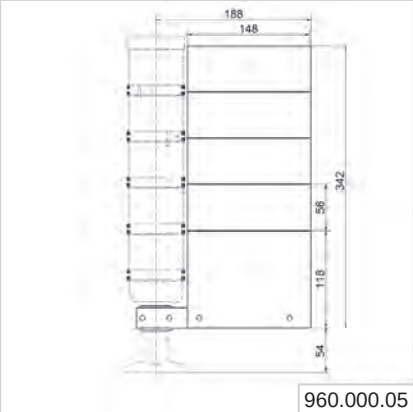

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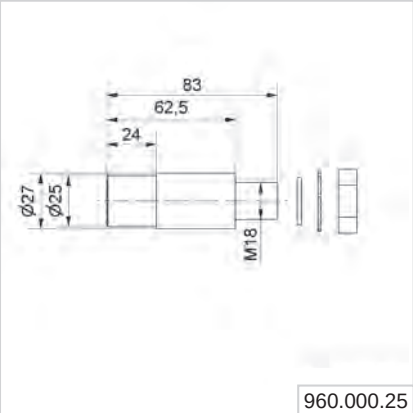

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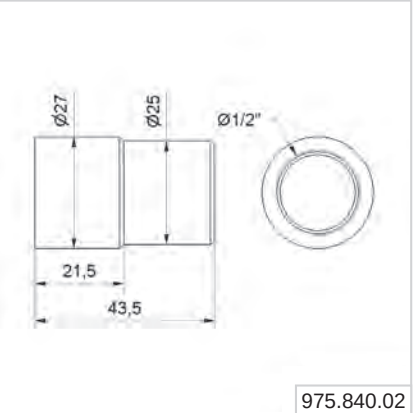
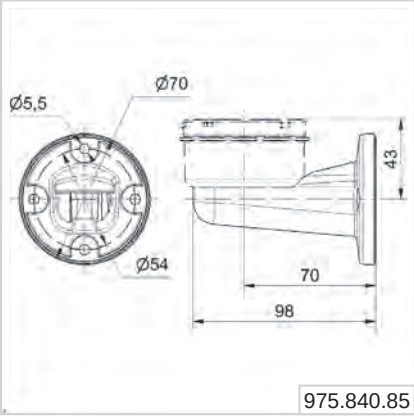
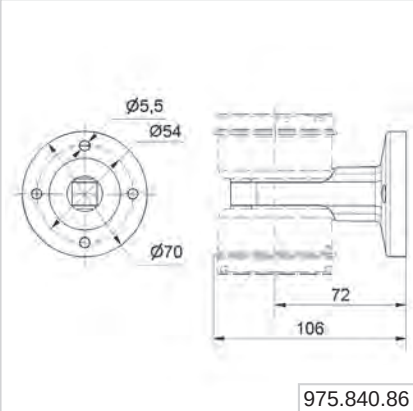
960.000.31



975.840.02



975.840.85

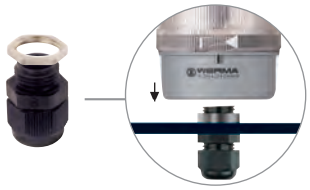


975.840.86

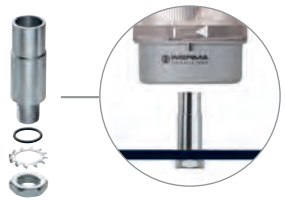
Overview Accessories for Signal Towers

Kombi*SIGN* 72 - Design*LOOK*

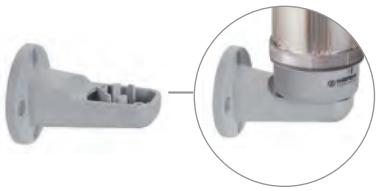
Cable gland for surface mounting, M16 x 1.5
Order no. 960 000 04



Adaptor for single hole mounting Ø 25 mm, M18
Order no. 960 000 25

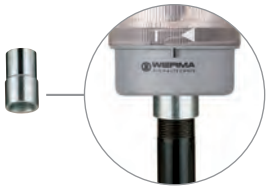


Bracket for 1-sided mounting, incl. rubber seals
Order no. 960 000 52



Bracket for surface mounting incl. cable gland M16 x 1.5
Order no. 960 000 53

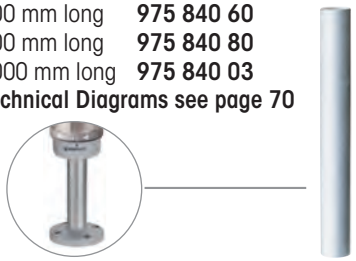
Adaptor for tube mounting Ø 25 mm / 1/2" NPT thread
Order no. 975 840 02



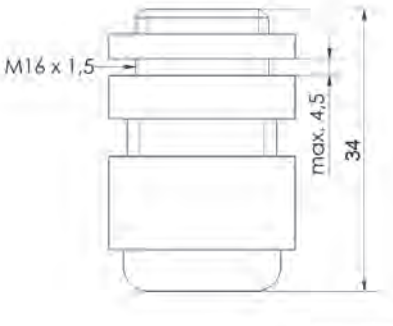
Tube Ø 25 mm, all anodized aluminium

100 mm long	**975 845 10**
250 mm long	**975 840 25**
400 mm long	**975 840 40**
600 mm long	**975 840 60**
800 mm long	**975 840 80**
1000 mm long	**975 840 03**

Technical Diagrams see page 70



TECHNICAL DIAGRAMS:



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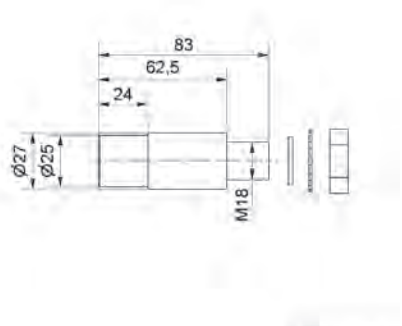

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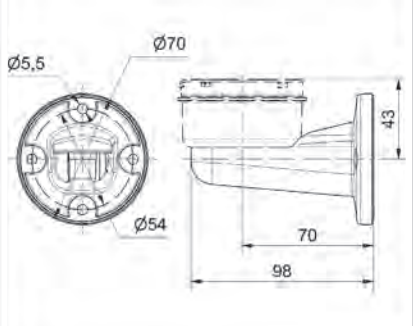

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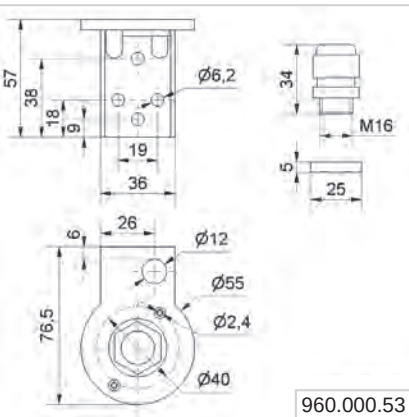

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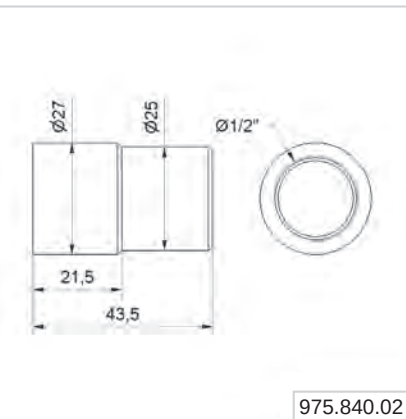


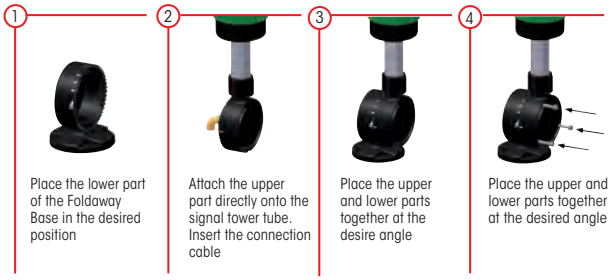
975.840.02

Kombi*SIGN* 71, 72 and 40 - Classic*LOOK*

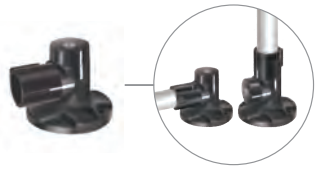
Foldaway Base - Signal Tower can be folded away, including rubber seal, for tube (all anodized aluminium) Ø 25 mm (not included in assembly)
Order no. 960 000 30

Dimensions (Ø x Height): 70 mm x 117 mm
Material: PA-GF
Cable diameter: Max. 14 mm
Fixing: Vertical, horizontal, Positioning in 7.5° steps

QUICK AND SIMPLE MOUNTING:

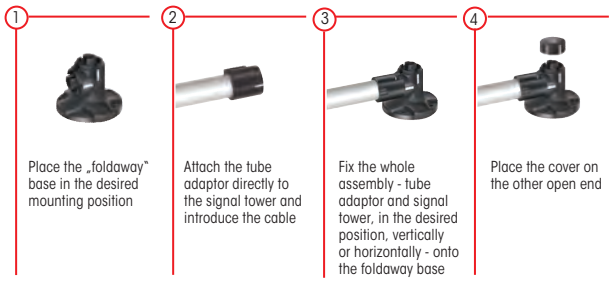


Foldaway Base - Signal Tower can be folded away, including rubber seal, for tube (all anodized aluminium) Ø 25 mm (not included in assembly)
Order no. 960 009 12

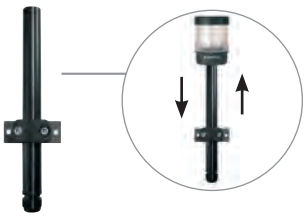


Dimensions (Ø x Height): 70 mm x 85 mm
Material: PA-GF
Cable diameter: Max. 8 mm
Fixing: Vertical, horizontal, Positioning in 0° and 90°

QUICK AND SIMPLE MOUNTING:



Tube with clamp, Ø 25 mm, 250 mm long, incl. cable gland
Order no. 960 000 18

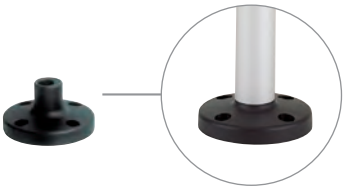


Base with integrated tube, Ø 25 mm, 110 mm long, plastic, incl. rubber seal
Order no. 975 840 10

Tube Ø 25 mm, all anodized aluminium

100 mm long	**975 845 10**
250 mm long	**975 840 25**
400 mm long	**975 840 40**
600 mm long	**975 840 60**
800 mm long	**975 840 80**
1000 mm long	**975 840 03**

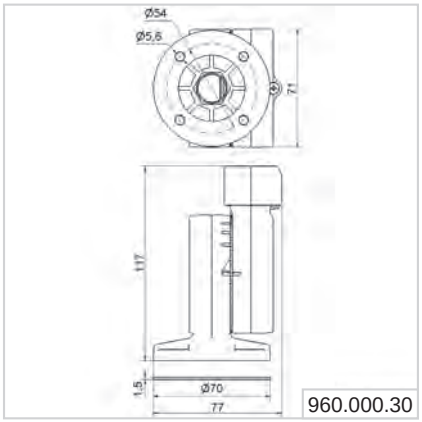
Base for tube mounting, Ø 25 mm, plastic, incl. rubber seal
Order no. 975 840 90



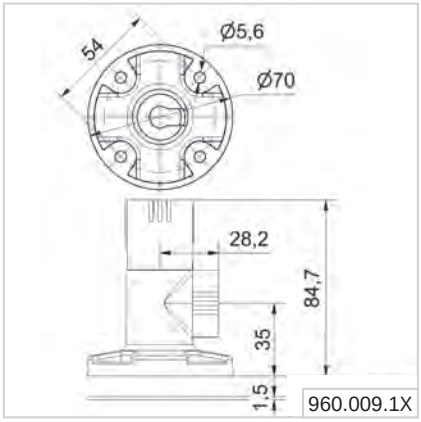
Base for tube Ø 25 mm, metal, incl. rubber seal, recommended for tube lengths of 400 mm and longer
Order no. 975 840 91

Overview Accessories for Signal Towers

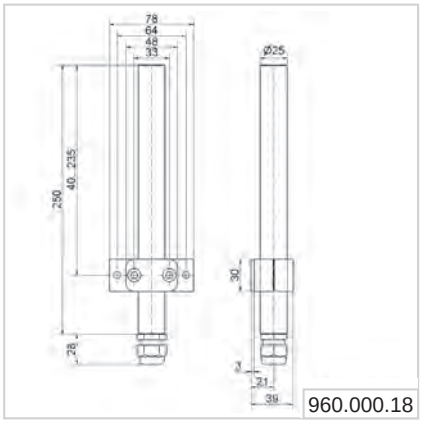
TECHNICAL DIAGRAMS:



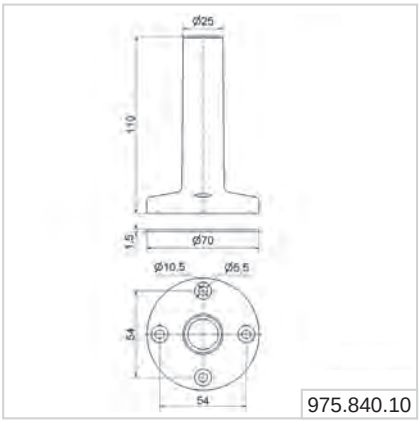
960.000.30



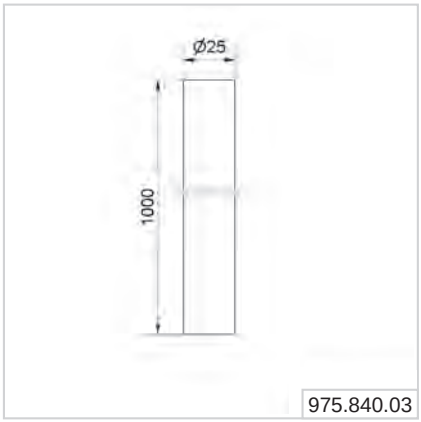
960.009.1X



960.000.18

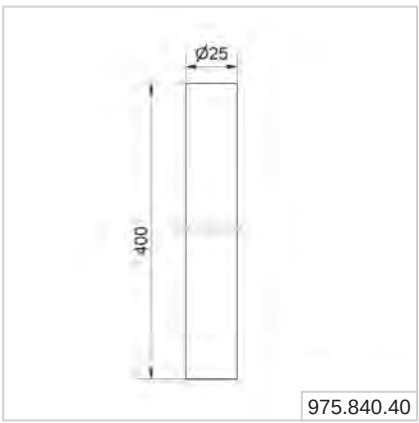


975.840.10



975.840.03

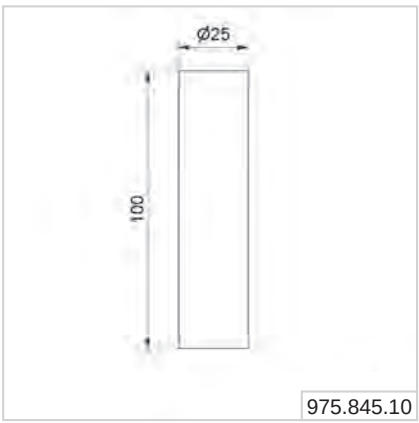
975.840.25



975.840.40

975.840.60

975.840.80



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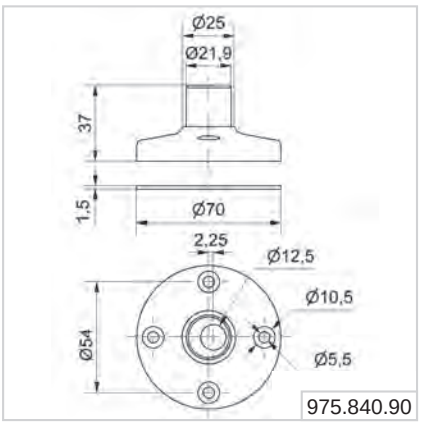

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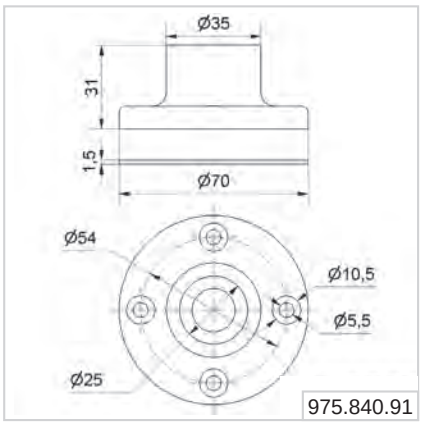

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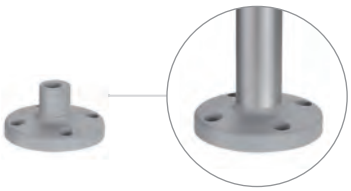
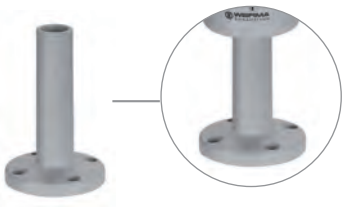
Kombi*SIGN* 72 and 40 - Design*LOOK*

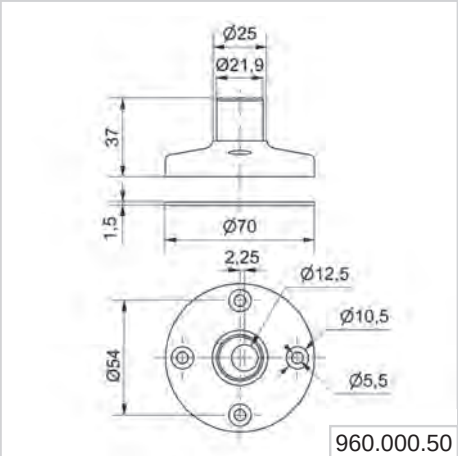
Base for tube mounting, Ø 25 mm,
plastic, incl. rubber seal
Order no. 960 000 50

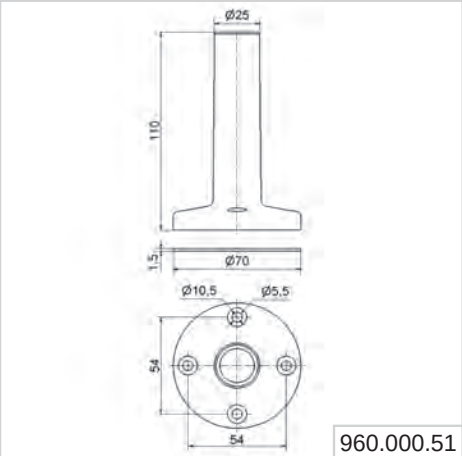


Base with integrated tube,
Ø 25 mm, 110 mm long,
plastic, incl. rubber seal
Order no. 960 000 51



TECHNICAL DIAGRAMS:

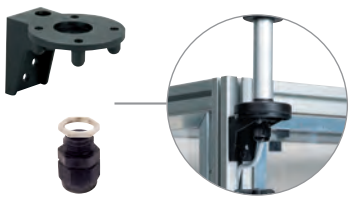




Overview Accessories for Signal Towers

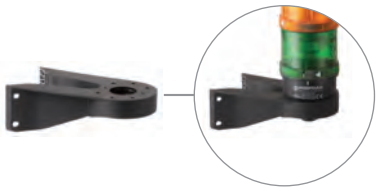
Kombi*SIGN* 71, 72, 40 and KOMPAKT 37 - Classic*LOOK*

Bracket for tube mounting,
incl. cable gland M16 x 1.5
Order no. 960 000 01



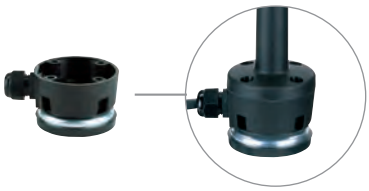
Bracket for base mounting,
with concealed cable entry,
incl. rubber seals
Order no. 960 000 14

Corner fixing bracket
Order no. 960 000 41

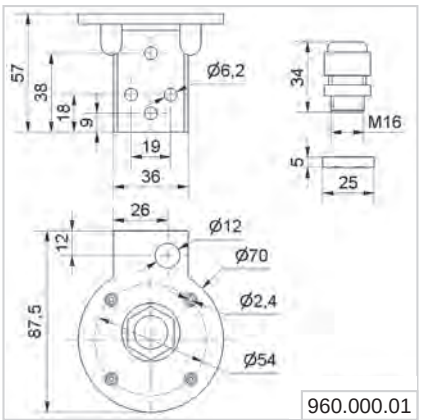


Contact box for cable exit
at side, with mounting material
and seal, cable gland M16 x 1.5
Order no. 975 840 01

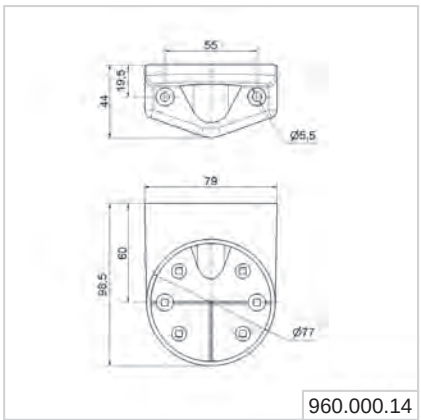
Contact box with magnetic
base and cable exit at side
cable gland M16 x 1.5
Order no. 975 840 04



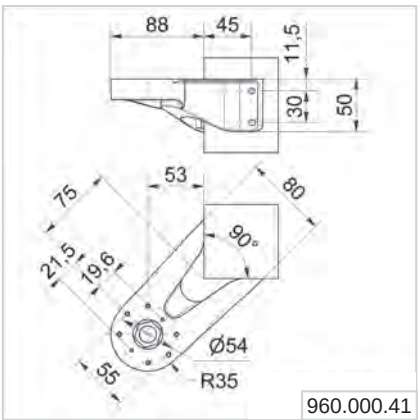
TECHNICAL DIAGRAMS:



960.000.01



960.000.14



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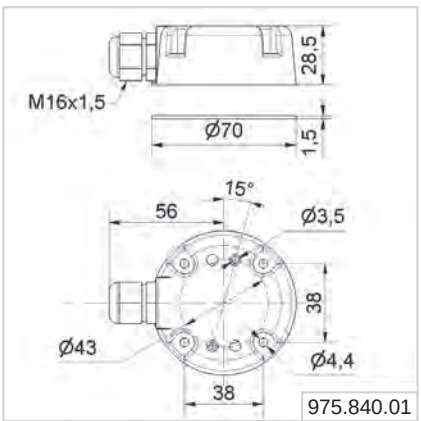

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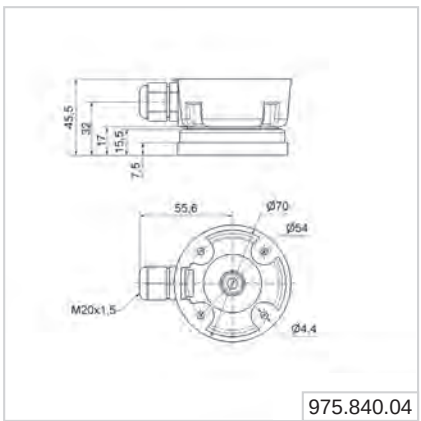
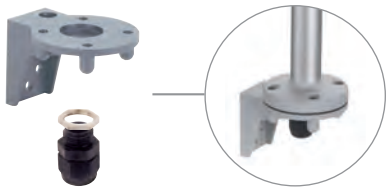


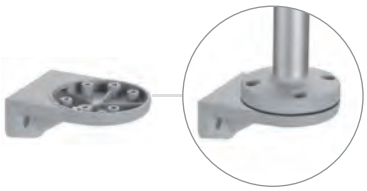
975.840.04

Kombi*SIGN* 72, 40 and KOMPAKT 37 - Design*LOOK*

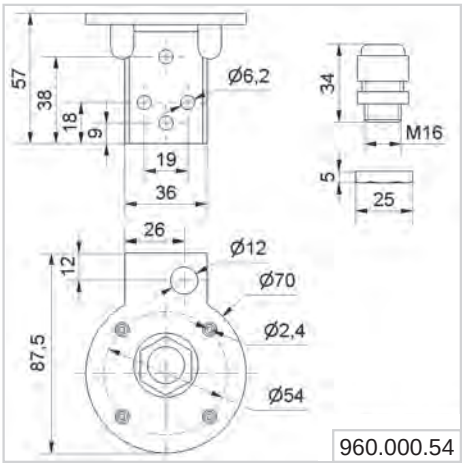
Bracket for tube mounting,
incl. cable gland M16 x 1.5
Order no. 960 000 54



Bracket for base mounting,
with concealed cable entry,
incl. rubber seals
Order no. 960 000 55



TECHNICAL DIAGRAMS:



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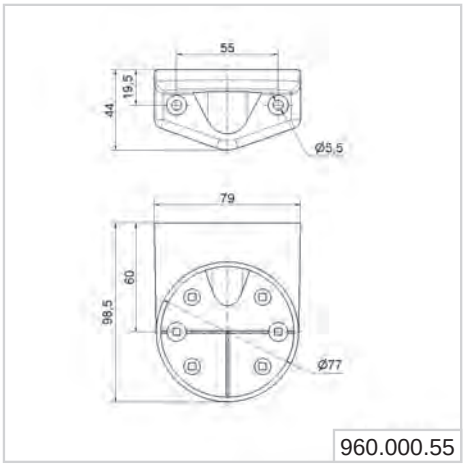


960.000.55

Overview Accessories for Signal Towers

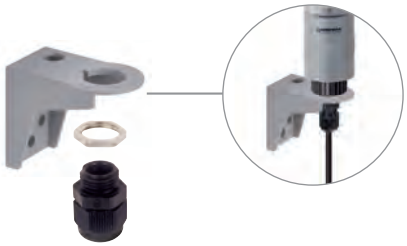
Kombi*SIGN* 40 - Classic*LOOK*

Bracket for assembly on aluminium profiles
incl. cable gland M12 x 1.5
Order no. 960 630 02

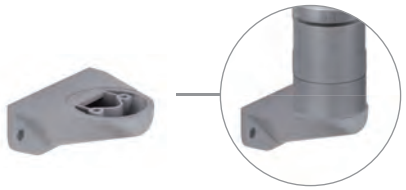
Bracket for concealed cable entry
Order no. 960 630 01

Kombi*SIGN* 40 - Design*LOOK*

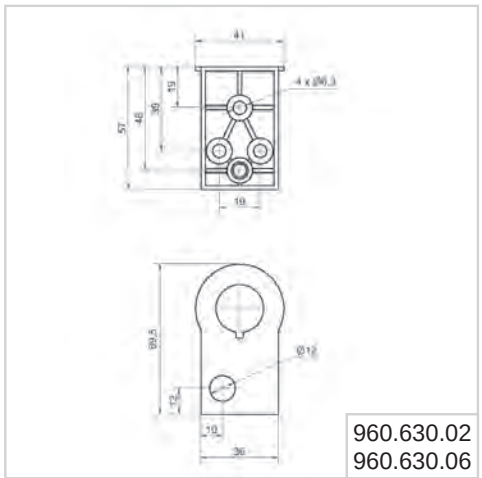
Bracket for assembly on aluminium profiles
incl. cable gland M12 x 1.5
Order no. 960 630 06

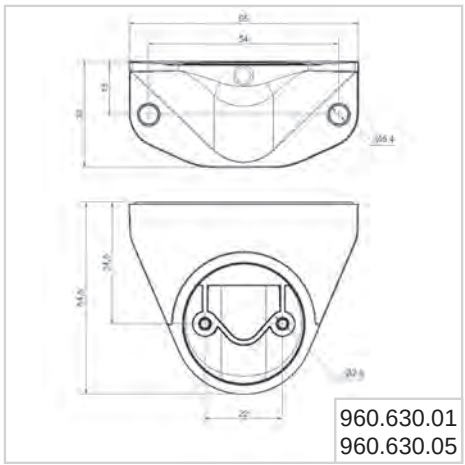


Bracket for concealed cable entry
Order no. 960 630 05



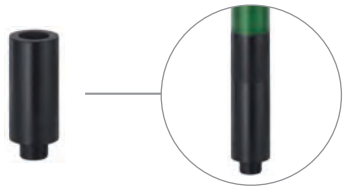
TECHNICAL DIAGRAMS:



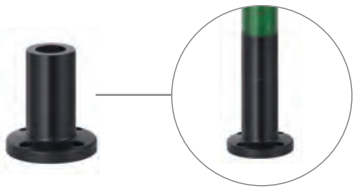


KOMPAKT 37 - Classic*LOOK*

Extension tube
Order no. 960 698 02



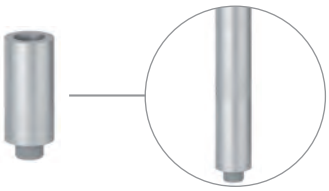
Base with integrated tube
Order no. 960 698 01



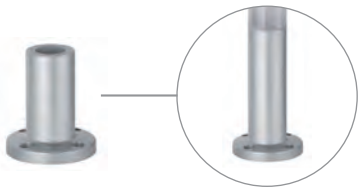
Bracket for assembly on aluminium profiles
Order no. 960 630 02

KOMPAKT 37 - Design*LOOK*

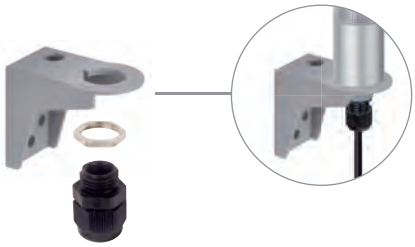
Extension tube
Order no. 960 698 04



Base with integrated tube
Order no. 960 698 03

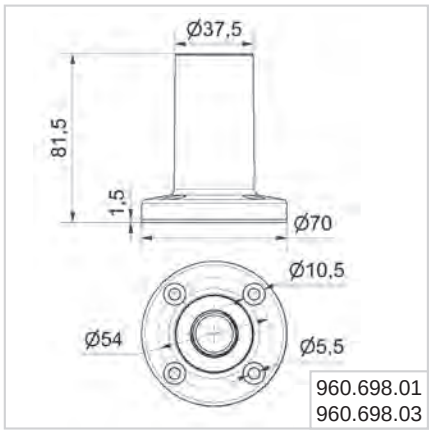


Bracket for assembly on aluminium profiles
Order no. 960 630 06

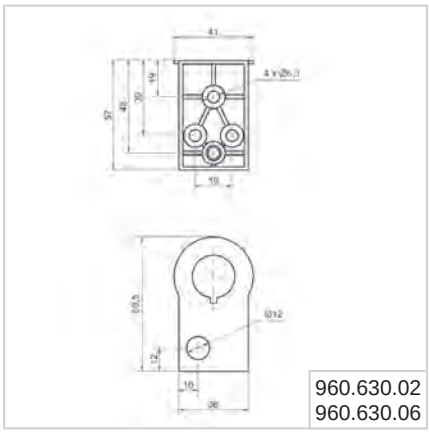


TECHNICAL DIAGRAMS:

960.698.02
960.698.04



960.698.01
960.698.03



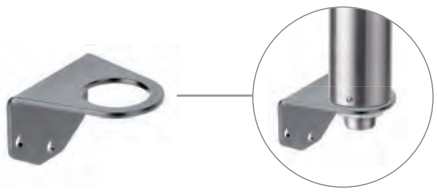
960.630.02
960.630.06

Overview Accessories for Signal Towers

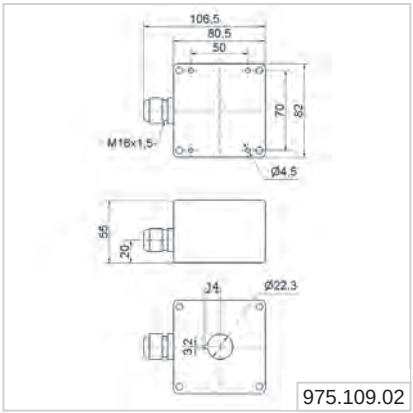
de*SIGN* 42

Surface housing single
Order no. 975 109 02

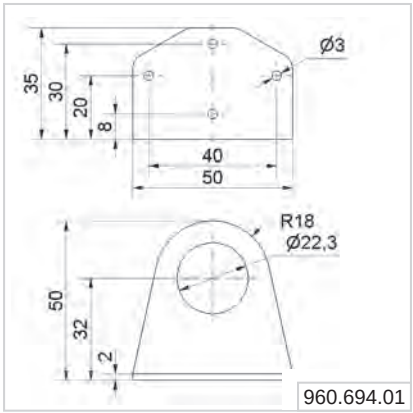
Bracket, stainless steel (Protection rating IP33)
Order no. 960 694 01



TECHNICAL DIAGRAMS:



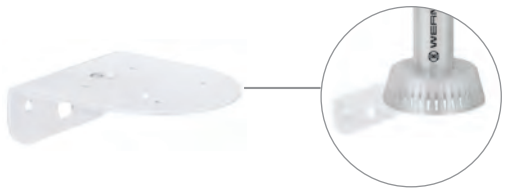
975.109.02



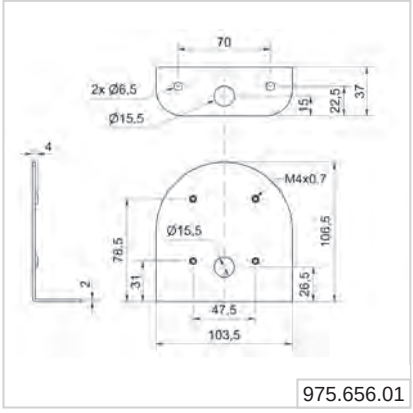
960.694.01

Clear*SIGN*

Bracket for base mounting
Order no. 975 656 01



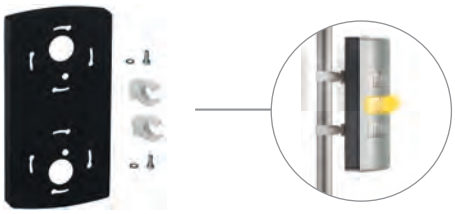
TECHNICAL DIAGRAMS:



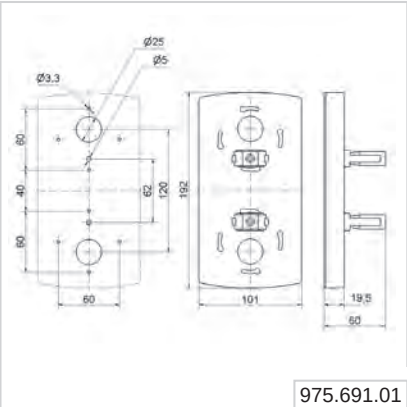
975.656.01

Flat*SIGN*

Fixing kit
Order no. 975 691 01



TECHNICAL DIAGRAMS:



975.691.01


win®
wireless information network
WERMA
SIGNALTECHNIK
640 810 00
LISTED 8D21
IND.CONT.EQ

Systems for optimising production and logistics areas

Systems for optimising production and logistics areas

Why network signal towers?

To discover hidden optimisation potential in your manufacturing, logistics or shipping processes, you need a system that measures unproductive time - whether it be at manual workstations, packing stations or in automated production areas.

Networked WERMA signal towers offer specific benefits in this regard. By using the signal tower as an interface, you are not dependent on other systems and it is easy to retrofit the system - either on workstations or in entire plants. Our wireless WIN solution (Wireless Information Network) makes time-consuming cabling effort obsolete. It allows you to collect reliable data, immediately identify weak points and optimise your processes based on these findings, thus increasing productivity. The stand-alone software displays the status of all integrated workstations or machines centrally in the control station module, provides information via the email notification function, documents faults and generates easy-to-read reports.

Smart*MONITOR* - The smart MDE alternative for manufacturing companies

Smart*MONITOR* (see page 82) is the smart MDE alternative for industrial companies looking for a way to quickly and easily gather reliable data to optimise their manufacturing processes. Smart*MONITOR* provides all of the relevant data for machines, systems and manual workstations easily at the touch of a button. Unlike conventional, complex MDE systems, Smart*MONITOR* is a simple, wireless-based retrofit solution for signalling and analysing your entire production facility - at a glance.

Andon*SPEED* - The solution for packaging and shipping workstations

Would you like to reduce costs in your shipping processes? Andon*SPEED* (see page 84) is the the ideal call-for-action system, because it makes permanent time-savings possible. In contrast to conventional Andon tools, Andon*SPEED* not only signals faults but it also documents and analyses unproductive downtime. This enables you to reduce wait times by up to 50% - for more "units per hour".

Andon*LIGHT* - Manual Call for Action System without Networking

Do you simply need a manual call for action system for a small designated area - and local, clear signalling is sufficient? If so, then Andon*LIGHT* (see page 92) is the ideal introduction to our professional call for action systems. And it is easy to network these products at a later date.

Kombi*SIGN* reflect - Simple "Reflection" of Signal Towers

The simple Kombi*SIGN* reflect solution wirelessly "reflects" machine statuses to a WERMA Signal Tower within your line of sight. This allows you to keep track of machines not in your direct vicinity.

Smart*MONITOR*

Your benefits

Smart*MONITOR* is the smart MDE alternative for industrial companies looking for a way to quickly and easily gather reliable data to optimise manufacturing processes. Intelligent networking of signal towers creates a simple, low-cost retrofit alternative to conventional, complex MDE systems.

- Identifies and documents faults and unproductive time more quickly
- Reduces response times and prevents downtime
- Works regardless of the manufacturer, age or function of the machine
- Provides all relevant data of machines, systems and manual workstations at a glance
- Reports show opportunities for process and productivity improvements
- Modular and expandable with no cabling required

Typical applications

- Discover hidden optimisation potential
- Signal a production stoppage
- Manage the supply of material to machines and workstations
- As a control station for manufacturing companies
- Production reporting

Initial startup

- Install software
- Connect and configure receiver on the computer
- Connect and configure transmitter on the computer
- Integate transmiter into signal tower (no tools necessary)

Features

- Robust and proven wireless network for manufacturing environments
- Licence-free software is included
- Integrated analytics and reporting tools
- WIN slave control enables you to trigger simple logical rules for example to activate an additional signal tower as a head-of-line function

Free test kit

Discover the optimisation potential in your company. Order your free test box today. It contains everything you need for one machine, including a full version of the software.

www.werma.com/systeme

This is how you put together your Smart*MONITOR* system

WIRELESS NETWORKING

STATUS MONITORING

This hardware monitors up to eight different statuses and transmits them to the receiver.

COUNTING MODULE

This hardware monitors up to six different statuses and counts a quantity pulse. This information is transmitted to the receiver.

CONTROLLING A SIGNAL TOWER

In combination with the software, this hardware allows the actuation of a signal tower or an external application (start machine, stop machine etc.).

Transmitter

WIN slave
Order no. **860 640 02**

WIN transmitter
Order no. **860 640 05**

WIN slave performance
Order no. **860 640 12**

WIN transmitter performance
Order no. **860 640 15**

WIN slave control
Order no. **860 640 22**

WIN transmitter control
Order no. **860 640 25**

Receiver

WIN ethernet master
Order no. **860 000 06**

WIN ethernet receiver
Order no. **860 000 07**

SIGNAL TOWER

SIGNAL ELEMENTS (UP TO A MAXIMUM OF 4)

Buzzer
Order no. **645 800 75**

2 tone siren
Order no. **645 870 75**

LED Permanent light red
Order no. **644 100 75**

LED Permanent light green
Order no. **644 200 75**

LED Permanent light yellow
Order no. **644 300 75**

LED Permanent light clear
Order no. **644 400 75**

LED Permanent light blue
Order no. **644 500 75**

Twin*LIGHT* red
Order no. **647 110 75**

Twin*LIGHT* yellow
Order no. **647 310 75**

Twin*LIGHT* green
Order no. **647 210 75**

Twin*LIGHT* clear
Order no. **647 430 75**

Twin*LIGHT* blue
Order no. **647 510 75**

Base mounting

Terminal element
Order no. **640 800 00**

Tube mounting

Terminal element +
Base with integrated tube
Order no. **640 810 00 + 975 840 10**

Bracket mounting

Terminal element +
Bracket for base mounting
Order no. **640 800 00 + 960 000 02**

PRE-ASSEMBLED SIGNAL TOWER

Base mounting

LED Permanent light
Order no.
649 240 02

LED Permanent light
Order no.
649 240 04

Twin*LIGHT*
Order no.
649 000 01

Tube mounting

LED Permanent light
Order no.
649 240 05

LED Permanent light
Order no.
649 240 06

Twin*LIGHT*
Order no.
649 000 02

Andon*SPEED*

Your benefits

Andon*SPEED* optimises your processes at packaging and shipping stations - because Andon*SPEED* provides a visual notification of where problems have arisen. Permanent time savings are possible because of quick fault repairs. The wireless network sends signals the workstation or the central control station and can send an email notification if required.

- Rapid assistance reduces wait times
- Reduces response times and prevents shutdowns
- Quick fault repair for more "units per hour"
- Intelligent reporting for lasting improvements
- Optimisation potential is made transparent

Typical applications

- Report stoppages on chutes or conveyor belts
- Manage the supply of materials to packaging stations
- Report missing items at the shipping station
- Process improvement in shipping areas

Initial startup

- Install software
- Connect and configure receiver on the computer
- Connect and configure transmitter on the computer
- Integate signal transmiter into signal tower (no tools necessary)
- Connect Andon Smart*BOX*

Features

- Robust, proven wireless network for production environments
- Licence-free software is included
- Integrated analytics and reporting tools
- Ability to implement a head-of-line function, for example, with slave control

Free test kit

Discover the optimisation potential in your company. Order your free test box today. It contains everything you need for one workstation, including a full version of the software.

www.werma.com/andonspeed

This is how you put together your Andon*SPEED* system

ANDON PRODUCT

Base mounting

Andon*CONTROL*
Order no. **860 640 07**

Aluminium profile mounting/Wall mounting

Andon Smart*BOX* incl. Power Supply
Order no. **860 000 09**

Wireless Networking

Transmitter

WIN slave
Order no. **860 640 02**

WIN transmitter
Order no. **860 640 05**

Receiver

WIN ethernet master
Order no. **860 000 06**

WIN ethernet receiver
Order no. **860 000 07**

SIGNAL TOWER

SIGNAL ELEMENTS (UP TO A MAXIMUM OF 4)

Buzzer
Order no. **645 800 75**

2 tone sirene
Order no. **645 870 75**

LED Permanent light red
Order no. **644 100 75**

LED Permanent light green
Order no. **644 200 75**

LED Permanent light yellow
Order no. **644 300 75**

LED Permanent light clear
Order no. **644 400 75**

LED Permanent light blue
Order no. **644 500 75**

Twin*LIGHT* red
Order no. **647 110 75**

Twin*LIGHT* yellow
Order no. **647 310 75**

Twin*LIGHT* green
Order no. **647 210 75**

Twin*LIGHT* clear
Order no. **647 430 75**

Twin*LIGHT* blue
Order no. **647 510 75**

Base mounting

Terminal element
Order no. **640 800 00**

Tube mounting

Terminal element + Base with integrated tube
Order no. **640 810 00 + 975 840 10**

Bracket mounting

Terminal element + Bracket for base mounting
Order no. **640 800 00 + 960 000 02**

PRE-ASSEMBLED SIGNAL TOWER

Base mounting

LED Permanent light
Order no.
649 240 02

LED Permanent light
Order no.
649 240 04

Twin*LIGHT*
Order no.
649 000 01

Tube mounting

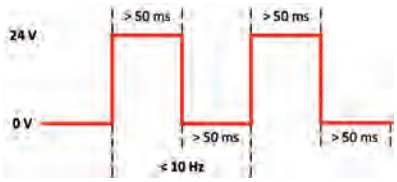
LED Permanent light
Order no.
649 240 05

LED Permanent light
Order no.
649 240 06

Twin*LIGHT*
Order no.
649 000 02

WIN Transmitter for Kombi*SIGN* 72 and 71

WIN slave,
WIN slave performance and
WIN slave control



The counter impulse of the
WIN slave performance is max. 10 Hz

Expandable at any time: With
additional "WIN slaves"
up to 50 machines can be
integrated into the network

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

	WIN slave	WIN slave performance	WIN slave control
Dimensions (Ø x Height):	70 mm x 65,5 mm	70 mm x 65,5 mm	70 mm x 65,5 mm
Housing:	PC, black	PC, black	PC, black
Function:	Status monitoring	Status monitoring + Counting	Switching + controlling
Counter input:	-	Max. 10 Hz	-
Max. current output continuous:	-	-	750 mA
Peak current output 10 ms:	-	-	3,6 A
Min. current:	-	-	0,1 mA
Max. current per tier:	-	-	250 mA
Wireless connection ISM frequency:	868 MHz (WIN conforms to the EU's EN 300220 harmonised standard and can thus be used in all EU member countries.) Further countries upon request		
Transmission range:	Up to 300 m (unobstructed line of sight) Every transmitter simultaneously functions as a "repeater", enabling the transmission range to be significantly increased.		
Operating voltage:	24 V AC/DC	24 V AC/DC	24 V AC/DC
Current consumption:	40 mA, max. 430 mA	40 mA, max. 430 mA	70 mA, max. 2 A
Order no.:	**860 640 02**	**860 640 12**	**860 640 22**

TECHNICAL DIAGRAMS:

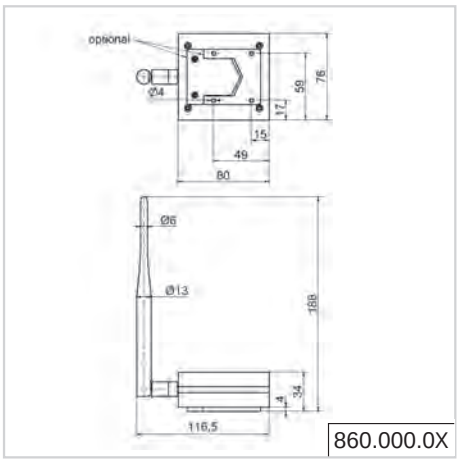
WIN Receiver for Kombi*SIGN* 72 and 71

The software package allows you to monitor a production area or individual workstations from the comfort of the PC

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

	WIN ethernet master
Dimensions (L x H x W):	76 mm x 30 mm x 80 mm (without antenna)
Housing:	ABS, black
Function:	Data collection
Connetion data transmission:	RJ45 Ethernet (10Base-T/100Base-TX nach Ieee 802,3)
Connection configurator:	Via USB
Wireless connection ISM frequency:	868 MHz (WIN conforms to the EU's EN 300220 harmonised standard and can thus be used in all EU member countries.) Further countries upon request
Suitable for:	Windows®, Sytem requirements - see Handbook
Assembly:	Receiver, USB power supply, Ethernet Cable (3 m), Software, Adapter supplied (EU, UK, North America)
Operating voltage:	Via Power supply (115-230 V AC, 50-60-Hz)
Peak current output:	2,1 A
Max. power output:	10,5 W
Current consumption:	< 160 mA (max. 800 mA)
Order no.:	**860 000 06**

TECHNICAL DIAGRAMS:



860 000 00 860 000 06

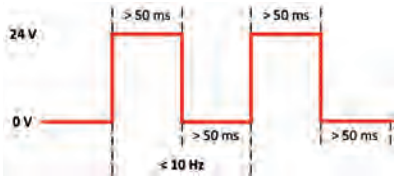
197 g 380 g IP20 +40°C 0°C

WIN Transmitter for Kombi*SIGN* 72 and 71

WIN transmitter,
WIN transmitter performance and
WIN transmitter control

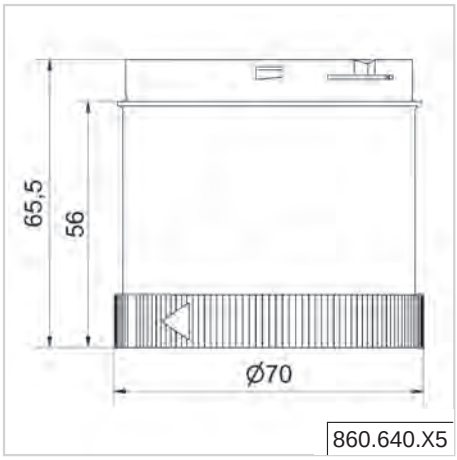
TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

	WIN transmitter	WIN transmitter performance	WIN transmitter control
Dimensions (Ø x Height):	70 mm x 65,5 mm	70 mm x 65,5 mm	70 mm x 65,5 mm
Housing:	PC, black	PC, black	PC, black
Function:	Status monitoring	Status monitoring + Counting	Switching + controlling
Counter input:	-	Max. 10 Hz	-
Max. current output continuous:	-	-	750 mA
Peak current output 10 ms:	-	-	3,6 A
Min. current:	-	-	0,1 mA
Max. current per tier:	-	-	250 mA
Wireless connection ISM frequency:	868 MHz (WIN conforms to the EU's EN 300220 harmonised standard and can thus be used in all EU member countries.) Further countries upon request		
Transmission range:	Up to 300 m (unobstructed line of sight) Every transmitter simultaneously functions as a "repeater", enabling the transmission range to be significantly increased.		
Operating voltage:	24 V AC/DC	24 V AC/DC	24 V AC/DC
Current consumption:	40 mA, max. 430 mA	40 mA, max. 430 mA	70 mA, max. 2 A
Order no.:	**860 640 05**	**860 640 15**	**860 640 25**



The counter impulse of the WIN transmitter performance is max. 10 Hz

TECHNICAL DIAGRAMS:



Expandable at any time: With additional "WIN transmitter" up to 50 machines can be integrated into the network

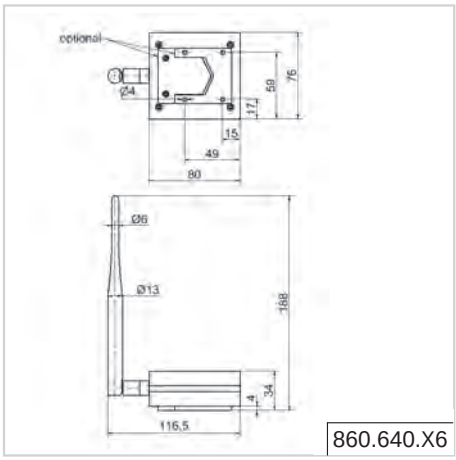
WIN Receiver for Kombi*SIGN* 72 and 71

The software package allows you to monitor a production area or individual workstations from the comfort of the PC

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

	WIN ethernet receiver
Dimensions (L x H x W):	76 mm x 30 mm x 80 mm (without antenna)
Housing:	ABS, black
Function:	Data collection
Connetion data transmission:	RJ45 Ethernet (10Base-T/100Base-TX by Ieee 802,3)
Connection configurator:	Via USB
Wireless connection ISM frequency:	915 MHz (only for use in North America) Further countries upon request
Suitable for:	Windows®, Sytem requirements - see Handbook
Assembly:	Receiver, USB power supply, Ethernet Cable (3 m), Software, Adapter supplied (EU, UK, North America)
Operating voltage:	Via Power supply (115-230 V AC, 50-60-Hz)
Peak current output:	2,1 A
Max. power output:	10,5 W
Current consumption:	< 160 mA (max. 800 mA)
Order no.:	**860 000 07**

TECHNICAL DIAGRAMS:



860 000 00 860 000 06

Canada 197 g 380 g IP20 +40°C 0°C

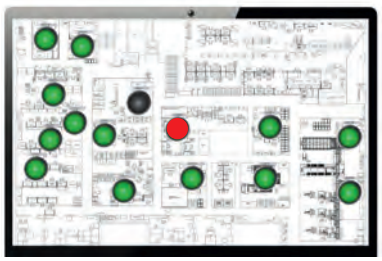
Software modules and functions

WIN is the stand-alone software for our wireless networked Smart*MONITOR* and Andon*SPEED* solutions and stands for "Wireless Information Network". **It is included in the product assembly.**

Technical Details

Suitable for:	Windows®, System requirements – see Handbook
Language:	Gernman, English, French, Chinese and Polish
Included in the delivery with the items:	860 000 00, 860 000 01, 860 000 06, 860 000 07

Overview of the software modules and functions:



React quickly with the Control Station

You can quickly see if a machine is in an error condition or running normally. This module helps you to quickly take action to reduce downtime.

The messaging function keeps you in touch at all times

It is no problem for WIN to keep you informed anytime anywhere about condition changes. For example a condition change can trigger an email to be sent automatically to a PC or smart phone. You can select for which machines and which condition changes an email is generated and also set a time delay before the email is sent.

Include a range of users with the Multiple Operator Access

The software uses a structure based on a database and can be used by any number of users. The database needs to be copied over to a shared drive on your network to allow multiple users access to the system.

Increase efficiency with the Productivity Module

Using the Productivity Module you can check the productivity of your machines and workstations over any time period. You can look for example at the last working day, or define specific time periods such as shift patterns.

Production transparency in the Runtime module

The run-time module provides an overview of the operating time and downtime of the stations monitored. You can use the module to lower your error rates, because the duration and number of faults is consistently recorded.

Compare different workstations or machines to gain insight into optimising your processes.

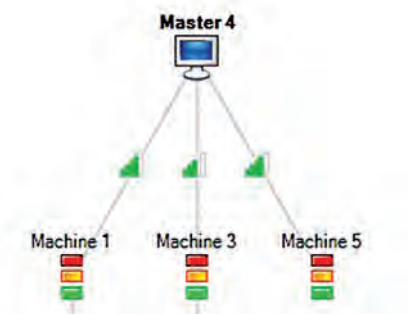
Description	Status	Fulfillment level
Part 21	Completed	100%
Part 78	Completed	100%
Part 43	Completed	100%
Part 500	Completed	108%
Moulding part P20123	Completed	100%
Tool 556	Running	39%
Tool 25	Running	49%
Part 677	Waiting	0%
Part 322	Waiting	0%
Part 456	Waiting	0%

Overview of jobs being run

The module gives you a comprehensive overview of which job is running on which machine and how the job is progressing.

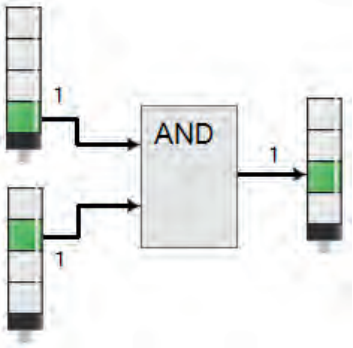
Simple reporting with the Report and Export Function

The user friendly report creation function allows you to convert all data into individual reports in tabular or graphic form.
The report is created and displayed for printing and can be individually amended and saved in various formats (pdf, HTML, Excel, CSV, jpg).



Stability of the Network with the Routing Module

All transmitters automatically form a network. The Routing Module assists in setting up or adjusting the best network for WIN.
The route network graphic shows the current set up of the WIN network and the signal strength of each "WIN slave/transmitter" or WIN slave performance/transmitter performance" and mainly serves diagnostic purposes.



Control and switch with the "Control" Module

Define simple logic rules in the "control" module to link the statuses of all connected signal towers and transmit them on to the "WIN slave control" hardware.

This allows you to implement a head-of-line function, for example, or to switch devices on and off.

Andon*LIGHT*

Your benefits

The introduction to professional call for action systems: the easy-to-retrofit Andon products in combination with WERMA Kombi*SIGN* 71 and Kombi*SIGN* 72 signal towers. With these products it is easy to improve safety and efficiency in the workplace.

- Rapid assistance reduces wait times
- Reduces response times and prevents shutdowns
- Intuitive and self-explanatory light system
- More reliability and efficiency (no running about, calling out, etc.)
- It can be expanded to a networked system at any time

Typical applications

- Professionally signal problems at workstations
- Manage supply of materials to workstations
- Optimise processes

Initial startup

- Simply connect Andon*LIGHT* with mains plug

Features

- Enables up to eight different statuses to be activated
- Signal directly on the signal tower with Andon*CONTROL*
- Activate signals on the signal tower with Andon Smart*BOX*

This is how you put together your Andon*LIGHT* system

ANDON PRODUCT

Base mounting

Andon*CONTROL*
Order no. **860 640 07**

Aluminium profile mounting/Wall mounting

Andon Smart*BOX*
incl. Power supply
Order no. **860 000 09**

SIGNAL TOWER

SIGNAL ELEMENTS (UP TO A MAXIMUM OF 4)

Buzzer
Order no. **645 800 75**

2 tone siren
Order no. **645 870 75**

LED Permanent light red
Order no. **644 100 75**

LED Permanent light green
Order no. **644 200 75**

LED Permanent light yellow
Order no. **644 300 75**

LED Permanent light clear
Order no. **644 400 75**

LED Permanent light blue
Order no. **644 500 75**

Twin*LIGHT* red
Order no. **647 110 75**

Twin*LIGHT* yellow
Order no. **647 310 75**

Twin*LIGHT* green
Order no. **647 210 75**

Twin*LIGHT* clear
Order no. **647 430 75**

Twin*LIGHT* blue
Order no. **647 510 75**

Base mounting

Terminal element
Order no. **640 800 00**

Tube mounting

Terminal element + Base with integrated tube
Order no. **640 810 00 + 975 840 10**

Bracket mounting

Terminal element + Bracket for base mounting
Order no. **640 800 00 + 960 000 02**

PRE-ASSEMBLED SIGNAL TOWER

Base mounting

LED Permanent light
Order no.
649 240 02

LED Permanent light
Order no.
649 240 04

Twin*LIGHT*
Order no.
649 000 01

Tube mounting

LED Permanent light
Order no.
649 240 05

LED Permanent light
Order no.
649 240 06

Twin*LIGHT*
Order no.
649 000 02

Andon*LIGHT* - Pre-assembled Signal Tower

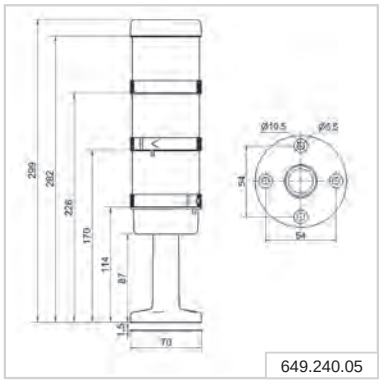
Or select one of our pre-configured variants.

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Pre-assembled signal tower	**Kombi*SIGN* 71**	**Kombi*SIGN* 72**
Order No.:	**649 260 01**	**649 000 03**
Consisting of:		
	 644 100 75	 647 110 75
	+ 644 300 75	+ 647 310 75
	+ 644 200 75	+ 647 210 75
	+ 640 810 00	+ 640 810 00
	+ 975 840 10	+ 975 840 10
	 + 860 000 09	 + 860 000 09

Technical details are given on the relevant product page.

TECHNICAL DIAGRAMS:



649.240.05

860.000.09

CE EAC 982 g IP30 +40°C 0°C

Andon Smart*BOX* for Signal Towers

Andon Smart*BOX* for use in industrial applications

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (B x H x T):	161 mm x 79 mm x 138 mm
Housing:	PA-GF Switches: PC
Fixing:	Base mounting, Wall mounting
Connection:	Via 5 m cable
Number of signal elements:	Max. 4 additional signal elements possible
Assembly:	Andon Smart*BOX*, power supply unit with connection cable (length 1.8 m), USB power supply, Adapter supplied (EU, UK, North America)
Voltage power supply unit:	100-240 V AC
Voltage signal elements:	24 V DC
Current consumption:	Max. 1 A
Order no.:	**860 000 09**

TECHNICAL DIAGRAMS:

860.000.09

Interchangeable adaptors (included in assembly) and wide input voltage range make the Power Supply suitable for worldwide use

582 g

IP30

+40°C

0°C

Andon*CONTROL* / Connection Set for KombiSIGN 72 and 71

Andon*CONTROL* is a simple call system for a wide variety of applications

The four push buttons can be individually labelled

With the aid of the connection set, the master/receiver from Kombi*SIGN* reflect can be used wherever an electrical socket is available (see next page)

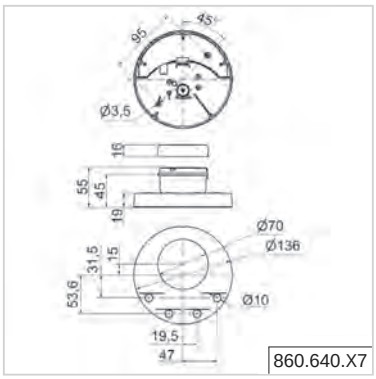
TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (Ø x Height):	136 mm x 45,5 mm	
Housing:	Base: PC/ABS Terminal element: PA-GF, shock resistant	
Fixing:	Base mounting, Bracket mounting (accessory)	
Number of signal elements:	Max. 4 additional signal elements possible	
Assembly:	Andon*CONTROL*, power supply unit with connection cable (length 1.8 m), interchangeable adaptors for EU, UK, North America, rubber feet, cable connection	Connection Set, power supply unit with connection cable (length 1.8 m), interchangeable adaptors for EU, UK, North America, rubber feet, cable connection
Voltage power supply unit:	100-240 V AC	
Voltage signal elements:	24 V DC	
Current consumption:	Max. 1 A	
Order no.:	**860 640 07**	**860 640 08**

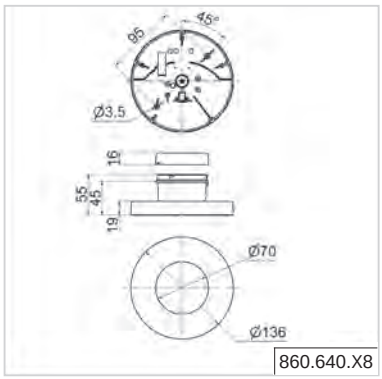
ACCESSORIES:

Mounting bracket, metal	**975 883 01**

TECHNICAL DIAGRAMS:



860.640.X7



860.640.X8

860 640 07 860 640 08

Kombi*SIGN* reflect for Kombi*SIGN* 72 and 71

Your benefits

Do you have a machine or a workstation that is out of your line of sight? Kombi*SIGN* reflect offers a simple solution that "reflects" the machine status to a Kombi*SIGN* signal tower in your vicinity. The two elements are paired and ready for immediate use.

- Keep track of machines that are out of view
- Reduce response times and prevent shutdowns
- Repair faults quickly
- Monitor machines/areas that are not yet networked

Typical applications

- Report stoppages in complex production areas
- Manage the supply of materials where visibility is restricted
- Improve processes in complex production areas

Initial startup

- Integrate transmitter and receiver into the signal towers (no tools necessary)

Features

- Pre-configured for plug & play
- Simple reflection of machine statuses
- Large transmission range thanks to robust wireless network for production environments

Kombi*SIGN* reflect for Kombi*SIGN* 72 and 71

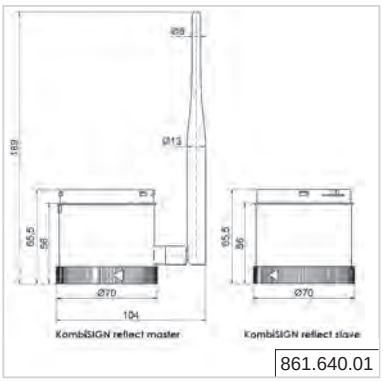
The slave sends the status directly to the master, and reflects the status of the signal tower installed on the machine

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

	Slave	Master
Dimensions (Ø x Height):	70 mm x 65,5 mm	70 mm x 65,5 mm (without antenna)
Housing:	Polycarbonat, black	
Connection:	Bayonet	
Wireless connection ISM frequency:	868 MHz (conforms to the EU's EN 300220 harmonised standard and can thus be used in all EU member countries) Further countries upon request	
Transmission range:	Up to 300 m (unobstructed line of sight)	
Operating voltage:	24 V AC/DC	24 V DC
Current consumption:	40 mA	40-900 mA
Order no.:	**861 640 01**	

Please check the wireless frequency. In Europe the version with 868 MHz is used. Please enquire about use in other countries.

TECHNICAL DIAGRAMS:



861.640.01

Simple monitoring of signal towers out of view

Simply fit the Kombi*SIGN* reflect slave to the signal tower on the machine

861 X40 02
receiver: class 2

Kombi*SIGN* reflect for Kombi*SIGN* 72 and 71

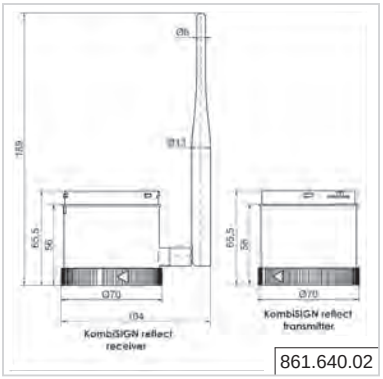
The transmitter sends the status directly to the receiver, and reflects the status of the signal tower installed on the machine

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

	Transmitter	Receiver
Dimensions (Ø x Height):	70 mm x 65,5 mm	70 mm x 65,5 mm (without antenna)
Housing:	Polycarbonat, black	
Connection:	Bayonet	
Wireless connection	915 MHz (only for use in North America)	
ISM frequency:	Further countries upon request	
Transmission range:	Up to 300 m (unobstructed line of sight)	
Operating voltage:	24 V AC/DC	24 V DC
Current consumption:	40 mA	40-900 mA
Order no.:	**861 640 02**	

In North America the version with 915 MHz is used. Please enquire about use in other countries.

TECHNICAL DIAGRAMS:



Simple monitoring of signal towers out of view

Simply fit the Kombi*SIGN* reflect transmitter to the signal tower on the machine

861 X40 02
receiver: class 2


WERMA
230 X00 68
IEC 60947-5-1
230V ~
ta50°C IP65

Signal Beacons & Traffic Lights

Overview Signal Beacons & Traffic Lights

WERMA's beacons and traffic lights help you indicate risks and imminent danger promptly and clearly. The urgency of the required action can be indicated by the colour of the light and by the type and duration of the signal.

This allows you to make your processes safe and efficient. Simply safe. Simply better. This is what we call intelligent signal technology.

Overview Signal Beacons & Traffic Lights						
		Installation	**Installation**	**Installation/ Surface mounting**	**Surface mounting**	**Surface mounting**
	Product range	**Micro Installation Beacons**	**Mini Installation Beacons**	**Mini Signal Beacons**	**Midi Signal Beacons**	**Maxi Signal Beacons**
Dimensions (Ø x Height)*		See comparison of sizes table on page 104				
Voltage	12 V	●		●	●	●
	24 V	●	●	●	●	●
	48 V			●	●	●
	115 V	●		●	●	●
	230 V	●		●	●	●
Optical	LED Permanent Light	●		●	●	●
	LED Permanent Light (multicolour)		●	●		
	LED Blinking Light			●	●	
	LED Rotating Light			●	●	●
	LED Flashing Light				●	●
	LED EVS Light				●	●
	Permanent Light			●	●	
	Blinking Light				●	
	Xenon Flashing Light	●		●	●	●
	Rotating Mirror/Rotating Light				●	●
Protection		IP65	IP65	IP65	IP65	IP65
Signalisation index**		2-4	3	2-4	4-8	6-10
Page		Page 106	Page 110	Page 113	Page 143	Page 154

* Technical diagrams can be found on the product page

** Signalisation index – see page 13 + 21

Installation beacons

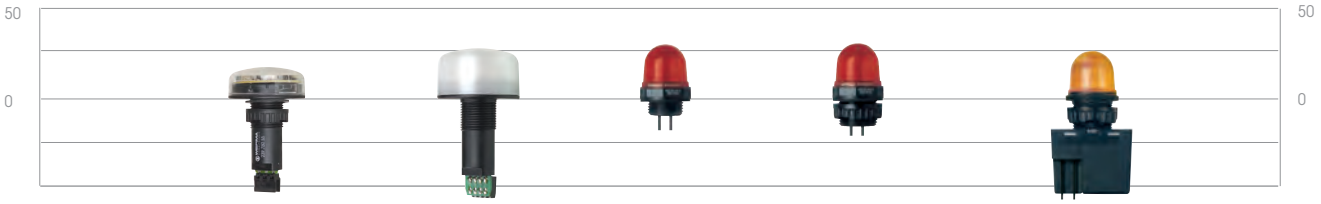
Installation beacons are used for installing in M20/M22 drilled holes. The beacon is fixed from the back, in controll panels for example, using a locking nut. This prevents subsequent tampering.

Surface mounted beacons

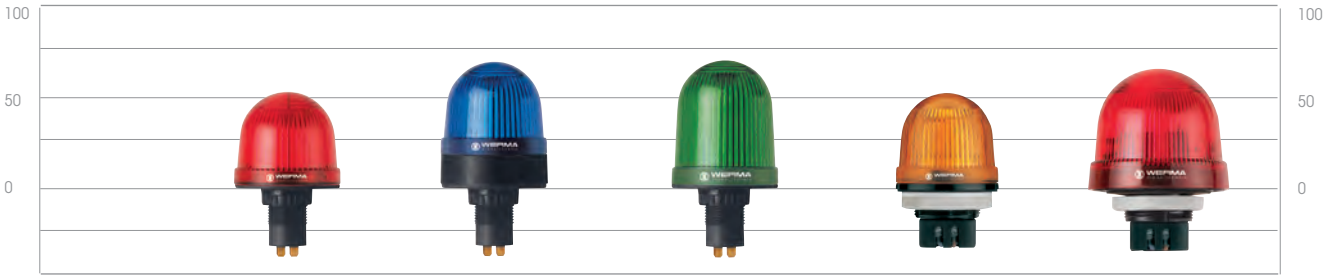
Surface mounted beacons are fixed directly onto the surface of the relevant object (machines). The basic mounting options are base, bracket or tube installation.

					
Surface mounting	**Surface mounting**	**Surface mounting**	**Surface mounting**	**Surface mounting**	**Surface mounting**
FlexSQUARE	**Heavy Duty Beacons**	**Obstruction Light**	**Traffic Lights**	**Monitorable Beacon**	**Ex Signal Beacons**
See comparison of sizes table on page 104					
●	●	●	●		
●	●	●	●	●	●
●	●	●			
●	●		●		●
●	●	●	●		●
●	●	●	●	●	●
●			●		
	●				●
●					●
●					●
			●	●	
	●		●		●
	●				●
IP67	IP67	IP65 / IP66/68	IP65/IP69k	IP65	IP66
5-8	6-9	Legal requirement	4-9	4-5	4-9
Page 162	Page 168	Page 173	Page 176	Page 189	Page 193

COMPARISON OF WERMA SIGNAL BEACONS AND TRAFFIC LIGHTS



Series	239	239	230	231	232
Thread	M22	M22	M20	M22	M22
Ø	50 mm	50 mm	29 mm	29 mm	29 mm
Height (Protrusion from panel)	22 mm	31 mm	32 mm	32 mm	32 mm
Page	103	102	98	100	113



Series	206	207/208	216	800/801/802	815/816/817
Thread	M22	M22	M22	PG29	PG29
Ø	57 mm	58 mm	57 mm	57 mm	75 mm
Height (Protrusion from panel)	53 mm	69 mm	69 mm	54 mm	66 mm
Page	104	105/114	106	107/108/115	109/116/117/111/112

Series	200	220	210	209	219	853
Ø	57 mm	75 mm	57 mm	57 mm	57 mm	85 mm
Height	65.5 mm	79 mm	81 mm	87 mm	103 mm	85 mm
Page	122	132	126	148	150	135

Series	826	885	839	280/883	884
Ø	98 mm	98 mm	153 mm	142 mm	142 mm
Height	137 mm	151 mm	189 mm	218 mm	218 mm
Page	136	165	142	143/172	171

Series	826	885	839	280/883	884
Ø	98 mm	98 mm	153 mm	142 mm	142 mm
Height	137 mm	151 mm	189 mm	218 mm	218 mm
Page	136	165	142	143/172	171

Micro Installation Beacons - 230/231/232

Size comparison Micro/Mini


Signalisation index	
Optical	
LED Permanent Light	2
Xenon Flashing Light	4

Your benefits

Despite their size, micro installation beacons from the 230 / 231 / 232 range will provide good all-round visibility. The range includes control panel indicator lights.

- The industry standard for control panels
- Easy to install, even where space is restricted

Typical applications

Signalling faults and statuses

- On small machines and equipment
- In building technology

Installation options

- M22 single-hole mounting including nut
- M20 for direct installation, in safety switches, for example

Features

- Available with a permanent light
- Powerful xenon flash light for increased visibility

230 LED Installation Beacon

Mainly sideways illumination

The LED Installation Beacon 230 can for example be used in applications with cable-operated switches or limit switch devices

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

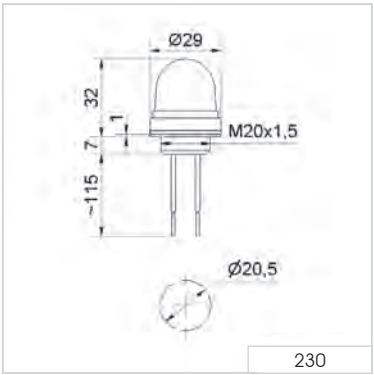
Dimensions (Ø x Height):	29 mm x 32 mm (Protrusion from panel)
Housing:	PC/ABS-Blend
Lens:	PC, transparent
Connection:	2 wires, c. 115 mm long
Fixing:	Installation mounting for Ø 20.5 mm (M20 x 1.5 mm)
Life duration:	Up to 100,000 hrs

Seal included in assembly.

Voltage:	12 V DC	24 V DC	115 V AC	230 V AC
Current consumption:	80 mA	45 mA	15 mA	20 mA
red	**230 100 54**	**230 100 55**	**230 100 67**	**230 100 68**
yellow	**230 300 54**	**230 300 55**	**230 300 67**	**230 300 68**
clear	-	**230 400 55**	-	-

Further colours on request.

TECHNICAL DIAGRAM:



230

Signalisation index

LED Permanent Light 2

24 V

PLC

LED Installation Beacon

Mainly sideways illumination

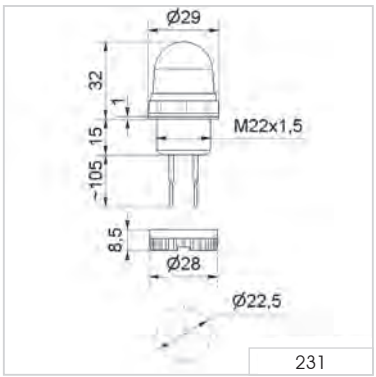
TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (Ø x Height):	29 mm x 32 mm (Protrusion from panel)
Housing:	PC/ABS-Blend
Lens:	PC, transparent
Connection:	2 wires, c. 105 mm long
Fixing:	Installation mounting for Ø 22.5 mm (M22 x 1.5 mm)
Life duration:	Up to 100,000 hrs

Nut and seal included in assembly.

Voltage:	12 V DC	24 V DC	115 V AC	230 V AC
Current consumption:	80 mA	45 mA	15 mA	20 mA
red	**231 100 54**	**231 100 55**	**231 100 67**	**231 100 68**
green	**231 200 54**	**231 200 55**	**231 200 67**	**231 200 68**
yellow	**231 300 54**	**231 300 55**	**231 300 67**	**231 300 68**
clear	**231 400 54**	**231 400 55**	**231 400 67**	**231 400 68**
blue	**231 500 54**	**231 500 55**	**231 500 67**	**231 500 68**

TECHNICAL DIAGRAM:



Signalisation index

LED Permanent Light 2

24 V

PLC

Installation Xenon Flashing Beacon

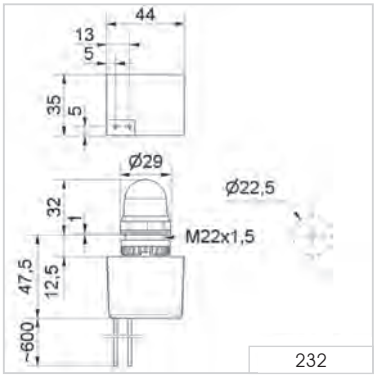
TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (Ø x Height):	29 mm x 32 mm (Protrusion from panel)
Housing:	PC/ABS-Blend
Lens:	PC, transparent
Connection:	2 wires, c. 600 mm long
Fixing:	Installation mounting for Ø 22.5 mm (M22 x 1.5 mm) with anti-twist device
Flash frequency:	1.5 Hz
Flash energy:	1 Ws
Life duration:	4 x 10^6 flashes

Nut and seal included in assembly.

Voltage:	24 V AC/DC (10-100 V DC) (20-72 V AC)	115 V AC	230 V AC
Current consumption:	140 mA	30 mA	20 mA
red	**232 100 55**	**232 100 67**	**232 100 68**
yellow	**232 300 55**	**232 300 67**	**232 300 68**

TECHNICAL DIAGRAM:



Signalisation index

Xenon Flashing Light 4

24 V

Mini Installation Beacons - 239

Size comparison Mini 239/Mini


Signalisation index	
Optical	
LED Permanent Light (multicolour)	3

Your benefits

WERMA's 239 mini installation beacon is perfect for use on machinery, and control panels. The colours can be set quite simply by means of binary inputs.

- Up to five different colours with just one light
- Low lens, where space is restricted
- Raised lens for best visibility also from the side

Typical applications

Signalling faults and statuses

- On control consoles of machinery
- In machine housings
- On control panels

Installation options

- M22 single-hole mounting

Features

- Bit-encoded actuation allows the three basic colours green, yellow and red to be displayed using just two PLC outputs. With a third output, white and blue can also be activated.
- With Spec. V 3.0, the special AS interface version is suitable for addressing (A/B mode) up to 62 modules – without an external power supply

LED Installation Beacon (Multicolour)

LED Installation Beacon (Multicolour)

LED Installation Beacon (Multicolour) with raised lens

Five colours in one beacon: red, yellow, green, white and blue

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (Ø x Height):	50 mm x 22 mm (Protrusion from panel) 50 mm x 31 mm (Protrusion from panel)
Housing:	PC/ABS-Blend, black
Lens:	PC, transparent
Fixing:	Installation mounting for Ø 22.5 mm (M22 x 1.5 mm)
Connection:	Screw terminal max. 0.5 mm² (239 480 55) Push In max. 1.5 mm² (239 482 55)
Colour options:	Red, yellow, green, white, blue (multicolour)
Life duration:	Up to 50,000 hrs

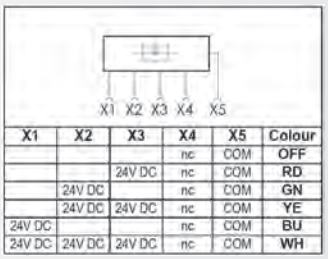
Nut and seal included in assembly.

Voltage:	24 V DC
Current consumption:	Max. 75 mA
Low lens, clear	**239 480 55**
Raised lens, opaque	**239 482 55**

ADDITIONAL INFORMATION:

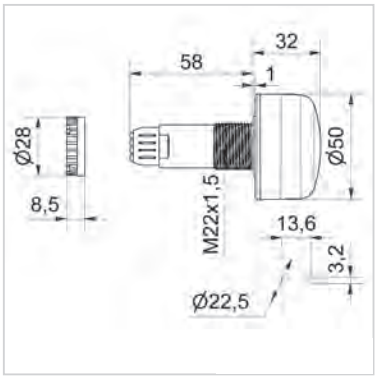
The LED beacon 239 is suitable for applications on machines or in control panels.

The LED installation beacon (multicolour) can be single-hole mounted with ease thanks to its M22 installation dimensions.

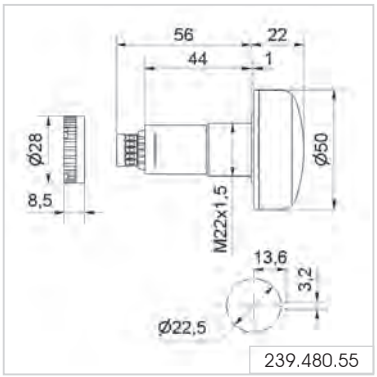


X1	X2	X3	X4	X5	Colour
			nc	COM	OFF
		24V DC	nc	COM	RD
	24V DC		nc	COM	GN
	24V DC	24V DC	nc	COM	YE
24V DC			nc	COM	BU
24V DC	24V DC	24V DC	nc	COM	WH

TECHNICAL DIAGRAMS:



239.482.55



239.480.55

Signalisation index

LED Permanent Light (multicolour) 3

CE EAC 31 g IP65 +50°C -20°C PLC

239 LED Installation Beacon (Multicolour) for AS-Interface

Five colours in one beacon:
red, yellow, green, white and blue

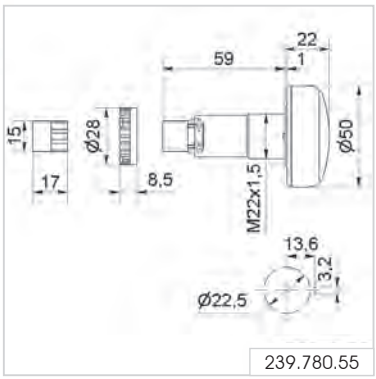
TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (Ø x Height):	50 mm x 22 mm (Protrusion from panel)
Housing:	PC/ABS-Blend, black
Lens:	PC, transparent
Fixing:	Installation mounting for Ø 22.5 mm (M22 x 1.5 mm) with anti-twist device
Connection:	Screw terminal with wire protection max. 1.5 mm^2
Power supply AS-Interface:	Via bus conduction
Operating voltage:	25 V ... 31.6 V according to the AS-Interface specification
Current consumption:	≤ 100 mA
Specification:	V 3.0
IO-Code:	8_{HEX}
ID-Code:	A_{HEX}
ID2-Code:	E_{HEX}
Colour options:	Red, yellow, green, white, blue
Life duration:	Up to 50,000 hrs

Nut and seal included in assembly.

LED Installation Beacon (multicolour) for AS-Interface	**239 780 55**

TECHNICAL DIAGRAM:



239.780.55

Signalisation index

LED Permanent Light (multicolour)	3

Approval No. 2001

42 g

IP65

+50°C

-20°C

PLC

Mini Signal Beacons - 2xx and 800/801/802/815/816/817 families

Size comparison Mini 239/Mini


Signalisation index	
Optical	
LED Permanent Light 2xx + 8xx	3
LED Blinking Light 8xx	3
LED Rotating Light 8xx	4
Permanent Light 2xx + 8xx	2
Xenon Flashing Light 2xx + 8xx	4

Your benefits

The Mini Signal Beacons are used wherever space is restricted.

The beacons are easy to install and connect, even in tight spaces, thanks to convenient connection terminals and easily accessible mounting holes.

- Reliable signalling at close quarters
- Available as a permanent light or as a bright Xenon flash light to attract attention

The 8xx range:

- Robust and tamper-proof

Typical applications

Signalling of faults

- On small machines and equipment
- In building technology

Installation options

- Base mounting
- M22/PG29 single-hole mounting
- Bracket mounting
- Tube mounting

Features

- High protection rating IP65 for both indoor and outdoor use

The 815 / 816 / 817 family:

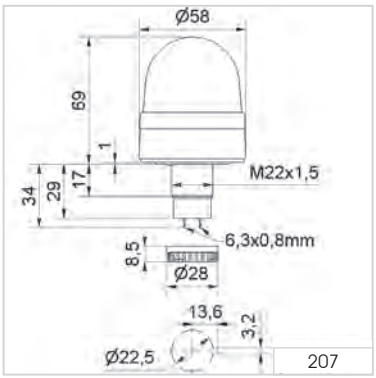
- Robust and shock-resistant up to 20 joules

LED Installation Permanent Beacon - M22

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (Ø x Height):	58 mm x 69 mm (Protrusion from panel)		
Housing:	PA-GF, high impact		
Lens:	PC, transparent Ring: PC		
Connection:	Spades 6.3 x 0.8 mm Finger-proof model according to BGV A2, when used with insulated spades		
Fixing:	Installation mounting for Ø 22.5 mm (M22 x 1.5 mm) with anti-twist device		
Life duration:	Up to 100,000 hrs		
Voltage:	24 V AC/DC	115 V AC	230 V AC
Current consumption:	45 mA	25 mA	25 mA
red	**207 100 75**	**207 100 67**	**207 100 68**
green	**207 200 75**	**207 200 67**	**207 200 68**
yellow	**207 300 75**	**207 300 67**	**207 300 68**

TECHNICAL DIAGRAM:



Signalisation index

LED Permanent Light 3

24 V

PLC

LED Permanent Beacon 201 (base mounting)

LED Permanent Beacon 204 with integrated mounting bracket

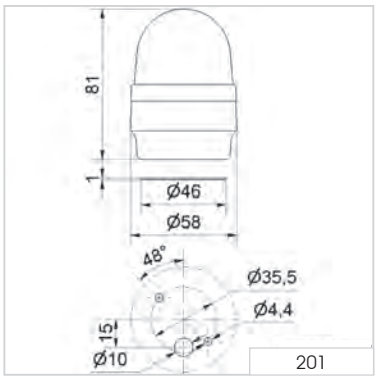
TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

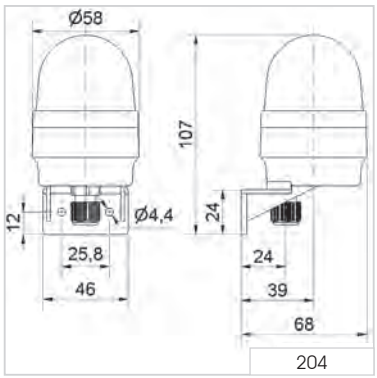
	Base mounting 201	Bracket mounting 204
Dimensions (Ø x Height):	58 mm x 81 mm	58 mm x 107 mm
Housing:	PA-GF, high impact	
Lens:	PC, transparent; Ring: PC	
Connection:	CAGE CLAMP® technology max. 1.5 mm²	
Cable entry:	Cable diameter max. 10 mm	Cable diameter 3-6 mm
Fixing:	Base mounting with flat seal	Bracket mounting incl. cable gland M 12 x 1.5 mm
Life duration:	Up to 100,000 hrs	

Base mounting 201			
Voltage:	24 V AC/DC	115 V AC	230 V AC
Current consumption:	45 mA	25 mA	25 mA
red	**201 100 75**	**201 100 67**	**201 100 68**
green	**201 200 75**	**201 200 67**	**201 200 68**
yellow	**201 300 75**	**201 300 67**	**201 300 68**

Bracket mounting 204			
Voltage:	24 V AC/DC	115 V AC	230 V AC
Current consumption:	45 mA	25 mA	25 mA
red	**204 100 75**	**204 100 67**	**204 100 68**
green	**204 200 75**	**204 200 67**	**204 200 68**
yellow	**204 300 75**	**204 300 67**	**204 300 68**

TECHNICAL DIAGRAMS:





Signalisation index

LED Permanent Light 3

Base mounting

Bracket mounting

24 V

209 LED Permanent Beacon

Base with integrated tube (accessory)

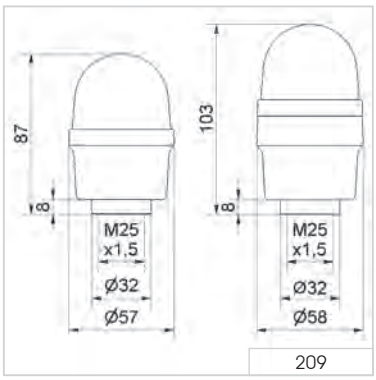
TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (Ø x Height):	58 mm x 103 mm		
Housing:	PA-GF, high impact		
Lens:	PC, transparent; Ring: PC		
Connection:	CAGE CLAMP® technology max. 1.5 mm²		
Cable entry:	Cable diameter max. 11 mm		
Fixing:	Tube mounting M25 x 1.5 mm		
Life duration:	Up to 100,000 hrs		
Voltage:	24 V AC/DC	115 V AC	230 V AC
Current consumption:	45 mA	25 mA	25 mA
red	**209 110 75**	**209 110 67**	**209 110 68**
green	**209 210 75**	**209 210 67**	**209 210 68**
yellow	**209 310 75**	**209 310 67**	**209 310 68**

ACCESSORIES:

Base with integrated tube, 100 mm long, M25 x 1.5 mm	**975 209 01**
Cable gland M25 x 1.5 mm	**975 209 02**

TECHNICAL DIAGRAM:



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Signalisation index

LED Permanent Light 3

24 V

PLC

LED Permanent Beacon 211 (base mounting)

LED Permanent Beacon 214 with integrated mounting bracket

Housing with CAGE CLAMP® connection

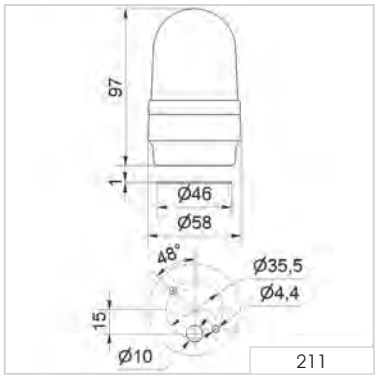
TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

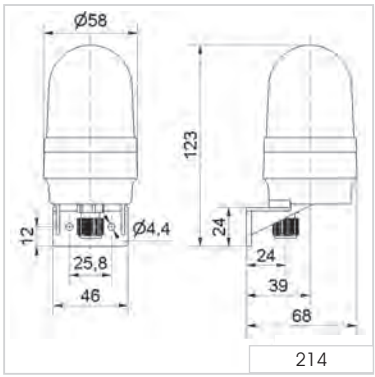
	Base mounting 211	Bracket mounting 214
Dimensions (Ø x Height):	58 mm x 97 mm	58 mm x 123 mm
Housing:	PA-GF, high impact	
Lens:	PC, transparent; Ring: PC	
Connection:	CAGE CLAMP® technology max. 1.5 mm²	
Cable entry:	Cable diameter max. 10 mm	Cable diameter 3-6 mm
Fixing:	Base mounting with flat seal	Bracket mounting incl. cable gland M12 x 1.5 mm
Life duration:	Up to 100,000 hrs	

Base mounting 211			
Voltage:	24 V AC/DC	115 V AC	230 V AC
Current consumption:	45 mA	25 mA	25 mA
red	**211 100 75**	**211 100 67**	**211 100 68**
green	**211 200 75**	**211 200 67**	**211 200 68**
yellow	**211 300 75**	**211 300 67**	**211 300 68**

Bracket mounting 214			
Voltage:	24 V AC/DC	115 V AC	230 V AC
Current consumption:	45 mA	25 mA	25 mA
red	**214 100 75**	**214 100 67**	**214 100 68**
green	**214 200 75**	**214 200 67**	**214 200 68**
yellow	**214 300 75**	**214 300 67**	**214 300 68**

TECHNICAL DIAGRAMS:





Signalisation index

LED Permanent Light 3

Base mounting

Bracket mounting

24 V

LED Permanent Beacon - Tube mounting M25

Base with integrated tube (accessory)

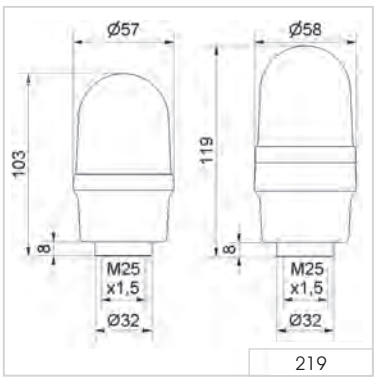
TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (Ø x Height):	58 mm x 103 mm		
Housing:	PA-GF, high impact		
Lens:	PC, transparent; Ring: PC		
Connection:	CAGE CLAMP® technology max. 1.5 mm²		
Cable entry:	Cable diameter max. 11 mm		
Fixing:	Tube mounting, M25 x 1.5 mm		
Life duration:	Up to 100,000 hrs		
Voltage:	24 V AC/DC	115 V AC	230 V AC
Current consumption:	45 mA	25 mA	25 mA
red	**219 110 75**	**219 110 67**	**219 110 68**
green	**219 210 75**	**219 210 67**	**219 210 68**
yellow	**219 310 75**	**219 310 67**	**219 310 68**

ACCESSORIES:

Base with integrated tube, 110 m long, M25 x 1.5 mm	**975 209 01**
Cable gland M25 x 1.5 mm	**975 209 02**

TECHNICAL DIAGRAM:



Signalisation index

LED Permanent Light 3

24 V

PLC

LED Permanent Beacon 221 (base mounting)

LED Permanent Beacon 224 with integrated mounting bracket

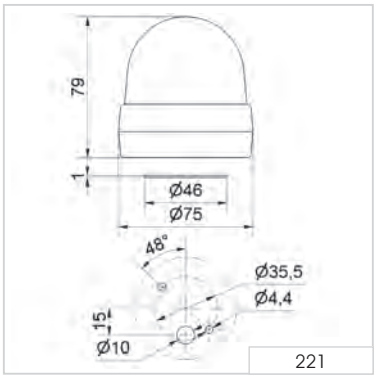
TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

	Base mounting 221	Bracket mounting 224
Dimensions (Ø x Height):	75 mm x 79 mm	75 mm x 105 mm
Housing:	PA-GF, high impact	
Lens:	PC, transparent; Ring: PC /ABS-Blend	
Connection:	CAGE CLAMP® technology max. 1.5 mm²	
Cable entry:	Cable diameter max. 10 mm	Cable diameter 3-6 mm
Fixing:	Base mounting with flat seal	Bracket mounting incl. cable gland M12 x 1.5 mm
Life duration:	Up to 100,000 hrs	

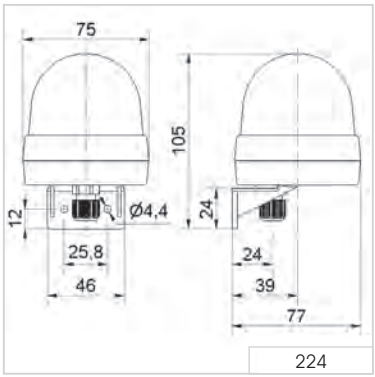
Base mounting 221			
Voltage:	24 V AC/DC	115 V AC	230 V AC
Current consumption:	45 mA	25 mA	25 mA
red	**221 100 75**	**221 100 67**	**221 100 68**
green	**221 200 75**	**221 200 67**	**221 200 68**
yellow	**221 300 75**	**221 300 67**	**221 300 68**

Bracket mounting 224			
Voltage:	24 V AC/DC	115 V AC	230 V AC
Current consumption:	45 mA	25 mA	25 mA
red	**224 100 75**	**224 100 67**	**224 100 68**
green	**224 200 75**	**224 200 67**	**224 200 68**
yellow	**224 300 75**	**224 300 67**	**224 300 68**

TECHNICAL DIAGRAMS:



221



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Signalisation index

LED Permanent Light 3

Base mounting

Bracket mounting

24 V

Installation Permanent Beacon

Bulb change via removal of lens
(LED bulb as accessory)

Accessories

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (Ø x Height):	57 mm x 53 mm (Protrusion from panel)
Housing:	PA-GF, high impact
Lens:	PC, transparent
Fixing:	Installation mounting for Ø 22.5 mm (M22 x 1.5 mm) with anti-twist device
Connection:	Spades 6.3 x 0.8 mm Finger-proof model according to BGV A2, when used with insulated spades
Operating voltage:	Max. 48 V
Bulb socket:	BA15d 5 Watt max.
Bulb change:	Via removal of lens

Nut and seal included in assembly. Bulb not included in assembly.

Voltage:	12-48 V
red	**206 100 00**
green	**206 200 00**
yellow	**206 300 00**
clear	**206 400 00**
blue	**206 500 00**

Further colours and voltages on request.

ACCESSORIES:

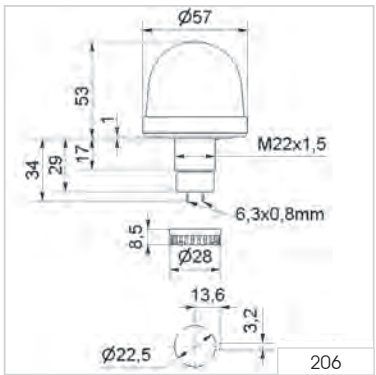
LED bulb BA15d, 5 W, total length 42 mm

Voltage:	12 V AC/DC	24 V AC/DC	30 V AC/DC
	955 840 34	**955 840 35**	**955 840 32**

LED bulb BA15d total length 42 mm

Voltage:	24 V AC/DC
Current consumption:	< 45 mA
red	**956 100 75**
green	**956 200 75**
yellow	**956 300 75**
white	**956 400 75**
blue	**956 500 75**

TECHNICAL DIAGRAM:



Signalisation index

Permanent Light	2

Permanent Beacon - Base/Bracket mounting

Permanent Beacon 200 (base mounting)

Permanent Beacon 203 with integrated mounting bracket

Accessoires

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

	Base mounting 200	Bracket munting 203
Dimensions (Ø x Height):	57 mm x 65.5 mm	57 mm x 91 mm
Housing:	PA-GF, high impact	
Lens:	PC, transparent	
Connection:	CAGE CLAMP® technology max. 1.5 mm²	
Cable entry:	Cable diameter max. 10 mm	Cable diameter 3-6 mm
Fixing:	Base mounting with flat seal	Bracket mounting incl. cable gland M 12 x 1.5 mm
Operating voltage:		12-230 V
Bulb socket:	BA15d, 7 Watt max.	
Bulb change:	Via removal of lens	

Bulb not included in assembly.

Voltage:	12-230 V	12-230 V
red	**200 100 00**	**203 100 00**
green	**200 200 00**	**203 200 00**
yellow	**200 300 00**	**203 300 00**
clear	**200 400 00**	**203 400 00**
blue	**200 500 00**	**203 500 00**

ACCESSORIES:

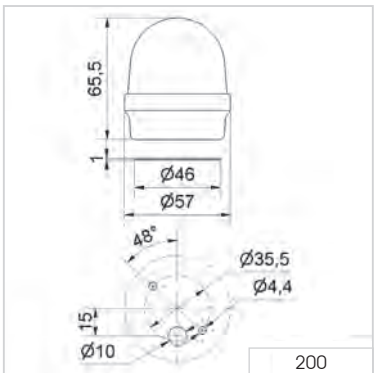
Bulb BA15d, 5 W total length 42 mm

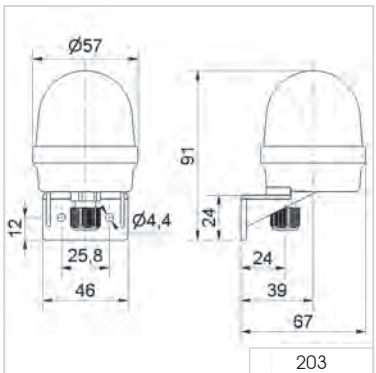
Voltage:	12 V AC/DC	24 V AC/DC	30 V AC/DC	115 V AC/DC	230 V AC/DC
	955 840 34	**955 840 35**	**955 840 32**	**955 840 57**	**955 840 38**

LED bulb BA15d, total length 42 mm

Voltage:	24 V AC/DC			115 V AC	230 V AC
Current consumption:	< 45 mA			< 15 mA	< 15 mA
red	**956 100 75**			**956 100 67**	**956 100 68**
green	**956 200 75**			**956 200 67**	**956 200 68**
yellow	**956 300 75**			**956 300 67**	**956 300 68**
white	**956 400 75**			**956 400 67**	**956 400 68**
blue	**956 500 75**			**956 500 67**	**956 500 68**

TECHNICAL DIAGRAMS:





Signalisation index

Permanent Light	2

Base mounting

Bracket mounting

Accessories

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (Ø x Height):	57 mm x 87 mm
Housing:	PA-GF, high impact
Lens:	PC, transparent
Connection:	CAGE CLAMP® technology max. 1.5 mm²
Cable entry:	Cable diameter max. 11 mm
Fixing:	Tube mounting M25 x 1.5 mm
Operating voltage:	12-230 V
Bulb socket:	BA15d, 7 Watt max.
Bulb change:	Via removal of lens

Bulb not included in assembly.

Voltage:	12-240 V
red	**209 100 00**
green	**209 200 00**
yellow	**209 300 00**
clear	**209 400 00**
blue	**209 500 00**

ACCESSORIES:

Base with integrated tube 110 mm long, M25 x 1.5 mm	**975 209 01**
Cable gland M25 x 1.5 mm	**975 209 02**

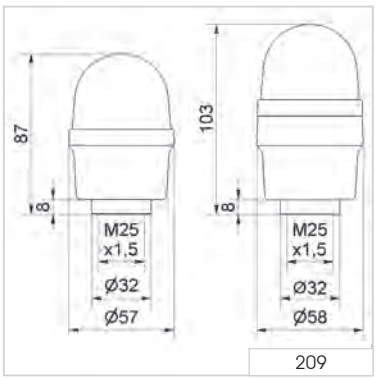
Bulb BA15d, 5 W, total length 42 mm

Voltage:	12 V AC/DC	24 V AC/DC	30 V AC/DC	115 V AC/DC	230 V AC/DC
	955 840 34	**955 840 35**	**955 840 32**	**955 840 57**	**955 840 38**

LED bulb BA15d total length 42 mm

Voltage:	24 V AC/DC			115 V AC	230 V AC
Current consumption:	< 45 mA			< 15 mA	< 15 mA
red	**956 100 75**			**956 100 67**	**956 100 68**
green	**956 200 75**			**956 200 67**	**956 200 68**
yellow	**956 300 75**			**956 300 67**	**956 300 68**
white	**956 400 75**			**956 400 67**	**956 400 68**
blue	**956 500 75**			**956 500 67**	**956 500 68**

TECHNICAL DIAGRAM:



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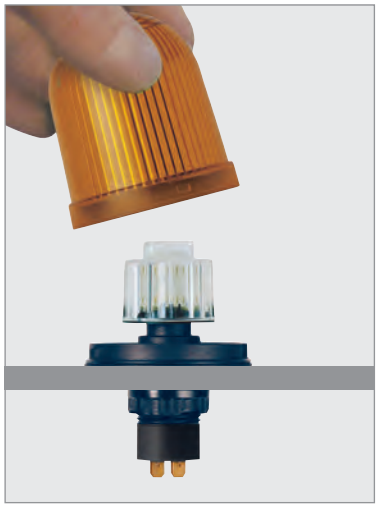
Signalisation index

Permanent Light 2

Installation Permanent Beacon - M22



Bulb change via removal of lens
(LED bulb as accessory)

Accessories

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (Ø x Height):	57 mm x 69 mm (Protrusion from panel)
Housing:	PA-GF, high impact
Lens:	PC, transparent Ring: PC
Connection:	Spades 6.3 mm x 0.8 mm Finger-proof model according to BGV A2, when used with insulated spades
Fixing:	Installation mounting for Ø22.5 mm (M22 x 1.5 mm) with anti-twist device
Operating voltage:	Max. 48 V
Bulb socket:	BA15d, 7 Watt max.
Bulb change:	Via removal of lens

Nut and seal included in assembly. Bulb not included in assembly.

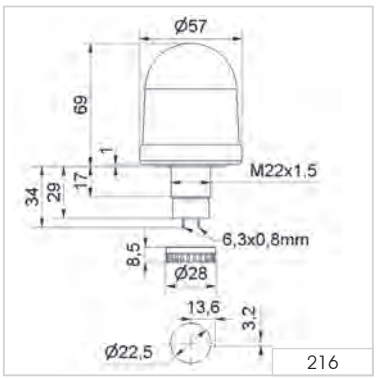
Voltage: 12-48 V	
red	**216 100 00**
green	**216 200 00**
yellow	**216 300 00**
clear	**216 400 00**
blue	**216 500 00**

ACCESSORIES:

Bulb BA15d, total length 54 mm			total length 42 mm
Voltage:	12 V AC/DC (7 W)	24 V AC/DC (7 W)	30 V AC/DC (5 W)
	955 015 34	**955 015 35**	**955 840 32**

LED bulb BA15d, total length 42 mm	
Voltage:	24 V AC/DC
Current consumption:	< 45 mA
red	**956 100 75**
green	**956 200 75**
yellow	**956 300 75**
clear	**956 400 75**
blue	**956 500 75**

TECHNICAL DIAGRAM:



Signalisation index

Permanent Light	2

Permanent Beacon 210 (base mounting)

Permanent Beacon 213 with integrated mounting bracket

Accessories

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

	Base mounting 210	Bracket mounting 213
Dimensions (Ø x Height):	57 mm x 81 mm	57 mm x 107 mm
Housing:	PA-GF, high impact	
Lens:	PC, transparent	
Connection:	CAGE CLAMP® technology max. 1.5 mm²	
Cable entry:	Cable diameter max. 10 mm	Cable diameter 3-6 mm
Fixing:	Base mounting with flat seal	Bracket mounting incl. cable gland M12 x 1.5 mm
Operating voltage:	12-230 V	
Bulb socket:	BA15d, 10 Watt max.	
Bulb change:	Via removal of lens	

Bulb not included in assembly.

Voltage:	12-230 V	12-230 V
red	**210 100 00**	**213 100 00**
green	**210 200 00**	**213 200 00**
yellow	**210 300 00**	**213 300 00**
clear	**210 400 00**	**213 400 00**
blue	**210 500 00**	**213 500 00**

ACCESSORIES:

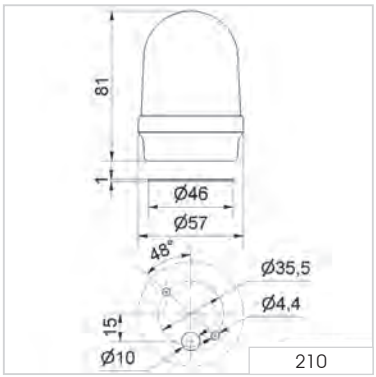
Bulb BA15d, 7 W, total length 54 mm

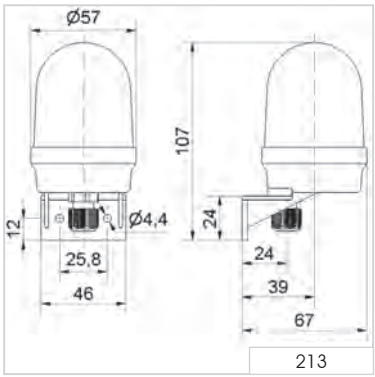
Voltage:	12 V AC/DC	24 V AC/DC	48 V AC/DC	115 V AC/DC	230 V AC/DC
	955 015 34	**955 015 35**	**955 015 36**	**955 015 37**	**955 015 38**

LED bulb BA15d, total length 42 mm

Voltage:	24 V AC/DC	115 V AC	230 V AC
Current consumption:	< 45 mA	< 15 mA	< 15 mA
red	**956 100 75**	**956 100 67**	**956 100 68**
green	**956 200 75**	**956 200 67**	**956 200 68**
yellow	**956 300 75**	**956 300 67**	**956 300 68**
clear	**956 400 75**	**956 400 67**	**956 400 68**
blue	**956 500 75**	**956 500 67**	**956 500 68**

TECHNICAL DIAGRAMS:





Signalisation index

Permanent Light	2

Base mounting 55 g

Bracket mounting 61 g

IP65

+50°C -20°C

Accessories

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (Ø x Height):	57 mm x 103 mm
Housing:	PA-GF, high impact
Lens:	PC, transparent Ring: PC
Connection:	CAGE CLAMP® technology max. 1.5 mm²
Cable entry:	Cable diameter max. 11 mm
Fixing:	Tube mounting, M25 x 1.5 mm
Operating voltage:	12-230 V
Bulb socket:	BA15d, 10 Watt max.
Bulb change:	Via removal of lens

Bulb not included in assembly.

Voltage:	12-230 V
red	**219 100 00**
green	**219 200 00**
yellow	**219 300 00**
clear	**219 400 00**
blue	**219 500 00**

ACCESSORIES:

Base with integrated tube, M25 x 1.5 mm	**975 209 01**
Cable gland M25 x 1.5 mm	**975 209 02**

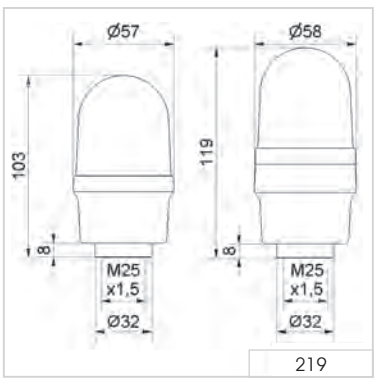
Bulb BA15d, 7 W, total length 54 mm

Voltage:	12 V AC/DC	24 V AC/DC	48 V AC/DC	115 V AC/DC	230 V AC/DC
	955 015 34	**955 015 35**	**955 015 36**	**955 015 37**	**955 015 38**

LED bulb BA15d, total length 42 mm

Voltage:	24 V AC/DC	115 V AC	230 V AC
Current consumption:	< 45 mA	< 15 mA	< 15 mA
red	**956 100 75**	**956 100 67**	**956 100 68**
green	**956 200 75**	**956 200 67**	**956 200 68**
yellow	**956 300 75**	**956 300 67**	**956 300 68**
clear	**956 400 75**	**956 400 67**	**956 400 68**
blue	**956 500 75**	**956 500 67**	**956 500 68**

TECHNICAL DIAGRAM:



Signalisation index

Permanent Light	2

Permanent Beacon 220 (base mounting)

Permanent Beacon 223 with integrated mounting bracket

Housing with CAGE CLAMP® connection

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

	Base mounting 220	Bracket mounting 223
Dimensions (Ø x Height):	75 mm x 79 mm	75 mm x 105 mm
Housing:	PA-GF, high impact	
Lens:	PC, transparent; Ring: PC/ABS-Blend	
Connection:	CAGE CLAMP® technology max. 1.5 mm²	
Cable entry:	Cable diameter max. 10 mm	Cable diameter 3-6 mm
Fixing:	Base mounting with flat seal	Bracket mounting incl. cable gland M12 x 1.5 mm
Operating voltage:	12-230 V	
Bulb socket:	BA15d, 7 Watt max.	
Bulb change:	Via removal of lens	

Bulb not included in assembly.

Voltage:	12-230 V	12-230 V
red	**220 100 00**	**223 100 00**
green	**220 200 00**	**223 200 00**
yellow	**220 300 00**	**223 300 00**
clear	**220 400 00**	**223 400 00**
blue	**220 500 00**	**223 500 00**

ACCESSORIES:

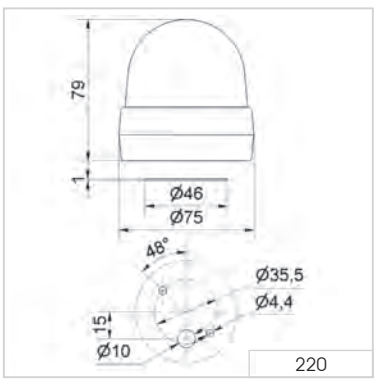
Bulb BA15d, 7 W total length 54 mm

Voltage:	12 V AC/DC	24 V AC/DC	48 V AC/DC	115 V AC/DC	230 V AC/DC
	955 015 34	**955 015 35**	**955 015 36**	**955 015 37**	**955 015 38**

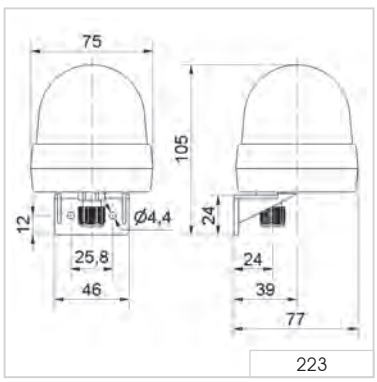
LED bulb BA15d total length 42 mm

Voltage:	24 V AC/DC	115 V AC	230 V AC
Current consumption:	< 45 mA	< 15 mA	< 15 mA
red	**956 100 75**	**956 100 67**	**956 100 68**
green	**956 200 75**	**956 200 67**	**956 200 68**
yellow	**956 300 75**	**956 300 67**	**956 300 68**
clear	**956 400 75**	**956 400 67**	**956 400 68**
blue	**956 500 75**	**956 500 67**	**956 500 68**

TECHNICAL DIAGRAMS:



220



223

Signalisation index

Permanent Light 2

Base mounting 97 g

Bracket mounting 103 g

IP65

+50°C -20°C

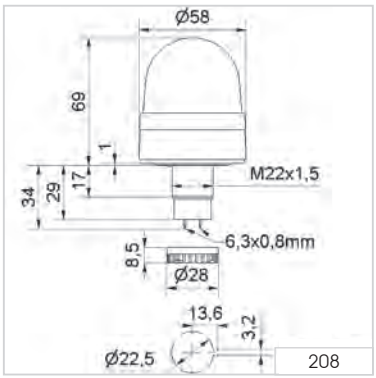
TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (Ø x Height):	58 mm x 69 mm (Protrusion from panel)
Housing:	PA-GF, high impact
Lens:	PC, transparent; Ring: PC
Connection:	Spades 6.3 x 0.8 mm Finger-proof model according to BGV A2, when used with insulated spades
Fixing:	Installation mounting for Ø 22.5 mm (M22 x 1.5 mm) with anti-twist device
Flash frequency:	C. 0.75 Hz
Flash energy:	1 Ws
Life duration:	4 x 10^6 flashes

Nut and seal included in assembly.

Voltage:	24 V DC	115 V AC	230 V AC
Current consumption:	100 mA	25 mA	30 mA
red	**208 100 55**	**208 100 67**	**208 100 68**
yellow	**208 300 55**	**208 300 67**	**208 300 68**

TECHNICAL DIAGRAM:



Signalisation index

Xenon Flashing Light 4

202/205 Xenon Flashing Beacon - Base/Bracket mounting

Flashing Beacon 202
(base mounting)

Flashing Beacon 205 with
integrated mounting bracket

Housing with
CAGE CLAMP® connection

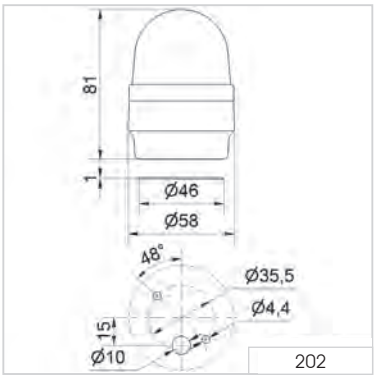
TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

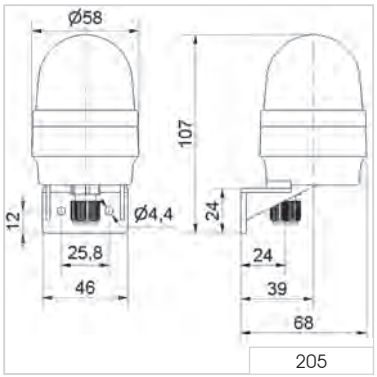
	Base mounting 202	Bracket mounting 205
Dimensions (Ø x Height):	58 mm x 81 mm	58 mm x 107 mm
Housing:	PA-GF, high impact	
Lens:	PC, transparent; Ring: PC	
Connection:	CAGE CLAMP® technology max. 1.5 mm²	
Cable entry:	Cable diameter max. 10 mm	Cable diameter 3-6 mm
Fixing:	Base mounting with flat seal	Bracket mounting ncl. cable gland M12 x 1.5 mm
Flash frequency:	C. 0.75 Hz	
Flash energy:	1 Ws	
Life duration:	4 x 10^6 flashes	

Base mounting 202			
Voltage:	24 V AC/DC	115 V AC	230 V AC
Current consumption:	100 mA	20 mA	30 mA
red	**202 100 55**	**202 100 67**	**202 100 68**
yellow	**202 300 55**	**202 300 67**	**202 300 68**

Bracket mounting 205			
Voltage:	24 V AC/DC	115 V AC	230 V AC
Current consumption:	100 mA	20 mA	30 mA
red	**205 100 55**	**205 100 67**	**205 100 68**
yellow	**205 300 55**	**205 300 67**	**205 300 68**

TECHNICAL DIAGRAM:





Signalisation index

Base mounting
Bracket mounting
82 g
88 g
IP65
+50°C
-20°C
1 Ws

Xenon Flashing Beacon - Tube mounting M25

Base with integrated tube (accessory)

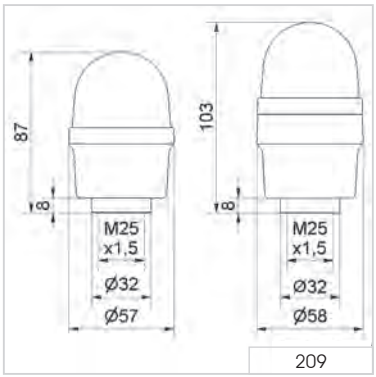
TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (Ø x Height):	58 mm x 103 mm		
Housing:	PA-GF, high impact		
Lens:	PC, transparent Ring: PC		
Connection:	CAGE CLAMP® technology max 1.5 mm²		
Cable entry:	Cable diameter max. 11 mm		
Fixing:	Tube mounting M25 x 1.5 mm		
Flash frequency:	C. 0.75 Hz		
Flash energy:	1 Ws		
Life duration:	4 x 10^6 flashes		
Voltage:	24 V DC	115 V AC	230 V AC
Current consumption:	100 mA	20 mA	30 mA
red	**209 120 55**	**209 120 67**	**209 120 68**
yellow	**209 320 55**	**209 320 67**	**209 320 68**

ACCESSORIES:

Base with integrated tube, 110 mm long, M25 x 1.5 mm	**975 209 01**
Cable gland M25 x 1.5 mm	**975 209 02**

TECHNICAL DIAGRAM:



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Signalisation index

Xenon Flashing Light 4

212/215 Xenon Flashing Beacon - Base/Bracket mounting

Flashing Beacon 212
(Base mounting)

Flashing Beacon 215 with
integrated mounting bracket

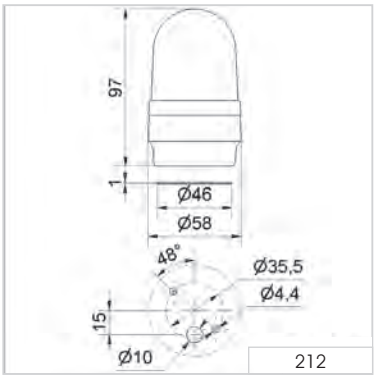
TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

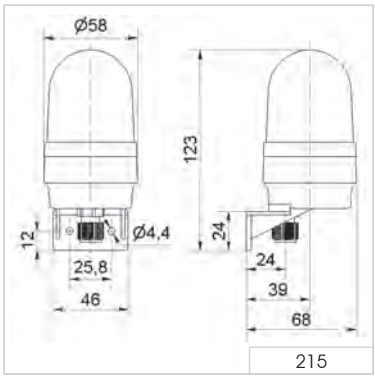
	Base mounting 212	Bracket mounting 215
Dimensions (Ø x Height):	58 mm x 97 mm	58 mm x 123 mm
Housing:	PA-GF, high impact	
Lens:	PC, transparent; Ring: PC	
Connection:	CAGE CLAMP® technology max. 1.5 mm²	
Cable entry:	Cable diameter max. 10 mm	Cable diameter 3-6 mm
Fixing:	Base mounting with flat seal	Bracket mounting incl. cable gland M12 x 1.5 mm
Flash frequency:	C. 0.75 Hz	
Flash energy:	1 Ws	
Life duration:	4 x 10^6 flashes	

Base mounting 212			
Voltage:	24 V AC/DC	115 V AC	230 V AC
Current consumption:	100 mA	20 mA	30 mA
red	**212 100 55**	**212 100 67**	**212 100 68**
yellow	**212 300 55**	**212 300 67**	**212 300 68**

Bracket mounting 215			
Voltage:	24 V AC/DC	115 V AC	230 V AC
Current consumption:	100 mA	20 mA	30 mA
red	**215 100 55**	**215 100 67**	**215 100 68**
yellow	**215 300 55**	**215 300 67**	**215 300 68**

TECHNICAL DIAGRAMS:





Signalisation index

Xenon Flashing Light 4

Base mounting

Bracket mounting

Base with tube (accessory)

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

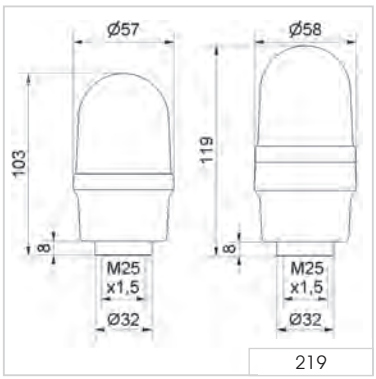
Dimensions (Ø x Height):	58 mm x 119 mm
Housing:	PA-GF, high impact
Lens:	PC, transparent Ring: PC
Connection:	CAGE CLAMP® technology max. 1.5 mm²
Cable entry:	Cable diameter max. 11 mm
Fixing:	Tube mounting M25 x 1.5 mm
Flash frequency:	C. 0.75 Hz
Flash energy:	1 Ws
Life duration:	4 x 10^6 flashes

Voltage:	24 V DC	115 V AC	230 V AC
Current consumption:	100 mA	20 mA	30 mA
red	**219 120 55**	**219 120 67**	**219 120 68**
yellow	**219 320 55**	**219 320 67**	**219 320 68**

ACCESSORIES:

Base with integrated tube, 110 mm long, M25 x 1.5 mm	**975 209 01**
Cable gland M25 x 1.5 mm	**975 209 02**

TECHNICAL DIAGRAM:



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Signalisation index

Xenon Flashing Light 4

222/225 Xenon Flashing Beacon - Base/Bracket mounting

Flashing Beacon 222
(base mounting)

Flashing Beacon 225 with
integrated mounting bracket

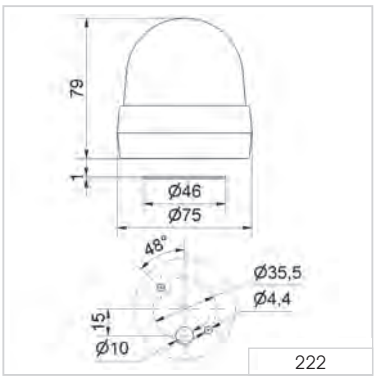
TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

	Base mounting 222	Bracket mounting 225
Dimensions (Ø x Height):	75 mm x 79 mm	75 mm x 105 mm
Housing:	PA-GF, high impact	
Lens:	PC, transparent; Ring: PC/ABS-Blend	
Connection:	CAGE CLAMP® technology max. 1.5 mm²	
Cable entry:	Cable diameter max. 10 mm	Cable diameter 3-6 mm
Fixing:	Base mounting with flat seal	Bracket mounting incl. cable gland M12 x 1.5 mm
Flash frequency:	C. 0.75 Hz	
Flash energy:	1 Ws	
Life duration:	4 x 10⁶ flashes	

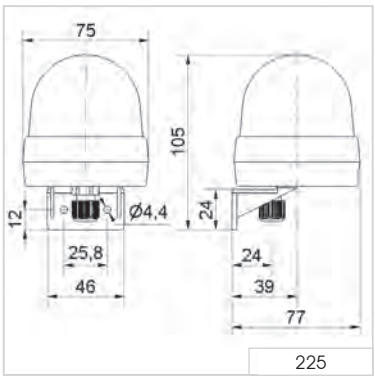
Base mounting 222			
Voltage:	24 V DC	115 V AC	230 V AC
Current consumption:	100 mA	20 mA	30 mA
red	**222 100 55**	**222 100 67**	**222 100 68**
yellow	**222 300 55**	**222 300 67**	**222 300 68**

Bracket mounting 225			
Voltage:	24 V DC	115 V AC	230 V AC
Current consumption:	100 mA	20 mA	30 mA
red	**225 100 55**	**225 100 67**	**225 100 68**
yellow	**225 300 55**	**225 300 67**	**225 300 68**
blue	**225 500 55**	**225 500 67**	**225 500 68**

TECHNICAL DIAGRAMS:



222



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Signalisation index

Base mounting
Bracket mounting

956 LED Bulb BA15d

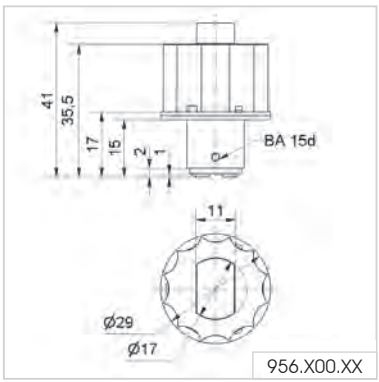
TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Housing:	PA-GF, high-impact
Lens:	PC, transparent
Socket:	BA15d
Life duration:	Up to 50,000 hrs
For use with:	200, 203, 206, 209, 210, 213, 216, 219, 220, 223, 641, 805, 840, 846, 850, 851, 852

Slight deviatons in the form of the bulbs are possible.

Voltage:	24 V AC/DC	115 V AC	230 V AC
Current consumption:	≤ 45 mA	≤ 15 mA	≤ 15 mA
red	**956 100 75**	**956 100 67**	**956 100 68**
green	**956 200 75**	**956 200 67**	**956 200 68**
yellow	**956 300 75**	**956 300 67**	**956 300 68**
white	**956 400 75**	**956 400 67**	**956 400 68**
blue	**956 500 75**	**956 500 67**	**956 500 68**

TECHNICAL DIAGRAM:



801 LED Installation Permanent Beacon - PG29 (Ø 37 mm)

Tube adaptor as accessory

Accessories

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

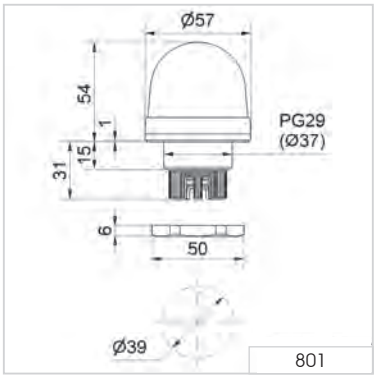
Dimensions (Ø x Height):	57 mm x 54 mm (Protrusion from panel)		
Housing:	PC/ABS-Blend Socket: PA-GF, high impact		
Lens:	PC, transparent		
Fixing:	Installation mounting for Ø 37 mm (PG29)		
Connection:	Screw terminal 0.5 - 1.5 mm² flex radial or axial laid		
Life duration:	Up to 100,000 hrs		
Voltage:	24 V AC/DC	115 V AC	230 V AC
Current consumption:	45 mA	25 mA	25 mA
red	**801 100 75**	**801 100 67**	**801 100 68**
green	**801 200 75**	**801 200 67**	**801 200 68**
yellow	**801 300 75**	**801 300 67**	**801 300 68**

Further colours and voltages on request.

ACCESSORIES:

Tube adaptor	**975 812 01**
Base with integrated tube, Ø 25 mm, 110 mm long, plastic	**975 840 10**
Base for tube mounting	**975 840 90**
Base for base mounting	**975 812 02**
Tube Ø 25 mm, all anodized aluminium	
100 mm long	**975 845 10**
250 mm long	**975 840 25**
400 mm long	**975 840 40**
Anti-twist device	**975 815 22**
Surface housing IP 65	
for 1 Installation Beacon	**975 815 03**
for 2 Installation Beacons	**975 815 07**
for 3 Installation Beacons	**975 815 08**
for 4 Installation Beacons	**975 109 05**

TECHNICAL DIAGRAM:



Signalisation index

LED Permanent Light 3

24 V

PLC

816 LED Installation Permanent Beacon - PG29 (Ø 37 mm)

Tube adaptor as accessory

Surface housing as accessory

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

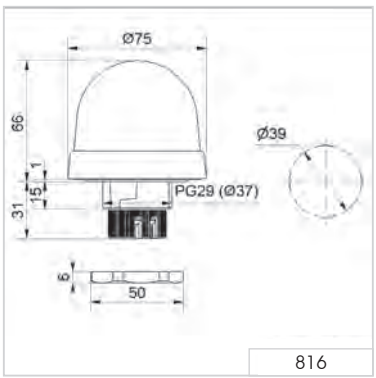
Dimensions (Ø x Height):	75 mm x 66 mm (Protrusion from panel)		
Housing:	PC/ABS-Blend Socket: PA-GF, high impact		
Lens:	PC, transparent Shock resistance 20 Joules according to EN 60079-0		
Fixing:	Installation mounting for Ø 37 mm (PG29)		
Connection:	Screw terminal 0.5 - 1.5 mm^2 flex radial or axial laid		
Life duration:	Up to 100,000 hrs		
Voltage:	24 V AC/DC	115 V AC	230 V AC
Current consumption:	45 mA	25 mA	25 mA
red	**816 100 55**	**816 100 67**	**816 100 68**
green	**816 200 55**	**816 200 67**	**816 200 68**
yellow	**816 300 55**	**816 300 67**	**816 300 68**
clear	**816 400 55**	**816 400 67**	**816 400 68**

ACCESSORIES:

Tube adaptor	**975 812 01**
Base with integrated tube, Ø 25 mm, 110 mm long, plastic	**975 840 10**
Base for tube mounting	**975 840 90**
Base for base mounting	**975 812 02**
Tube Ø 25 mm, all anodized aluminium	
100 mm long	**975 845 10**
250 mm long	**975 840 25**
400 mm long	**975 840 40**
Anti-twist device	**975 815 22**
Surface housing IP 65	
for 1 Installation Beacon	**975 815 03**
for 2 Installation Beacons	**975 815 07**
for 3 Installation Beacons	**975 815 08**
for 4 Installation Beacons	**975 109 05**

Accessories see page 140

TECHNICAL DIAGRAM:



Signalisation index

LED Permanent Light 3

24 V

816 LED Installation Blinking Beacon - PG29 (Ø 37 mm)

Tube adaptor as accessory

Surface housing (accessory)

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (Ø x Height):	75 mm x 66 mm (Protrusion from panel)
Housing:	PC/ABS-Blend Socket: PA-GF, high impact
Lens:	PC, transparent Shock resistance 20 Joules according to EN 60079-0
Fixing:	Installation mounting for Ø 37 mm (PG29)
Connection:	Screw terminal 0.5 - 1.5 mm² flex radial or axial laid
Blink frequency:	C. 1 Hz
Life duration:	Up to 50,000 hrs
Voltage:	24 V AC/DC
Current consumption:	25 mA
red	**816 110 55**
yellow	**816 310 55**

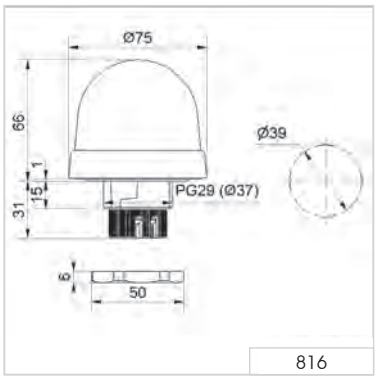
Further colours and voltages on request.

ACCESSORIES:

Tube adaptor	**975 812 01**
Base with integrated tube, Ø 25 mm, 110 mm long, plastic	**975 840 10**
Base for tube mounting	**975 840 90**
Base for base mounting	**975 812 02**
Tube Ø 25 mm, all anodized aluminium	
100 mm long	**975 845 10**
250 mm long	**975 840 25**
400 mm long	**975 840 40**
Anti-twist device	**975 815 22**
Surface housing IP 65	
for 1 Installation Beacon	**975 815 03**
for 2 Installation Beacons	**975 815 07**
for 3 Installation Beacons	**975 815 08**
for 4 Installation Beacons	**975 109 05**

Accessories see page 140

TECHNICAL DIAGRAM:



Signalisation index

LED Blinking Light 3

816 LED Permanent Beacon Multicolour - PG29 (Ø 37 mm)

816 Multicolour
with clear lens

816 Multicolour
with opaque lens

7 colours in one beacon:
red, yellow, green, white, blue,
violet and turquoise

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

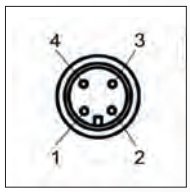
Dimensions (Ø x Height):	75 mm x 66 mm (Protrusion from panel)
Housing:	ABS/PC-Blend, black
Lens:	PC, transparent Shock resistance 20 Joules according to EN 60079-0
Fixing:	Installation mounting for Ø 37 mm (PG29)
Connection:	M12 plug (4 pole)
Colour options:	Red, yellow, green, white, blue, violet, turquoise (multicolour)
Life duration:	Up to 50,000 hrs
Voltage:	24 V DC
Current consumption:	max. 120 mA
clear lens	**816 480 55**
opaque lens	**816 780 55**

ACCESSORIES:

Cable 5m with M12 plug	**960 693 05**
Base for base mounting	**975 812 02**
Tube adaptor	**975 812 01**
Base with integrated tube, Ø 25 mm, 110 mm long, plastic	**975 840 10**
Tube Ø 25 mm, all anodized aluminium	
100 mm long	**975 845 10**
250 mm long	**975 840 25**
400 mm long	**975 840 40**
Base for tube mounting, metal	**975 840 91**
Anti-twist device	**975 815 22**

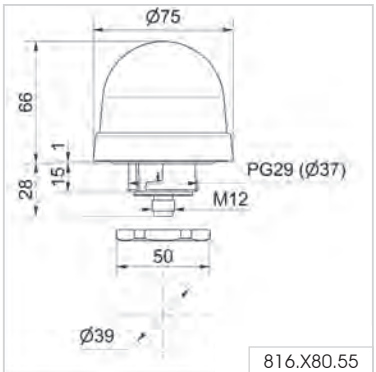
ADDITIONAL INFORMATION:

Easy triggering



PIN				Colour
1	2	3	4	
24 V	-	GND	-	rd
-	24 V	GND	-	gn
24 V	24 V	GND	-	ye
-	-	GND	24 V	bu
24 V	24 V	GND	24 V	wh
24 V	-	GND	24 V	vt
-	24 V	GND	24 V	tg

TECHNICAL DIAGRAM:



Signalisation index

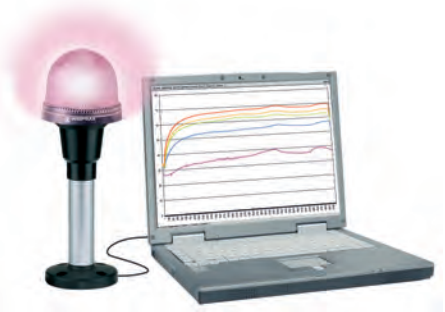
LED Permanent Light (multicolour) 3

PLC

816 LED Beacon (Multicolour) with USB Interface - PG29 (Ø 37 mm)

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (Ø x Height):	75 mm x 66 mm (Protrusion from panel)
Housing:	ABS/PC-Blend, black
Lens:	PC, transparent Shock resistance 20 Joules according to EN 60079-0
Fixing:	Installation mounting for Ø 37 mm (PG29) Base and wall mounting possible (accessories)
Connection:	Mini USB 2.0 downward cable outlet
Power supply:	Via USB
Colour options:	More than 200,000 colours (RGB LED)
Suitable for:	Windows®, System requirements – see Handbook
Assembly:	LED beacon, demo software, driver and USB connection cable included, 1.8 m long
Life duration:	Up to 50,000 hrs
Voltage:	5 V (USB-Connection)
Current consumption:	≤ 500 mA
clear lens	**816 480 53**
opaque lens	**816 780 53**



Simple triggering as no special software is required

ACCESSORIES:

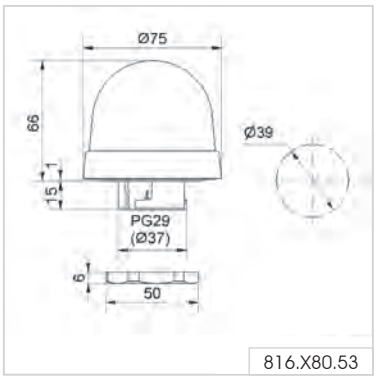
You will find the appropriate accessories for base or tube mounting on page 140
or under wwww.werma.com

ADDITIONAL INFORMATION:

The installation LED Beacon with USB interface is compatible with USB 2.0 and 1.1.

A wide range of colours and light effects can be quickly and simply programmed by the customer and altered at any time.

TECHNICAL DIAGRAM:



Signalisation index

LED Permanent Light (multicolour) 3

Bulb change via rear access with bayonet holder

Accessories

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (Ø x Height):	57 mm x 54 mm (Protrusion from panel)
Housing:	PC/ABS-Blend Socket: PA-GF, high impact
Lens:	PC, transparent
Connection:	Screw terminal 0.5 -1.5 mm² Flex radial or axial laid
Fixing:	Installation mounting for Ø 37 mm (PG29)
Operating voltage:	12-230 V
Bulb socket:	BA15d, 5 Watt max.
Bulb change:	Via rear access with bayonet mechanism

Bulb not included in assembly.

Voltage:	12-230 V
red	**800 100 00**
green	**800 200 00**
yellow	**800 300 00**
white	**800 400 00**
blue	**800 500 00**

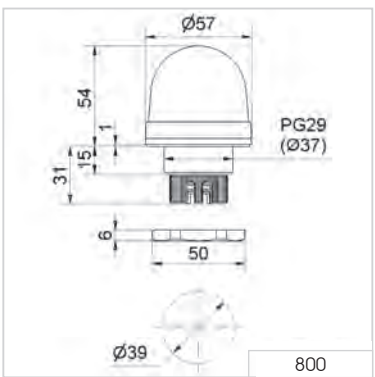
ACCESSORIES:

Bulb BA15d, 5 W total length 42 mm

Voltage:	12 V AC/DC	24 V AC/DC	30 V AC/DC	115 V AC/DC	230 V AC/DC
	955 840 34	**955 840 35**	**955 840 32**	**955 840 57**	**955 840 38**

Tube adaptor	**975 812 01**
Base with integrated tube, Ø 25 mm, 110 mm long, plastic	**975 840 10**
Base for tube mounting	**975 840 90**
Base for base mounting	**975 812 02**
Tube Ø 25 mm, all anodized aluminium	
100 mm long	**975 845 10**
250 mm long	**975 840 25**
400 mm long	**975 840 40**
Anti-twist device	**975 815 22**
Surface housing IP 65	
for 1 Installation Beacon	**975 815 03**
for 2 Installation Beacons	**975 815 07**
for 3 Installation Beacons	**975 815 08**
for 4 Installation Beacons	**975 109 05**

TECHNICAL DIAGRAM:



Signalisation index

Permanent Light	2

815 Installation Permanent Beacon - PG29 (Ø 37 mm)

Vandal-proof construction

Accessories

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (Ø x Height):	75 mm x 66 mm (Protrusion from panel)
Housing:	PC/ABS-Blend, Socket: PA-GF, high impact
Lens:	PC, transparent Shock resistance 20 Joules according to EN 60079-0
Connection:	Screw terminal 0.5 -1.5 mm² flex radial or axial laid
Fixing:	Installation mounting for Ø 37 mm (PG29)
Operating voltage:	12-230 V
Bulb socket:	BA15d, 5 Watt max.
Bulb change:	Via rear access with bayonet mechanism

Bulb not included in assembly.

Voltage:	12-230 V
red	**815 100 00**
green	**815 200 00**
yellow	**815 300 00**
white	**815 400 00**
blue	**815 500 00**

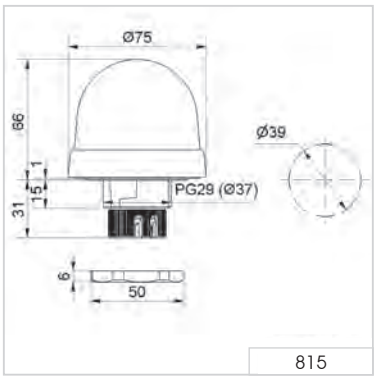
ACCESSORIES:

Bulb BA15d, 5 W total length 42 mm

Voltage:	12 V AC/DC	24 V AC/DC	30 V AC/DC	115 V AC/DC	230 V AC/DC
	955 840 34	**955 840 35**	**955 840 32**	**955 840 57**	**955 840 38**

Tube adaptor	**975 812 01**
Base with integrated tube, Ø 25 mm, 110 mm long, plastic	**975 840 10**
Base for tube mounting	**975 840 90**
Base for base mounting	**975 812 02**
Tube Ø 25 mm, all anodized aluminium	
100 mm long	**975 845 10**
250 mm long	**975 840 25**
400 mm long	**975 840 40**
Anti-twist device	**975 815 22**
Surface housing IP 65	
for 1 Installation Beacon	**975 815 03**
for 2 Installation Beacons	**975 815 07**
for 3 Installation Beacons	**975 815 08**
for 4 Installation Beacons	**975 109 05**

TECHNICAL DIAGRAM:



Signalisation index

Permanent Light 2

130 g IP65 +60°C -20°C 20J

802 Xenon Installation Flashing Beacon - PG29 (Ø 37 mm)

Tube adaptor as accessory

Accessories

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (Ø x Height):	57 mm x 54 mm (Protrusion from panel)
Housing:	PC/ABS-Blend Socket: PA-GF, high impact
Lens:	PC, transparent
Fixing:	Installation mounting for Ø 37 mm (PG29)
Connection:	Screw terminal 0.5 - 1.5 mm² flex radial or axial laid
Flash frequency:	0.75 Hz
Flash energy:	1 Ws
Life duration:	4 x 10^6 flashes

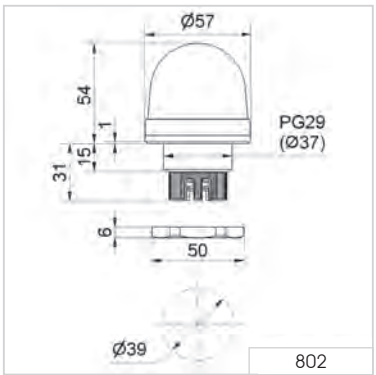
Voltage:	24 V DC	115 V AC	230 V AC
Current consumption:	45 mA	25 mA	25 mA
red	**802 100 55**	**802 100 67**	**802 100 68**
yellow	**802 300 55**	**802 300 67**	**802 300 68**

Further colours and voltages on request.

ACCESSORIES:

Tube adaptor	**975 812 01**
Base with integrated tube, Ø 25 mm, 110 mm long, plastic	**975 840 10**
Base for tube mounting	**975 840 90**
Base for base mounting	**975 812 02**
Tube Ø 25 mm, all anodized aluminium	
100 mm long	**975 845 10**
250 mm long	**975 840 25**
400 mm long	**975 840 40**
Anti-twist device	**975 815 22**
Surface housing IP 65	
for 1 Installation Beacon	**975 815 03**
for 2 Installation Beacons	**975 815 07**
for 3 Installation Beacons	**975 815 08**
for 4 Installation Beacons	**975 109 05**

TECHNICAL DIAGRAM:



Signalisation index

Xenon Flashing Light 4

817 Installation Flashing Beacon (Xenon) - PG29 (Ø 37 mm)

Tube adaptor as accessory

Accessories

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

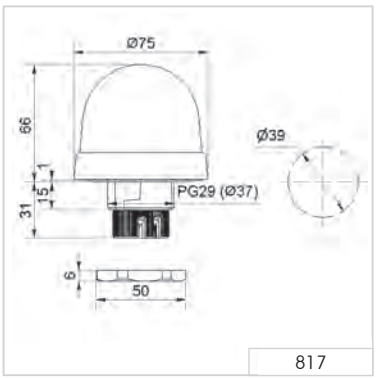
Dimensions (Ø x Height):	75 mm x 66 mm (Protrusion from panel)			
Housing:	PC/ABS-Blend Socket: PA-GF, high impact			
Lens:	PC, transparent Shock resistance 20 Joules according to EN 60079-0			
Fixing:	Installation mounting for Ø 37 mm (PG29)			
Connection:	Screw terminal 0.5 - 1.5 mm^2 flex radial or axial laid			
Flash frequency:	C. 1 Hz			
Flash energy:	2 Ws			
Life duration:	4 x 10^6 flashes			
Voltage:	12 V DC	24 V DC	115 V AC	230 V AC
Current consumption:	< 195 mA	125 mA	20 mA	35 mA
red	**817 100 54**	**817 100 55**	**817 100 67**	**817 100 68**
yellow	**817 300 54**	**817 300 55**	**817 300 67**	**817 300 68**

Further colours and voltages on request.

ACCESSORIES:

Tube adaptor	**975 812 01**
Base with integrated tube, Ø 25 mm, 110 mm long, plastic	**975 840 10**
Base for tube mounting	**975 840 90**
Base for base mounting	**975 812 02**
Tube Ø 25 mm, all anodized aluminium	
100 mm long	**975 845 10**
250 mm long	**975 840 25**
400 mm long	**975 840 40**
Anti-twist device	**975 815 22**
Surface housing IP 65	
for 1 Installation Beacon	**975 815 03**
for 2 Installation Beacons	**975 815 07**
for 3 Installation Beacons	**975 815 08**
for 4 Installation Beacons	**975 109 05**

TECHNICAL DIAGRAM:



817

Signalisation index

Xenon Flashing Light 4

Midi Signal Beacons – 826/827/828/829/885 families

Size comparison Mini/Midi/Maxi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Xenon Flashing Light	7
Rotating Mirror/Rotating Light	7

Your benefits

The Midi Beacons provide flexible signalling over medium distances. The high protection rating IP65 ensures the safe operation in many areas – both indoor and outdoor applications.

828 xenon flash light:

- Bright 5-joule xenon flash for high visibility, even in direct sunlight or over longer distances

829 LED beacons:

- Versatile lighting effects (permanent / blinking / rotating / flash / EVS) for a wide range of applications
- No moving mechanical parts, therefore unsusceptible to shock and vibration
- Maintenance-free operation and lower running costs due to low current consumption

885 rotating mirror beacon:

- High intensity light thanks to halogen bulb in extremely compact housing
- Easy to connect, without removing the mechanical assembly

Typical applications

Signalling faults or relaying alarms

- in building service industry
- for door and gate systems
- on machinery and plant

Installation options

- Base mounting
- Tube mounting
- Bracket mounting with plastic bracket

Features

- Optional wire guard to protect against mechanical damage

829 LED lights:

- Also available as a particularly attention-grabbing EVS option (flickering light)

885 rotating mirror beacon:

- Quiet belt drive allows the beacon to be mounted and operated in any position, even up side down (with limited IP protection) or at 90° to the wall

829 LED Permanent/Blinking Beacon

Tube mounting

Accessories

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

	Base/Bracket mounting	Tube mounting
Dimensions (Ø x Height):	98 mm x 137 mm	98 mm x 200 mm
Cable entry:	Cable diameter 5-7 mm	
Housing:	PC/ABS-Blend	
Lens:	PC, transparent	
Connection:	Screw terminal 0.5 - 1.5 mm²	
Life duration:	Up to 50,000 hrs	

LED PERMANENT/BLINKING BEACON (INTERCHANGEABLE LIGHT EFFECT)

Blinking frequency:	C. 1.5 Hz	
Voltage:	24 V DC	24 V DC
Current consumption:	≤ 150 mA	≤ 150 mA
red	**829 100 55**	**829 107 55**
green	**829 200 55**	**829 207 55**
yellow	**829 300 55**	**829 307 55**
blue	**829 500 55**	**829 507 55**

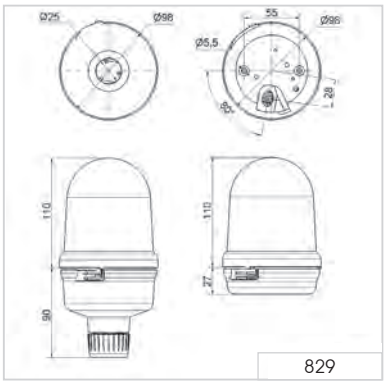
LED PERMANENT BEACON

Voltage:	115 V AC	230 V AC	115 V AC	230 V AC
Current consumption:	≤ 30 mA	≤ 30 mA	≤ 30 mA	≤ 30 mA
red	**829 130 67**	**829 130 68**	**829 137 67**	**829 137 68**
green	**829 230 67**	**829 230 68**	**829 237 67**	**829 237 68**
yellow	**829 330 67**	**829 330 68**	**829 337 67**	**829 337 68**
blue	**829 530 67**	**829 530 68**	**829 537 67**	**829 537 68**

ACCESSORIES:

Plastic bracket for wall mounting	**975 826 05**
Wire guard, galvanised, only for base mounting	**975 826 03**
Tube Ø 25 mm, all anodized aluminium, 100 mm long	**975 845 10**
Base for tube, plastic, Ø 25 mm	**975 840 90**
Base for tube, metal, Ø 25 mm	**975 840 91**

TECHNICAL DIAGRAM:



Signalisation index

Base/Bracket mounting

Base/Bracket mounting

Tube mounting

829

LED Permanent/Blinking/Rotating Beacon with external triggering

Base/Bracket mounting

Bracket (accessories)

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

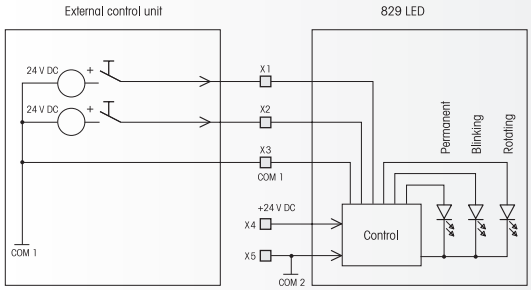
	Base/Bracket mounting	Tube mounting
Dimensions (Ø x Height):	98 mm x 137 mm	98 mm x 200 mm
Cable entry:	Cable diameter 5-7 mm	
Housing:	PC/ABS-Blend	
Lens:	PC, transparent	
Connection:	Screw terminal 0.5 - 1.5 mm²	
Blink frequency:	C. 1.5 Hz	
Rotation rate:	C. 180 r.p.m.	
Life duration:	Up to 50,000 hrs	
Voltage:	24 V DC	24 V DC
Current consumption:	≤ 300 mA	≤ 300 mA
red	**829 150 55**	**829 157 55**
green	**829 250 55**	**829 257 55**
yellow	**829 350 55**	**829 357 55**
blue	**829 550 55**	**829 557 55**

ACCESSORIES:

Plastic bracket for wall mounting	**975 826 05**
Wire guard, galvanised, only for base mounting	**975 826 03**
Tube Ø 25 mm, all anodized aluminium, 100 mm long	**975 845 10**
Base for tube, plastic, Ø 25 mm	**975 840 90**
Base for tube, metal, Ø 25 mm	**975 840 91**

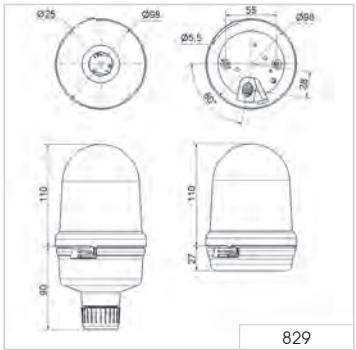
ADDITIONAL INFORMATION:

829 with external triggering - Light effects set via control cables



Thanks to the external trigger function, the range of light effects offered by the LED Beacon 829 can be set by means of electrically isolated, binary coded 24 V control cables. This guarantees a much greater level of resistance to electrical interference.
The machine operator can use the different signals to indicate various machine conditions - without having to make adjustments to the beacon itself. In addition the LED beacon 829 can be used in conjunction with both positive and negative trigger logic.

TECHNICAL DIAGRAM:



Base/Bracket mounting 220 g

Tube mounting 255 g

IP65

+50°C

-20°C

Signalisation index

LED Permanent Light	4
LED Blinking Light	5
LED Rotating Light	6

829 LED Rotating Beacon

Tube mounting

Base/Bracket mounting

Accessories

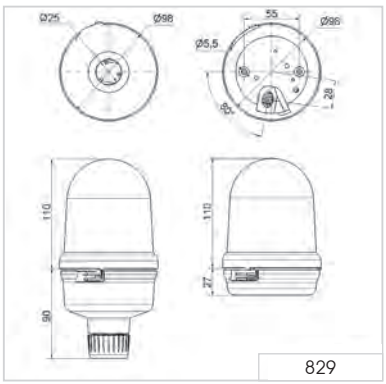
TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

	Base/Bracket mounting		Tube mounting	
Dimensions (Ø x Height):	98 mm x 137 mm		98 mm x 200 mm	
Cable entry:	Cable diameter 5-7 mm			
Housing:	PC/ABS-Blend			
Lens:	PC, transparent			
Connection:	Screw terminal 0.5 - 1.5 mm²			
Rotation rate:	C. 180 r.p.m.			
Life duration:	Up to 50,000 hrs			
Voltage:	24 V DC	115-230 V AC	24 V DC	115-230 V AC
Current consumption:	< 170 mA	< 200 mA	< 170 mA	< 200 mA
red	**829 110 55**	**829 110 68**	**829 117 55**	**829 117 68**
green	**829 210 55**	**829 210 68**	**829 217 55**	**829 217 68**
yellow	**829 310 55**	**829 310 68**	**829 317 55**	**829 317 68**
clear	**829 410 55**	**829 410 68**	**829 417 55**	**829 417 68**
blue	**829 510 55**	**829 510 68**	**829 517 55**	**829 517 68**

ACCESSORIES:

Plastic bracket for wall mounting	**975 826 05**
Wire guard, galvanised, only for base mounting	**975 826 03**
Tube Ø 25 mm, all anodized aluminium, 100 mm long	**975 845 10**
Base for tube, plastic, Ø 25 mm	**975 840 90**
Base for tube, metal, Ø 25 mm	**975 840 91**

TECHNICAL DIAGRAM:



Signalisation index

Base/Bracket mounting: 200 g

Tube mounting: 235 g

IP65

+50°C

-20°C

LED Double Flash Beacon

Base/Bracket Mounting

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

	Base/Bracket mounting		Tube mounting	
Dimensions (Ø x Height):	98 mm x 137 mm		98 mm x 200 mm	
Cable entry:	Cable diameter 5-7 mm			
Housing:	PC/ABS-Blend			
Lens:	PC, transparent			
Connection:	Screw terminal 0.5 - 1.5 mm²			
Life duration:	Up to 50,000 hrs			
Voltage:	24 V DC	115-230 V AC	24 V DC	115-230 V AC
Current consumption:	< 100 mA	< 100 mA	< 100 mA	< 100 mA
red	**829 120 55**	**829 120 68**	**829 127 55**	**829 127 68**
yellow	**829 320 55**	**829 320 68**	**829 327 55**	**829 327 68**
clear	**829 420 55**	**829 420 68**	**829 427 55**	**829 427 68**

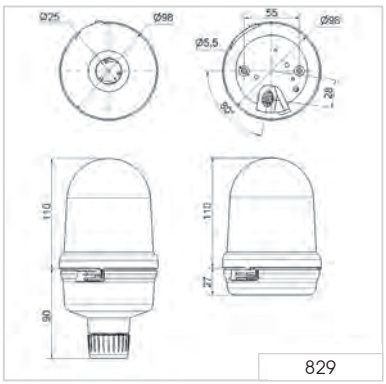
Tube Mounting (tube and base for tube - accessory)

ACCESSORIES:

Plastic bracket for wall mounting	**975 826 05**
Wire guard, galvanised, only for base mounting	**975 826 03**
Tube Ø 25 mm, all anodized aluminium, 100 mm long	**975 845 10**
Base for tube, plastic, Ø 25 mm	**975 840 90**
Base for tube, metal, Ø 25 mm	**975 840 91**

(Accessories see page 146)

TECHNICAL DIAGRAM:



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Tube-mounting

829 LED EVS Beacon

Base/Bracket mounting

Tube mounting

Accessories

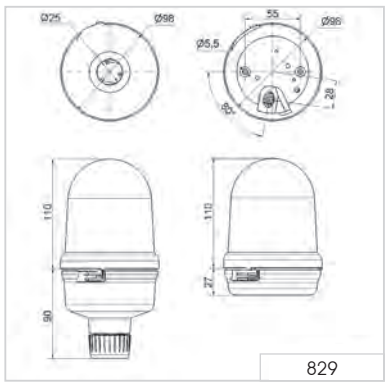
TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

	Base/Bracket mounting		Tube mounting	
Dimensions (Ø x Height):	98 mm x 137 mm		98 mm x 200 mm	
Cable entry:	Cable diameter 5-7 mm			
Housing:	PC/ABS-Blend			
Lens:	PC, transparent			
Connection:	Screw terminal 0.5 - 1.5 mm²			
Life duration:	Up to 50,000 hrs			
Voltage:	24 V DC	115-230 V AC	24 V DC	115-230 V AC
Current consumption:	< 300 mA	< 150 mA	< 300 mA	< 150 mA
red	**829 190 55**	**829 190 68**	**829 197 55**	**829 197 68**
yellow	**829 390 55**	**829 390 68**	**829 397 55**	**829 397 68**
clear	**829 490 55**	**829 490 68**	**829 497 55**	**829 497 68**

ACCESSORIES:

Plastic bracket for wall mounting	**975 826 05**
Wire guard, galvanised, only for base mounting	**975 826 03**
Tube Ø 25 mm, all anodized aluminium, 100 mm long	**975 845 10**
Base for tube, plastic, Ø 25 mm	**975 840 90**
Base for tube, metal, Ø 25 mm	**975 840 91**

TECHNICAL DIAGRAM:



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Tube mounting

200 g | 235 g | IP65 | +50°C | -20°C

Base/Bracket Mounting

Tube Mounting

Accessories

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

	Base/Bracket mounting	Tube mounting
Dimensions (Ø x Height):	98 mm x 137 mm	98 mm x 200 mm
Housing:	PC/ABS-Blend	
Lens:	PC, transparent	
Connection:	Srew free clamp mechanism max. 1,5 mm²	
Cable entry:	Cable diameter 5-7 mm	
Operating voltage:	230 V for BA15d	
Bulb:	Max. 15 W	
Socket:	BA15d	

Bulb not included in assembly.

Voltage:	12-230 V	12-230 V
red	**826 100 00**	**826 110 00**
green	**826 200 00**	**826 210 00**
yellow	**826 300 00**	**826 310 00**
clear	**826 400 00**	**826 410 00**
blue	**826 500 00**	**826 510 00**

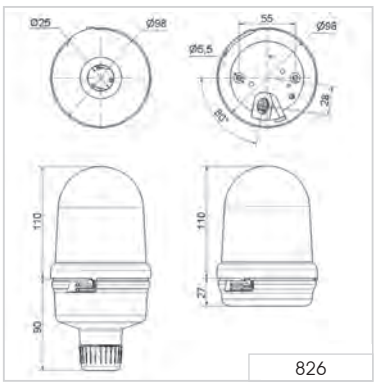
ACCESSORIES:

Plastic bracket for wall mounting	**975 826 05**
Wire guard, galvanised, only for base mounting	**975 826 03**
Tube Ø 25 mm, all anodized aluminium, 100 mm long	**975 845 10**
Base for tube, plastic, Ø 25 mm	**975 840 90**
Base for tube, metal, Ø 25 mm	**975 840 91**

Bulb BA15d, 15 W, total length 48 mm

Voltage:	24 V AC/DC	230 V AC/DC
	955 826 35	**955 826 38**

TECHNICAL DIAGRAM:



Signalisation index

Permanent Light 4

Base/Bracket mounting

Base/Bracket mounting 200 g

Tube mounting 235 g

IP65

+50°C -20°C

827 Blinking Beacon

Base/Bracket Mounting

Tube mounting

Accessories

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

	Base/Bracket mounting		Tube mounting
Dimensions (Ø x Height):	98 mm x 137 mm		98 mm x 200 mm
Housing:	PC/ABS-Blend		
Lens:	PC, transparent		
Connection:	Screw terminal 0.5 - 1.5 mm²		
Cable entry:	Cable diameter 5-7 mm		
Bulb:	Max. 25 W		
Blinking frequency:	1.5 Hz		
Starting current:	24 V AC/DC	115 V AC	230 V AC
	3 A	0,6 A	0,35 A
Socket:	BA15d		

Bulb included in assembly.

Base/Bracket mounting			
Voltage:	24 V AC/DC	115 V AC/DC	230 V AC/DC
red	**827 100 75**	**827 100 77**	**827 100 78**
yellow	**827 300 75**	**827 300 77**	**827 300 78**

Tube mounting			
Voltage:	24 V AC/DC	115 V AC/DC	230 V AC/DC
red	**827 110 75**	**827 110 77**	**827 110 78**
yellow	**827 310 75**	**827 310 77**	**827 310 78**

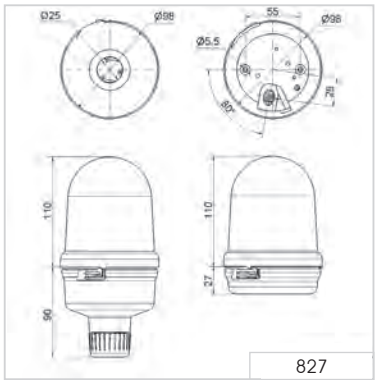
ACCESSORIES:

Plastic bracket for wall mounting	**975 826 05**
Wire guard, galvanised, only for base mounting	**975 826 03**
Tube Ø 25 mm, all anodized aluminium, 100 mm long	**975 845 10**
Base for tube, plastic, Ø 25 mm	**975 840 90**
Base for tube, metal, Ø 25 mm	**975 840 91**

Bulb BA15d, 25 W, total length max. 55 mm

Voltage:	24 V AC/DC	115 V AC/DC	230 V AC/DC
	955 827 35	**955 827 37**	**955 827 38**

TECHNICAL DIAGRAM:



Base/Bracket mounting

Tube mounting

200 g

235 g

IP65

+50°C

-20°C

Signalisation index

Blinking Light 5

Xenon Flashing Beacon

Base/Bracket Mounting

Tube mounting

Accessories

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

	Base/Bracket mounting	Tube mounting
Dimensions (Ø x Height):	98 mm x 137 mm	98 mm x 200 mm
Cable entry:	Cable diameter 5-7 mm	
Housing:	PC/ABS-Blend	
Lens:	PC, transparent	

FLASHING BEACON 828

Connection:	Screw terminal 0.5 - 1.5 mm²
Flash energy:	5 Ws
Flash frequency:	C. 1 Hz
Life duration:	4 x 10⁶ flashes

12 V: Safety contact is triggered by removal of lens.

Base/Bracket mounting

Voltage:	12 V DC	24 V DC	10-60 V AC/DC	115 V AC	230 V AC
Current consumption:	500 mA	300 mA	500-120 mA	65 mA	150 mA
red	**828 100 54**	**828 100 55**	**828 180 70**	**828 100 67**	**828 100 68**
yellow	**828 300 54**	**828 300 55**	**828 380 70**	**828 300 67**	**828 300 68**
clear	-	**828 400 55**	**828 480 70**	-	**828 400 68**

Tube mounting

Voltage:	24 V DC		115 V DC	230 V AC
red	**828 140 55**		**828 140 67**	**828 140 68**
yellow	**828 340 55**		**828 340 67**	**828 340 68**
clear	**828 440 55**		-	-

FLASHING BEACON 828 WITH 2 FREQUENCIES

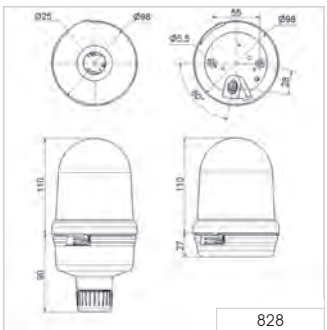
Connection:	Screw terminal 0.5 - 1.5 mm²
Flash energy:	5 Ws
Flash frequency:	0.5 Hz or 1.5 Hz can be set externally
Life duration:	4 x 10⁶ flashes

	Base/Bracket mounting	Tube mounting
Voltage:	24 V DC	24 V DC
Current consumption:	500 mA	500 mA
red	**828 120 55**	**828 160 55**
yellow	**828 320 55**	**828 360 55**

ACCESSORIES:

Accessories see page 146.

TECHNICAL DIAGRAM:



828

828 X00 XX
828 X40 XX
828 X20 XX
828 X60 XX

Base/Bracket mounting: 200 g
Tube mounting: 235 g
IP65
+50°C / -20°C
5 Ws

Signalisation index

Xenon Flashing Light	7

Modified flashing beacon 828 specifically for use in road tunnels

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

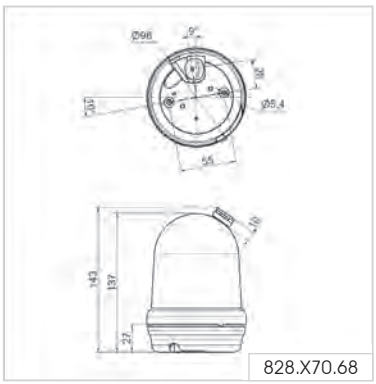
Dimensions (Ø x Height):	98 mm x 137 mm
Housing:	PC/ABS-Blend
Lens:	PC, transparent
Fixing:	Base mounting, bracket mounting (accessory)
Cable entry:	Cable diameter 5-7 mm
Connection:	Screw terminal 0.5 -1.5 mm^2
Flash energy:	5 Ws
Flash frequency:	C. 1 Hz
Life duration:	4 x 10^6 flashes
Voltage:	230 V AC
Current consumption:	140 mA
yellow	**828 370 68**
clear	**828 470 68**

Clear identification of escape routes can save lives

ACCESSORIES:

Plastic bracket for wall mounting	**975 826 05**
Wire guard, galvanised, only for base mounting	**975 826 03**

TECHNICAL DIAGRAM:



828.X70.68

A special valve in the lens also prevents the build-up of condensation inside the beacon

Signalisation index

Xenon Flashing Light	7

Rotating Mirror Beacon

Base mounting

Rotating Mirror Beacon 885 with tube and base (accessories)

Plastic bracket und wire guard (accessories)

Signalisation index

Rotating Mirror: 7

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

	Base/Bracket mounting	Tube mounting
Dimensions (Ø x Height):	98 mm x 151 mm	98 mm x 200 mm
Housing:	PC/ABS-Blend	
Lens:	PC, transparent	
Connection:	Screw terminal 0.5 - 1.5 mm²	
Cable entry:	Cable diameter 5-7 mm	
Installation position:	Standing, Tube mounting if required	
Halogen bulb:	G 6.35 20 W 12 V / 24 V	
Mirror rotation rate:	C. 180 r.p.m.	
Service life of drive	> 5,000 hrs	
Duty cycle:	100 %	

Halogen bulb included in assembly.

Base/Bracket mounting

Voltage:	12 V DC	24 V AC/DC	115 V AC/ 115 V DC/ 230 V AC/ 230 V DC
Current consumption:	1,9 A	1,0 A	0,4 A / 0,2 A / 0,2 A / 0,1 A
red	**885 100 54**	**885 100 75**	**885 100 78**
green	**885 200 54**	**885 200 75**	**885 200 78**
yellow	**885 300 54**	**885 300 75**	**885 300 78**
blue	**885 500 54**	**885 500 75**	**885 500 78**

Tube mounting

Voltage:	12 V DC	24 V AC/DC	115 V AC/ 115 V DC/ 230 V AC/ 230 V DC
Current consumption:	1,9 A	1,0 A	0,4 A / 0,2 A / 0,2 A / 0,1 A
red	**885 110 54**	**885 110 75**	**885 110 78**
green	**885 210 54**	**885 210 75**	**885 210 78**
yellow	**885 310 54**	**885 310 75**	**885 310 78**
blue	**885 510 54**	**885 510 75**	**885 510 78**

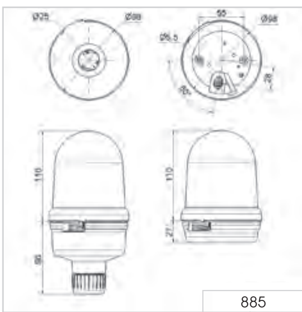
ACCESSORIES:

Plastic bracket for wall mounting	**975 826 05**
Wire guard, galvanised, only for base mounting	**975 826 03**
Tube Ø 25 mm, all anodized alluminium	
100 mm long	**975 845 10**
250 mm long	**975 840 25**
Base for tube mounting, plastic, Ø 25 mm	**975 840 90**
Base for tube mounting, metal, Ø 25 mm	**975 840 91**

SPARE PARTS:

Halogen bulb 20 W/12 V für 12 V DC	
115 V AC/DC, 230 V AC/DC	**955 885 24**
Halogen bulb 20 W/24 V für 24 V AC/DC	**955 885 25**

TECHNICAL DIAGRAM:



IP65 · +50°C · -30°C · 360 g

Signal Beacons & Traffic Lights

Maxi Signal Beacons – 280/838/883/884 families

Size comparison Mini/Midi/Maxi

Signalisation index	
Optical	
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LED Rotating Light	7
LED Flashing Light	8
LED EVS Light	10
Xenon Flashing Light	9
Rotating Mirror/Rotating Light	9

Your benefits

WERMA's Maxi Beacons give flexible signalling over larger distances. The IP65 rated units are ideally suited for use in both indoor and outdoor applications.

838 xenon double flash:

- Very bright, even in direct sunlight and over longer distances

280 LED beaconss:

- Versatile light effects (permanent / rotating / flash / EVS) for a wide range of applications
- Resistant to shock and vibration
- Maintenance-free operation and low running costs

883/884 rotating mirror beacons:

- High intensity light and robust housing
- Easy to connect, without removing the mechanical assembly

Typical applications

Signalling faults and relaying alarms

- In building technology
- For door and gate systems
- On machinery and plant equipment, over long distances

Installation options

- Base mounting
- Tube mounting
- Bracket mounting

Features

- Tamper-proof and shock-resistant up to 20 joules
- Optional wire guard to protect against mechanical damage

883/884 rotating mirror beacons:

- Quiet, with low-wear wheel and disc drive

884 revolving beacon:

- Special Fresnel lenses produce beams of light that can be seen over longer distances even in poor light conditions

LED Permanent Beacon

Plastic bracket (accessory)

Plastic bracket, adaptor for tube mounting and wire guard (accessories)

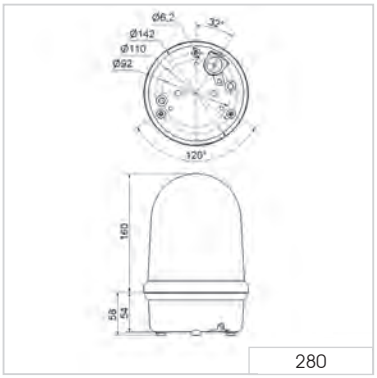
TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (Ø x Height):	142 mm x 218 mm	
Housing:	PC/ABS-Blend	
Lens:	PC, transparent	
Fixing:	Base/bracket mounting (accessory), tube mounting (accessory)	
Cable entry:	Cable diameter 5-7 mm	
Connection:	Screw terminal 0.5 - 1.5 mm²	
Duty cycle:	100 %	
Life duration:	Up to 50,000 hrs	
Voltage:	12-50 V DC	230 V AC
Current consumption:	12 V: 500 mA 50 V: 100 mA	50 mA
red	**280 100 55**	**280 100 68**
yellow	**280 300 55**	**280 300 68**

ACCESSORIES:

Plastic bracket for wall mounting	**975 883 06**
Adaptor for tube mounting	**975 883 09**
Wire guard, only for base mounting	**975 883 08**

TECHNICAL DIAGRAM:



280

Signalisation index

LED Permanent Light	6

280 LED Rotating Beacon

High impact resistance to 20 Joules

Plastic bracket, adaptor for tube mounting and wire guard (accessories)

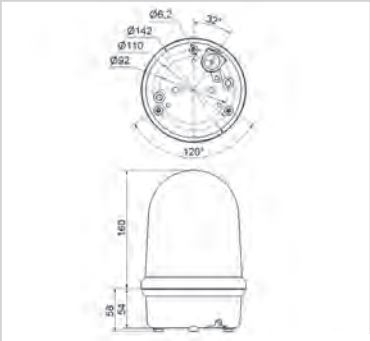
TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (Ø x Height):	142 mm x 218 mm	
Housing:	PC/ABS-Blend, black	
Lens:	PC, transparent	
Fixing:	Base mounting, Bracket/Tube mounting (accessory)	
Cable entry:	Cable diameter 5-7 mm	
Connection:	Screw terminal 0.5 - 1.5 mm²	
Rotation rate:	C. 180 r.p.m.	
Duty cycle:	100 %	
Life duration:	Up to 50,000 hrs	
Voltage:	24 V DC	115-230 V AC
Current consumption:	150 mA	< 200 mA
red	**280 120 55**	**280 120 68**
yellow	**280 320 55**	**280 320 68**

ACCESSORIES:

Plastic bracket for wall mounting	**975 883 06**
Adaptor for tube mounting	**975 883 09**
Wire guard, only for base mounting	**975 883 08**

TECHNICAL DIAGRAM:



280

Signalisation index

LED Rotating Light	7

24 V

PLC

280 LED Double Flash Beacon

Base mounting

The adaptor (accessory) allows quick and simple mounting on a tube

Plastic bracket, Adaptor for tube mounting and wire guard (accessories)

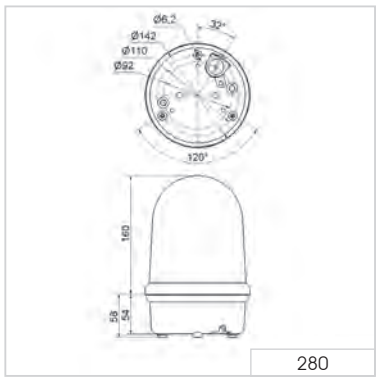
TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (Ø x Height):	142 mm x 218 mm	
Housing:	PC/ABS-Blend	
Lens:	PC, transparent	
Fixing:	Base mounting, Bracket/Tube mounting (accessory)	
Cable entry:	Cable diameter 5-7 mm	
Connection:	Screw terminal 0.5 - 1.5 mm²	
Duty cycle:	100 %	
Life duration:	Up to 50,000 hrs	
Voltage:	24 V DC	115-230 V AC
Current consumption:	< 150 mA	< 350 mA
red	**280 150 55**	**280 150 60**
yellow	**280 350 55**	**280 350 60**
clear	**280 450 55**	**280 450 60**

ACCESSORIES:

Plastic bracket for wall mounting	**975 883 06**
Adaptor for tube mounting	**975 883 09**
Wire guard, only for base mounting	**975 883 08**

TECHNICAL DIAGRAM:



280

Signalisation index

LED Flashing Light 8

280 LED EVS Beacon

Base mounting

Bracket mounting (accessory)

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

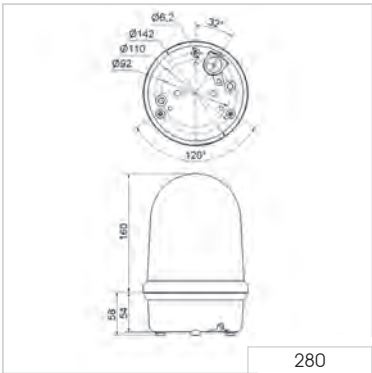
Dimensions (Ø x Height):	142 mm x 218 mm	
Housing:	PC/ABS-Blend	
Lens:	PC, transparent	
Fixing:	Base mounting, Bracket/Tube mounting (accessory)	
Cable entry:	Cable diameter 5-7 mm	
Connection:	Screw terminal 0.5 -1.5 mm²	
Duty cycle:	100 %	
Life duration:	Up to 50,000 hrs	
Voltage:	24 V DC	115-230 V AC
Current consumption:	< 500 mA	< 350 mA
red	**280 160 55**	**280 160 60**
yellow	**280 360 55**	**280 360 60**
clear	**280 460 55**	**280 460 60**

ACCESSORIES:

Plastic bracket for wall mounting	**975 883 06**
Adaptor for tube mounting	**975 883 09**
Wire guard, only for base mounting	**975 883 08**

(Accessories see page 156)

TECHNICAL DIAGRAM:



280

Signalisation index

LED EVS	10

838 Xenon Double Flash Beacon

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (Ø x Height):	142 mm x 218 mm		
Housing:	PC/ABS-Blend		
Lens:	PC, transparent		
Fixing:	Base mounting, Bracket/Tube mounting (accessory)		
Cable entry:	Cable diameter 5-7 mm		
Connection:	Screw terminal 0.5 - 1.5 mm^2		
Flash energy:	15 Ws		
Flash frequency:	C. 1 Hz		
Life duration:	4 x 10^6 flashes		
Voltage:	24 V DC	115 V AC	230 V AC
Current consumption:	800 mA	400 mA	200 mA
red	**838 100 55**	**838 100 67**	**838 100 68**
yellow	**838 300 55**	**838 300 67**	**838 300 68**

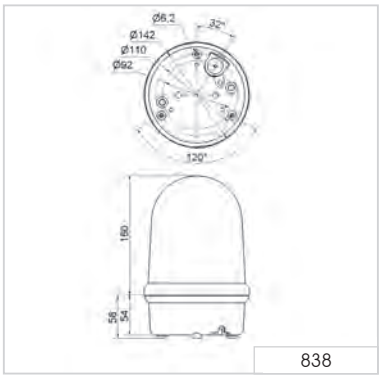
Wire guard
(accessory)

ACCESSORIES:

Plastic bracket for wall mounting	**975 883 06**
Adaptor for tube mounting	**975 883 09**
Wire guard, only for base mounting	**975 883 08**

Adaptor for tube mounting
and plastic bracket
(accessories)

TECHNICAL DIAGRAM:



838

Signalisation index

Xenon Flashing Light	9

883 Rotating Mirror Beacon

Bracket (accessory)

Plastic bracket, adaptor for tube mounting and wire guard (accessories)

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (Ø x Height):	142 mm x 218 mm
Housing:	PC/ABS-Blend
Lens:	PC, transparent
Fixing:	Base mounting, bracket mounting, tube mounting (accessory)
Cable entry:	Cable diameter 5-7 mm
Connection:	Screw terminal 0.5 -1.5 mm²
Drive:	Wheel and disc drive, motor in centre of gravity
Halogen bulb:	G 6.35 35 W 12 V / 24 V
Mirror rotation rate:	180 r.p.m.
Service life of drive:	> 5,000 hrs
Duty cycle:	100 %

Halogen bulb included in assembly.

Voltage:	12 V DC	24 V AC/DC	115 V AC/DC	230 V AC
Current consumption:	3 A	1,6 A	0,35 A	0,17 A
red	**883 100 54**	**883 100 75**	**883 100 77**	**883 100 68**
green	**883 200 54**	**883 200 75**	**883 200 77**	**883 200 68**
yellow	**883 300 54**	**883 300 75**	**883 300 77**	**883 300 68**
blue	**883 500 54**	**883 500 75**	**883 500 77**	**883 500 68**

Further colours and voltages on request.

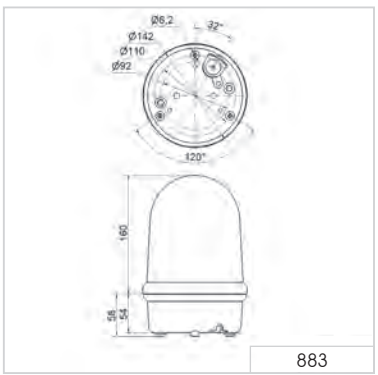
ACCESSORIES:

Plastic bracket for wall mounting	**975 883 06**
Adaptor for tube mounting	**975 883 09**
Base for tube mounting	**975 840 91**
Tube, Ø 25 mm, 100 mm long	**975 845 10**
Tube, Ø 25 mm, 250 mm long	**975 840 25**
Wire guard, only for base mounting	**975 883 08**

SPARE PARTS:

Halogen bulb 35 W/12 V for 230 V AC, 12 V DC, 115 V AC/DC	**955 883 34**
Halogen bulb 35 W/24 V for 24 V AC/DC	**955 883 35**

TECHNICAL DIAGRAM:



883

Signalisation index

670 g · IP65 · +50°C · -30°C · 20J

Revolving Signal Beacon

Bracket
(accessory)

Plastic bracket, adaptor for tube mounting and wire guard (accessories)

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (Ø x Height):	142 mm x 218 mm
Housing:	PC/ABS-Blend
Lens:	PC, transparent
Fixing:	Base mounting, bracket mounting, tube mounting (accessory)
Cable entry:	Cable diameter 5-7 mm
Connection:	Screw terminal 0.5 - 1.5 mm²
Drive:	Wheel and disc drive, motor in centre of gravity
Halogen bulb:	G 6.35 35 W 12 V / 24 V
Mirror rotation rate:	60 r.p.m.
Service life of drive:	> 5,000 hrs
Duty cycle:	100 %

Halogen bulb included in assembly.

Voltage:	24 V AC/DC	230 V AC
Current consumption:	1,6 A	0,17 A
red	**884 100 75**	**884 100 68**
green	**884 200 75**	**884 200 68**
yellow	**884 300 75**	**884 300 68**
blue	**884 500 75**	**884 500 68**

Further colours and voltages on request.

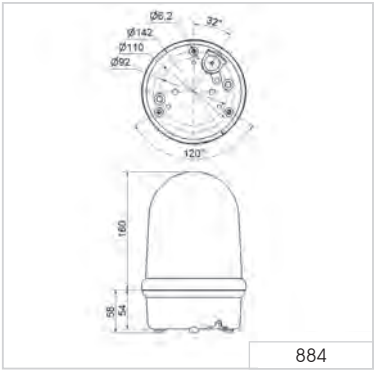
ACCESSORIES:

Plastic bracket for wall mounting	**975 883 06**
Adaptor for tube mounting	**975 883 09**
Base for tube mounting	**975 840 91**
Tube, Ø 25 mm, 100 mm long	**975 845 10**
Tube, Ø 25 mm, 250 mm long	**975 840 25**
Wire guard, only for base mounting	**975 883 08**

SPARE PARTS:

Halogen bulb 35 W/12 V for 230 V AC, 12 V DC, 115 V AC/DC	**955 883 34**
Halogen bulb 35 W/24 V for 24 V AC/DC	**955 883 35**

TECHNICAL DIAGRAM:



884

Signalisation index

Rotating Light	9

Flex*SQUARE* – Square shaped beacons

Size comparison Mini/Midi/Maxi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Optical	
LED Permanent Light	5
LED Flashing Light	6
LED EVS	8

Your benefits

The compact 853 LED beacon is particularly versatile. With an IP67 protection rating, it is suitable for all indoor and outdoor applications, even in harsh environmental conditions.

- Powerful high-output, forward-directed light effect
- Clearly visible, also from the side
- Easy mounting and electrical installation thanks to the elastic, self-sealing, membranes or optional M20 cable gland for mounting on different sides
- Many combinations possible (traffic lights, for example)
- Where space is restricted: Multi-coloured version available, with up to seven colours

153 multi-tone siren:

- Loud audible signal to complement 853 beacon or as a stand-alone product
- Eight signal tones to choose from and a signal escalation option using three different externally triggerable tones

Typical applications

Signalling of faults

- In lift and hoist systems (48 V)
- In building technology

Installation options

- Wall mounting
- Base mounting

Features

- Signal escalation possible with LED permanent light, LED double flash and EVS light in different colours
- Wide range of light effects and voltage options (12V, 24V, 48V and 115-230V)
- With the multi-coloured version, the three basic colours red, yellow and green can be activated with just two PLC outputs. With a third output, a further four colours are available

153 multi-tone siren:

- The sound output can be adjusted remotely

LED Permanent Beacon

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (L x H x W):	85 mm x 85 mm x 72 mm
Housing:	PP-GF, black
Lens:	PC, transparent
Connection:	Screw terminal 0.5 - 1.5 mm²
	CAGE CLAMP® 0,5 bis 1,5 mm² (Multicolour, RGY)
Fixing:	Wall, base and ceiling mounting
Possible colours:	Red, yellow, green, white, blue, violet, turquoise (multicolour)
Equipment:	Elastic self-sealing membranes for cable entry without tools Eight integrated M20 threads, no nuts required Optional use of a cable gland, thread length of cable gland ≤ 9 mm (accessory)
Assembly:	Incl. snap-on fixing bracket (optional use)
Life duration:	Up to 50,000 hrs

LED Permanent Beacon

Voltage:	12 V DC	24 V DC	48 V AC	115-230 V AC
Current consumption:	< 180 mA	< 80 mA	< 35 mA	< 40 mA
red	**853 100 54**	**853 100 55**	**853 100 66**	**853 100 60**
green	**853 200 54**	**853 200 55**	**853 200 66**	**853 200 60**
yellow	**853 300 54**	**853 300 55**	**853 300 66**	**853 300 60**
clear	**853 400 54**	**853 400 55**	**853 400 66**	**853 400 60**
blue	**853 500 54**	**853 500 55**	**853 500 66**	**853 500 60**

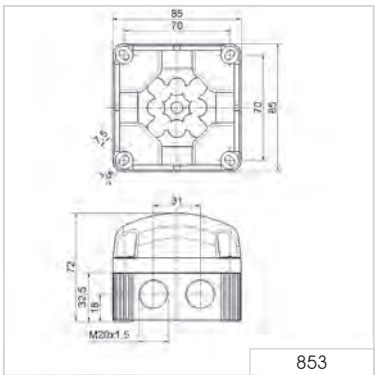
LED Permanent Beacon (multicolour)

Voltage:		24 V DC		115-230 V AC
Current consumption:		< 150 mA		< 35 mA
Multicolour		**853 480 55**		-
RGY (red, green, yellow)		-		**853 480 60**

ACCESSORIES:

Connector for traffic light combinations	**975 853 01**
Cable gland M20 x 1.5 mm, 8mm thread length	**975 853 02**

TECHNICAL DIAGRAM:



853

LED Permanent Light multicolour: 7 colours in one beacon: red, yellow, green, clear, blue, violet, turquoise

Signalisation index

LED Permanent Light 5

24 V

853 LED Double Flash Beacon

Intense double flash effect
with low power consumption

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

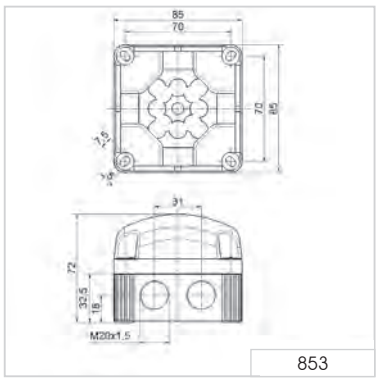
Dimensions (L x H x W):	85 mm x 85 mm x 72 mm
Housing:	PP-GF, black
Lens:	PC, transparent
Connection:	Screw terminal 0.5 - 1.5 mm²
Fixing:	Wall, base and ceiling mounting
Equipment:	Elastic self-sealing membranes for cable entry without tools Eight integrated M20 threads, no nuts required Optional use of a cable gland, thread length of cable gland ≤ 9 mm (accessory)
Assembly:	Incl. snap-on fixing bracket (optional use)
Life duration:	Up to 50,000 hrs

Voltage:	12 V DC	24 V DC	48 V AC	115-230 V AC
Current consumption:	< 100 mA	< 80 mA	< 95 mA	< 180 mA
red	**853 110 54**	**853 110 55**	**853 110 66**	**853 110 60**
green	**853 210 54**	**853 210 55**	**853 210 66**	**853 210 60**
yellow	**853 310 54**	**853 310 55**	**853 310 66**	**853 310 60**
clear	**853 410 54**	**853 410 55**	**853 410 66**	**853 410 60**
blue	**853 510 54**	**853 510 55**	**853 510 66**	**853 510 60**

ACCESSORIES:

Connector for traffic light combinations	**975 853 01**
Cable gland M20 x 1.5 mm, 8mm thread length	**975 853 02**

TECHNICAL DIAGRAM:



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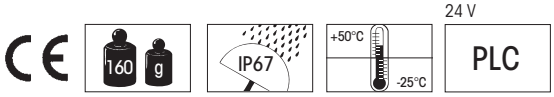
Signalisation index

LED Flashing Light 6



LED EVS Beacon

The innovative connector (accessory) enables traffic light combinations to be created in a matter of seconds

The "EVS" light signal ensures a maximum attention-grabbing effect

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

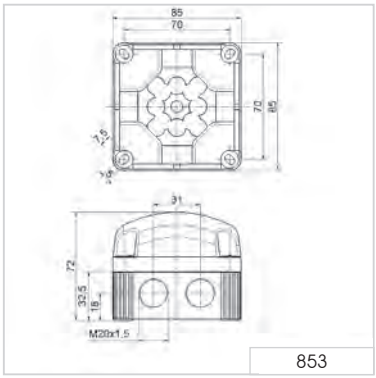
Dimensions (L x H x W):	85 mm x 85 mm x 72 mm
Housing:	PP-GF, black
Lens:	PC, transparent
Connection:	Screw terminal 0.5 - 1.5 mm²
Cable entry:	Cable diameter max. 8 mm, optional Cable gland M20 (accessory)
Fixing:	Wall, base and ceiling mounting
Equipment:	Elastic self-sealing membranes for cable entry without tools Eight integrated M20 threads, no nuts required Optional use of a cable gland, thread length of cable gland ≤ 9 mm (accessory)
Assembly:	Incl. snap-on fixing bracket (optional use)
Life duration:	Up to 50,000 hrs

Voltage:	12 V DC	24 V DC	48 V AC	115-230 V AC
Current consumption:	< 400 mA	< 200 mA	< 95 mA	< 160 mA
red	**853 120 54**	**853 120 55**	**853 120 66**	**853 120 60**
green	**853 220 54**	**853 220 55**	**853 220 66**	**853 220 60**
yellow	**853 320 54**	**853 320 55**	**853 320 66**	**853 320 60**
clear	**853 420 54**	**853 420 55**	**853 420 66**	**853 420 60**
blue	**853 520 54**	**853 520 55**	**853 520 66**	**853 520 60**

ACCESSORIES:

Connector for traffic light combinations	**975 853 01**
Cable gland M20 x 1.5 mm, 8mm thread length	**975 853 02**

TECHNICAL DIAGRAM:



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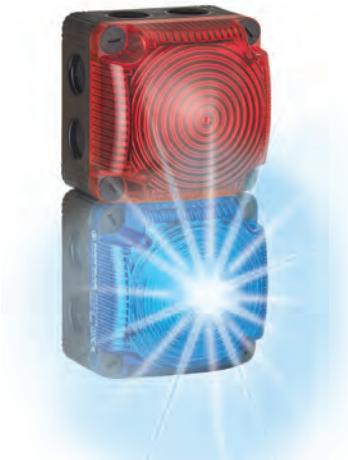
LED EVS Light	8

CE 160 g IP67 +50°C -25°C 24 V PLC

853 LED Traffic Light

The innovative connector (accessory) enables traffic light combinations to be created in a matter of seconds



Three highly visible light effects are available

The LED beacon can be used with the sounder

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

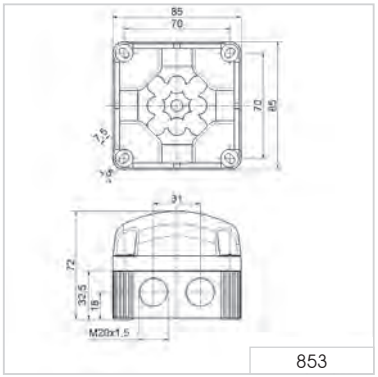
Dimensions (L x H x W):	85 mm x 85 mm x 72 mm
Housing:	PP-GF, black
Lens:	PC, transparent
Connection:	Screw terminal 0.5 - 1.5 mm²
	CAGE CLAMP® 0,5 - 1,5 mm² (Multicolour, RGY)
Fixing:	Wall, base and ceiling mounting
Possible colours:	Red, green, yellow, clear, blue
Operating voltage:	12 V DC, 24 V DC, 115-230 V AC
Current consumption:	Max. 80 mA at 24 V (LED Permanent Beacon)
	Max. 80 mA at 24 V (LED Double Flash Beacon)
	Max. 200 mA at 24 V (LED EVS Beacon)
	Max. 150 mA at 24 V (Multicolour)
Equipment:	Eight self-sealing membranes for cable entry without tools
	Eight integrated M20 threads, no nuts required
	Optional use of a cable gland, thread length of cable gland ≤ 9 mm (accessory)
Assembly:	Incl. snap-on fixing bracket (optional use)
Life duration:	Up to 50,000 hrs

LED Permanent Beacon 853	**see page 163**
LED Permanent Beacon 853 (multicolour)	**see page 163**
LED Permanent Beacon 853 (RGY)	**see page 163**
LED Double Flash Beacon 853	**see page 164**
LED EVS Beacon 853	**see page 165**
Sounder 153	**see page 167**

ACCESSORIES:

Connector for traffic light combinations	**975 853 01**
Cable gland M20 x 1.5 mm, 8mm thread length	**975 853 02**

TECHNICAL DIAGRAM:



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853 X00 XX 853 X10 XX 853 X20 XX 24 V

The innovative connector (accessory) enables traffic light combinations to be created in a matter of seconds

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (L x H x W):	85 mm x 85 mm x 72 mm
Housing:	PP-GF, black
Lens:	LED Beacon 853: PC, transparent Sounder 153: PC, tinted black
Connection:	Screw terminal 0.5 - 1.5 mm²
Cable entry:	Cable diameter max. 8 mm, optional Cable gland M20 (accessory)
Fixing:	Wall and ceiling mounting
Current consumption:	Max. 200 mA at 24 V
Equipment:	Eight self-sealing membranes for cable entry without tools Eight integrated M20 threads, no nuts required Optional use of a cable gland, thread length of cable gland ≤ 9 mm (accessory)
Assembly:	Incl. snap-on fixing bracket (optional use)

Voltage:	12 V DC	24 V DC	48 V AC	115-230 V AC
Current consumption:	150 mA	100 mA	150 mA	75 mA (115 V) 150 mA (230 V)
Order no.:	**153 000 54**	**153 000 55**	**153 000 66**	**153 000 60**

The technical specifications and order specifications of the LED Beacons can be found at www.werma.com or on page 163 (LED Permanant Beacon), page 164 (LED Double Flash Beacon) and page 165 (LED EVS Beacon).

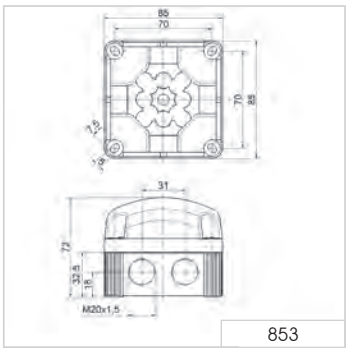
ACCESSORIES:

Connector for traffic light combinations	**975 853 01**
Cable gland M20 x 1.5 mm, 8mm thread length	**975 853 02**

TONE TYPES AND FREQUENCIES:

Tone	Tone type	Tone	Tone type
1	Continous tone (ca. 3000 Hz)	5	800 - 970 Hz rising @ 1 H
2	Horn tone (ca. 110 Hz)	6	2400 - 2850 Hz rising @ 7 Hz
3	1 Hz tone (ca. 3,0 kHz)	7	1200 - 500 Hz falling @ 1 Hz
4	20 Hz whistle tone (ca. 3,0 kHz)	8	Alternating tone 800 Hz/1200 Hz@1 Hz

TECHNICAL DIAGRAMS:



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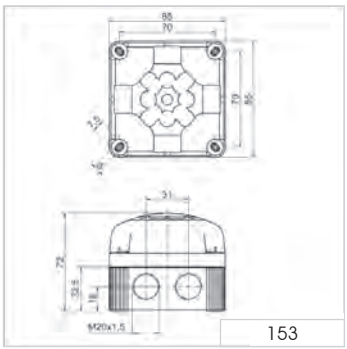

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Signalisation index

Multi-tone siren 7

CE

12 V, 24 V 48 V, 115-230 V

EAC | 160 g | IP65 | +50°C -25°C | 105 dB | 8 | 1 | PLC

Heavy-Duty Beacons - 839

Size comparison Maxi/Heavy Duty


Signalisation index	
Optical	
LED Permanent Light	6
LED Rotating Light	7
Flashing Light Xenon	9
Rotating Mirror/Rotating Light	7

Your benefits

The heavy-duty beacons have the advantage of a robust and seawater-resistant aluminium housing unit in conjunction with a shock-resistant wire guard. These products are therefore especially suitable for use in harsh environments, locations exposed to seawater, or situations where excellent shock resistance is required.

- Maintenance-free operation permits use in locations where access is difficult
- Optimum protection, against even severe mechanical strain or exposure to seawater

Typical applications

Signalling faults and relaying alarms

- In outdoor and indoor areas under extreme conditions
- For maritime applications on ships or in harbour areas

Installation options

- Base mounting
- Bracket mounting

Features

- Special screwed cable gland for equalising the pressure in the housing with the environmental pressure
- IP66 / 67 for use in harsh conditions

839 LED Permanent Beacon

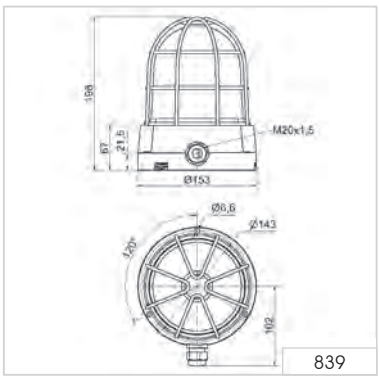
TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (Ø x Height):	153 mm x 198 mm	
Housing:	Black laquered aluminium with integral wire guard	
Lens:	PC, transparent	
Fixing:	Base mounting, Bracket mounting (accessory)	
Connection:	Screw terminal 0.5 - 1.5 mm²	
Cable entry:	Cable gland M20 x 1.5 mm (included in assembly) Cable diameter 6-13 mm	
Installation position:	As required	
Life duration:	Up to 50,000 hrs	
Voltage:	12-50 V DC	230 V AC
Current consumption:	500-100 mA	50 mA
red	**839 100 55**	**839 100 68**
yellow	**839 300 55**	**839 300 68**

ACCESSORIES:

Mounting bracket	**975 839 02**

TECHNICAL DIAGRAM:



Signalisation index

LED Permanent Light	6

839 LED Rotating Beacon

Mounting bracket (accessory)

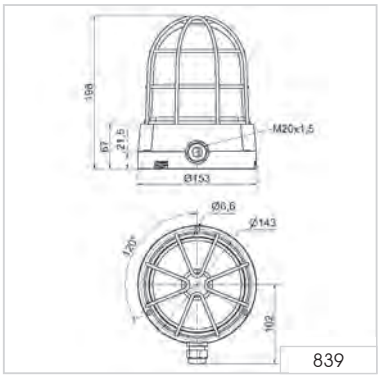
TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (Ø x Height):	153 mm x 198 mm	
Housing:	Black laquered aluminium with integral wire guard	
Lens:	PC, transparent	
Fixing:	Base mounting, Bracket mounting (accessory)	
Connection:	Screw terminal 0.5 -1.5 mm²	
Cable entry:	Cable gland M20 x 1.5 mm (included in assembly) Cable diameter 6-13 mm	
Installation position:	As required	
Rotation rate:	C. 180 r.p.m.	
Life duration:	Up to 50,000 hrs	
Voltage:	24 V DC	115-230 V AC
Current consumption:	150 mA	70-180 mA
red	**839 120 55**	**839 120 68**
yellow	**839 320 55**	**839 320 68**

ACCESSORIES:

Mounting bracket	**975 839 02**

TECHNICAL DIAGRAM:



Signalisation index

LED Rotating Light	7

839 Xenon Double Flash Beacon

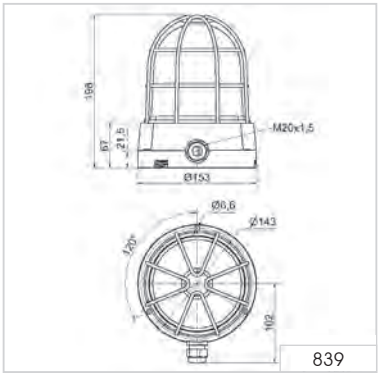
TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (Ø x Height):	153 mm x 198 mm	
Housing:	Black laquered aluminium with integral wire guard	
Lens:	PC, transparent	
Fixing:	Base mounting, Bracket mounting (accessory)	
Connection:	Screw terminal 0.5 - 1.5 mm^2	
Cable entry:	Cable gland M20 x 1.5 mm (included in assembly) Cable diameter 6-13 mm	
Installation position:	As required	
Flash energy:	15 Ws	
Flash frequency:	C. 1 Hz	
Life duration:	4 x 10^6 flashes	
Voltage:	24 V DC	230 V AC
Current consumption:	800 mA	200 mA
red	**839 152 55**	**839 152 68**
yellow	**839 352 55**	**839 352 68**

ACCESSORIES:

Mounting bracket	**975 839 02**

TECHNICAL DIAGRAM:



Signalisation index

Xenon Flashing Light	9

839 Rotating Mirror Beacon

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (Ø x Height):	153 mm x 198 mm
Housing:	Black laquered aluminium with integral wire guard
Lens:	PC, transparent
Fixing:	Base mounting, Bracket mounting (accessory)
Connection:	Screw terminal 0.5 - 1.5 mm²
Cable entry:	Cable gland M20 x 1.5 mm (included in assembly) Cable diameter 6-13 mm
Installation position:	As required
Halogen bulb:	G 6.35 20W 12/24 V
Mirror rotating rate:	180 r.p.m.
Service life of drive:	> 5,000 hrs

Voltage:	24 V AC/DC	115 V AC / 115 V DC / 230 V AC / 230 V DC
Current consumption:	1,0 A	0,35 A / 0,2 A / 0,15 A / 0,1 A
red	**839 160 75**	**839 160 78**
yellow	**839 360 75**	**839 360 78**

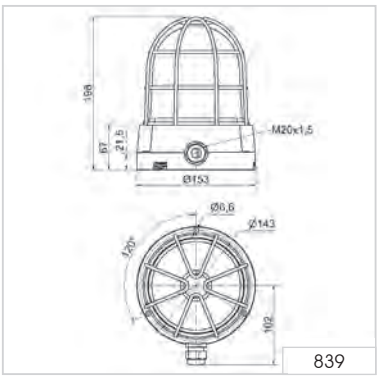
ACCESSORIES:

Mounting bracket	**975 839 02**

SPARE PARTS:

Halogen bulb 20 W/12 V for 115 V AC, 115 V DC, 230 V AC, 230 V DC	**955 885 24**
Halogen bulb 20 W/24 V for 24 V AC/DC	**955 885 25**

TECHNICAL DIAGRAM:



Signalisation index

Rotating Mirror	7

Obstruction Light

Why do obstacles need to be illuminated?

The law stipulates that buildings of a specific height and in the vicinity of airports as well as factory chimneys, towers, masts etc. must be equipped with obstruction lights.

This special lighting makes obstacles visible for pilots in the dark or when visibility is poor. Obstruction lighting is one of the most important aspects of flight safety.

What directives and regulations are there?

The method of marking obstacles to air traffic is laid down by diverse laws, regulations and recommendations. These regulations have a clearly defined sphere of influence and are **internationally interlinked.**

The International Civil Aviation Organisation **(ICAO)** is a special organisation within the United Nations created to establish and develop universal regulations for safety, continuity and economic efficiency in international air traffic. The recommendations of the ICAO are not directly binding in the member states, but must be transformed by them into the appropriate **national legal regulations.**

In **Germany** the Ministry for Transport and Construction Development **(BMVBS)** issues the regulations covering obstruction lighting on buildings. The **ICAO** regulations regarding the methods of marking and lighting aviation obstacles can be found in ICAO Annex 14.

- **"Low intensity obstacle beacon type A":** a red permanent night-time warning beacon for fixed obstructions with a brightness of 10 cd.
- **"Low intensity obstacle beacon type B":** a red permanent night-time warning beacon for fixed obstructions with a brightness of 32 cd.

Where are obstacle lights deployed?

- **Germany:** Marking of aviation obstacles by night at any height providing the highest point of the obstacle can be marked.

- **According to ICAO:** Marking of aviation obstacles by night up to 45 m ("Low-intensity Obstacle Light, Type A"), aditionally in combination with "medium-intensity obstacle lights"

280 Low-intensity LED Obstruction Light Type A and B

LED Obstruction Light Type B

LED Obstruction Light Type A - The adaptor (accessory) allows quick and simple mounting on a tube

Plastic bracket, adaptor for tube mounting (accessories)

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (Ø x Height):	142 mm x 218 mm
Housing:	PC/ABS-Blend
Lens:	PC, transparent, clear
Connection:	Screw terminal 0.5 - 1.5 mm²
Cable entry:	Cable diameter 5-7 mm
Fixing:	Base mounting, bracket mounting (accessory), tube mounting (accessory)
Duty cycle:	100 %
Life duration:	Up to 50,000 hrs

Current consumption at failure of 2 of the 12 LED strips: < 50mA

Low-intensity LED Obstruction Light Type A

Voltage:	12-50 V DC		
Current consumption:	500-100 mA		
aviation red	**280 410 55**		

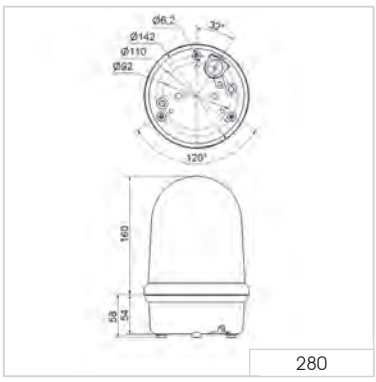
Low-intensity LED Obstruction Light Type B (includes Type A)

Voltage:	24 V DC	230 V AC	230 V AC (with monitoring funct.)
Current consumption:	~ 400 mA	~ 200 mA	~ 200 mA / < 50 mA (Failure mode)
aviation red	**280 470 55**	**280 470 68**	**280 480 68**

ACCESSORIES:

Plastic bracket for wall mounting	**975 883 06**
Wire guard, only for base mounting	**975 883 08**
Adaptor for tube mounting	**975 883 09**

TECHNICAL DIAGRAM:



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Low-intensity LED Obstruction Light Type A and B

LED Obstruction Light Type B

LED Obstruction Light Type A

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (Ø x Height):	185 mm x 205 mm
Housing:	Aluminium, coloured powder coating
Lens:	Reinforced borosilicate glass
Connection:	Screw terminal 0.5 - 1.5 mm²
Cable entry:	Cable gland M25 x 1.5 mm (included in assembly), Cable diameter 9-17 mm Reducer unit (included in assembly)
Fixing:	Base mounting, tube mounting M25 (no accessory required)
Life duration:	Up to 50,000 hrs

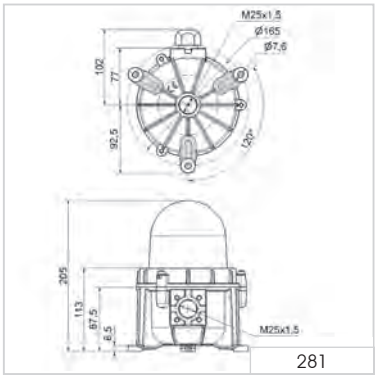
Low-intensity LED Obstruction Light Type A

Voltage:	12-50 V DC		
Current consumption:	500-100 mA		
aviation red	**281 410 55**		

Low-intensity LED Obstruction Light Type B (includes Type A)

Voltage:	24 V DC	230 V AC	230 V AC (with monitoring funct.)
Current consumption:	~ 400 mA	~ 200 mA	~ 200 mA / < 50 mA (Failure mode)
aviation red	**281 470 55**	**281 470 68**	**281 480 68**

TECHNICAL DIAGRAM:



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Traffic Lights / Signal Beacons - 890/895/897/894/ + 494 families

Size comparison Midi/Traffic Lights


Signalisation index	
Optical	
LED Permanent Light 890	7
LED Permanent Light 894	6
Permanent Light (bulb) 890	4
Flashing Light Xenon 890	9
Audible	
Multi-tone 190	8
Vocal alarm 190	7
Siren 494	4

Your benefits

Signal lights and traffic lights from the 890/895/897/494 range provide reliable signalling, both as single lights or as combined signalling lights.

Modular traffic lights 890 and multi-tone sounder 190:

- Cost-effective traffic light with 25W incandescent bulb or LED traffic light with clear lenses
- Easy installation in just a few steps and with any combination of 4 lights

Multi-colour variant (RGY):

- Drastic reduction in number of variants by combining three light colours in a single product – Ideal where space is restricted
- Additional high-output audible signalling of up to 110 dB(A) available in combination with multi-tone sounder/vocal alarm 190

Compact LED traffic light 894/traffic light combination 494 for extreme ambient conditions:

- With high IP65/IP69K protection rating for use in extremely harsh conditions
- The 494 range combines a high-output optical signal with a powerful 90dB siren

Typical applications

- Garages and car parks
- Access control in building service systeme
- Traffic regulation on construction sites
- Signalling for loading bays
- Car washes/washing areas

Installation options

Modular traffic light 890:

- Direct mounting or bracket mounting of up to 4 lights with fixing bracket

Compact LED traffic light 894/494:

- Wall mounting and tube mounting with additional adapter

Features

190 Vocal Alarm:

- The vocal alarm enables the high-output playback of spoken messages, music and tones provided in mp3 format

LED Beacon/LED Traffic Light

LED Permanent Beacon

LED Traffic Light Combination with mounting bracket (accessory)

Clear lenses ensure effective signalling even in direct sunlight

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (Ø x Height):	150 mm x 154 mm
Housing:	PC/ABS-Blend, grey
Lens:	PC, transparent
Fixing:	Base mounting, bracket mounting (accessory), tube mounting (accessory)
Cable entry:	From top or bottom with cable gland M20 x 1.5 mm or from the back with rubber grommet Ø 6-12 mm, included in assembly.
Colours:	Red, green, yellow
Connection:	CAGE CLAMP® 0.5 - 1.5 mm²
Installation position:	As required
Life duration:	Up to 50,000 hrs

LED Beacon/LED Traffic Light

Voltage:	12-24 V DC	115-230 V AC
Current consumption:	< 200 mA	< 35 mA
red	**890 120 55**	**890 120 68**
green	**890 220 55**	**890 220 68**
yellow	**890 320 55**	**890 320 68**

LED Permanent Light (RGY)

Voltage:	12-24 V DC	230 V AC
Current consumption:	< 220 mA	< 40 mA
RGY (red, green, yellow)	**890 480 55**	**890 480 68**

ACCESSORIES:

FIXING BRACKET

Fixing bracket for one beacon	**975 890 33**
Fixing bracket for two beacons	**975 890 34**
Fixing bracket for three beacons	**975 890 35**
Fixing bracket for four beacons	**975 890 37**

Mounting material and connecting grommet included in assembly.
Further information can be found on page 183.

CONNECTING GROMMET

Connecting grommet for traffic light combinations	**975 890 25**

ADDITIONAL INFORMATION:

Traffic light configurator at **www.werma.com**

TECHNICAL DIAGRAMS: see page 181

Signalisation index

890/190

(LED) Beacon 890/Multi-Tone Sounder 190/ Vocal alarm 190 Combination

High-output traffic light combination

The fixing bracket can be mounted pointing inwards or outwards (accessory)

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

(LED-)Beacon/Sounder 190/Vocal Alarm 190			
Dimensions (Ø x Height):	150 mm x 154 mm (890) 150 mm x 127 mm (190) 150 mm x 148 mm (Vocal Alarm 190)		
Housing:	PC/ABS-Blend, grey		
Lens:	PC, transparent		
Fixing:	Base mounting, fixing bracket (accessory)		
Cable entry:	From top or bottom with cable gland M20 x 1.5 mm or from the back with rubber grommet Ø 6-12 mm, included in assembly		
Connection:	CAGE CLAMP® 0.5 - 1.5 mm²		
Vocal Alarm 190			
Sound output:	Adjustable, up to 110 dB		
File Transfer:	Via USB connection and provided software		
Possible data format:	Mp3 and wav files		
Number of sequences:	15 files can be remotely triggered or one sequence with max. 50 files		
Suitable for:	Windows®, System requirements - see Handbook		
Assembly:	Vocal alarm, USB connection cable and software		
Multi-Tone Sounder 190			
Voltage:	10-30 V DC	115 V AC	230 V AC
Current consumption:	< 180 mA	< 55 mA	< 30 mA
grey	**190 000 55**	**190 000 67**	**190 000 68**
Vocal Alarm 190			
Voltage:	24 V DC		
Current consumption:	< 500 mA Low Power < 1500 mA High Power		
grey	**190 020 55**		

LED Beacon 890 see page 177

Permanent Beacon 890 see page 180

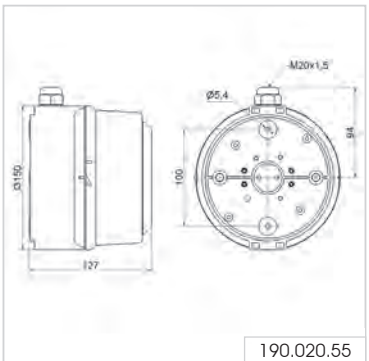
ACCESSORIES:

Fixing bracket, tube adaptor and connecting grommet see page 181.

TONE TYPES AND FREQUENCIES:

Selectable via DIP switch, see tone table on page 239.

TECHNICAL DIAGRAM:



CE

EAC | 969 g | IP65 | +50°C / -30°C

(A)

110 dB | 32 | PLC

Signalisation index

LED Permanent Light	7
Vocal alarm	7
Multi-tone siren	8

895 Permanent Beacon

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

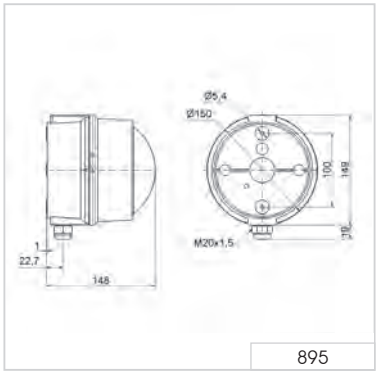
Dimensions (Ø x Height):	150 mm x 148 mm
Housing:	PC/ABS-Blend, grey
Lens:	PC, transparent
Socket:	E27 max. 25 W 2 sockets E14 each with max. 15 W with adhesive stickers E27 max. 15 W
Fixing:	Base mounting, tube mounting and fixing bracket (accessory)
Connection:	CAGE CLAMP® 0.5 - 1.5 mm²
Cable entry:	From top or bottom with cable gland M20 x 1.5 mm or from the back with rubber grommet Ø 6-12 mm
Voltage:	12-230 V AC/DC
red	**895 100 00**
green	**895 200 00**
yellow	**895 300 00**
clear	**895 400 00**
blue	**895 500 00**

Bulb not included in assembly.

ACCESSORIES:

Fixing bracket, additional reflector, Bulbs and LED Bulbs, Adhesive Stickers see Permanent/ Traffic Light Beacon (page 181).

TECHNICAL DIAGRAM:



895

Signalisation index

Permanent Light 4

Permanent/Traffic Light Beacon

Permanent Beacon

Traffic Light Combination with mounting bracket (accessory)

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (Ø x Height):	150 mm x 154 mm
Housing:	PC/ABS-Blend, grey
Lens:	PC, transparent
Socket:	E27 max. 25 W at 890 X00 00 2 sockets each E14 with max. 15 W at 890 X10 00 with adhesive stickers E27 max. 15 W
Fixing:	Base mounting, fixing bracket (accessory), tube mounting (accessory)
Connection:	CAGE CLAMP® 0.5 - 1.5 mm²
Cable entry:	From top or bottom with cable gland M20 x 1.5 mm or from the back with rubber

PERMANENT BEACON

Voltage:	12-230 V AC/DC
red	**890 100 00**
green	**890 200 00**
yellow	**890 300 00**
clear	**890 400 00**
blue	**890 500 00**

Further colours and voltages on request.

ACCESSORIES: see next page

Signalisation index

Permanent Light 4

Beacon 890 in combination with Multi-Tone Sounder 190 (see page 178)

The adaptor (accessory) allows quick and simple mounting on a tube (Ø 75 mm)

890 with adhesive sticker (accessory)

ACCESSORIES:

FIXING BRACKET

Fixing bracket for one beacon	**975 890 33**
Fixing bracket for two beacons	**975 890 34**
Fixing bracket for three beacons	**975 890 35**
Fixing bracket for four beacons	**975 890 37**

Mounting material and connecting grommet included in assembly.
Further information can be found on page 183.

CONNECTING GROMMET

Connecting grommet for traffic light combinations	**975 890 25**

REFLECTOR

Additional reflector for 890 X00 00	**975 890 02**

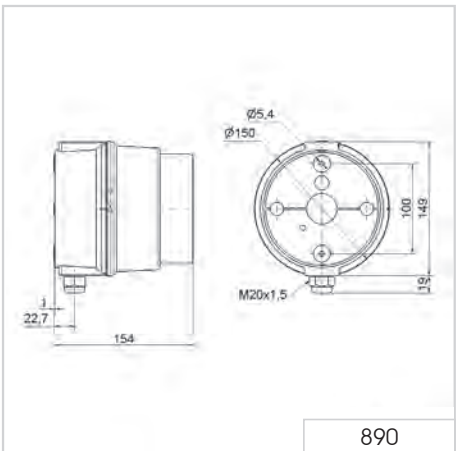
BULBS

LED bulb E27, 24 V	**956 X20 75**
LED bulb E27, 115 V	**956 X20 67**
LED bulb E27, 230 V	**956 X20 68**
For colours see page 184	
Bulb E27, 24 V / 25 W	**955 890 55**
Bulb E27, 115 V / 25 W	**955 890 67**
Bulb E27, 230 V / 25 W	**955 890 68**
Bulb E14, 230 V / 15 W	**955 890 38**

ADHESIVE STICKERS:

→	**975 890 52**
STOP	**975 890 53**
START	**975 890 54**
↯	**975 890 64**
✋	**975 890 65**

TECHNICAL DIAGRAM:



890

897 Xenon Double Flash Beacon

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

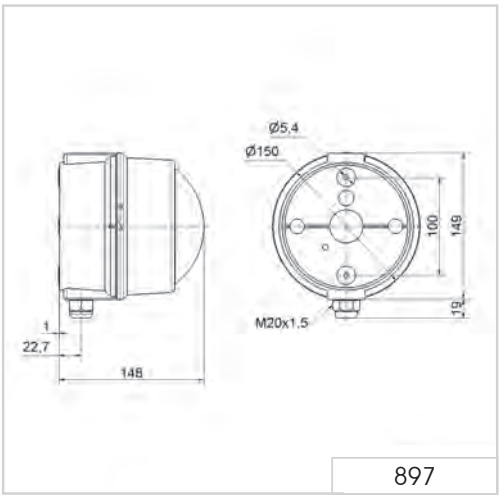
Dimensions (Ø x Height):	150 mm x 148 mm	
Housing:	PC/ABS-Blend, grey	
Lens:	PC, transparent	
Fixing:	Base mounting, tube mounting and fixing bracket (accessory)	
Cable entry:	From top or bottom with cable gland M20 x 1.5 mm or from the back with rubber grommet Ø 6-12 mm	
Connection:	Screw terminal, max. 2.5 mm^2	
Flash frequency:	1 Hz	
Flash energy:	15 Ws	
Life duration:	4 x 10^6 flashes	
Voltage:	24 V DC	230 V AC
Current consumption:	800 mA	200 mA
red	**897 100 55**	**897 100 68**
yellow	**897 300 55**	**897 300 68**

Further colours and voltages on request.

ACCESSORIES:

Fixing bracket, adhesive stickers see Permanent/ Traffic Light Beacon 890 (page 181).

TECHNICAL DIAGRAM:



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Signalisation index

Xenon Flashing Light	9

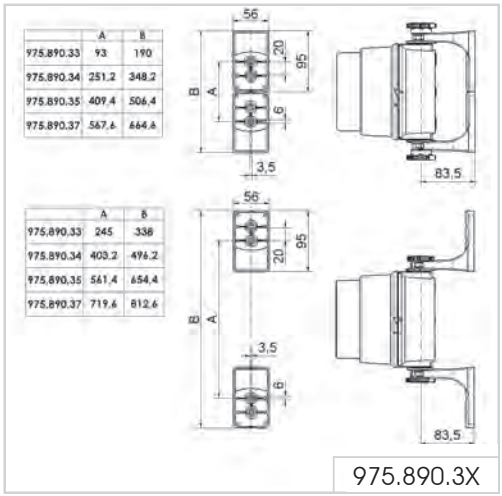
Fixing bracket for 890/190

Fixing bracket for
(LED) Beacons 890
and Multi-Tone Sounder 190

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Material Fixing bracket:	PC/ABS-Blend, grey
Material Connecting Grommet:	PA 6.6
Assembly:	Fixing bracket with mounting material and connecting grommet
Suitable for:	LED Beacon/LED Traffic Light 890 Permanent/Traffic Light Beacon 890 Multi-Tone Sounder 190
Fixing bracket for one beacon	**975 890 33**
Fixing bracket for two beacons	**975 890 34**
Fixing bracket for three beacons	**975 890 35**
Fixing bracket for four beacons	**975 890 37**

TECHNICAL DIAGRAM:



The fixing bracket can be mounted
pointing inwards or outwards

1 tier 158 g | 2 tier 175 g | 3 tier 195 g | 4 tier 215 g | IP65 | +50°C -20°C

956 LED Bulb E27

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Socket:	E27		
For use with:	890, 895		
Slight deviatons in the form of the bulbs are possible.			
Voltage:	24 V AC/DC	115 V AC	230 V AC
Current consumption:	≤ 30 mA	≤ 30 mA	≤ 20 mA
red	**956 120 75**	**956 120 67**	**956 120 68**
green	**956 220 75**	**956 220 67**	**956 220 68**
yellow	**956 320 75**	**956 320 67**	**956 320 68**

Suitable for use in Permanent/Traffic Light Beacons 890 (see page 180)

LED Traffic Light (IP69k)

LED Traffic Light (3 tier)

The direction of the optical signal can be individually adjusted

Clear lenses ensure effective signalling even in direct sunlight

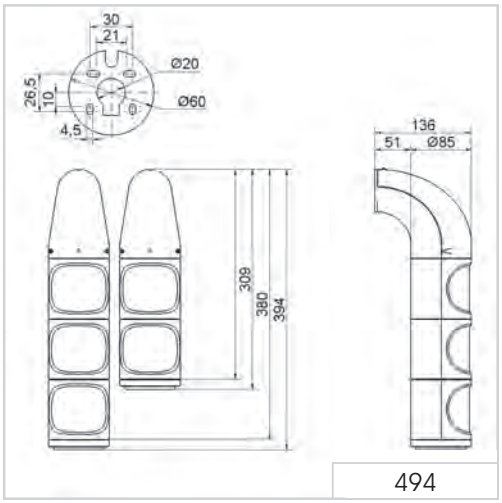
TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (Ø x Height):	2 tier: 85 mm x 309 mm x 136 mm 3 tier: 85 mm x 394 mm x 136 mm	
Housing:	PC/ABS, grey	
Lens:	PC, transparent	
Fixing:	Wall mounting, tube mounting (accessory)	
Cable entry:	Cable diameter max. 13 mm	
Connection:	Screw terminal 0.5 - 1.5 mm²	
Installation position:	Vertical/hanging	
Duty cycle:	100 %	
Life duration:	Up to 50,000 hrs	
Voltage:	24 V DC	115-230 V AC
Current consumption:	60 mA (red/yellow) 120 mA (green)	30 mA per tier at 230 V/50 Hz
red/green	**894 160 55**	**894 160 68**
red/yellow/green	**894 180 55**	**894 180 68**

ACCESSORIES:

Fixing bracket underneath	**975 894 01**

TECHNICAL DIAGRAM:



494

2 tier 3 tier

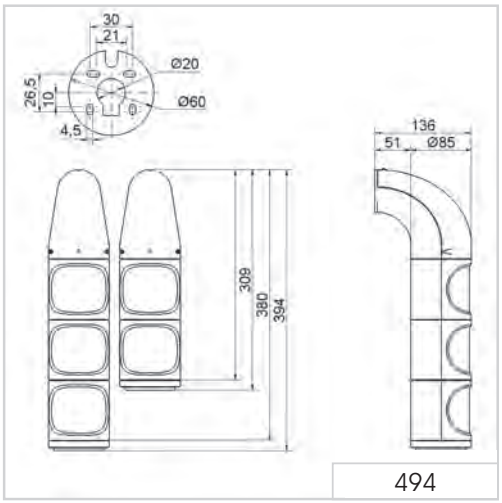
LED Beacon / LED Traffic Light (IP69k)

The direction of the optical signal can be individually adjusted

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

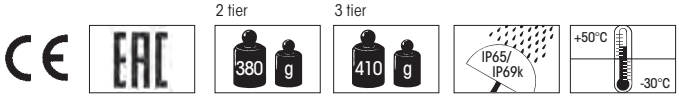
Dimensions (Ø x Height):	2 tier: 85 mm x 309 mm x 136 mm 3 tier: 85 mm x 394 mm x 136 mm	
Housing:	PC/ABS, grey	
Lens:	PC, transparent	
Fixing:	Wall mounting, tube mounting (accessory)	
Cable entry:	Cable diameter max. 13 mm	
Connection:	Screw terminal 0.5 - 1.5 mm²	
Installation position:	Vertical/hanging	
Duty cycle:	100 %	
Life duration:	Up to 50, 000 hrs	
Voltage:	24 V DC	115-230 V AC
Current consumption:	60 mA (red/yellow)	30 mA per tier at 230 V/50 Hz
red/green	**894 060 55**	**894 060 68**
red/yellow/green	**894 080 55**	**894 080 68**

TECHNICAL DIAGRAM:



Signalization index

LED Permanent Light 6



LED Traffic Light / Siren Combination

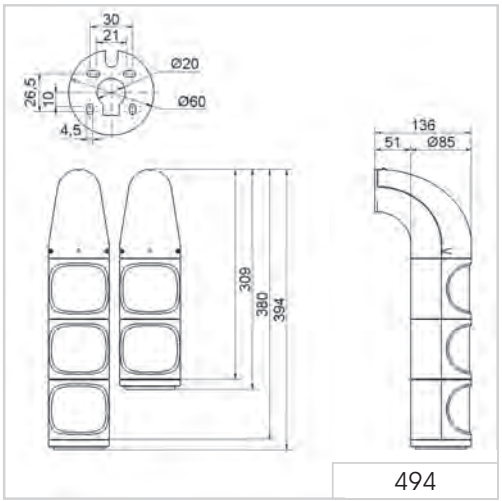
LED Traffic Light with integrated siren (2 tier)

Integrated siren with high sound output

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (Ø x Height):		2 tier: 85 mm x 309 mm x 136 mm 3 tier: 85 mm x 394 mm x 136 mm	
Housing:		PC/ABS, grey	
Lens:		PC, transparent	
Fixing:		Wall mounting, tube mounting (accessory)	
Cable entry:		Cable diameter max. 13 mm	
Connection:		Screw terminal 0.5 - 1.5 mm²	
Installation position:		Vertical/hanging	
Tone type:		Continuous tone	
Duty cycle:		100 %	
Voltage:		24 V DC	115-230 V AC
Current Consumption	LED	60 mA (red/yellow) 120 mA (green)	30 mA per tier at 230 V/50 Hz
	Siren	20 mA	30 mA at 230 V/50 Hz
red/green		**494 160 55**	**494 160 68**
red/yellow/green		**494 180 55**	**494 180 68**

TECHNICAL DIAGRAM:



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Signalization index

LED Permanent Light	6
Continuous tone	4

2 tier 380 g

3 tier 410 g

IP65/ IP69k

+50°C -30°C

90 dB

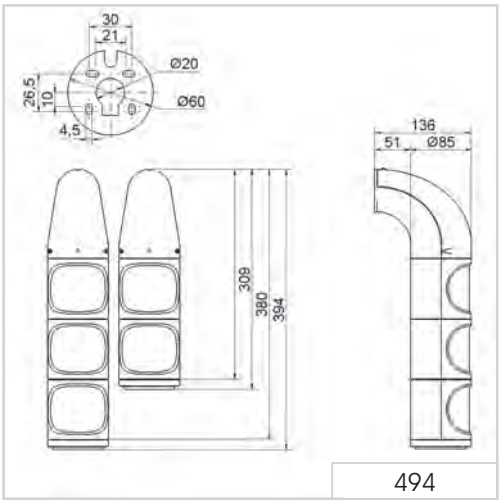
LED Beacon / Siren Combination

Integrated siren with high sound output

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (Ø x Height):		2 tier: 85 mm x 309 mm x 136 mm 3 tier: 85 mm x 394 mm x 136 mm	
Housing:		PC/ABS, grey	
Lens:		PC, transparent	
Fixing:		Wall mounting, Tube mounting (accessory)	
Cable entry:		Cable diameter max. 13 mm	
Connection:		Screw terminal 0.5 - 1.5 mm²	
Installation position:		Vertical	
Tone type:		Continuous tone	
Duty cycle:		100 %	
Voltage:		24 V DC	115-230 V AC
Current Consumption	LED	60 mA (red/yellow)	30 mA per tier at 230 V/50 Hz
	Siren	20 mA	30 mA at 230 V/50 Hz
red/green		**494 060 55**	**494 060 68**
red/yellow/green		**494 080 55**	**494 080 68**

TECHNICAL DIAGRAM:



494

Signalization index

LED Permanent Light	6
Continuous tone	4

2 tier 380 g

3 tier 410 g

IP65/ IP69k

+50°C -30°C

90 dB

Monitored / Monitorable Beacons for safety applications – 806/826/829 families

Size comparison Mini/Midi/Maxi


Signalisation index	
Optical	
LED Permanent Light	4-5
Permanent Light (bulb)	4

Your benefits

For applications where safety is an issue, we recommend WERMA's monitored beacons. These beacons are certified by the TÜV Technical Inspection Agency and can be integrated into the safety assessment of your machinery/plant equipment in accordance with EN 13849-1 and EN 62061.

806 monitorable LED beacons:

- TÜV certified LED light that enables currentmonitoring
- Approved for muting applications in accordance with IEC 61496-1 and laser applications as per EN 60825-1

829 monitored LED beacons:

- Built-in monitoring electronics with two potential-free outputs; the light thus achieves PL e as per EN 13849-1 and safety category 4
- Approval confirmed by TÜV certificate
- Maintenance-free LED technology

826 monitored beacons:

- Built-in monitoring electronics with two potential-free outputs; the light thus achieves PL e as per EN 13849-1 and safety category 4
- Approval confirmed with a TÜV certificate

Typical applications

Signalling of faults in applications where safety is an issue

- on machinery and plant equipment
- in building service industry

Installation options

- Base mounting
- Bracket mounting with accessories
- Wire guard accessory to protect against mechanical damage

Features

- Further safety-related products are available – or request

Monitorable LED Permanent Beacon

Bracket (accessory)

Accessories

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (Ø x Height):	70 mm x 97 mm
Housing:	Terminal element: PA-GF, high impact Cap: PC
Lens:	PC, transparent
Fixing:	Base mounting, Bracket mounting
Cable entry:	Cable diameter max. 14 mm
Connection:	CAGE CLAMP® technology max. 2.5 mm²
Duty cycle:	100 %
Current consumption following failure of 3 of the 6 strips:	< 5 mA
Life duration:	Up to 100,000 hrs
Voltage:	24 V DC
Current consumption:	60 mA
yellow	**806 350 55**
clear	**806 450 55**

ACCESSORIES:

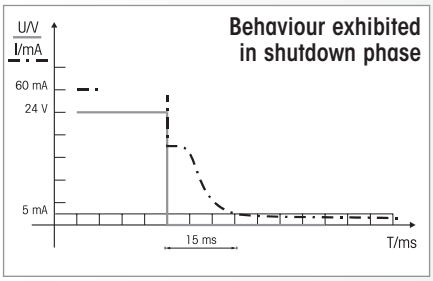
Bracket, including cable gland	**960 000 02**
Bracket for 1-sided mounting	**975 840 85**

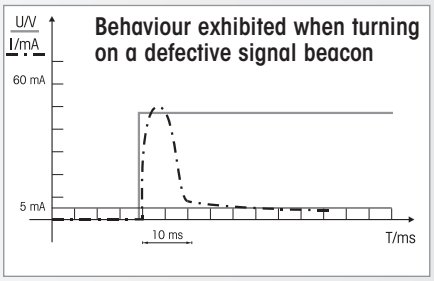
ADDITIONAL INFORMATION:

What does Muting mean?

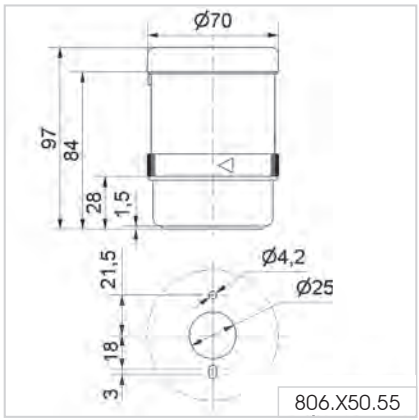
Muting is the temporary automatic overriding of a safety protection device by means of a control system within the normal operating cycle of a machine. This bridging of the safety protection must be visually displayed in order to prevent staff mistakenly entering a dangerous area.

It is therefore necessary that the signal beacon in such applications can be triggered by failsafe technology and the bulb function can be monitored.
The standard colour for muting signalisation is clear; yellow is however also permitted.





TECHNICAL DIAGRAM:



Signalisation index

LED Permanent Light 4

Monitored LED Permanent Beacon

Monitored Permanent Beacon with long life, maintenance-free LED technology

Bracket (accessory)

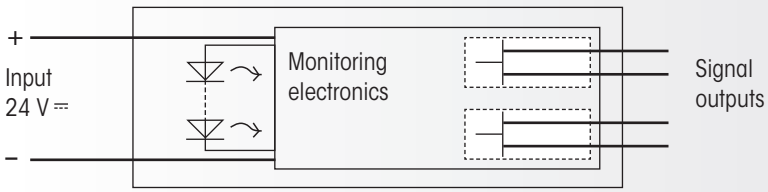
TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (Ø x Height):	98 mm x 137 mm
Housing:	PC/ABS-Blend
Lens:	PC, transparent
Fixing:	Base, bracket and tube mounting Base 975 840 90 must be ordered twice for tube mounting - once as socket for beacon and once as base
Cable entry:	Cable diameter 5-7 mm
Connection:	Screw terminal with wire protection 0.5-1.5 mm²
Installation position:	Vertical
Cable outlet:	Downwards
Duty cycle:	100 %
Rated voltage:	24 V DC
Input power 24 V DC:	C. 3.5 W
Output current capability:	30 V DC / 100 mA
On state resistance of an output:	Max. 25 Ω
Atmospheric humidity:	≤ 95 % without moisture condensation
Response time,	
normal operation and with LED failure:	1 ms to 5 ms
in fault cases with safety release:	< 1 s (with short-circuit current ≥ 1 A)
Certification:	EN ISO 13849-1:2008 category 4, Peformance Level "e" EN ISO 13849-2:2008 validation
Life duration:	Up to 50,000 hrs
Voltage:	24 V DC
Current consumption:	≤ 145 mA
red	**829 170 55**
yellow	**829 370 55**
clear	**829 470 55**

ACCESSORIES:

Bracket	**975 826 05**

ADDITIONAL INFORMATION:

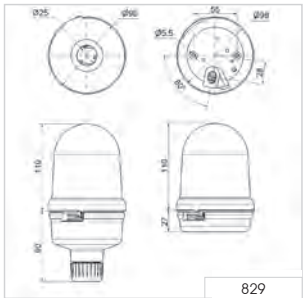


Function

The device is equipped with monitoring electronics which signal the current flow of the beacon back to two electrically isolated, potential-free semiconductor outputs A and B (outputs closed).

If the beacon has not been actuated, both outputs are open. In case of a fault at least one output is opened.

TECHNICAL DIAGRAM:



Signalisation index

LED Permanent Light	5

Monitored Permanent Beacon

Bracket (accessory)

Tube with base (accessory)

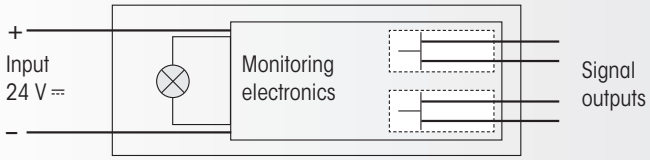
TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (Ø x Height):	98 mm x 137 mm
Housing:	PC/ABS-Blend
Lens:	PC, transparent
Fixing:	Base, bracket and tube mounting Base 975 840 90 must be ordered twice for base mounting - once as socket for beacon and once as base
Cable entry:	Cable diameter 5-7 mm
Connection:	Screw terminal 0.5 - 1.5 mm²
Rated voltage:	24 V DC ± 10 %
Input power 24 V AC/DC:	7 W
Bulb BA15d:	7 W / 24 V
Output current capability:	30 V DC / 100 mA
On state resistance of an output:	Max. 25 Ω
Fuse for 7 W bulb:	500 mA quick action (IEC 60127-3/3)
Atmospheric humidity:	≤ 95 % without moisture condensation
Response time,	
normal operation and with filament break:	1 ms bis 5 ms
in fault cases with safety release:	< 300 ms (with short-circuit current ≥ 4 A)
Certification:	EN ISO 13849-1:2008 category 4, Peformance Level „e" EN ISO 13849-2:2008 validation

Bulb included in assembly.

Voltage:	24 V DC
red	**826 110 55**
yellow	**826 310 55**
clear	**826 410 55**

ADDITIONAL INFORMATION:



Function

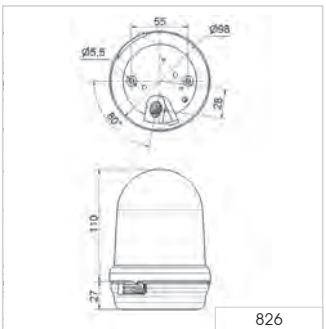
The device is equipped with a lamp monitor which signals the current flow of the incandescent lamp back to two electrically isolated, potential-free semiconductor outputs A and B (outputs closed). If the lamp has not been actuated, both outputs are open. In case of a fault and/or a lamp failure at least one output is opened.

Depending on the safety category, one or two outputs are to be used for a reliable lamp evaluation. In case of an incandescent filament short-circuit in the lamp, the integrated fuse is tripped. It must be replaced by a new fuse in accordance with the specification after the lamp has been replaced by a lamp of equal wattage.

ACCESSORIES:

Bulb BA15d, 7 W	**955 015 35**

TECHNICAL DIAGRAM:



Signalisation index

Permanent Light (bulb)	4

Ex Signal Beacons

Size comparison Ex-Signalleuchten


Signalisation index	
Ex Midi	**Optical**
LED Permanent Light	4
LED Rotating Light	6
LED Flashing Light	6
LED EVS Light	8
Xenon Flashing Light	7
Rotating Mirror/Rotating Light	7
Ex Maxi	
LED Permanent Light	6
LED Rotating Light	7
Xenon Flashing Light	9
Rotating Mirror/Rotating Light	9

Your benefits

Ex rated beacons from WERMA are designed for use in both gas and dust atmospheres that are potentially explosive.

- Their use in the highest explosion group IIC and IIIC has been tested, which means that they are suitable for all explosion groups in the relevant area
- Easy, customer-friendly connection thanks to "e" connection area
- Various light effects, also with LED technology, for all conceivable application types

Typical applications

Signalling faults and relaying alarms

- in potentially explosive atmospheres resulting from gases and liquids (in the chemical industry, filling lines for flammable liquids, petrochemical industry etc.)
- in potentially explosive atmospheres resulting from dust (in the plastics and metalwork industry, food industry, grain mills and the wood processing industry)

Installation options

- Base mounting
- Bracket mounting (accessory)
- Tube mounting (accessory)

Features

728 / 729 / 785:

- Extended Ex temperature range of -50 °C to 50°C is possible with accessories

728 / 729 / 785:

- Seawater resistant aluminium housing

Ex LED Permanent Beacon Midi

The maintenance-free LEDs have a life duration of up to 50,000 hours

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

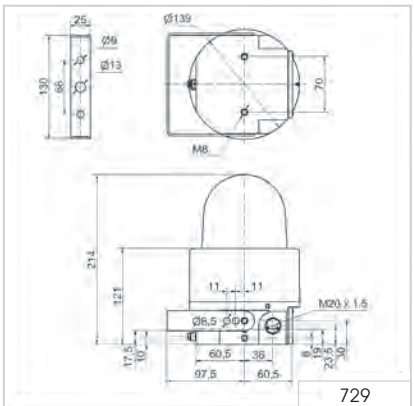
Dimensions (Ø x Height):	139 x 214 mm	
Housing:	Black coated aluminium, salt water resistant	
Lens:	Reinforced borosilicate glass	
Connection:	CAGE CLAMP® max. 2.5 mm²	
Fixing:	Wall, base and ceiling mounting Integrated mounting bracket, VA steel	
Cable entry:	Cable gland M20 x 1.5 mm Cable diameter 6-13 mm	
Life duration:	Up to 50,000 hrs	
Assembly:	Ex screw plug M20 x 1.5 mm Ex cable gland M20 x 1.5 mm	
Voltage:	24 V DC	115 V/230 V AC
Current consumption:	130 mA	30 mA at 230 V AC
Explosion protection:	Ⓔx II 2G Ex d e IIC T6 Gb Ⓔx II 2D Ex tb IIIC T80°C Db	
Approval:	BVS 11 ATEX E 107 IECEx_BVS_11.0082	
red	**729 100 55**	**729 100 68**
yellow	**729 300 55**	**729 300 68**

Additional protection with the robust wire guard (accessory)

ACCESSORIES:

Ex wire guard, VA steel, stainless	**975 729 03**
Ex cable gland M20 x 1.5 mm, metal To expand the temperature range from -40 °C to -50 °C	**975 729 04**
Ex screw plug M20 x 1.5 mm	**975 729 02**
Ex cable gland M20 x 1.5 mm For connecting to an additional beacon	**975 729 01**

TECHNICAL DIAGRAM:



Signalisation index

LED Permanent Light	4

CE Ⓔx IECEx | 2 G Zone 1 + 2 | 2 D Zone 21 + 22 | 2,9 kg | IP66 | +50°C -40°C

WERMA

Ex LED Rotating Beacon Midi

Intense rotating signal effect with low power consumption

Innovative solution: The universal mounting bracket (included in assembly)

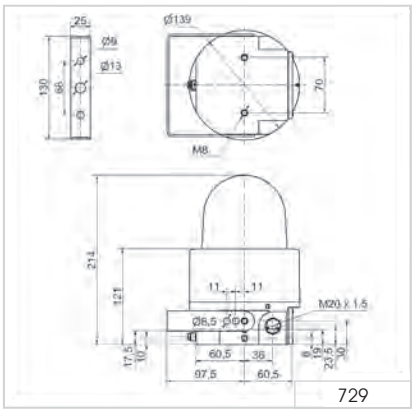
TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (Ø x Height):	139 x 214 mm	
Housing:	Black coated aluminium, salt water resistant	
Lens:	Reinforced borosilicate glass	
Connection:	CAGE CLAMP® max. 2.5 mm²	
Fixing:	Wall, base and ceiling mounting Integrated mounting bracket, VA steel	
Cable entry:	Cable gland M20 x 1.5 mm Cable diameter 6-13 mm	
Mirror rotation rate:	C. 180 r.p.m.	
Duty cycle:	100 %	
Life duration:	Up to 50,000 hrs	
Assembly:	Ex screw plug M20 x 1.5 mm Ex cable gland M20 x 1.5 mm	
Voltage:	24 V DC	115 V/230 V AC
Current consumption:	< 170 m A	150 mA at 230 V AC
Explosion protection:	Ⓔx II 2G Ex d e IIC T6 Gb Ⓔx II 2D Ex tb IIIC T80°C Db	Ⓔx II 2G Ex d e IIC T5 Gb Ⓔx II 2D Ex tb IIIC T95°C Db
Approval:	BVS 11 ATEX E 107 IECEx_BVS_11.0082	BVS 11 ATEX E 107 IECEx_BVS_11.0082
red	**729 120 55**	**729 120 68**
yellow	**729 320 55**	**729 320 68**

ACCESSORIES:

Ex wire guard, VA steel, stainless	**975 729 03**
Ex cable gland M20 x 1.5 mm, metal To expand the temperature range from -40 °C to -50 °C	**975 729 04**
Ex screw plug M20 x 1.5 mm	**975 729 02**
Ex cable gland M20 x 1.5 mm For connecting to an additional beacon	**975 729 01**

TECHNICAL DIAGRAM:



Signalisation index

LED Rotating Light	6

CE Ⓔx IECEx | 2 G Zone 1 + 2 | 2 D Zone 21 + 22 | 2,9 kg | IP66 | +50°C -40°C

729 Ex LED Double Flash Beacon Midi

Intense double flash with low power consumption

Additional protection with the robust wire guard (accessory)

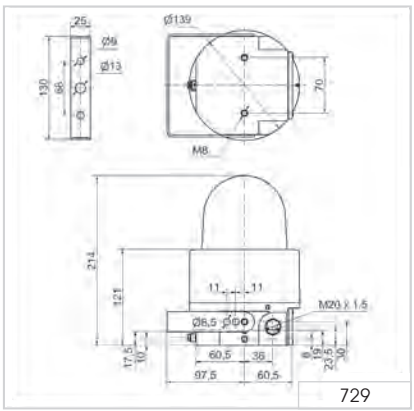
TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (Ø x Height):	139 x 214 mm	
Housing:	Black coated aluminium, salt water resistant	
Lens:	Reinforced borosilicate glass	
Connection:	CAGE CLAMP® max. 2.5 mm²	
Fixing:	Wall, base and ceiling mounting Integrated mounting bracket, VA steel	
Cable entry:	Cable gland M20 x 1.5 mm Cable diameter 6-13 mm	
Assembly:	Ex screw plug M20 x 1.5 mm Ex cable gland M20 x 1.5 mm	
Voltage:	24 V DC	115 V/230 V AC
Current consumption:	< 140 m A	140 mA at 230 V AC
Explosion protection:	Ⓔx II 2G Ex d e IIC T6 Gb Ⓔx II 2D Ex tb IIIC T80°C Db	Ⓔx II 2G Ex d e IIC T5 Gb Ⓔx II 2D Ex tb IIIC T95°C Db
Approval:	BVS 11 ATEX E 107 IECEx_BVS_11.0082	BVS 11 ATEX E 107 IECEx_BVS_11.0082
red	**729 150 55**	**729 150 68**
yellow	**729 350 55**	**729 350 68**

ACCESSORIES:

Ex wire guard, VA steel, stainless	**975 729 03**
Ex cable gland M20 x 1.5 mm, metal To expand the temperature range from -40 °C to -50 °C	**975 729 04**
Ex screw plug M20 x 1.5 mm	**975 729 02**
Ex cable gland M20 x 1.5 mm For connecting to an additional beacon	**975 729 01**

TECHNICAL DIAGRAM:



Signalisation index

LED Double Flash	6

CE Ⓔx IECEx | 2 G Zone 1 + 2 | 2 D Zone 21 + 22 | 2,9 kg | IP66 | +50°C -40°C

WERMA

Ex LED EVS Beacon Midi

The flickering light of the Ex LED EVS beacon generates an optimal awareness level

Random light signals prevent an acclimatisation effect occurring

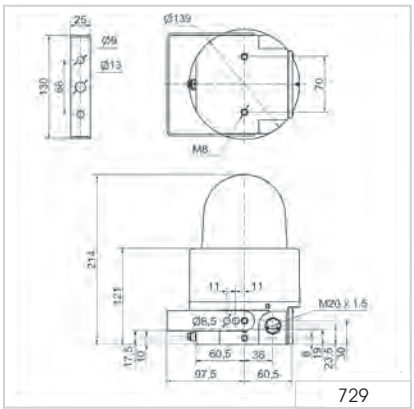
TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (Ø x Height):	139 x 214 mm	
Housing:	Black coated aluminium, salt water resistant	
Lens:	Reinforced borosilicate glass	
Connection:	CAGE CLAMP® max. 2.5 mm²	
Fixing:	Wall, base and ceiling mounting Integrated mounting bracket, VA steel	
Cable entry:	Cable gland M20 x 1.5 mm Cable diameter 6-13 mm	
Life duration:	Up to 50,000 hrs	
Assembly:	Ex screw plug M20 x 1.5 mm Ex cable gland M20 x 1.5 mm	
Voltage:	24 V DC	115 V/230 V AC
Current consumption:	< 240 m A	140 mA at 230 V AC
Explosion protection:	Ex II 2G Ex d e IIC T6 Gb Ex II 2D Ex tb IIIC T80°C Db	Ex II 2G Ex d e IIC T5 Gb Ex II 2D Ex tb IIIC T95°C Db
Approval:	BVS 11 ATEX E 107 IECEx_BVS_11.0082	BVS 11 ATEX E 107 IECEx_BVS_11.0082
red	**729 160 55**	**729 160 68**
yellow	**729 360 55**	**729 360 68**

ACCESSORIES:

Ex wire guard, VA steel, stainless	**975 729 03**
Ex cable gland M20 x 1.5 mm, metal To expand the temperature range from -40 °C to -50 °C	**975 729 04**
Ex screw plug M20 x 1.5 mm	**975 729 02**
Ex cable gland M20 x 1.5 mm For connecting to an additional beacon	**975 729 01**

TECHNICAL DIAGRAM:



Signalisation index

LED EVS Light	8

CE Ex IECEx | 2 G Zone 1 + 2 | 2 D Zone 21 + 22 | 2,9 kg | IP66 | +50°C -40°C

Ex Signal Beacons

Ex Xenon Flashing Beacon Midi

Ex Flashing Beacon for use in gas and dust explosion-endangered areas

Innovative solution: The universal mounting bracket (included in assembly)

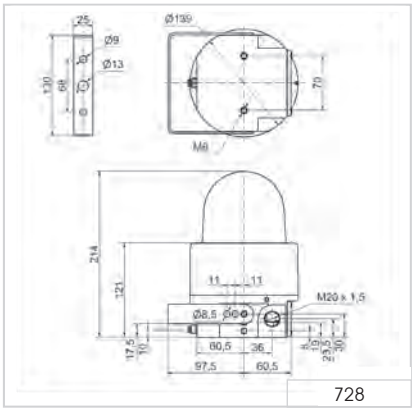
TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (Ø x Height):	139 x 214 mm	
Housing:	Black coated aluminium, salt water resistant	
Lens:	Reinforced borosilicate glass	
Connection:	CAGE CLAMP® max. 2.5 mm²	
Fixing:	Wall, base and ceiling mounting Integrated mounting bracket, VA steel	
Cable entry:	Cable gland M20 x 1.5 mm Cable diameter 6-13 mm	
Flash energy:	C. 5 Ws	
Flash frequency::	C. 1 Hz	
Life duration:	4 x 10^6 flashes	
Assembly:	Ex screw plug M20 x 1.5 mm Ex cable gland M20 x 1.5 mm	
Voltage:	24 V DC	115 V/230 V AC
Current consumption:	300 m A	150 mA
Explosion protection:	Ⓔx II 2G Ex d e IIC T6 Gb Ⓔx II 2D Ex tb IIIC T80°C Db	Ⓔx II 2G Ex d e IIC T5 Gb Ⓔx II 2D Ex tb IIIC T95°C Db
Approval:	BVS 11 ATEX E 107 IECEx_BVS_11.0082	BVS 11 ATEX E 107 IECEx_BVS_11.0082
red	**728 100 55**	**728 100 68**
yellow	**728 300 55**	**728 300 68**

ACCESSORIES:

Ex wire guard, VA steel, stainless	**975 729 03**
Ex cable gland M20 x 1.5 mm, metal To expand the temperature range from -40 °C to -50 °C	**975 729 04**
Ex screw plug M20 x 1.5 mm	**975 729 02**
Ex cable gland M20 x 1.5 mm For connecting to an additional beacon	**975 729 01**

TECHNICAL DIAGRAM:



Signalisation index

Xenon Flashing Light 7

Ex Rotating Mirror Beacon Midi

Long life duration thanks to low wear wheel and disc drive

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (Ø x Height):	139 x 214 mm	
Housing:	Black coated aluminium, salt water resistant	
Lens:	Reinforced borosilicate glass	
Connection:	CAGE CLAMP® max. 2.5 mm²	
Fixing:	Wall, base and ceiling mounting Integrated mounting bracket, VA steel	
Cable entry:	Cable gland M20 x 1.5 mm Cable diameter 6-13 mm	
Drive:	Wheel and disc drive, motor in centre of gravity	
Mirror rotation rate:	180 r.p.m.	
Service life of drive:	> 5,000 hrs	
Assembly:	Ex screw plug M20 x 1.5 mm Ex cable gland M20 x 1.5 mm	
Voltage:	24 V AC/DC	115 V/230 V AC/DC
Current consumption:	1,0 A	130 mA bei 230 V AC/350 mA bei 115 V AC
Explosion protection:	Ⓔx II 2G Ex d e IIC T5 Gb Ⓔx II 2D Ex tb IIIC T95°C Db	
Approval:	BVS 11 ATEX E 107	
red	**785 100 75**	**785 100 70**
yellow	**785 300 75**	**785 300 70**

Additional protection with the robust wire guard (accessory)

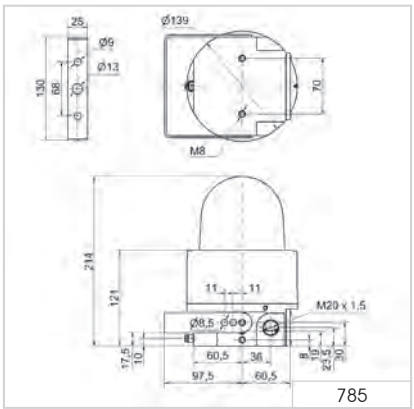
ACCESSORIES:

Ex wire guard, VA steel, stainless	**975 729 03**
Ex cable gland M20 x 1.5 mm, metal To expand the temperature range from -40 °C to -50 °C	**975 729 04**
Ex screw plug M20 x 1.5 mm	**975 729 02**
Ex cable gland M20 x 1.5 mm For connecting to an additional beacon	**975 729 01**

SPARE PARTS:

Halogen bulb 20 W/24 V for 24 V AC/DC	**955 885 25**
Halogen bulb 20 W/12 V for 115 V/230 V AC/DC	**955 885 24**

TECHNICAL DIAGRAM:



Signalisation index

Rotating Mirror	7

CE Ⓔx IECEx | 2 G Zone 1 + 2 | 2 D Zone 21 + 22 | 2,9 kg | IP66 | +50°C -30°C

782 Ex LED Permanent Beacon Maxi

Wire guard (accessory)

Clamp for tube mounting (accessory)

Mounting plate (accessory)

Bracket (accessory)

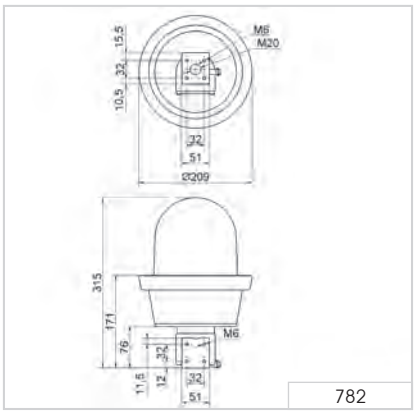
TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (Ø x Height):	209 mm x 315 mm	
Housing:	Aluminium	
Lens:	Reinforced borosilicate glass	
Mounting Plate:	VA stainless steel	
Connection:	Screw terminal max. 2.5 mm²	
Fixing:	Base mounting, bracket mounting (accessory), tube mounting (accessory)	
Cable entry:	Cable gland M20 x 1.5 mm Cable diameter 5-13 mm	
Connection area:	Increased Safety "e"	
Installation position:	As required	
Duty cycle:	100 %	
Life duration:	Up to 50,000 hrs	
Voltage:	24 V DC	115-230 V AC
Current consumption:	200 m A	25-60 mA
Explosion protection:	Ⓔx II 2G Ex d e IIC T6 Gb Ⓔx II 2D Ex tb IIIC T80°C Db	
Approval:	PTB 06 ATEX 1039	
red	**782 100 55**	**782 100 68**
yellow	**782 300 55**	**782 300 68**

ACCESSORIES:

Wire guard	**975 783 01**
Mounting plate	**975 783 02**
Clamp for tube mounting 1¼"	**975 783 03**
Clamp for tube mounting 1½"	**975 783 04**
Clamp for tube mounting 2"	**975 783 05**
Bracket	**975 783 06**

TECHNICAL DIAGRAM:



782

Signalisation index

LED Permanent Light 6

CE Ⓔx | 2 G Zone 1 + 2 | 2 D Zone 21 + 22 | 4,4 kg | IP66 | +50°C -20°C

782 Ex LED Rotating Beacon Maxi

Ex LED Rotating Beacon
with wire guard (accessory)

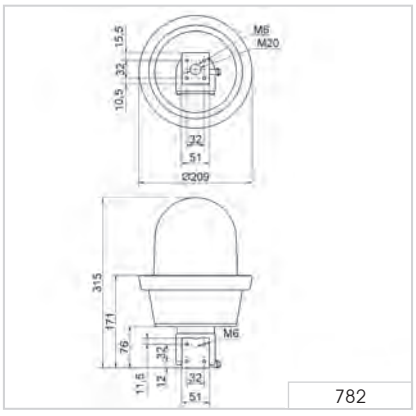
TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (Ø x Height):	209 mm x 315 mm	
Housing:	Aluminium	
Lens:	Reinforced borosilicate glass	
Mounting Plate:	VA stainless steel	
Connection:	Screw terminal max. 2.5 mm²	
Fixing:	Base mounting, bracket mounting (accessory), tube mounting (accessory)	
Cable entry:	Cable gland M20 x 1.5 mm Cable diameter 5-13 mm	
Connection area:	Increased Safety "e"	
Installation position:	As required	
Rotation rate:	C. 180 r.p.m.	
Duty cycle:	100 %	
Life duration:	Up to 50,000 hrs	
Voltage:	24 V DC	115-230 V AC
Current consumption:	150 m A	70-180 mA
Explosion protection:	Ex II 2G Ex d e IIC T6 Gb Ex II 2D Ex tb IIIC 80°C Db	
Approval:	PTB 06 ATEX 1039	
red	**782 120 55**	**782 120 68**
yellow	**782 320 55**	**782 320 68**

ACCESSORIES:

Wire guard	**975 783 01**
Mounting plate	**975 783 02**
Clamp for tube mounting 1¼"	**975 783 03**
Clamp for tube mounting 1½"	**975 783 04**
Clamp for tube mounting 2"	**975 783 05**
Bracket	**975 783 06**

TECHNICAL DIAGRAM:



Signalisation index

LED Rotating Light 9

2 G Zone 1 + 2 | 2 D Zone 21 + 22 | 4,4 kg | IP66 | +50°C -20°C

Ex Xenon Double Flash Beacon Maxi

Wire guard (accessory)

Clamp for tube mounting (accessory)

Mounting plate (accessory)

Bracket (accessory)

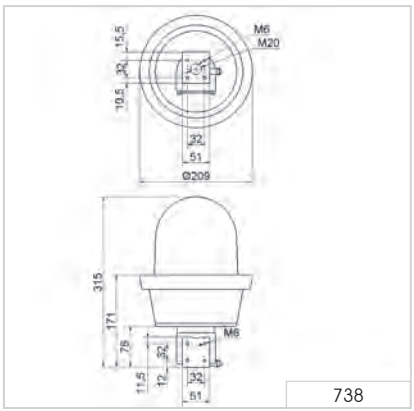
TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (Ø x Height):	209 mm x 315 mm		
Housing:	Aluminium		
Lens:	Reinforced borosilicate glass		
Mounting Plate:	VA stainless steel		
Connection:	Screw terminal max. 2.5 mm²		
Fixing:	Base mounting, bracket mounting (accessory), tube mounting (accessory)		
Cable entry:	Cable gland M20 x 1.5 mm Cable diameter 5-13 mm		
Connection area:	Increased Safety "e"		
Installation position:	As required		
Flash energy:	C. 15 Ws		
Flash frequency:	C. 1 Hz		
Life duration:	4 x 10^6 flashes		
Voltage:	24 V DC	115 V AC	230 V AC
Current consumption:	700 m A	300 mA	200 mA
Surface Temp. (dust):	85 °C	90 °C	85 °C
Explosion protection:	Ⓔx II 2G Ex d e IIC T5 Gb Ⓔx II 2D Ex tb IIIC 85°C-90°C Db (depending on the voltage)		
Approval:	PTB 06 ATEX 1039		
red	**738 100 55**	**738 100 67**	**738 100 68**
yellow	**738 300 55**	**738 300 67**	**738 300 68**

ACCESSORIES:

Wire guard	**975 783 01**
Mounting plate	**975 783 02**
Clamp for tube mounting 1¼"	**975 783 03**
Clamp for tube mounting 1½"	**975 783 04**
Clamp for tube mounting 2"	**975 783 05**
Bracket	**975 783 06**

TECHNICAL DIAGRAM:



Signalisation index

Xenon Flashing Light 9

CE Ⓔx | 2 G Zone 1 + 2 | 2 D Zone 21 + 22 | 4,4 kg | IP66 | +40°C -20°C | 15 Ws

WERMA

Ex Rotating Mirror Beacon Maxi

Wire guard (accessory)

Clamp for tube mounting (accessory)

Mounting plate (accessory)

Bracket (accessory)

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (Ø x Height):	209 mm x 315 mm				
Housing:	Aluminium				
Lens:	Reinforced borosilicate glass				
Mounting Plate:	VA stainless steel				
Connection:	Screw terminal max. 2.5 mm²				
Fixing:	Base mounting, bracket mounting (accessory), tube mounting (accessory)				
Cable entry:	Cable gland M20 x 1.5 mm Cable diameter 5-13 mm				
Connection area:	Increased Safety "e"				
Drive:	Wheel and disc drive, motor in centre of gravity				
Installation position:	As required				
Mirror rotation rate::	180 r.p.m.				
Service life of drive:	> 5,000 hrs				
Duty cycle:	100 % ED				
Accessory:	Halogen bulb				
Voltage:	24 V AC/DC 20 W/24 V	24 V AC/DC 35 W/24 V	115 V AC/DC 35 W/12 V	230 V AC 20 W/12 V	230 V AC 35 W/12 V
Current consumption:	900 mA	1,6 A	350 mA	110 mA	170 mA
Temperature Class (gas):	T4	T3	T3	T4	T3
Surface Temperature (dust):	105°C	150°C	150°C	105°C	150°C
Explosion protection:	Ⓔx II 2G Ex d e IIC T3-T4 Gb (depending on version) Ⓔx II 2D Ex tb IIIC 105 °C - 150 °C Db (depending on version)				
Approval:	PTB 06 ATEX 1039				
red	**783 110 75**	**783 100 75**	**783 100 77**	**783 110 68**	**783 100 68**
yellow	**783 310 75**	**783 300 75**	**783 300 77**	**783 310 68**	**783 300 68**

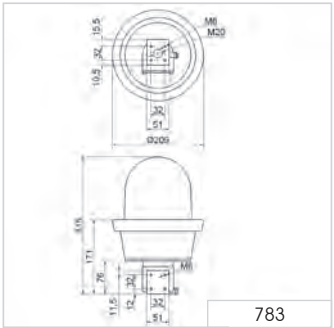
ACCESSORIES:

Wire guard	**975 783 01**
Mounting plate	**975 783 02**
Clamp for tube mounting 1¼"	**975 783 03**
Clamp for tube mounting 1½"	**975 783 04**
Clamp for tube mounting 2"	**975 783 05**
Bracket	**975 783 06**

SPARE PARTS:

Halogen bulb 20 W/24 V for 24 V AC/DC	**955 885 25**
Halogen bulb 20 W/12 V for 230 V AC	**955 885 24**
Halogen bulb 35 W/24 V for 24 V AC/DC	**955 883 35**
Halogen bulb 35 W/12 V for 115 V AC, 230 V AC	**955 883 34**

TECHNICAL DIAGRAM:



CE Ⓔx | 2 G Zone 1 + 2 | 2 D Zone 21 + 22 | 4,6 kg | IP66 | +40°C -20°C

Signalisation index

Rotating Light 9

784 Ex Rotating Signal Beacon Maxi

Wire guard (accessory)

Clamp for tube mounting (accessory)

Mounting plate (accessory)

Bracket (accessory)

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (Ø x Height):	209 mm x 315 mm		
Housing:	Aluminium		
Lens:	Reinforced borosilicate glass		
Mounting Plate:	VA stainless steel		
Connection:	Screw terminal max. 2.5 mm²		
Fixing:	Base mounting, bracket mounting (accessory), tube mounting (accessory)		
Cable entry:	Cable gland M20 x 1.5 mm Cable diameter 5-13 mm		
Connection area:	Increased Safety "e"		
Drive:	Wheel and disc drive, motor in centre of gravity		
Installation position:	As required		
Halogen bulb:	G 6.35 35 W 12 V/24 V		
Lens rotation rate:	60 r.p.m.		
Service life of drive:	> 5,000 hrs		
Duty cycle:	100 % ED		
Accessory:	Halogen bulb		
Voltage:	24 V AC/DC	115 V AC/DC	230 V AC
Current consumption:	1,6 A	350 mA	170 mA
Explosion protection:	Ⓔx II 2G Ex d e IIC T4 Gb Ⓔx II 2D Ex tb IIIC 105°C Db		
Approval:	PTB 06 ATEX 1039		
red	**784 100 75**	**784 100 77**	**784 100 68**
yellow	**784 300 75**	**784 300 77**	**784 300 68**

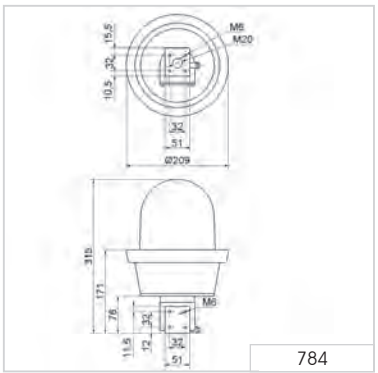
ACCESSORIES:

Wire guard	**975 783 01**
Mounting plate	**975 783 02**
Clamp for tube mounting 1¼"	**975 783 03**
Clamp for tube mounting 1½"	**975 783 04**
Clamp for tube mounting 2"	**975 783 05**
Bracket	**975 783 06**

SPARE PARTS:

Halogen bulb 35 W/24 V for 24 V AC/DC	**955 883 35**
Halogen bulb 35 W/12 V for 115 V AC, 230 V AC	**955 883 34**

TECHNICAL DIAGRAM:



Signalisation index

Rotating Light 9

CE Ⓔx | 2 G Zone 1 + 2 | 2 D Zone 21 + 22 | 4,6 kg | IP66 | +40°C -20°C

Notes


WERMA
SIGNALTECHNIK
584 000 75
24V≂ IP65 ta50°C

Horns & Sirens

Overview Buzzer, Sirens, Horns and Sounders

Audible signals are everywhere!

Audible signals warn, protect and guide us in the modern industrial world. They function where caution, prudence and clarity are imperative, indicate emergencies and demand direct action. They are globally understood, irrespective of language, written or spoken.

Audible signals are deployed where an optical signal is insufficient or inappropriate. The basic signal is provided by one or more tones or a sequence of tones, and is to raise awareness and alert to a specific danger.

Overview Buzzer, Sirens, Horns and Sounders				
Product type		**Installation**	**Free-standing**	**Free-standing**
Category	**Product range**	**Installation Sirens and Buzzer**	**Mini Buzzer, Sirens and Horns**	**Midi Horns and Sirens**
Dimensions (Ø x Height)* Dimensions (L x H x W)		starting on page 210	starting on page 218	starting on page 226
Voltage	12 V	●	●	●
	24 V	●	●	●
	30 V			
	48 V	●		●
	115 V	●	●	●
	230 V	●	●	●
Audible	Continuous tone	●	●	
	Pulse tone	●	●	
	Multi-tone sounder	●		●
	Horn		●	●
	Alternating tone			●
	Vocal alarm			
	Alarm bell			
Protection rating		IP30-65	IP33-65	IP33-65
Signalisatin index**		1-5	4-5	6-7
Page		Page 210	Page 218	Page 226

* Technical diagrams can be found on the product page

** Signalisation index - see page 13 + 21

				
Free-standing	**Free-standing**	**Free-standing**	**Free-standing**	**Free-standing**
Design Multi-Tone Sounder	**Vocal alarm**	**Heavy Duty Multi-Tone Sounder**	**Alarm Bell**	**Ex Horns and Sirens**
starting on page 235	starting on page 240	starting on page 242	starting on page 249	starting on page 251
●		●		
●	●	●	●	●
				●
●		●		●
●		●	●	●
				●
●		●		●
				●
	●			
			●	
IP65	IP65	bis zu IP67	IP66	IP65
8	6	6-10	5	4-6
Page 235	Page 240	Page 242	Page 249	Page 251

Installation Buzzers and Sounders

Signalisation index				
Audible	**107**	**109**	**110**	**111**
Continuous Tone	1	3		
Pulse Tone	2	4		3
Multi-Tone Sounder			5	4
Audible	**338**	**382**	**114**	**118 + 119**
Continuous Tone	1	4	3	4
Pulse Tone	1			4

Your benefits

WERMA Installation Buzzers and Sounders have been specifically designed for easy installation in control panels.

- Quick and easy installation
- Tamper-proof when installed
- Minimal protrusion from panel installations where space is tight (111)

Typical applications

Signalling faults or status messages

- in switch panels
- in control cabinets

Installation options

- Installation mounting

Features

- Proven piezo technology (except 338, 382)

107, 109, 110, 111

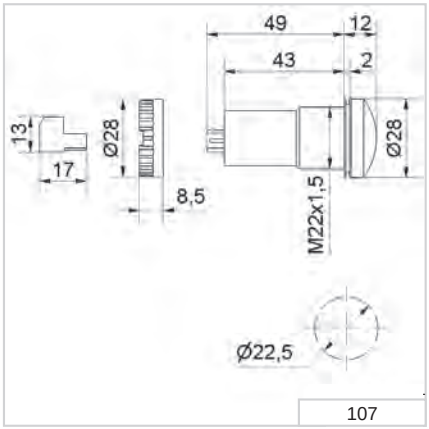
- High IP65 protection rating for outdoor applications
- Easy to connect using a plug-in connection
- Up to 8 tones for signalling different statuses

Electronic Installation Buzzer

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (Ø x Height):	28 mm x 12 mm (Protrusion from panel)			
Housing:	PA fibreglass, high-impact			
Tone frequency:	Ca. 2.400 Hz / ca. 3.200 Hz (12 V)			
Tone type:	Continuous tone or pulse tone with approx. 1 Hz			
Fixing:	Installation mounting for Ø 22,5 mm (M22)			
Connection:	Connector plug with screw terminal max. 1.5 mm²			
Life duration:	> 5,000 hrs			
Voltage:	12 V DC	24 V AC/DC	115 V AC/DC	230 V AC
Current consumption:	≤ 10 mA	≤ 8 mA	≤ 8 mA	≤ 8 mA
Continuous tone	**107 000 54**	**107 000 75**	**107 000 77**	**107 000 68**
Pulse tone	**107 010 54**	**107 010 75**	**107 010 77**	**107 010 68**

TECHNICAL DIAGRAM:



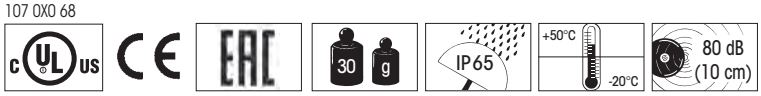
Simple connection by means of connector plug

High protection rating IP 65 for use in arduous conditions

Signalisation index

Continuous tone	1
Pulse tone	2

107 0X0 7X
107 0X0 68



Electronic Installation Buzzer

Surface housing (accessory)

Surface housing (triple) for
2 beacons and 1 audible element
(not included in assembly)

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

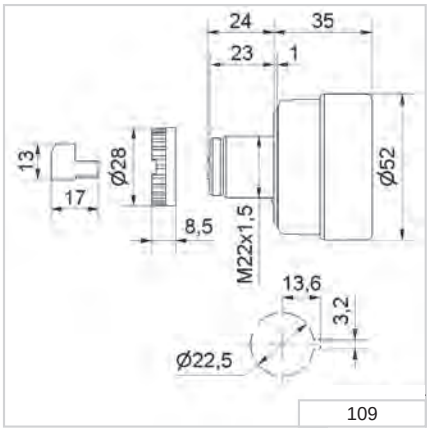
Dimensions (Ø x Height):	52 mm x 35 mm (Protrusion from panel)		
Housing:	PC/ABS-Blend; Cap: PC		
Tone frequency:	C. 2,100 Hz		
Tone type:	Continuous tone or pulse tone with approx. 1 Hz		
Fixing:	Installation mounting for Ø 22,5 mm (M22) with anti-twist device		
Connection:	Connector plug with screw terminal max. 1.5 mm²		
Life duration:	> 5,000 hrs		
Voltage:	24 V AC/DC	115 V AC/DC	230 V AC
Current consumption:	25 mA	25 mA	25 mA
Continuous tone	**109 000 75**	**109 000 77**	**109 000 68**
Pulse tone	**109 010 75**	**109 010 77**	**109 010 68**

ACCESSORIES:

Bracket with protective cap (IP54), only 24 V	**975 109 01** (see picture on page 244)
Single surface housing	**975 109 02**
Double surface housing	**975 109 03**
Triple surface housing	**975 109 04**

Assembly comprises of only the surface housing. Beacons 800-802
or 815-817 have to be ordered additionally.

TECHNICAL DIAGRAM:



Signalisation index

Continuous tone	3
Pulse tone	4

Electronic Installation Multi-Tone Sounder

Surface housing (accessory)

Bracket (accessory)

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (Ø x Height):	72 mm x 40 mm (Protrusion from panel)		
Housing:	PC/ABS-Blend; Cap: PC		
Sound output:	Max. 100 dB (sound output is adjustable on rear side when mounted)		
Fixing:	Installation mounting for Ø 22,5 mm (M22) with anti-twist device		
Connection:	Connector plug with screw terminal max. 1.5 mm²		
Life duration:	> 5,000 hrs		
Voltage:	24 V AC/DC	115 V AC	230 V AC
Current consumption:	80 mA	40 mA	40 mA
Order No.:	**110 000 75**	**110 000 67**	**110 000 68**

TONE TYPES AND FREQUENCIES:

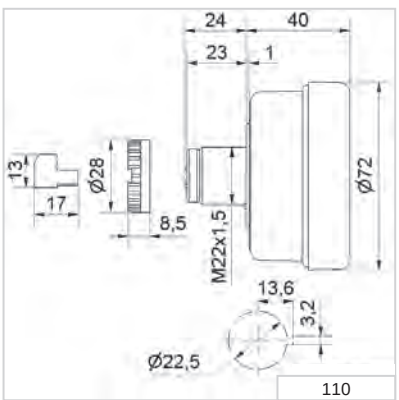
8 tones selectable on rear side of the housing

position 0	420 Hz	1.6 kHz	86 dB (A)
position 1	1 Hz	1.6 kHz	86 dB (A)
position 2	20 Hz	1.6 kHz	86 dB (A)
position 3		1.6 kHz	88 dB (A)
position 4	420 Hz	3.4 kHz	90 dB (A)
position 5	1 Hz	3.4 kHz	100 dB (A)
position 6	20 Hz	3.4 kHz	96 dB (A)
position 7		3.4 kHz	100 dB (A)

ACCESSORIES:

Bracket with protective cap (IP 54)	**975 109 01**
Surface housing IP 65 (single)	**975 109 02**
Surface housing IP 65 (double) for 1 installation beacon and 1 Installation siren	**975 109 03**
Surface housing IP 65 (triple) for 2 installation beacons and 1 Installation siren	**975 109 04**

TECHNICAL DIAGRAM:



Signalisation index

Multi-tone sounder: 5

IP65 | +50°C / -20°C | 100 dB | 8

111 Electronic Installation buzzer

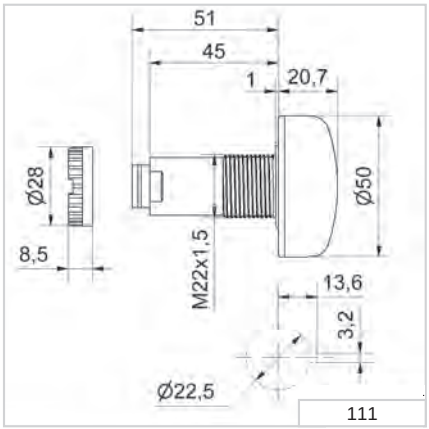
With its minimum level of protrusion the installation buzzer 111 is ideal for control panel applications

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (Ø x Height):	50 mm x 22 mm (Protrusion from panel)	
Housing:	PC/ABS-Blend, black; Cap: PC	
Tone frequency:	C. 2,8 Khz	
Tone type:	Continuous or pulse tone	
Fixing:	Installation mounting for Ø 22,5 mm (M22 x 1.5 mm)	
Connection:	Connector plug with screw terminal max. 1.5 mm²	
Life duration:	> 5,000 hrs	
Assembly:	Nut and seal included in assembly	
Voltage:	24 V DC	230 V AC
Current consumption:	20 mA	20 mA
Continuous tone	**111 000 55**	**111 000 68**

Simple installation with single hole mounting for M22

TECHNICAL DIAGRAM:



Signalisation index

Continuous tone	3
Pulse tone	4

CE 30 g IP65 +50°C -20°C 80 dB PLC

338 AC Installation Buzzer

338 373

338 323

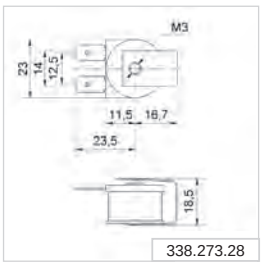
TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

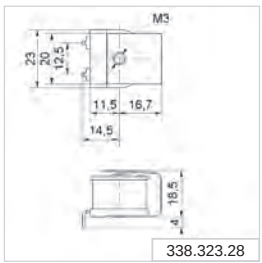
Dimensions (L x H x W):	23 mm x 18,5 mm x 40 mm (338 273)
Tone frequency:	PC/ABS-Blend, black; Deckel: PC
Mounting:	As required
Fixing:	M3 or M4 thread

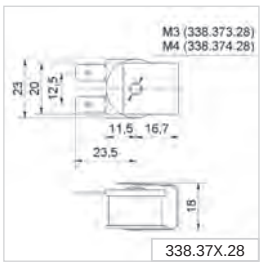
230 V AC, c. 75 dB, spades, fixing: M3	**338 273 28**
230 V AC, c. 75 dB, solder lugs for printed circuits, fixing: M3	**338 323 28**
230 V AC, c. 75 dB, spades, 6.3 x 0.8 mm, fixing: M3	**338 373 28**
230 V AC, c. 75 dB, spades, 6.3 x 0.8 mm, fixing: M4	**338 374 28**

Further voltages on request.

TECHNICAL DIAGRAMS:





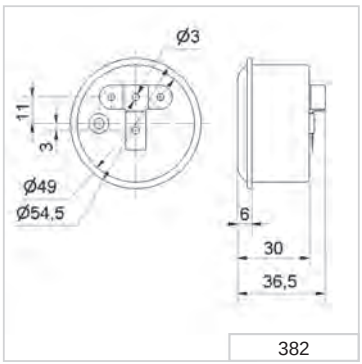


382 Installation Buzzer

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (Ø x Height):	54,5 mm x 36,5 mm	
Housing:	Steel, passivated	
Connection:	AC: 2 wires, 215 mm long; DC: 2 wires, 50 mm long The housing of the DC version is current-carrying	
Fixing:	M3 thread	
AC Version		
Voltage:	230 V AC	
Current consumption:	15 mA	
Order No.:	**382 013 68**	
DC Version		
Voltage:	6 V DC	24 V DC
Current consumption:	100 mA	70 mA
Order No.:	**382 013 53**	**382 013 55**

TECHNICAL DIAGRAM:



Signalisation index

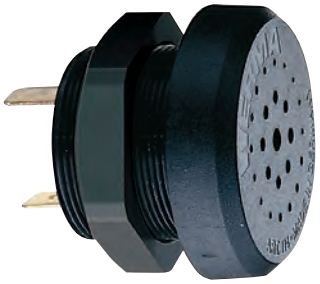
338

Continuous tone	1
Pulse tone	1

382

Continuous tone	4

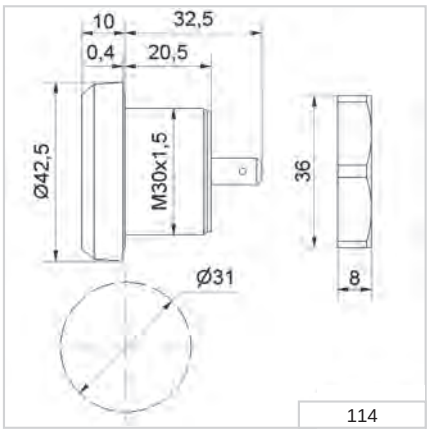
114 Electronic Installation Buzzer



TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (Ø x Height):	42,5 mm x 10 mm (Protrusion from panel)	
Housing:	PC/ABS-Blend; Nut: PA fibreglass, high-impact	
Connection:	Spades 6.3 x 0.8 mm, finger proof model according to BGV A2, when used with insulated spades	
Tone frequency:	C. 2.400 Hz	
Fixing:	Installation mounting for Ø 30,5 mm (M30)	
Voltage:	24 V DC (12-30 V)	230 V AC (110-240 V)
Current consumption:	20 mA	20 mA
Order No.:	**114 068 15**	**114 068 28**

TECHNICAL DIAGRAM:



Signalisation index

Continuous tone 3

118/119 Electronic Installation Buzzer

Cap

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (Ø x Height):	43 mm x 13 mm (Protrusion from panel)
Housing:	PC/ABS-Blend
Connection:	Spades 6.3 x 0.8 mm, finger proof model according to BGV A2, when used with insulated spades
Tone frequency:	C. 2.400 Hz
Tone type:	Type 118 Continuous tone Type 119 Continuous tone and pulse tone, c. 1 Hz, selectable via plug-in terminal Version with 3 tones: 2,7 kHz, 270 Hz, 337 Hz
Fixing:	Installation mounting for Ø 28,5 mm (M28)

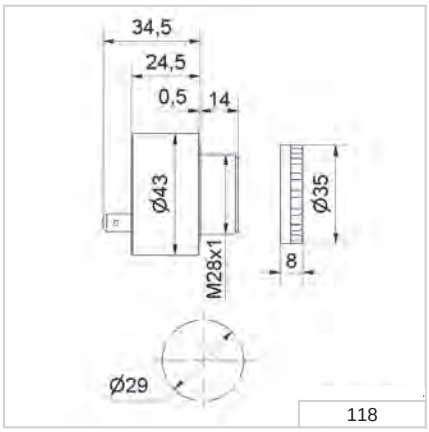
Voltage:	12 V DC	24 V AC/DC	48 V AC/DC	115 V AC/DC	230 V AC
Current consumption:	20 mA	20 mA	20 mA	20 mA	20 mA
Continuous tone	**118 068 14**	**118 068 15**	**118 068 26**	**118 068 27**	**118 068 28**
Continuous/pulse tone	-	**119 068 15**	**119 068 26**	**119 068 27**	**119 068 28**

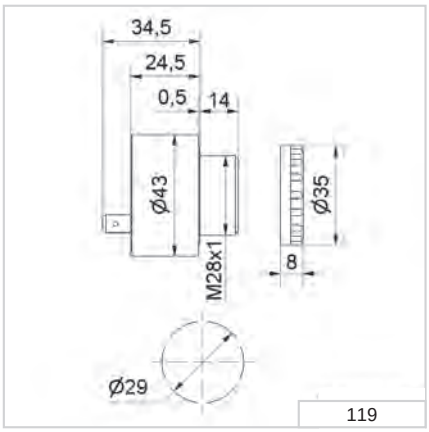
Voltage:	24 V DC (9-29 V DC)
Current consumption:	< 30 mA (Tone 1)
3 tones	**119 004 55**

ACCESSORIES:

Cap	**975 118 00**

TECHNICAL DIAGRAMS:





Signalisation index

Continuous tone	4
Pulse tone	4

With cap

With cap

Mini Buzzers and Horns

Signalisation index				
Audible	**127 + 128**	**118 483 + 119 483**	**584 + 585**	**582 + 482**
Continuous Tone	4	4		
Pulse Tone	4	4		
Horn			5	4

Your benefits

Mini Buzzers and Horns from WERMA provide safety and security by delivering a reliable audible warning when faults occur.

- Quick and easy installation
- Tamper-proof when installed
- Ideal signalling effect in close-range applications

Typical applications

Fault signalling

- in areas with low ambient noise levels
- in control panels and on machine control units
- in building service systems (e.g. gas alarm, lift alarm)

Installation options

- Base mounting
- Wall mounting
- Tube mounting

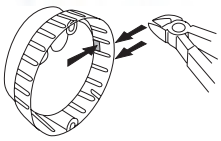
Features

- Proven piezo technology
- 584/585 series with ten times longer life duration compared with electromechanical versions

Mini Electronic Buzzer

Base mounting

The adaptor (accessory) allows quick and simple mounting on a tube



A piece of the rim can be broken out to allow for cable entry from the side

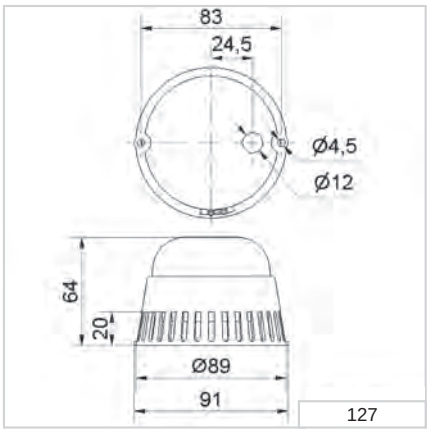
TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (Ø x Height):	89 mm x 64 mm		
Housing:	PC, black		
Fixing:	Base mounting, tube mounting (accessory)		
Installation position:	Sound outlet facing downwards		
Connection:	Screw terminal with wire protection max. 1.5 mm²		
Cable entry:	Cable diameter max. 9 mm		
Tone type:	Continuous or pulse tone, selectable		
Tone frequency:	2,3 kHz		
Life duration:	> 5,000 hrs		
Duty cycle:	100 %		
Voltage:	24 V AC/DC	115 V AC	230 V AC
Current consumption:	≤ 15 mA	≤ 15 mA	≤ 15 mA
Order No.:	**127 000 75**	**127 000 67**	**127 000 68**

ACCESSORIES:

Adaptor for tube mounting, plastic, for tube Ø 25 mm	**975 420 01**
Base for tube Ø 25 mm, plastic, incl. rubber seal	**975 840 90**
Base for tube Ø 25 mm, metal, incl. rubber seal	**975 840 91**
Tube Ø 25 mm, all anodized aluminium	
100 mm	**975 845 10**
250 mm	**975 840 25**

TECHNICAL DIAGRAM:



Signalisation index

Continuous tone	4
Pulse tone	4

24 V

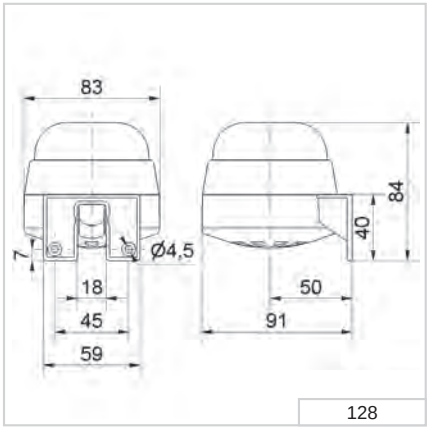
85 g | IP65 | +50°C -20°C | 92 dB | PLC

128 Mini Electronic Buzzer

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (L x H x W):	83 mm x 84 mm x 91 mm		
Housing:	PC, PC/ABS-Blend, grey		
Fixing:	Wall mounting		
Installation position:	Sound outlet facing downwards		
Connection:	Screw terminal with wire protection max. 1.5 mm²		
Cable entry:	Cable diameter max. 9 mm		
Tone type:	Continuous or pulse tone, selectable		
Tone frequency:	2,3 kHz		
Life duration:	> 5,000 hrs		
Duty cycle:	100 %		
Voltage:	24 V AC/DC	115 V AC	230 V AC
Current consumption:	≤ 15 mA	≤ 15 mA	≤ 15 mA
Order No.:	**128 000 75**	**128 000 67**	**128 000 68**

TECHNICAL DIAGRAM:



Horns & Sirens

Signalisation index

Continuous tone	4
Pulse tone	4

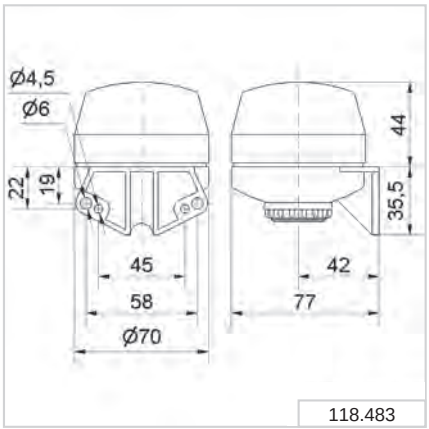
24 V

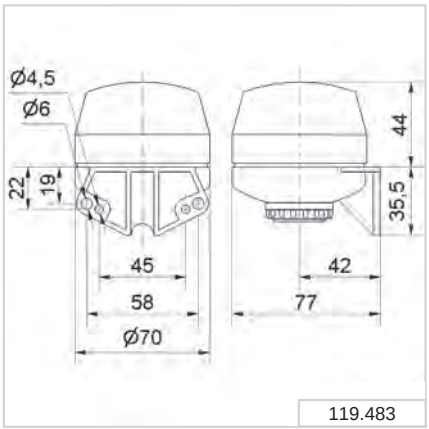
118 483/119 483 Mini Electronic Buzzer

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (L x H x W):	70 mm x 79,5 mm x 77 mm	
Housing:	PC/ABS-Blend	
Connection:	Spades 6.3 x 0.8 mm, Finger proof model according to BGV A2, when used with insulated spades	
Cable entry:	Cable diameter max. 9 mm	
Tone frequency:	C. 2.400 Hz	
Tone type:	Type 118 483 Continuous tone Type 119 483 Continuous tone and pulse tone, c. 1 Hz selectable via plug-in terminal	
Fixing:	Wall mounting, Sound outlet facing downwards	
Voltage:	24 V AC/DC (12-30 V)	230 V AC (110-240 V)
Current consumption:	20 mA	20 mA
Continuous tone	**118 483 15**	**118 483 28**
Continuous/pulse tone	**119 483 15**	**119 483 28**

TECHNICAL DIAGRAMS:





Signalisation index

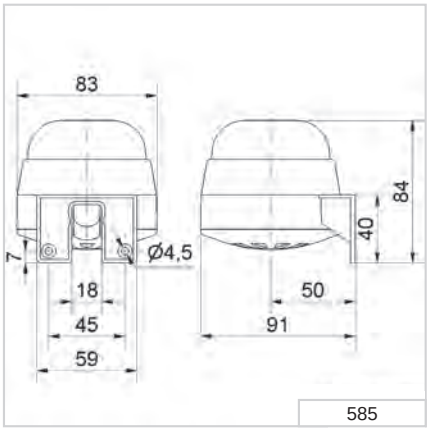
Continuous tone	4
Pulse tone	4

Mini Electronic Signal Horn

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

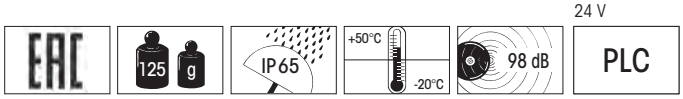
Dimensions (L x H x W):	83 mm x 84 mm x 91,5 mm		
Housing:	PC, PC/ABS-Blend, grey		
Fixing:	Wall mounting		
Installation position:	Sound outlet facing downwards		
Connection:	Screw terminal 0.5 - 1.5 mm²		
Cable entry:	Cable diameter max. 9 mm		
Tone frequency:	C. 110 Hz		
Life duration:	> 5,000 hrs		
Duty cycle:	100 %		
Voltage:	24 V AC/DC	115 V AC	230 V AC
Current consumption:	≤ 80 mA	≤ 70 mA	≤ 70 mA
Order No.:	**585 000 75**	**585 000 67**	**585 000 68**

TECHNICAL DIAGRAM:



Signalisation index

Horn 5

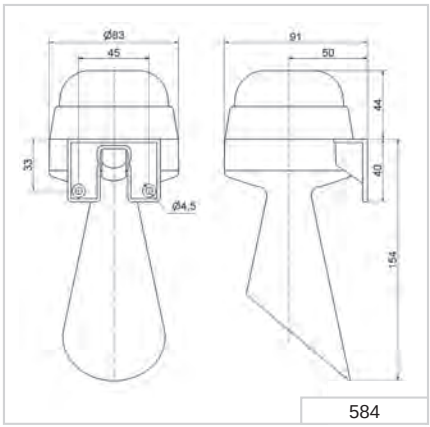


584 Mini Electronic Signal Horn

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

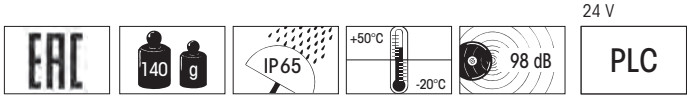
Dimensions (L x H x W):	83 mm x 198 mm x 91,5 mm		
Housing:	PC, PC/ABS-Blend, grey		
Fixing:	Wall mounting		
Installation position:	Sound outlet facing downwards		
Connection:	Screw terminal 0.5 - 1.5 mm²		
Cable entry:	Cable diameter max. 9 mm		
Tone frequency:	C. 110 Hz		
Life duration:	> 5,000 hrs		
Duty cycle:	100 %		
Voltage:	24 V AC/DC	115 V AC	230 V AC
Current consumption:	≤ 80 mA	≤ 70 mA	≤ 70 mA
Order No.:	**584 000 75**	**584 000 67**	**584 000 68**

TECHNICAL DIAGRAM:



Signalisation index

Horn	5



582 Mini Signal Horn

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

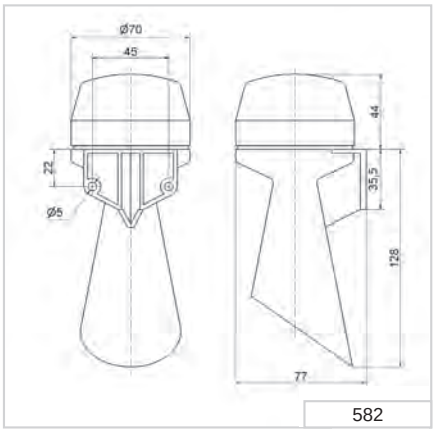
Dimensions (L x H x W):	70 mm x 172 mm x 77 mm
Housing:	PC/ABS-Blend
Connection:	Screw terminal with wire protection, 1,0-1.5 mm² fine strand, 1,0-2.5 mm² single wire
Cable entry:	Cable diameter 9 mm
Fixing:	Wall mounting, Sound outlet facing downwards

AC Version					
Voltage:	12 V AC	24 V AC	42 V AC	115 V AC	230 V AC
Current consumption:	330 mA	190 mA	75 mA	15 mA	15 mA
Order No.:	**582 052 64**	**582 052 65**	**582 052 66**	**582 052 67**	**582 052 68**

DC Version					
Voltage:	12 V DC	24 V DC			
Current consumption:	150 mA	70 mA			
Order No.:	**582 052 54**	**582 052 55**			

Further voltages on request.

TECHNICAL DIAGRAM:



Signalisation index

Horn 4

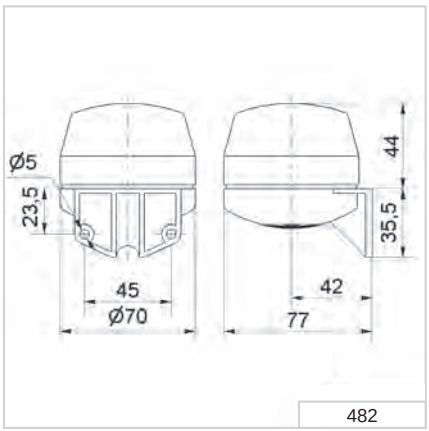
482 Signal Horn

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (L x H x W):	70 mm x 79,5 mm x 77 mm		
Housing:	PC/ABS-Blend		
Connection:	Screw terminal with wire protection, 1,0-1.5 mm² fine strand, 1,0-2.5 mm² single wire		
Cable entry:	Cable diameter 9 mm		
Fixing:	Wall mounting, Sound outlet facing downwards		
AC Version			
Voltage:	24 V AC	42 V AC	230 V AC
Current consumption:	190 mA	75 mA	15 mA
Order No.:	**482 052 65**	**482 052 66**	**482 052 68**
DC Version			
Voltage:	12 V DC	24 V DC	
Current consumption:	150 mA	70 mA	
Order No.:	**482 052 54**	**482 052 55**	
Lift Alarm (reduced inrush current)			
Voltage:	6 V DC	12 V DC	
Current consumption:	80 mA	130 mA	
Order No.:	**482 347 13**	**482 347 14**	

Further voltages on request.

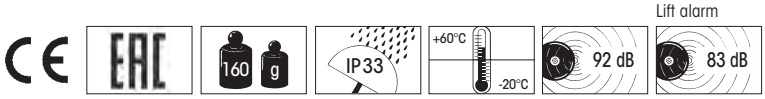
TECHNICAL DIAGRAM:



Signalisation index

Horn 4

Lift alarm



Midi Horns, Sounders and Sirens

Signalisation index			
Audible	**126**	**133 + 134**	**123**
Signal Horn			7
Multi-Tone Sounder	7	7	
Audible	**573**	**570**	**574 + 575**
Signal Horn	6		6
Alternating Tone		7	

Your benefits

The loud Midi Horns, Sounders and Sirens from WERMA provide safety and security by delivering reliable audible warning when faults occur over longer distances or in noisy environments.

- Quick and easy installation
- Tamper-proof when installed
- Ideal for noisy environments
- Long life duration

Typical applications

Fault signalling

- On machine controllers and on large equipment
- In building service systems (e.g. gas alarm)
- Alarm in the event of overload (e.g. mobile cranes)

Installation options

- Base mounting
- Wall mounting
- Tube mounting

Features

- Proven piezo technology
- 574/575 series with ten times longer life duration compared to electromechanical versions
- Up to 8 tones for signalling different statuses

Midi Electronic Multi-Tone Sounder

Base mounting

The adaptor (accessory) allows quick and simple mounting on a tube

Top view: Mounting holes integrated into the product rim allow easy mounting without having to remove the cap

Signalisation index

Multi-tone sounder	7

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (Ø x Height):	89 mm x 64 mm
Housing:	PC, black
Fixing:	Base mounting, tube mounting (accessory)
Installation position:	Sound outlet facing downwards
Connection:	Screw terminal 0.5 - 1.5 mm²
Cable entry:	Cable diameter max. 9 mm
Tone type:	Selectable, see table
Tone frequency:	See table
Life duration:	> 5,000 hrs
Duty cycle:	100 %
Voltage:	24 V AC/DC
Current consumption:	≤ 80 mA
Order No.:	**133 000 75**

TONE TYPES AND FREQUENCIES:

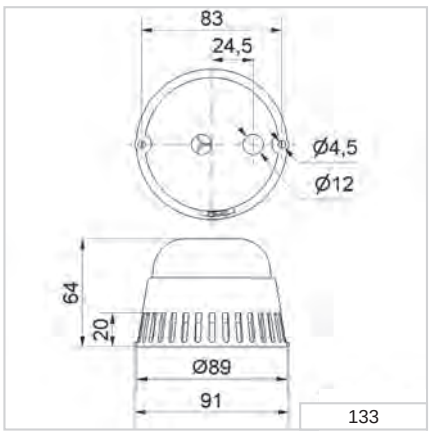
8 selectable tones and adjustable sound output

Tone	Tone type
1	Horn tone (c. 110 Hz)
2	Continuous tone (c. 3.0 KHz)
3	1 Hz tone (c. 3.0 KHz)
4	20 Hz whistle tone (c. 3.0 KHz)
5	800-970 Hz rising @ 1 Hz
6	2400-2850 Hz rising @ 7 Hz
7	1200-500 Hz falling @ 1 Hz
8	Alternating tone 800 Hz + 1200 Hz @ 1Hz

ACCESSORIES:

Adaptor for tube mounting, plastic, for tube Ø 25 mm	**975 420 01**
Base for tube Ø 25 mm, plastic, incl. rubber seal	**975 840 90**
Base for tube Ø 25 mm, metal, incl. rubber seal	**975 840 91**
Tube Ø 25 mm, all anodized aluminium	
100 mm	**975 845 10**
250 mm	**975 840 25**

TECHNICAL DIAGRAM:



Midi Electronic Multi-Tone Sounder

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

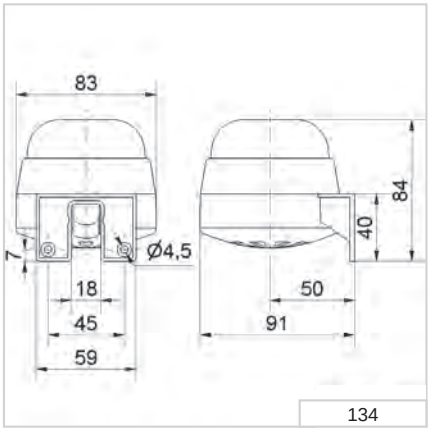
Dimensions (L x H x W):	83 mm x 84 mm x 91 mm
Housing:	PC, PC/ABS-Blend, grey
Fixing:	Wall mounting
Installation position:	Sound outlet facing downwards
Connection:	Screw terminal 0.5 - 1.5 mm²
Cable entry:	Cable diameter max. 9 mm
Tone type:	Selectable, see table
Tone frequency:	See table
Life duration:	> 5,000 hrs
Duty cycle:	100 %
Voltage:	24 V AC/DC
Current consumption:	≤ 80 mA
Order No.:	**134 000 75**

TONE TYPES AND FREQUENCIES:

8 selectable tones and adjustable sound output

Tone	Tone type
1	Horn tone (c. 110 Hz)
2	Continuous tone (c. 3.0 KHz)
3	1 Hz tone (c. 3.0 KHz)
4	20 Hz whistle tone (c. 3.0 KHz)
5	800-970 Hz rising @ 1 Hz
6	2400-2850 Hz rising @ 7 Hz
7	1200-500 Hz falling @ 1 Hz
8	Alternating tone 800 Hz + 1200 Hz @ 1Hz

TECHNICAL DIAGRAM:



Signalisation index

Multi-tone sounder 7

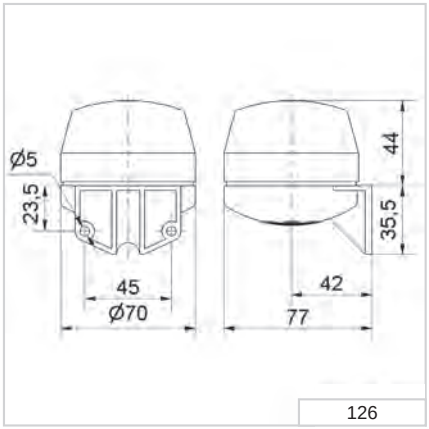
CE EAC 100 g IP65 +50°C -20°C 109 dB 8 PLC

Midi Electronic Multi-Tone Sounder

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (L x H x W):	70 mm x 79,5 mm x 77 mm
Housing:	PC/ABS-Blend
Tone types and frequencies:	4 selectable tones adjustable Continuous tone: c. 2,700 Hz Continuous tone: c. 530 Hz Bell: c. 2,700 Hz (pulse 20 Hz) Pulse tone: c. 2,700 Hz (pulse 1 Hz)
Connection:	Screw terminal 0.5 - 1.5 mm^2
Cable entry:	Cable diameter max. 9 mm
Fixing:	Wall mounting, Sound outlet facing downwards
Voltage:	12-24 V DC
Current consumption:	80 mA
Order No.:	**126 052 15**

TECHNICAL DIAGRAM:



Signalisation index

Multi-tone sounder	7

CE EAC 140 g IP33 +50°C -20°C 105 dB 4 PLC

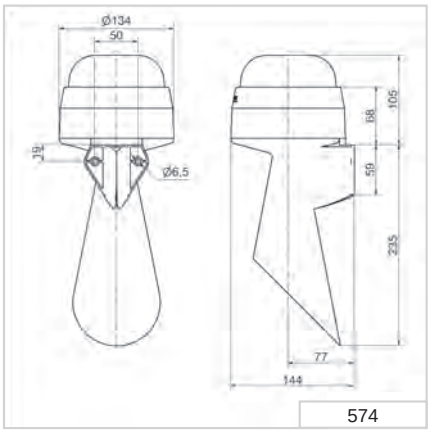
574 Midi Electronic Signal Horn (Long life duration)

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (Ø x Height):	134 mm x 340 mm		
Housing:	PC/ABS-Blend, grey		
Fixing:	Wall mounting, integrated mounting bracket		
Installation position:	Sound outlet facing downwards		
Connection:	Screw terminal 0.5 - 1.5 mm^2		
Cable entry:	Cable diameter max. 11 mm		
Tone frequency:	C. 110 Hz		
Life duration:	Up to 5,000 hrs		
Voltage:	24 V AC/DC	10-48 V AC/DC*	115-230 V AC
Current consumption:	55 mA	210 mA	30 mA
Order No.:	**574 000 75**	**574 000 70**	**574 000 60**

* Current consumption at 10 V / 115 V

TECHNICAL DIAGRAM:



Signalisation index

Horn	7

adjustable

575 Midi Electronic Signal Horn (Piezo - Long life duration)

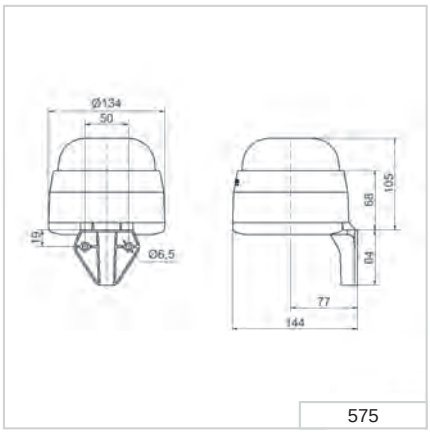
Quick and simple wall mounting without additional accessories with the integrated mounting bracket

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (L x H x W):	134 mm x 169 mm x 144 mm		
Housing:	PC/ABS-Blend, grey		
Fixing:	Wall mounting, integrated mounting bracket		
Installation position:	Sound outlet facing downwards		
Connection:	Screw terminal 0.5 - 1.5 mm²		
Cable entry:	Cable diameter max. 11 mm		
Tone frequency:	C. 110 Hz		
Life duration:	Up to 5,000 hrs		
Voltage:	24 V AC/DC	10-48 V AC/DC*	115-230 V AC
Current consumption:	55 mA	210 mA	30 mA
Order No.:	**575 000 75**	**575 000 70**	**575 000 60**

* Current consumption at 10 V / 115 V

TECHNICAL DIAGRAM:



Signalisation index

Horn	7

adjustable

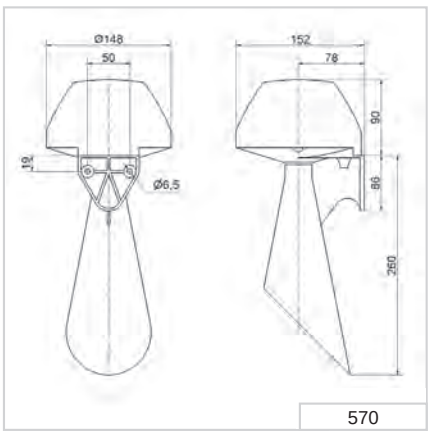
570 Midi Signal Horn

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (L x H x W):	148 mm x 350 mm x 152 mm			
Housing:	PC/ABS-Blend			
Connection:	Screw terminal 0.5 - 2.5 mm²			
Cable entry:	Rubber squeeze grommet Ø 7-10 mm			
Fixing:	Wall mounting, Sound outlet facing downwards			
Continuous tone (AC)				
Voltage:	24 V AC (50 Hz)	42-48 V AC (50/60 Hz)	115 V AC (50/60 Hz)	230 V AC (50 Hz)
Current consumpt.:	500 mA	250 mA	200 mA	70 mA
Order No.:	**570 052 65**	**570 052 66**	**570 052 67**	**570 052 68**
Pulse tone (AC)				
Voltage:				230 V AC (50 Hz)
Current consumpt.:				≤ 70 mA
Order No.:				**570 100 68**
Continuous tone (DC)				
Voltage:	24 V DC		115 V DC	230 V DC
Current consumpt.:	350 mA		150 mA	100 mA
Order No.:	**570 052 55**		**570 052 57**	**570 052 58**

Further voltages on request.

TECHNICAL DIAGRAM:



Signalisation index

Horn	6

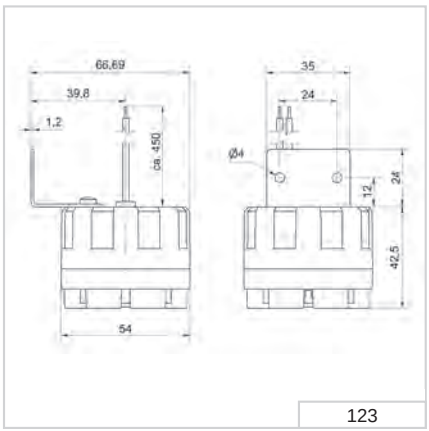
IP55 +60°C -20°C 108 dB

123 Midi Electronic Siren

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (L x H x W):	54 mm x 66,5 mm x 67 mm	
Housing:	ABS	
Tone frequency:	2 / 3.6 Hz	
Tone type:	Alternating	
Connection:	2 wires, c. 450 mm long	
Fixing:	Metal bracket	
Voltage:	12 V DC	24 V DC
Current consumption:	100 mA	100 mA
Order No.:	**123 100 54**	**123 200 55**

TECHNICAL DIAGRAM:



Signalisation index

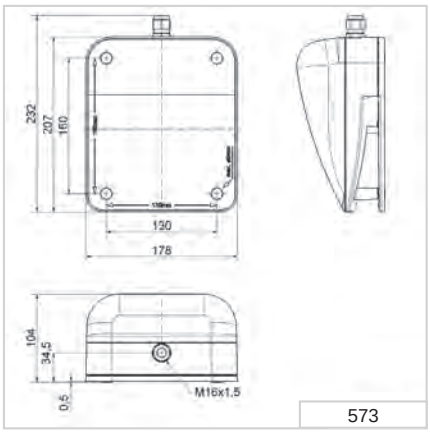
Alternating tone 7

573 Midi Signal Horn

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (L x H x W):	178 mm x 104 mm x 207 mm				
Fixing dimensions (B x H):	130 mm x 160 mm				
Housing:	PC/ABS-Blend				
Connection:	Screw terminal 0,5 - 2.5 mm^2				
Cable entry:	Cable gland M16 x 1.5 mm Cable diameter 5-10 mm				
Fixing:	Wall mounting, Sound outlet facing downwards				
Voltage:	24 V DC	24 V AC (50 Hz)	42-48 V AC (50/60 Hz)	115 V AC (50/60 Hz)	230 V AC (50 Hz)
Current consumption:	350 mA	500 mA	250 mA	200 mA	70 mA
Order No.:	**573 000 55**	**573 000 65**	**573 000 66**	**573 000 67**	**573 000 68**

TECHNICAL DIAGRAM:



Signalisation index

Horn 6

Design Multi-Tone Sounder

Signalisation index	
Audible	
Multi-Tone Sounder	8

Your benefits

WERMA Design Multi-Tone Sounders provide safety and security by providing an audible warning in applications with greater aesthetic requirements. The innovative housing design makes for simple mounting in many diverse applications.

- Ideal signalling effect over great distances
- Many application options with up to 32 tones available
- Up to 3 tones can be externally triggered for the escalation of signals
- Includes standardised tones (including those used in fire alarms)

Typical applications

- Signalling faults or alarms in the event of danger
- in building service systems
- on machinery and equipment

Installation options

- Wall mounting
- Base mounting
- Ceiling mounting

Features

- Up to 32 tones (standardised according to various standards and guidelines)
- Multi-voltage versions allow multiple applications with a single device

Multi-Tone Sounder

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (Ø x Height):	100 mm x 100 mm
Housing:	PC/ABS-Blend
Connection:	Screw terminal max. 2.5 mm²
Cable entry:	Cable gland M20 x 1.5 mm Cable gland not included in assembly
Tone types and frequencies:	Selectable via DIP switch, see table page 237
Installation position:	Sound outlet not facing upwards
Voltage:	9 -28 V DC
Current consumption:	≤ 120 mA
red	**140 150 50**
white	**140 950 50**

Products with EN54-3 (VdS) approval for fire alarm applications

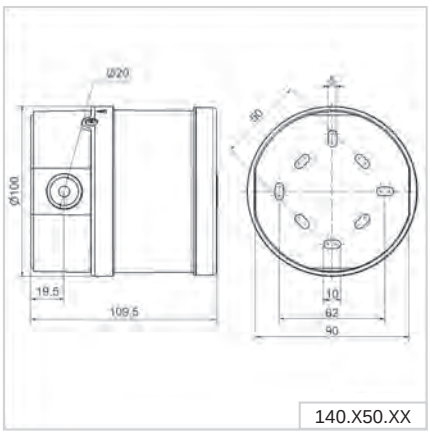
Voltage:	9 -28 V DC
Current consumption:	≤ 120 mA
red	**140 160 50**
white	**140 960 50**
Voltage:	110-240 V AC
Current consumption:	≤ 40 mA
red	**140 150 60**
white	**140 950 60**

VdS

ACCESSORIES:

Cable gland M20 x 1.5 mm	**975 444 01**

TECHNICAL DIAGRAM:



Signalisation index

Multi-tone sounder 8

140.160.50
140.960.50

CE VdS

9-28 V | 110-240 V | with use of rear cable entry

EAC | 260 g | 290 g | IP54 | IP65 | +70°C / -40°C | 115 dB | 32

140 Tone table

The 140 Multi-Tone Sounder offers a large choice of internationally recognised signal tones for the widest spectrum of applications. The low voltage version allows two tones to be triggered externally.

TONE TYPES AND FREQUENCIES:

Selectable via DIP switch

Tone 1 No.	Tone type	Description	Sound output (dBA) (12 V)	(24 V)	Tone 2 Low voltage version
1	alternating 800/970 Hz in 2 Hz stroke	BS 5839-1: 2002	101	105	14
2	rising 800/970 Hz in 7 Hz stroke		103	107	14
3	rising 800/970 Hz in 1 Hz stroke	BS 5839-1: 2002, VdS tested	104	108	14
4	continuous 2,850 Hz		110	115	14
5	rising 2,400-2,850 Hz in 7 Hz stroke		108	114	4
6	rising 2,400-2,850 Hz in 1 Hz stroke		109	115	4
7	500-1,200 Hz rising in 3 sec., 0.5 sec OFF		100	104	14
8	falling 1,200-500 Hz in 1 Hz stroke	DIN 33404, VdS tested	99	104	14
9	alternating 2,400/2,850 Hz in 2 Hz stroke		108	115	4
10	pulse 970 Hz in 0.5 Hz stroke	Back-up-alarm BS 5839 Part 1 1988	98	105	14
11	alternating 800/970 Hz in 1 Hz stroke	BS5839 Part 1 1988	100	105	14
12	pulse 2,850 Hz in 0.5 Hz stroke		107	114	4
13	970 Hz pulse: 0.25 sec. ON / 1 sec. OFF		96	105	14
14	continuous 970 Hz	BS 5839-1: 2002	101	105	15
15	554 Hz/100 ms alternating 440 Hz/400 ms	French alarm signal AFNOR NFS 32 S 32-001	97	102	14
16	660 Hz pulse: 150 ms ON, 150 ms OFF	Swedish alarm signal	97	101	17
17	660 Hz pulse: 1.8 sec. ON, 1.8 sec. OFF	Swedish alarm signal	97	103	16
18	660 Hz pulse: 6.5 sec. ON, 13 sec. OFF	Swedish alarm signal	99	103	14
19	continuous 660 Hz	Swedish alarm signal	99	103	21
20	alternating 554/440 Hz in 0.5 Hz stroke		99	103	21
21	pulse 660 Hz in 1 Hz stroke	Swedish alarm signal	98	104	19
22	2,850 Hz pulse: 150 ms ON, 100 ms OFF	Pedestrian crossing GB	109	115	14
23	rising 800/970 Hz in 50 Hz stroke	Low frequency BS 5839 Part 1 1988	101	106	14
24	rising 2,400-2,850 Hz in 50 Hz stroke	High frequency	106	112	4
25	970 Hz pulse: 3 x 500 ms ON, 500 ms OFF, Pause 1.5 sec.	ISO 8201 Low frequency: Evacuation	101	105	26
26	2,850 Hz pulse: 3 x 500 ms ON, 500 ms OFF, Pause 1.5 sec.	ISO 8201 High frequency	109	115	25
27	970/800 Hz alternating: 1.5 s ON, 0.5 s OFF		96	105	17
28	alternating 800/970 Hz in 2 Hz stroke	FP 1063.1-Telecoms/BS 5839-1: 2002	99	105	10
29	alternating 988/645 Hz in 2 Hz stroke		99	104	988 Hz cont. tone
30	alternating 510/610 Hz in 2 Hz stroke		97	102	510 Hz cont. tone
31	falling 1,200-300 Hz in 1 Hz stroke		99	104	13
32	alternating 510/610 Hz in 1 Hz stroke		97	102	510 Hz cont. tone

Multi-Tone Sounder

Base Mounting

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

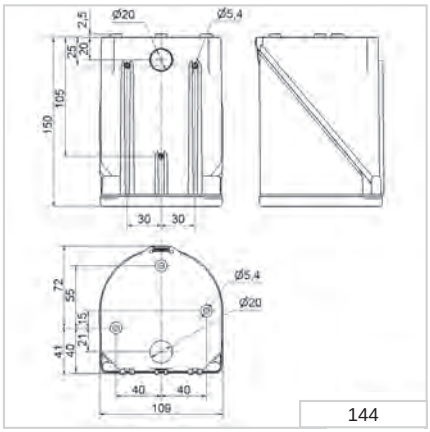
Dimensions (L x H x W):	109 mm x 112,5 mm x 152 mm		
Housing:	PC/ABS-Blend		
Connection:	24 V: Screw terminal 0.5 - 1.5 mm² 115/230 V: CAGE CLAMP®		
Cable entry:	Membrane for cable diameter max. 13 mm		
Fixing:	Wall, base and ceiling mounting		
Tone types and frequencies:	Selectable via DIP switch, see table on page 239		
Voltage:	24 V AC/DC	115 V AC	230 V AC
Current consumption:	200 mA	55 mA	30 mA
Order No.:	**144 000 75**	**144 000 67**	**144 000 68**

ACCESSORIES:

Cable gland M20 x 1.5 mm (for cable strain relief) Protection rating IP 65 is provided even without cable gland	**975 444 01**

Wall mounting

TECHNICAL DIAGRAM:



Horns & Sirens

Signalisation index

Multi-tone sounder 8

24 V | 115 V / 230 V | IP65 | +50°C -30°C | (A) 110 dB | (C) 114 dB | 32 | 24 V PLC

144 Tone table

The 144 Multi-Tone Sounder offers a large choice of internationally recognised signal tones for the widest spectrum of applications. 3 tones can be triggered externally.

TONE TYPES AND FREQUENCIES:

Tone 1	Tone type	Frequency	Description	Use	Tone 2	Tone 3	Output (dBA)
1	continuous	200		BS 5839-1:2002	440 Hz cont.	554 Hz cont.	97
2	rising	800 & 970	7 Hz		14	800 Hz cont.	102
3	rising	800 & 970	1 Hz		14	800 Hz cont.	103
4	continuous	2850			14	9	104
5	rising	2400 - 2850	7 Hz		4	2400 Hz cont.	109
6	rising	2400 - 2850	1 Hz		4	2400 Hz cont.	110
7	rising	500 - 1200	3 s, then 0.5 s OFF (then repeat)		14	8	106
8	falling	1200 - 500	1 Hz	DIN 33404-3	14	7	104
9	alternating	2400 & 2850	2 Hz		4	2400 Hz cont.	111
10	pulse	970	0.5 Hz (1 s On/1 s Off)	BS 5839 Part 1 1988	14	800 Hz cont.	101
11	alternating	800 & 970	1 Hz	BS 5839 Part 1 1988	14	800 Hz cont.	105
12	pulse	2850	0.5 Hz		4	22	104
13	pulse	970		0,25 s On/1 s Off	14	800 Hz cont.	98
14	continuous	970		BS 5839-1:2002 PFEER - Toxic gas	10	8	102
15	alternating	554 & 440		France NFS	14	800 Hz cont.	101
16	pulse	660	150 ms On/150 ms Off	Swedish	16	14	96
17	pulse	660	1.8 s On/1.8 s Off	Swedish	17	14	98
18	pulse	660	6.5 s On/13 s Off	Swedish	18	14	98
19	continuous	660		Swedish	19	31	98
20	alternating	554 & 440	0.5 Hz		20	19	102
21	pulse	660	1 Hz	Swedish	21	4	97
22	pulse	2850	150 ms On/100 ms Off	GB	14	4	104
23	rising	800 - 970	50 Hz (low)	BS 5839 Part 1 1988	14	800 Hz cont.	102
24	rising	2400 - 2850	50 Hz (high)		4	2400 Hz cont.	109
25	pulse	970	3 x 500 ms ON/500 ms OFF / 1.5 s silence, then repeat (low)	ISO 8201 US Temporal	26	14	101
26	pulse	2850	3 x 500 ms ON/500 ms OFF / 1.5 s Pause, then repeat (low)	ISO 8201 US Temporal	25	4	104
27	continuous	4000			27	6	92
28	rising	2000 - 2850	7 Hz		2000 Hz cont.	4	111
29	alternating	988 & 645	2 Hz		988 Hz cont.	645 Hz cont.	102
30	alternating	510 & 610	2 Hz		510 Hz cont.	610 Hz cont.	102
31	alternating	800 & 970	2 Hz	5839-1:2002	800 cont.	14	105
32	alternating	800 & 1200	1 Hz		800 cont.	1200 Hz cont.	105

Vocal alarm

Signalisation index	
Audible	
Vocal alarm	7

Your benefits

This extremely loud Vocal Alarm provides the ability to play application-specific audio files in order to produce clear and targeted instructions. It is particularly suitable for large assembly facilities and can address defined groups of people (for example, a particular work unit) in a targeted manner.

- Reliable alarm output over long distances or in noisy environments
- Easy to adjust to local conditions
- Excellent audio and sound quality for optimum clarity of signalling
- Completely flexible; select the audio file yourself

Typical applications

Signalling faults or issuing specific instructions

- For areas with high ambient noise levels
- In production and assembly environments

Installation options

- Wall mounting

Features

- Plays customer-specific audio files (sounds, melodies and your own recorded messages)
- 15 files can be played, or a sequence with a maximum of 50 files
- Simple USB data transfer
- Sound output can be externally triggered up to 110 dB

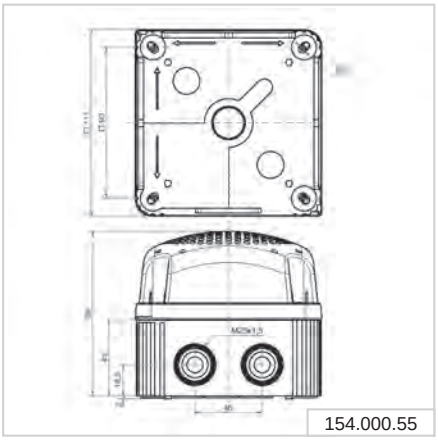
Vocal alarm

Vocal alarm 154

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (L x H x W):	111 mm x 98 mm x 111 mm
Housing:	PP-GF, PC/ABS Blend
Sound output:	Adjustable, up to 110 dB
File Transfer:	Via USB connection and provided software
Possible data format:	Mp3 and wav files
Number of sequences:	15 files can be remotely triggered or one sequence with max. 50 files
Suitable for:	Windows®, System requirements - see Handbook
Assembly:	Vocal alarm, USB connection cable and software
Voltage:	24 V DC
Current consumption:	< 500 mA Low Power < 1500 mA High Power
Order No.:	**154 000 55**

TECHNICAL DIAGRAM:



154.000.55

User-friendly software ensures easy transfer of audio files and simple operation

Signalisation index

Vocal alarm	7

Heavy Duty Multi-Tone Sounder

Signalisation index				
Audible	**139**	**141**	**142**	**129**
Multi-Tone Sounder	6	8	10	8

Your benefits

The robust housings of WERMA Heavy Duty Multi-Tone Sounders are particularly well-suited for use in public areas or in harsh industrial environments. Versions with an aluminium housing and separate certification (German Lloyd) are available for marine applications.

- Ideal in extremely noisy environments and over long distances
- Many application options with up to 42 tones
- Up to 3 tones can be externally triggered for the escalation of signals
- Includes standardised tones (including those used in fire alarms)

Typical applications

Signalling of faults and alarms

- outdoors in extreme conditions
- in larger industrial plants
- in maritime applications

Installation options

- Wall mounting

Features

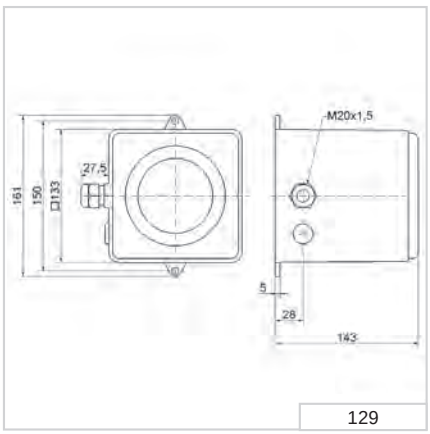
- High protection rating up to IP67
- Multi-voltage versions allow multiple applications with a single device

129 Electronic Multi-Tone Sounder (110 dB)

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (L x H x W):	133 mm x 161 mm x 143 mm		
Housing:	Die-cast aluminium		
Connection:	Screw terminal 0.5 - 2.5 mm²		
Cable entry:	Cable gland M20 x 1.5 mm Cable diameter 8-12 mm		
Tone types and frequencies:	Selectable via DIP switch, see table page 244		
Voltage:	24 V DC	115 V AC	230 V AC
Current consumption:	420 mA	120 mA	60 mA
Order No.:	**129 052 55**	**129 052 67**	**129 052 68**

TECHNICAL DIAGRAM:



Signalisation index

Multi-tone sounder 8

24 V 230 V

129 Tone table

The 129 Multi-Tone Sounder offers a large choice of internationally recognised signal tones for the widest spectrum of applications.

TONE TYPES AND FREQUENCIES:

Tone 1	Tone type	Description
1	falling 1,200-500 Hz in 1 Hz stroke	DIN 33404
2	950 Hz pulse: 3 x 500 ms ON, 500 ms OFF, Pause 1.5 sec.	ISO 8201
3	alternating 825 Hz/1,025 Hz in 2 Hz stroke	
4	continuous 950 Hz	
5	950 Hz pulse: 1 sec. ON, 1 sec. OFF	
6	500-1.200 Hz rising and falling in 3 sec.	Siren
7	554 Hz/100 ms alternating 440 Hz/400 ms	French fire alarm signal AFNOR NFS 32 S 32-001
8	pulse 700 Hz: 150 ms ON, 150 ms OFF, Dauer 1 Min.	
9	pulse 800 Hz: 4 ms ON, 4 ms OFF	
10	continuous 500 Hz	
11	continuous 725 Hz	
12	continuous 825 Hz	
13	continuous 1,250 Hz	
14	continuous 1,500 Hz	
15	pulse 500 Hz: 500 ms ON, 500 ms OFF	
16	pulse 825 Hz: 500 ms ON, 500 ms OFF	
17	pulse 725: 0.7 sec. ON, 0.3 sec. OFF	
18	pulse 800 Hz: 0.25 sec. ON, 1 sec. OFF	
19	alternating 800 Hz/1,000 Hz in 2 Hz stroke	
20	pulse 825 Hz: 2.5 sec. ON, 2.5 sec OFF x 7, dann 7 sec. PULS	
21	pulse 950 Hz: 1 sec. ON, 1 sec. OFF, 3 sec. ON, 1 sec. OFF	
22	rising 500-1,200 Hz in 3 sec., 0.5 sec OFF	
23	rising 500-2,400 Hz in 3 sec.	
24	alternating 825 Hz/1,075 Hz in 1 Hz stroke	
25	alternating 500 Hz/900 Hz in 2 Hz stroke	
26	alternating 1,200 Hz/1,400 Hz in 25 Hz stroke	
27	rising 300-1,200 Hz in 3 sec.	
28	700-1,500 Hz rising and falling in 3 sec.	
29	rising 150-1,000 Hz in 10 sec., 40 sec. ON, falling in 10 sec.	
30	pulse 680 Hz: 0.875 sec. ON, 0.875 sec. OFF	
31	rising 1,400-1,600 Hz in 1 sec., falling in 0.5 sec.	NF C 48-265

139 Electronic Multi-Tone Sounder (105 dB)

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (L x H x W):	136 mm x 108 mm x 119 mm	
Housing:	ABS	
Connection:	Screw terminal 0.5 - 2.5 mm²	
Cable entry:	Cable gland M20 x 1.5 mm (not included in assembly)	
Tone types and frequencies:	Selectable via DIP switch	
Voltage:	9-60 V DC	115/230 V AC
Current consumption:	13 mA (24V)	20 mA (230 V)
red	**139 000 55**	**139 000 68**
grey	**139 100 55**	**139 100 68**

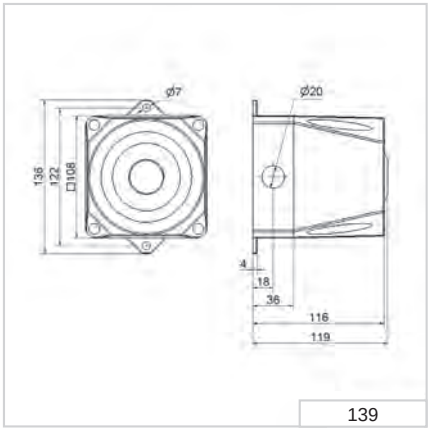
ACCESSORIES:

Cable gland M20 x 1.5 mm	**975 444 01**

TONE TYPES AND FREQUENCIES:

For further details see www.werma.com.

TECHNICAL DIAGRAM:



Signalisation index

Multi-tone sounder	6

Electronic Multi-Tone Sounder (110 dB)

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (L x H x W):	165 mm x 136 mm x 132 mm	
Housing:	PC/ABS-Blend	
Connection:	Screw terminal 0.5 - 2.5 mm²	
Cable entry:	Cable gland M20 x 1.5 mm (not included in assembly)	
Tone types and frequencies:	Selectable via DIP switch	
Voltage:	9-60 V DC	115/230 V AC
Current consumption:	120 mA (24V)	22 mA (230 V)
red	**141 000 55**	**141 000 68**
grey	**141 100 55**	**141 100 68**

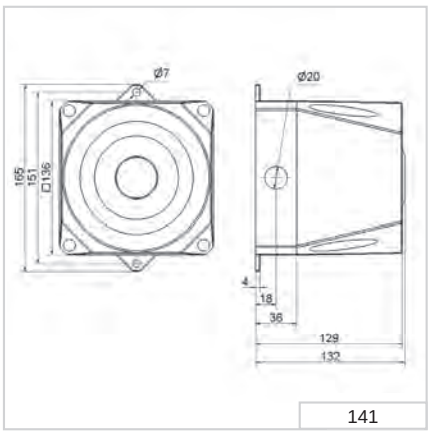
ACCESSORIES:

Cable gland M20 x 1.5 mm	**975 444 01**

TONE TYPES AND FREQUENCIES:

For further details see www.werma.com.

TECHNICAL DIAGRAM:



Signalisation index

Multi-tone sounder	8

142 Electronic Multi-Tone Sounder (120 dB)

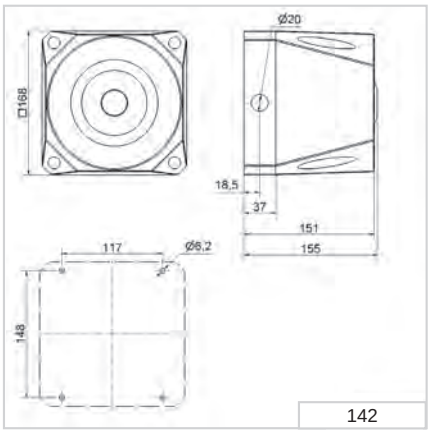
TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (L x H x W):	168 mm x 168 mm x 155 mm	
Housing:	PC/ABS-Blend	
Connection:	Screw terminal 0.5 - 2.5 mm²	
Cable entry:	Cable gland M20 x 1.5 mm (not included in assembly)	
Tone types and frequencies:	Selectable via DIP switch, see table on page 248	
Voltage:	18-30 V DC	115/230 V AC
Current consumption:	450 mA	130 mA (115 V) / 65 mA (230 V)
red	**142 000 55**	**142 000 68**
grey	**142 100 55**	**142 100 68**

ACCESSORIES:

Cable gland M20 x 1.5 mm	**975 444 01**

TECHNICAL DIAGRAM:



Signalisation index

Multi-tone sounder	10

142 X00 68 142 X00 55

142 Tone table

The 142 Multi-Tone Sounder offers a large choice of internationally recognised signal tones for the widest spectrum of applications. The first two tones can be freely chosen. The third tone is paired with the second tone.

TONE TYPES AND FREQUENCIES:

Tone 1+2 No	Tone type	Use	Output (dBA)	Tone 3
1	alternating 800/970 Hz in 2 Hz stroke (250 ms-250 ms)		120	14
2	rising 800/970 Hz in 7 Hz stroke (7/s)		120	14
3	rising 800/970 Hz in 1 Hz stroke (1/s)		120	14
4	continuous 2,850 Hz		111	9
5	rising 2,400-2,850 Hz in 7 Hz stroke		109	4
6	rising 2,400-2,850 Hz in 1 Hz stroke		110	4
7	500-1,200 Hz rising in 3 sec., 0.5 sec. OFF	Slow Whoop Holland	119	14
8	falling 1,200-500 Hz in 1 Hz stroke	DIN/PFEER (PAPA), DIN 33404-3, VDS tested	119	14
9	alternating 2,400/2,850 Hz in 2 Hz stroke (250 ms-250 ms)		113	4
10	pulse 970 Hz in 0,5 Hz stroke (1 sec. ON / 1 sec. OFF)	PFEER Alarm	117	14
11	alternating 800/970 Hz in 1 Hz stroke (500 ms-500 ms)		118	14
12	pulse 2,850 Hz in 0.5 Hz stroke (1 sec. ON / 1 sec. OFF)		112	4
13	970 Hz pulse: 0.25 sec. ON / 1 sec. OFF		117	14
14	continuous 970 Hz	PFEER - Toxic gas	118	8
15	554 Hz/100 ms alternating 440 Hz/400 ms	French alarm signal AFNOR NFS 32 S 32-001	115	14
16	660 Hz pulse: 150 ms ON, 150 ms. OFF	Swedish alarm signal	114	14
17	660 Hz pulse: 1.8 sec. ON, 1.8 sec. OFF	Swedish alarm signal	115	14
18	660 Hz pulse: 6.5 sec. ON, 13 sec. OFF	Swedish alarm signal	115	14
19	continuous 660 Hz	Swedish alarm signal	116	1
20	alternating 554/440 Hz in 0.5 Hz stroke (1 sec. ON / 1 sec. OFF)	Swedish alarm signal	115	19
21	pulse 660 Hz in 1 Hz stroke (500 ms-500 ms)	Swedish alarm signal	115	4
22	pulse 2,850 Hz in 4 Hz stroke (150 ms ON / 100 ms OFF)		110	4
23	rising 800-970 Hz in 50 Hz stroke		117	14
24	rising 2,400-2,850 Hz in 50 Hz stroke		110	4
25	970 Hz puls.: 3 x 500 ms. ON, 500 ms OFF, break 1.5 sec.	ISO 8201 / US Temporal	118	14
26	2,850 Hz puls.: 3 x 500 ms. ON, 500 ms OFF, break 1.5 sec.	ISO 8201 / US Temporal	112	4
27	continuous 4,000 Hz		105	6
28	alternating 800/970 Hz in 2 Hz stroke (250 ms-250 ms)		118	14
29	alternating 990/650 Hz in 2 Hz stroke (250 ms-250 ms)		117	14
30	alternating 510/610 Hz in 2 Hz stroke (250 ms-250 ms)		116	14
31	rising 300-1,200 Hz in 1 Hz stroke		118	14
32	continuous Bell		117	3
33	continuous Bell: 3x500 ms. Pulse, 1.5 sec. Silence, then repeat	Bell / US Temporal	117	14
34	alternating 1,000/2,000 Hz in 1 Hz stroke (500 ms-500 ms)	Singapore	115	4
35	pulse 420 Hz (0,625 sec.)	Australian alarm signal	118	14
36	500-1,200 Hz rising in 3,75 sec., then 0,25 sec. OFF	Australian alarm signal (Evacuation)	117	14
37	rising 1,400-1,600 Hz in 1 sec., falling in 0.5 sec.	NF C 48-265	116	14
38	500-1,200 Hz rising and falling 3 sec.	Siren	117	14
39	pulse 720 Hz: 0.7 sec. ON, 0.3 sec. OFF	German industrial alarm	118	14
40	rising 422-775 Hz in 0.85 sec., 1 sec. silence, then repeat	NFPA Whoop	118	14
41	continuous 470 Hz	Horn (USA)	114	3
42	continuous 370 Hz	Air Horn (USA)	113	3

Alarm Bell

Signalisation index	
Audible	
Alarm Bell	5

Your benefits

A signalling technology classic: The robust WERMA Alarm Bell for signalling break-time or machine activation warnings.

- Many application possibilities
- Robust housing prevents damage when used in public areas or in harsh industrial environments

Typical applications

As a bell or alarm

- Goods receiving areas
- Entry/exit applications
- Counter service call point, etc.

Installation options

- Wall mounting

Features

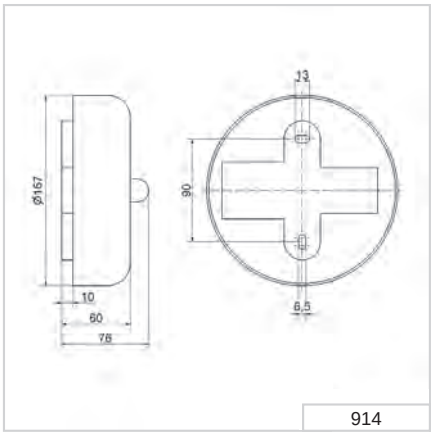
- High IP66 protection rating for outdoor use

914 Alarm Bell

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (Ø x Depth):	167 mm x 76 mm		
Housing:	Steel bell, epoxy dust enamelled		
Connection:	Screw terminal max. 1.5 mm²		
Cable entry:	Cable gland M16 x 1.5 mm Cable diameter 5-10 mm		
Voltage:	24 V DC	110 V AC (50/60 Hz)	230 V AC
Current consumption:	300 mA	90 mA	55 mA
Order No.:	**914 052 55**	**914 052 67**	**914 052 68** (50 Hz)
Order No.:			**914 053 68** (60 Hz)

TECHNICAL DIAGRAM:



Horns & Sirens

Signalisation index

Alarm bell 5

See note on page 347

at DC - 98 dB(A)
at AC - 100 dB(A)

Ex Horns and Sirens

Signalisation index	
Audible	
Continuous Tone	4
Signal Horn	6
Multi-Tone Sounder	6

Your benefits

Ex Horns and Sirens from WERMA have been developed specifically for use in potentially explosive atmospheres. The Ex signalling devices are designed for use in explosive gas and vapour atmospheres (zones 1 and 2).

- Many years of proven use in potentially explosive areas
- Light and compact design for easy mounting
- Diverse signalling options

Typical applications

Signalling of faults or alarms

- during the processing or filling of highly flammable substances (gases and/or vapours and liquids)
- during storage of highly flammable substances (gases and/or vapours and liquids)
- in industrial plants with flammable dust atmospheres (e.g. metal processing, sawmills, mills, powdered milk processing plants)

Installation options

- Wall mounting

Features

- For use with or without the use of a safety barrier (depent on product)
- Proven technology with ATEX and IECEx certifications

761:

- „E" terminal box for easy connection; approved for use in gas and dust applications (zones 1 and 21)

Ex Electronic Installation Buzzer

Cap (accessory)

Zener Barrier (accessory)

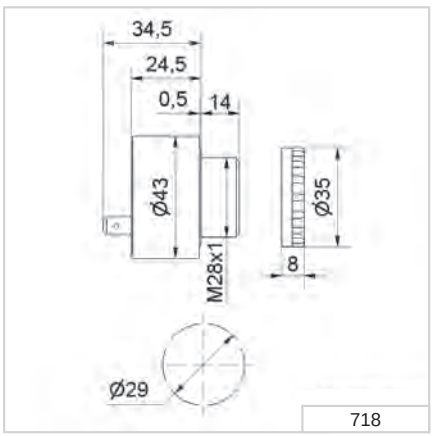
TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (Ø x Height):	43 mm x 13 mm (Protrusion from panel)			
Housing:	PC/ABS-Blend			
Connection:	Spades 6.3 x 0.8 mm			
Tone frequency:	C. 2,400 Hz			
Duty cycle:	100 % ED			
Explosion protection:	Ⓔx II 2G Ex ib IIC T4 / T5 / T6 Gb			
Approval:	DMT 98 ATEX E 005 X			
Maximum values of the Zener barrier:	Ui: 40 V DC, Ii: 660 mA			
Minimum values of the Zener barrier:	For 24 V DC 15 V DC/ 20 mA			
Maximum Input Power Pi:	Temp.-classes	Max. surrounding temperature + 40°C	+ 50°C	+ 60°C
	T4	Pi = 1,3 W	Pi = 1,2 W	Pi = 1,0 W
	T5	Pi = 0,82 W	Pi = 0,66 W	Pi = 0,52 W
	T6	Pi = 0,6 W	Pi = 0,45 W	Pi = 0,3 W
Voltage:	24 V DC			
Current consumption:	20 mA			
Order No.:	**718 000 55**			

ACCESSORIES:

PC/ABS-Blend Cap (IP 43)	**975 118 00**
Zener Barrier	**975 714 01**

TECHNICAL DIAGRAM:



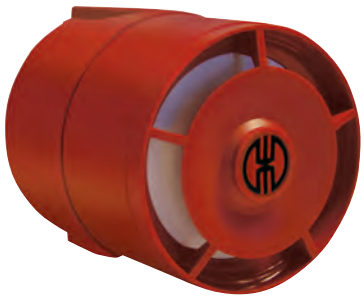
Signalisation index

Continuous tone 4

with cap

2 G
Zone 1 + 2
50 g
IP30
IP43
+60°C
0°C
90 dB

Ex Electronic Multi-Tone Sounder



Zener Barrier (accessory)

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (Ø x Height):	93 mm x 103 mm
Housing:	ABS
Connection:	Screw terminal max. 2.5 mm²
Cable entry:	Cable diameter max. 12 mm
Duty cycle:	100%
Tone types and frequencies:	Selectable via switched, see table below
Fixing:	Wall mounting, Bodenmontage
Installation position:	Sound outlet not facing upwards
Explosion protection:	Ⓔx II 1G Ex ia IIC T4 Ga
Approval:	Baseefa 06 ATEX 0161
Voltage:	24 V DC
Current consumption:	14 mA
Order No.:	**714 000 55**

ACCESSORIES:

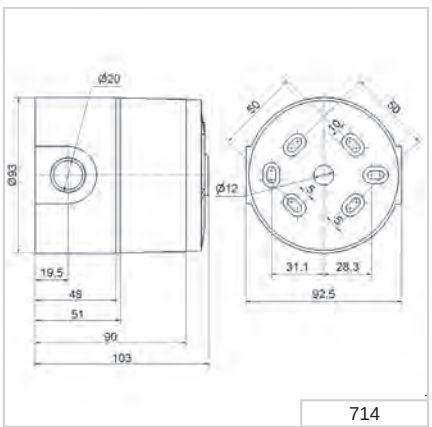
Zener Barrier	**975 714 01**

TONE TYPES AND FREQUENCIES:

selectable via DIP switch, 2 tones externally triggered

Ton A No.	Tone type	Ton A No.	Tone type
1	alternating 800/970 Hz in 2 Hz stroke	14	continuous 970 Hz
2	rising 800/970 Hz in 7 Hz stroke	15	554 Hz/100 ms alternating 440 Hz/400 ms
3	rising 800/970 Hz in 1 Hz stroke	16	660 Hz pulse: 150 ms ON, 150 ms OFF
4	continuous 2,850 Hz	17	660 Hz pulse: 1.8 sec. ON, 1.8 sec OFF
5	rising 2,400-2,850 Hz in 7 Hz stroke	18	660 Hz pulse: 6.5 sec. ON, 13 sec OFF
6	rising 2,400-2,850 Hz in 1 Hz stroke	19	continuous 660 Hz
7	500-1,200 Hz rising in 3 sec., 0.5 sec OFF	20	alternating 554/440 Hz in 0.5 Hz stroke
8	falling 1,200-500 Hz in 1 Hz stroke	21	pulse 660 Hz in 1Hz stroke
9	alternating 2,400/2,850 Hz in 2 Hz stroke	22	2,850 Hz pulse: 150 ms ON / 100 ms OFF
10	pulse 970 Hz in 0.5 Hz stroke	23	rising 800/970 Hz in 50 Hz stroke
11	alternating 800/970 Hz in 1 Hz stroke	24	rising 2,400-2,850 Hz in 50 Hz stroke
12	pulse 2,850 Hz in 0.5 Hz stroke	25	970 Hz pulse: 3 x 500 ms ON, 500 ms OFF, 1.5 sec. pause
13	970 Hz pulse: 0.25 sec. ON / 1 sec. OFF	26	2,850 Hz pulse: 3 x 500 ms ON, 500 ms OFF, 1.5 sec. pause

TECHNICAL DIAGRAM:



Signalisation index

Multi-tone sounder: 6

Up to

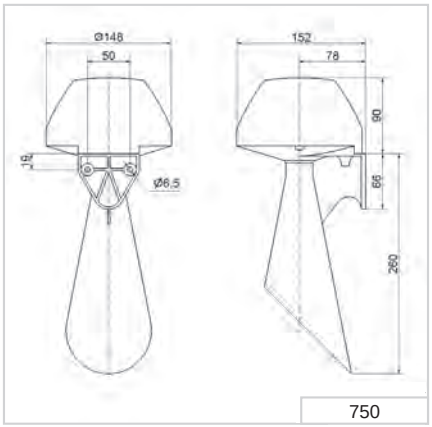
1 G
Zone 0, 1 + 2
300 g
IP65
+55°C
-20°C
103 dB
26

750 Ex Signal Horn

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (L x H x W):	148 mm x 350 mm x 152 mm					
Housing:	PC/ABS-Blend					
Connection:	Cable 3 m, 2 x 0,75 mm²					
Fixing:	Bracket mounting, sound outlet facing downwards					
Explosion protection:	Ⓔx II 2G Ex mb IIC T5 Gb					
Approval:	BVS 03 ATEX E 118X					
Voltage:	24 V DC	24 V AC	42-48 V AC	115 V AC		230 V AC
Voltage:	21,6 V ... 26,4 V	21,6 V ... 26,4 V	37,8 V ... 52,8 V	102,5 V ... 126,5 V (50 Hz)	108 V ... 131 V (60 Hz)	208 V ... 250 V (50 Hz)
Current consumption:	350 mA	450 mA	220 mA	205 mA		70 mA
Order No.:	**750 000 55**	**750 000 65**	**750 000 66**	**750 000 67**		**750 000 68**

TECHNICAL DIAGRAM:



Signalisation index

Horn	6

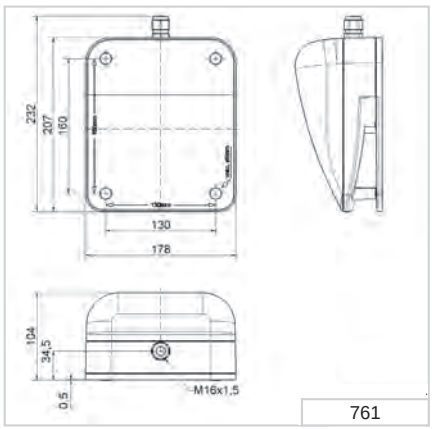
CE Ⓔx 2 G Zone 1 + 2 | 1,3 kg | IP55 | +50°C -40°C | 105 dB

761 Ex Signal Horn

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (L x H x W):	178 mm x 104 mm x 207 mm 130 mm x 160 mm					
Housing:	PC					
Connection:	CAGE CLAMP® max. 2.5 mm²					
Cable entry:	Cable gland M16 x 1.5 mm; Cable diameter 6,5-9,5 mm					
Fixing:	Wall mounting, base mounting					
Explosion protection:	Ⓔx II 2G Ex e mb IIC T5 Gb Ⓔx II 2D Ex tb IIIC T 70°C Db					
Approval:	BVS 03 ATEX E 118X					
Voltage:	24 V DC	24 V AC	48 V AC	115 V AC		230 V AC
Voltage:	21,6 V ... 26,4 V	21,6 V ... 26,4 V	37,8 V ... 52,8 V	102,5 V ... 126,5 V (50 Hz)	108 V ... 131 V (60 Hz)	208 V ... 250 V (50 Hz)
Current consumption:	350 mA	450 mA	220 mA	205 mA		70 mA
Order No.:	**761 000 55**	**761 000 65**	**761 000 66**	**761 000 67**		**761 000 68**

TECHNICAL DIAGRAM:



Signalisation index

Horn	6

CE Ⓔx | 2 G Zone 1 + 2 | 2 D Zone 21 + 22 | 1,3 kg | IP65 | +50°C -40°C | max. 105 dB


WERMA
SIGNALTECHNIK
424.X20.75
24V= IP65 1o50°C

Optical-audible combinations

Overview Optical and Audible Combinations

Double the safety with optical-audible signals

Large systems are often managed by only a few people, especially in automated production facilities and large machine shops. This results in optical signals not always being in the machine operator's immediate field of vision. In such cases, an audible signal may also be used. The use of both optical and audible alarms will help to counter an audible alarm not always being heard above an ambient noise level.

Overview Optical and Audible Combinations						
Product type		**Installation**	**Free-standing**	**Free-standing**	**Free-standing**	**Free-standing**
Mounting	**Product range**	**Installation Combinations**	**Mini Combinations**	**Midi Combinations**	**Design Combinations**	**Heavy Duty Combinations**
Dimensions (Ø x Height)*		50 x 22 mm	89 x 100,5 mm	146 x 171 mm 134 x 235 mm	-	-
Dimensions (L x H x W)		-	83 x 120,5 x 91mm 83 x 234,5 x 91 mm	134 x 407 x 144 mm	109 x 112,5 x 152 mm	136 x 138 x 119 mm 165 x 169 x 132 mm 168 x 211 x 155 mm
Voltage	12 V		●			●
	24 V	●	●	●	●	●
	60 V					●
	115 V	●	●	●	●	●
	230 V	●	●	●	●	●
Protection rating		IP65	IP65	IP65	IP65	IP66
Signalisation index optical**		3	3-4	5-9	6-8	4
Signalisation index audible**		3	4-7	6-7	8	6-10
Page		Page 260	Page 263	Page 270	Page 276	Page 280

* Technical diagrams can be found on the product page

** Signalisation index - see page 13 + 21

Variety of signals

WERMA supplies a large number of audible signals which can also be enhanced with the addition of optical light signals.

AUDIBLE SIGNALS:
Sirens and Multi-Tone Sounder, Buzzer and Installation Buzzer, Horns

OPTICAL SIGNALS:
(LED) Permanent Light, Flashing Light, LED Double Flash Light, LED EVS Signal, LED Permanent/Flash/EVS Light

Size comparison

Serie	422/423	420/421	432/433	430/431	424/425	434/435
Ø	-	89 mm	134 mm	146 mm	-	-
Height	-	100,5 mm	235 mm	171 mm	-	-
L x H x W	83x120.5x91 mm	-	-	-	83x234.5x91 mm	134x407x144 mm

Installation Combination Beacon with Buzzer

Size comparison Installation / Mini


Siganlisation index	
Audible	
Continuous Tone	3
Optical	
LED Permanent Light	3

Your benefits

Optical audible Installation Combinations give excellent all-round visibility of the signal and are an industry standard for easy installation in control panels.

- Easy to install
- Tamper-proof when installed
- Minimal protrusion from panel for installations where space is limited
- Acknowledgement function promotes faster response time and fault repair (450 series)

Typical applications

Fault signalling

- in switch panels
- in control panels

Installation options

- Installation mounting

Features

- High IP65 protection rating for outdoor applications
- Standard M22 for control panel installation
- Proven piezo technology for extended life duration
- Easy to connect using a plug-in connection
- LED permanent light with continuous tone that can be additionally activated

LED Permanent Light / Buzzer Combination

LED Permanent light with continuous tone that can be additionally activated

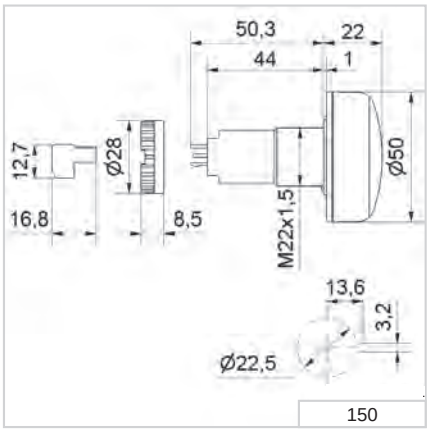
TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (Ø x Height):	50 mm x 22 mm (Protrusion from panel)
Housing:	PC/ABS-Blend
Lens:	PC, transparent
Connection:	Connector plug with screw terminal max. 1.5 mm²
Tone type:	Continuous
Tone frequency:	C. 2,8 kHz
Duty cycle:	100 %
Life duration:	Up to 50,000 hrs
Fixing:	Installation mounting for Ø 22.5 mm (M22 x 1.5 mm) with anti-twist device

Nut and seal included in assembly.

Voltage:	24 V DC	115 V AC	230 V AC
Current consumption:	< 50 mA	< 20 mA	< 20 mA
red	**150 100 55**	**150 100 67**	**150 100 68**
yellow	**150 300 55**	**150 300 67**	**150 300 68**

TECHNICAL DIAGRAM:



Siganlisation index

Continuous tone	3
LED Permanent Light	3

24 V

IP65 +50°C -20°C 80 dB PLC

LED Permanent Light/Buzzer Combination with acknowledgement function

LED Permanent light with continuous tone that can be additionally activated

The audible signal can be turned off in seconds by lightly pressing the front of the product

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (Ø x Height):	50 mm x 22 mm (Protrusion from panel)	
Housing:	PC/ABS-Blend	
Lens:	PC, transparent	
Connection:	Screw terminal 0,5 mm²	
Signal input:	24 V DC	
Acknowledgement output:	Semiconductor-Relay	U_{max} = 30 V I_{max} = 100 mA $R_{ON\ max}$ = 25 Ohm
Tone type:	Continuous	
Tone frequency:	C. 2,8 kHz	
Duty cycle:	100 %	
Life duration:	Up to 50,000 hrs	
Fixing:	Installation mounting for Ø 22.5 mm (M22 x 1.5 mm)	
Nut and seal included in assembly.		
Voltage:	24 V DC	
Current consumption:	40-80 mA	
red	**450 100 55**	
gelb	**450 300 55**	

ADDITIONAL INFORMATION:

1

The occurrence of a malfunction or an error is indicated by means of an optical-audible signal.

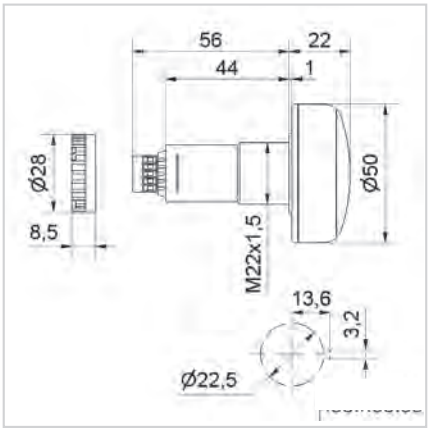
2

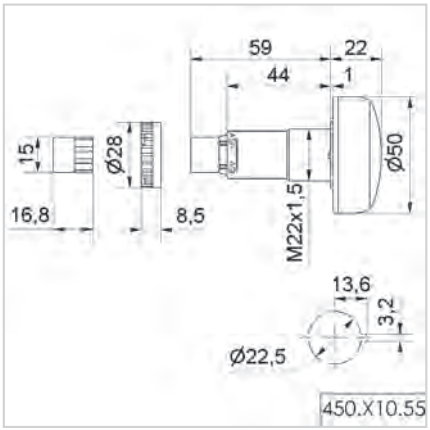
The audible signal can be turned off in seconds by lightly pressing the front of the product.

3

The acknowledgement signal is sent to the control unit via an electronic switch and the malfunction is now only indicated by the optical signal.

TECHNICAL DIAGRAMS:





Siganlisation index

Continuous tone	3
LED Permanent Light	3

450.X00.00

450.X10.55

PLC

Mini Combination Beacon with Buzzer / Siren / Horn

Size comparison Mini / Midi

Siganlisation index				
Audible	**420 + 422**	**421 + 423**	**424**	**425**
Continuous tone	4	4		
Pulse tone	4	4		
Horn			5	5
Multi-Tone Sounder	7	7		
Optical				
LED Permanent Light	3		3	
Xenon Flash		4		4

Your benefits

The WERMA Mini Beacon with a buzzer, siren or horn provides safety and security by providing a secure alarm warning in various applications. These optical-audible combination beacons are easy to install and connect, particularly when space is limited.

- Reliable signalling in close-range applications
- Tamper-proof when installed
- Multiple visual and audible escalation levels possible

Typical applications

Fault signalling

- In areas with low ambient noise levels
- On smaller sized machinery and equipment
- In building service systems (e.g. gas alarm, lift alarm)

Installation options

- Base mounting
- Wall mounting
- Tube mounting

Features

- Proven piezo technology for a long life duration
- Adjustable sound output
- Permanent light with long-lasting and energy-saving LEDs or as an eye-catching Xenon flashing light for high visibility

Base mounting

The adaptor (accessory) allows quick and simple mounting on a tube

Wall mounting

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

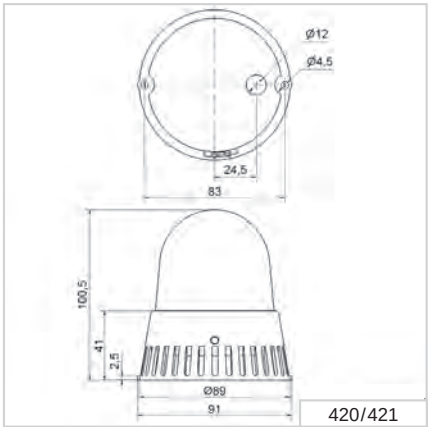
	Base/Tube mounting	Wall mounting
Dimensions (Ø x Height):	89 mm x 100,5 mm (Base mount.)	-
Dimensions (L x H x W):	-	83 mm x 120,5 mm x 91 mm
Housing:	PC, black	PC/ABS-Blend; PC grey
Lens:	PC, transparent	
Connection:	Connector plug with screw terminal max. 1.5 mm²	
Cable entry:	Cable diameter max. 9 mm	
Life duration:	Up to 50,000 hrs	
Tone type:	Continuous tone or pulse tone, adjustable 12 V: only continuous tone	
Tone frequency:	2,3 kHz (c. 3,3 kHz at 12 V)	
Fixing:	Tube mounting via accessory	Sound outlet facing downwards

Voltage:	12 V DC	24 V AC/DC	115 V AC	230 V AC
Current consumption LED:	80 mA	45 mA	25 mA	25 mA
Current consumption Buzzer:	40 mA	15 mA	15 mA	25 mA
Base/Tube mounting				
red	**420 110 54**	**420 110 75**	**420 110 67**	**420 110 68**
yellow	**420 310 54**	**420 310 75**	**420 310 67**	**420 310 68**
Wall mounting				
red	**422 110 54**	**422 110 75**	**422 110 67**	**422 110 68**
yellow	-	**422 310 75**	**422 310 67**	**422 310 68**

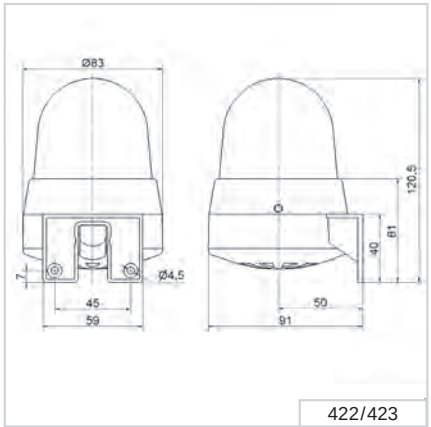
ACCESSORIES:

Adaptor for tube mounting, plastic, for tube Ø 25 mm	**975 420 01**
Base for tube Ø 25 mm, plastic, incl. rubber seal	**975 840 90**
Base for tube Ø 25 mm, metal, incl. rubber seal	**975 840 91**
Tube Ø 25 mm, all anodized aluminium	
100 mm	**975 845 10**
250 mm	**975 840 25**

TECHNICAL DIAGRAMS:



420/421



422/423

Siganlisation index

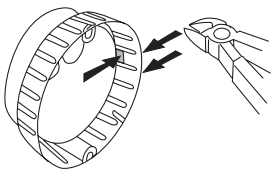
Continuous tone	4
Pulse tone	4
LED Permanent Light	3

24 V

Mini Xenon Flash / Buzzer Combination

Base mounting

Wall mounting



A piece of the rim can be broken out to allow for cable entry from the side

TECHNICAL SPECIFICATIONS / ORDER SPECIFICATIONS:

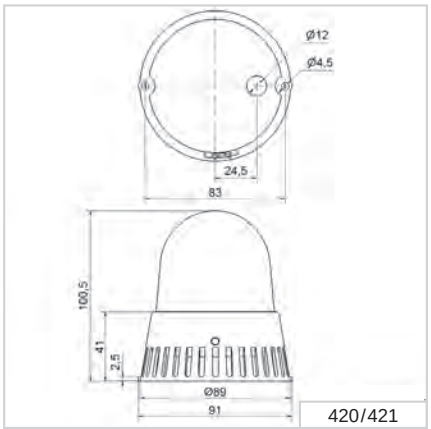
	Base/Tube mounting	Wall mounting
Dimensions (Ø x Height):	89 mm x 100,5 mm (Base mount.)	-
Dimensions (L x H x W):	-	83 mm x 120,5 mm x 91 mm
Housing:	PC, black	PC/ABS-Blend; PC grey
Lens:	PC, transparent	
Connection:	Connector plug with screw terminal max. 1.5 mm^2	
Cable entry:	Cable diameter max. 9 mm	
Tone type:	Continuous tone or pulse tone, adjustable	
Tone frequency:	2,3 kHz	
Flash energy:	1 Ws	
Flash frequency:	1 Hz	
Life duration:	4 x 10^6 flashes	
Fixing:	Tube mounting via accessory	Sound outlet facing downwards

Voltage:	24 V AC/DC	115 V AC	230 V AC
Current consumption Flash:	120 mA	25 mA	35 mA
Current consumption Buzzer:	15 mA	15 mA	25 mA
Base/Tube mounting			
red	**421 110 75**	**421 110 67**	**421 110 68**
yellow	**421 310 75**	**421 310 67**	**421 310 68**
Wall mounting			
rot	**423 110 75**	**423 110 67**	**423 110 68**
gelb	**423 310 75**	**423 310 67**	**423 310 68**

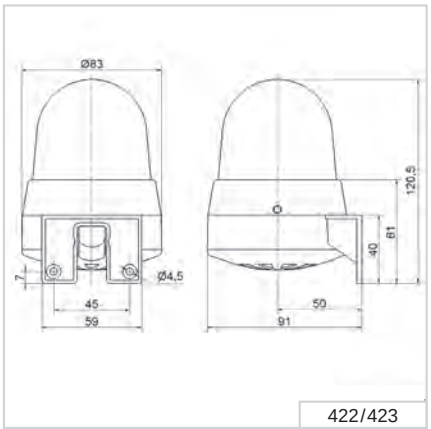
ACCESSORIES:

Adaptor for tube mounting, plastic, for tube Ø 25 mm	**975 420 01**
Base for tube Ø 25 mm, plastic, incl. rubber seal	**975 840 90**
Base for tube Ø 25 mm, metal, incl. rubber seal	**975 840 91**
Tube Ø 25 mm, all anodized aluminium	
100 mm	**975 845 10**
250 mm	**975 840 25**

TECHNICAL DIAGRAMS:



420/421



422/423

Siganlisation index

Continuous tone	4
Pulse tone	4
Xenon Flash	4

CE EAC 120 g IP65 +50°C -20°C 1 Ws 92 dB

420/422 Mini LED Permanent Light / Multi-Tone Sounder Combination

Base mounting

Mounting holes integrated into the product rim allow easy mounting without having to remove the lens

Wall mounting

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

	Base/Tube mounting	Wall mounting
Dimensions (Ø x Height):	89 mm x 100,5 mm (Base mount.)	-
Dimensions (L x H x W):	-	83 mm x 120,5 mm x 91 mm
Housing:	PC, black	PC/ABS-Blend; PC grey
Lens:	PC, transparent	
Connection:	Screw terminal with wire protection max. 1.5 mm²	
Cable entry:	Cable diameter max. 9 mm	
Tone type:	Selectable, see table below	
Tone frequency:	See table	
Life duration:	Up to 50,000 hrs	
Fixing:	Tube mounting via accessory	Sound outlet facing downwards

Voltage:	24 V AC/DC
Current consumption LED:	45 mA
Current consumption MTS:	80 mA
Base/Tube mounting	
red	**420 120 75**
yellow	**420 320 75**
Wall mounting	
red	**422 120 75**
yellow	**422 320 75**

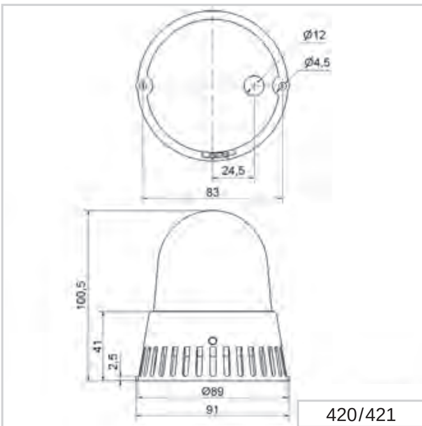
TONE TYPES AND FREQUENCIES:

Ton No.	Tone type
1	Horn tone (c. 110 Hz)
2	Continuous tone (c. 3.0 KHz)
3	1 Hz tone (c. 3.0 KHz)
4	20 Hz whistle tone (c. 3.0 KHz)
5	800-970 Hz rising @ 1 Hz
6	2400-2850 Hz rising @ 7 Hz
7	1200-500 Hz falling @ 1 Hz
8	Alternating tone 800 Hz / 1200 Hz @ 1Hz

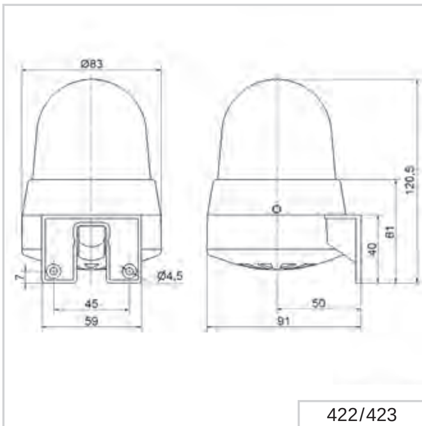
ACCESSORIES:

Accessories see page 264.

TECHNICAL DIAGRAMS:



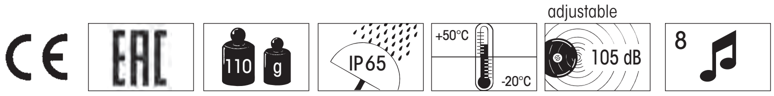
420/421



422/423

Siganlisation index

Multi-Tone Sounder	7
LED Permanent Light	3



WERMA

421/423 Mini Xenon Flash / Multi-Tone Sounder Combination

Base mounting

Wall mounting

Mounting holes integrated into the product rim allow easy mounting without having to remove the lens

TECHNICAL SPECIFICATIONS / ORDER SPECIFICATIONS:

	Base/Tube mounting	Wall mounting
Dimensions (Ø x Height):	89 mm x 100,5 mm (Base mount.)	-
Dimensions (L x H x W):	-	83 mm x 120,5 mm x 91 mm
Housing:	PC, black	PC/ABS-Blend; PC grey
Lens:	PC, transparent	
Connection:	Screw terminal with wire protection max. 1.5 mm^2	
Cable entry:	Cable diameter max. 9 mm	
Flash energy:	1 Ws	
Flash frequency:	1 Hz	
Life duration:	4 x 10^6 flashes	
Tone type:	Selectable, see table below	
Tone frequency:	See table	
Fixing:	Tube mounting via accessory	Sound outlet facing downwards

Voltage:	24 V AC/DC
Current consumption Flash:	120 mA
Current consumption MTS:	80 mA
Base/Tube mounting	
red	**421 120 75**
yellow	**421 320 75**
Wall mounting	
red	**423 120 75**
yellow	**423 320 75**

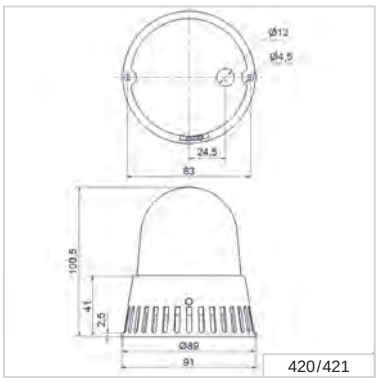
TONE TYPES AND FREQUENCIES:

Ton	Tone type
1	Horn tone (c. 110 Hz)
2	Continuous tone (c. 3.0 KHz)
3	1 Hz tone (c. 3.0 KHz)
4	20 Hz whistle tone (c. 3.0 KHz)
5	800-970 Hz rising @ 1 Hz
6	2400-2850 Hz rising @ 7 Hz
7	1200-500 Hz falling @ 1 Hz
8	Alternating tone 800 Hz / 1200 Hz @ 1Hz

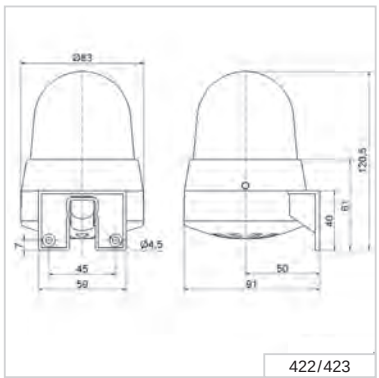
ACCESSORIES:

Accessories see page 265.

TECHNICAL DIAGRAMS:



420/421



422/423

adjustable

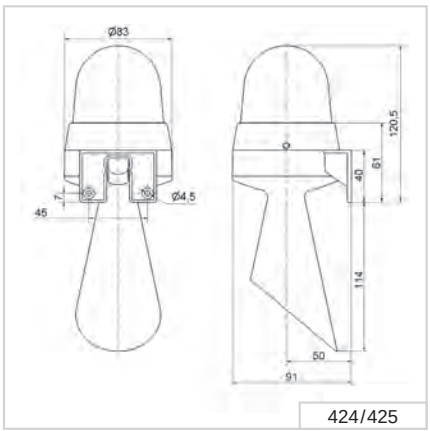
Siganlisation index	
Multi-Tone Sounder	7
Xenon Flash	4

Mini LED Permanent Light / Horn Combination

TECHNICAL SPECIFICATIONS / ORDER SPECIFICATIONS:

Dimensions (L x H x W):	83 mm x 234,5 mm x 91 mm		
Housing:	PC/ABS-Blend; PC grey		
Lens:	PC, transparent		
Connection:	Screw terminal with wire protection max. 1.5 mm²		
Cable entry:	Cable diameter max. 9 mm		
Life duration:	50,000 h (LED Permanent light) 5,000 h (Horn)		
Tone frequency:	110 Hz		
Fixing:	Wall mounting, Sound outlet facing downwards		
Voltage:	24 V AC/DC	115 V AC	230 V AC
Current consumption LED:	45 mA	25 mA	25 mA
Current consumption Horn:	80 mA	70 mA	70 mA
red	**424 120 75**	**424 120 67**	**424 120 68**
yellow	**424 320 75**	**424 320 67**	**424 320 68**

TECHNICAL DIAGRAM:



424/425

Siganlisation index

Horn	5
LED Permanent Light	3

adjustable (24 V)

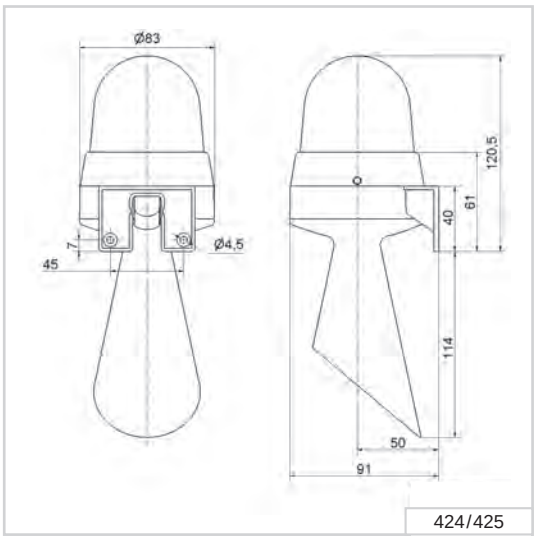
EAC | 170 g | IP65 | +50°C -20°C | 98 dB

Mini Xenon Flash/Horn Combination

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (L x H x W):	83 mm x 234,5 mm x 91 mm		
Housing:	PC/ABS-Blend; PC grey		
Lens:	PC, transparent		
Connection:	Screw terminal with wire protection max. 1.5 mm²		
Cable entry:	Cable diameter max. 9 mm		
Flash energy:	1 Ws		
Flash frequency:	1 Hz		
Life duration:	4 x 10⁶ Blitze (Xenon Flash) 5,000 h (Horn)		
Tone frequency:	110 Hz		
Fixing:	Wall mounting, Sound outlet facing downwards		
Voltage:	24 V AC/DC	115 V AC	230 V AC
Current consumption Flash:	120 mA	30 mA	30 mA
Current consumption Horn:	80 mA	70 mA	70 mA
red	**425 120 75**	**425 120 67**	**425 120 68**
yellow	**425 320 75**	**425 320 67**	**425 320 68**

TECHNICAL DIAGRAM:



424/425

Siganlisation index

Horn	5
Xenon Flash	4

adjustable (24 V)

CE EAC 190 g IP65 +50°C -20°C 98 dB 1 Ws

Midi Combination Beacon with Siren/Horn

Size comparison Midi / Design

Siganlisation index				
Audible	**430/432**	**431/433**	**434**	**435**
Horn			7	7
Multi-Tone Sounder	7	7		
Optical				
LED Permanent Light	5	5	5	5
LED Flashing Light		7		7
LED EVS Light		9		9

Your benefits

The WERMA Midi Beacon with a siren or horn provides safety and security by delivering reliable fault alarms over medium distances. The IP65 protection rating is suitable for outdoor applications.

- Multiple light configurations for different purposes and distances (some with partial external triggering)
- Simple installation
- Tamper-proof when installed
- Multiple visual and audible escalation levels possible
- Clear all-round visibility thanks to the OmniVIEW lens; no blind spots
- Multi-tone siren with up to 32 tones available for maximum flexibility

Typical applications

Fault signalling

- In areas with high ambient noise levels
- On machinery and equipment
- In building service systems (e.g. gas alarm)
- In the event of e.g. overload on mobile cranes and similar

Installation options

- Base mounting
- Wall mounting
- Tube mounting

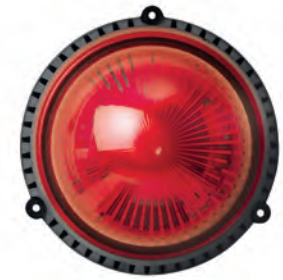
Features

- Long life and energy-saving LEDs

430/432 Midi LED Permanent Light/ Multi-Tone Sounder Combination

LED Permanent Light in combination with Multi-Tone Sounder

Quick and simple wall mounting without additional accessories thanks to integrated mounting bracket (432)



Mounting holes integrated into the product rim allow easy mounting without having to remove the lens (430)

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

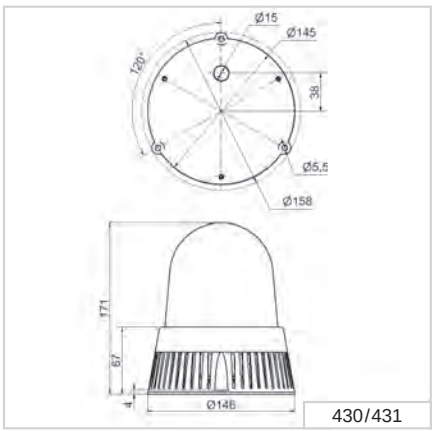
	Base mounting (430)	Wall mounting (432)
Dimensions (Ø x Height):	146 mm x 171 mm	134 mm x 235 mm
Housing:	PC/ABS-Blend, black	PC/ABS-Blend, grey
Lens:	PC, transparent	
Connection:	Screw terminal 0.5-1.5 mm²	
Cable entry:	Cable diameter max. 11 mm	
Tone type and frequency:	32 tones adjustable, see table on page 273	
Life duration:	Up to 50,000 h (LED), up to 5,000 h (Multi-tone Sounder)	
Installation position:	Sound outlet facing downwards	
Fixing:	Base mounting (430), Wall mounting (432) Tube mounting (accessory, only for 430)	
Voltage:	24 V AC/DC	115-230 V AC*
Current consumption MTS:	190 mA	55 mA
Current consumption LED:	350 mA 230 mA (red)	100 mA 80 mA (red)
Base mounting		
red	**430 100 75**	**430 100 60**
yellow	**430 300 75**	**430 300 60**
Wall mounting		
red	**432 100 75**	**432 100 60**
yellow	**432 300 75**	**432 300 60**

*Current consumption at 115 V

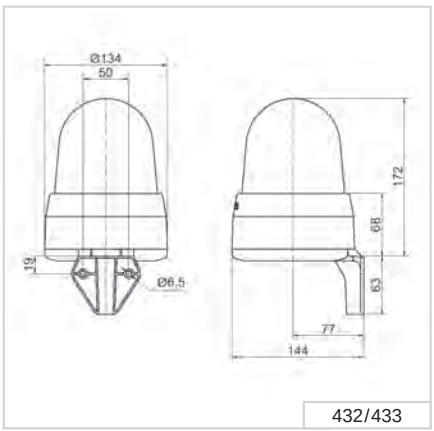
ACCESSORIES:

Adaptor for tube mounting, plastic, for tube Ø 25 mm	**975 430 01**

TECHNICAL DIAGRAMS:



430/431



432/433

Siganlisation index

Multi-Tone Sounder	7
LED Permanent Light	5

c UL us CE 515 g IP65 +50°C -30°C 108 dB 32

Midi LED Permanent / Flashing / EVS / Multi-Tone Sounder Combination

Multi-functional LED beacon: 3 light effects can be externally triggered

The adaptor enables mounting on a tube (431)

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

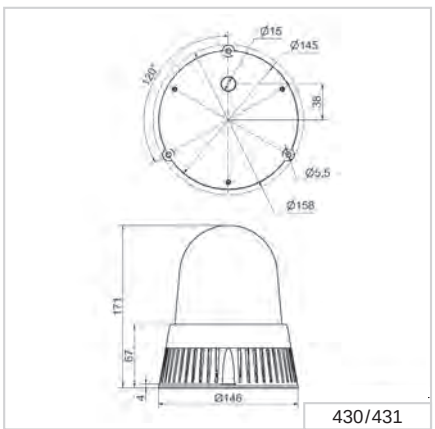
	Base mounting (431)	Wall mounting (433)
Dimensions (Ø x Height):	146 mm x 171 mm	134 mm x 235 mm
Housing:	PCABS-Blend, black	PC/ABS-Blend, grey
Lens:	PC, transparent	
Connection:	Screw terminal 0.5-1.5 mm²	
Cable entry:	Cable diameter max. 11 mm	
Tone type and frequency:	32 tones adjustable, see table on page 273	
Installation position:	Sound outlet facing downwards	
Life duration:	Up to 50,000 h (LED), up to 5,000 h (Multi-tone Sounder)	
Fixing:	Base mounting (431), Wall mounting (433) Tube mounting (accessory, only for 431)	
Voltage:	24 V AC/DC	115-230 V AC*
Current consumption MTS:	190 mA	55 mA
Current consumption LED:	350 mA	100 mA
	230 mA (red)	80 mA (red)
Base mounting		
red	**431 100 75**	**431 100 60**
yellow	**431 300 75**	**431 300 60**
Wall mounting		
red	**433 100 75**	**433 100 60**
yellow	**433 300 75**	**433 300 60**

*Current consumption at 115 V

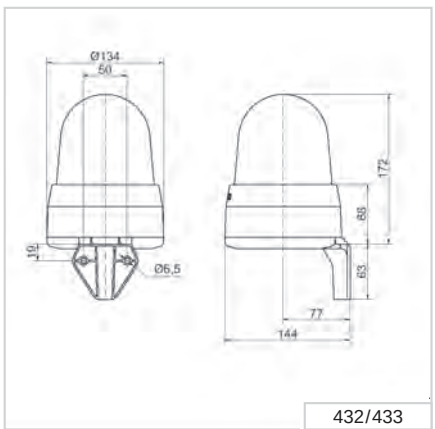
ACCESSORIES:

Adaptor for tube mounting, plastic, for tube Ø 25 mm	**975 430 01**

TECHNICAL DIAGRAMS:



430/431



432/433

Optical-audible combinations

Siganlisation index

Multi-Tone Sounder	7
LED Permanent Light	5
LED Flashing Light	7
LED EVS Light	9

525 g | IP65 | +50°C -30°C | 108 dB | 32

Tone table for Multi-Tone Sounder

The Multi-Tone Sounder Combinations 43x offers a large choice of internationally recognised signal tones for the widest range of applications. The tone types and frequencies can be found in the table below:

TONE TYPES AND FREQUENCIES:

Tone 1	Tone type	Frequency (Hz)	Description	Use	Tone 2	Sound output (dbA)
1	continuous	200		BS 5839-1:2002	440 Hz cont.	97
2	rising	800 & 970	7 Hz		14	102
3	rising	800 & 970	1 Hz		14	103
4	continuous	2850			14	104
5	rising	2400 - 2850	7 Hz		4	109
6	rising	2400 - 2850	1 Hz		4	110
7	rising	500 - 1200	3 s, then 0.5 s OFF (then repeat)		14	106
8	falling	1200 - 500	1 Hz	DIN 33404-3	14	104
9	alternating	2400 & 2850	2 Hz		4	111
10	pulse	970	0.5 Hz (1 s On/1 s Off)	BS 5839 Part 1 1988	14	101
11	alternating	800 & 970	1 Hz	BS 5839 Part 1 1988	14	105
12	pulse	2850	0.5 Hz		4	104
13	pulse	970		0,25 s On/1 s Off	14	98
14	continuous	970		BS 5839-1:2002 PFEER - Toxic gas	10	102
15	alternating	554 & 440		France NFS	14	101
16	pulse	660	150 ms On/150 ms Off	Swedish	16	96
17	pulse	660	1.8 s On/1.8 s Off	Swedish	17	98
18	pulse	660	6.5 s On/13 s Off	Swedish	18	98
19	continuous	660		Swedish	19	98
20	alternating	554 & 440	0.5 Hz		20	102
21	pulse	660	1 Hz	Swedish	21	97
22	pulse	2850	150 ms On/100 ms Off	GB	14	104
23	rising	800 - 970	50 Hz (low)	BS 5839 Part 1 1988	14	102
24	rising	2400 - 2850	50 Hz (high)		4	109
25	pulse	970	3 x 500 ms ON/500 ms OFF / 1.5 s silence, then repeat (low)	ISO 8201 US Temporal	26	101
26	pulse	2850	3 x 500 ms ON/500 ms OFF / 1.5 s silence, then repeat (high)	ISO 8201 US Temporal	25	104
27	continuous	4000			27	92
28	rising	2000 - 2850	7 Hz		2000 Hz cont.	111
29	alternating	988 & 645	2 Hz		988 Hz cont.	102
30	alternating	510 & 610	2 Hz		510 Hz cont.	102
31	alternating	800 & 970	2 Hz	5839-1:2002	800 Hz cont.	105
32	alternating	800 & 1200	1 Hz		800 Hz cont.	105

Midi LED Permanent Light / Horn Combination

Award winning design Winner of the iF product design award 2012

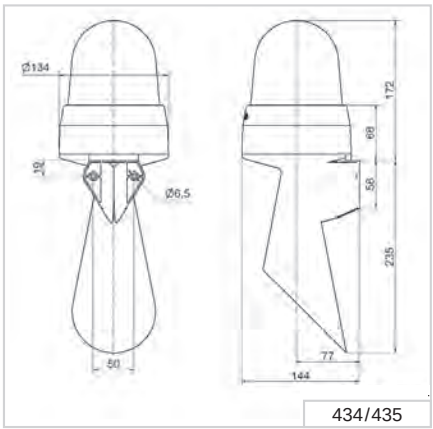
Quick and simple wall mounting without additional accessories thanks to integrated mounting bracket

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (L x H x W):	134 mm x 407 mm x 144 mm	
Housing:	PC/ABS-Blend, grey	
Lens:	PC, transparent	
Connection:	Screw terminal 0.5-1.5 mm²	
Cable entry:	Cable diameter max. 11 mm	
Tone frequency:	C. 110 Hz	
Life duration:	Up to 50,000 h (LED), up to 5,000 h (Horn)	
Fixing:	Wall mounting, integrated mounting bracket	
Installation position:	Sound outlet facing downwards	
Voltage:	24 V AC/DC	115-230 V AC*
Current consumption MTS:	55 mA	30 mA
Current consumption LED:	350 mA 230 mA (red)	100 mA 80 mA (red)
red	**434 100 75**	**434 100 60**
yellow	**434 300 75**	**434 300 60**

*Current consumption at 115 V

TECHNICAL DIAGRAM:



434/435

Siganlisation index

Horn	7
LED Permanent Light	5

c UL us · CE · 625 g · IP65 · +50°C · -30°C · 108 dB

435 Midi LED Permanent / Flashing / EVS / Horn Combination

Multi-functional LED beacon:
3 light effects can be triggered externally

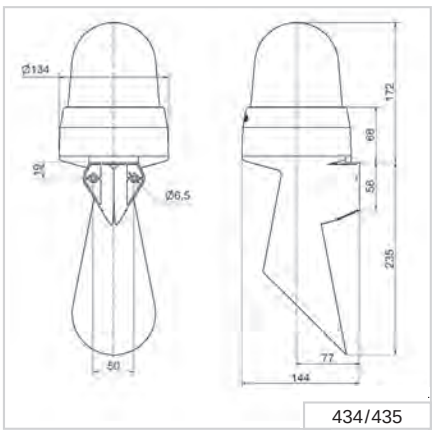
The "EVS" light effect ensures a maximum attention-grabbing effect

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (L x H x W):	134 mm x 407 mm x 144 mm	
Housing:	PC/ABS-Blend, grey	
Lens:	PC, transparent	
Connection:	Screw terminal 0.5-1.5 mm²	
Cable entry:	Cable diameter max. 11 mm	
Tone frequency:	C. 110 Hz	
Life duration:	Up to 50,000 h (LED), up to 5,000 h (Horn)	
Fixing:	Wall mounting, integrated mounting bracket	
Installation position:	Sound outlet facing downwards	
Voltage:	24 V AC/DC	115-230 V AC*
Current consumption MTS:	55 mA	30 mA
Current consumption LED:	350 mA 220 mA (red)	100 mA 80 mA (red)
red	**435 100 75**	**435 100 60**
yellow	**435 300 75**	**435 300 60**

*Current consumption at 115 V

TECHNICAL DIAGRAM:



Siganlisation index

Horn	7
LED Permanent Light	5
LED Flashing Light	7
LED EVS	9

635 g
IP65
+50°C
-30°C
108 dB

Design Combination LED Multi-Tone Sirens

Size comparison Design / Heavy Duty


Siganlisation index	
Audible	
Multi-Tone Sounder	8
Optical	
LED Flashing Light	6
LED EVS	8

Your benefits

The Design Combination LED Multi-Tone Sirens provide safety and security in environments with heightened aesthetic design requirements. The innovative housing design makes for simple mounting in many diverse applications.

- Ideal signalling effect over great distances
- Multiple visual and audible escalation levels possible
- Many application options with up to 32 tones available
- Up to 3 tones controlled remotely for the escalation of signals
- Includes standardised tones (including those used in fire alarms)

Typical applications

Fault signalling

- In building service systems
- On machinery and equipment

Installation options

- Wall mounting
- Base mounting
- Ceiling mounting

Features

- Multi-voltage versions allow multiple applications with a single device
- Long life and energy-saving LEDs, either as a flashing light or EVS

Base mounting

Wall mounting

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (L x H x W):	109 mm x 112.5 mm x 152 mm		
Housing:	PC/ABS-Blend		
Lens:	PC, transparent		
Connection:	24 V: Screw terminal 0.5-1.5 mm² 115/230 V: CAGE CLAMP®		
Cable entry:	Membrane for cable diameter max. 13 mm		
Life duration:	Up to 50,000 hrs (LED Double Flash)		
Flash frequency:	C. 1 Hz		
Fixing:	Wall, base and ceiling mounting		
Voltage:	24 V AC/DC	115 V AC	230 V AC
Current consumption Optical:	60 mA	30 mA	30 mA
Current consumption Audible:	200 mA	55 mA	30 mA
red	**444 100 75**	**444 100 67**	**444 100 68**
yellow	**444 300 75**	**444 300 67**	**444 300 68**

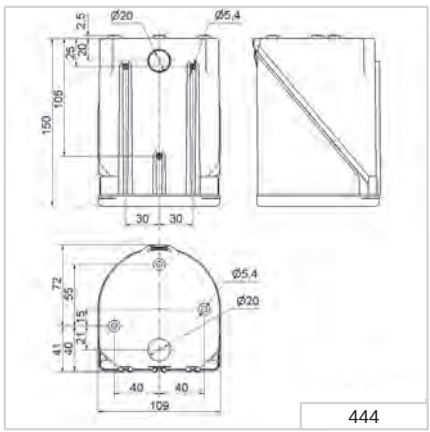
ACCESSORIES:

Cable gland M20 x 1.5 mm (for cable strain relief) Protection rating IP 65 is guaranteed even without cable gland	**975 444 01**

TONE TYPES AND FREQUENCIES:

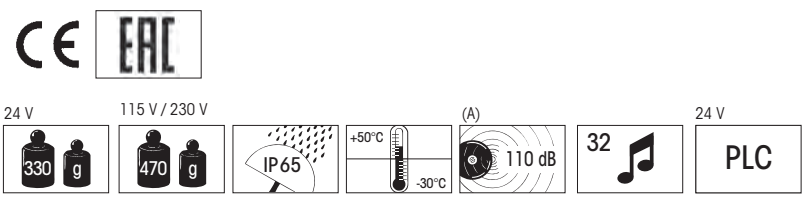
Selectable via DIP switch, see tone table on page 279, 3 tones can be externally triggered

TECHNICAL DIAGRAM:



Siganlisation index

Multi-Tone Sounder	8
LED Flashing Light	6



LED EVS/Multi-Tone Sounder Combination

Base mounting

The „EVS“ light effect ensures a maximum attention-grabbing effect

TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (L x H x W):	109 mm x 112.5 mm x 152 mm		
Housing:	PC/ABS-Blend		
Lens:	PC, transparent		
Connection:	24 V: Screw terminal 0.5-1.5 mm² 115/230 V: CAGE CLAMP®		
Cable entry:	Membrane for cable diamter max. 13 mm		
Fixing:	Wall, base and ceiling mounting		
Life duration:	Up to 50,000 hrs (LED EVS)		
Voltage:	24 V AC/DC	115 V AC	230 V AC
Current consumption Optical:	60 mA	30 mA	30 mA
Current consumption Audible:	220 mA	55 mA	30 mA
red	**444 110 75**	**444 110 67**	**444 110 68**
yellow	**444 310 75**	**444 310 67**	**444 310 68**

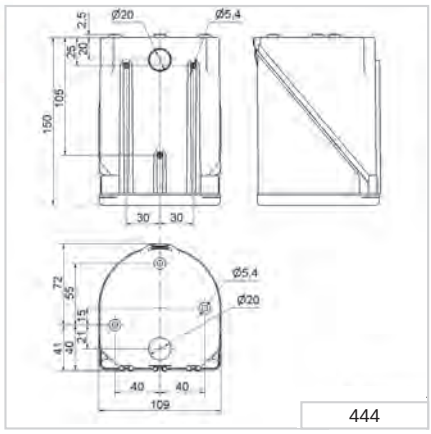
ACCESSORIES:

Cable gland M20 x 1.5 mm (for cable strain relief) Protection rating IP 65 is guaranteed even without cable gland	**975 444 01**

TONE TYPES AND FREQUENCIES:

Selectable via DIP switch, see tone table on page 279, 3 tones can be externally triggered

TECHNICAL DIAGRAM:



Optical-audible combinations

Siganlisation index

Multi-Tone Sounder	8
LED EVS Light	8

24 V | 330 g | 115 V / 230 V | 470 g | IP65 | +50°C -30°C | 110 dB | 32 | 24 V PLC

444 Combination

The 444 Combinations offer a large choice of internationally recognised signal tones for the widest spectrum of applications.
3 tones can be triggered externally.

TONE TYPES AND FREQUENCIES:

Tone 1	Tone type	Frequency (Hz)	Description	Use	Tone 2	Sound output (dbA)
1	continuous	200		BS 5839-1:2002	440 Hz cont.	97
2	rising	800 & 970	7 Hz		14	102
3	rising	800 & 970	1 Hz		14	103
4	continuous	2850			14	104
5	rising	2400 - 2850	7 Hz		4	109
6	rising	2400 - 2850	1 Hz		4	110
7	rising	500 - 1200	3 s, then 0.5 s OFF (then repeat)		14	106
8	falling	1200 - 500	1 Hz	DIN 33404-3	14	104
9	alternating	2400 & 2850	2 Hz		4	111
10	pulse	970	0.5 Hz (1 s On/1 s Off)	BS 5839 Part 1 1988	14	101
11	alternating	800 & 970	1 Hz	BS 5839 Part 1 1988	14	105
12	pulse	2850	0.5 Hz		4	104
13	pulse	970		0,25 s On/1 s Off	14	98
14	continuous	970		BS 5839-1:2002 PFEER - Toxic gas	10	102
15	alternating	554 & 440		France NFS	14	101
16	pulse	660	150 ms On/150 ms Off	Swedish	16	96
17	pulse	660	1.8 s On/1.8 s Off	Swedish	17	98
18	pulse	660	6.5 s On/13 s Off	Swedish	18	98
19	continuous	660		Swedish	19	98
20	alternating	554 & 440	0.5 Hz		20	102
21	pulse	660	1 Hz	Swedish	21	97
22	pulse	2850	150 ms On/100 ms Off	GB	14	104
23	rising	800 - 970	50 Hz (low)	BS 5839 Part 1 1988	14	102
24	rising	2400 - 2850	50 Hz (high)		4	109
25	pulse	970	3 x 500 ms ON/500 ms OFF / 1.5 s silence, then repeat (low)	ISO 8201 US Temporal	26	101
26	pulse	2850	3 x 500 ms ON/500 ms OFF / 1.5 s silence, then repeat (high)	ISO 8201 US Temporal	25	104
27	continuous	4000			27	92
28	rising	2000 - 2850	7 Hz		2000 Hz cont.	111
29	alternating	988 & 645	2 Hz		988 Hz cont.	102
30	alternating	510 & 610	2 Hz		510 Hz cont.	102
31	alternating	800 & 970	2 Hz	5839-1:2002	800 cont.	105
32	alternating	800 & 1200	1 Hz		800 cont.	105

Heavy Duty Combination – Multi-Tone Siren with Xenon Flash

Size comparison Heavy Duty / Design


Siganlisation index			
Audible	**439**	**441**	**442**
Multi-Tone Sounder	6	8	10
Optical			
Xenon Flash	4	5	5-6

Your benefits

The WERMA Heavy Duty Combination - Multi-Tone Siren with Xenon Flash features a very robust housing. The combination device provides safety and security through reliable, loud signalling in particularly harsh environments. Up to 120 dB for use in extremely noisy environments and signalling over long distances.

- Multiple visual and audible escalation levels possible
- Includes standardised tones (including those used in fire alarms)
- Up to 42 tones for signalling various statuses

Typical applications

Signalling of faults or alarms

- Outdoors in extreme conditions
- In larger industrial plants
- As an evacuation alarm

Installation options

- Wall mounting

Features

- High protection rating IP66
- Multi-voltage versions available

439 Xenon Flash / Multi-Tone Sounder Combination (105 dB)

TECHNICAL SPECIFICATIONS / ORDER SPECIFICATIONS:

Dimensions (L x H x W):	136 mm x 138 mm x 119 mm	
Housing:	ABS	
Connection:	Screw terminal 0.28-2.5 mm²	
Cable entry:	Cable gland M20 x 1.5 mm (not included in assembly)	
Flash frequency:	1 Hz	
Flash energy	1,6 Ws	
Tone type and frequency:	Selectable via DIP switch, 2 tones can be externally triggered	
Voltage:	9-60 V DC	110-230 V AC
Current consumption:	230 mA (24 V)	30 mA (230 V)
Housing/Flash		
red / red	**439 010 55**	**439 010 68**
red / yellow	**439 030 55**	**439 030 68**
grey / red	**439 110 55**	**439 110 68**
grey / yellow	**439 130 55**	**439 130 68**

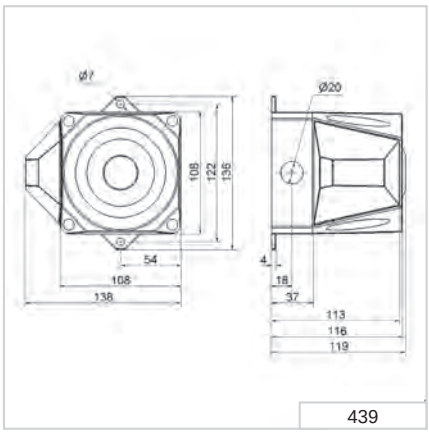
ACCESSORIES:

Cable gland M20 x 1.5 mm	**975 444 01**

TONE TYPES AND FREQUENCIES:

For further details see www.werma.com.

TECHNICAL DIAGRAM:



Siganlisation index

Multi-Tone Sounder	6
Xenon Flash	4

441 Xenon Flash / Multi-Tone Sounder Combination (110 dB)

TECHNICAL SPECIFICATIONS / ORDER SPECIFICATIONS:

Dimensions (L x H x W):	165 mm x 169 mm x 132 mm	
Housing:	PC/ABS-Blend	
Connection:	Screw terminal 0.28-2.5 mm²	
Cable entry:	Cable gland M20 x 1.5 mm (not included in assembly)	
Flash frequency:	1 Hz	
Flash energy	2.5 Ws	
Tone type and frequency:	Selectable via DIP switch, 2 tones can be externally triggered	
Voltage:	9-60 V DC	230 V AC
Current consumption:	230 mA	35 mA
Housing/Flash		
red / red	**441 010 55**	**441 010 68**
red / yellow	**441 030 55**	**441 030 68**
grey / red	**441 110 55**	**441 110 68**
grey / yellow	**441 130 55**	**441 130 68**

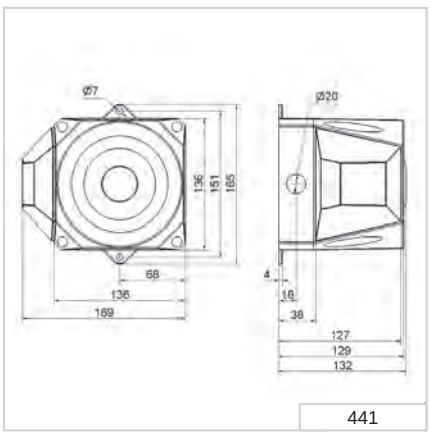
ACCESSORIES:

Cable gland M20 x 1.5 mm	**975 444 01**

TONE TYPES AND FREQUENCIES:

For further details see www.werma.com.

TECHNICAL DIAGRAM:



441

Optical-audible combinations

Siganlisation index

Multi-Tone Sounder	8
Xenon Flash	5

442 Xenon Flash / Multi-Tone Sounder Combination (120 dB)

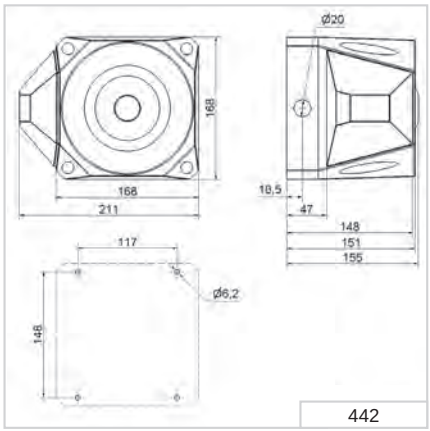
TECHNICAL SPECIFICATIONS / ORDER SPECIFICATIONS:

Dimensions (L x H x W):	168 mm x 211 mm x 155 mm		
Housing:	PC/ABS-Blend		
Connection:	Screw terminal 0,28-2.5 mm²		
Cable entry:	Cable gland M20 x 1.5 mm (not included in assembly)		
Tone type and frequency:	Selectable via DIP switch, 3 tones externally triggered see table on page 284		
Voltage:	18-30 V DC		115/230 V AC
Current cons. Multi Tone Sounder:	450 mA		130/65 mA
Current consumption Flash:	127-389 mA (dependent on voltage and flash frequency)		– /15 mA (dependent on voltage and flash frequency)
Flash frequency	0,75 Hz/1 Hz	1,25 Hz/2 Hz	1 Hz (Flash can only be operated with 230 V)
Flash energy	3,5 Ws	2 Ws	2 Ws
Housing/Flash			
red / red	**442 010 55**		**442 010 68**
red / yellow	**442 030 55**		**442 030 68**
grey / red	**442 110 55**		**442 110 68**
grey / yellow	**442 130 55**		**442 130 68**

ACCESSORIES:

Cable gland M20 x 1.5 mm	**975 444 01**

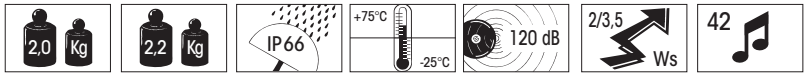
TECHNICAL DIAGRAM:



Siganlisation index

Multi-Tone Sounder	10
Xenon Flash	5-6

442 XX0 55 | 442 XX0 68



Optical-audible combinations

442 Combination

The Flash/Multi-Tone Sounder Combination 442 offers a large choice of internationally recognised signal tones for the widest spectrum of applications. 3 tones can be triggered externally. The first two tones can be freely chosen. The third tone is paired with the second tone.

TONE TYPES AND FREQUENCIES:

Tone 1+2 No	Tone type	Use	Output (dBA)	Tone 3
1	alternating 800/970 Hz in 2 Hz stroke (250 ms-250 ms)		120	14
2	rising 800/970 Hz in 7 Hz stroke (7/s)		120	14
3	rising 800/970 Hz in 1 Hz stroke (1/s)		120	14
4	continuous 2,850 Hz		111	9
5	rising 2,400-2,850 Hz in 7 Hz stroke		109	4
6	rising 2,400-2,850 Hz in 1 Hz stroke		110	4
7	500-1,200 Hz rising in 3 sec., 0.5 sec. OFF	Slow Whoop Holland	119	14
8	falling 1,200-500 Hz in 1 Hz stroke	DIN/PFEER (PAPA), DIN 33404-3, VDS tested	119	14
9	alternating 2,400/2,850 Hz in 2 Hz stroke (250 ms-250 ms)		113	4
10	pulse 970 Hz in 0,5 Hz stroke (1 sec. ON / 1 sec. OFF)	PFEER Alarm	117	14
11	alternating 800/970 Hz in 1 Hz stroke (500 ms-500 ms)		118	14
12	pulse 2,850 Hz in 0.5 Hz stroke (1 sec. ON / 1 sec. OFF)		112	4
13	970 Hz pulse: 0.25 sec. ON / 1 sec. OFF		117	14
14	continuous 970 Hz	PFEER - Toxic gas	118	8
15	554 Hz/100 ms alternating 440 Hz/400 ms	French alarm signal AFNOR NFS 32S 32-001	115	14
16	660 Hz pulse: 150 ms ON, 150 ms. OFF	Swedish alarm signal	114	14
17	660 Hz pulse: 1.8 sec. ON, 1.8 sec. OFF	Swedish alarm signal	115	14
18	660 Hz pulse: 6.5 sec. ON, 13 sec. OFF	Swedish alarm signal	115	14
19	continuous 660 Hz	Swedish alarm signal	116	1
20	alternating 554/440 Hz in 0.5 Hz stroke (1 sec. ON / 1 sec. OFF)	Swedish alarm signal	115	19
21	pulse 660 Hz in 1 Hz stroke (500 ms-500 ms)	Swedish alarm signal	115	4
22	pulse 2,850 Hz in 4 Hz stroke (150 ms ON / 100 ms OFF)		110	4
23	rising 800-970 Hz in 50 Hz stroke		117	14
24	rising 2,400-2,850 Hz in 50 Hz stroke		110	4
25	970 Hz puls.: 3 x 500 ms. ON, 500 ms OFF, break 1.5 sec.	ISO 8201 / US Temporal	118	14
26	2,850 Hz puls.: 3 x 500 ms. ON, 500 ms OFF, break 1.5 sec.	ISO 8201 / US Temporal	112	4
27	continuous 4,000 Hz		105	6
28	alternating 800/970 Hz in 2 Hz stroke (250 ms-250 ms)		118	14
29	alternating 990/650 Hz in 2 Hz stroke (250 ms-250 ms)		117	14
30	alternating 510/610 Hz in 2 Hz stroke (250 ms-250 ms)		116	14
31	rising 300-1,200 Hz in 1 Hz stroke		118	14
32	continuous Bell		117	3
33	continuous Bell: 3x500 ms. Pulse, 1.5 sec. Silence, then repeat	Bell / US Temporal	117	14
34	alternating 1,000/2,000 Hz in 1 Hz stroke (500 ms-500 ms)	Singapore	115	4
35	pulse 420 Hz (0,625 sec.)	Australian alarm signal	118	14
36	500-1,200 Hz rising in 3.75 sec., then 0,25 sec. OFF	Australian alarm signal (Evacuation)	117	14
37	rising 1,400-1,600 Hz in 1 sec., falling in 0.5 sec.	NF C 48-265	116	14
38	500-1,200 Hz rising and falling in 3 sec.	Siren	117	14
39	pulse 720 Hz: 0.7 sec. ON, 0.3 sec. OFF	German industrial alarm	118	14
40	rising 422-775 Hz in 0.85 sec., 1 sec. silence, then repeat	NFPA Whoop	118	14
41	continuous 470 Hz	Horn (USA)	114	3
42	continuous 370 Hz	Air Horn (USA)	113	3

Notes

Product number index

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