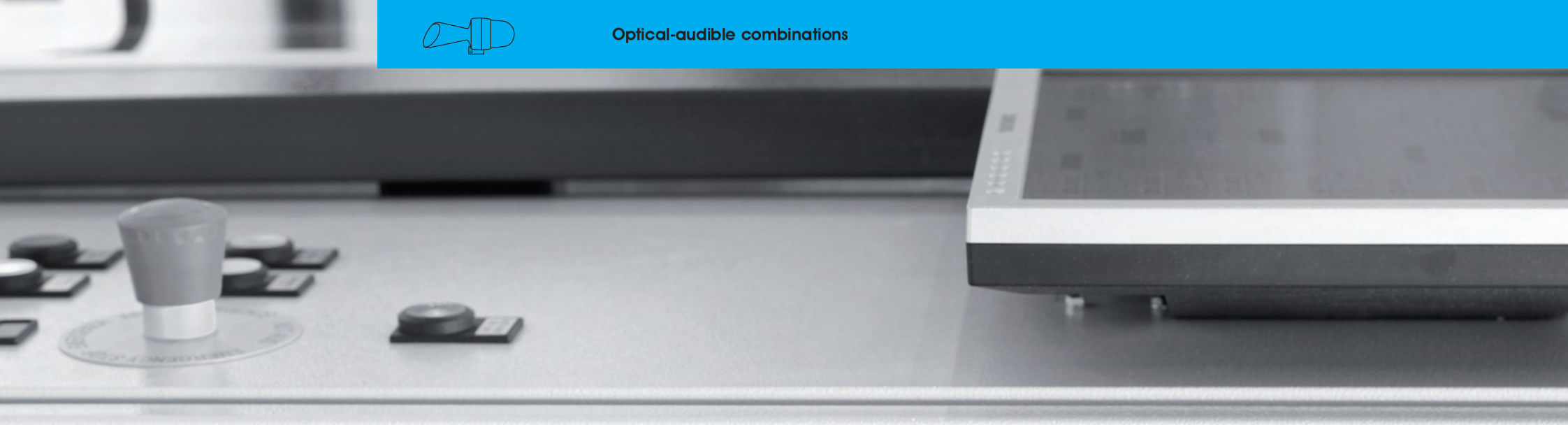



WERMA
SIGNALTECHNIK
424 X20 75
24V= IP65 to50°C

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

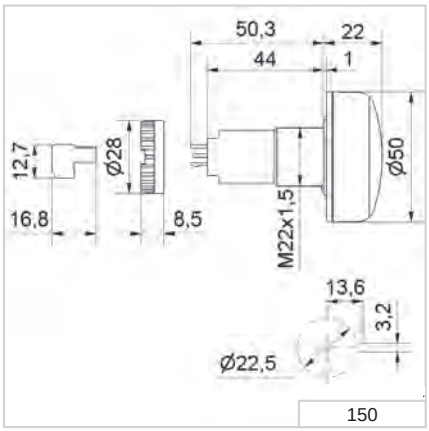
TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

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.

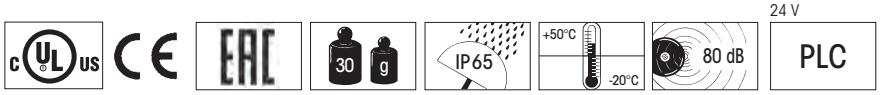
Voltage:	24 V DC	115 V AC	230 V AC
Current consumption:	< 50 mA	< 20 mA	< 20 mA
red	**150 100 55**	**150 100 67**	**150 100 68**
yellow	**150 300 55**	**150 300 67**	**150 300 68**

TECHNICAL DIAGRAM:



Siganlisation index

Continuous tone	3
LED Permanent Light	3



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.

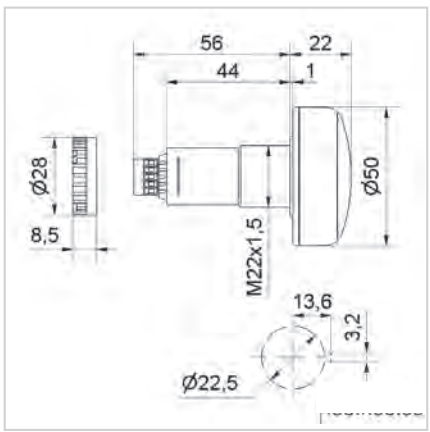
2

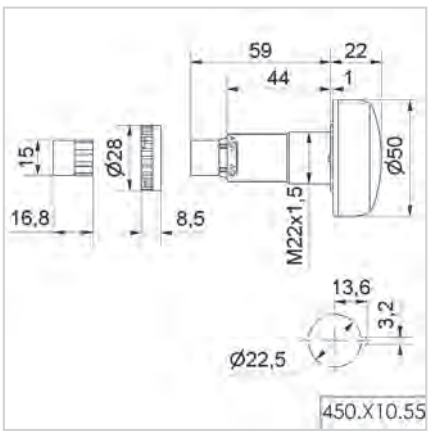
The audible signal can be turned off in seconds by lightly pressing the front of the product.

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

35 g | IP65 | +50°C -20°C | 80 dB

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:

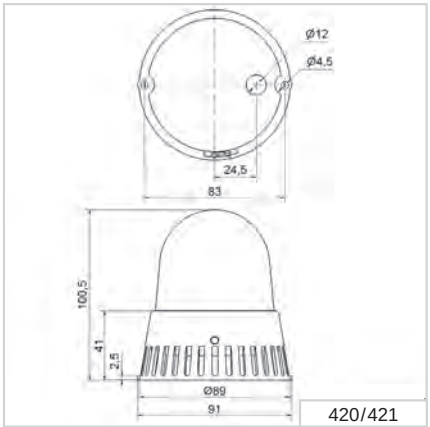
	Base/Tube mounting	Wall mounting
Dimensions (Ø x Height):	89 mm x 100,5 mm (Base mount.)	-
Dimensions (L x H x W):	-	83 mm x 120,5 mm x 91 mm
Housing:	PC, black	PC/ABS-Blend; PC grey
Lens:	PC, transparent	
Connection:	Connector plug with screw terminal max. 1.5 mm²	
Cable entry:	Cable diameter max. 9 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**

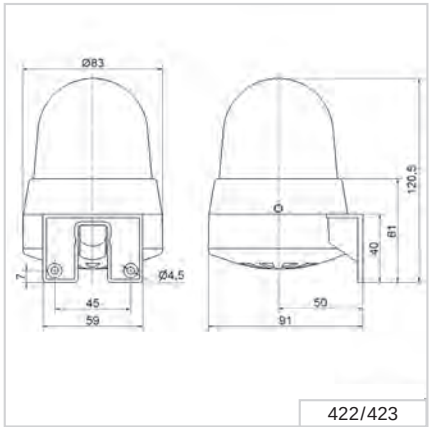
ACCESSORIES:

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

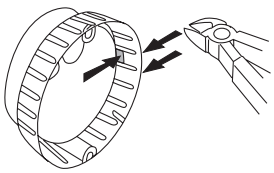
Continuous tone	4
Pulse tone	4
LED Permanent Light	3

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:

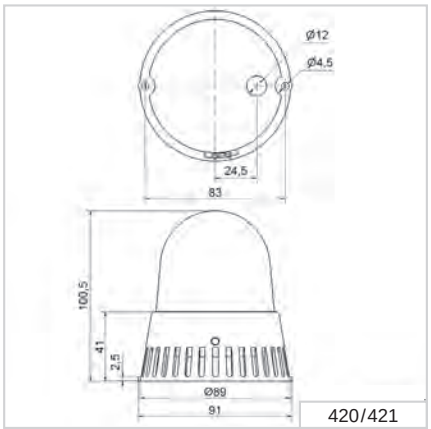
	Base/Tube mounting	Wall mounting
Dimensions (Ø x Height):	89 mm x 100,5 mm (Base mount.)	-
Dimensions (L x H x W):	-	83 mm x 120,5 mm x 91 mm
Housing:	PC, black	PC/ABS-Blend; PC grey
Lens:	PC, transparent	
Connection:	Connector plug with screw terminal max. 1.5 mm^2	
Cable entry:	Cable diameter max. 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**

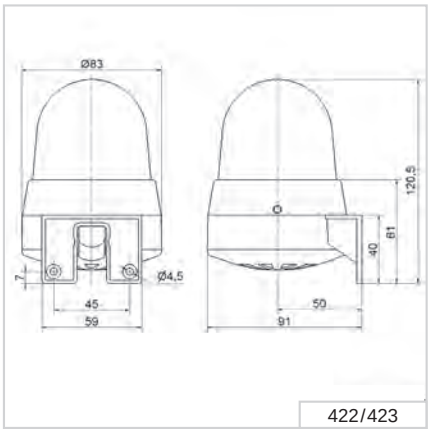
ACCESSORIES:

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**

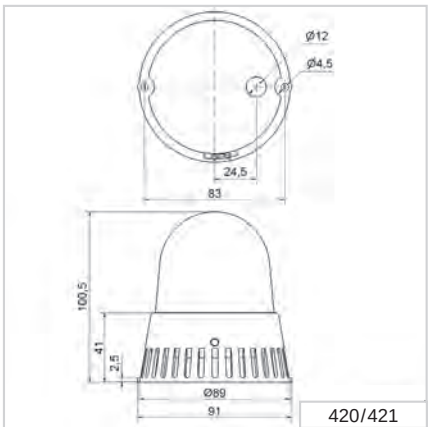
TONE TYPES AND FREQUENCIES:

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

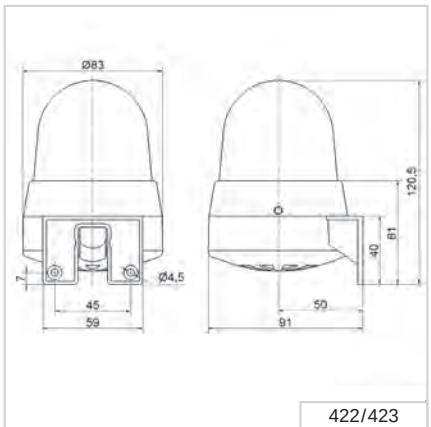
ACCESSORIES:

Accessories see page 264.

TECHNICAL DIAGRAMS:

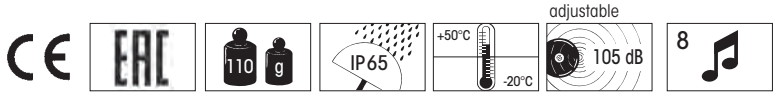


420/421



422/423

adjustable



Siganlisation index

Multi-Tone Sounder	7
LED Permanent Light	3

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**

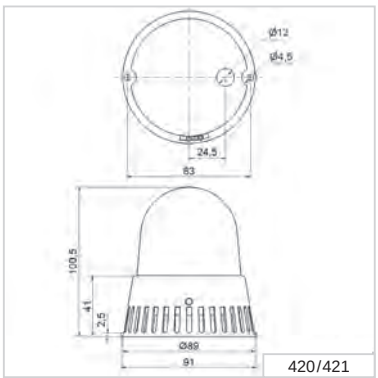
TONE TYPES AND FREQUENCIES:

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

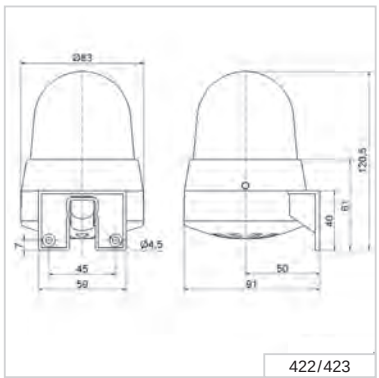
ACCESSORIES:

Accessories see page 265.

TECHNICAL DIAGRAMS:



420/421



422/423

adjustable

105 dB

1 Ws

8

Siganlisation index

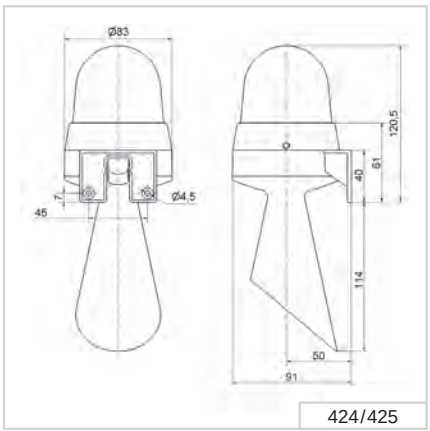
Multi-Tone Sounder	7
Xenon Flash	4

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)

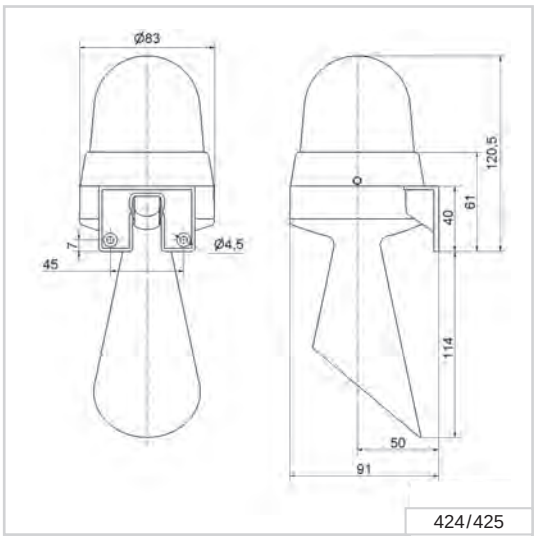
EAC | 170 g | IP65 | +50°C -20°C | 98 dB

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 mm^2		
Cable entry:	Cable diameter max. 9 mm		
Flash energy:	1 Ws		
Flash frequency:	1 Hz		
Life duration:	4 x 10^6 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:

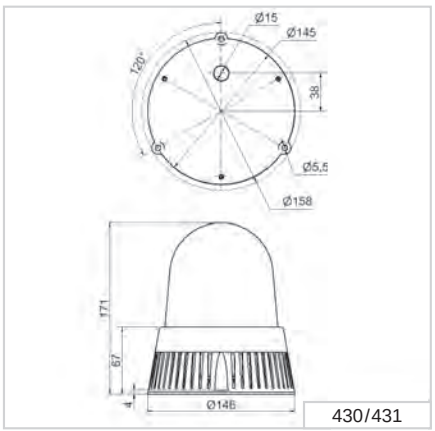
	Base mounting (430)	Wall mounting (432)
Dimensions (Ø x Height):	146 mm x 171 mm	134 mm x 235 mm
Housing:	PC/ABS-Blend, black	PC/ABS-Blend, grey
Lens:	PC, transparent	
Connection:	Screw terminal 0.5-1.5 mm²	
Cable entry:	Cable diameter max. 11 mm	
Tone type and frequency:	32 tones adjustable, see table 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

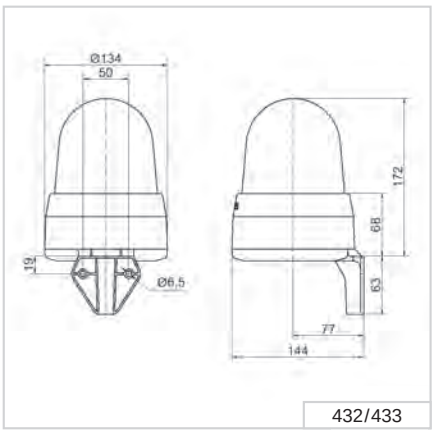
ACCESSORIES:

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:

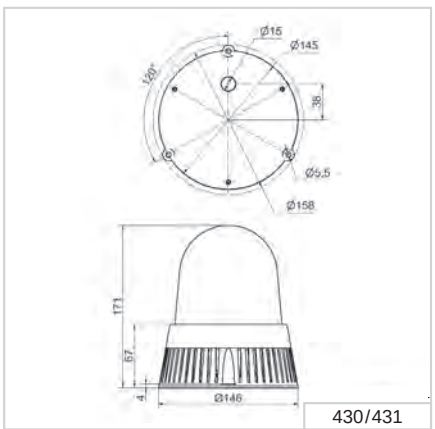
	Base mounting (431)	Wall mounting (433)
Dimensions (Ø x Height):	146 mm x 171 mm	134 mm x 235 mm
Housing:	PCABS-Blend, black	PC/ABS-Blend, grey
Lens:	PC, transparent	
Connection:	Screw terminal 0.5-1.5 mm²	
Cable entry:	Cable diameter max. 11 mm	
Tone type and frequency:	32 tones adjustable, see table 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

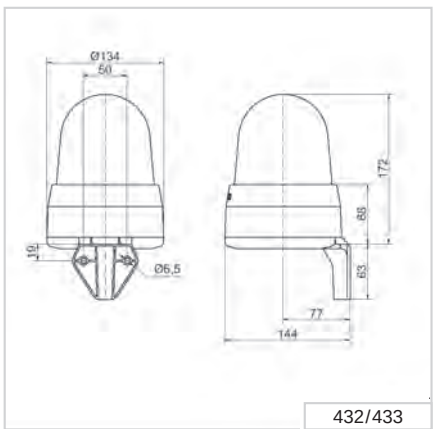
ACCESSORIES:

Adaptor for tube mounting, plastic, for tube Ø 25 mm	**975 430 01**

TECHNICAL DIAGRAMS:



430/431



432/433

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

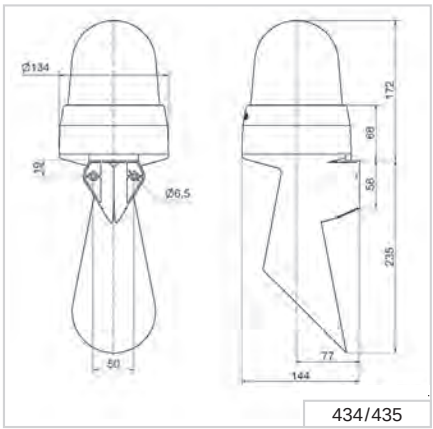
Quick and simple wall mounting without additional accessories thanks to integrated mounting bracket

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

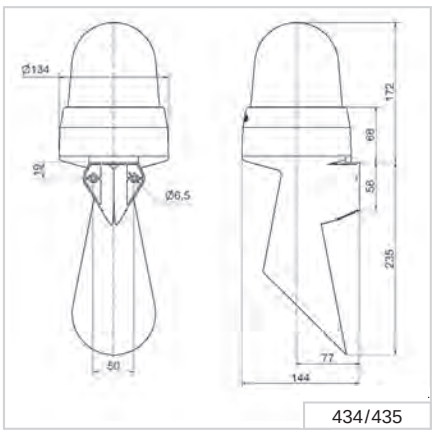
The "EVS" light effect ensures a maximum attention-grabbing effect

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**

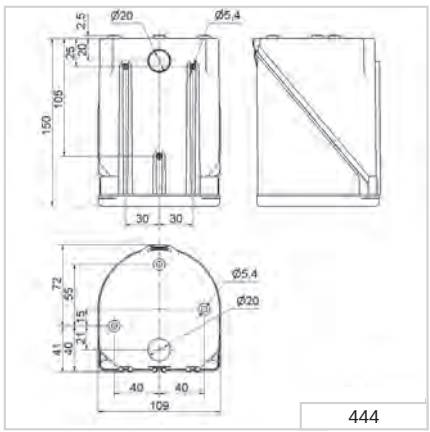
ACCESSORIES:

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

24 V | 115 V / 230 V | (A) | 24 V

330 g | 470 g | IP65 | +50°C -30°C | 110 dB | 32 | PLC

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**

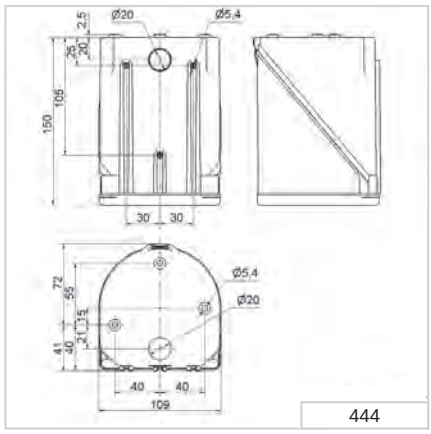
ACCESSORIES:

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:



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**

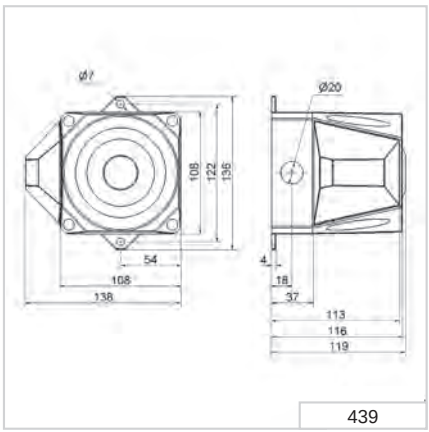
ACCESSORIES:

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**

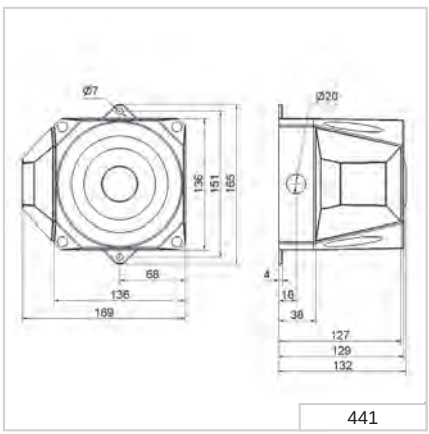
ACCESSORIES:

Cable gland M20 x 1.5 mm	**975 444 01**

TONE TYPES AND FREQUENCIES:

For further details see www.werma.com.

TECHNICAL DIAGRAM:



441

Siganlisation index

Multi-Tone Sounder	8
Xenon Flash	5

442 Xenon Flash / Multi-Tone Sounder Combination (120 dB)

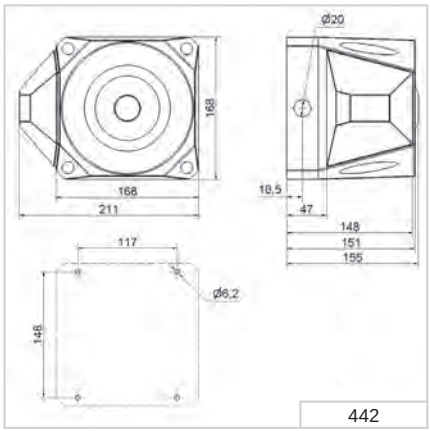
TECHNICAL SPECIFICATIONS / ORDER SPECIFICATIONS:

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**

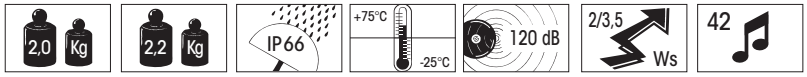
TECHNICAL DIAGRAM:



Siganlisation index

Multi-Tone Sounder	10
Xenon Flash	5-6

442 XX0 55 442 XX0 68



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