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1. Intended use

Sounders of the PA series are designed for the signaling of e.g. hazardous conditions in industry, trade and construction areas. There is also the possibility of visual signaling when the sounder/flashing light combination (PA X 10... / PA X 20...) is used.

The sounders produce acoustic signals in 80 different tones, which can be selected using an internal switch. The external control can be used to switch over to a maximum of 3 further tones.

The devices must only be operated when undamaged and within the specified parameters. The function of the device can only be guaranteed if the upper and lower parts are correctly joined together.

The devices are designed for indoor and outdoor use.

2. Scope of delivery

The scope of delivery consists of:

1x Signaling device

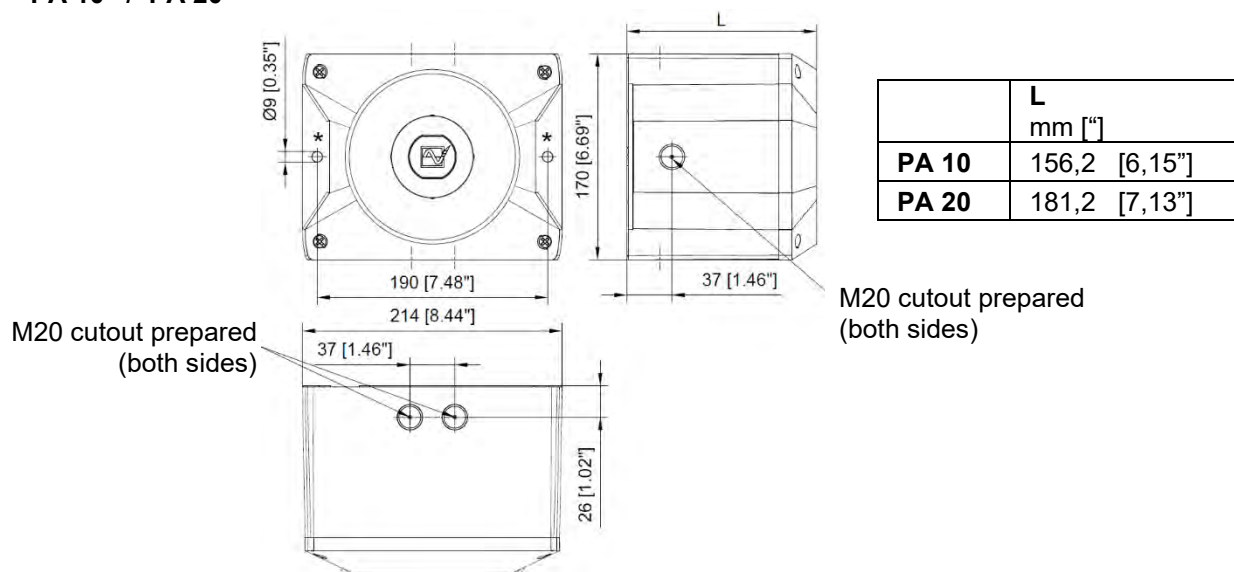
1x Diaphragm nipple M20

1x Quick guide

1x Resistor (only for –SSM versions)

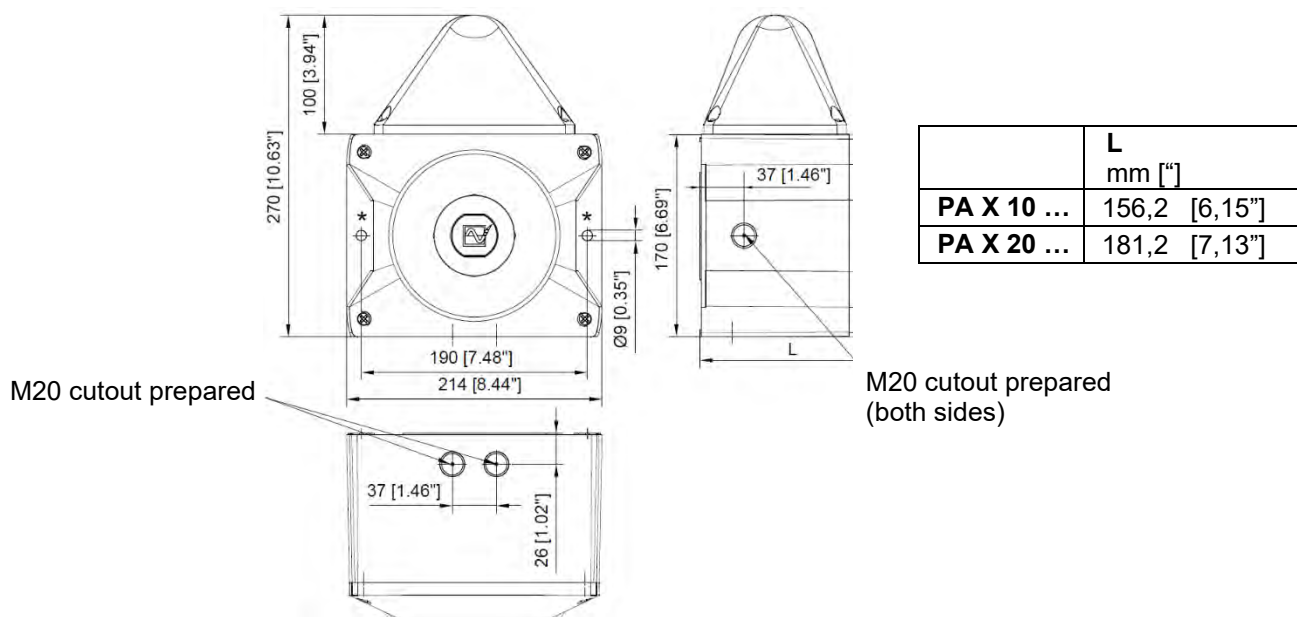
3. Dimensions

3.1 PA 10 / PA 20



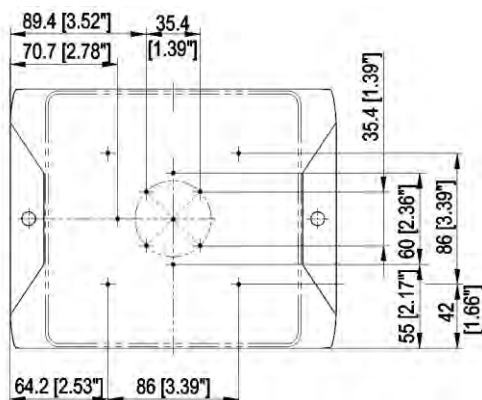
* max. M8 screw, tightening torque 6 Nm

3.2 PA X 10-10/ PA X 10-15 PA X 20-10/ PA X 20-15



* max. M8 screw, tightening torque 6 Nm

Drilling pattern inside the housing



4. Technical data

4.1 General

	PA 10	PA 20	PA X 10-10	PA X 10-15	PA X 20-10	PA X 20-15
Max. sound level	117 dB (A) 1m	122 *dB (A) 1m	117 dB (A) 1m		122 *dB (A) 1m	
Volume control	-10 dB	-9 dB	-10 dB		-9 dB	
Tones	80					
Flash energy	-		10 J	15 J	10 J	15 J
Flash frequency	-		1 Hz			
Duty cycle	100 %					
Connecting terminals	0.14 - 2.5mm² fine stranded / AWG24 - AWG 14					
Ingress protection	IP 66 (EN 60529), Type 4 & 4x					
Impact strength	IK08 (EN 50102)					
Protection class	II  double insulated equipment					
Operating temperature	-40 °C...+55 °C					
Storage temperature	-40 °C...+70 °C					
Max. rel. air humidity	90%					
Cable inlet	7x M20 pre-embossed		5x M20 pre-embossed			
Sealing range of the feed-through grommet	7 – 13 mm		A cable gland with a sufficient degree of protection must be provided when cable diameters of < 7 mm are used.			
Housing material	PC/ ABS Blend					
Lens material	PC					
Installation position	any					
Lens colors			transparent, white, yellow, amber, red, green, blue			

* Delivery condition: 120 dB

4.2 Electrical data PA 10 / PA 20

	PA 10			PA 20		
Rated voltage (see approvals for limit values)	24 V DC or 12-48 V DC	24 V AC 50/60 Hz	110 – 240 V AC 50/60 Hz	24 V DC or 12-48 V DC	24 V AC 50/60 Hz	110 – 240 V AC 50/60 Hz
Voltage range	10 – 60 V	20 – 30 V	95 – 265 V	10 – 60 V	20 – 30 V	95 – 265 V
Current consumption (max)	24 V: 360 mA 485 mA	850 mA	140 mA	24 V: 800 mA 880 mA	1600 mA	330 mA
Power consumption	24 V: 8.5 W 12-48 V: 9 W	17,5 VA	15.5 VA	24 V: 24.5 W 12-48 V: 27 W	17.5 VA	50 VA

4.3 Electrical data PA X 10-10/ PA X 10-15

	PA X 10-10			PA X 10-15		
	AC versions					
Rated voltage (See approvals for limit values)	24 V AC 50/ 60 Hz	115 V AC 50/ 60 Hz	230 V AC 50/ 60 Hz	24 V AC 50/ 60 Hz	115 V AC 50/ 60 Hz	230 V AC 50/ 60 Hz
Voltage range	20 V – 30 V	95 V – 127 V	195 V–253 V	20 V – 30 V	95 V – 127 V	195 V–253 V
Sounder current consumption (max)	850 mA	150 mA	100 mA	850 mA	150 mA	100 mA
Flashing light current consumption (max)	1400 mA	300 mA	160 mA	1400 mA	400 mA	220 mA
Power consumption	54.5 VA	34.5 VA	40.5 VA	57 VA	45 VA	65.5 VA

	PA X 10-10			PA X 10-15		
	DC versions					
Rated voltage (See approvals for limit values)	12 V DC	24 V DC	48 V DC	12 V DC	24 V DC	48 V DC
Voltage range	10.5 V – 15 V	18 V – 30 V	40 V – 60 V	10.5 V – 15 V	18 V – 30 V	40 V – 60 V
Sounder current consumption (max)	490 mA	360 mA	230 mA	490 mA	360 mA	230 mA
Flashing light current consumption (max)	1400 mA	680 mA	300 mA	1550 mA	850 mA	440 mA
Power consumption	22 W	22 W	32 W	29 W	27.5 W	32.5 W

4.4 Electrical data PA X 20-10/ PA X 20-15

	PA X 20-10			PA X 20-15		
	AC versions					
Rated voltage (See approvals for limit values)	24 V AC 50/ 60 Hz	115 V AC 50/ 60 Hz	230 V AC 50/ 60 Hz	24 V AC 50/ 60 Hz	115 V AC 50/ 60 Hz	230 V AC 50/ 60 Hz
Voltage range	20 V – 30 V	95 V – 127 V	195 V–253 V	20 V – 30 V	95 V – 127 V	195 V–253 V
Sounder current consumption (max)	1600 mA	330 mA	200 mA	1600 mA	330 mA	200 mA
Flashing light current consumption (max)	1400 mA	300 mA	160 mA	1400 mA	400 mA	220 mA
Power consumption	80 VA	62.5 VA	72 VA	82.5 VA	72.5 VA	97 VA
	PA X 20-10			PA X 20-15		
	DC versions					
Rated voltage (See approvals for limit values)	12 V DC	24 V DC	48 V DC	12 V DC	24 V DC	48 V DC
Voltage range	10.5 V – 15 V	18 V – 30 V	40 V – 60 V	10.5 V – 15 V	18 V – 30 V	40 V – 60 V
Sounder current consumption (max)	460 mA	800 mA	500 mA	460 mA	800 mA	500 mA
Flashing light current consumption (max)	1400 mA	680 mA	300 mA	1550 mA	850 mA	440 mA
Power consumption	27.5 W	38 W	50.5 W	35 W	43.5 W	51 W

5. Approvals

(Approvals are valid for marked devices)

Construction Product Regulation (CPR) (305/2011/EU)  0786  0843	PA10, 110 – 240 V AC PA10, 24 – 48 V DC PA 10-SSM		PA20, 110 - 240 V AC PA20, 24 – 48 V DC PA 20-SSM	
	04CPR2013-06-07		03CPR2013-06-18	
		PA 10/ PA 20		
	Options	–SSM (24 V DC)		
	Rated voltage	24 – 48 V DC	110 V – 240 V AC	
	Voltage range in accordance with EN54-3, EN54-23	18 V – 60 V Option: -SSM: 18 V – 30 V	95 V – 265 V AC	
	Tone	compliant with the Construction Products Regulation (CPR) (305/2011/EU)		
	2	1200Hz-500Hz (Sawtooth) DIN/PFEER P.T.A.P.		
	15	500Hz-1200Hz (Slow whoop)		
	60	825Hz (Continuous tone)		
104	660Hz (Interrupted tone)			
131	800Hz/ 1000Hz (Alternating tone)			
146	544Hz/ 440Hz (NF S 32-001)			
Coverage volume	EN54-3: see documents 30305-005-1 (PA 10) and 30306-005-1 (PA 20)			
Environmental protection class	Type B			
The test was performed using the supplied diaphragm nipple and the outer mounting bores.				
VdS	PA10/ PA 20, 110 – 230 V AC	PA10/ PA 20, 24 – 48 V DC	PA10-SSM, PA 20-SSM	
	G212116	G212191	G212192	
	See Construction Product Regulation (CPR) (305/2011/EU) for data			
DNV	TAA00001R0			
MED	MEDB00002BH			
MER	MERB00002BH			
CNBOP	PA 10/ PA 20:		PA 10-SSM / PA 20-SSM:	
	4549/2022		4550/2022	
UL, cUL	S7256			
		Rated voltage	Audible-signal Appliance Fire Alarm Equipment ULSZ, ULSZ7	Audible and Visual Signal Appliance General Signal Equipment UCST, UCST7 and UEES, UEES7
	PA 10 PA 20	24V – 48V DC (Fire Alarm Equipment) 12V – 48V DC (General Signal Equipment)	x Special application, limited operating voltage range 18 – 60V DC	X
	PA 10 PA 20	24V AC 110 – 240V AC	--	X
	PA X 10 .. PA X 20 ..	115V AC 230V AC 24V AC 12V DC 24V DC 48V DC	--	x

PATROL sounders and combined units **PA 10/ PA 20/ PA X 10../ PA X 20..** comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules.

UL/ cUL specifications:

Inrush current:

PA 10, PA 20	Surge Current Peak	Surge Current RMS (16,7ms frame)	Voltage
24 – 48 V DC	27 A	4.5 A	60 V DC
24 V AC	11.5 A	6.8 A	30 V AC
110 – 240 V AC	18.5 A	1.45 A	265 V AC

Suitable for indoor and outdoor use. Signaling area: see document 30305-005-1 (PA 10) and 30306-005-1 (PA 20).

Cable gland entries:

Conduit installation needs to be UL/ cUL listed fittings suitable for knockout openings. The supply wiring has to be enclosed in metal conduits for products for Fire Alarm Use.

Installation:

The units shall be installed indoors or outdoors in accordance with the manufacturer's installation instructions as well as the National Electrical Code (NFPA 70) and the National Fire Alarm Code (NFPA 72) for the units evaluated for Public Fire Alarm applications in the U.S. In Canada, they shall be installed in accordance with the Canadian Electrical Code, Part 1 and the Standard for the Installation of Fire Alarm Systems CAN/ULC-S524-M91 for the units evaluated for Public Fire Alarm applications. The installation shall also be in a manner acceptable with the local authority having jurisdiction.

For audible application for Fire Alarm Service use both terminals for connection. Break wire run to provide Electrical Supervision (see UL 464 clause 39.1e). The tone no. 111 is to be used for evacuation use only (see UL 464 clause 39.1e)

Volume control:

PA 20/ PA X 20 ...: The volume control has to be set to the secured factory position.

cUL directional characteristics for the horn:

AXIS	ANGLE	dB(A)
Horizontal	32 deg. left or right	-3
Horizontal	28 deg. left or right	-6
Vertical	32 deg. left or right	-3
Vertical	28 deg. left or right	-6

Min. Output sound pressure level: [dB(A)]:

Type	Voltage	UL 464 dB(A) at 10 ft ++	CAN/ULC-S525-07
PA 10 (24-48 DC)	18V DC	82.4 (for tone 113)	92.4 (for tone 111)
PA 20 (24-48 DC)	18V DC	84.3 (for tone 113)	99.3 (for tone 111)
Tone no. 2, 15, 60, 104, 131, 146, 111, 112, and 113 was used for this test.			

Connecting cables:

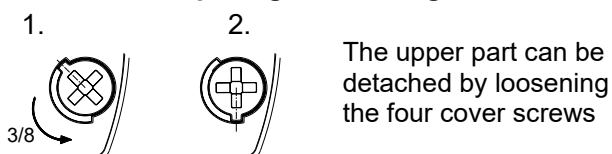


6. Commissioning

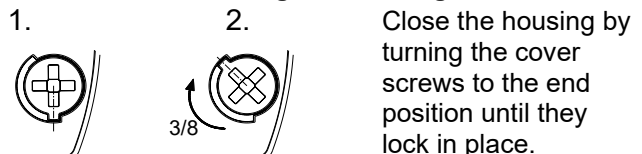
6.1 Safety information

	DANGER - Danger to life due to electric shock Voltage-carrying devices and exposed connection cables may cause electric shocks and serious accidents. ➤ Only trained and authorized electricians may work on electrical connections. ➤ Disconnect all supply lines from mains before installation and secure them against reconnection. Always ensure absence of voltage. ➤ Wait for the discharge phase of 5 minutes for the electrical components. The device should only be opened afterwards. ➤ The operating voltage must only be applied when the housing is firmly closed.
	WARNING - Danger due to unauthorized use of the devices Improper use may lead to serious accidents. ➤ Ensure that the connection cable is protected against pulling and twisting during installation. The devices are only intended for fixed installation. To ensure long-term function: ➤ Do not mount the sound projector pointing upwards in dusty environments or outdoors.
	DANGER - Danger due to damage to the devices Non-compliance with the information on the type plate can lead to serious accidents. ➤ Always observe the information on the type plate when installing and maintaining the devices.
	CAUTION - Risk of injury due to sharp edges or heated components ➤ Wear suitable personal protective equipment (PPE) for installation, assembly or service/maintenance work. ➤ Lay wires well away from sharp edges, corners and internal components; avoid collisions with parts.
	CAUTION - Risk of hearing impairment ➤ Wear sound insulation equipment during work/testing to prevent hearing impairment. ➤ Unexpected triggering of the sound can lead to startled reactions. CAUTION - Impairment of vision When using the sounder/flashing light combination: ➤ Avoid constant, direct glances into the activated lights to prevent impairment of vision. ➤ Unexpected triggering of the flash can lead to startled reactions.

Opening the housing



Closing the housing



The device is delivered in an unsealed condition.

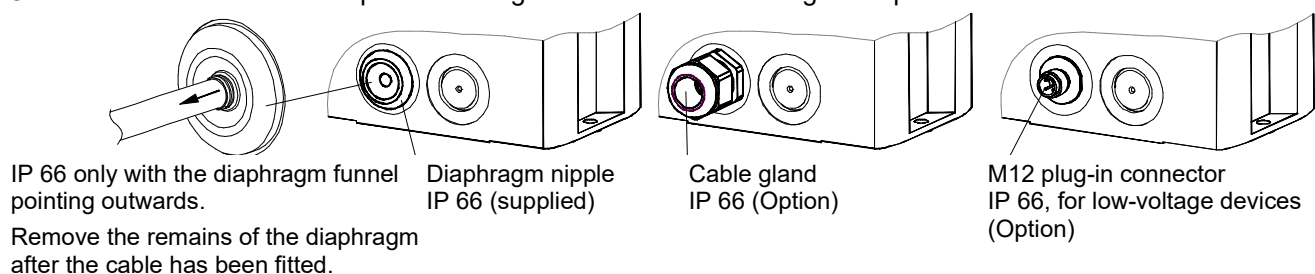
Sealing plugs for the housing screws are available as accessories.

Cable feed-throughs

The supplied diaphragm nipple can be replaced by a cable gland or by an M12 plug-in connector with a flange dimension of M20.

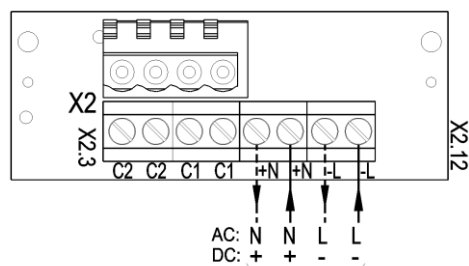
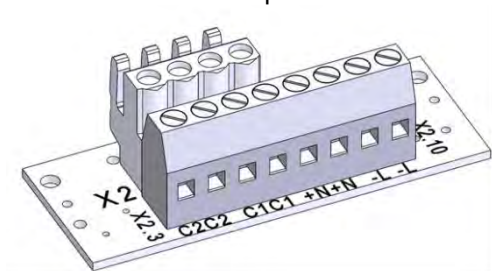
- Only cable glands with a degree of protection of at least IP66 should be fitted to the corresponding openings.

Cable diameters of <7 mm require a cable gland with a sufficient degree of protection.



6.2 Electrical connection PA 10/ 20

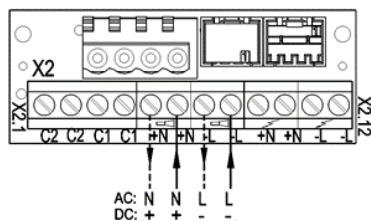
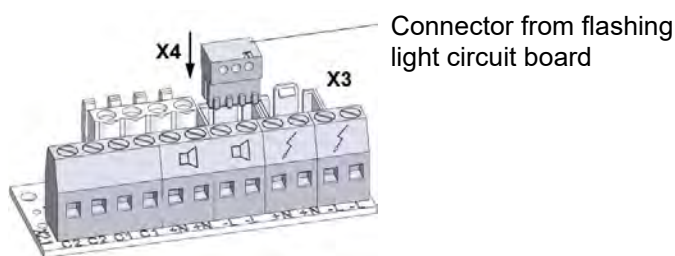
Circuit board in lower part:



Operating voltage connection

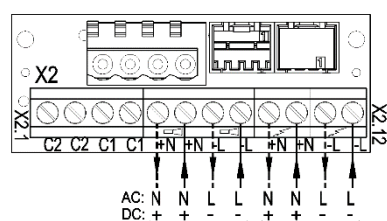
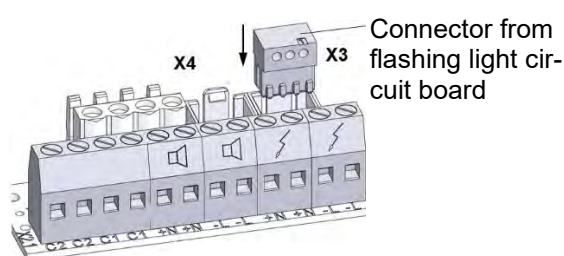
6.3 Electrical connection PA X 10-10/..-15 / PA X 20-10/ ..-15

Common connection of flashing light and sounder (Factory setting)



Operating voltage connection

Separate connection of flashing light and sounder



Operating voltage connection for sounder Operating voltage connection for flashing light

7. Tone settings (on the driver board in the upper part)

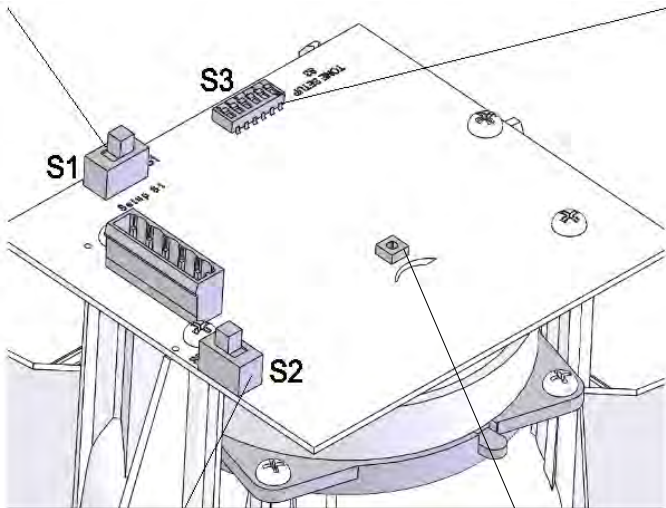
The desired tone can be selected using the tone selector switch S3 (on the driver board in the upper part). The possible tones are described in the tone type table in the Annex.
The tone is generated after the supply voltage is applied.

DC version:

S1 (Selection of control voltage polarity for C1 and C2)

	- Factory setting
	+

Tone selector switch



S2:
Bridging
Rectifier diode

	with rectifier Factory setting
	without rectifier

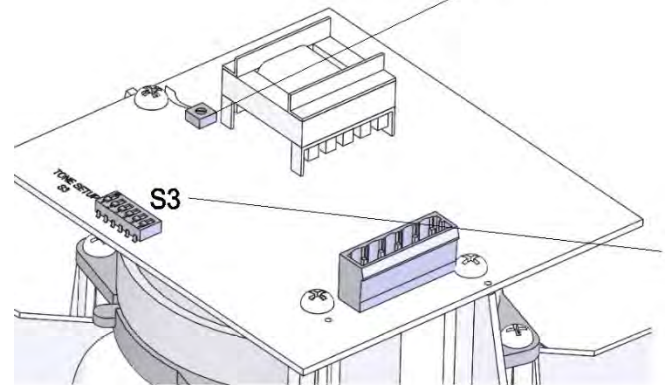
AC version:

Volume control

Note:
The volume control must be in the maximum position in order to conform to EN54-3.

PA 10: in maximum position

PA 20: in the factory-set and secured position



Tone selector switch

7.1 Changing the tones by external control

It is possible to obtain up to three additional tone types using the following electrical controls for applications that require additional tones in addition to the base tone.

The desired base tone (J, see tone type table in the Annex) is always set first with the tone selector switch **S3** on the driver board. The corresponding additional tones (C1, C2, C1+C2) can be found in the "Control of tones" table in the Annex.

7.1.1 Stage selection via control input (TAS), AC and DC versions

DC version:

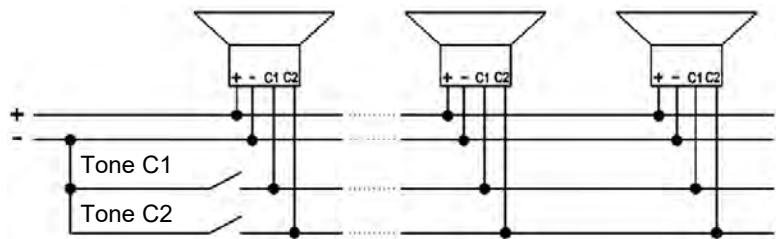
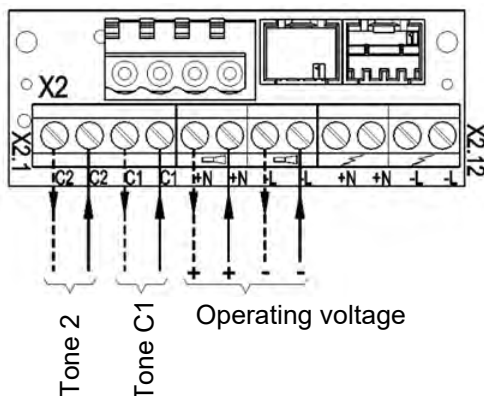
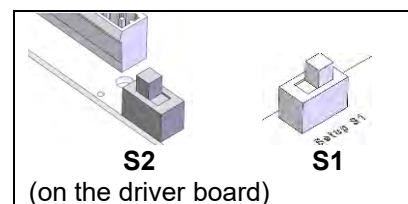
Note: Always apply the supply voltage together with the control inputs.

Caution: If the control voltage is higher than the supply voltage or the supply voltage is not present at all, the operating current will be supplied via the control inputs. A corresponding carrying capacity has to then be ensured.

Negative control: (Factory setting)

Switch setting should be as follows:

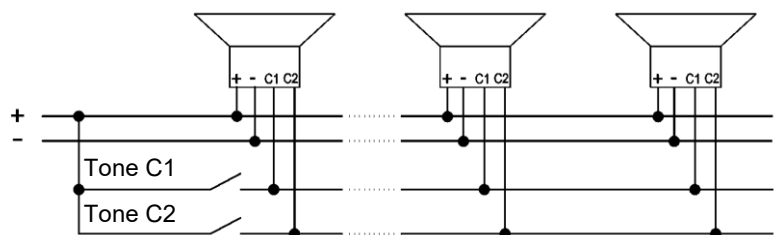
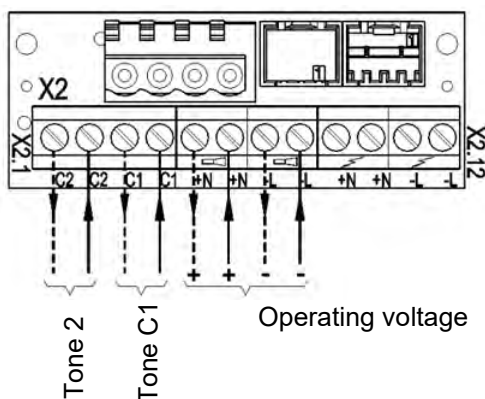
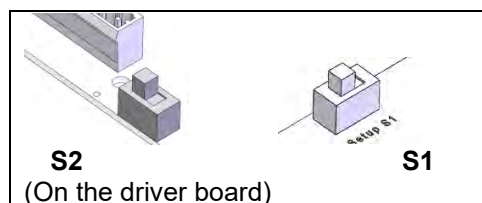
- Switch **S2**: with reverse polarity protection, (with rectifier)
- Switch **S1**: to „-“



Positive control:

Switch setting should be as follows:

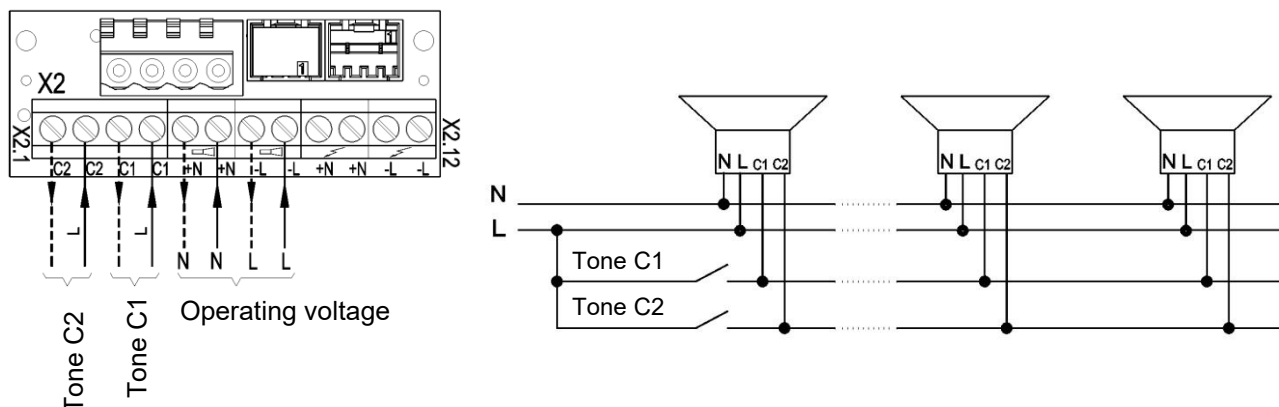
- Switch **S2**: with reverse polarity protection, (with rectifier)
- Switch **S1**: to „+“ (positive control)



AC version:

Note: Always apply the supply voltage together with the control inputs.

Apply phase "L" of the supply voltage to the control inputs C1 / C2.



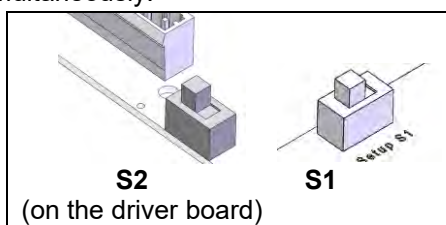
7.1.2 Stage selection by supply via control input (TAV) – all DC versions

Note: Only applicable to DC version!

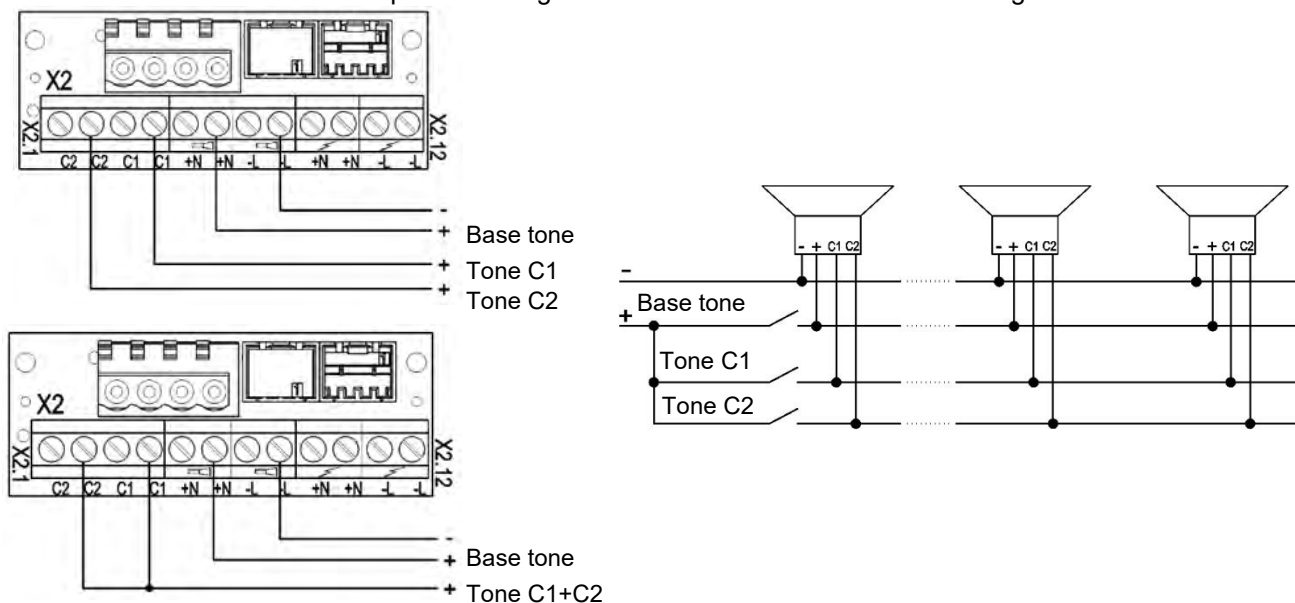
The sounder can be supplied with operating voltage via the control inputs C1 / C2 on the connection board. Supply and stage selection therefore take place simultaneously.

Switch setting should be as follows:

- Switch **S2**: with reverse polarity protection
- Switch **S1**: to „+“



- Connect the negative terminal on the connection board.
- Connect the positive terminal on the connection board. The basic tone (♪) is generated.
- Connection of the positive voltage to C1 on the connection board generates tone C1.
- Connection of the positive voltage to C2 on the connection board generates tone C2.
- Simultaneous connection of the positive voltage to C1 and C2 on the connection board generates tone "C1+C2".



7.1.3 Stage selection by reverse polarity (TAR) - all DC versions (except option –SSM)

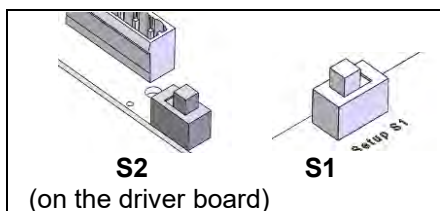
Note: Only applicable to DC version!

Not applicable to –SSM versions!

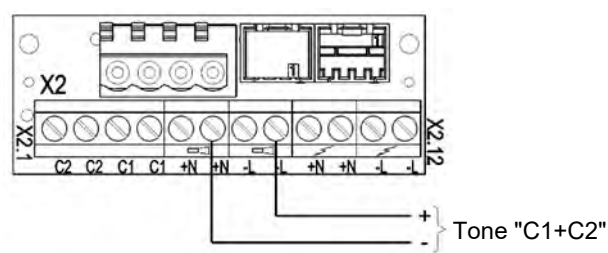
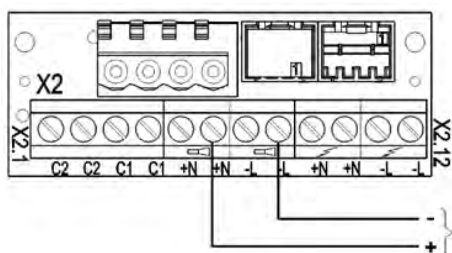
The control inputs C1 and C2 must not be connected on the connection board!

Switch setting should be as follows:

- Switch **S2**: without reverse polarity protection
- Switch **S1** to „+“



Tone "C1+C2" can also be selected by reversing the polarity of the operating voltage to the basic tone (♫):



8. Option

–SSM (soft-start module, only 24V DC)

The inrush current peak is limited to:

PA 10-SSM:	🔊: max. 2.1 A	
PA 20-SSM:	🔊: max. 4.5 A	
PA X 10-xx-SSM:	🔊: max. 2.1 A	⚡: max. 4.5 A
PA X 20-xx-SSM:	🔊: max. 4.5 A	⚡: max. 4.5 A

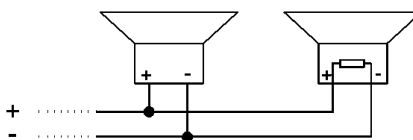
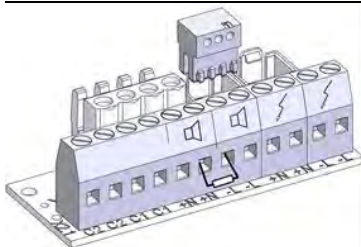
The operating voltage is only switched through to the operating equipment from >7 V.

Operating voltage range: 18 V – 30 V DC

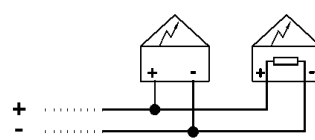
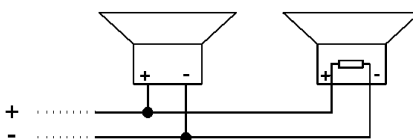
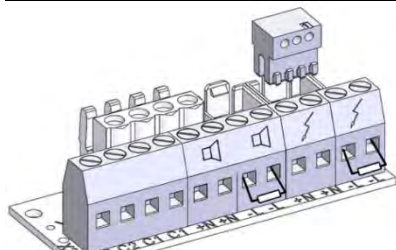
Positioning of the resistor (1kOhm) is as follows:

- Always mount the resistor for line monitoring in the last device.
- See below for the position of the second resistor if the sounder and flashing light are connected separately.
- Remove any resistors that are not required.

Common connection of sounder and flashing light:



Separate connection of sounder and flashing light:



9. Accessories

Item No.	Designation
28300000002	Sealing plug, 4-pack
28912000000	Spare locking bolt, 4-pack
28300000006	Surface seal
28300000009	Control panel mounting kit PA 10/ 20

10. Maintenance, service, repairs

- Observe the [Safety information](#) during all work on the device.

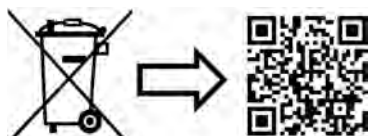
The device requires no special maintenance.

- Do not use abrasive, solvent-containing or chemically aggressive cleaners for cleaning the outside.
Do not use sharp tools for cleaning and especially avoid scratching the lens.
Do not clean with high pressure.
- Only replace components using original spare parts.
- Only have repairs carried out at the manufacturer's premises.

Conversions, modifications, improper and impermissible use as well as failure to observe the notes in these operating instructions shall void any warranty.

11. Decommissioning, dismantling and disposal

- Observe the [Safety information](#) during all work on the device.



www.pfannenberg.com/disposal

EU



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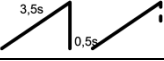
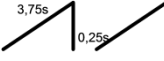
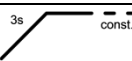
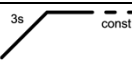
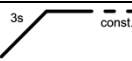
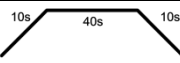
UK

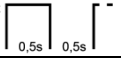
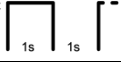
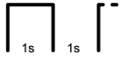
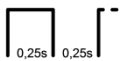
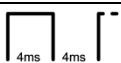
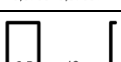
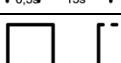
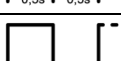
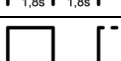
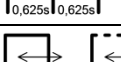
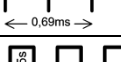


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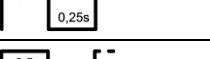
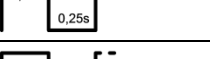
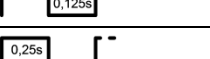
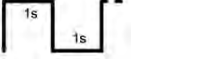
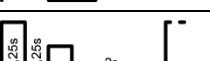
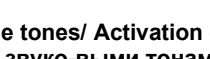
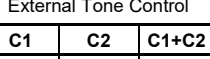
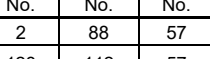
Anhang/ Appendix/ Annexe/ Appendice/ Приложение

**Tonartentabelle/ Tone table/ Tableau de sons/
Tabella suoni/ „Таблица звуковых тонов“**

Grund-Ton-Nr. (J)	Beschreibung/ Description/ Descrizione/ Описание	
1	Kein Ton/ Silence/ Pas de son/ Nessun suono	
2*	Saw tooth, Germany DIN 33404-3 (emergency signal), PFEER PTAP	1200Hz 1s 500Hz  EN54-3
9	Slow whoop, fire alarm, UK BS5839-1	970Hz 1s 800Hz 
11	Whoop (fast)	970Hz 20ms 800Hz 
13	Whoop	900Hz 0,3s 700Hz 0,6s 
15	Slow whoop, evacuation, Netherlands NEN 2575	1200Hz 3,5s 500Hz 0,5s  EN54-3
16	Slow whoop, evacuation Australia AS2220	1200Hz 3,75s 500Hz 0,25s 
18	Slow whoop, NFPA	775Hz 0,85s 422Hz 1s 
22	Whoop, Australia AS1670, ISO8201	1200Hz 0,5s 500Hz 0,5s 1,5s 
23	Siren	2400Hz 3s 500Hz const. 
24	Siren	1200Hz 3s 300Hz const. 
25	Siren	800Hz 3s 300Hz const. 
26	Industrial alarm (Germany)	1000Hz 10s 150Hz 40s 10s 
27	Sweeping	2900Hz 0,5s 2400Hz 0,5s 
29	Sweeping (fast)	2900Hz 10ms 2400Hz 10ms 
30	Sweeping	2900Hz 70ms 2400Hz 70ms 
31	Sweeping, France NF C 48-265	1600Hz 1s 1400Hz 0,5s 
33	Sweeping, UK BS5839-1 (medium sweep)	1000Hz 0,5s 800Hz 0,5s 
34	Sweeping (fast)	1000Hz 10ms 800Hz 10ms 
35	Sweeping, UK BS5839-1 (fast sweep)	1000Hz 70ms 800Hz 70ms 
36	Sweeping	1500Hz 1,5s 700Hz 1,5s 
43	Sweeping	1200Hz 1,5s 500Hz 1,5s 
44	Sweeping, IMO 3d, Germany KTA3901 evacuation	1200Hz 1s 500Hz 1s 
45	Sweeping	1200Hz 3s 500Hz 3s 
46	Sweeping, Finland General Alarm	1500Hz 7s 500Hz 7s 
52	Continuous	2400Hz ————
53	Continuous	2000Hz ————
54	Continuous, Finland All Clear	1500Hz ————
55	Continuous	1200Hz ————

(J)	Beschreibung/ Description/ Descrizione/ Описание	
56	Continuous, PFEER (Gasalarm)	1000Hz ————
57	Continuous, UK BS5839-1	950Hz ————
59	Continuous	880Hz ————
60	Continuous	825Hz ———— EN54-3
61	Continuous	800Hz ————
63	Continuous	725Hz ————
65	Continuous, Sweden SS031711 (All Clear)	660Hz ————
66	Continuous	554Hz ————
67	Continuous, Germany KTA3901 (All Clear)	500Hz ————
68	Continuous	470Hz ————
69	Continuous	440Hz ————
71	Continuous	340Hz ————
77	Intermittent	2400Hz 
82	Intermittent, PFEER (General Alarm), UK BS5839-1 (Back-up Alarm)	1000Hz 
83	Intermittent, PFEER (General Alarm)	1000Hz 
88	Intermittent	950Hz 
90	Intermittent	825Hz 
91	Intermittent	800Hz 
92	Intermittent	800Hz 
93	Intermittent (fast), electromechanical horn	800Hz 
97	Intermittent	725Hz 
98	Intermittent, Sweden SS 031711 (Imminent Danger)	700Hz 
100	Intermittent, Industrial Alarm (Germany)	680Hz 
101	Intermittent, Sweden SS031711 (Important Message (Pre Mess))	660Hz 
102	Intermittent, Sweden SS031711 (Local Warning)	660Hz 
103	Intermittent, Sweden SS031711 (Air Raid)	660Hz 
104	Intermittent, Sweden SS031711 (Imminent Danger)	660Hz  EN54-3
107	Intermittent, Germany KTA3901 (evacuation)	500Hz 
109	Intermittent, Australia AS2220, AS1610, AS1670	420Hz 
110	Intermittent (fast variable), Bell	1450Hz 
111	Intermittent, ISO8201 (emergency evacuation signal), USA (evacuation)	470Hz 
112	Intermittent, ISO8201 (emergency evacuation signal)	950Hz 
113	Intermittent, ISO8201 (emergency evacuation signal) treble tone	2850Hz 

Anhang/ Appendix/ Annexe/ Appendice/ Приложение

Grund-Ton-Nr. (J)	Beschreibung/ Description/ Descrizione/ Описание	
115	Intermittent, IMO (Telefon Call)	950Hz 
116	Intermittent, IMO (abandon ship)	950Hz 
117	Intermittent, IMO SOLAS III/50 + SOLAS III/6.4 (General Alarm)	825Hz 
122	Alternating	2900Hz 
123	Alternating	2900Hz 
124	Alternating, Singapore	2000Hz 
125	Alternating	1400Hz 
128	Alternating	1025Hz 
130	Alternating, UK BS5839-1 (Fire Alarm)	1000Hz 
131	Alternating, UK BS5839-1 (Fire Alarm, Level crossing)	1000Hz  EN54-3
135	Alternating, UK BS5839-1 (Fire Alarm, increased urgency – Level crossing)	1000Hz 
142	Alternating	900Hz 
143	Alternating, Germany Industrial Alarm	660Hz 
144	Alternating	650Hz 
146	Alternating, France NFS 32-001 (fire alarm)	554Hz  EN54-3
147	Alternating, Sweden SS031711 (turn out)	554Hz 
148	Alternating, Sweden SS031711 (turn out)	554Hz 
152	Alternating-intermittent	800Hz 

Ansteuerung der Töne/ Selection of the tones/ Activation des sons/ Controllo dei toni / Управление звуко-выми тонами

Tonartenschalter/ Selector –switch (Einstellung des Grundtones/ Adjusting the base tone)							External Tone Control		
							C1	C2	C1+C2
1	2	3	4	5	6	Grund-Ton No. (♯)	Tone No.	Tone No.	Tone No.
						1	2	88	57
ON						2 *	128	112	57
	ON					2	26	100	93
ON	ON					2	61	131	112
		ON				9	57	11	82
ON		ON				15	131	52	112
	ON	ON				16	109	52	56
ON	ON	ON				18	111	57	68
			ON			22	16	109	68
ON			ON			23	131	52	112
	ON		ON			24	131	52	131
ON	ON		ON			25	131	52	92
		ON	ON			26	2	100	93

Tonartenschalter/ Selector –switch (Einstellung des Grundtones/ Adjusting the base tone)							External Tone Control		
							C1	C2	C1+C2
1	2	3	4	5	6	Grund-Ton No. (♯)	Tone No.	Tone No.	Tone No.
ON		ON	ON			27	123	52	92
	ON	ON	ON			29	35	52	61
ON	ON	ON	ON			30	27	52	77
				ON		31	131	52	57
ON				ON		33	30	52	35
	ON			ON		34	35	52	93
ON	ON			ON		35	27	52	110
		ON		ON		36	146	67	57
ON		ON		ON		43	131	52	91
	ON	ON		ON		45	2	57	93
ON	ON	ON		ON		52	15	65	82
			ON	ON		54	46	54	131
ON			ON	ON		55	131	52	128
	ON		ON	ON		56	82	35	33
ON	ON		ON	ON		59	143	59	101
		ON	ON	ON		60	131	52	125
ON		ON	ON	ON		65	131	52	93
	ON	ON	ON	ON		66	110	52	107
ON	ON	ON	ON	ON		69	131	52	110
					ON	71	131	52	93
ON					ON	77	61	52	122
	ON				ON	82	131	52	83
ON	ON				ON	83	56	2	82
		ON			ON	88	2	57	128
ON		ON			ON	90	131	52	125
	ON	ON			ON	91	30	52	110
ON	ON	ON			ON	92	33	52	57
			ON		ON	93	2	128	57
ON			ON		ON	97	2	63	93
	ON		ON		ON	100	131	52	125
ON			ON		ON	101	98	102	65
		ON			ON	103	131	65	147
ON		ON	ON		ON	104	103	65	101
	ON	ON	ON		ON	109	16	52	22
ON	ON	ON	ON		ON	110	131	61	91
				ON	ON	112	2	57	128
ON				ON	ON	113	52	123	104
	ON			ON	ON	115	117	116	44
ON	ON			ON	ON	116	117	93	125
		ON		ON	ON	117	93	116	125
ON		ON		ON	ON	123	27	52	77
	ON	ON		ON	ON	124	53	83	2
ON	ON	ON		ON	ON	130	2	107	67
			ON	ON	ON	131	2	112	57
ON			ON	ON	ON	135	16	56	109
	ON		ON	ON	ON	142	2	54	88
ON	ON		ON	ON	ON	143	59	93	33
		ON	ON	ON	ON	144	110	61	2
ON		ON	ON	ON	ON	146	31	67	57
	ON	ON	ON	ON	ON	148	131	52	92
ON	ON	ON	ON	ON	ON	152	110	61	13

* Werkseinstellung/ Factory setting/ Réglage d'usine/
Impostazione di fabbrica/ Заводская настройка

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