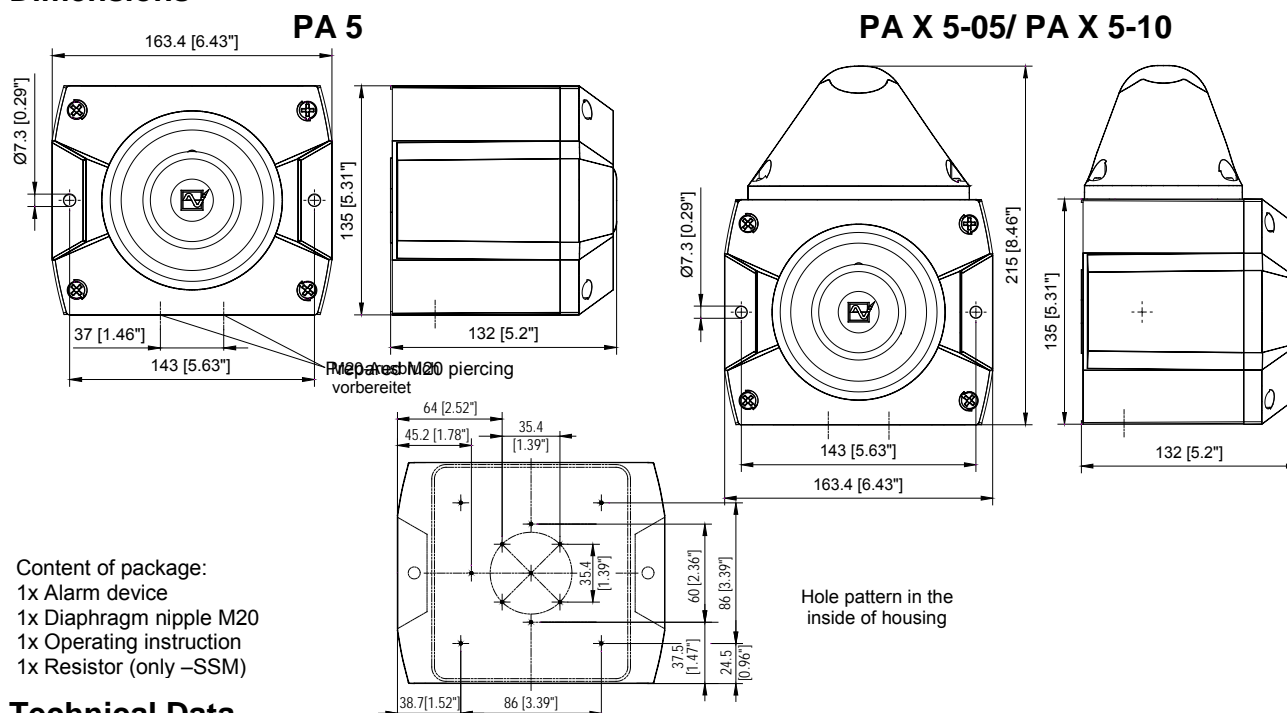



PA 5 / PA X 5-05/ PA X 5-10 - Operating and installation instruction


Dimensions



Technical Data

Technical Data					PA 5						PA X 5-05/ PA X 5-10					
Max. sound level					107 dB (A) 1m											
Volume control					max. -12 dB											
Tones					80											
Flash energy					-				PA X 5-05: 5J				PA X 5-10: 10J			
Flash frequency					-				1Hz							
Rated voltage (limits see approvals)					24V DC or 12 – 48 V DC	24V AC 50/60 Hz	115V AC 50/60 Hz	230V AC 50/60 Hz	12V DC	24V DC	48V DC	24V AC 50/60 Hz	115V AC 50/60 Hz	230V AC 50/60 Hz		
Operating voltage range					10 - 57 V DC	18-30 V AC	95 – 127 V AC	195 – 253 V AC	10-15 V DC	18-30 V DC	40-57 V DC	18-30 V AC	95 – 127 V AC	195 – 253 V AC		
Current consumption Sounder (max)					80 mA	150 mA	30 mA	16 mA	25 mA	70 mA	80 mA	150 mA	30 mA	16 mA		
Current consumption Beacon (max)					-	-	-	-	5 J: 700 mA	5J: 360 mA	5 J: 170 mA	5 J: 800 mA	5 J: 120 mA	5 J: 90 mA		
									10 J: 1400 mA	10 J: 680 mA	10 J: 300 mA	10 J: 1400 mA	10 J: 300 mA	10 J: 160 mA		
Power consumption					12-48DC: 4W 24 DC: 2W	4,5 VA	4,5 VA	4,5 VA	8 W	11,5 W	11,5 W	34,5 VA	18,5 VA	25 VA		
Duty cycle					100%											
Connection terminal					0,14 - 2,5mm² / AWG24 - AWG 14 (stranded)											
Ingress protection					IP66 (EN60529), Type 4 & 4x											
Resistance against impact					IK08 (EN50102)											
Protection class					II  Double insulated equipment											
Operating temperature					-40°C...+55°C											
Storage temperature					-40°C...+70°C											
Max. rel. Humidity					90%											
Cable entry					6x M20 (prepared)				4x M20 (prepared)							
Sealing range of grommet					7 – 13 mm With the use of cable diameters < 7mm, a cable screw joint with sufficient ingress protection must be provided											
Material of housing					PC/ABS Blend											
Material of lens					PC											
Installation position					arbitrary											
Options					-SSM (see page 11)											
Accessory					Sealing plug (Art-no. 28300000002)											
Lens colours									clear, white, yellow, amber, red, green, blue							

Approvals

Approvals (valid for marked equipment)				
<div>Construction Product Regulation (305/2011/EC)</div> <div></div>	VdS 0786-CPD-21182			
			PA 5	
	Options		–SSM (24V DC)	
	Rated voltage		24 – 48 V DC	
	Operating voltage range acc. to EN54-3, EN54-23		18V – 57V Option: -SSM (18V – 30V)	
	Tone <div>2 15 60 104 131 146</div>		Compliant with the Construction Product Directive (89/106/EWG) 1200Hz-500Hz (Saw tooth) DIN/PFEER P.T.A.P. 500Hz-1200Hz (Slow whoop) 825Hz (Continuous) 660Hz (Intermittent tone) 800Hz/ 1000Hz (Alternating tone) 544Hz/ 440Hz (NF S 32-001)	
	Signaling area		EN54-3: see document 30304-005-1	
	Environmental protection class		Type B	
	Testing takes place using the supplied diaphragm nipple and the outer fastening bores.			
VdS	G 212115 Data see Construction Product Regulation (305/2011/EC)			
GL	61062-13 HH Environmental Category C, H, EMC1			
MED	MEDB00002BH			
CNBOP	PA 5: 2015/2014			
UL, cUL		Rated voltage	Audible-signal Appliance Fire Alarm Equipment ULSZ, ULSZ7	Audible and Visual signal Appliance General Signal Equipment UCST, UCST7 and UEES, UEES7
	PA 5	24V – 48V DC (Fire Alarm Equipment) 12V – 48V DC (General Signal Equipment)	x Special application, limited operating voltage range 18 – 57V DC	-
	PA 5 PA X 5-05 PA X 5-10	24V AC (except PA X 5-10) 115V AC 230V AC	-	x
	PA X 5-05	12V DC 24V DC 48V DC	-	x

PATROL sounders and combined units **PA 5/ PA X 5** comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules.

UL/ cUL specifications:

Suitable for indoor and outdoor use. Signaling area: see document 30304-005-1.

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.

According to CSA-C22.2 No. 205-M1983 clause 4.3.4 the connection is limited to max. seven leads for combined units (PA X).

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)

cUL directional characteristics for the horn:

AXIS	ANGLE	dBA
Horizontal	40 deg. left or right	-3
Horizontal	27 deg. left or right	-6
Vertical	45 deg. left or right	-3
Vertical	27 deg. left or right	-6

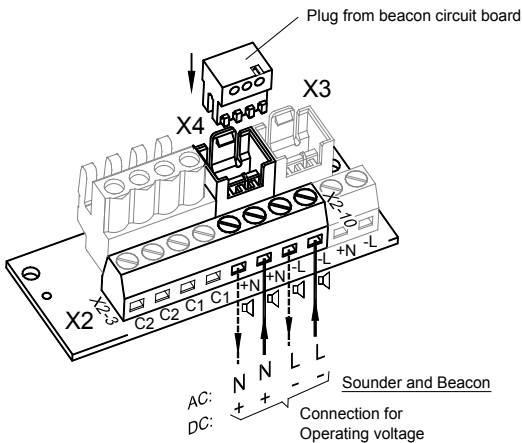
Min. Output sound pressure level: [dB(A)]

Type	Voltage	UL 464 db(A) at 10 ft ++	CAN/ULC-S525-07
PA 5-24V DC	18V DC	76,7 (for tone 111)	86,2 (for tone 60)
Tone no. 2, 15, 60, 104, 131, 146, 111, 112, and 113 was used for this test.			

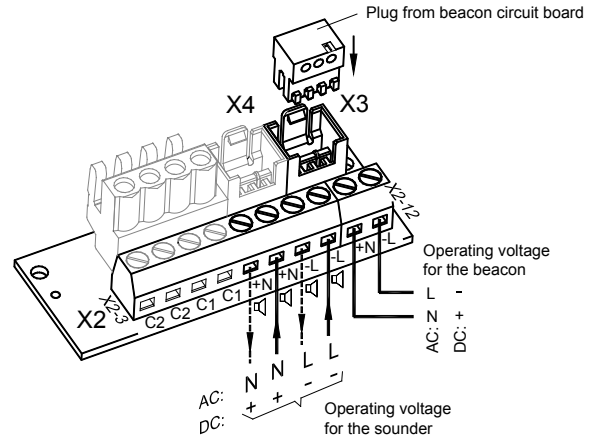
Connecting cables:



Terminal for operating voltage - Sounder-beacon combination:



Common connection of
beacon and sounder
(Delivery status)

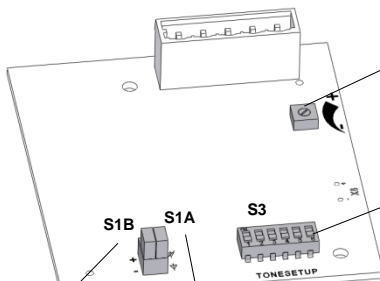


Separate connection of
beacon and sounder

The desired tone can be selected using the tone selector switch S3 (on the driver circuit board). The available tones are described in the tone table in the appendix.
After establishing the supply voltage the tone is generated.

Driver circuit board of sounder (located in the upper section):

DC-Version

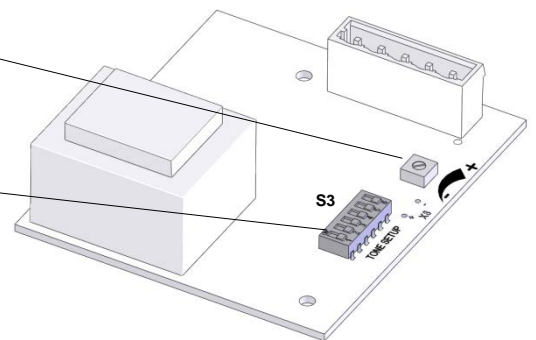


S1B
Selection of polarity of
the control voltage for
C1 and C2

S1A
Bridging of
blocking diode

	Diode not bridged Negative polarity Factory setting
	Diode not bridged Positive polarity
	Diode bridged Negative polarity
	Diode bridged Positive polarity

AC-Version



Change of the tones by external control

For applications which require more tones than just the base tone, it is possible to provide up to three additional tone types with the use of the following electrical controls.

As a basic rule, the desired base tone (J, see tone table in the appendix) is set with the tone selector switch S3 on the driver board. The corresponding additional tones (C1, C2, C1+C2) can be gathered from the table "Selection of the tones".

Tone selection with control input (TAS)

DC-Version:

When used with correct polarity, the tone selection takes place through the control inputs C1 and C2 on the circuit board. In the process, the supply voltage must always be applied together with the two control inputs. Switch S1A on the driver board is set to ∇ (Diode not bridged).

The selection of the polarity of the control voltage ("+" or "-") takes place with the switch S1B on the driver board.

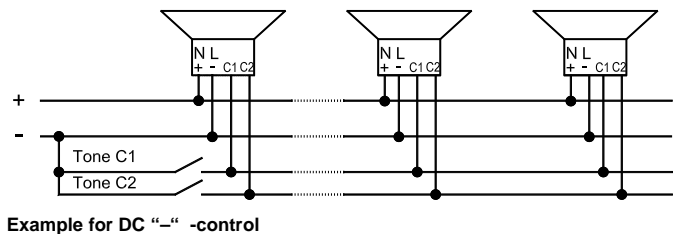
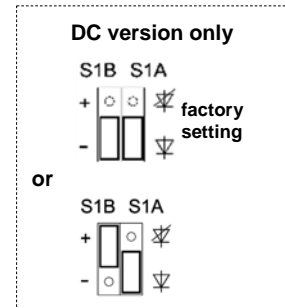
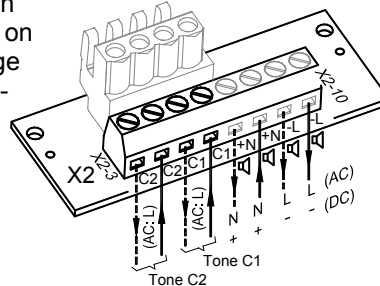
"+": positive control

"-": negative control (factory setting)

Caution: If the control voltage is greater than the supply voltage or the supply voltage is not applied, the operating current supply is provided through the control inputs. A corresponding load capacity must then be guaranteed.

AC-version:

In the AC version the tone selection takes place by connecting the phase "L" of the supply voltage to the control inputs C1 and C2. In the process, the supply voltage must always be applied together with the two control inputs.

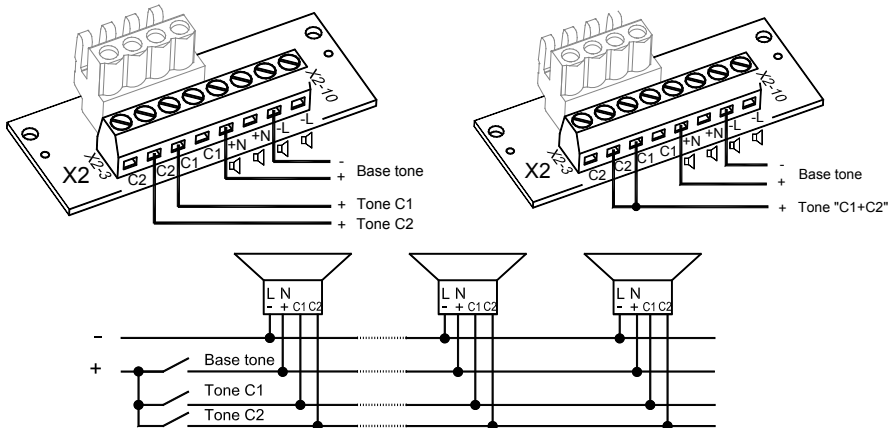


Tone selection with supply through control input (TAV) - for all DC versions

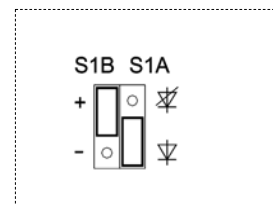
The sounder can be supplied with operating voltage through the control inputs C1 and C2 on the circuit board. Supply and tone selection thus take place simultaneously.

The minus pole of the sounder must be connected. With connection of the positive voltage to the plus pole of the circuit board, the base tone (J) is generated; with connection to C1 or C2 the corresponding tone is selected. With simultaneous connection of the positive voltage to C1 and C2 the tone "C1+C2" is selected.

The switch S1B on the driver board must be set to "+".



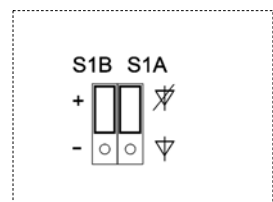
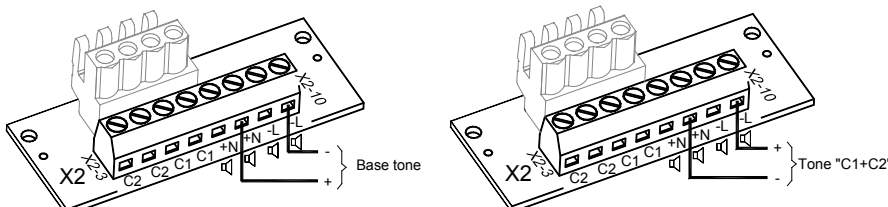
Connection example



Tone selection through pole reversal (TAR) - for all DC versions, except for option -SSM




If the switch S1A on the driver board is set to ∇ (diode bridged), the tone "C1+C2" can be selected in addition to the base tone through pole reversal. The switch S1B must be set to "+".

The control inputs C1 and C2 may not be switched on the circuit board.



Option –SSM (Soft-Start-Module) (24V DC only):

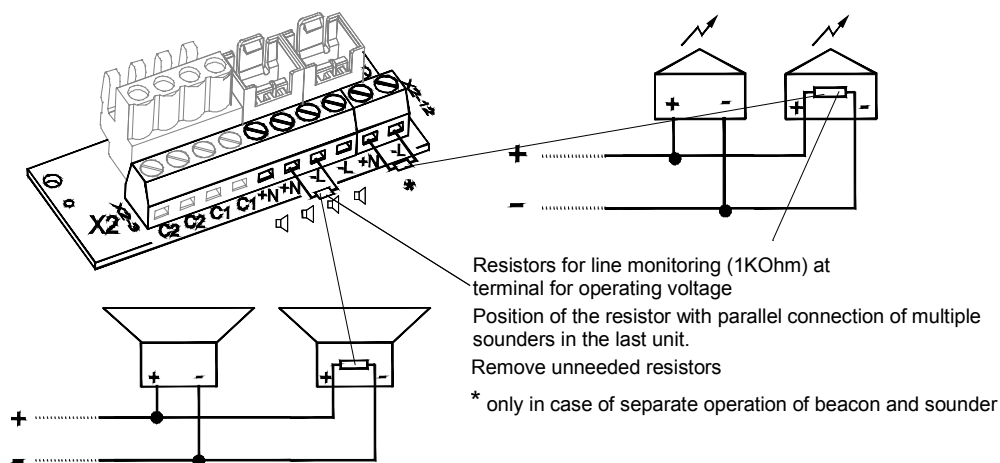
- Limiting of the switch-on current peak to:

PA 5-SSM:	 : max. 2,1 A	
PA X 5-xx-SSM:	 : max. 2,1 A	 : max. 4,5 A

- Connection of the operating voltage to the equipment starts at >7V
- Resistance for the line monitoring mounted

Operating voltage range: 18V – 30V DC

Connection of a resistor for line monitoring:



Maintenance, Service and Ordering Spare Parts

The device does not require any special maintenance.

External cleaning should be done with a mild soap solution without the use of solvents.

The device may only be operated in the undamaged state within the specified rating.

Conversions, alterations, improper and inadmissible use as well as the non-observance of the notes in these operating instructions shall render the warranty null and void.

Components may be replaced only by original spare parts.

As a matter of principle, repairs are to be carried out in the manufacturing works.