

# PATROL FLASHING SOUNDERS 105/107 dB(A) / 5/10 J PA X 1-05 / PA X 5-05 / PA X 5-10



reddot design award  
winner 2013



PATROL – the new generation of sounder/flashing light combinations. Three dimensional innovation.

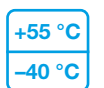
- Safe – an incorrect installation is virtually impossible.
- Easy – significantly shorter assembly and installation times.
- Economical – extremely high efficiency and good penetration of acoustical obstacles significantly reduce the required number of sounders.
- Pre-wired sounder and light ex works.
- Various light intensities available to support best match of audible and visual coverage.



protection system



impact-proof housing



operating temperature



acoustic penetration



external tone selection



PA X 1-05  
24 V DC



PA X 1-05  
24 V DC



PA X 1-05  
24 V DC



warranty



warranty



connector (option)



connector (option)

## PRODUCT PA X 1-05

DATA		187–255 V	90–135 V	18–30 V	40–60 V	18–30 V	12–15 V
Operating range		AC 50   60 Hz			DC		
	Nominal current consumption <sup>1</sup>	65–70 mA @ 230 V	110–130 mA	315–365 mA @ 24 V	190–150 mA	315–365 mA	610–625 mA

## PRODUCT PA X 5

DATA		187–255 V	90–135 V	18–30 V	40–60 V	18–30 V	12–15 V
Operating range		AC 50   60 Hz			DC		
	Nominal current consumption <sup>1</sup>	5 J	65–70 mA @ 230 V	110–130 mA	315–365 mA @ 24 V	190–150 mA	315–365 mA
		10 J	150–155 mA	250–260 mA	1460–1520 mA	320–380 mA	565–620 mA

PRODUCT	PA X 1-05	PA X 5-05	PA X 5-10
Sound pressure level	105 dB(A)	107 dB(A)	107 dB(A)
Sound pressure level @DIN-tone	104 dB(A)	105 dB(A)	105 dB(A)
Sound level reduction	max. –12 dB via potentiometer		
Alarm tones	80 / 4 tones are externally selectable		
Flash energy and flash rate	5 J @ 1 Hz = 60 flashes/min	5 J @ 1 Hz = 60 flashes/min	10 J @ 1 Hz = 60 flashes/min
Light intensity (DIN 5037) <sup>2</sup>	50 cd	56 cd	149 cd
Max. viewing distance	164 m	173 m	283 m
Operating temperature	–40 °C ... +55 °C		
Relative humidity	90 %		
Protection system (EN 60529)	IP 66		
Protection class	II		
Service life of the light source	light emission still 70 % after 8,000,000 flashes		
Material	sounder	PC / ABS blend similar to RAL 3000 (flame red) / RAL 7035 (light grey) / RAL 9003 (signal white)	
	lens flashing light	polycarbonate (PC)	
Cable entry	3x M20 knock-outs prepared (on side), 1 knock-out on back		
Integrated seal with cable entry	6–13 mm (feed-through grommet)		
Connecting terminals	2.5 mm <sup>2</sup> fine wire with cable end sleeve, AWG 16		
Weight	AC	725 g	983 g
	DC	560 g	800 g

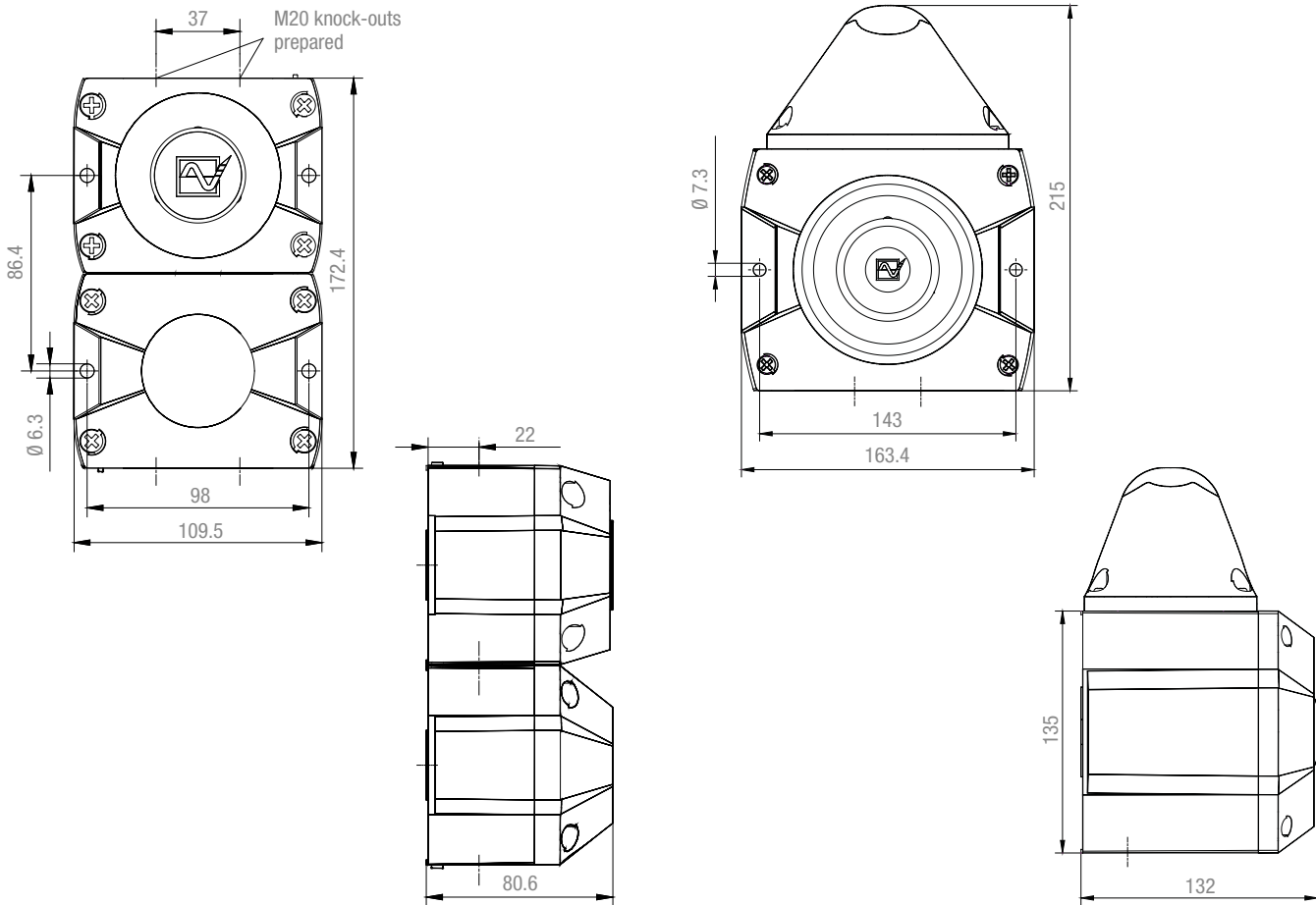
<sup>1</sup> power consumption dependent on operating voltage

<sup>2</sup> with a clear lens

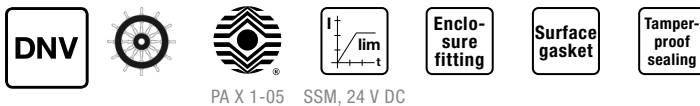
**DIMENSIONS**

**PA X 1-05**

**PA X 5-05**



**OPTIONS/ACCESSORIES**



PA X 1-05 SSM, 24 V DC

ARTICLE NO.		PA X 1-05			PA X 5-05		
HOUSING COLOUR	LENS COLOUR	230 V AC	115 V AC	24 V DC	230 V AC	115 V AC	24 V DC
●	∕	23311101000	23311151000	23311801000 <sup>1</sup>	23351101000	23351151000	23351801000
●	●	23311103000	23311153000	23311803000	23351103000	23351153000	23351803000
●	●	23311104000	23311154000	23311804000	23351104000	23351154000	23351804000
●	●	23311105000	23311155000	23311805000 <sup>1</sup>	23351105000	23351155000	23351805000
●	∕	23311101055	23311151055	23311801055 <sup>1</sup>	23351101055	23351151055	23351801055
●	●	23311103055	23311153055	23311803055	23351103055	23351153055	23351803055
●	●	23311104055	23311154055	23311804055	23351104055	23351154055	23351804055
●	●	23311105055	23311155055	23311805055 <sup>1</sup>	23351105055	23351155055	23351805055

Article numbers for other voltages and versions on request.

<sup>1</sup> Version with EN 54-23 approval.

ARTICLE NO.		PA X 1-05	PA X 5-05
Enclosure fitting	For connection (daisy-chaining) of several sounders of the PATROL series.	28300000003	
Surface gasket	Sealing of the sounder installation surface when, e.g. cable entry is executed from the back.	28300000004	28300000005
Tamper-proof sealing (pack of 4)	Anti-tamper sealing for fasteners of the PATROL devices after installation in order to prevent manipulation of the devices.		28300000002

TONE TABLE			
NO.	DESCRIPTION		
1	no tone		
2	Sawtooth, DIN tone 33404-3 Germany (emergency signal), PFEER PTAP	1200 Hz 500 Hz	
9	Slow whoop, fire alarm, UK BS5839-1	970 Hz 800 Hz	
11	Interrupted tone (fast)	970 Hz 800 Hz	
13	Interrupted tone	900 Hz 700 Hz	
15	Slow whoop, evacuation alarm Netherlands NEN 2575	1200 Hz 500 Hz	
16	Slow whoop, evacuation alarm Australia AS2220	1200 Hz 500 Hz	
18	Slow whoop, NFPA	775 Hz 422 Hz	
22	Pulsating tone, Australien alert AS1670, ISO8201	1200 Hz 500 Hz	
23	Siren	2400 Hz 500 Hz	
24	Siren	1200 Hz 300 Hz	
25	Siren	800 Hz 300 Hz	
26	Siren, industrial alarm Germany	1000 Hz 150 Hz	
27	Sweeping	2900 Hz 2400 Hz	
29	Sweeping (fast)	2900 Hz 2400 Hz	
30	Sweeping	2900 Hz 2400 Hz	
31	Sweeping, France NFC48-265	1600 Hz 1400 Hz	
33	Sweeping (medium), UK BS5839-1	1000 Hz 800 Hz	
34	Sweeping (fast)	1000 Hz 800 Hz	
35	Sweeping (fast), UK BS5839-1	1000 Hz 800 Hz	
36	Sweeping	1500 Hz 700 Hz	
43	Sweeping	1200 Hz 500 Hz	
44	Sweeping, IMO 3d, Germany KTA3901 evacuation alarm	1200 Hz 500 Hz	
45	Sweeping	1200 Hz 500 Hz	
46	Sweeping, general alarm Finland	1500 Hz 500 Hz	
52	Continuous tone	2400 Hz	
53	Continuous tone	2000 Hz	
54	Continuous tone, Finland (all-clear signal)	1500 Hz	
55	Continuous tone, PFEER gas alarm	1200 Hz	
56	Continuous tone	1000 Hz	
57	Continuous tone, UK BS5839-1	950 Hz	
59	Continuous tone	880 Hz	
60	Continuous tone	825 Hz	
61	Continuous tone	800 Hz	
63	Continuous tone	725 Hz	
65	Continuous tone, Sweden SS031711 (all-clear signal)	660 Hz	
66	Continuous tone	554 Hz	
67	Continuous tone, Germany KTA3901 (all-clear signal)	500 Hz	
68	Continuous tone	470 Hz	
69	Continuous tone	440 Hz	
71	Continuous tone	340 Hz	
77	Interrupted tone	2200 Hz	
82	Interrupted tone, PFEER (general alarm), UK BS5839-1 (back-up alarm)	1000 Hz	
83	Interrupted tone, PFEER (general alarm)	1000 Hz	
88	Interrupted tone	950 Hz	
90	Interrupted tone	825 Hz	
91	Interrupted tone	800 Hz	
92	Interrupted tone	800 Hz	
93	Interrupted tone (fast), Horn	800 Hz	
97	Interrupted tone	725 Hz	
98	Interrupted tone, Sweden SS031711 (emergency signal)	700 Hz	
100	Interrupted tone, industrial alarm Germany	680 Hz	
101	Interrupted tone, Sweden SS031711 (important message (pre-mess))	660 Hz	
102	Interrupted tone, Sweden SS031711 (local warning)	660 Hz	
103	Interrupted tone, Sweden SS031711 (air raid warning)	660 Hz	
104	Interrupted tone, Sweden SS031711 (emergency signal)	660 Hz	
107	Interrupted tone, Germany KTA3901 (evacuation alarm)	500 Hz	
109	Interrupted tone, Australia AS2220, AS1610, AS1670	420 Hz	
110	Interrupted tone, (fast variable), bell	1450 Hz	
111	Interrupted tone, ISO8201 (emergency evacuation signal), USA (evacuation alarm)	470 Hz	
112	Interrupted tone, ISO8201 (emergency evacuation signal)	950 Hz	
113	Interrupted tone, ISO8201 (emergency evacuation signal), sweeping	2850 Hz	

TONE TABLE			
NO.	DESCRIPTION		
115	Interrupted tone, IMO (telephone call)	950 Hz	
116	Interrupted tone, IMO (leave ship)	950 Hz	
117	Interrupted tone, IMO SOLAS III/50 + SOLAS III/6.4 (general alarm)	825 Hz	
122	Alternating tone	2900 Hz / 2400 Hz	
123	Alternating tone	2900 Hz / 2400 Hz	
124	Alternating tone, Singapore	2900 Hz / 1000 Hz	
125	Alternating tone	1400 Hz / 1200 Hz	
128	Alternating tone	1025 Hz / 825 Hz	
130	Alternating tone, UK BS5839-1 (fire alarm)	1000 Hz / 800 Hz	
131	Alternating tone, UK BS5839-1 (fire alarm, railway crossing)	1000 Hz / 800 Hz	
135	Alternating tone, UK BS5839-1 (fire alarm, increased urgency – railway crossing)	1000 Hz / 800 Hz	
142	Alternating tone	900 Hz / 500 Hz	
143	Alternating tone, industrial alarm Germany	660 Hz / 440 Hz	
144	Alternating tone	650 Hz / 440 Hz	
146	Alternating tone, France NFS 32-001 (fire alarm)	554 Hz / 440 Hz	
147	Alternating tone, Sweden SS031711	554 Hz / 440 Hz	
148	Alternating tone, Sweden SS031711	554 Hz / 440 Hz	
152	Alternating tone (two tone chime)	800 Hz / 650 Hz	

**CONTROL OF THE TONES**

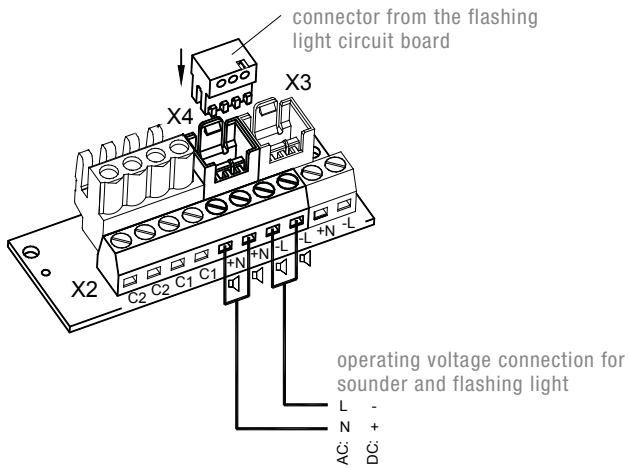
DIP-SWITCH (SETTING OF BASIC TONE)								EXTERNAL TONE SELECTION			DIP-SWITCH (SETTING OF BASIC TONE)								EXTERNAL TONE SELECTION						
1	2	3	4	5	6	BASIC TONE	C1	C2	C1+C2	1	2	3	4	5	6	BASIC TONE	C1	C2	C1+C2						
										TONE NO.										TONE NO.					
						1			2						ON	71			131			52			93
ON						2 *			128						ON	77			61			52			122
	ON					2			26						ON	82			131			52			83
ON	ON					2			61						ON	83			56			2			82
		ON				9			57						ON	88			2			57			128
ON		ON				15			131						ON	90			131			52			125
		ON	ON			16			109						ON	91			30			52			110
ON	ON	ON				18			111						ON	92			33			52			57
			ON			22			16						ON	93			2			128			57
ON			ON			23			131						ON	97			2			63			93
		ON		ON		24			131						ON	100			131			52			125
ON	ON		ON			25			131						ON	101			98			102			65
			ON	ON		26			2						ON	103			131			65			147
ON		ON	ON			27			123						ON	104			103			65			101
		ON	ON			29			35						ON	109			16			52			22
ON	ON	ON				30			27						ON	110			131			61			91
				ON		31			131						ON	112			2			57			128
ON				ON		33			30						ON	113			52			123			104
		ON			ON	34			35						ON	115			117			116			44
ON	ON			ON		35			27						ON	116			117			93			125
			ON		ON	36			146						ON	117			93			116			125
ON		ON		ON		43			131						ON	123			27			52			77
		ON	ON		ON	45			2						ON	124			53			83			2
ON	ON	ON		ON		52			15						ON	130			2			107			67
			ON	ON		54			46						ON	131			2			112			57
ON			ON	ON		55			131						ON	135			16			56			109
		ON		ON	ON	56			82						ON	142			2			54			88
ON	ON		ON	ON		59			143						ON	143			59			93			33
				ON	ON	60			131						ON	144			110			61			2
ON		ON	ON	ON		65			131						ON	146			31			67			57
		ON	ON	ON	ON	66			110						ON	148			131			52			92
ON	ON	ON	ON	ON		69			131						ON	152			110			61			13

\* factory setting

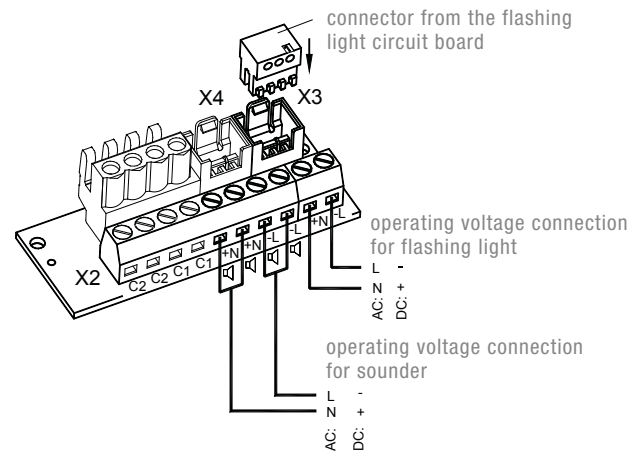
## CONNECTION DIAGRAM

### PA X 1-05 | PA X 5-05 light

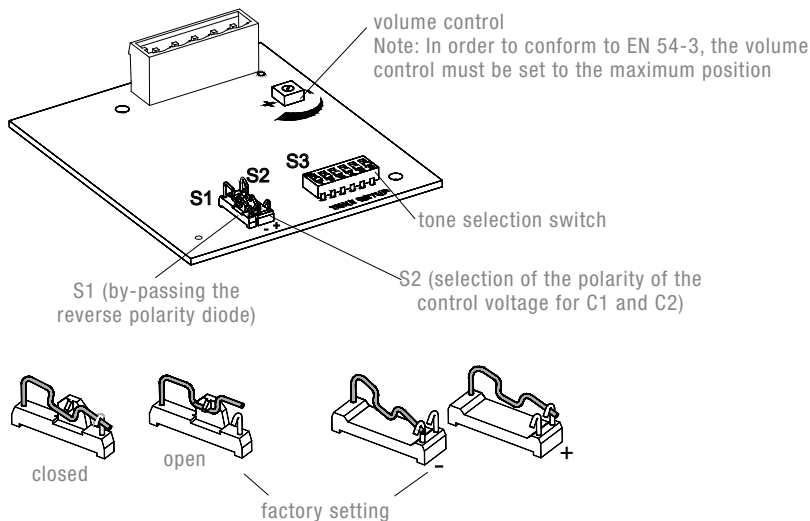
**Common connection of flashing light and sounder**  
(delivery condition)



**Separated connection of flashing light and sounder**



### PA X 1-05 | PA X 5-05 sounder



## CONFORMITY TO STANDARDS

The acoustic parameters conform to the European standard DIN EN ISO 7731:  
"Ergonomic – alarms for public areas and workplaces – acoustic alarms".

The requirement for an acoustic alarm signal can be found in the harmonised standards:

EN 60204-1 Electrical equipment of machines  
EN 60825-1 Radiation safety of laser devices, identical to IEC 825 and DIN-VDE 0837