

PATROL SOUNDERS 100/105 dB(A) PA 1 / PA 5



PATROL – the new generation of sounders.

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.



reddot design award
winner 2013



protection system



impact-proof housing



operating temperature



acoustic penetration



external tone selection



24–48 V DC



24–48 V DC



warranty



warranty



warranty

| PRODUCT | PA 1 | | | | PA 5 | | | |
|---------|------|--|--|--|------|--|--|--|
|---------|------|--|--|--|------|--|--|--|

| DATA | | | | | | | | |
|--|---|----------|-----------|---------|---|----------|-----------|---------|
| Operating range | 195–253 V | 95–127 V | 18–30 V | 10–57 V | 195–253 V | 95–127 V | 18–30 V | 10–57 V |
| | AC 50 60 Hz | | | DC | AC 50 60 Hz | | | DC |
| Nominal current consumption ¹ | 9–15 mA | 8–30 mA | 59–120 mA | 6–80 mA | 9–15 mA | 8–30 mA | 59–120 mA | 6–80 mA |
| Sound pressure level | 100 dB(A) | | | | 105 dB(A) | | | |
| Sound level reduction | max. –12 dB via potentiometer | | | | | | | |
| Alarm tones | 80 / 4 tones are externally selectable | | | | | | | |
| Operating temperature | –40 °C ... +55 °C | | | | | | | |
| Storage temperature | –40 °C ... +70 °C | | | | | | | |
| Relative humidity | 90 % | | | | | | | |
| Protection system according to EN 6052 | IP 66 | | | | | | | |
| Protection class | II | | | | | | | |
| Duty cycle | 100 % | | | | | | | |
| Material | PC / ABS blend similar to RAL 3000 (flame red) RAL 7035 (light grey) RAL 9003 (signal white) | | | | | | | |
| Cable entry | 3x M20 M20 knock-outs on side, 1 knock-out on back | | | | 5x M20 knock-outs on side, 1 knock-out on back | | | |
| Integrated seal with cable entry | 6–13 mm (feed-through grommet) | | | | | | | |
| Connecting terminals | 2.5 mm ² fine wire with cable end sleeve, AWG 16 | | | | | | | |
| Weight | 405 g | | 270 g | | 778 g | | 643 g | |

¹ Power consumption dependent on operating voltage.

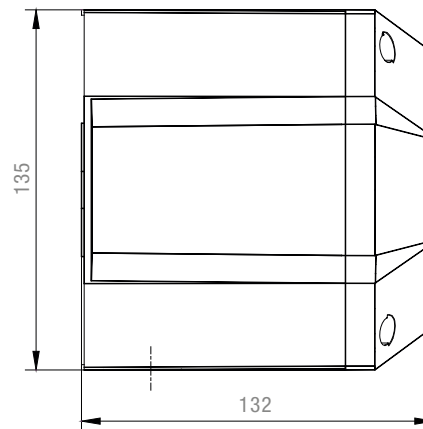
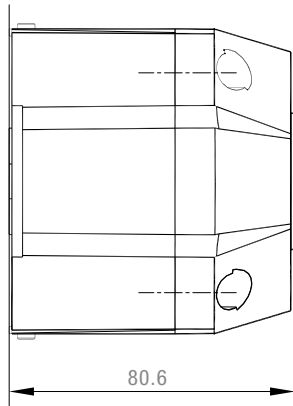
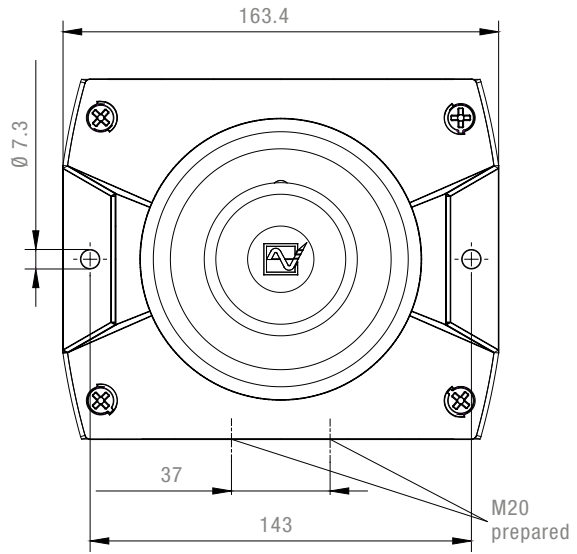
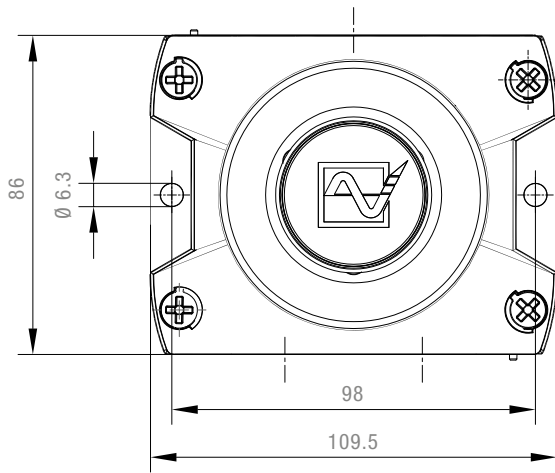
OPTIONS/ACCESSORIES



DIMENSIONS

PA 1

PA 5



| ARTICLE NO. | | PA 1 | | | PA 5 | | |
|-------------|---------------|-------------|-------------|-------------|-------------|-------------|-------------|
| VERSION | RATED VOLTAGE | 230 V AC | 115 V AC | 10-57 V DC | 230 V AC | 115 V AC | 10-57 V DC |
| Standard | housing red | 23310100000 | 23310150000 | 23310630000 | 23350100000 | 23350150000 | 23350630000 |
| GL/MED | housing red | 23310100001 | 23310150001 | 23310630001 | 23350100001 | 23350150001 | 23350630001 |
| Standard | housing grey | 23310100055 | 23310150055 | 23310630055 | 23350100055 | 23350150055 | 23350630055 |
| GL/MED | housing grey | 23310100056 | 23310150056 | 23310630056 | 23350100056 | 23350150056 | 23350630056 |

Article numbers for other voltages and versions on request.

| ARTICLE NO. | | PA 1 | PA 5 |
|-------------------------------------|---|-------------|-------------|
| Enclosure fitting | For connection (daisy-chaining) of several sounders of the PATROL series. | 28300000003 | 28300000002 |
| 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 | 28300000002 |
| Panel mount installation kit PATROL | The PATROL devices are also suitable for panel mounting. This kit consists of a plug connector for the electrical contact, as well as all installation materials. | 28300000007 | 28300000008 |

| 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 | |

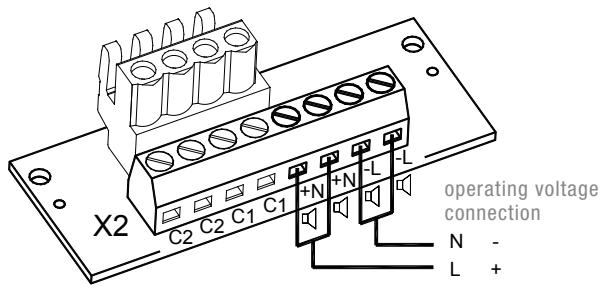
| TONE TABLE | | TONE TABLE | |
|------------|--|------------------|---------------------|
| NO. | DESCRIPTION | NO. | DESCRIPTION |
| 115 | Interrupted tone, IMO (telephone call) | 950 Hz | 2 s, 0,5 s, 1 s |
| 116 | Interrupted tone, IMO (leave ship) | 950 Hz | 1 s, 1 s, 3 s, 1 s |
| 117 | Interrupted tone, IMO SOLAS III/50 + SOLAS III/6.4 (general alarm) | 825 Hz | 2,5 s, 7 s |
| 122 | Alternating tone | 2900 Hz, 2400 Hz | 0,5 s |
| 123 | Alternating tone | 2900 Hz, 2400 Hz | 0,25 s |
| 124 | Alternating tone, Singapore | 2900 Hz, 1000 Hz | 0,5 s |
| 125 | Alternating tone | 1400 Hz, 1200 Hz | 20 ms |
| 128 | Alternating tone | 1025 Hz, 825 Hz | 0,25 s |
| 130 | Alternating tone, UK BS5839-1 (fire alarm) | 1000 Hz, 800 Hz | 0,5 s |
| 131 | Alternating tone, UK BS5839-1 (fire alarm, railway crossing) | 1000 Hz, 800 Hz | 0,25 s |
| 135 | Alternating tone, UK BS5839-1 (fire alarm, increased urgency – railway crossing) | 1000 Hz, 800 Hz | 0,125 s |
| 142 | Alternating tone | 900 Hz, 500 Hz | 0,25 s |
| 143 | Alternating tone, industrial alarm Germany | 660 Hz, 440 Hz | 0,125 s |
| 144 | Alternating tone | 650 Hz, 440 Hz | 1 s |
| 146 | Alternating tone, France NFS 32-001 (fire alarm) | 554 Hz, 440 Hz | 0,1 s, 0,4 s |
| 147 | Alternating tone, Sweden SS031711 | 554 Hz, 440 Hz | 1 s |
| 148 | Alternating tone, Sweden SS031711 | 554 Hz, 440 Hz | 0,5 s |
| 152 | Alternating tone (two tone chime) | 800 Hz, 650 Hz | 0,25 s, 0,25 s, 2 s |

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 | 88 | | | | | ON | 71 | 131 | 52 | 93 |
| ON | | | | | | 2 * | | | 128 | 112 | | | | | ON | 77 | 61 | 52 | 122 |
| | ON | | | | | 2 | | | 26 | 100 | | | | | ON | 82 | 131 | 52 | 83 |
| ON | ON | | | | | 2 | | | 61 | 131 | | | | | ON | 83 | 56 | 2 | 82 |
| | | ON | | | | 9 | | | 57 | 11 | | | | | ON | 88 | 2 | 57 | 128 |
| ON | | ON | | | | 15 | | | 131 | 52 | | | | | ON | 90 | 131 | 52 | 125 |
| | ON | ON | | | | 16 | | | 109 | 52 | | | | | ON | 91 | 30 | 52 | 110 |
| ON | ON | ON | | | | 18 | | | 111 | 57 | | | | | ON | 92 | 33 | 52 | 57 |
| | | | ON | | | 22 | | | 16 | 109 | | | | | ON | 93 | 2 | 128 | 57 |
| ON | | | ON | | | 23 | | | 131 | 52 | | | | | ON | 97 | 2 | 63 | 93 |
| | ON | | ON | | | 24 | | | 131 | 52 | | | | | ON | 100 | 131 | 52 | 125 |
| ON | ON | | ON | | | 25 | | | 131 | 52 | | | | | ON | 101 | 98 | 102 | 65 |
| | | ON | ON | | | 26 | | | 2 | 100 | | | | | ON | 103 | 131 | 65 | 147 |
| ON | | ON | ON | | | 27 | | | 123 | 52 | | | | | ON | 104 | 103 | 65 | 101 |
| | ON | ON | | | | 29 | | | 35 | 52 | | | | | ON | 109 | 16 | 52 | 22 |
| ON | ON | ON | | | | 30 | | | 27 | 52 | | | | | ON | 110 | 131 | 61 | 91 |
| | | | | ON | | 31 | | | 131 | 52 | | | | | ON | 112 | 2 | 57 | 128 |
| ON | | | | ON | | 33 | | | 30 | 52 | | | | | ON | 113 | 52 | 123 | 104 |
| | ON | | | ON | | 34 | | | 35 | 52 | | | | | ON | 115 | 117 | 116 | 44 |
| ON | ON | | | ON | | 35 | | | 27 | 52 | | | | | ON | 116 | 117 | 93 | 125 |
| | | ON | | ON | | 36 | | | 146 | 67 | | | | | ON | 117 | 93 | 116 | 125 |
| ON | | ON | | ON | | 43 | | | 131 | 52 | | | | | ON | 123 | 27 | 52 | 77 |
| | ON | ON | | ON | | 45 | | | 2 | 57 | | | | | ON | 124 | 53 | 83 | 2 |
| ON | ON | ON | | ON | | 52 | | | 15 | 65 | | | | | ON | 130 | 2 | 107 | 67 |
| | | | ON | ON | | 54 | | | 46 | 54 | | | | | ON | 131 | 2 | 112 | 57 |
| ON | | | ON | ON | | 55 | | | 131 | 52 | | | | | ON | 135 | 16 | 56 | 109 |
| | ON | | ON | ON | | 56 | | | 82 | 35 | | | | | ON | 142 | 2 | 54 | 88 |
| ON | ON | | ON | ON | | 59 | | | 143 | 59 | | | | | ON | 143 | 59 | 93 | 33 |
| | | | ON | ON | | 60 | | | 131 | 52 | | | | | ON | 144 | 110 | 61 | 2 |
| ON | | ON | ON | ON | | 65 | | | 131 | 52 | | | | | ON | 146 | 31 | 67 | 57 |
| | ON | ON | ON | ON | | 66 | | | 110 | 52 | | | | | ON | 148 | 131 | 52 | 92 |
| ON | ON | ON | ON | ON | | 69 | | | 131 | 52 | | | | | ON | 152 | 110 | 61 | 13 |

* factory setting

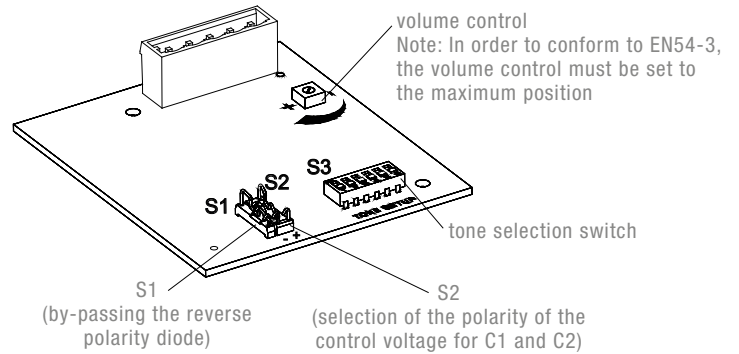
CONNECTION DIAGRAM



electrical connection and tone selection through external control of C1 and C2

operating voltage connection
 AC: N -
 L +
 DC: +
 -

Caution:
 Position of changeover switch S2 only at „-“ or „+“. „Open“ position is not permitted and leads to malfunction.

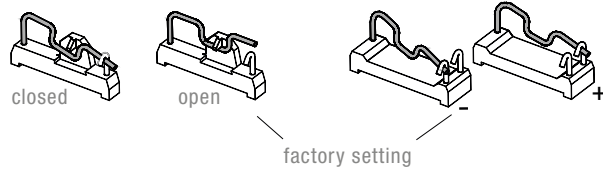


volume control
 Note: In order to conform to EN54-3, the volume control must be set to the maximum position

S1
 (by-passing the reverse polarity diode)

S2
 (selection of the polarity of the control voltage for C1 and C2)

tone selection switch



closed

open

factory setting

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