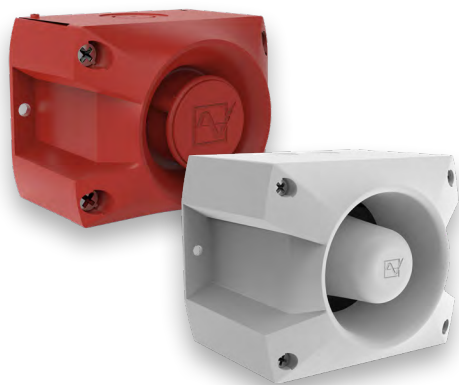


# PATROL SOUNDERS 105/107 dB(A)

## 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.



protection system



impact-proof housing



operating temperature



acoustic penetration



external tone selection



inrush current limitation



24-48 V DC



24-48 V DC



warranty

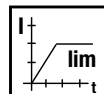


connector (option)

| 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                                                                                          |          | AC      | DC      | AC 50   60                                        |          | AC      | DC      |
| Nominal current consumption <sup>1</sup> (max) | 16 mA                                                                                               | 30 mA    | 150 mA  | 80 mA   | 16 mA                                             | 30 mA    | 150 mA  | 80 mA   |
| Sound pressure level                           | 105 dB(A)                                                                                           |          |         |         | 107 dB(A)                                         |          |         |         |
| Sound pressure level @DIN-tone                 | 104 dB(A)                                                                                           |          |         |         | 105 dB(A)                                         |          |         |         |
| Sound level reduction                          | max. –12 dB via potentiometer                                                                       |          |         |         |                                                   |          |         |         |
| Alarm tones                                    | 80 thereof 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 (EN 60529), NEMA Type 4 & 4x                                                                  |          |         |         |                                                   |          |         |         |
| Protection class                               | II                                                                                                  |          |         |         |                                                   |          |         |         |
| Duty cycle                                     | 100 %                                                                                               |          |         |         |                                                   |          |         |         |
| Material                                       | PC / ABS blend<br>similar to RAL 3000 (flame red)   RAL 7035 (light grey)   RAL 9003 (signal white) |          |         |         |                                                   |          |         |         |
| Cable entry                                    | 3x M20 knock-outs on side,<br>1 knock-out on back                                                   |          |         |         | 5x M20 knock-outs on side,<br>1 knock-out on back |          |         |         |
| Integrated seal with cable entry               | 7-13 mm (Feed-through grommet)                                                                      |          |         |         |                                                   |          |         |         |
| Connecting terminals                           | 0.14 - 2.5mm <sup>2</sup> fine stranded / AWG24 - AWG 14                                            |          |         |         |                                                   |          |         |         |
| Weight                                         | 405 g                                                                                               |          | 270 g   |         | 778 g                                             |          | 643 g   |         |

<sup>1</sup> Power consumption dependent on operating voltage.

### OPTIONS/ACCESSORIES

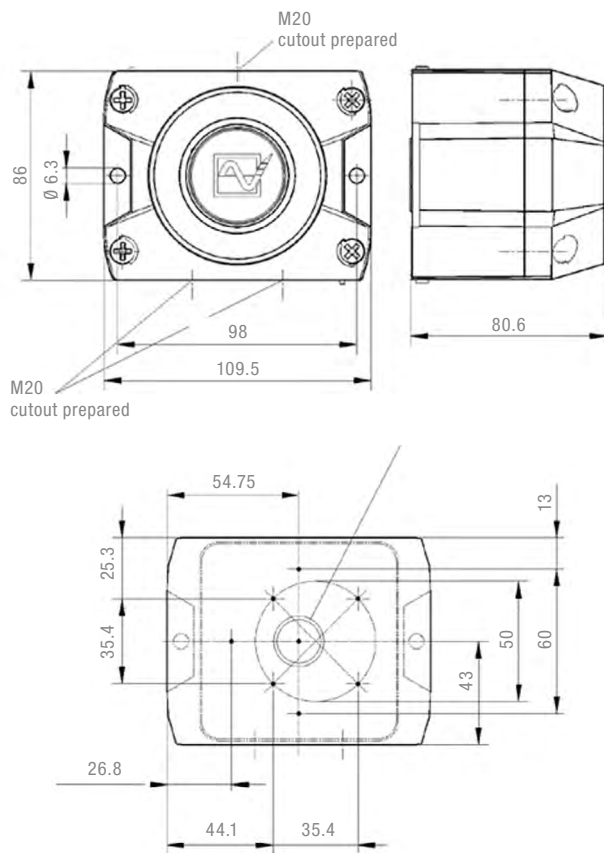


inrush current limitation

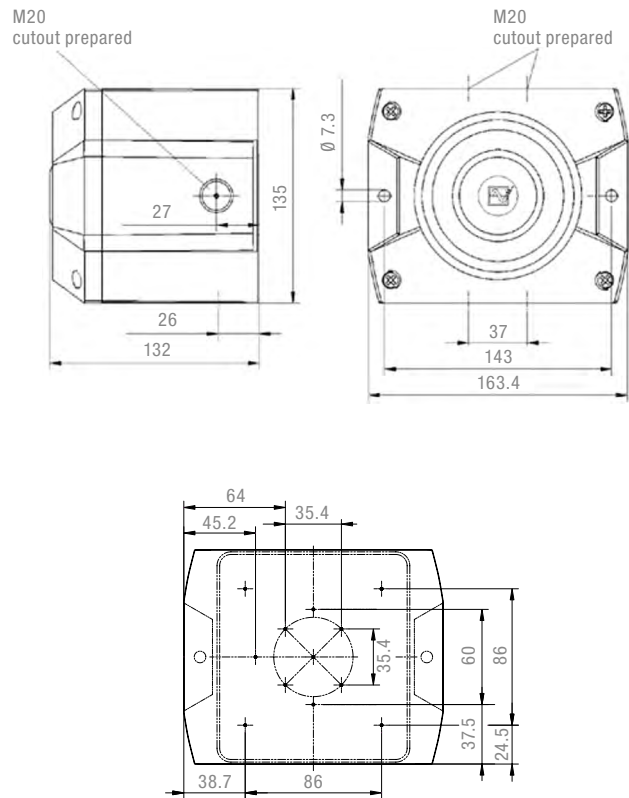


## DIMENSIONS

### PA 1



### PA 5



| ARTICLE NO. |              | PA 1        |             |             | PA 5        |             |             |
|-------------|--------------|-------------|-------------|-------------|-------------|-------------|-------------|
| VERSION     |              | 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 |
| DNV/MED     | housing red  | 23310100001 | 23310150001 | 23310630001 | 23350100001 | 23350150001 | 23350630001 |
| Standard    | housing grey | 23310100055 | 23310150055 | 23310630055 | 23350100055 | 23350150055 | 23350630055 |
| DNV/MED     | housing grey | 23310100056 | 23310150056 | 23310630056 | 23350100056 | 23350150056 | 23350630056 |

Article numbers for other voltages and versions on request.

| ARTICLE NO.                          |                                                                                                                                                                   | PA 1        | PA 5        |
|--------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-------------|
| Gehäuseverbinder                     | For connection (daisy-chaining) of several sounders of the PATROL series.                                                                                         | 28300000003 | 28300000003 |
| Flächendichtung                      | Sealing of the sounder installation surface when, e. g. cable entry is executed from the back.                                                                    | 28300000004 | 28300000005 |
| Plombierstopfen (4er Pack)           | Anti-tamper sealing for fasteners of the PATROL devices after installation in order to prevent manipulation of the devices.                                       | 28300000002 | 28300000002 |
| Schalttafeleinbaukit 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 | 28300000007 |
| Replacement locking bolts, pack of 4 |                                                                                                                                                                   | 28912000000 | 28912000000 |

| TONE TABLE |                                                                   |  |                      |     |                                                                                 |         |         |
|------------|-------------------------------------------------------------------|--|----------------------|-----|---------------------------------------------------------------------------------|---------|---------|
| NO.        | DESCRIPTION                                                       |  |                      | NO. | DESCRIPTION                                                                     |         |         |
| 1          | no tone                                                           |  |                      | 57  | Continuous tone, UK BS5839-1                                                    | 950 Hz  |         |
| 2          | Sawtooth, DIN tone 33404-3 Germany (emergency signal), PFEER PTAP |  | 1200 Hz 1 s  EN 54-3 | 59  | Continuous tone                                                                 | 880 Hz  |         |
| 9          | Slow whoop, fire alarm, UK BS5839-1                               |  | 970 Hz 1 s           | 60  | Continuous tone                                                                 | 825 Hz  | EN 54-3 |
| 11         | Interrupted tone (fast)                                           |  | 970 Hz 20 ms         | 61  | Continuous tone                                                                 | 800 Hz  |         |
| 13         | Interrupted tone                                                  |  | 900 Hz 0,3 s         | 63  | Continuous tone                                                                 | 725 Hz  |         |
| 15         | Slow whoop, evacuation alarm Netherlands NEN 2575                 |  | 1200 Hz 3,5 s        | 65  | Continuous tone, Sweden SS031711 (all-clear signal)                             | 660 Hz  |         |
| 16         | Slow whoop, evacuation alarm Australia AS2220                     |  | 1200 Hz 3,75 s       | 66  | Continuous tone                                                                 | 554 Hz  |         |
| 18         | Slow whoop, NFPA                                                  |  | 775 Hz 0,85 s        | 67  | Continuous tone, Germany KTA3901 (all-clear signal)                             | 500 Hz  |         |
| 22         | Pulsating tone, Australien alert AS1670, ISO8201                  |  | 1200 Hz 0,6 s        | 68  | Continuous tone                                                                 | 470 Hz  |         |
| 23         | Siren                                                             |  | 2400 Hz 3 s          | 69  | Continuous tone                                                                 | 440 Hz  |         |
| 24         | Siren                                                             |  | 1200 Hz 3 s          | 71  | Continuous tone                                                                 | 340 Hz  |         |
| 25         | Siren                                                             |  | 800 Hz 3 s           | 77  | Interrupted tone                                                                | 2200 Hz |         |
| 26         | Siren, industrial alarm Germany                                   |  | 1000 Hz 10 s         | 82  | Interrupted tone, PFEER (general alarm), UK BS5839-1 (back-up alarm)            | 1000 Hz |         |
| 27         | Sweeping                                                          |  | 2900 Hz 0,5 s        | 83  | Interrupted tone, PFEER (general alarm)                                         | 1000 Hz |         |
| 29         | Sweeping (fast)                                                   |  | 2900 Hz 10 ms        | 88  | Interrupted tone                                                                | 950 Hz  |         |
| 30         | Sweeping                                                          |  | 2400 Hz 70 ms        | 90  | Interrupted tone                                                                | 825 Hz  |         |
| 31         | Sweeping, France NFC48-265                                        |  | 1600 Hz 1 s          | 91  | Interrupted tone                                                                | 800 Hz  |         |
| 33         | Sweeping (medium), UK BS5839-1                                    |  | 1000 Hz 0,5 s        | 92  | Interrupted tone                                                                | 800 Hz  |         |
| 34         | Sweeping (fast)                                                   |  | 1000 Hz 10 ms        | 93  | Interrupted tone (fast), Horn                                                   | 800 Hz  |         |
| 35         | Sweeping (fast), UK BS5839-1                                      |  | 1000 Hz 70 ms        | 97  | Interrupted tone                                                                | 725 Hz  |         |
| 36         | Sweeping                                                          |  | 1500 Hz 1,5 s        | 98  | Interrupted tone, Sweden SS031711 (emergency signal)                            | 700 Hz  |         |
| 43         | Sweeping                                                          |  | 1200 Hz 1,5 s        | 100 | Interrupted tone, industrial alarm Germany                                      | 680 Hz  |         |
| 44         | Sweeping, IMO 3d, Germany KTA3901 evacuation alarm                |  | 1200 Hz 1 s          | 101 | Interrupted tone, Sweden SS031711 (important message (pre-mess))                | 660 Hz  |         |
| 45         | Sweeping                                                          |  | 1200 Hz 3 s          | 102 | Interrupted tone, Sweden SS031711 (local warning)                               | 660 Hz  |         |
| 46         | Sweeping, general alarm Finland                                   |  | 1500 Hz 7 s          | 103 | Interrupted tone, Sweden SS031711 (air raid warning)                            | 660 Hz  |         |
| 52         | Continuous tone                                                   |  | 2400 Hz              | 104 | Interrupted tone, Sweden SS031711 (emergency signal)                            | 660 Hz  |         |
| 53         | Continuous tone                                                   |  | 2000 Hz              | 107 | Interrupted tone, Germany KTA3901 (evacuation alarm)                            | 500 Hz  |         |
| 54         | Continuous tone, Finland (all-clear signal)                       |  | 1500 Hz              | 109 | Interrupted tone, Australia AS2220, AS1610, AS1670                              | 420 Hz  |         |
| 55         | Continuous tone, PFEER gas alarm                                  |  | 1200 Hz              | 110 | Interrupted tone, (fast variable), bell                                         | 1450 Hz |         |
| 56         | Continuous tone                                                   |  | 1000 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

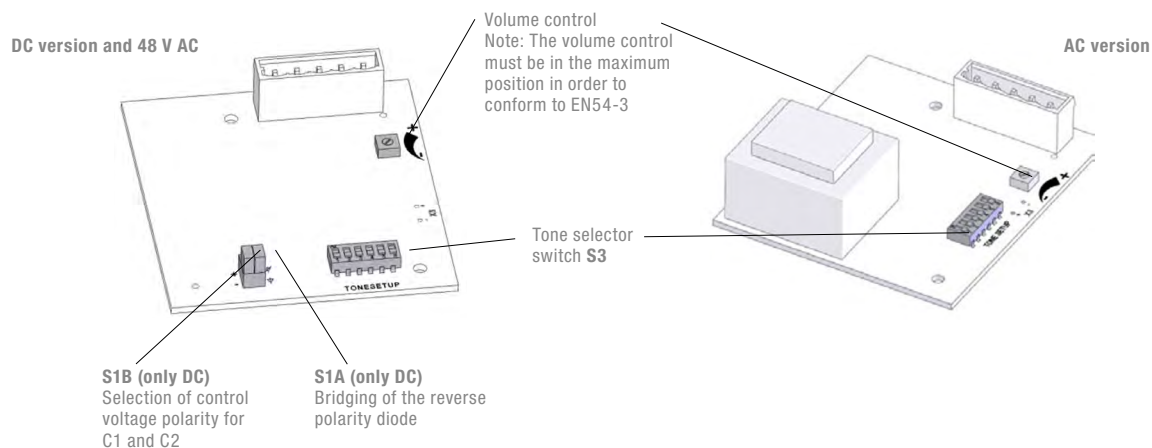
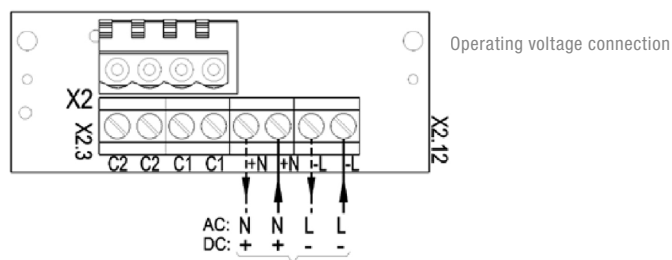
| NO. | DESCRIPTION                                                        |         | NO. | DESCRIPTION                                                                      |                  |
|-----|--------------------------------------------------------------------|---------|-----|----------------------------------------------------------------------------------|------------------|
| 115 | Interrupted tone, IMO (telephone call)                             | 950 Hz  | 131 | Alternating tone, UK BS5839-1 (fire alarm, railway crossing)                     | 1000 Hz  EN 54-3 |
| 116 | Interrupted tone, IMO (leave ship)                                 | 950 Hz  | 135 | Alternating tone, UK BS5839-1 (fire alarm, increased urgency – railway crossing) | 1000 Hz          |
| 117 | Interrupted tone, IMO SOLAS III/50 + SOLAS III/6.4 (general alarm) | 825 Hz  | 142 | Alternating tone                                                                 | 900 Hz           |
| 122 | Alternating tone                                                   | 2900 Hz | 143 | Alternating tone, industrial alarm Germany                                       | 660 Hz           |
| 123 | Alternating tone                                                   | 2900 Hz | 144 | Alternating tone                                                                 | 650 Hz           |
| 124 | Alternating tone, Singapore                                        | 2900 Hz | 146 | Alternating tone, France NFS 32-001 (fire alarm)                                 | 554 Hz  EN 54-3  |
| 125 | Alternating tone                                                   | 1400 Hz | 147 | Alternating tone, Sweden SS031711                                                | 554 Hz           |
| 128 | Alternating tone                                                   | 1025 Hz | 148 | Alternating tone, Sweden SS031711                                                | 554 Hz           |
| 130 | Alternating tone, UK BS5839-1 (fire alarm)                         | 1000 Hz | 152 | Alternating tone (two tone chime)                                                | 800 Hz           |

## CONTROL OF THE TONES

| DIP-SWITCH<br>(SETTING OF BASIC TONE) |    |    |    |    |   |            | EXTERNAL TONE SELECTION |     |       | DIP-SWITCH<br>(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 |
|                                       |    |    |    |    |   | 1          |                         | 88  | 57    |                                       |    |    |    |    | ON | 71         | 131                     | 52  | 93    |
| ON                                    |    |    |    |    |   | 2 *        | 128                     | 112 | 57    | ON                                    |    |    |    |    | ON | 77         | 61                      | 52  | 122   |
|                                       | ON |    |    |    |   | 2          | 26                      | 100 | 93    |                                       | ON |    |    |    | ON | 82         | 131                     | 52  | 83    |
| ON                                    | ON |    |    |    |   | 2          | 61                      | 131 | 112   | ON                                    | ON |    |    |    | ON | 83         | 56                      | 2   | 82    |
|                                       |    | ON |    |    |   | 9          | 57                      | 11  | 82    |                                       |    | ON |    |    | ON | 88         | 2                       | 57  | 128   |
| ON                                    |    | ON |    |    |   | 15         | 131                     | 52  | 112   | ON                                    |    | ON |    |    | ON | 90         | 131                     | 52  | 125   |
|                                       | ON | ON |    |    |   | 16         | 109                     | 52  | 56    |                                       | ON | ON |    |    | ON | 91         | 30                      | 52  | 110   |
| ON                                    | ON | ON |    |    |   | 18         | 111                     | 57  | 68    | ON                                    | ON | ON |    |    | ON | 92         | 33                      | 52  | 57    |
|                                       |    |    | ON |    |   | 22         | 16                      | 109 | 68    |                                       |    |    | ON |    | ON | 93         | 2                       | 128 | 57    |
| ON                                    |    |    | ON |    |   | 23         | 131                     | 52  | 112   | ON                                    |    |    | ON |    | ON | 97         | 2                       | 63  | 93    |
|                                       | ON |    | ON |    |   | 24         | 131                     | 52  | 131   |                                       | ON |    | ON |    | ON | 100        | 131                     | 52  | 125   |
| ON                                    | ON |    | ON |    |   | 25         | 131                     | 52  | 92    | ON                                    | ON |    | ON |    | ON | 101        | 98                      | 102 | 65    |
|                                       |    | ON | ON |    |   | 26         | 2                       | 100 | 93    |                                       |    | ON | ON |    | ON | 103        | 131                     | 65  | 147   |
| ON                                    |    | ON | ON |    |   | 27         | 123                     | 52  | 92    | ON                                    |    | ON | ON |    | ON | 104        | 103                     | 65  | 101   |
|                                       | ON | ON |    |    |   | 29         | 35                      | 52  | 61    |                                       | ON | ON | ON |    | ON | 109        | 16                      | 52  | 22    |
| ON                                    | ON | ON |    |    |   | 30         | 27                      | 52  | 77    | ON                                    | ON | ON | ON |    | ON | 110        | 131                     | 61  | 91    |
|                                       |    |    |    | ON |   | 31         | 131                     | 52  | 57    |                                       |    |    |    | ON | ON | 112        | 2                       | 57  | 128   |
| ON                                    |    |    |    | ON |   | 33         | 30                      | 52  | 35    | ON                                    |    |    |    | ON | ON | 113        | 52                      | 123 | 104   |
|                                       | ON |    |    | ON |   | 34         | 35                      | 52  | 93    |                                       | ON |    |    | ON | ON | 115        | 117                     | 116 | 44    |
| ON                                    | ON |    |    | ON |   | 35         | 27                      | 52  | 110   | ON                                    | ON |    |    | ON | ON | 116        | 117                     | 93  | 125   |
|                                       |    | ON |    | ON |   | 36         | 146                     | 67  | 57    |                                       |    | ON |    | ON | ON | 117        | 93                      | 116 | 125   |
| ON                                    |    | ON |    | ON |   | 43         | 131                     | 52  | 91    | ON                                    |    | ON |    | ON | ON | 123        | 27                      | 52  | 77    |
|                                       | ON | ON |    | ON |   | 45         | 2                       | 57  | 93    |                                       | ON | ON |    | ON | ON | 124        | 53                      | 83  | 2     |
| ON                                    | ON | ON |    | ON |   | 52         | 15                      | 65  | 82    | ON                                    | ON | ON |    | ON | ON | 130        | 2                       | 107 | 67    |
|                                       |    |    | ON | ON |   | 54         | 46                      | 54  | 131   |                                       |    |    | ON | ON | ON | 131        | 2                       | 112 | 57    |
| ON                                    |    |    | ON | ON |   | 55         | 131                     | 52  | 128   | ON                                    |    |    | ON | ON | ON | 135        | 16                      | 56  | 109   |
|                                       | ON |    | ON | ON |   | 56         | 82                      | 35  | 33    |                                       | ON |    | ON | ON | ON | 142        | 2                       | 54  | 88    |
| ON                                    | ON |    | ON | ON |   | 59         | 143                     | 59  | 101   | ON                                    | ON |    | ON | ON | ON | 143        | 59                      | 93  | 33    |
|                                       |    |    | ON | ON |   | 60         | 131                     | 52  | 125   |                                       |    | ON | ON | ON | ON | 144        | 110                     | 61  | 2     |
| ON                                    |    | ON | ON | ON |   | 65         | 131                     | 52  | 93    | ON                                    |    | ON | ON | ON | ON | 146        | 31                      | 67  | 57    |
|                                       | ON | ON | ON | ON |   | 66         | 110                     | 52  | 107   |                                       | ON | ON | ON | ON | ON | 148        | 131                     | 52  | 92    |
| ON                                    | ON | ON | ON | ON |   | 69         | 131                     | 52  | 110   | ON                                    | ON | ON | ON | ON | ON | 152        | 110                     | 61  | 13    |

\* factory setting

## CONNECTION DIAGRAM



## 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