

PROTECT EX LED SOUNDER 116 dB(A) PRO L 10-EX



- Excellent robustness – Cast aluminium housing guarantees long lasting use in tough applications
- Explosion proof – for potentially explosive areas in zone 2 (3G) and zone 22 (3D) as well as Class I / II / III Div2
- Selectable signaling modes – Continuous light, blinking light or flashing light
- Outstanding perceptibility – Ideal radiation characteristics and high penetration of acoustical obstacles reduce the required number of devices
- Selectable tone – 80 different tones, 3 additional tones externally selectable
- Selectable sound pressure – Reduction of sound pressure level up to 30 dB, internally or externally selectable
- Pre- & main alarm – Preventing shock reactions by pre-alarming due to reduced sound pressure level
- Safe & easy handling – Designed with unlosable seal and screws to significantly shorten wiring and installation times



acoustic
penetration



protection
system



impact-proof
housing



operating
temperature



warranty



sound
adjustable



protection
system



UL



EAC

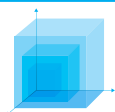


ext. sound
reduction



DC version,
inrush current
limitation

3D-COVERAGE PERFORMANCE DATA



PRO L 10-EX			
VISUAL	Indicate	43 x 39 x 44 m	AUDIBLE
	Warn	19 x 17 x 20 m	
	Alarm	10 x 9 x 10 m	
		80 dB (A)	51 x 49 x 24 m @DIN tone
		85 dB (A)	29 x 27 x 14 m @DIN tone
		90 dB (A)	16 x 15 x 8 m @DIN tone

To determine the exact signalling area for your needs, please use the online available Pfannenberg Sizing Software PSS.

PRODUCT

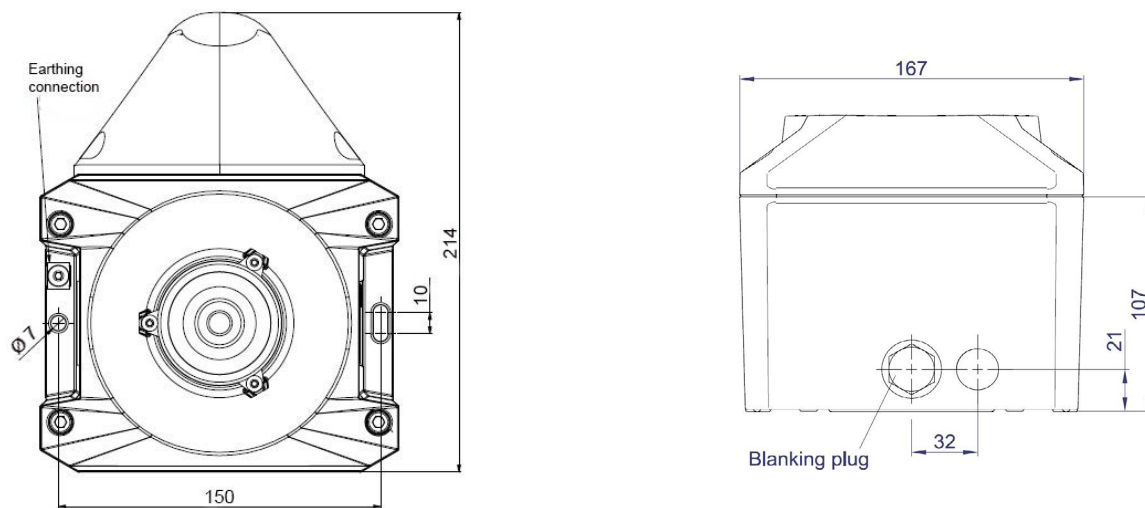
PRO L 10-EX

DATA

Rated voltage	230 / 115 V AC	12–48 V DC
Rated frequency	50 / 60 Hz	–
Operating range	95–265 V AC	10–60 V
Current consumption light (max)	120 mA @ 230 V AC	120 mA @ 24 V DC
Current consumption sounder (max)	95 mA @ 230 V AC	400 mA @ 24 V DC
Current consumption sounder @ DIN tone	85 mA @ 230 V AC	355 mA @ 24 V DC
Type of protection	Ex ec / Ex tc	
Explosion protection	See manual	
Category (area of use)	3G (Zone 2), 3D (Zone 22) Class I / II / III Div2	
Certificate of conformity	Pfannenberg PDG 24.0010 X UL	
Sound pressure level max / @DIN tone	116 dB (A) @ 1m / 114 dB (A) @ 1m	
Sound level reduction	-4 dB / -10 dB / -16 dB / -22 dB / -26 dB / -30 dB	
Tones	80 / 3 ext. selectable	
Sound time-out	60 s / 15 min / 45 min / none	
Light types	flashing light (0.1 Hz, 0.5 Hz, 0.75 Hz, 1 Hz, 1 Hz double flash), blink light (1 Hz, 2 Hz), continuous light	
Light intensity ¹ / max. viewing distance	23 cd (reducible) / 111 m	
Temperature class T	up to IIC T4 @ Ta -40°C...+55 °C further details see certificate and manual	
Operating / storage temperature	-40 °C ... +55 °C / -40 °C ... +70 °C	
Degree of protection	IP66 / IP67 / NEMA 4/4x / IK09 (Housing), IK08 (Lens)	
Service life of the light source	≥50,000 hrs	
Material	Sounder	Aluminum
	Light	(○ - RGB) Polycarbonate (PC)
Connecting terminal	stranded 2.5 mm ² , solid 4.0 mm ²	
Weight	2800 g	

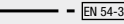
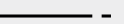
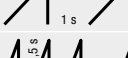
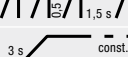
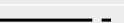
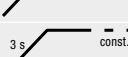
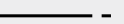
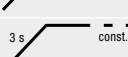
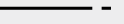
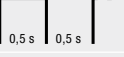
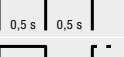
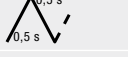
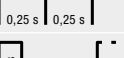
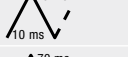
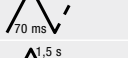
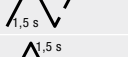
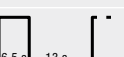
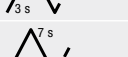
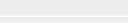
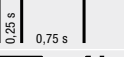
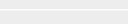
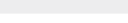
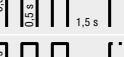
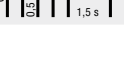
¹ with a clear lens

DIMENSIONS

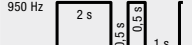
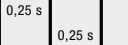
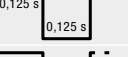
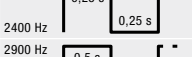
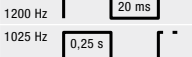
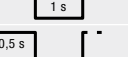
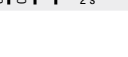


ORDERING DETAILS	PRO L 10-EX	
LENS COLOUR	230 / 115 V AC	12 -48 V DC
●	23151645007	23151635007

Article numbers for other colours and voltages on request.

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  500 Hz	59	Continuous tone		880 Hz 
9	Slow whoop, fire alarm, UK BS5839-1		970 Hz  800 Hz	60	Continuous tone		825 Hz 
11	Interrupted tone (fast)		970 Hz  800 Hz	61	Continuous tone		800 Hz 
13	Interrupted tone		900 Hz  700 Hz	63	Continuous tone		725 Hz 
15	Slow whoop, evacuation alarm Netherlands NEN 2575		1200 Hz  500 Hz	65	Continuous tone, Sweden SS031711 (all-clear signal)		660 Hz 
16	Slow whoop, evacuation alarm Australia AS2220		1200 Hz  500 Hz	66	Continuous tone		554 Hz 
18	Slow whoop, NFPA		775 Hz  422 Hz	67	Continuous tone, Germany KTA3901 (all-clear signal)		500 Hz 
22	Pulsating tone, Australien alert AS1670, ISO8201		1200 Hz  500 Hz	68	Continuous tone		470 Hz 
23	Siren		2400 Hz  500 Hz	69	Continuous tone		440 Hz 
24	Siren		1200 Hz  300 Hz	71	Continuous tone		340 Hz 
25	Siren		800 Hz  300 Hz	77	Interrupted tone		2200 Hz 
26	Siren, industrial alarm Germany		1000 Hz  150 Hz	82	Interrupted tone, PFEER (general alarm), UK BS5839-1 (back-up alarm)		1000 Hz 
27	Sweeping		2900 Hz  2400 Hz	83	Interrupted tone, PFEER (general alarm)		1000 Hz 
29	Sweeping (fast)		2900 Hz  2400 Hz	88	Interrupted tone		950 Hz 
30	Sweeping		2900 Hz  2400 Hz	90	Interrupted tone		825 Hz 
31	Sweeping, France NFC48-265		1600 Hz  1400 Hz	91	Interrupted tone		800 Hz 
33	Sweeping (medium), UK BS5839-1		1000 Hz  800 Hz	92	Interrupted tone		800 Hz 
34	Sweeping (fast)		1000 Hz  800 Hz	93	Interrupted tone (fast), Horn		800 Hz 
35	Sweeping (fast), UK BS5839-1		1000 Hz  800 Hz	97	Interrupted tone		725 Hz 
36	Sweeping		1500 Hz  700 Hz	98	Interrupted tone, Sweden SS031711 (emergency signal)		700 Hz 
43	Sweeping		1200 Hz  500 Hz	100	Interrupted tone, industrial alarm Germany		680 Hz 
44	Sweeping, IMO 3d, Germany KTA3901 evacuation alarm		1200 Hz  500 Hz	101	Interrupted tone, Sweden SS031711 (important message (pre-mess))		660 Hz 
45	Sweeping		1200 Hz  500 Hz	102	Interrupted tone, Sweden SS031711 (local warning)		660 Hz 
46	Sweeping, general alarm Finland		1500 Hz  500 Hz	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 
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 
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 

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

The visual characteristics of flashing lights conform to the European standard DIN EN 842; **“Machine safety – visual alarm signals”**.
Requirements contained in the DIN EN 981 standard; **“Machine safety – system of acoustic and visual alarm and information signals”**, can be fulfilled.

The colours “red” for the emergency signal and “yellow” for the warning signal conform to the requirements of IEC 73 / DIN EN 60073 / VDE 0199; **“Coding of display devices and control elements using colours and supplementary means”**.

References to visual alarm devices can be found in the following standards:
EN 60825-1 Radiation safety of laser devices, identical to IEC 825 and DIN-VDE 0837
DIN EN 54 Fire alarm systems
DIN 54113-2 Radiation protection regulations for the technical operation of X-ray equipment up to 500 kV