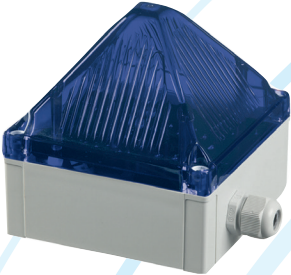# Signaling Solutions for Alarm, Warning, and Indication

SIGNALING TECHNOLOGY

Pfannenberg
ELECTRO-TECHNOLOGY FOR INDUSTRY

Audible Alarm Sounders

Audible alarm sounders serve to safeguard people, machinery, and processes from danger, malfunction, breakage, and waste. When something goes wrong, a sounder signals the need for necessary action.

Pfannenberg sounders are engineered with better sound penetration, more features, easier installation, higher IP ratings, and a variety of international certifications.

Flashing Alarm Sounders

Flashing sounders offer an enhanced level of signaling by combining visual and audible alarms. Such devices are particularly well suited for environments with high ambient noise levels or when the use of hearing protection may hamper a sounder's effectiveness.

Typical Applications

- **Machinery Startup Alarm** - paper machines, textile machines, printing machines, large conveyors, baggage carrousels.
- **Heavy Equipment Movement Alarm** - cranes, hoists, trucks, derricks, conveyors, mining equipment, quarries.
- **Machinery Malfunction Alarm** - breakdown, clog, spill, leak, low feed stock.
- **Process Upset** - tank overfill, high temperature, high pressure, leaks, spills, toxic emission, pump failure, valve failure.
- **Evacuation Alarm** - fire, toxic gas, chemical spill, intruder, terrorist, tornado, earthquake, tsunami, end of shift.

PATROL General Purpose Sounder Series

Highly engineered and with an impressive list of features, PATROL sounders are the best choice for audible alarming in industrial facilities, rail yards, shipping terminals, ports, quarries, mining, sports arenas, campuses, and commercial buildings. By spreading the acoustic spectrum of alarm tones across more low frequencies, Pfannenberg sounders achieve wider sound dispersion as well as delivering superior penetration through walls and doors. Not only does this improve the functionality of alarming individuals to dangerous situations, but it also reduces the number of units required per square foot area of coverage - thereby trimming equipment purchase and installation costs.

Features	Advantages	Benefits
Blended ABS/polycarbonate plastic housing	Flame retardant and UV resistant	Strong, durable, and long lasting
Choose from 80 tones	Satisfies a large variety of applications	Reduces number of models to buy or stock
4 stages of alarm tones in each unit	Ability to signal different tones with one unit	Eliminates need for multiple units
IP 66 rating with molded integral gasket	Suitable for use in any environment	Inseparable gasket can't get lost
All electrical connections are in the back box	Simple to mount box and attach wires	A third hand is not needed for installation
3/8-turn captive fasteners	Quicker assembly and correct sealing assured	Fasteners can't get lost

PATROL

Model Number	PA 1	PA 5	PA 10	PA 20
Nominal SPL @ 1 m*	100 dB(A)	105 dB(A)	110 dB(A)	120 dB(A)
Size (h x w x d)	3.4 x 4.3 x 3.2 inch	5.3 x 6.4 x 5.2 inch	6.7 x 8.4 x 6.1 inch	6.7 x 8.4 x 7.1 inch
Temperature Range	-40 to + 131 °F (-40 to +55 °C)			
Rated Voltage Options	12 VDC, 24 VDC, 48 VDC, 24 VAC, 115 VAC, 230 VAC			
Available Approvals	UL, VdS, EN 54-3, GL			

*Higher sound pressure levels are possible depending upon particular tone selected and supply voltage used.

SIGNALING TECHNOLOGY

PATROL General Purpose Flashing Sounder Series

PATROL flashing sounders share the same engineered benefits as the dedicated sounder series as well as possessing some additional enhancements surrounding the integration of their flashing strobe lights. The lights are pre-wired to the single terminal strip in the back box for ease of installation. Optional wiring arrangements offer the ability to control the light either simultaneously or separately from the sounder. A unique advantage of Pfannenberg flashing sounders is the option for higher energy flashing strobes to match the alarm intensity of the louder sounders.

PATROL

Model Number	PA X 1	PA X 5	PA X 10	PA X 20
Nominal SPL @ 1 m*	100 dB(A)	105 dB(A)	110 dB(A)	120 dB(A)
Flash Energy Options	5 Joules	5 Joules, 10 Joules	10 Joules, 15 Joules	10 Joules, 15 Joules
Size (h x w x d)	6.8 x 4.3 x 3.2 inch	8.5 x 6.4 x 5.2 inch	10.6 x 8.4 x 6.1 inch	10.6 x 8.4 x 7.1 inch
Temperature Range	-40 to +55 °C			
Lens Color Options	clear, white, yellow, amber, red, green, blue			

*Higher sound pressure levels are possible depending upon particular tone selected and supply voltage used.

Special Duty Sounders and Flashing Sounders

Pfannenberg has the expertise to custom tailor devices to meet specific requirements. Shown here are some of our popular options..

Model Number	DS 5	DS 10	DSF 5	DSF 10	PA 130	SON 2	SON F1	SON 4	SON 4L
Nominal SPL @ 1 m*	105 dB(A)	110 dB(A)	105 dB(A)	110 dB(A)	130 dB(A)	100 dB(A)		100 dB(A)	
Noteworthy Attributes	Heavy-duty cast aluminum sounder housing for use in demanding environments				Aluminum enclosure, 9 externally controllable tones, option to use also as a loudspeaker	Low Cost, Piezo Crystal Style		Compact, Low Cost, Piezo Crystal Style	
						115 VAC, 230 VAC, 24 VDC	24 VDC Only	115 VAC, 230 VAC, 12 VDC, 24 VDC	
Flash Energy	N/A		13 Joules		N/A	N/A		1 Hz Flash, 0.25 Joules	2 Hz Blinking LED
Tone Options	31 tones, 4 stages		31 tones, 4 stages		80 tones	32 tones 3 stages	10 tones 2 stages	32 tones 3 stages	10 tones 2 stages
Size (h x w x d)	5.2 x 5.2 x 5.6 inch		10.4 x 5.2 x 5.6 inch		11.6 x 19.3 x 24.5 inch	3.4 x 3.4 x 2.5/3.5 inch		3.4 x 3.4 x 4.0/4.7 inch	
Temperature Range	25 to +55 °C		25 to +55 °C		20 to +50 °C	-25 to +55 °C		25 to +55 °C	
Lens Color Options	N/A		clear, yellow, amber, red, green, blue		N/A	N/A		yellow, amber, red, blue	

*Higher sound pressure levels are possible depending upon particular tone selected and supply voltage used.

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Beacons - Flashing Strobes, Steady Lights, Rotating Lights, Blinking Lights, and Multifunction LEDs

Pfannenberg offers a wide variety of signal lights with incandescent, halogen, LED, and flashing xenon strobe illumination technologies. Products within this range have satisfied numerous alarm, warning, and indication requirements in some of the most demanding environments. Robust engineering delivers reliability for tough applications yet their elegant designs integrate well with machine or building decor.

Series (multiple colors available in all styles)	Available Types	Protection Rating
PYRA PY X-S	**Flashing strobe** • 5 Joules • Impact-resistant lens • Surface, flush and pole mount	IP 66
PYRA PY X-M	**Flashing strobe** • 5 Joules • 10 Joules • Multiple flash rates to suit many applications • Impact-resistant lens	IP 66
Quadro	**Flashing strobe** • 13 Joules Multi function LED for steady, blinking, or rotating action	IP 66, IP 67
PMF	**Flashing strobe** • 30 Joules • 7 Joules Multi function LED for steady, blinking, or rotating action	IP 55
ABL/ABS/KBL	**Flashing strobe** • 15 Joules • 5 Joules Incandescent lamp	IP 54
WBL/WBS/DWBL/DWBS	**Flashing strobe** • 5 Joules • 2.5 Joules	IP 54
P 300/P 400	**Flashing strobe** • 15 Joules • 5 Joules Multifunction LED Incandescent lamp Halogen lamp	IP 65
P 100/P 200	**Flashing strobe** • 1 Joules Steady LED Incandescent lamp	IP 65

Pilot Lights and Panel Buzzers

▲ **Series P 22 D** - steady on/off LED pilot lights, 22.5 mm cutout

▲ **Series P 22 DFS** Blinking LED pilot lights, 22.5 mm cutout	▲ **Label** holder for 22.5 mm pilot devices	▲ **P 22 DFS** Combined blinking LED and buzzer
◄ **Series P 28** panel buzzer, 28.6 mm cutout	◄ **P 22 DBZ** buzzer, 22.5 mm cutout	

Loudspeakers

Suitable for connection to public address systems or mass notification systems, loudspeakers offer the ability to broadcast spoken messages, music, and separately-generated alarm tones.

AIW SIGNALING TECHNOLOGY

SIL Signaling

Pfannenberg offers the industry's first signaling devices that are specifically designed to meet SIL 1 and SIL 2 safety integrity levels. When configuring Safety Instrumented Systems in conformance with IEC-61508 and IEC-61511, a signaling device with a self monitoring function will provide fail safe operation without the expense of redundant devices. These function monitored devices offer a set of contacts which activate in the event of a malfunction of their internal circuitry or signal driver. This feature permits shut down or lock out of machinery or processes until corrective action is taken. Each device is supported with full statistical data to support the necessary criteria of the safety instrumented system.

- Machinery startup alarm.
- Safety system muting alarm.
- Toxic gas leak evacuation alarm.
- Process upset alarm.

Series Quadro F12-SIL
10 Joules Flashing Light
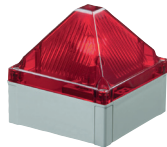
Series DS 5-SIL, DS 10-SIL
105 or 110 dB (A) Sounders

Series PMF 2015-SIL
10 Joules Flashing Light

Function Monitored Signaling

Function monitored devices offer a set of contacts which activate in the event a malfunction occurs with their internal circuitry or signal driver. This feature permits shut down or lock out of machinery or processes until corrective action is taken. Function monitored signaling devices are particularly well suited for hazardous machinery such as laser cutting tools and similar devices whose guarding systems must be in place in order to achieve safe operation.
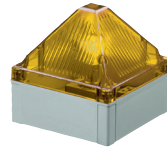
Series Quadro S-M-Flex
13 Joules Flashing Light

Series WBx-M
5 Joules Flashing Light

Series PD 2100
LED Continuous Light

Series PMF 2015-M
7 Joules Flashing Light

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Material Handling Safety Signaling

We have numerous signaling products suitable for material handling safety. They are available in several configurations; for example our PA X series is an ideal solution for cranes and hoists. Provides four unique alarms for up to four actions or axes of movement, combined with a visual strobe for added safety. Our Quadro LED-TL series is a popular upgrade on spreader bar cranes to notify personnel of capacity overload, wind warning, and crane movement and load rotation.

- Loading dock assignments
- Parking lot entrance gates
- Warehouse traffic control
- Security barriers
- Crane operation

P350 / P450

PA X 20

Quadro LED-TL

Explosive Area Signaling

Pfannenberg signaling devices for explosive area use are specified per International Electrotechnical Commission ATEX nomenclature. Within the product offering are devices that are suitable for use in hazardous areas containing combustible gasses, vapors, and dusts.

Image	Description	Usage Areas
	LED stack light with junction box enclosure	Zone 2, 22
	7.5 Joules flashing strobe light or multi-function LED	Zone 2, 22
	Intrinsically safe LED blinking light, 100 dB(A) sounder, and combined LED blinking light with sounder	Zone 0, 1, 2
	5 Joules flashing strobe light	Zone 1, 2, 21, 22
	105 or 110 dB (A) sounder in cast aluminum housing	Zone 2, 22
	Intrinsically safe 105 dB (A) sounder	Zone 0, 1, 2
	110 or 117 dB (A) loudspeaker, sounder, or sounder with speech reproduction	Zone 1, 2, 21, 22
	Combined flashing strobe with 110 or 113 dB (A) sounder,	Zone 1, 2, 21, 22

SIGNALING TECHNOLOGY

Stack Lights, Tower Lights, Signal Towers, Andon Lights

Pfannenberg offers two styles of Stack Lights, Model BR 50 and Model BR 35. The larger Model BR 50 is 54 mm in diameter and is fully modular. The user can build the stack to their liking from the component modules which easily fit together with the bayonet-style twist and lock ring. The BR 50 is the better choice for machinery applications with extended versatility of flashing strobes, blinking lights, and sounder modules. The smaller Model BR 35 is 30 mm in diameter and is semi-modular in that the user can alter lens colors and orientation. The number of light segments, however, is fixed upon order. Both models support LED lamps for superior tolerance to vibration.

Typical Applications

- **Machinery Status Indication** - packaging and filling machinery, food processing machinery, CNC machine tools, metal cutting machines, conveyor systems, process lines, assembly lines.

- **Customer Service and Check-out Lane Availability** - supermarkets, department stores, bank tellers, ticket counters, customs checkpoints.

- **Annunciation Signal at Operator Station** - process running, process ended, feedstock depleted.

- Assistance Required Signal - supervisor call signal.

Series BR 35

The Series BR 35 is a pre-configured stack light with the number of stages being fixed upon order. Simply specify the mounting style, number of light stages and lens colors desired and the light comes fully assembled and ready to use.

- 1-3/8 inch (35 mm) diameter.

- Semi modular - lens colors can easily be changed or re-oriented.

- Pre-configured assembly for up to four color segments.

- IP 54 protection system - suitable for outdoor use.

- Attractive design - complements any machine or installation location.

- Energy efficient - optional LED lamps for low power consumption and vibration tolerance.

- Sensible hookup - all wiring connections are accommodated by screw terminals in the base or flying leads.

- Variety of mounting possibilities.

Series BR 50

The Series BR 50 easily assembles into any desired configuration. Choose from a variety of flashing and steady on/off modules. A choice of mounting options are also supported including direct mount, tube with stand, or tube with bracket.

- 2-1/8 inch (54 mm) diameter modules.

- Fully modular - simple configuration of up to five desired segments.

- Attractive design - complements any machine or installation location.

- Bayonet locking ring - assures robust assembly on vibrating machines.

- Protection up to IP 65 - withstands pressurized spray and outdoor use.

- Sensible hookup - all wiring connections are accommodated by screw terminals in the base module.

- Variety of mounting possibilities.

Modular construction of the Series BR 50 makes installation easy

Light modules are available in a variety of colors with choice of flashing strobes, blinking / steady LED's, or blinking / steady incandescent lamps.

LED lamps install into standard BA15d sockets and are offered in a choice of vibrant colors to match the module color - or select the clear LED for universal application with any module color. Incandescent lamps are available in either 7 watts or 4 watts.

| Top piece and base module where all wiring is connected. | Optional sounder module installs at top of stack. | ASi bus module permits 2-wire, daisy-chained operation. | Tube with stand mount available in 3 standard lengths. | Tube with bracket mount available in 3 standard lengths. |

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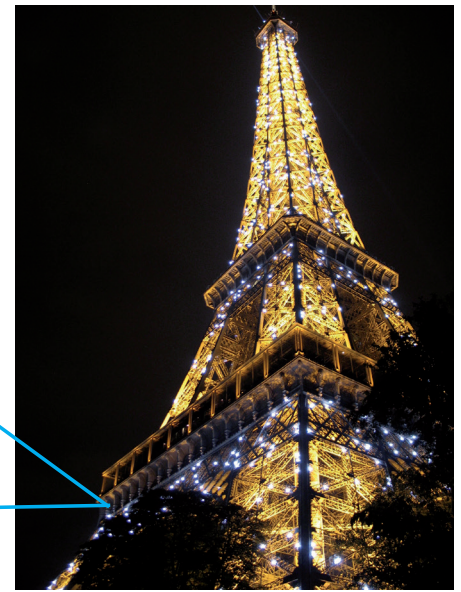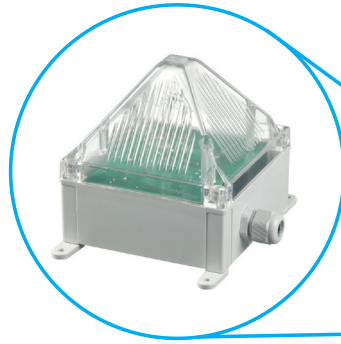
ELECTRO-TECHNOLOGY FOR INDUSTRY

Artistic Illumination

Pfannenberg's flashing xenon strobe lights have fulfilled a variety of illumination project requirements on municipal structures and monuments. .

Visit **www.art-illumination.com** to learn more.

The Eiffel tower is outfitted with 20,000 flashing lights manufactured by Pfannenberg.

About Pfannenberg:

Pfannenberg is a German-based company with worldwide operations. We manufacture and distribute products for North America from our facility near Buffalo, NY. In addition, we maintain a nationwide network of sales and service organizations to help with product selection and after sale support.

Other Products:

Climate control and thermal management products

Complete solutions for maintaining optimal conditions inside enclosures that contain critical control boards, motor drives, and power inverters.

- Filterfans®.
- Air Conditioners and Cooling Units.
- Air to Water Heat Exchangers.
- Chillers for Water, Oil, Glycol.
- Heaters, Thermostats, Hygrostats.

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