

Alarm signaler with light or sound or vibration

Battery-powered portable or desk top device, with a signal receiver (sensor) and a signal transmitter (built-in flashing or strobe light, vibrating device or sound amplification), that transforms a signal (e.g., from telephone, doorbell, baby's call, alarm systems) into a visual, acoustic or mechanical output (vibrotactile), and alerts or inform people who are deaf and/or hard of hearing about changes within their environment. The alarm signaler can be added to existing fire alarm systems, or alarm clocks (if they make use of the same frequency) to provide the necessary warning signal. The product may be also called alerting device or signaling systems.

Possible variants concern the signal transmitter (which can be also a strobe or a flashing light, a vibration, or an amplified acoustic signal with lower frequency sounds, that may be different for different receivers), the signal receiver (which may be also a smoke sensor, a heat sensor, a gas sensor, a sound sensor, a water sensor, a pressure sensor, or a weather alert), the stand-alone device (which can be also coupled to an existing alarm system), the signal receiver placement (which can be also a WIFI or radio frequencies connected external receiver of an environmental emergency alarm systems device), the amount of signal receivers that can be received (which can be also multiple, integrated in an alert system receiver unit), the type of the transmitter signal output (which can be also different for different signal receivers, e.g. different kinds of vibration or different kinds of colored light), the batteries (which can be also rechargeable), and the power supply (which may be also electric power supply).

- **Product Classification**

- APL (WHO Assistive Product Priority List): 1 (Alarm signallers with light/sound/vibration)
- ISO 9999:2022: 222903 (Signaling devices)

- **Possible configuration variants**

- Signal transmitter: strobe.
- Signal transmitter: flashing light.
- Signal transmitter: vibration.
- Signal transmitter: amplified acoustic signal with lower frequency sounds (that may be different for different receivers).

- **Possible accessories or optional components**

- Alert system monitor receiver (which indicates the different types of alarm).
- Alarm clock with built-in strobe lights.
- Alarm clock with an external vibrotactile transmitter (also called vibration pad, bed-shaker or bed-vibrating alarms, that goes under the pillow or the mattress).
- Rechargeable batteries.

- **Product goals**

Activities or functions the product is mainly intended to support, according to WHO ICF Classification:

- Using communication devices and techniques [\[d360\]](#).

- **Indicated impairments**

Difficulties the product is mainly intended to address, according to the WHO ICF Classification:

- Hearing [\[b230\]](#). Only if used with variants: Signal transmitter: strobe, Signal transmitter: flashing light, Signal transmitter: vibration, Signal transmitter: amplified acoustic signal with lower frequency sounds

- Seeing [\[b210\]](#). *Only if used with variants: Signal transmitter: vibration*
- **Contraindicated impairments**

Difficulties for which the product may be inappropriate:

 - Blindness. *Unless used with variants: Signal transmitter: vibration, Signal transmitter: amplified acoustic signal with lower frequency sounds*
 - Deafblindness. *Unless used with variants: Signal transmitter: vibration*
- **Indicated environments**

Specific environments in which the product should be used:
None specified.
- **Contraindicated environments**

Environments in which the product may be inappropriate:

 - Areas where the product might cause harmful interference (to adjacent devices, products or electrical equipment).
- **Other indicated factors**

Other factors or situations the product is intended to address:

 - Notify household events needing attention (such as doorbell rings, phone rings, or a baby cry).
- **Other contraindicated factors**

Other factors or situations in which the product may be inappropriate:
None specified.
- **Points to be considered in product selection**
 - Check what kind of signal receiver (sensor) the user needs to control environmental events (fire, smoke, telephone ring, doorbell, baby crying, security breach, weather alert, water leakiness), that he does not hear due to his hearing loss.
 - Check how many signal receivers (sensor) the user needs to control in the environment where he is living or working; in case of two or more events to control, select an alert system connectable to the number of sensors the user needs.
 - Ensure that exiting signal receivers are connectable and compatible with the alarm signaler.
 - Check what kind signal of transmitter is preferred by the user (light, vibration, amplified sound).
 - For 24-hours control (also during nighttime), select an alarm signaler with an integrated alarm clock, flashlight, and bed vibration alarm (that can be placed under the pillow or the mattress).
 - For maximum freedom of movement in the environment where the alarm signaler will be used, it is recommendable a body wear signal transmitter; in case of wireless connection to the signal receiver, the signal must be strong enough to be received anywhere in the user's environment.
 - Ensure that the alarm signaler uses different light, acoustic o vibration signals for the different sensors, in the way that the user may distinguish what alarm it is.
 - An alarm signaler with a light signal transmitter (flashlight, strobe) is suitable also for outdoor use.
 - If you want to be alerted of an incoming message on your smartphone when you are sleeping, choose a light sensor to place on the smartphone and a bed-shaker to place under the pillow.
 - An alarm signaler with a vibration signal transmitter is suitable also for deafblind users.
 - An alarm signaler device can be added to existing alarm systems, to alert them of imminent danger (such as smoke, fire, or a security breach), or be added to alarm clocks, to provide the necessary warning signal.
- **Points to be considered in product fitting**
 - Ensure that the user can switch on/off the alarm signaler.
 - Ensure that the device correctly captures and transmits the signal, and that the user receives it his or her preferred mode (light, vibration, amplified sound).
 - In case of external wireless sensors, ensure that the sensor is installed close to where it captures the signal (alarm), is powered adequately (batteries or electric power supply) and sends the signal to the alarm signaler; in case of a portable device check if the alarm alert can be received anywhere in the room, house or working place.
 - If the alarm signaler is connected to an existing alarm system, the installer should ensure that it is compatible with the alarm system.

- For installation and maintenance of sensors with electric supply, a qualified installer is needed.
- In case of an alert system with multiple sensors, ensure that every alarm can be correctly associated to the cause of the alarm; an enlarged legend may be helpful if the person has difficulty seeing the symbols of the different alarms.
- For battery powered sensors and transmitters, ensure that user can replace or recharge the batteries.
- When moving around your home, make sure that the light transmitter is visible from anywhere you are.
- Make sure that the bed vibration transmitter is easily perceptible when you are lying on the bed; under the mattress, the vibration can be less intensive than under the pillow or in the lining of the pillow.
- **Points to be considered in product use**
 - Switch off your battery powered alarm signaler when you leave your home and turn it on, when you get home.
 - It is important to wear your portable vibrating transmitter when you are moving in your house, so you can be alert in case of alarm.
 - Before you go to bed, check if the bed-shaker is in the right position.
- **Points to be considered in product maintenance / follow-up**
 - Regularly check the sensors functioning, especially the gas and heat sensors: if any sensor shows malfunction, repair should be carried out immediately. It is important that you often replace the batteries of smoke and fire alarm sensors, to ensure they are working properly; it is recommendable to note the date when the batteries have been changed.
- **Examples of products available on the market**
 - Live product search in the EASTIN website <https://www.eastin.eu/en/searches/products/list?iso=222903>

Source

This Fact Sheet was compiled in 2021 by an international team of experts, to provide the initial knowledge base for a project ("An online system to assist the selection of assistive product") supported by the World Health Organization in 2020-2021 within the GATE Initiative (Global collaboration on Assistive Product). Fact Sheets were compiled for each of the 50 types of products included in the WHO APL (Assistive Product Priority List).

The team was composed of Renzo Andrich (Italy, group leader), Natasha Layton (Australia), Stefan von Prondzinski (Italy), Jerry Weisman (USA), Silvana Contepomi (Argentina) and Hasan Minto (Pakistan).

The project led to a prototype online tool called ASPREX (ASsistive PROduct EXplorer). At the end of the project, it was transferred to a WHO collaborating center (the Global Disability Hub in the UK), in view of possible future developments.