

> PAS

Personal alarm system for emergency response

DESCRIPTION – The Personal Alarm System (PAS) is an ultrasonic emergency notification / communication system. The exact location of an individual moving throughout a facility is immediately determined when he or she activates their personal alarm transmitter (PAT) device. Through integration with an overall security management system the location of the individual requiring aide can be graphically represented on a map-type display at a central control location. One or more receivers are installed in each room or hallway area that the system is required to cover. A microphone on the receiver can forward audio to the central control. The receiver can optionally be provided with a video camera as well.

APPLICATION – The PAS transmitters are discreet, compact and rugged. Depending on the version they can be worn on the belt either with a belt clip or in a holster, or they can be worn as a pendant. Several options are available for transmitter activation – button press, pull pin, pull ring (keeper switch), or self-activation in a man-down situation. Receivers are flush-mounted in the wall or ceiling and provide an alarm output, auxiliary alarm output, audio, and a visible LED that illuminates to indicate that an alarm has been received.



Features

- Immediate and accurate location of an individual in distress
- Omni-directional reflective ultrasonic signal ensures reception of alarm signal
- Modulated ultrasonic signal results in very few false alarms
- Ultrasound does not penetrate walls - hence alarms can be localized to a given room
- Receiver microphone provides audio output for assessment purposes
- Receiver optionally provides camera for video assessment purposes
- Personal Alarm Transmitter (PAT) types:
 - Standard PAT (PAT/S), push-button activated
 - PAT/MD, push-button or man-down activated
 - PAT/S or PAT/MD can optionally have the push-button replaced with a pull-pin
 - Compact PAT (PAT/C), push-button or pull-ring activated
- Audible low-battery warning on transmitter

Benefits

- Timely response to an individual in distress
- Rugged design for reliable operation
- Integrates easily with overall security management systems including PAS-120
- Low-power transmitters for long battery life

Markets

- Correctional facilities
- Hospitals
- Industrial facilities

How it works

Unlike radio signals (RF), ultrasonic signals do not penetrate walls, ceilings or floors. Therefore, the transmission / reception is confined to the immediate area of the transmitter and there is no confusion regarding where response should be sent. PAS is based on ultrasonic technology to ensure that location identification is accurate since there is no "bleeding" of signal between walls or floors.

The ultrasonic transmission is modulated, meaning that receivers will only alarm when they receive a transmission containing two set frequencies in an established pattern. This eliminates false alarms from items such as jangling keys, metallic items, and HVAC systems as it is extremely unlikely for the same modulated frequency pattern to be duplicated. Upon activation, the transmitter carried by an individual emits a continuous ultrasonic signal. The signal is omni-directional, eliminating the need to point or direct the transmission. Ultrasonic transmission is not blocked by the carrier's body nor items or furnishings in the area.

Technical Specifications

PAS transmitters

The transmitter (PAT) is activated by pushing a latching alarm button which has been specifically designed to prevent accidental activation. Additional methods are also available as options: pull-pin, keeper switch (breakaway lanyard or key chain use), and "man down". The "man down" provides automatic transmission whenever an individual is in a prone position (greater than 60° from vertical). In order to prevent accidental transmissions, the transmitter emits a warning tone first and allows a 4 second time delay to correct the transmitter position before an alarm signal is sent. A breakaway lanyard is supplied with the PAT/C (compact unit).

PAT housings are made from rugged Lexan™ cases. Sturdy pocket / belt clips provide a variety of carrying positions. An optional holster is available for the standard PAT (PAT/S) and standard PAT with man-down feature (PAT/MD) when they are worn on a service belt. A lithium battery is included with each transmitter along with a special tool to gain entrance to the battery compartment. An audible tone is emitted when the battery begins to run low; it will sound for several days. All transmitters are interchangeable within the system.

PAS receivers

The Personal Alarm Receiver (PAR) 03RM is the receiving unit that decodes the modulated ultrasonic signal emitted by the PAT transmitter. The alarm contact, auxiliary contact and Light Emitting Diode (LED) latch each time an alarm is received. They remain latched when an activated transmitter is within range. The latching condition is held for 5 seconds after the transmitter is deactivated. A built-in microphone and pre-amplifier provide audio assessment capability of the alarm.

Receiving range is factory adjusted for a nominal distance of 15 m (50 ft.) radial, 300 m (100 ft.) diameter. This normally needs no adjustment but can be field adjusted if required. The red alarm LED assures the user that the transmitter signal has been received and the alarm message has been sent. For outdoor applications, 2 weatherproof versions of the PAR receiver are available.

The PAR 03RM / IV ultrasonic receiver contains a super miniature CCD camera with a wide angle lens. The only difference in appearance from a standard receiver unit is a small circular opening on the face plate to accommodate the fixed camera lens. Upon alarm, both video and audio assessment is available in the security command center.

Receiver key features

- NO / NC relay output for easy integration in any system
- Nominal range of 15 m (50 ft.), adjustable if required
- Multiple receivers can be mounted in proximity for large area coverage
- Two alarm relay outputs and tamper supervision
- Alarm LED
- Mountable in double-gang electrical box

Receiver / Communicator (PARC)

The Personal Alarm Receiver / Communicator (PARC) is the unit that receives alarm and audio signals from a group of four receiver units (PARs), ends the alarm, audio and video to the central control. Each PARC contains the circuitry that interfaces to the PAR units and the multiplex transponder circuitry that communicates the alarm information to the PAS 120. Various audio and video (with PARC / IV) switching configurations are field-selectable to best suit the application.

PAT test unit

The PAT test unit is designed specifically for use with the Personal Alarm Transmitters (PAT/S, PAT/C). The transmitter is activated and the test initiated when the PAT is properly inserted into the tester. A yellow LED indicates the test is in progress. Within 2 seconds, the tester unit checks the transmitter signal strength, frequencies and modulation rate. A green LED indicates a satisfactory test completion and fully operational transmitter. A red LED and alert tone signify any fail conditions.

PAT/S (STANDARD TRANSMITTER)

DIMENSIONS: 9.7 H x 6.1 W x 2.3 cm D (3.8 H x 2.4 W x 0.9 in. D)

WEIGHT: 114 g (4 oz.)

COLOR: Dark gray with red button

ACTIVATION: Latching push switch, optional man-down or optional pull-pin

POCKET CLIP: Molded Lexan® - moveable for left or right access

BATTERY: 9 V lithium

ESTIMATED BATTERY LIFE: 1 year

PAT/C (COMPACT TRANSMITTER)

DIMENSIONS: 6.04 H x 3.8 W x 2.1 cm D (2.4 H x 1.5 W x 0.8 in. D)

WEIGHT: 43 g (1.5 oz.)

COLOR: Light gray with dark gray button

ACTIVATION: Latching push button and pull-ring (keeper loop)

POCKET CLIP: Spring steel

BATTERY: 3.3 V lithium

ESTIMATED BATTERY LIFE: 1 year

PAR (RECEIVER)

MODELS 03RM, 03RM/IV, 03RM/WP, 03RM/WPH

CIRCUIT COMPONENTS: 100% solid-state; conformal coated PCB

POWER REQUIREMENT: 40 mA @ 12 VDC or 24 VDC, noise ± 0.5 Vp-p

CONNECTION: Plug-in terminal block

ALARM CONTACT: NO relay

AUXILIARY ALARM CONTACT: NO or NC relay

TAMPER SWITCH: 2 NC magnetic reed switches (0.25 A @ 12 VDC)

ENCLOSURE REQUIREMENTS (INTERIOR): 10.2 cm x 5.4 cm (4 in. x 2.1 in.) deep electrical box (not supplied) flush or recessed with plaster ring

ENCLOSURE REQUIREMENTS (EXTERIOR): 2 gang weatherproof box with gasket (supplied with WP units)

03RM/WPH HEATER UNIT

POWER REQUIREMENT: 1.0 A @ 12 VDC, 0.5 A @ 24 VDC

03RM/IV VIDEO

PICK UP DEVICE: 1/3 in. CCD

PIXELS: 512 (H) x 492 (V)

SCANNING SYSTEM: 2:1 interlace

FREQUENCY: 15.734 kHz (H), 59.94 HZ (V)

VIDEO OUTPUT: 1.0 V p-p, neg. sync, 75 Ohm (unbalanced) via screw terminals or BNC connector

RESOLUTION: 350 (H), 350 (V) TV lines

SIGNAL TO NOISE RATIO: 47 dB or more

MINIMUM ILLUMINATION: 3 lux (F/1.4)

AGC: Automatic

POWER: 12 to 24 VDC, 120 mA, typical

OPERATING TEMPERATURE: 0°C to +50°C (32°F to 122°F)

FOCAL LENGTH: 3 mm, F/3.5 (120°)

FOCUS RANGE: 10 mm to infinity

ELECTRONIC SHUTTER: Electronically adjusts for lighting

Specifications are subject to change without prior notice.

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