Flare™
Real-Time Locating System

FEATURES AND BENEFITS

- Locates indoor personal duress alarms up to within 6 m (20 ft)
- Low sensor unit density minimizes installation costs – up to 1,800 sq ft of indoor coverage per unit
- Outdoor coverage:
  - Up to 90 m (300 ft) from building (without external antenna)
  - Up to 1 km (0.6 mi) line-of-sight (with external antenna)
- Provides coverage in rooms, stairwells, and corridors, with no blind spots
- Resolves to the floor in multi-level facilities
- RF signal is not blocked by smoke, heavy clothing, or the human body
- Uses protected frequency bands to avoid interference
- Field-proven, ultra-reliable technology
- Concealable, tamper-resistant sensor units
- Modern, IP-based networking with PoE support reduces installation and maintenance costs
- Minimal user training requirements
- Configurable man-down (device tilt) and pull-pin options
- Self-test feature simplifies PPD test during shift changes
- Map-based monitoring software
- Support for integration with other systems

📄 DATASHEET

Keeping staff safe in high-threat environments

To keep staff working in high-threat environments safe, the Flare Real-Time Locating System (RTLS) instantly identifies and locates personal duress alarms at the touch of a button. Designed for reliability in institutional and industrial environments, the Flare RTLS uses proven, cost-effective technology that has been keeping staff safe for over 20 years.

In the event of danger, the individual activates the Personal Protection Device (PPD) on his or her belt. The PPD emits an RF signal that is detected by a network of sensor units concealed throughout the building. Flare immediately locates indoor emergency alarms to within 6 m (20 ft) and displays the location, status, and identity of the PPD on a map-based display in the control room.

Field-proven technology designed for ultra-reliability

Locating people accurately within high-threat institutional and industrial environments poses substantial difficulties:

- Concrete and steel buildings limit RF propagation.
- Ultrasonic or IR signals can easily be blocked by people, heavy clothing, smoke, and other obstructions.
- The system needs to work outdoors in nearby areas, such as exercise yards.
- The system must be protected against tampering and vandalism.

The Flare RTLS uses patented technology that works with the building's RF characteristics to accurately and reliably locate duress alarms. This enables the system to avoid the potentially disastrous situation where a duress alarm is resolved to within the required distance but inadvertently appears on the wrong side of a wall or even on an adjacent floor.

Operating in protected frequency bands that use dedicated spectrum, the system avoids the potential for interference – a fundamental concern with systems using public unlicensed spectrum – in order to guarantee Quality of Service (QoS). Dedicated spectrum means that when someone activates their PPD, the signal will not be blocked, lost, or interfered with.

Mission-critical feature set with low Total Cost of Ownership

The technology behind the Flare RTLS has been in continuous use in high-threat correctional environments for over 20 years. Senstar has used this experience to design into the Flare RTLS the architecture and feature set required for a mission critical real-time locating system while offering one of the industry's lowest Total Cost of Ownership (TCO)[†].

Low sensor unit density

The number of sensor units required at a site is determined primarily by location resolution requirements. For example, an industrial site where workers only need to be located to a general area will require fewer sensor units than a correctional facility where a per-room resolution is critical. The specific frequencies used by the Flare RTLS enable the signals to pass through most walls, which means small adjoining areas like inmate cells or utility closets do not require their own dedicated sensor units.

Scalable architecture

The Flare RTLS sensor network can be extended by adding additional sensor units. The existing sensor units do not need to be moved or reconfigured. This future-proofs your system if your facility undergoes expansion or renovations.

Easy to install and maintain

To simplify installation and reduce costs, the sensor units connect to a Power-over-Ethernet (PoE) switch, which provides both power and network connectivity. PoE eliminates the need to install costly AC wiring. It also enables the use of a centralized Uninterruptible Power Supply (UPS) for backup power.

The sensor units are housed in rugged, tamper-resistant enclosures designed for mounting in a variety of locations, including concealed ones like pipe chases or drop ceilings. If a sensor unit is damaged, an equipment alarm is generated in the control room and on-site maintenance staff can simply swap out the old unit with a new one. No recalibration is required.

Post-installation calibration and system verification is performed at the same time by a technician using the Flare RTLS tablet-based software. The process guarantees accurate and reliable locating throughout the facility, ensuring no dead zones or problematic areas.

Minimal user training requirements

The Flare RTLS is designed to be easy to use and fit within the facility's daily routines.

The PPD is a compact, rugged device typically worn on the user's belt. Each PPD is individually identified and the system can be configured to display user names or other information in the control room.

The personal duress alarm is activated by a button push, pull-pin, or man-down (device tilt) event. The PPD includes a self-test function, making it easy for users to test their PPD at the start of each shift without control room intervention.

The PPD is designed to be hassle-free. Powered by a 9V battery, the PPD typically operates up to a year between changes[††]. When the charge becomes low, the PPD generates an audible warning beep as well as a low-battery notification in the control room. The PPD will operate for at least 15 days after the initial warning.

Orderable system components

Part	Description
T1EM1700	Flare sensor unit
T1FG1601	Flare Personal Protection Device (PPD)
T1FG0800	Windows PC, software, and programming cables (no monitor)
T1KT1100	Flare sensor unit external Whip antenna kit
T1KT1102	Flare sensor unit outdoor Yagi antenna kit
T1KT1104	Flare sensor unit outdoor Omni antenna kit

Calibration and system verification is quickly performed with Senstar's tablet-based software. The streamlined process minimizes disruptions to daily operations and ensures that there are no coverage dead zones.

[†] Contact Senstar for a TCO analysis of the Flare RTLS versus other life safety systems.

[††] PPD battery lifespan dependent on type and capacity.

Sensor units (SU) are installed throughout the facility in concealed, protected locations like pipe chases. Each sensor unit provides up to 1,800 sq ft of indoor coverage.

The PPD is a rugged, easy-to-use device that instantly sends a call for help at the press of a button. Customization options like pull-pin activation and man-down features are available.

Designed for virtually maintenance-free operation, the PPD is powered by a 9V battery, has a typical battery life of one year, and provides a 15-day low-battery warning.

Officer Smith

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↑↓↑↓ PoE
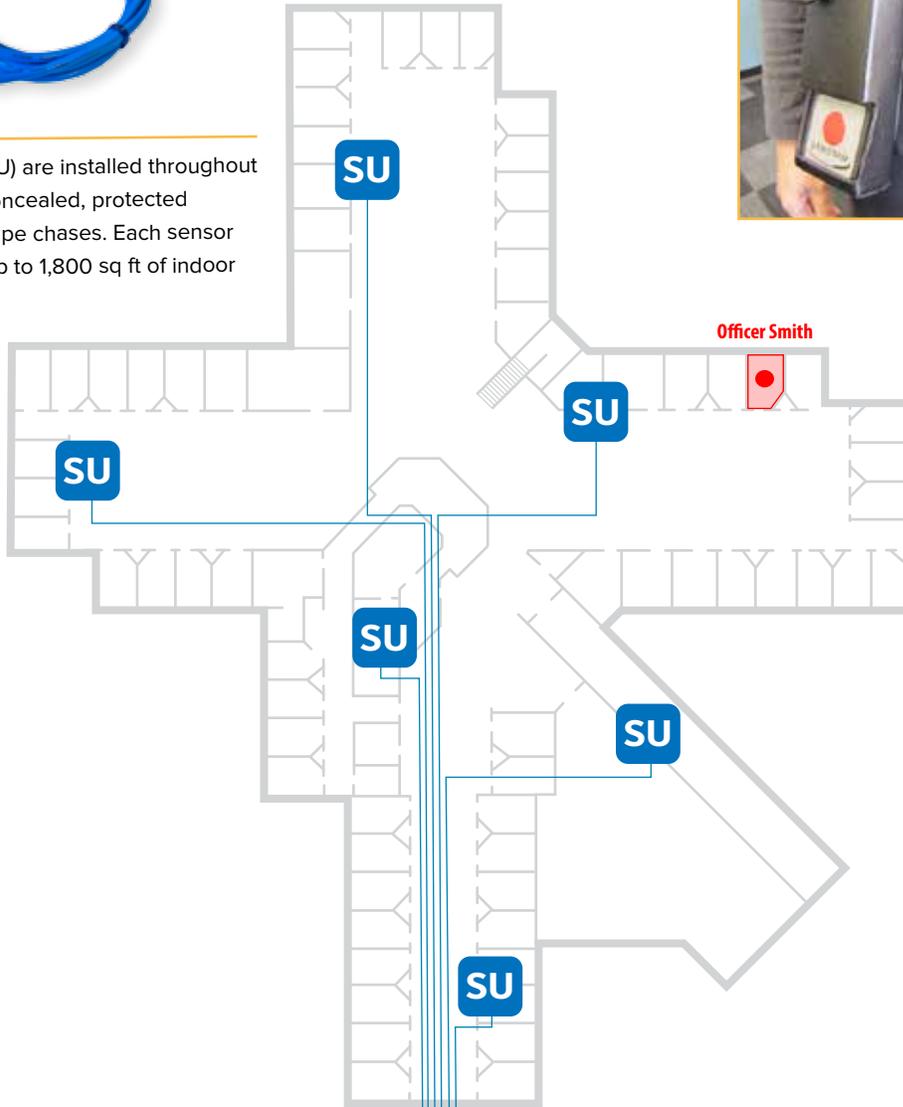
The Flare RTLS runs on a dedicated TCP/IP-based network. PoE switches provide power, network communications, and support for a centralized UPS. Being IP-based, different network media can be used for connections between buildings (e.g. fiber).

The Flare RTLS software runs on standard PC hardware and provides a top-level site overview as well as a zoomed-in view for active alarms.

Technical specifications

SYSTEM PERFORMANCE SPECIFICATIONS

- Locating accuracy (indoors):
  Up to 6 m (20 ft)
- Sensor unit spacing (indoors):
  up to 1,800 square feet per unit
- Designed for large buildings and campuses
- Over 24,000 unique locations or zones per facility, with indoor and outdoor locations
- Licensed operation in public safety bands:
  - USA: 450 to 470 MHz
  - Bands in other countries:
    Contact Senstar
- Transmission range: Up to 1 km (0.6 mi) line-of-sight with external antenna
- 100% coverage within prescribed area
- Alarm capacity: 10 alarms every 10 seconds, continuous

SENSOR UNIT

General specifications

- Dimensions: 222 x 146 x 55 mm (8.75 x 5.75 x 2.17 in) (not including cable gland)
- Weight: 598 g (1.3 lbs)
- Enclosure: Flame-retardant UV-stablized polycarbonate
- Mounting flanges
- Internal antenna (for regular indoor use)
- Cable entry point with compression gland
- Internal connectors:
  - USB (Type B)
  - SMA antenna connector for various antenna options

Environmental specifications

- Temperature range:
  –20 to 60 °C (–4 to 140 °F)
- Humidity: 0 to 90% non-condensing

Electrical specifications

- Power-over-Ethernet (PoE) per IEEE 802.3af (Class 1)
- Power consumption: less than 1.5W
- Backup power: Provided via third-party centralized UPS

Network specifications

- Dedicated Ethernet network: 10/100BASE-TX
- Cabling: CAT5e or CAT6
- Connector: RJ-45

PERSONAL PROTECTION DEVICE (PPD)

Mechanical specifications

- Belt-mounted
- Dimensions (excluding holster):
  12 x 5.0 x 2.5 cm (4.7 x 2 x 1 in)
- Weight (including battery):
  200 g (7 oz)
- Includes belt holster
- Durability: Cosmetic-only damage after 6 drops onto tiled floor from 1.5 m (5 ft) with one drop per side
- Tamper-resistant construction

Environmental specifications

- Temperature range:
  –20 to 60 °C (–4 to 140 °F)
- Humidity: 0 to 99%, non-condensing
- Water-resistant

Electrical specifications

- Input power: 9V alkaline battery
- 1 year of operation between battery changes
- Audible low-battery warning
- 15-day battery life after low-battery warning

DISPLAY SYSTEM

- Flare RTLS display software
- Map-based facility overview with simultaneous detailed view of alarm zone and active alarm points
- Alarm reporting:
  - Personal duress alarms
  - Self-test failures
  - Low battery in PPD
  - Sensor unit communication errors
  - Calibration errors
- Automated diagnostics:
  - Data communication reliability
  - Manual and automatic system self-tests
  - Automatic sensor unit test
  - Data traffic
- Archiving of alarm and diagnostic data
- Map format: .bmp and .emf
- Access control and keyboard lockout

Workstation hardware specifications

- Operating system: Windows 7 Professional
- Processor: Intel i5
- Hard drive: 320 GB
- Memory: 8 GB
- Network: 10/100 Mbit Ethernet
- Display: 1920 x 1080 recommended
- Keyboard, mouse and/or touch screen

SITE INTEGRATION OPTIONS

- Integration options provided by Flare software include API, TCP/IP or serial text strings, and relay controls

REGULATORY COMPLIANCE

- FCC Part 90
- EN 60950
- UL/CSA

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