

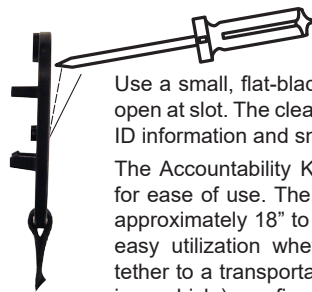
FX5™ with Accountability Key in Place

1. To **Reset**, press both side buttons simultaneously when Accountability Key is off unit.
2. To turn **OFF**, replace Accountability Key and press both side buttons simultaneously.



Accountability Key

FX5 Accountability Key can be personalized to the specific identity of the user. The clear Identification Window easily snaps into place to protect enclosed information (photo, name, number, dept ID, barcodes, etc.) and provide quick identification.

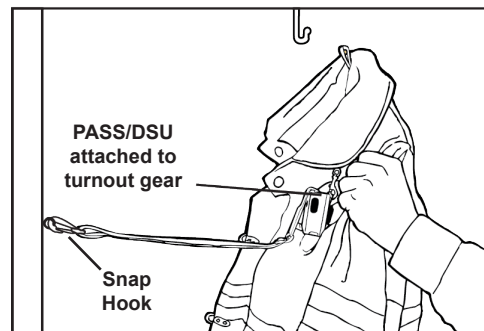


Use a small, flat-blade screwdriver to pry window open at slot. The clear ID Window will release. Add ID information and snap window back in place.

The Accountability Key has an adjustable tether for ease of use. The tether can be adjusted from approximately 18" to 36" in length. This allows for easy utilization whether you are anchoring the tether to a transportation position (such as a seat in a vehicle) or a fixed storage position (such as in the fire station).

Accountability Keys are available with various length tethers to facilitate operational needs.

Pull Away Tether for Auto-On Activation from Storage Positions

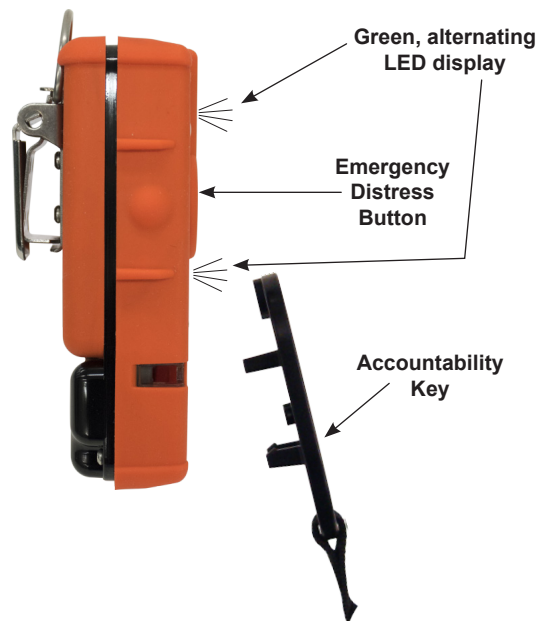


Snap hook attached to Transportation or Fixed Storage Position. Pull turnout gear away, tether tightens and pulls Accountability Key off PASS/DSU, automatically activating FX5 into the Sensing Mode.

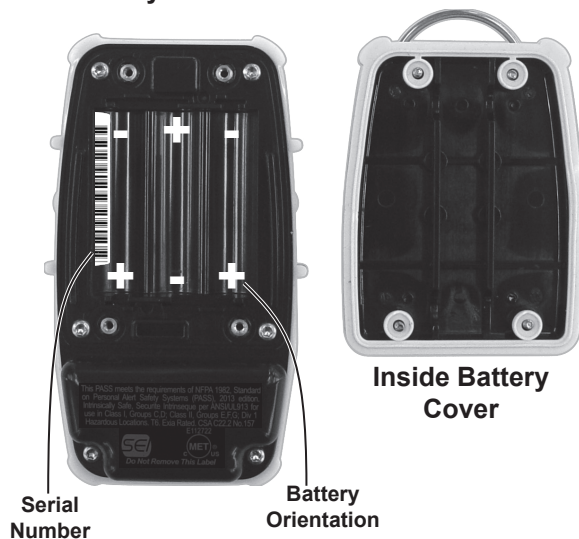
Side View with Accountability Key in Place



Auto-On Activation



Battery Chamber



LED Status Indicators

Note: FX5 only uses the Heat Alarm indicator.



Grip-Clip Maintenance

Lubricate Grip-Clip annually. Use PTFE lube (CRC 03044 or equivalent) to lubricate the grip-clip along this area.



GRACE One (1) Year Warranty

Grace Industries Incorporated, of Fredonia PA 16124 USA, warrants products that it manufactures to be free from defects in workmanship and materials for a period of one (1) year from the original date of purchase. This warranty does not apply to third party products sold by Grace Industries. Grace Industries will repair or replace, at their sole discretion, defective products free of charge. This warranty applies to products that Grace Industries deems defective in its sole discretion due to defects in material or workmanship under normal use and maintenance and where a defect was not caused by accident, misuse or abuse of the product and that no disassembly, repairs or parts replacement were made or attempted by other than Grace Industries' personnel. **GRACE INDUSTRIES, INCORPORATED SHALL NOT BE LIABLE FOR ANY DIRECT, INCIDENTAL OR CONSEQUENTIAL LOSS OR DAMAGE ARISING OUT OF THE USE OF THE PRODUCT OR FAILURE OF THE PRODUCT TO OPERATE.**

The sole and exclusive remedy under all guarantees or warranties, expressed or implied, is strictly limited to repair or replacement as herein provided. **ALL IMPLIED WARRANTIES, INCLUDING BUT NOT LIMITED TO WARRANTIES OF FITNESS AND MERCHANTABILITY, ARE HEREBY LIMITED IN DURATION TO A PERIOD OF ONE (1) YEAR FROM THE DATE OF ORIGINAL PURCHASE.** The warranty and liability set forth here are in lieu of all other warranties, expressed or implied, in law or in fact, including warranties of merchantability and fitness for a particular purpose.

Warranty claims process: 1) Obtain a Return Authorization Number from Grace Industries corporate headquarters by calling phone number 724-962-9231, or by email correspondence to sales@graceindustries.com. 2) The product name, serial number, date and proof of purchase must be provided and 3) Return products including Return Authorization Number, prepaid and accompanied by original proof of purchase that states the date and location of purchase to: Grace Industries, Inc., Service Department, 305 Bend Hill Road, Fredonia, PA 16124, USA. Customer is responsible for all shipping costs, return shipping costs, handling, or any other fees associated with a warranty claim.

The information contained in this booklet is believed to be accurate and reliable. Grace Industries, Inc. provides this information as a guide only.

FX5 technical assistance is available by contacting Grace Industries, Inc. at (724) 962-9231 or by email at info@graceindustries.com.

For training purposes a copy of this information is available by contacting Grace Industries, Inc.

FX5 issues may be reported at any time to Grace Industries, Inc. at 724-962-9231. After working with the manufacturer to resolve any issues, they may be reported to SEI at 703-442-5732.

FX5™

USER'S INFORMATION

Only To Be Removed By End User



Front View without Accountability Key in Place

MADE IN USA

Grace Industries, Inc.

www.graceindustries.com

Ph. 724-962-9231 • Fax 724-962-3611



Front View with Accountability Key in Place

GRACE
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Solutions for Life Safety

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P/N: FX5 UI 0326

READ INSTRUCTIONS BEFORE USE

FX5™ Intended Use

FX5 is a motion-sensing PASS/DSU device designed for use by firefighters, first-responders, and industrial users engaged in firefighting, rescue, and other hazardous duties. FX5 provides distinct audible and visual alarms for indicating a user is in distress. FX5 has a very loud audio alarm, allowing rescue personnel to rapidly pinpoint the location of the firefighter or worker in distress.

It is highly recommended that all personnel be thoroughly trained in the proper use and operation of FX5 prior to use. Always inspect and test FX5 prior to use. Failure to do so may expose the user to serious injury or loss of life.

FX5™ Features

- Auto-On Activation by Removal of Accountability Key
- Distress Button Alarm Activation
- Pre-Alert: Audible Warning Before Full Alarm
- Audible and Visual Indicators for all Modes of Operation

Operating Instructions

ACTIVATING FX5: When the FX5 is removed from a storage position, the Accountability Key automatically detaches, activating FX5 into the motion **Sensing Mode**.

During activation, an operational signal of escalating audio tones will be heard and an alternating display of two Green LEDs indicates the FX5 is in **Sensing Mode**.

In motion sensing mode, FX5 will strobe two Green LEDs in opposing corners, alternating to the opposite corners when motion is sensed.

PRE-ALERT MODE: After approximately 18 to 23 seconds of no motion, FX5 begins an audible Pre-Alert sound and an alternating Green and Yellow LED display. The Pre-Alert sound progressively becomes louder, indicating FX5 is closer to going into **Alarm**.

ALARM MODE: There are two methods of activating the Alarm.

- 1) **MOTION-ALARM:** After 30 to 35 seconds of no motion, FX5 enters the **Alarm Mode**.
- 2) **DISTRESS ALARM:** PASS/DSU user can activate **Alarm** at any time (from **Sensing Mode** or **Off Mode**) by pressing the Emergency Distress Button.

ALARM MODE is indicated by a rapid pulsing of four front Red LEDs while sounding a loud audio alarm.

Reset the Alarm and return FX5 to **Sensing Mode** by simultaneously pressing both side buttons.

TURN OFF: To turn FX5 **OFF**, replace Accountability Key and press both side buttons simultaneously. A brief series of de-escalating audio tones will be heard and all LED activity will cease.

Visual / Audio Mode Display

OFF

- Accountability Key in place with no LED display.

CLOCK NOT SET

- A series of four audio tones, ‘long-short-long-short’ (– ● – ●), when accountability key is removed to activate unit.
- Followed by steady ON display of upper left Amber LED.
- See *Internal Clock Status* section to set the clock.

ON (Sensing Mode)

- Accountability Key removed, a series of escalating, loud audio tones.
- Alternating display of front Green LEDs.

PRE-ALERT

- No motion sensed for 18 - 23 seconds.
- Alternating Green and Yellow LED display.
- Accompanied by progressively louder audio tones.

ALARM

- No motion sensed for 30 - 35 seconds.
- Rapid pulsing of four front Red LEDs.
- Accompanied by a loud (95+ dBA) audio alarm.
- Audio alarm signal is current NFPA sound signature.

LOW BATTERY

- Alternating Green and Yellow pulsing display of front LEDs.
- Series of two audio beep tones enunciated every 23 seconds.

Mode Selection

AUTO-ON

- When FX5 is removed from storage position, the Accountability Key detaches and **Sensing Mode** is activated.

ALARM

- **Alarm Mode** can be manually activated at any time (from **Sensing Mode** or **Off Mode**) by pressing the Emergency Distress Button on front of unit.

RESET

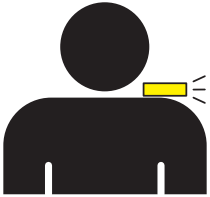
- When in **Alarm**, the FX5 can be reset to **Sensing Mode** by simultaneously pressing both side buttons.

OFF

- Turn OFF FX5 by replacing the Accountability Key and then pressing both side buttons simultaneously.

FX5™ Mounting and Attachment

FX5 is equipped with a high-strength grip-clip designed for secure attachment to turnout-gear such as to an SCBA strap. For optimal performance, recommended mounting location is on the upper left or right shoulder and in the horizontal position with the sound port facing out to the side (see image below). However, the ideal wearing position of FX5 is often best determined by the end user for ease of access and operation.



Maintenance

FX5 requires minimum maintenance and will provide years of service.

Please Observe These Guidelines

- At the end of each use, clean unit with a damp cloth. **DO NOT use cleaning solvents.**
- After each use, inspect unit for signs of physical damage. **Remove FX5 from service if physical damage is observed.**
- Grip-Clip requires yearly lubrication with PTFE lube

(CRC 03044 or equivalent as shown in grip-clip drawing.

- Store FX5 in a dry, well ventilated area consistent with battery manufacturer requirements. Recommended storage conditions are: 50° to 77°F (10° to 25°C) at no more than 65% relative humidity.
- Units contaminated by chemical or radioactive materials must be disposed of or decontaminated in accordance with all applicable regulatory standards.
- Replace batteries approximately every 3 to 4 months or sooner if indicated by Low Battery Alarm.
- **DO NOT mark or apply paint to FX5.**

Specifications

Dimensions: 2.75" wide, 5" high, 2" deep.

Weight: 14 ounces with batteries (without key).

Alarm Audio Output: minimum 95+ dBA, typical 98dBA+ at 1 meter.

Case: Rugged, high temperature, impact resistant, engineered plastic with high temperature silicone over-mold.

Attachment: Large, stainless steel grip-clip and D-ring.

Batteries: Three approved AA (LR6), 1.5 volt, alkaline batteries.

Battery Life: Estimated at 200 hours in **Sensing Mode**; 24 to 28 hours in **ALARM Mode**.

Product Life: Approximately 3 to 5 years or longer, depending on fitness for use. Fitness for use is best determined by the end user through a proper inspection and maintenance program. **Product should be retired from service when damaged or determined unfit for use.**

Limitations

To reduce risk of serious injury or loss of life, ensure FX5 is fully operational by testing and inspecting the unit prior to use. Use of a FX5 maintenance and training program including replacement of exhausted or low batteries is required for safe and proper use.

If proper operation of FX5 is questionable, remove unit from service and contact Grace Industries for assistance.

Temperature Sensing and Heat-Alarm

Certain models of Grace FX5 are equipped with an internal temperature sensor that can warn the user of a potential heat-stress condition and to indicate the FX5 is approaching an extended operational time of potentially-dangerously high temperatures. The FX5 Heat-Alert and Heat-Alarm functions use this internal temperature sensor as an integrated, time-weighted average to provide the user with a three-stage heat alert/alarm visual and audible warning. The heat time-weighted average relates to the alert and alarm indications based on both inputs: time and temperature. FX5 exposure to a higher temperature for a shorter time can be equivalent to a less-high temperature for a longer period of time.

This Heat-Alert and Heat-Alarm feature has 3 stages to indicate the internal FX5 temperature.

Stage 1 Heat-Alert: When the internal FX5 temperature reaches **120°F**, the top Red LED (above the flame icon), begins to flash briefly.

Stage 2 Heat-Alert: Begins when the internal FX5 temperature reaches **130°F**, the top Red LED (above the flame icon), flashes brighter and longer and is accompanied by a 2-tone audio alert sound occurring once per minute.

Stage 3 Heat-Alarm: Occurs when the internal FX5 temperature exceeds **140°F**, the top Red (flame icon) LED stays ON and is accompanied by a 2-tone audio

alert occurring once every 10 seconds. The Heat-Alarm is recorded in the FX5 internal data-log. A Stage 3 Heat-Alarm audio can be temporarily muted for 1 minute by simultaneously pressing both side buttons on the FX5. A Stage 3 Heat-Alarm condition is also RF-transmitted and can be received and displayed by the In-Command® software PC monitoring system.

The Stage 3 Heat-Alarm is self-clearing as FX5 cools and the internal temperature drops below the respective stage temperature levels. The flame icon LED will follow the respective stage temperature levels indicated.

WARNING! The FX5 Heat-Alert and Heat-Alarm functions are relative internal monitoring functions and NOT intended to determine a safe-temperature environment and should NOT be relied on as the sole warning to the firefighter of dangerously high environmental temperatures or possible flash-over conditions.

Battery Installation and Replacement

To change batteries, remove the four screws securing the back cover. Remove the exhausted batteries and insert new batteries. Observe polarity for proper (+) and (-) placement. Dispose of used batteries in accordance with national or local regulations.

Always use approved AA (LR6) 1.5 volt alkaline batteries. Batteries may be any of the following brands but DO NOT MIX battery brands and/or part numbers:

Approved Alkaline Batteries:

Rayovac, Rayovac-Fusion,
Energizer E91, Energizer-Industrial EN91,
Duracell MN1500, Duracell-Procell PC1500.

Important: To preserve the internal real-time-clock date & time setting, batteries must be replaced within 30 minutes of removing the exhausted batteries.

Before replacing the back cover, inspect and remove any dust or dirt on the mating edges of the back cover and case.

Carefully replace back cover and gently tighten all four screws using a crisscross pattern for even gasket pressure, ensuring a good seal. DO NOT over tighten screws.

Replacing batteries every 3 to 4 months is recommended unless indicated earlier by the **Low Battery Alarm**.

Low Battery Alarm will sound when the batteries have been exhausted to 20% of capacity (indicating approximately 1 hour of Alarm operating time remains). Immediate replacement of the batteries is necessary when the **Low Battery Alarm** sounds.

When FX5 is in **Sensing Mode**, the **Low Battery Alarm** is easily recognized by an alternating Green and Yellow LED pulsing display of front LEDs, accompanied by a series of two audio beep tones enunciated every 23 seconds.

Grace Industries, Inc. assumes no liability for mechanical, electrical, or other types of battery failure.

Safety Certifications

This PASS meets the requirements of NFPA 1970, Standard on Personal Alert Safety Systems (PASS), 2025 edition.

Intrinsically Safe per ANSI/UL913 6th edition for use in Class 1, Groups C, D; and Class II, Groups E, F, G; Division 1 Hazardous Locations; Class III, Division 1 & 2.

Certified to CSA C22.2 No.157-92 3rd edition.

Intrinsically Safe, Sécurité Intrinsèque

Additional Certifications

CE, AS/NZS 3820:2009 + A1:2011

WARNINGS!

WARNING! Changes or modifications not expressly approved by the party responsible for compliance could void the user’s authority to operate this equipment.

WARNING! To prevent ignition of a hazardous atmosphere, batteries must only be changed in an area known to be nonhazardous.

WARNING! To reduce the risk of explosion, do not mix new batteries with used batteries, or mix batteries from different manufacturers.

WARNING! Substitution of components may impair intrinsic safety. After battery replacement, always test FX5 to ensure proper operation.

AVERTISSEMENTS!

AVERTISSEMENT! Les changements ou modifications non expressément approuvés par la partie responsable de la conformité pourraient annuler l’autorité de l'utilisateur à utiliser cet équipement.

AVERTISSEMENT! Afin de prévenir les inflammations des atmosphères dangereuses, ne changer les batteries que dans des emplacements désignés non dangereux.

AVERTISSEMENT! Pour réduire le risque d’explosion, ne pas mélanger des piles neuves avec des piles usagées, ou mélanger des piles de fabricants différents.

AVERTISSEMENT! La substitution de composants peut compromettre la sécurité intrinsèque. Après le remplacement de la batterie, toujours tester FX5 pour assurer un fonctionnement correct.

Internal Data Logger

The internal data logging function meets and exceeds NFPA requirements. The data logger timestamps, dates and stores over 2,000 of the most recent events.

Recorded FX5 events include: Power On, Pre-Alert, Motion Alarm, Distress Alarm, Alarm Reset, Power Off, Heat Alarm and Low Battery indications. Data-log information can be downloaded to a PC using the datalog-transfer software and USB cable available from Grace Industries, Inc.

Internal Clock Status

Clock is Set: After removing Accountability Key to activate unit - a series of loud escalating audio tones is followed by an alternating display of Green LEDs indicating PASS is operational and ready for use.

Clock NOT Set: After removing Accountability Key to activate unit - a series of four audio tones (– ● – ●) is followed by a steady ON display of upper left Amber LEDs. When the clock is not set, accurate time and date logging is not achieved.

Setting the Clock: HIDPass5Config USB Cable (S5T5DLC-1) is used to set the clock.

* For information on how to reset the internal clock please visit our website at www.gracefirefighter.com

NOTE: This user’s information also applies to FX5X that have the optional telemetry functions Not Activated.