

# WorkForce® 1

## Model WF1

### User's Information



WorkForce® model WF1 is a worker-worn motion-sensing Man-Down Alarm that uses independent, high performance RF (radio-frequency) wireless signaling to help protect workers in dangerous and hazardous environments.

WorkForce® provides real-time **motion-sensing**, including **fall-detection**, and contains an Emergency Alarm Button to immediately transmit a distress alarm signal.

WorkForce® Alarm Monitoring (AM) version also receives distress alarm signals from other workers equipped with WorkForce® and alerts the user with audible and visual indicators. Other emergency signaling features of WorkForce® include Evacuate, PAR, Roll-Call and optional Out-of-Range indication.

A complete worker safety system can be achieved by using additional Grace monitoring products with locating capabilities.



## Read Instructions Before Use

Always test WorkForce® prior to use

### Operating Instructions

**(90 seconds to Alarm used for example)**

**ACTIVATING WorkForce®:** Simultaneously pressing both side buttons turns the WorkForce® ON and activates Sensing Mode. In Sensing Mode, the device is monitoring radio traffic for alarm messages. The WorkForce® is also sensing motion, if enabled. *When Auto-ON/OFF setting is enabled, disconnecting the unit from the charger adapter will activate WorkForce® and put into Sensing Mode.*

During activation, an operational signal of escalating audio tones will be heard and the Power Indicator (at upper left) will begin to blink approximately once per second. A pair of Green LEDs in the Alarm Ring will begin flashing in an alternating display to indicate motion is being sensed.

When WorkForce® is activated, its internal radio transmits signals to other GRACE devices and equipment.

**PRE-ALERT MODE:** When a user remains motionless, a Pre-Alert warning will begin to sound approximately 12 seconds before going into Alarm Mode. When no motion is sensed for approximately 78-83 seconds, WorkForce® begins an audible Pre-Alert sound and an alternating Yellow LED display in the Alarm Ring. *If motion is detected during Pre-Alert, WorkForce® will reset into Sensing Mode.*

**ALARM MODE:** There are 2 methods of activating Alarm Mode.

- 1) **MOTION ALARM:** After 90 to 95 seconds of no motion, WorkForce® enters the Alarm Mode.
- 2) **PANIC ALARM:** WorkForce® user can activate Alarm Mode at any time (from **Sensing Mode** or **OFF Mode**) by pressing the Emergency Alarm Button.

**ALARM MODE:** Is indicated by a rapid pulsing of Red LEDs in the Alarm Ring while sounding a loud audio alarm. During alarm, an emergency radio signal is transmitted to other GRACE devices and equipment, alerting personnel that personnel may need assistance.

**RESET Alarm Mode:** Return WorkForce® to **Sensing Mode** by simultaneously pressing both side buttons.

**OFF:** When in Sensing Mode, turn OFF by simultaneously pressing and holding both side buttons for approximately 3 seconds until a series of de-escalating audio tones are heard and all LED activity cease. *When Auto-ON/OFF setting is enabled, connecting the unit to the charger adapter will turn the WorkForce® OFF.*

**SYSTEM LOOP TEST:** When in Sensing Mode, press and hold top button until a rapid tri-tone confirms the device has sent Loop Test Message and the countdown timer has started. A successful Loop Test is indicated by an escalating tri-tone and side LEDs 4-1 blinking yellow in an upward sequence. If the Loop Test Acknowledge message is NOT received within the configured timeframe, a de-escalating tri-tone will be heard.

**NOTE:** see Device Settings, pg.10, to enable/disable this System Loop Test feature.

### WorkForce® SPECIAL FEATURES

**EVACUATION ACKNOWLEDGMENT:** If an Evacuate message is received by the WorkForce®, it can be manually acknowledged by simultaneously pressing both side buttons.

**ALARM MONITORING:** Allows the user to monitor the status of other personnel working in the same general area when they are equipped with WorkForce® or other GRACE devices. WorkForce® MUST be in the Sensing Mode to receive Alarm signals from other Grace devices or equipment. When one device goes into Alarm and an Alarm Monitoring WorkForce® receives the signal, the Red side LEDs will flash in an alternating pattern. This alert can be cleared for one minute by pressing both side buttons simultaneously. If additional GRACE devices go into Alarm during this one-minute period, the Alarm Monitoring LED display will be reactivated. This cycle will continue until the telemetry unit in Alarm is reset or shut off.

**NOTE:** *If an alarm has been received, the WorkForce® will not turn off until the alarm has been cleared or reset.*

#### FALL DETECTION:

WorkForce® is capable of detecting a fall of greater than 4ft. If a fall is detected, the device will enter the Fall Pre-Alert state for 15 seconds to allow the user to reset the WorkForce® after a false trigger or a fall that does not require assistance. Fall Pre-Alert can only be reset by simultaneously pressing both side buttons. If the Fall Pre-Alert is not reset within 15 seconds the device will automatically enter the Fall Alarm mode. This will send out a Fall Detected Alarm message to any compatible Grace monitoring equipment.

**FALL PRE-ALERT MODE:** Is indicated by alternating Yellow LED display in the Alarm Ring, and a double beep after the Pre-Alert tone. Fall Pre-Alert may be cleared by simultaneously pressing both side buttons.

**FALL ALARM MODE:** Is indicated by rapid pulsing of the Red LED's in the Alarm Ring while sounding a loud audio alarm with a double beep. Clear the Fall Alarm by simultaneously pressing both side buttons.

**IMPORTANT NOTE:** WorkForce® model WF1 cannot detect every possible type of 'fall'-event and it is the user's responsibility to be trained to always push the Emergency Alarm button, if they are able, following any type of 'fall'-event.

### WorkForce® Mounting and Attachment

WorkForce® is equipped with a high-strength grip-clip designed for secure attachment to personnel gear such as to a vertical strap on the upper left or right shoulder with the sound port facing out, or on the right or left hip area. The optional swivel-clip attachment is designed to clip onto a horizontal belt or strap. **However, the ideal wearing position of WorkForce® is often best determined by the**

end user for ease of access and operation.

**IMPORTANT NOTE:** For the WorkForce® to properly sense a falling motion, the device must be securely attached to the user.

## Mode Selection

### ON (Sensing Mode)

- Simultaneously press both side buttons to activate WorkForce® and put into **Sensing Mode**.
- **Auto-ON:** when Auto-ON/OFF setting is enabled, disconnecting the unit from the charger adapter will activate WorkForce® and put into **Sensing Mode**.

### ALARM

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

### RESET

- When in Alarm or receiving an EVACUATE signal, **RESET** WorkForce® to **Sensing Mode** by pressing both side buttons simultaneously.

### OFF

- When in **Sensing Mode**, turn **OFF** by simultaneously pressing and holding both side buttons until the unit deactivates.
- **Auto-OFF:** when Auto-ON/OFF setting is enabled, WorkForce® is turned OFF by connecting the unit to the charger adapter.

### SYSTEM LOOP TEST

- When in **Sensing Mode**, press and hold top button until a rapid tri-tone confirms the device has sent Loop Test Message and the countdown timer has started.
- **SUCCESSFUL Loop Test** is indicated by an escalating tri-tone and side LEDs 4-1 blinking yellow in an upward sequence.
- **FAILED TEST:** If the Loop Test Acknowledge message is NOT received within the configured timeframe, a de-escalating tri-tone will be produced.

## Visual / Audio Mode Display

### OFF

- No LED Display.

### ON (Sensing Mode)

- A series of escalating, loud audio tones.
- Green alternating LED display in Alarm Ring.
- Power LED flashing approximately once per second.

### PRE-ALERT

- No motion sensed for 78-83 seconds.
- Amber alternating LED display in Alarm Ring.
- Loud, sweeping audio tones.

### ALARM

- No motion sensed for 90 to 95 seconds.
- Rapid pulsing of Red LEDs in Alarm Ring.
- Loud audio alarm.

- Audio Alarm pauses briefly as an aid for determining direction when personnel need assistance.
- Radio LED flashes Red when transmitting the emergency radio signal.

### EVACUATE 🚶

- Running Man LED Flashes Red when receiving EVACUATE signal from another Grace device or equipment.

### SATELLITE-GPS 📶

- Slow blinking Green LED when GPS signal is acquired.
- Slow blinking Red/Green LED when NO GPS signal is detected.

### LOW BATTERY

- Power LED blinks Red when battery charge is below 25%.
- Double chirp sound every five (5) minutes if audio is enabled.
- NO power-on tones.

### SYSTEM LOOP TEST

- **Loop Test Initiated:** Rapid tri-tone.
- **Successful Loop Test:** Escalating tri-tone is produced and side LEDs blinking in upward sequence.
- **Failed Loop Test:** De-escalating tri-tone.

## WorkForce®1 Top LED Indicators



**POWER** ⦿ When WorkForce® is ON, Power LED blinks Green approximately once per second. LED blinks Red when battery level is below 25%.

**RADIO** 📶 Flashes Red when transmitting radio signals. Flashes Green when receiving radio signal from other GRACE devices or equipment. Alternating Green/Red flashing when WorkForce® is Out of Range.

**SATELLITE-GPS** 📶 For GPS Equipped devices, the Satellite LED displays status of GPS fix. LED blinks Green when a GPS fix is acquired.

**EVACUATE** 🚶 Displays EVACUATION status of the WorkForce®. Flashes Red when receiving an EVACUATE signal.

**ALARM RING STATUS LEDs:** LED ring surrounding Emergency Alarm Button.

- Rapid pulsing **Red** LEDs when in Alarm.
- Alternating **Yellow** LEDs when in Pre-Alert.
- Alternating **Green** LEDs when in Sensing Mode.

## System Status (Side) LED Indicators

The System Status LEDs perform several functions. Four (4) Red/Green LEDs are numbered 1 through 4 and arranged along the left side of the device beginning with #1 at the upper left and #4 at the lower left.

**Alarm Monitoring (AM):** If AM is enabled, Red LEDs will flash in an alternating pattern when an Alarm signal is received from a GRACE Man-Down device.

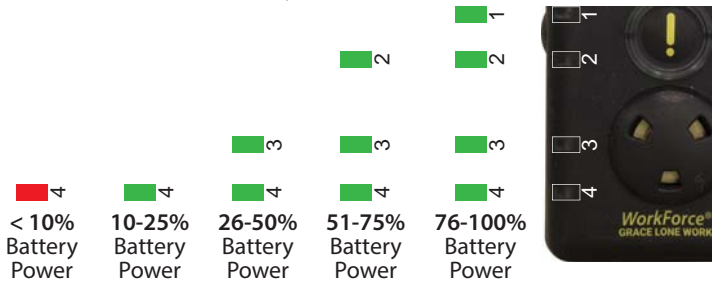
**System Fault Detected:** If a System Fault is detected, the LEDs will indicate the detected fault. (Please see Troubleshooting chart/diagram on Page 4 for detailed information).

**Battery Power Level:** When either side button is pressed, System Status LEDs will display the remaining battery power level. (See diagram below).

**Battery Charging Status:** When charging the WorkForce®, the System Status LEDs will indicate the current battery power level.

- **Battery fully charged:** All 4 LEDs will blink Green.
- **Partially charged:** While charging, these LEDs will cycle from #4 up to the current Battery Power Level.

### Battery Power Level



### Battery Charging

When less than 3 hours of operating time remain in Sensing Mode, the WorkForce® Power LED will blink Red. The power-on tones are not emitted when WorkForce® has a low battery. When audio is enabled, low battery is also indicated by a double chirp sound once every five minutes.

**Warning: There are no audible low battery sounds with audio tones disabled.**

When low battery is indicated, less than 3 hours of operating time remain and battery should be charged immediately.

With the 120VAC charger provided, recharge time is approximately 3 hours from a low battery warning and 4 hours for a dead battery.

Typical operation time between recharging is approximately 40 hours in Sensing Mode.

An optional 12VDC charging adapter is available.

**NOTE: Charging via computer USB port may take longer.**

Plug the charger into an outlet. It takes approximately 10 seconds for the unit to detect a charger connection and begin to show charging status. Charging status is displayed

on the side LED status bar 1-4. This battery charge status will be indicated by the number of blinking status bar LEDs.



WorkForce® with Micro B USB Cord and 120VAC Charger Adapter (p/n: 120-G-WF950) Optional 12VDC Charger Adapter shown at left

**Battery Charging Status:** When charging the WorkForce®, the System Status LEDs will indicate the current level of charge.

- **Battery fully charged:** All 4 LEDs will blink Green
- **Partially charged:** While charging, these LEDs will cycle from #4 up to the current Battery Power Level.

### System Faults

LEDs	Fault
4 3 2 1	Real Time Clock (RTC) Not Set
4 3 2 1	Settings
4 3 2 1	Data-Log
4 3 2 1	Radio
4 3 2 1	Temperature Sensor
4 3 2 1	Data-Log Hardware
4 3 2 1	12C0 Bus Lockup or Timeout
4 3 2 1	GPS (Solid Red Top LED also)
4 3 2 1	Real Time Clock Chip Not Responding
4 3 2 1	Battery System
4 3 2 1	Accelerometer Fault
4 3 2 1	EEPROM Fault



## Features

- Large button for manual activation of Emergency Alarm
- Man-Down safety monitoring feature provides the User with motion sensing protection
- Audible and Visible Pre-Alert warning before Man Down Alarm
- Audible and Visible Indicators for all Modes of Operation
- RF (radio-frequency) wireless signaling for immediate notification of personnel emergency distress
- No voice radio needed for Evacuation signaling and user acknowledgment
- Alarm Monitoring function alerts the user that a Grace Man-Down device, within signaling range, is transmitting an alarm message
- High performance radio signaling with Smart-Signal® repeating capability
- Tracking the location of WorkForce®1 is possible when used in conjunction with Grace Locator Beacon and either a GRACE SMS or Grace-Watch® safety monitoring system

## Specifications

- **Model:** WF-1-H, User Model.
- **Dimensions:** 2-1/4" wide, 1-1/4" deep (without clip), 3-3/8" high.
- **Weight:** 5.7 oz.
- **Internal Battery:** 3.7 V nominal, 1960 mAh, lithium-ion rechargeable.
- **Device Run Time:** Approximately 40 hours in Sensing Mode, and 8 hrs. in Alarm Mode.
- **Radio Frequency:** ISM license free, spread spectrum.
- **Battery Charger Operational Voltage:** 120VAC or 12VDC.
- **Battery Charge Time:** 3 - 4 hrs.
- **USB Connector:** Micro B USB connection for battery charging and WorkForce®1 configuration.
- **Certifications:**
  - FCC ID: J5XT5HIP
  - IC: 5916A-T5HIP
  - AS/NZS 4268:2017
  - Australia / New Zealand: Compliant to ACMA AS/NZS CISPR22:2006, Class A Digital Apparatus | AS/NZS 4268:2017 for Intentional Radiators
  - EMC93142B-ACMA
  - EMC93142B-AS/NZS 4268



### Pre-Alert and Alarm Time Periods

Alarm Time	Pre-Alert	Alarm
30 seconds	Pre-Alert 18 to 23 seconds	30 to 35 seconds to Alarm
60 seconds	Pre-Alert 48 to 53 seconds	60 to 65 seconds to Alarm
<b>90 seconds</b>	<b>Pre-Alert 78 to 83 seconds</b>	<b>90 to 95 seconds to Alarm</b>
120 seconds	Pre-Alert 108 to 113 seconds	120 to 125 seconds to Alarm
180 seconds	Pre-Alert 168 to 173 seconds	180 to 185 seconds to Alarm

***\*90 seconds is standard setting (factory default) from the Manufacturer.***

**WARNING:** Any motion sensing Alarm Time period longer than 90 seconds is potentially dangerous to the user of this product. The longer the motion sensing time period is, the greater the risk of exposing the user to a delayed response to an incapacitated, distressed worker.

## Definition of Terms

**Alarm Inhibit Timer:** When WorkForce® receives an alarm message from another GRACE Industries device and that alarm is cleared, the Alarm Inhibit Timer provides a 30 second period of time where the WorkForce® will not receive another alarm message from that same device.

**Alarm Message:** When the Emergency Alarm Button is pressed, a radio transmitted signal is sent from the WorkForce® to notify monitoring personnel that an emergency situation is present and rescue action is requested.

**Alarm Mode:** A WorkForce® is placed in Alarm Mode by pressing the device's Emergency Alarm Button. When this occurs, the device transmits an emergency radio signal and emits a loud alarm audio tone.

**Alarm Monitoring:** Allows the user to monitor the status of other personnel working in the same general area when they are equipped with WorkForce® or other GRACE devices. WorkForce® MUST be in the Sensing Mode to receive Alarm signals from other GRACE devices or equipment.

When one device goes into Alarm and an Alarm Monitoring WorkForce® receives the signal, the Red side LEDs will flash in an alternating pattern. This alert can be cleared for 30 seconds by pressing both side buttons simultaneously. If additional GRACE devices go into Alarm during this one-minute period, the Alarm Monitoring LED display will be reactivated. This cycle will continue until the unit in Alarm is reset or shut off.

**NOTE:** *If an alarm has been received, the WorkForce® will not turn off until the alarm has been cleared or reset.*

**Auto ON/OFF:** When this setting is enabled, WorkForce® is turned On and Off by disconnecting or connecting the device into the Charger Adapter.

**Dilution of Precision:** A term used in satellite-gps navigation to express the positioning accuracy of a GPS enabled device.

**EVACUATE:** Evacuation signal received, indicating the user should leave the area immediately.

**Fall Detection:** When in Sensing Mode, WorkForce® monitors the user for a falling motion. Once a possible fall is detected, the unit enters Fall Pre-Alert mode, alerting the user of a detected fall and allowing time (< 15 seconds) to clear the detected fall before an Alarm is activated.

**Man-Down Alarm Mode:** A WorkForce® or other GRACE safety device enters Man-Down Alarm Mode when the Motion Sensing Timer counts down to zero.

**Monitoring Authority:** The Monitoring Authority is the person/people responsible for monitoring the status of the devices used by the various on-scene personnel, usually from a centralized base location.

**PAR:** Personnel Accountability Report is used to prompt the person wearing the WorkForce® to acknowledge a **PAR-request** signal sent from a **Grace-Watch® software monitoring system**. This is designed as a periodic **check-in** for the

WorkForce® user providing an indication of their well-being.

**Radio Signal Propagation:** Radio Signal Propagation is the behavior radio waves exhibit when they are transmitted. Radio Signal Propagation can be affected by structural, environmental, and atmospheric conditions.

**Resetting the Device:** Simultaneously pressing the side buttons resets the WorkForce®.

**ROLL-CALL:** Requires the use of a **z® software monitoring system** and is designed to signal the WorkForce® user of an escalated situation prompting the user to acknowledge their safety status immediately.

**Sensing Mode:** When the WorkForce® is turned on, it is in Sensing Mode. In Sensing Mode, the device is monitoring radio traffic for alarm messages. The WorkForce® is also sensing motion, if enabled.

**Unit ID:** The Unit ID is the unique ID number assigned to the WorkForce® device for the purpose of radio communication. It can be viewed on the HID WorkForce® Configuration Tool.

**Unit OEM:** The Unit OEM is a number assigned to the WorkForce® device and is similar to the Unit ID. The key difference is the Unit OEM is not a unique number to each device. In most applications all of the WorkForce® devices will have the same OEM number; from the factory, this number will usually be 9090.

## FCC Statements

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

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

## Industry Canada Statements

This Class A digital apparatus complies with Canadian ICES-003.

This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.(select the class for your device)

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes: (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

## Warranty Information

Grace industries, Inc. warrants this product to be free from defects in workmanship and materials for a period of one year from the date of purchase. This warranty is valid only when the returned product is accompanied by a sales slip or other proof of purchase that states the date and location of purchase. Grace Industries, Inc. will not repair or replace any merchandise under warranty which has been damaged because of accident, misuse or abuse while in possession or control of the consumer. This warranty is void if any attempt to repair or replace parts was made or attempted by other than qualified Grace Industries, Inc. personnel. This warranty is void if any of the sealed compartments are opened or tampered with.

Send all returned merchandise, prepaid and accompanied by proof of purchase to: Grace Industries, Inc., Repair Division, 305 Bend Hill Road, Fredonia, PA 16124 USA. Grace Industries, Inc. shall not be liable for any direct, incidental or other consequential loss or damage arising out of the failure of the product to operate. End-user or customer is responsible for return shipping/freight charges.

The sole and exclusive remedy under all guarantees or warranties, express 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 ENDING ONE (1) YEAR FROM THE DATE OF PURCHASE. The warranty and liability set forth in the prior paragraphs are in lieu of all other warranties, expressed or implied, in law or in fact, including implied warranties of merchantability and fitness for a particular purpose. Some states do not allow limitations on how long an implied warranty lasts, so the above limitations may not apply to you.

This warranty gives you specific legal rights and you may also have other rights which may vary from state to state.

This information is believed to be accurate and reliable. Grace Industries, Inc. provides this information as a guide only.

Technical assistance is available by contacting Grace Industries, Inc. by telephone at 724-962-9231, M – F, 8:00 am – 4:30 pm.

For training purposes a copy of User's Information is available by contacting Grace Industries, Inc. at [www.graceindustries.com](http://www.graceindustries.com) or by mail to: 305 Bend Hill Rd, Fredonia, PA 16124 U.S.A.

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# HID WorkForce® Configuration Tool

## User's Manual



### WorkForce® Model WF1

A worker-worn motion-sensing Man-Down Alarm that uses proprietary, ISM license free, high performance RF (radio-frequency) wireless signaling to help protect workers in dangerous and hazardous environments.

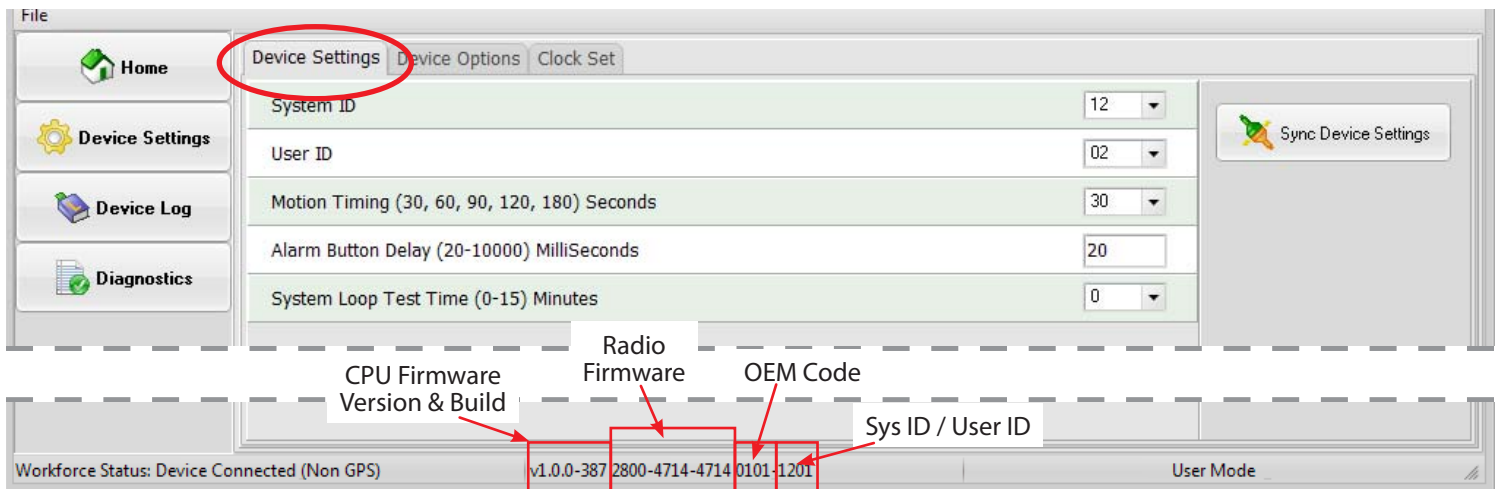
### HID WorkForce® Configuration Tool

Allows users to customize the settings of their WorkForce® by connecting the device to a PC with a Micro B USB cable and running the GRACE utility (HID WorkForce® Configuration) tool.



### To use the configuration tool:

- 1. If configuration tool is not already installed on your Windows PC:**
  - A. Download the WorkForce® configuration tool from <http://www.graceindustries.info/downloads/>
  - B. Select "WorkForce Config tool" to download the installer.
  - C. Run the program installer to install configuration tool onto your Windows PC.
- 2. Open the configuration tool.**
3. Follow the instructions on the tool to connect to your WorkForce® device.
4. Once the device is connected, you will hear 3 quick beeps and all 4 side status bar LED will glow green. The WorkForce® configuration tool should display the current device settings within 30 seconds of the 3 quick beeps.
5. Settings will not be changed until the <Sync Device Setting> button is clicked. A pop up window will acknowledge that device settings have been updated
6. Note the unit will drop out of HID configuration mode after 5 minutes of inactivity. To reconnect, you must turn the unit off and start over at step 3.



## Device Settings Tab:

**Sync Device:** This button will transmit Device Options to the connected WorkForce®.

**System ID:** (01-FE). This selection allows you to change the Grace System ID of the WorkForce®. Caution must be taken that the new ID is not already in use and is set to be monitored.

**User ID:** (01-99). This selection allows you to change the Grace User ID of the WorkForce®. Caution must be taken that the new ID is not already in use and is set to be monitored.

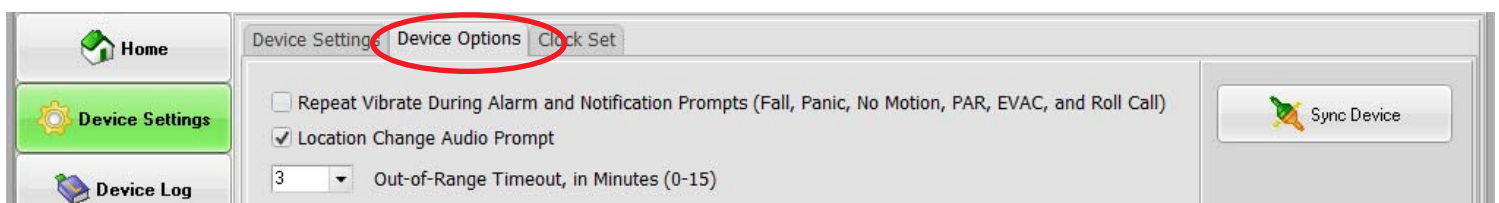
**Motion Timing Seconds:** This setting controls how long the user and device can remain motionless before the Man Down Alarm is activated. A Pre-Alert warning will begin to sound approximately 12 seconds before the Man-Down Alarm, indicating the WorkForce® is closer to going into Alarm. Available timing (in seconds) includes: 0, 30, 60, 90, 120, 180, 300, 600, and 900. **NOTE: Setting the timing to zero (0) will DISABLE the motion sensing protection.**

**WARNING:** Any motion sensing alarm time period longer than 90 seconds is potentially dangerous to the user of this product. The longer the motion sensing time period is, the greater the risk of exposing the user to a delayed response to an incapacitated, distressed worker.

**Alarm Button Delay Time:** This value controls the number of milliseconds the alarm button must be held before an alarm is declared. This timer is useful in eliminating accidental alarm triggers caused bumping the alarm button.

**Note:** This value is in milliseconds 1 second = 1000 milliseconds.

**System Loop Test Timeout, in Minutes:** Setting the value to zero (0) disables the System Loop Test feature. Selecting a value of 1-15 sets the maximum number of minutes before System Loop Test failure is declared. System Loop Test sends a message from the WorkForce® through your gateway to a monitoring platform. If the platform does not respond with an Acknowledge of the loop test within the allotted time, the unit will trigger a System Test Timeout. (See page 2 for more information on system loop tests).



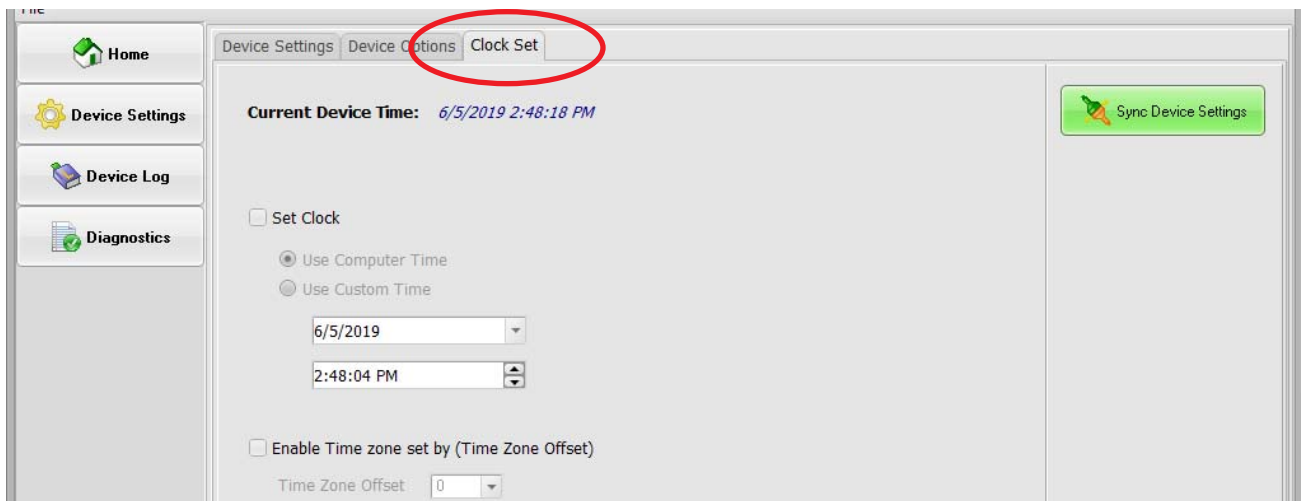
## Device Options Tab:

**Sync Device:** This button will transmit Device Options to the connected WorkForce®.

**Repeat Vibrate During Alarm and Notifications:** With this box checked, WorkForce® will vibrate with every Alarm audio cycle. If unchecked, the device will vibrate only once.

**Location Change Audio Prompt:** With this box checked, WorkForce® will produce an audible chirp when it detects a new Grace Locator Beacon.

**Out-of-Range Timeout:** This function is disabled when set to zero (0). When timeout is set to 1-15 minutes, the Out of Range alert will occur if WorkForce® has not received a ping message from a base station within the set timeout period. **NOTE: To use this function, WorkForce® must be used with, and in communication with, a Grace Base (MS2000, SMS, Grace-Watch, Alarm Box, MX900, etc.)**



## Clock Set Tab:

**Current Device Time:** Displays the current time and date of the connected WorkForce®.

**NOTE:** The WorkForce® date and time will not be updated until the Sync Device Settings button is pressed.

**Set Clock:** Check this box to enable the time setting options. Selecting “Use Computer Time” will match the device to the time and date of the connected computer. “Use Custom Time” will allow you to set the WorkForce® date and time as desired.

**Enable Time Zone Offset:** Check this box to enable Time Zone Offset. NOTE: Eastern Standard Time (EST) is GMT -5 hours.

**Sync Device Settings:** After the desired date and time settings are complete, press the Sync Device Settings button to update time and date of the connected WorkForce®.

## Device Log:

**This window is for accessing WorkForce® device logs.**

**Download Log:** Allows you to download the log from a connected WorkForce® device.

**Open Log File:** This allows you to save a downloaded log to you local system for future retrieval.

**Print Log:** Prints existing Log file.

**Clear Device Log:** This erases the logs in the connected device.

## Diagnostics Window:

This window shows USB connections diagnostics data. You can save the diagnostic log for debugging if needed.



**305 Bend Hill Road, Fredonia, PA 16124 USA**  
**[www.graceloneworker.com](http://www.graceloneworker.com)**  
**(724)-962-9231**

# WorkForce<sup>®</sup> 2

## Model WF2

### User's Information



WorkForce<sup>®</sup> model WF2 is a worker-worn motion-sensing Man-Down Alarm that uses proprietary, ISM license free, high performance RF (radio-frequency) wireless signaling to help protect workers in dangerous and hazardous environments.

WorkForce<sup>®</sup> provides real-time **motion-sensing**, including **fall-detection**, and contains an Emergency Alarm Button to immediately transmit a distress alarm signal.

WorkForce<sup>®</sup> Alarm Monitoring (AM) version also receives distress alarm signals from other workers equipped with WorkForce<sup>®</sup> and alerts the user with audible and visual indicators. Other emergency signaling features of WorkForce<sup>®</sup> include Evacuate, PAR, Roll-Call and optional Out-of-Range indication.

A complete worker safety system can be achieved by using additional Grace monitoring products with locating capabilities.



**Read Instructions Before Use**  
**Always test WorkForce® prior to use**

## Operating Instructions

**(90 seconds to Alarm used for example)**

**ACTIVATING WorkForce®:** Simultaneously pressing both side buttons turns the WorkForce® ON and activates Sensing Mode. In Sensing Mode, the device is monitoring motion sensing and also radio traffic for alarm messages. *When Auto-ON/OFF setting is enabled, disconnecting the unit from the charger will activate the WorkForce® and place it into Sensing Mode.*

During activation, an operational signal of escalating audio tones will be heard, the Power Indicator (at upper left) will begin to blink approximately once per second, and the OLED display will turn on. After a short series of splash screens, the OLED home page will display the current status of the WorkForce, including battery level, unit ID, and Motion Sensing.

When WorkForce® is activated, its internal radio transmits signals to other GRACE devices and equipment that are within RF range.

**PRE-ALERT MODE:** When a user remains motionless, a Pre-Alert warning tone will begin to sound approximately 12 seconds before going into Alarm Mode. When no motion is sensed for approximately 78-83 seconds, WorkForce® begins an audible Pre-Alert sound and the on-screen countdown Time to Alarm will be highlighted. *If motion is detected during Pre-Alert, WorkForce® will reset into Sensing Mode.*

**ALARM MODE:** There are three methods of activating Alarm Mode.

- 1) **MOTION ALARM:** After 90 to 95 seconds of no motion, WorkForce® enters the Alarm Mode.
- 2) **PANIC ALARM:** WorkForce® user can activate Alarm Mode at any time (from **Sensing Mode** or **OFF Mode**) by pressing the Emergency Alarm Button.
- 3) **FALL ALARM:** After detecting a free fall of greater than 4 feet.

**ALARM MODE:** Is indicated by sounding a loud audio alarm and the Alarm mode displayed on the screen. During alarm, an emergency radio signal is transmitted to other GRACE devices and equipment, alerting personnel of the alarm.

**RESET Alarm Mode:** Return WorkForce® to **Sensing Mode** by simultaneously pressing both side buttons.

**OFF:** When in Sensing Mode, turn OFF by simultaneously pressing and holding both side buttons (for approximately 3 seconds) until a series of de-escalating audio tones are heard and all display screen and LED activity ceases. *When Auto-ON/OFF setting is enabled, connecting the unit to the charger will turn the WorkForce® OFF.*

**SYSTEM LOOP TEST:** When in Sensing Mode, simultaneously press and hold the UP and DOWN arrow buttons until a rapid tri-tone and on-screen message confirms System Test Sent. During test, the OLED display shows

elapsed time and preset maximum time for test to complete. A successful Loop Test is indicated by an escalating tri-tone and display message "System Test Successful". If the Loop Test Acknowledge message is NOT received within the configured timeframe, a de-escalating tri-tone will be heard and "System Test Timeout" message displayed. **NOTE: see Device Settings, pg.10, to enable/disable this feature.**

## Operation of Special Features

**EVACUATION ACKNOWLEDGMENT:** If an Evacuate alarm message is received by WorkForce®, an EVACUATE message is displayed on screen and the Evacuate LED indicator flashes Red. EVACUATION message can be manually acknowledged by simultaneously pressing both side buttons.

**ALARM MONITORING:** Allows the user to monitor the status of other personnel working in the same general area when they are equipped with WorkForce® units or other GRACE devices. The WorkForce® MUST be in the Sensing Mode to receive Alarm signals from other Grace devices or equipment. When one device goes into Alarm and an Alarm Monitoring WorkForce® receives the signal, the Red side LEDs will flash in an alternating pattern, and device info for the unit in alarm will be displayed on the screen. This alert can be **cleared for one minute** by pressing both side buttons simultaneously. If additional GRACE devices go into Alarm during this one-minute period, the Alarm Monitoring notifications will be reactivated. This cycle will continue until the telemetry unit in Alarm is reset or shut off.

**NOTE:** *If an alarm has been received, the WorkForce® will not turn off until the alarm has been cleared or reset.*

### FALL DETECTION:

WorkForce® is capable of detecting a free fall of greater than 4 feet. If a fall is detected, the device will enter the Fall Pre-Alert state for 15 seconds to allow the user to reset the WorkForce® after a false trigger or a fall that does not require assistance. Fall Pre-Alert can only be reset by simultaneously pressing both side buttons. If the Fall Pre-Alert is not reset within 15 seconds the device will automatically enter the Fall Alarm mode. This will send out a Fall Detected Alarm message to any compatible Grace monitoring equipment.

**FALL PRE-ALERT MODE:** Is indicated by a **Fall Pre-Alert** message on the display and a double beep after the Pre-Alert tone. Fall Pre-Alert may be cleared by simultaneously pressing both side buttons.

**FALL ALARM MODE:** Is indicated by a **Fall Alarm** message on the display while sounding a loud audio alarm with a double beep. Clear the Fall Alarm by simultaneously pressing both side buttons.

**IMPORTANT NOTE:** WorkForce® model WF2 cannot detect every possible type of 'fall'-event and it is the user's responsibility to be trained to always push the Emergency Alarm button, if they are able, following any type of 'fall'-event.

## WorkForce® Mounting and Attachment

WorkForce® is equipped with a high-strength grip-clip designed for secure attachment to personnel gear such as to a vertical strap on the upper left or right shoulder with the sound port facing out, or on the right or left hip area. The optional swivel-clip attachment is designed to clip onto a horizontal belt or strap. **However, the ideal wearing position of WorkForce® is often best determined by the end user for ease of access and operation.**

**IMPORTANT NOTE: For the WorkForce® to properly sense a falling motion, the device must be securely attached to the user.**

## Mode Selection

### ON (Sensing Mode)

- Simultaneously press both side buttons to activate WorkForce® and put into **Sensing Mode**.
- **Auto-ON:** when Auto-ON/OFF setting is enabled, disconnecting the unit from the charger will activate WorkForce® and place it into **Sensing Mode**.

### ALARM

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

### RESET

- When in Alarm or receiving an EVACUATE signal, **RESET** WorkForce® to **Sensing Mode** by pressing both side buttons simultaneously.

### OFF

- When in **Sensing Mode**, turn **OFF** by simultaneously pressing and holding both side buttons until the unit deactivates.
- **Auto-OFF:** when Auto-ON/OFF setting is enabled, WorkForce® is turned OFF by connecting the unit to the charger.

### SYSTEM LOOP TEST

- When in **Sensing Mode**, simultaneously press and hold the UP and DOWN buttons until a rapid tri-tone and on-screen message confirms System Test is Sent and timer has started.
- **SUCCESSFUL Loop Test** is indicated by an escalating tri-tone and display message "System Test Successful".
- **FAILED TEST:** If the Loop Test Acknowledge message is NOT received within the configured timeframe, a de-escalating tri-tone will be produced and "System Test Timeout" message displayed.

## Visual / Audio Mode Display

### OFF

- No LED Display.

### ON (Sensing Mode)

- A series of escalating, loud audio tones.
- OLED display screen.
- Power LED flashing approximately once per second.

### PRE-ALERT

- **Time to Alarm** countdown is highlighted.
- Loud, sweeping audio tones.

### ALARM

- Loud audio alarm.
- Alarm type is displayed on screen.
- Audio Alarm pauses briefly as an aid for determining location when personnel need assistance.
- Radio LED flashes Red when transmitting the emergency radio signal.

### EVACUATE 🚶

- Running Man LED Flashes Red when receiving an EVACUATE signal from other Grace devices or equipment.
- EVACUATE message is displayed on screen.

### SATELLITE-GPS 📶 (available on GPS models)

- Slow blinking Green LED when GPS signal is acquired.
- Slow blinking Red/Green LED when NO GPS signal is detected.
- GPS Status icon is inverted on the home screen when NO GPS signal is detected.

### LOW BATTERY

- Power LED blinks Red when battery charge is below 25%.
- Double chirp sound every five (5) minutes if audio is enabled.
- Plug icon displayed on the home screen.
- NO power-on tones.

### SYSTEM LOOP TEST

- **Loop Test Initiated:** Rapid tri-tone and on-screen test status message.
- **Successful Loop Test:** Escalating tri-tone is produced and "System Test Successful" message displayed.
- **Failed Loop Test:** De-escalating tri-tone and "System Test Timeout" message displayed.

## WorkForce® 2 Top LED Indicators



**POWER** ⦿ When WorkForce® is ON, Power LED blinks Green approximately once per second. LED blinks Red when battery level is below 25%.

**RADIO** 📶 Flashes Red when transmitting radio signals. Flashes Green when receiving radio signal from other GRACE devices or equipment. Alternating Green/Red flashing when WorkForce® is Out of Range.

**SATELLITE-GPS** 📶 For GPS Equipped devices, the Satellite LED displays status of GPS fix. LED blinks Green when a GPS fix is acquired.

**EVACUATE** 🚶 Displays EVACUATION status of the WorkForce®. Flashes Red when receiving an EVACUATE signal.

## System Status (Side) LED Indicators

The System Status LEDs perform several functions. Four (4) Red/Green LEDs are numbered 1 through 4 and arranged along the left side of the device beginning with #1 at the upper left and #4 at the lower left.

**Alarm Monitoring (AM):** If AM is enabled, Red LEDs will flash in an alternating pattern when an Alarm signal is received from a GRACE Man-Down device.

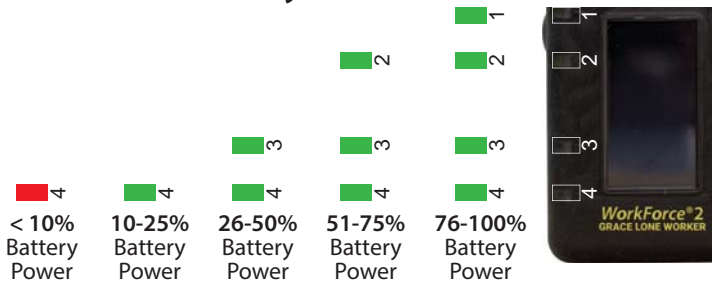
**System Fault Detected:** If a System Fault is detected, the LEDs will indicate the detected fault. (Please see Troubleshooting chart/diagram on Page 5 for detailed information).

**Battery Power Level:** When either side button is pressed, System Status LEDs will display the remaining battery power level. (See diagram below).

**Battery Charging Status:** When charging the WorkForce®, the System Status LEDs will indicate the current battery power level.

- **Battery fully charged:** All 4 LEDs will blink Green.
- **Partially charged:** While charging, these LEDs will cycle from #4 up to the current Battery Power Level.

### Battery Power Level



### Battery Charging

When less than 3 hours of operating time remain in Sensing Mode, the WorkForce® Power LED will blink Red and the plug icon will be displayed on the Icon Line of the display. The power-on tones are not emitted when WorkForce® has a low battery. When audio is enabled, low battery is also indicated by a double chirp sound once every five minutes. **Warning: There are no audible low battery sounds with audio tones disabled.**

When low battery is indicated, less than 3 hours of operating time remain and the battery should be charged immediately.

With the 120VAC charger provided, recharge time is approximately 3 hours from a low battery warning and 4 hours for a dead battery.

Typical operation time between recharging is approximately 40 hours in Sensing Mode or approximately 24 hours when GPS is enabled.

An optional 12VDC charging adapter is available.

**NOTE: Charging via computer USB port may take longer.**

Plug the charger into an outlet. It takes approximately 10

seconds for the unit to detect a charger connection and begin to show charging status. Charging status is displayed on the side LED status bar 1-4. This battery charge status will be indicated by the number of blinking status bar LEDs.



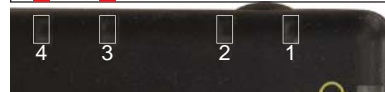
WorkForce®1 shown with Micro B USB Cord and 120VAC Charger Adapter (p/n: 120-G-WF950) Optional 12VDC Charger Adapter shown at left

**Battery Charging Status:** When charging the WorkForce®, the System Status LEDs will indicate the current level of charge.

- **Battery fully charged:** All 4 LEDs will blink Green.
- **Partially charged:** While charging, these LEDs will cycle from #4 up to the current Battery Power Level.

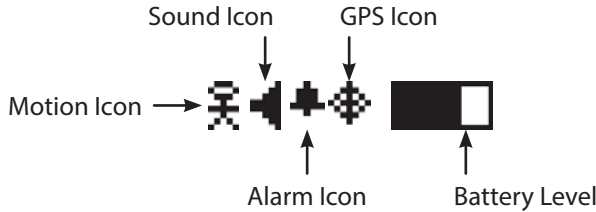
### System Faults

LEDs	Fault
4 3 2 1	Real Time Clock (RTC) Not Set
4 3 2 1	Settings
4 3 2 1	Data-Log
4 3 2 1	Radio
4 3 2 1	Temperature Sensor
4 3 2 1	Data-Log Hardware
4 3 2 1	12C0 Bus Lockup or Timeout
4 3 2 1	GPS (Solid Red Top LED also)
4 3 2 1	Real Time Clock Chip Not Responding
4 3 2 1	Battery System
4 3 2 1	Accelerometer Fault
4 3 2 1	EEPROM Fault





# WorkForce® Display Icons



## Menu Pages

Pressing MENU ⊖ button brings up menu pages in the following order:

- Page 1 - Send Message (canned text messages)
- Page 2 - Latitude / Longitude Display
- Page 3 - Setup Mode

### Page 1 - Send Message

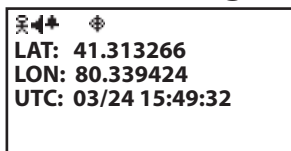


The **Send Message** function may be used to send one of 80 user-programmed, canned text messages. These messages are programmed into the WorkForce® through the HID WorkForce® Configuration Tool via the USB cable.

To send a message, proceed to the **Send Message** page by pressing the MENU ⊖ button. Next, cycle through the messages stored on the WorkForce® by pressing the UP ↑, Down ↓, Star \*, or Pound # buttons until you find the desired message you wish to send. ↑ and ↓ cycle the message count by one, \* and # cycle the count by five. Once the desired message is displayed, press and hold the Select ⊖ button for 3 seconds to transmit the message and a **Message Sent** acknowledgment will be displayed on the screen. Other messages can be selected and sent by repeating this process.

Pressing MENU ⊖ will navigate away from the Send Message page. Resetting the device will return the WorkForce® to the home page.

### Page 2 - Latitude / Longitude Display



\* only on GPS models \*

Press the ↑/↓ buttons to cycle through four Latitude / Longitude display formats:

#### Degrees

LAT: 41.313266 N  
LON: 80.339424 W

#### Degrees Minutes Seconds (DD mm ss.ss)

LAT: 41 18'47.677" N  
LON: 80 20'22.366" W

#### Degrees Minutes (DD mm.mmmm)

LAT: 41 18.7969' N  
LON: 80 20.3736' W

#### Raw Data

LAT: 00E2F0E6  
LON: FE46AE73

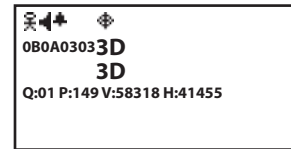
Press the \*/# buttons to view Quality of Fix Screen, Time to First Fix and additional GPS information screens.



Quality of Fix / Satellites in View

#### Quality of Fix:

- 00: No Fix
- 01: Ideal (01.00 -> 01.50); Icon is Solid
- 02: Excellent (01.51 -> 02.50); Icon is Solid
- 03: Good (02.51 -> 05.00); Icon is Solid
- 04: Moderate (05.01 -> 09.99); Icon will Flash
- 05: Fair (10.00 -> 19.99); Icon is Inverted and will Flash
- 06: Poor (≥ 20.00); Icon is Inverted and Solid



Time to First Fix (in Seconds)

Pressing MENU ⊖ will navigate away from the Latitude / Longitude Display page. Resetting the device will return the WorkForce® to the home page.

### Page 3 - Setup Mode



The Setup Mode page allows the user to put the WorkForce® into Setup Mode, where the various user preferences of the device can be changed.

To enter Setup Mode, proceed to the Setup Mode page by pressing the MENU ⊖ button. Next, press and hold the Select ⊖ button for three seconds. The WorkForce® is now in Setup Mode. Press the MENU ⊖ button while in Setup Mode to cycle through the Setup Mode pages.

**WARNING:** While in Setup Mode, the Alarm, Page, Par, and Roll Call messages CANNOT be monitored or be logged in the WorkForce®. Any Alarm, Page, Par, or Roll Call messages received, while in Setup Mode, will be subject to the WorkForce® device's inhibit timer.

Resetting the device or waiting two minutes without a button press will exit out of Setup Mode and return the WorkForce® to the home page.

- Setup Mode Page 1 - Alarm Disabled Notification
- Setup Mode Page 2 - Range Test
- Setup Mode Page 3 - View Adjust
- Setup Mode Page 4 - Enable GPS

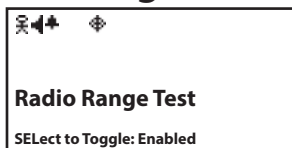
## Setup Mode Page 1 - Alarm Disabled Notification



The Alarm Disabled Notification acts as a reminder the WorkForce® will not monitor Alarm, Page, Par, or Roll Call transmissions while in Setup Mode.

Pressing MENU ⊖ will navigate away from the Alarm Disabled Notification page. Resetting the device will exit out of Setup Mode and return the WorkForce® to the home page.

## Setup Mode Page 2 - Range Test



The Radio Range Test mode of the WorkForce® is used to test radio signal propagation during on-site testing and system installation.

To enable or disable the Radio Range Test mode, proceed to the Radio Range Test page by pressing the MENU ⊖ button. On the Radio Range Test page, press Select ⊖ button to enable or disable Radio Range Test mode. **Once the Range Test Mode is enabled, resetting the device IS NOT REQUIRED - doing so disables the Radio Range Test mode and returns the device to the home page.**

Any radio signal that can be monitored by the WorkForce® and is within the device's detection range will be displayed on the screen as it is received by the WorkForce®. Each received signal is accompanied by an audio chirp and the Radio LED flashing Green.

Pressing MENU ⊖ will navigate away from the Range Test page; resetting the device will exit out of Setup Mode and return WorkForce® to the home page.

## Setup Mode Page 3 - View Adjust



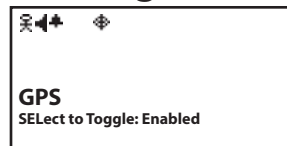
The View Adjust page allows the display contrast to be

adjusted for easier viewing of the WorkForce® device's display. Adjusting the display contrast may be necessary if the WorkForce® is used in extreme temperatures.

To adjust the display contrast, navigate to the View Adjust page by pressing the MENU ⊖ button. At the View Adjust page, press the ↑ or ↓ button to increase (or decrease) the display contrast by 1, press the \* or # button to increase (or decrease) the display contrast by 10.

Pressing MENU ⊖ will navigate away from the View Adjust page. Resetting the device will exit out of Setup Mode and return the WorkForce® to the home page.

## Setup Mode Page 4 - Enable GPS



*\* only on GPS models \**

The Enable GPS page allows the user to enable or disable the GPS function of the WorkForce®.

Navigate to this page by pressing the MENU ⊖ button.

Use the Select ⊖ button to enable or disable the GPS.

Pressing MENU ⊖ will navigate away from the Enable GPS page. Resetting the device will exit out of Setup Mode and return the WorkForce® to the home page.

## End of Setup Mode Screens

## Features

- Bright OLED Display
- Man-Down safety monitoring feature provides the user with motion sensing and fall detection protection
- Audible and Visible Pre-Alert warning before Man Down Alarm
- Audible and Visible Indicators for all Modes of Operation
- RF (radio-frequency) wireless signaling for immediate notification of personnel emergency distress
- No voice radio needed for Evacuation signaling and user acknowledgment
- Alarm Monitoring function alerts the user that a Grace Man-Down device within RF signaling range is transmitting an alarm message; WorkForce® will display the device name of the Alarm received. When used in conjunction with the Grace Locator Beacon or GPS enabled devices, WorkForce® will also display the location of the Alarm received.
- High performance radio signaling with Smart-Signal® RF repeating capability
- Tracking the location of WorkForce® is possible when used in conjunction with Grace Locator Beacon and either a GRACE SMS or Grace-Watch® safety monitoring system

## Specifications

- **Model:** WF-2-H.
- **Dimensions:** 2-1/4" wide, 1-1/4" deep (without clip), 3-3/8" high.
- **Weight:** 5.7 oz.
- **Display Screen:** Color OLED.
- **Internal Battery:** 3.7 V nominal, 1960 mAh, lithium-ion rechargeable.
- **Device Run Time:** Approximately 40 hours in Sensing Mode, approximately 24 hours when GPS is enabled, and 8 hrs. in Alarm Mode.
- **Radio Frequency:** ISM license free, spread spectrum.
- **Battery Charger Operational Voltage:** 120VAC or 12VDC.
- **Battery Charge Time:** 3 - 4 hrs.
- **USB Connector:** Micro B USB connection for battery charging and WorkForce® configuration.
- **Certifications:**
  - IP67
  - FCC ID: J5XT5HIP
  - IC: 5916A-T5HIP
  - Australia / New Zealand: Compliant to ACMA AS/NZS CISPR22:2006, Class A Digital Apparatus | AS/NZS 4268:2017 for Intentional Radiators
    - EMC93142B-ACMA
    - EMC93142B-AS/NZS 4268



### Pre-Alert and Alarm Time Periods

Alarm Time	Pre-Alert	Alarm
30 seconds	Pre-Alert 18 to 23 seconds	30 to 35 seconds to Alarm
60 seconds	Pre-Alert 48 to 53 seconds	60 to 65 seconds to Alarm
<b>90 seconds</b>	<b>Pre-Alert 78 to 83 seconds</b>	<b>90 to 95 seconds to Alarm</b>
120 seconds	Pre-Alert 108 to 113 seconds	120 to 125 seconds to Alarm
180 seconds	Pre-Alert 168 to 173 seconds	180 to 185 seconds to Alarm

***\*90 seconds is standard setting (factory default) from the Manufacturer.***

**WARNING:** Any motion sensing Alarm Time period longer than 90 seconds is potentially dangerous to the user of this product. The longer the motion sensing time period is, the greater the risk of exposing the user to a delayed response to an incapacitated, distressed worker.

## Definition of Terms

**Alarm Inhibit Timer:** When WorkForce® receives an alarm message from another GRACE Industries device and that alarm is cleared, the Alarm Inhibit Timer provides a 30 second period of time where the WorkForce® will not receive another alarm message from that same device.

**Alarm Message:** A radio transmitted signal is sent from the WorkForce® to notify monitoring personnel that an emergency situation is present and rescue action is requested.

**Alarm Mode:** WorkForce® transmits an emergency radio signal and emits a loud audio alarm tone when motion-sensing timer has lapsed, fall-detection was recorded, or the emergency alarm button is activated.

**ALARM MONITORING:** Allows the user to monitor the status of other personnel working in the same general area when they are equipped with WorkForce® units or other GRACE devices. The WorkForce® MUST be in the Sensing Mode to receive Alarm signals from other Grace devices or equipment. When one device goes into Alarm and an Alarm Monitoring WorkForce® receives the signal, the Red side LEDs will flash in an alternating pattern, and device info for the unit in alarm will be displayed on the screen. This alert can be **cleared for 30 seconds** by pressing both side buttons simultaneously. If additional GRACE devices go into Alarm during this one-minute period, the Alarm Monitoring notifications will be reactivated. This cycle will continue until the telemetry unit in Alarm is reset or shut off.

**NOTE:** *If an alarm has been received, the WorkForce® will not turn off until the alarm has been cleared or reset.*

**Auto ON/OFF:** When this setting is enabled, WorkForce® is turned On and Off by disconnecting or connecting the device into the Charger Adapter.

**Canned Text Message:** Canned Text Messages are pre-programmed, text-based messages that can be sent from one WorkForce®2 to another.

**Dilution of Precision:** A term used in satellite-gps navigation to express the positioning accuracy of a GPS enabled device.

**EVACUATE:** Displayed on the screen when Evacuation signal received, indicating the user should leave the area immediately.

**Fall Detection:** When in Sensing Mode, WorkForce® monitors the user for a falling motion. Once a fall is detected, the unit enters Fall Pre-Alert mode alerting the user of a detected fall and allowing time (< 15 seconds) to clear the detected Fall Pre-Alert before an Alarm is activated.

**GPS Status Icon:** The GPS Status Icon appears on the Icon Line of the Home Page when the GPS Location feature is active. The icon changes based on the satellite fix quality.

**Home Page:** The Home Page is the main page of the WorkForce®2 that is displayed on startup and any time the device is reset. Displayed information includes status icons, motion sensing timer, device OEM and ID numbers, and the firmware versions loaded on the device.

**Icon Line:** The top line of the home page displays the device status icons.

**Man-Down Alarm Mode:** A WorkForce® or other GRACE safety device enters an audible Alarm Mode when the Pre-Alert Timer counts down to zero.

**Monitoring Authority:** The person(s) responsible for monitoring the status of the devices used by the various on-scene personnel, usually from a centralized base location.

**Motion Sensing Activation Icon:** Appears on the Icon Line of the Home Page when the Motion Sensing feature is active. This icon changes as the device senses motion.

**Motion-Sensing Timer:** Indicates the seconds of lack-of-motion required before the WorkForce® enters the Pre-Alert mode.

**PAR:** Personnel Accountability Report is used to prompt the person wearing the WorkForce® to acknowledge a **PAR-Request** signal sent from a **Grace-Watch® monitoring system**. This is designed as a periodic **check-in** for the WorkForce® user providing an indication of their well-being.

**Pre-Alert:** An audible warning that starts 12 seconds before the Alarm Mode.

**Radio Signal Propagation:** Radio Signal Propagation is the behavior radio waves exhibit when they are transmitted. Radio Signal Propagation can be affected by structural, environmental, and atmospheric conditions.

**Resetting the Device:** Simultaneously pressing the side buttons resets the WorkForce®.

**ROLL-CALL:** Requires the use of a **Grace-Watch® software monitoring system** and is designed to signal the WorkForce® user of an escalated situation prompting the user to acknowledge their safety status immediately.

**Sensing Mode:** When the WorkForce® is turned on, it is in Sensing Mode. In Sensing Mode, the device is monitoring radio traffic for alarm messages. The WorkForce® is also sensing motion, if enabled.

**Setup Mode:** Allows certain characteristics and functions of the WorkForce® to be activated, deactivated, or modified.

**Signal Loss:** Signal loss is an event that occurs when the WorkForce® is out of the RF communication range of a base monitor for a preset length of time.

**Signal Loss Activation Icon:** Appears on the Icon Line of the Home Page when the Signal Loss feature is active.

**Unit ID:** A unique ID number assigned to the WorkForce® device for the purpose of radio communication. It can be viewed on the HID WorkForce® Configuration Tool.

**Unit OEM:** The Unit OEM is a number assigned to the WorkForce® device and is similar to the Unit ID. The key difference is the Unit OEM is not a unique number to each device. In most applications all of the WorkForce® devices will have the same OEM number; from the factory, this number will usually be 9090.

## FCC Statements

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

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

## Industry Canada Statements

This Class A digital apparatus complies with Canadian ICES-003.

This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.(select the class for your device)

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes: (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

## Warranty Information

Grace industries, Inc. warrants this product to be free from defects in workmanship and materials for a period of one year from the date of purchase. This warranty is valid only when the returned product is accompanied by a sales slip or other proof of purchase that states the date and location of purchase. Grace Industries, Inc. will not repair or replace any merchandise under warranty which has been damaged because of accident, misuse or abuse while in possession or control of the consumer. This warranty is void if any attempt to repair or replace parts was made or attempted by other than qualified Grace Industries, Inc. personnel. This warranty is void if any of the sealed compartments are opened or tampered with.

Send all returned merchandise, prepaid and accompanied by proof of purchase to: Grace Industries, Inc., Repair Division, 305 Bend Hill Road, Fredonia, PA 16124 USA. Grace Industries, Inc. shall not be liable for any direct, incidental or other consequential loss or damage arising out of the failure of the product to operate. End-user or customer is responsible for return shipping/freight charges.

The sole and exclusive remedy under all guarantees or warranties, express 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 ENDING ONE (1) YEAR FROM THE DATE OF PURCHASE. The warranty and liability set forth in the prior paragraphs are in lieu of all other warranties, expressed or implied, in law or in fact, including implied warranties of merchantability and fitness for a particular purpose. Some states do not allow limitations on how long an implied warranty lasts, so the above limitations may not apply to you.

This warranty gives you specific legal rights and you may also have other rights which may vary from state to state.

This information is believed to be accurate and reliable. Grace Industries, Inc. provides this information as a guide only.

Technical assistance is available by contacting Grace Industries, Inc. by telephone at 724-962-9231, M – F, 8:00 am – 4:30 pm.

For training purposes a copy of User's Information is available by contacting Grace Industries, Inc. at [www.graceindustries.com](http://www.graceindustries.com) or by mail to: 305 Bend Hill Rd, Fredonia, PA 16124 U.S.A.

# HID WorkForce® Configuration Tool

## User's Manual



### WorkForce® Model WF2

A worker-worn motion-sensing Man-Down Alarm that uses proprietary, ISM license free, high performance RF (radio-frequency) wireless signaling to help protect workers in dangerous and hazardous environments.

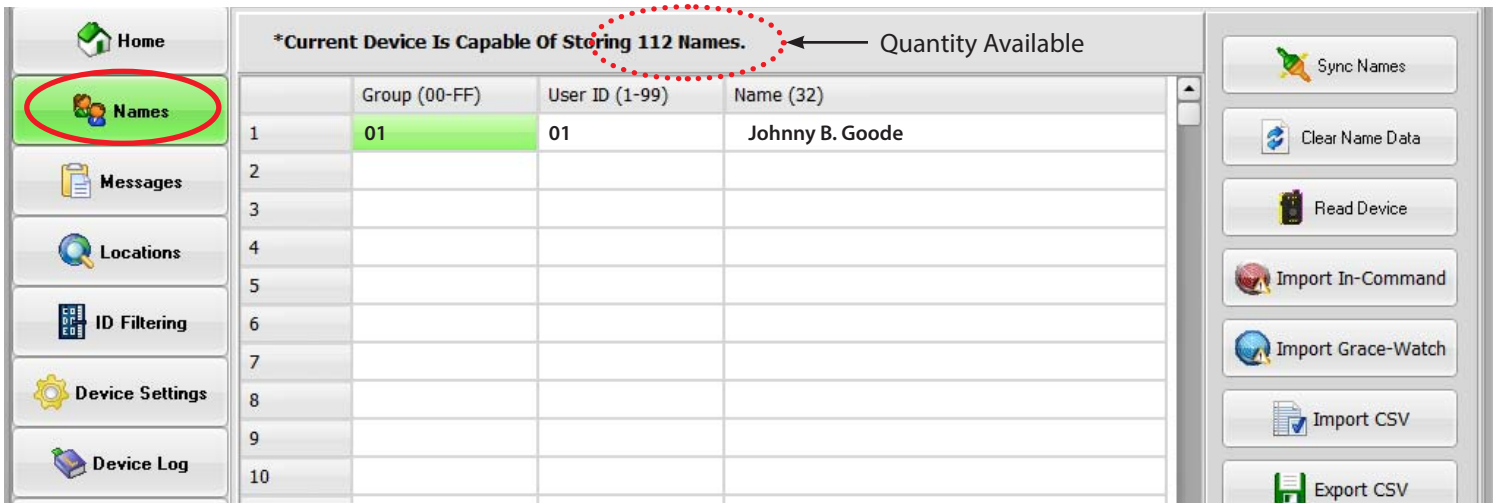
### HID WorkForce® Configuration Tool

Allows users to customize the settings of their WorkForce® by connecting the device to a PC with a Micro B USB cable and running the GRACE utility (HID WorkForce® Configuration) tool.



### To use the configuration tool:

- 1. If configuration tool is not already installed on your Windows PC:**
  - A. Download the WorkForce® configuration tool from <http://www.graceindustries.info/downloads/>
  - B. Select "WorkForce Config tool" to download the installer.
  - C. Run the program installer to install configuration tool onto your Windows PC.
- 2. Open the configuration tool.**
3. Follow the instructions on the tool to connect to your WorkForce® device.
4. Once the device is connected, you will hear 3 quick beeps and all 4 side status bar LED will glow green. The WorkForce® configuration tool should display the current device settings within 30 seconds of the 3 quick beeps.
5. Settings will not be changed until the <Sync Device Setting> button is clicked. A pop up window will acknowledge that device settings have been updated
6. Note the unit will drop out of HID configuration mode after 5 minutes of inactivity. To reconnect, you must turn the unit off and start over at step 3.



## Names Tab:

Names tab allows you to enter custom names for a set number of users (up to the quantity listed at top of window). The custom name will be displayed when showing alarms from other PASS devices. Enter the user's Group, User ID, and the custom name consisting of up to 32 characters.

**Sync Names:** This button will transmit PASS Name files to the connected WF2

**Clear Name Data:** This will clear all names in the display list (Note: this does not clear the device)

**Read Device:** Reads the configuration out of the device

**Import In-Command:** This pulls the stored name files into you listing from an In-Command data file

**Import Grace-Watch:** This pulls the stored name files into you listing from Grace-Watch data file

**Import CSV:** This pulls the stored name files from a CSV file

**Export CSV:** This stores name file to a CSV file



## Messages Tab:

Message tab allows you to link custom text to a canned message. **CAUTION: The PASS device does not send the text, it sends an index into the table.** For all users to receive the proper message, they must all have the same Message Table loaded into their devices. You can enter messages with up to 32 characters.

**Sync Messages:** This button will transmit PASS Message files to the connected WF2

**Clear Msg Data:** This will clear all Messages in the display list (Note: this does not clear the device)

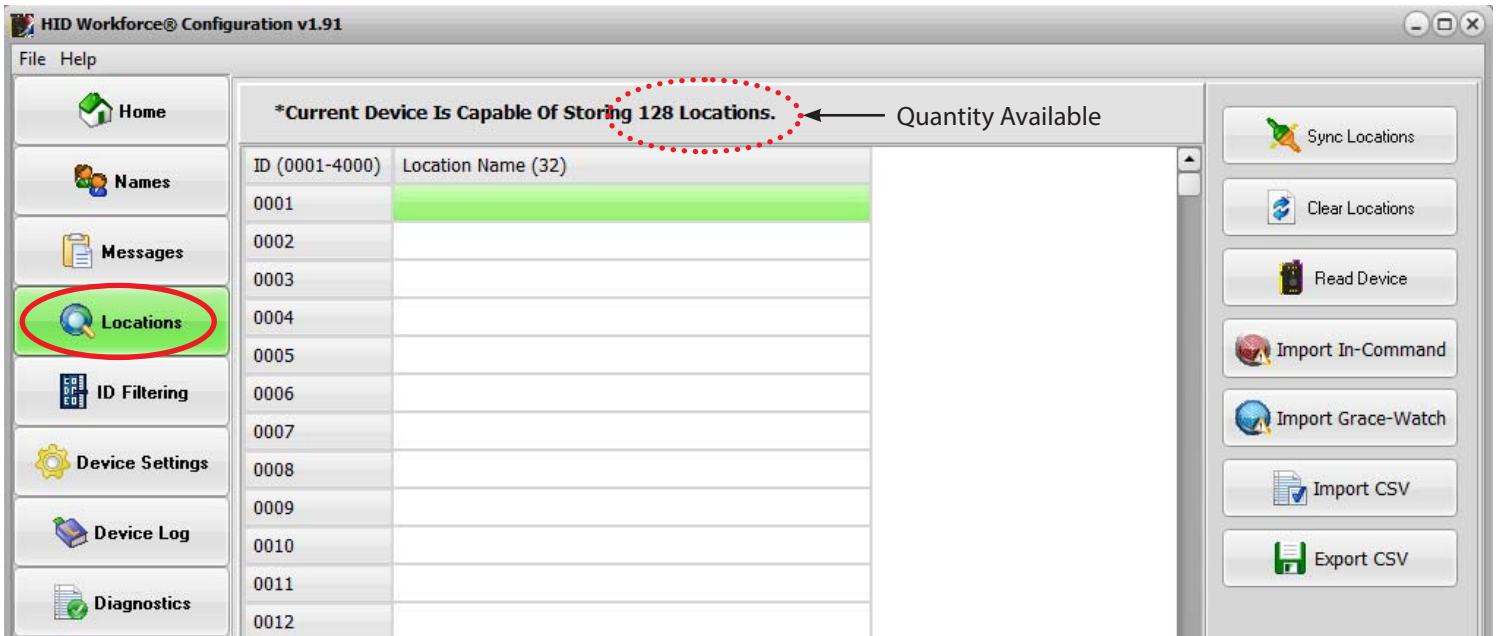
**Read Device:** Reads the configuration out of the device

**Import In-Command:** This pulls the stored message files into you listing from an In-Command data file

**Import Grace-Watch:** This pulls the stored message files into you listing from an Grace-Watch data file

**Import CSV:** This pulls the stored message files from a CSV file

**Export CSV:** This stores message files to a CSV file



## Locations Tab:

Locations tab allows you to enter a custom name for a set number of locations (up to the quantity listed at top of window). The custom location name will be displayed when showing messages and alarms from other PASS devices. Location names can be up to 32 characters long.

**Sync Locations:** This button will transmit PASS location files to the connected WF2

**Clear Locations:** This will clear all Locations in the display list (Note: this does not clear the device)

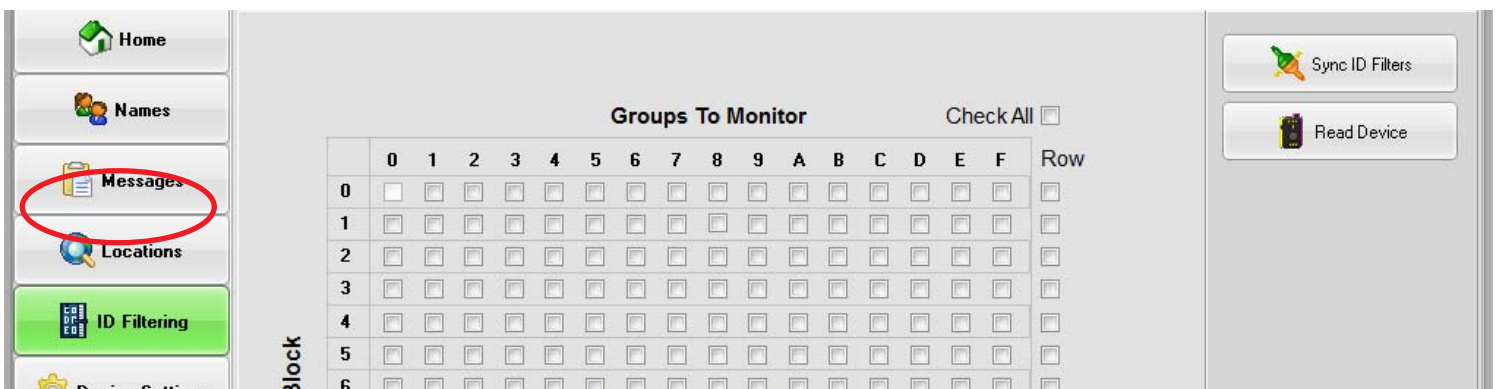
**Read Device:** Reads the configuration out of the device

**Import In-Command:** This pulls the stored Location files into you listing from In-Command software

**Import Grace-Watch:** This pulls the stored Location files into you listing from Grace-Watch software

**Import CSV:** This pulls the stored Location files from a CSV file

**Export CSV:** This stores Location files to a CSV file



## ID Filtering Tab:

ID Filtering allows you to configure what PASS device groups you wish to monitor for Alarms. **NOTE: Device must be configured as AM (Alarm Monitor) which is a factory setting and cannot be adjusted by the end user.**

Blocks can be selected by Individual USER ID, Entire Groups, All Devices.

To monitor all PASS devices, click the Check All box.

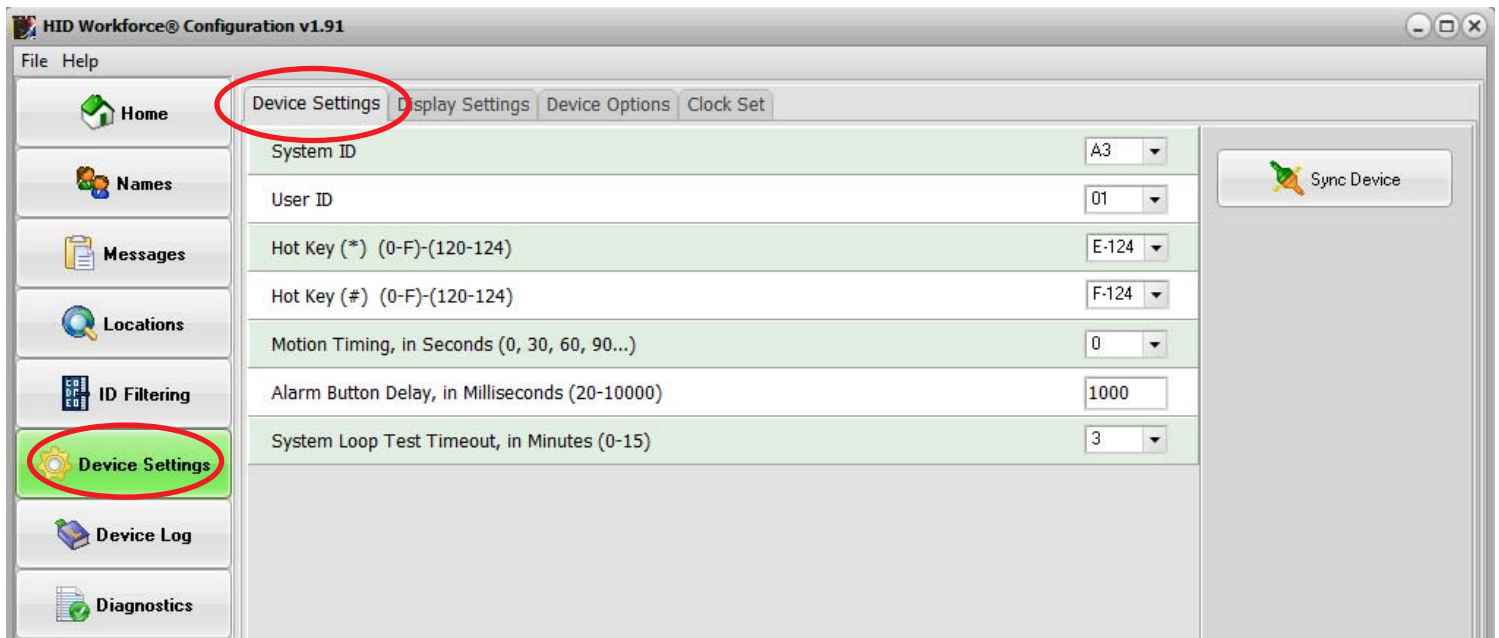
To select only certain group(s), check the boxes associated with the group(s) you wish to monitor.

**NOTE:** You cannot filter out the group your current device belongs to - it will always be active.

**Sync Messages:** This button will transmit the configurations to the connected WF2

**Read Device:** Reads the configuration out of the device





## Device Settings Tab:

**Sync Device:** This button will transmit Device Settings to the connected WorkForce®.

**System ID:** (01-FE). This selection allows you to change the Grace System ID of the WorkForce®. Caution must be taken that the new ID is not already in use and is set to be monitored.

**User ID:** (01-99). This selection allows you to change the Grace User ID of the WorkForce®. Caution must be taken that the new ID is not already in use and is set to be monitored.

**HOT Key (#) (0-F)(120-124):** Dropdown menu to select Canned Message to send on HotKey.

**HOT Key (\*) (0-F)(120-124):** Dropdown menu to select Canned Message to send on HotKey.

**NOTE:** Canned Message text is set under <Messages Tab>

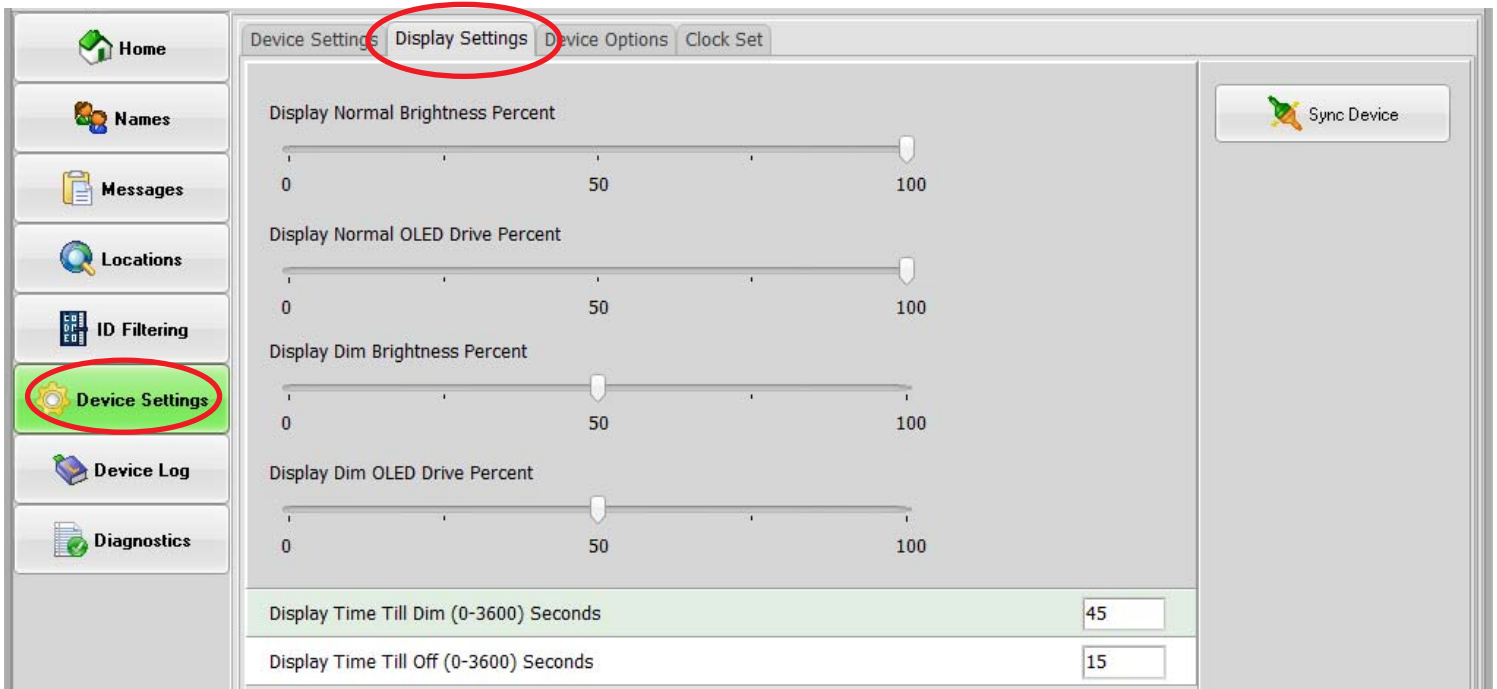
**Motion Timing, in Seconds:** This setting controls how long the user and device can remain motionless before the Man Down Alarm is activated. A Pre-Alert warning will begin to sound approximately 12 seconds before the Man-Down Alarm, indicating the WorkForce® is closer to going into Alarm. Available timing (in seconds) includes: 0, 30, 60, 90, 120, 180, 300, 600, and 900. **NOTE: Setting the timing to zero (0) will DISABLE the motion sensing protection.**

**WARNING:** Any motion sensing alarm time period longer than 90 seconds is potentially dangerous to the user of this product. The longer the motion sensing time period is, the greater the risk of exposing the user to a delayed response to an incapacitated, distressed worker.

**Alarm Button Delay, in Milliseconds:** This value controls the number of milliseconds the alarm button must be held before an alarm is declared. This timer is useful in eliminating accidental alarm triggers caused bumping the alarm button.

**Note:** This value is in milliseconds 1 second = 1000 milliseconds.

**System Loop Test Timeout, in Minutes:** Setting the value to zero (0) disables the System Loop Test feature. Selecting a value of 1-15 sets the maximum of minutes before System Loop Test failure is declared. System Loop Test sends a message from the WorkForce® through your gateway back to a monitoring platform. If the platform does not respond with an Acknowledge of the loop test within the allotted time, the unit will trigger a System Test Timeout. (See page 2 for more information on system loop tests).



## Display Settings Tab:

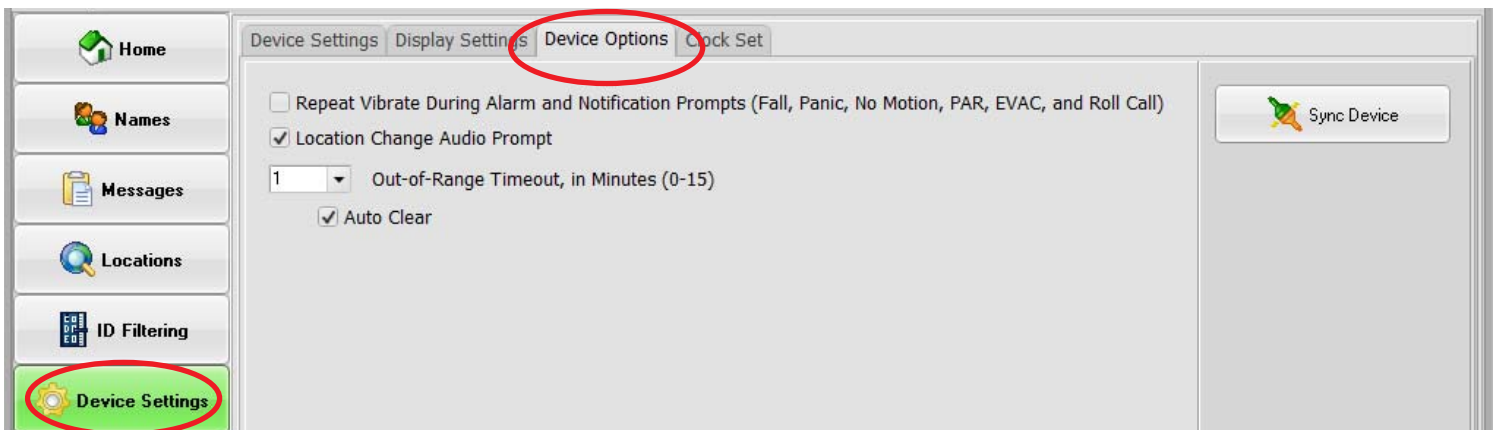
**Display Normal Brightness Percent & Display Normal OLED Drive Percent:** Sets brightness of OLED when on and Not Dimmed.

**Display Dim Brightness Percent & Display Dim OLED Drive Percent:** Sets brightness of the OLED when Dimmed.

**Display Time until Dim:** Number of seconds from last button press or Event before display automatically dims.

**Display Time until Off:** Number of seconds from last button press or Event before display automatically shuts off.

**NOTE:** A button press or Event will return/restore the WorkForce® display to normal brightness.



## Device Options Tab:

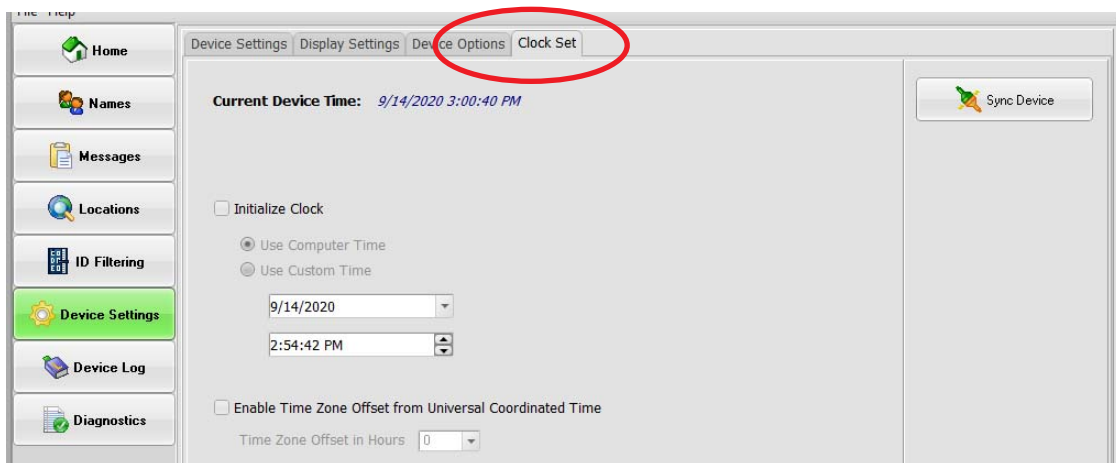
**Sync Device:** This button will transmit Device Options to the connected WorkForce®.

**Repeat Vibrate During Alarm and Notifications:** With this box checked, WorkForce® will vibrate with every Alarm audio cycle. If unchecked, the device will vibrate only once.

**Location Change Audio Prompt:** With this box checked, WorkForce® will produce an audible chirp when it detects a new Grace Locator Beacon.

**Out-of-Range Timeout:** This function is disabled when set to zero (0). When timeout is set to 1-15 minutes, the Out of Range alert will occur if WorkForce® has not received a ping message from a base station within the set timeout period. NOTE: To use this function, WorkForce® must be used with, and in communication with, a Grace Base (MS2000, SMS, Grace-Watch, Alarm Box, MX900, etc.)

**Auto Clear:** When this box is checked, the WorkForce® will automatically clear a Signal Loss notification when WorkForce® regains communications with the base station. When box is NOT checked, the user must manually clear the Signal Loss notification.



## Clock Set Tab:

**Current Device Time:** Displays the current time and date of the connected WorkForce®.

**NOTE:** The WorkForce® date and time will not be updated until the Sync Device Settings button is pressed.

**Set Clock:** Check this box to enable the time setting options. Selecting “Use Computer Time” will match the device to the time and date of the connected computer. “Use Custom Time” will allow you to set the WorkForce® date and time as desired.

**Enable Time Zone Offset:** Check this box to enable Time Zone Offset. NOTE: Eastern Standard Time (EST) is GMT -5 hours.

**Sync Device Settings:** After the desired date and time settings are complete, press the Sync Device Settings button to update time and date of the connected WorkForce®.

## Device Log:

**This window is for accessing WorkForce® device logs.**

**Download Log:** Allows you to download the log from a connected WorkForce® device.

**Open Log File:** This allows you to save a downloaded log to your local system for future retrieval.

**Print Log:** Prints existing Log file.

**Clear Device Log:** This erases the logs in the connected device.

## Diagnostics Window:

This window shows USB connections diagnostics data. You can save the diagnostic log for debugging if needed.



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