# WorkForce®2
## Model WF2
# User's Information


**WorkForce®** is a wearable, no-motion man-down alarm designed for workers in hazardous environments. It uses independent, high-performance RF (radio-frequency) wireless signaling to provide reliable protection and rapid response in dangerous situations.

**WorkForce®** provides real-time no-motion sensing and fall detection, and features an emergency alarm button that instantly transmits a distress signal when help is needed.

The **WorkForce®** Alarm Monitoring (AM) version can also receive distress signals from other workers equipped with **WorkForce®**, alerting the user through clear audible and visual indicators. Additional emergency signaling features include Evacuate, Abandon, PAR, Roll Call, and an optional out-of-range alert.

For a fully integrated worker safety solution, **WorkForce®** can be paired with additional Grace monitoring products that offer advanced locating capabilities.



Rear View with optional Grip Clip for attachment

Rear View with Swivel Clip for attachment

### Power Operation (Manual Control) WorkForce® WF2-MAN

WorkForce® WF2-MAN model is equipped with a manual power On/Off feature.

**Power On:** Press both side buttons simultaneously to turn the device on.

**Power Off:** Press and hold both side buttons at the same time until the device powers down.

***Ensure both buttons are pressed firmly and at the same time for proper operation.***

### Power Operation (Auto On/Off) WorkForce® WF2-A

The WF2-A model is equipped with an automatic power On/Off feature. This function is enabled by default on the WF2-A.

**Power On:** The device will automatically turn on when it is disconnected from the charger, provided the charger is connected to an appropriate power source.

**Power Off:** The device will automatically turn off when it is connected to the charger, while the charger is plugged into an appropriate power source.

***Ensure the charger is properly connected to a suitable power supply to enable correct operation of the automatic on/off feature.***

## 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 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.
- **Alarm Audio:** 70+ dBA at 10 feet.
- **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:** USB Micro connection for battery charging and WorkForce® configuration.
- **Environmental Range:** -20°C to 60°C / -4°F to 140°F.
- **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 |
| **90 seconds** | **Pre-Alert 78 to 83 seconds** | **90 to 95 seconds to Alarm** |
| 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.

# Important Notice

### Read Instructions Before Use

Carefully review all instructions in this manual before operating the WorkForce® device. Proper understanding of its functions and settings is essential for safe and effective use.

### Always Test WorkForce® Prior to Use

Before each use, test the WorkForce® device to ensure it is functioning correctly and that all features are operating as intended. This helps confirm proper system performance and readiness.

# Operating Instructions

## ACTIVATING WORKFORCE®

WorkForce® devices are activated by entering Sensing Mode, during which the unit monitors radio traffic for alarm messages and, if enabled, detects no-motion events.

- **Manual Activation (WF2-MAN Models):**
  Press both side buttons simultaneously to power on the device and activate Sensing Mode.
- **Automatic Activation (WF2-A Models):**
  When the auto on/off feature is enabled, disconnecting the device from the charger adapter (while the adapter is connected to a power source) will automatically power on the unit and place it into Sensing Mode.

Ensure the device is properly powered and configured so that all sensing features operate as intended.

## ACTIVATION INDICATORS

During activation, WorkForce® provides audible and visual feedback to confirm proper operation and entry into Sensing Mode.

- **Audible Indicator:** An escalating sequence of audio tones will sound during activation.
- **Power Indicator:** The power indicator will begin flashing at approximately one-second intervals.
- **Motion Sensing Indicator:** After a series of splash screens, the OLED will display motion-sensing status as well as WorkForce® unit ID and battery level.

These indicators confirm that the device has successfully powered on and is operating in Sensing Mode.

When WorkForce® is activated, its internal radio transmits signals to other compatible Grace devices and equipment. This communication enables coordinated system operation and allows connected devices to respond appropriately to the WorkForce status and any detected events.

## NO-MOTION PRE-ALERT and ALARM FUNCTIONS

If the WorkForce® device has No-Motion Timing enabled, it will monitor for movement and trigger an alarm if no motion is detected for the preset time interval (measured in seconds). Approximately 12 seconds before the No-Motion Alarm activates, the device will enter a Pre-Alert Warning phase to provide advance notice and allow time for user response.

**NOTE:** No-Motion timing can be adjusted by the user or configured by the factory prior to shipment. The factory default setting is 90 seconds.

When no motion is detected for approximately 78 seconds, the device will begin a pre-alert phase approximately 12 seconds before the full alarm is activated.

- **During the Pre-Alert Phase:**
  An audible Pre-Alert tone will sound.
  The on-screen countdown Time-to-Alarm will be highlighted.

If motion is detected during the Pre-Alert phase, the device will automatically reset and return to Sensing Mode.

## ALARM MODE

The WorkForce® device can enter Alarm Mode in two ways: automatically through motion sensing or manually via the Emergency Alarm Button.

- **No-Motion Alarm:**
  If the device is programmed to trigger an alarm after 90 seconds of no detected motion, it will automatically enter Alarm Mode once this threshold is reached.
- **Distress Alarm:**
  The user may manually activate Alarm Mode at any time, whether the device is in Sensing Mode or powered off, by pressing the Emergency Alarm Button for **two seconds**.

In both cases, Alarm Mode is initiated immediately upon activation conditions being met.

## ALARM MODE INDICATORS and TRANSMISSION

When Alarm Mode is activated, the device provides both visual and audible alerts to indicate an emergency condition.

- **Visual Indicator:**
  The Alarm Mode is displayed on screen.
- **Audible Indicator:**
  A loud audible alarm will sound continuously.
- **Radio Transmission:**
  During an Alarm condition, the device transmits an emergency radio signal to other compatible Grace devices and equipment. This signal is used to alert personnel that assistance may be required.

## RESETTING ALARM MODE

To reset the device and return WorkForce® to Sensing Mode, press both side buttons simultaneously. Release the buttons when a series of de-escalating audio tones is heard and all LED activity stops.

- The device will then return to Sensing Mode.
- When the auto on/off feature is enabled, connecting the unit to the charger adapter (while the adapter is plugged into an appropriate power source) will power the WorkForce off and also reset the alarm condition.

## OFF

WorkForce® devices are powered off using one of the following methods:

- **Manual Deactivation:**
  While in Sensing Mode, press and hold both side buttons simultaneously for approximately three (3) seconds. A series of de-escalating audio tones will sound, and all LED activity will cease, indicating the device has powered off.
- **Auto-Off Feature:**
  When the Auto-On/Off setting is enabled, connecting the WorkForce® to a charger adapter plugged into an appropriate power source will automatically power the unit off.

# Operation of Special Features

## SYSTEM ACCESS LOOP TEST indicator (SALTi®)

SALTi® is a feature that verifies the connection integrity of a user's Pendant and the cloud Monitoring and Alerting Portal, as part of the Grace Industries cloud-based Grace Connected Safety system.

- **SALTi® Test Procedure:**
  Ensure the WorkForce® is in Sensing Mode.
  Simultaneously press and hold the UP ↑ and DOWN ↓ arrow buttons.
- **Confirm Loop Test Message Has Been Sent:**
  A rapid tri-tone is heard.
  On-screen message confirms System Test Sent.
  During test, the OLED display shows elapsed time and preset maximum time for test to complete.
- **Successful Loop Test Indicators:**
  An escalating tri-tone is heard.
  "System Test Successful" displayed on screen.
- **Failure / No Acknowledgment:**
  If no acknowledgment is received within the configured time:
  A de-escalating tri-tone will sound.
  "System Test Timeout" message is displayed.

## EVACUATION ACKNOWLEDGMENT:

Evacuation Acknowledgment feature allows the user to confirm receipt of an evacuation alert transmitted to the WorkForce®.

- **To Acknowledge an Evacuation Alert:**
  When an Evacuation message is received, press both side buttons simultaneously.

## ABANDON ACKNOWLEDGMENT:

The Abandon Acknowledgment feature allows the user to confirm receipt of an abandon alert transmitted to the WorkForce®.

- **To Acknowledge an Abandon Alert:**
  When an Abandon message is received, press both side buttons simultaneously.

## ALARM MONITORING:

Alarm Monitoring feature enables personnel to monitor the status of nearby colleagues using WorkForce® units or other compatible Grace devices.

- **Operation:**
  WorkForce® must be in Sensing Mode to receive alarm signals from other devices.
- **Alarm Indication:**
  When an Alarm signal from another device is received, the side LEDs will flash red in an alternating pattern while sounding a rapid ringing tone, and device information of the originating alarm is displayed on screen.
- **Temporarily Clear an Alarm Indication:**
  Press both side buttons simultaneously.
  Alarm indication will be cleared for approximately one minute.
- **Alarm Re-Notification:**
  If another device enters an Alarm state during the one-minute period, the Alarm Indication will reactivate.
  This cycle will continue as long as Alarm signals are being received.
- **End of Alarm Monitoring Alert:**
  The Alarm Indication will stop only when the originating device is reset or powered off.
- **NOTE:**
  WorkForce® must remain in Sensing Mode to continue receiving alarm signals.
  Clearing the alert does not reset the originating alarm; it only silences the local alarm indication temporarily.

## MESSAGES RECEIVED:

WorkForce® model WF2 is designed to receive both canned (pre-configured) and freeform (on-demand) messages from various compatible devices, including other WF2 pendants, SC500, MS2000, Grace-Watch®, and GMG.

- **When a Message is Received:**
  Red side LEDs flash in an alternating pattern.
  A rapid ringing tone sounds to notify the user.
  Message is displayed on the screen.

## FALL DETECTION:

The Fall Detection feature enables the WorkForce®to automatically detect a fall of approximately 4 feet or greater and initiate an alert sequence.

- **Operation:**
  When a fall is detected, the device enters a Fall Pre-Alert state, allowing the user time to cancel the alarm in the event of a false trigger or non-emergency situation.
- **Fall Pre-Alert:**
  Activated immediately after a fall is detected.
  Indicated by a Fall Pre-Alert message on the display and a double beep after the Pre-Alert tones.
  Lasts for approximately 15 seconds.
  Provides an opportunity to reset the WorkForce® before an alarm is transmitted.
- **To RESET During Pre-Alert:**
  Press both side buttons simultaneously.
  This will cancel the Fall Pre-Alert and prevent an Alarm from being sent.
- **Fall Alarm:**
  If the Fall Pre-Alert is not reset within 15 seconds:
  WorkForce® will enter Fall Alarm Mode.
  Indicated by a Fall Alarm message on the display and sounding a loud audio alarm with a double beep.
  A Fall Detected alarm message will be transmitted to compatible Grace monitoring equipment.
- **NOTE:** Ensure proper and secure device placement to minimize false triggers.
- **IMPORTANT:** WorkForce® model WF2 is not capable of detecting all possible types of fall events. It is the responsibility of the user, if physically able, to ensure the Emergency Alarm button is pressed following any fall of fall-related incident, regardless of whether the device has automatically detected the event.

## SIGNAL-LOST/OUT-of-RANGE OPERATION:

The Signal Lost/Out-of-Range condition indicates that the user has moved beyond the effective communication range of the WorkForce® device and its associated Grace monitoring equipment, such as a Grace GMG or GFG Gateway, MS2000, SMS, or Grace-Watch® system. This function utilizes two-way communication

between the WorkForce® device and the monitoring unit to alert the user they may be outside of the system's effective operational range.

When this feature is enabled and operating under normal conditions, the user will receive confirmation on the WorkForce® that they are within the effective signaling range within 30 seconds of powering on the WorkForce® device.

In-Range Notification is 3 audio up-sweeping tones, 3 short vibration pulses, and display will show Signal Active.

This feature may be enabled through the PC software configuration tool. If the feature is not active, verify that a compatible Grace monitoring device is present, supports Signal Loss/Out-of-Range notification, and is properly configured to operate with the WorkForce® units.

### LOCATION:

WorkForce® provides real-time location and status updates whenever it is within range of a Locator Beacon. When the device enters a Locator Beacon coverage zone, a chirp tone will sound and the Locator Beacon ID will appear on the WorkForce® display.

If the Locator Beacon battery is low, a low battery warning will appear on the WorkForce® screen in reverse colors to alert the user.

To view your last three recorded locations, press the Left (Menu) button to open the Location History screen.

## WorkForce® Mounting and Attachment

**IMPORTANT: For WorkForce® to accurately detect a fall, the device must be securely attached to the user.**

WorkForce® is equipped with a swivel clip attachment for secure attachment to personnel gear. For best performance, attach the device to a stable part of your gear or clothing where it can remain firmly in place during normal movement and activity.

The ideal wearing position may vary depending on the user's equipment, work environment, and personal preference. Select a mounting location that provides a secure attachment, allows the device to move naturally with the body, and remains easily accessible for operation.

## Mode Selection

### Turn ON (Sensing Mode)

- Press both side buttons simultaneously.
- **If Auto-ON/OFF is enabled:**
  WorkForce® turns on automatically when unplugged from its charger. It may also turn on if power is lost (during an outage).

### ALARM Mode

- Press and hold Emergency Alarm Button for approximately two seconds to trigger Alarm.
  Alarm can be activated whether WorkForce® is on or off.

### RESET

- When in Alarm or an Evacuate/Abandon signal is received, reset WorkForce® by simultaneously pressing the side buttons.

### OFF

- **When in Sensing Mode:** Press and hold both side buttons until the unit powers down.
- **If Auto-ON/OFF is enabled:** Plugging WorkForce® into the charger will automatically turn it off.

### SYSTEM ACCESS LOOP TEST indicator (SALTi®)

- **Start a Test:**
  Ensure WorkForce® is in Sensing Mode.
  Simultaneously press and hold the UP ⬆ and DOWN ⬇ arrow buttons.
- **Confirm Loop Test Message Has Been Sent:**
  A rapid tri-tone is heard.
  On-screen message confirms System Test Sent.
  OLED displays elapsed time and max time for test to complete.
- **SUCCESSFUL Test:**
  An escalating tri-tone is heard.
  "System Test Successful" is displayed on screen.
- **FAILED Test:**
  A de-escalating tri-tone will sound.
  "System Test Timeout" message is displayed.

## Device Status and Indicators

### OFF

- No LED Display
- Device is inactive

### ON (Sensing Mode)

- **Audio:** Escalating, loud audio tones upon activation
- **OLED Screen:** On
- **Power LED:** Flashes
- Device is actively monitoring for motion

### PRE-ALERT

- Triggered after approximately 78 seconds of no-motion
- **Audio:** Loud, sweeping audio tones
- **OLED Screen: Time to Alarm** countdown is highlighted
- Early warning before full Alarm

### ALARM

- Triggered after approximately 90 seconds of no-motion or by pressing the Emergency Alarm Button
- **Audio:** Loud, continuous alarm
- Audio Alarm briefly pauses to help responders locate direction
- **OLED Screen:** Alarm type is displayed
- **Radio LED:** Flashes red while transmitting emergency signal

### EVACUATE / ABANDON Signals

- **Running Man:** LED Flashes red when a signal is received.
- **OLED Screen:** Alarm type is displayed
- **EVACUATE Tone:** Loud, stepped de-escalating tone ending with a higher note
- **ABANDON Tone:** Loud, multi-chirp two-step pulsed tone

### ALARM MONITORING

- **Audio:** rapid ringing tone
- **OLED Screen:** Device info of unit in alarm is displayed
- **Side LEDs:** Flash red in an alternating pattern

### MESSAGE RECEIVED

- **Audio:** rapid ringing tone
- **OLED Screen:** Message displayed
- **Side LEDs:** Flash red in an alternating pattern

### FALL PRE-ALERT

- **Audio:** Loud, sweeping tones followed by a double beep
- **OLED Screen:** FALL Pre-Alert message displayed

### FALL ALARM

- **Audio:** Loud audio alarm followed by a double beep
- **OLED Screen:** FALL ALARM message displayed

## LOCATION

- **Audio:** a chirp tone when a new Coverage Zone is entered
- **OLED Screen:** Locator Beacon ID of the Coverage Zone

## SIGNAL STATUS

**Signal Lost / Out-of-Range**

- **OLED Screen:** displays "Signal Lost"
- 3 de-escalating sweeping tones
- 3-second vibration
- Repeats every minute until signal returns

**Signal Active / In Range**

- **OLED Screen:** displays "Signal Active"
- 3 escalating sweeping tones
- 3 short vibration pulses

## SATELLITE-GPS

- **Green Flashing LED:** GPS signal acquired
- **Red/Green Flashing LED:** No GPS signal detected
- **OLED Screen:** GPS Icon inverted when No GPS signal detected

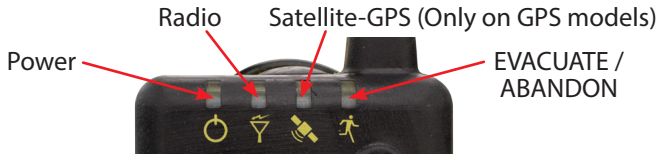
## LOW BATTERY

- **Power LED:** Flashes red when below 25%
- **Audio:** Short, double high-pitched sound every five minutes (if audio is enabled)
- **NO power-on tones**
- **OLED Screen:** Plug Icon is displayed

## SYSTEM ACCESS LOOP TEST indicator (SALTi®)

- **Test Started:** Rapid tri-tone and on-screen test status message
- **Success:** Escalating tri-tone, "System Test Successful" displayed
- **Failed Test:** De-escalating tri-tone and "System Test Timeout" message is displayed

## WorkForce®2 Top LED Indicators




## POWER LED

- **Green Flashing:** Device is ON (Sensing Mode)
- **Red Flashing:** Battery is below 25%

## RADIO LED

- **Red Flashing:** Transmitting radio signal
- **Green Flashing:** Receiving signal from other devices
- **Alternating Red/Green:** Signal Lost / Out-of-Range

## SATELLITE-GPS LED

- **Green Flashing:** GPS signal (fix) acquired
- **Red/Green Flashing:** No GPS signal

## EVACUATE / ABANDON LED

- **Red Flashing:** EVACUATE or ABANDON signal received

## System Status (Side) LED Indicators

System Status LEDs show the device status and alerts. There are four LEDs on the left side of the device, numbered 1 to 4 from top to bottom.

**Alarm Monitoring**: When an Alarm signal from another device is received, the side LEDs will flash red in an alternating pattern.

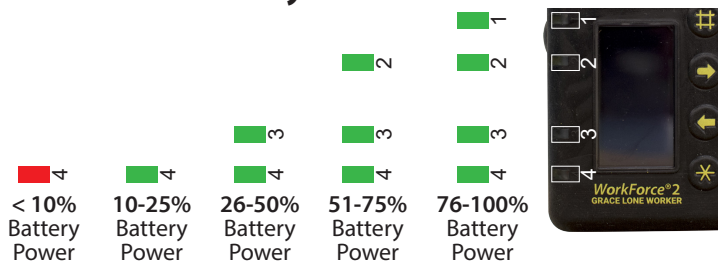
**System Fault Detected**: If the device detects a system fault, the System Status LEDs will show the fault type. For more details, see the Troubleshooting diagram on page 7.

**Battery Power Level**: Press either side button to check the battery level. Status LEDs will show the remaining battery power (***see diagram below***).

**Battery Charging Status**: When WorkForce® is charging, Status LEDs show the current battery charge level.

- **Battery Fully Charged:** All four Side LEDs flash green.
- **Battery Charging (Partially Charged):** LEDs light sequentially from the bottom up to the current battery level to indicate charging progress.

## Battery Power Level




## Charging the Battery

**Low Battery Warning:**

When the battery has less than 3 hours of operating time remaining in Sensing Mode, WorkForce® will indicate a low battery warning:

- Power LED will flash red
- A plug icon will appear on the display.

If audio is enabled, WorkForce® will make a double chirp sound every 5 minutes.

***Important: If audio is turned off, there will be no low battery sound.***

***Note: normal power-on sounds will not play when battery is low.***

When WorkForce® shows low battery warning, the battery has less than three hours of operating time. Charge the battery right away.

**Recharge Time Using the 120/240VAC Charger:**

- Charging from low battery warning takes approximately 3 hours
- Charging a fully drained battery takes approximately 4 hours

*An optional 12VDC charger is also available.*

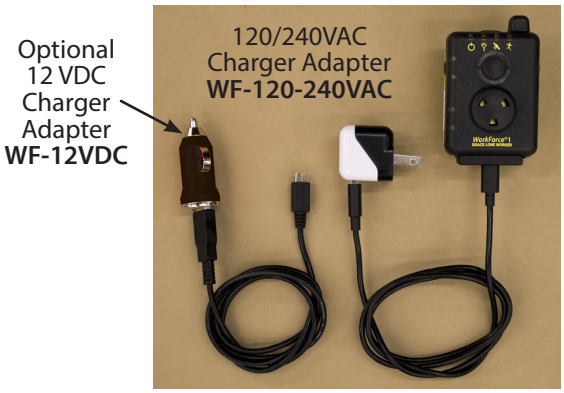
***Note: Charging from a computer USB port may take more time.***

**Battery Run Time:**

- Approximately 40 hours in Sensing Mode
- Approximately 24 hours with GPS enabled

**Charging the WorkForce®:**

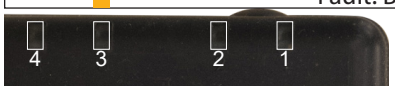
- Plug charger into a power outlet
- Connect the charger to WorkForce®
- System Status (Side) LEDs will show the battery charging level




**WorkForce®1 shown with USB Micro Cord and 120/240VAC Charger Adapter (p/n: WF-120-240VAC)**
Optional 12VDC Charger Adapter shown at left

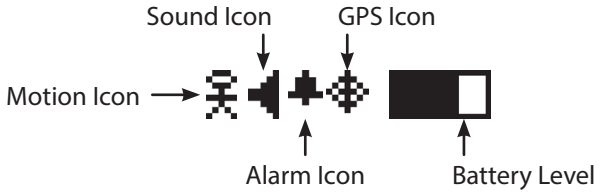
## System Faults

| 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 |
| **4** | **3** | 2 | 1 | Fault: Bootloader Mode |




*If Bootloader Mode occurs - press and hold both side buttons for 30sec., then release. WorkForce® will reboot within 5sec.*

## WorkForce® Display Icons




## Menu Pages

Pressing MENU ⊜ button (while on the main screen) brings up menu pages in the following order:

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

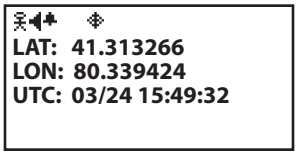
## Page 1 - Send Message


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

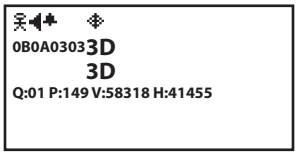
**Degrees Minutes (DD mm.mmmm)**
LAT: 41 18.7969' N
LON: 80 20.3736'W

**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 - Survey Mode


**WorkForce® models WF1 and WF2 have a RF performance Site-Survey test mode, further referred to as Survey Mode, where two WorkForce® units can be used to provide an indication of anticipated RF signaling performance in the environment being surveyed. Important, PLEASE READ THE ENTIRE SECTION ON THE SURVEY MODE (page 10) BEFORE ATTEMPTING TO PLACE A WorkForce® UNIT IN TO SURVEY MODE.**

*Pressing MENU ⊜ will navigate away from the Survey Mode page. Resetting the device will exit out of Setup Mode and return the WorkForce® to the home page.*

## Setup Mode Page 3 - Range Test

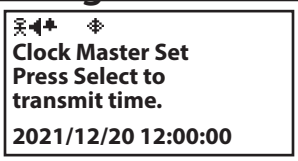

**The Radio Range Test mode of the WorkForce® is used to test radio signal propagation during on-site testing and system installation.**

**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.*

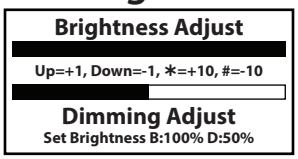
## Setup Mode Page 4 - Clock Master Set




**Pressing the Select button will send a real time clock message, syncing all other WorkForce® pendants in the area.** This may need to be performed multiple times.

*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 5 - 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 6 - 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 *****

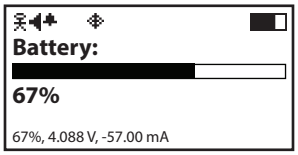
# Select Pages

Pressing Select ⊖ button (while on the main screen) brings up device information pages in the following order:

**Page 1 - Battery Level**
**Page 2 - WorkForce® Clock**
**Page 3 - CPU firmware version**
**Page 4 - Radio firmware version**

Resetting the device will return WorkForce® to the home page.

## Page 1 - Battery Level




## Page 2 - WorkForce® Clock


## Page 3 - CPU Firmware Version


## Page 4 - Radio Firmware Version


**Note:** WorkForce® will remain on selected page until Select ⊖ button is pressed or the unit is reset. Resetting the device will return WorkForce® to the home page.

# Definition of Terms

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

**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:** Enables personnel to monitor the status of nearby colleagues using WorkForce® units or other compatible Grace devices.

**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:** **P**ersonnel **A**ccountability **R**eport 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-Lost/Out-of-Range:** Signal Lost is an indication that the user is beyond the effective signaling range of the WorkForce® and a Grace monitoring device or unit, such as a Grace GMG or GFG Gateway, MS2000, SMS or GraceWatch® system

**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.

# User's Manual info: Survey Mode, WorkForce® Models WF1, WF2

1. The WorkForce® models WF1 and WF2 have a RF performance Site-Survey test mode, further referred to as "Survey mode", whereby two WorkForce® units transmit and receive RF signals between them providing an indication of anticipated RF signaling performance when used in the environment that is being surveyed. Important, **PLEASE READ THIS ENTIRE SECTION ON THE SURVEY MODE BEFORE ATTEMPTING TO PLACE A WorkForce® UNIT IN TO SURVEY MODE**.

**Before starting Survey Mode, make sure all Grace Gateways and Base Station devices are powered off. This includes: GFG, GMG, MS3000. PWA, MS2000, Grace-Watch, and SMS.**

**WARNING! Powering off Gateways and/or Base Stations may leave lone workers or employees without safety monitoring and alerting during this time. Be sure to re-activate the Gateways and Base Stations after Survey Mode testing is complete.**

a) The WorkForce® Survey mode is operational between two model WF1 and/or model WF2 units and are not exclusive to any model, thereby allowing two model WF1 units, two model WF2 units or one of each (a model WF1 and a model WF2) to be used in this Survey mode.

**IMPORTANT NOTE: WorkForce® units placed in Survey mode <u>are not operational</u> as a safety device.**

b) While WorkForce® units are in the Survey mode, only two WorkForce® units can be used at the same time for this purpose, however on-going use of other Grace devices (including WorkForce® units) can continue to operate, unaffected by the Survey mode testing.

c) The WorkForce® units, when placed in Survey mode will assume a role of either roving-Primary or stationary-Secondary, determined by which WorkForce® unit was put in the Survey mode first. The WorkForce® unit powered on first and placed in Survey mode becomes the ***roving-Primary*** and the second WorkForce® unit placed in Survey mode becomes the ***stationary-Secondary***.

d) The WorkForce® Survey test mode uses a method indicating a successful RF transmit and receive from both units. When in Survey mode, the WorkForce® does not Smart-signal® repeat other RF signals from other Grace devices nor will they transmit any polling signals. Typically, a WorkForce® model WF2 is used as the Primary and a WorkForce® model WF1 is used as a Secondary.

2. Placing the WorkForce® models WF1 and WF2 in to Survey mode is done using this sequence:

**IMPORTANT NOTE: WF1 can only enter the Survey mode within the first 15 seconds after powering on the WF1 unit. (Lone Worker models are automatically powered On by disconnecting the WorkForce® from the Charger Adapter.)**

a. With the unit turned off, power on the WorkForce® unit by pressing and releasing both side buttons simultaneously.

**b. The WorkForce® model WF2 will use a menu and display to enter Survey mode.** After powering on the WF2, use the MENU button to index the display showing message "Hold Select 3Sec for Setup Mode" and then press and hold the Select button for 3+ seconds to enter Setup mode. Once in Setup mode, press the MENU button to navigate to the "Radio Survey Mode" menu item and enable the Survey mode by pressing the SELECT button. To exit Survey mode, press and release both side buttons (MENU and SELECT) and then again press and hold the MENU and SELECT buttons simultaneously to power off the unit.

**c. The WorkForce® model WF1 is placed in Survey mode after powering on** by pressing and holding the unit's SELECT button (on the antenna side) and then the TOP button both for 3+ seconds until a double-chirp beep tone sounds, indicating Survey mode is entered. **<u>Note</u>:** Lone Worker models are automatically powered On by disconnecting the WF1 from the Charger Adapter.

d. Once the first WorkForce® unit is placed in Survey mode, THERE IS A REQUIRED 20+ SECOND WAITING PERIOD before placing the second WorkForce® unit in to Survey mode. After the 20+ second wait period, the first WorkForce® unit begins transmitting the Survey mode signals every 2 seconds indicated by the red LED transmit indicator and the audible two-tone (high to low) chirp sound.

3. The first WorkForce® unit placed in Survey mode will automatically become the ***roving-Primary*** after 20+ seconds, assuming there are no other WorkForce® units present that are already in roving-Primary Survey mode. After the 20+ second wait period, the second WorkForce® unit is to be powered on and placed in Survey mode and will automatically become the ***stationary-Secondary*** unit if it receives the Survey RF signal from another WorkForce® already in ***roving-Primary*** Survey mode.

Once the WorkForce® units are successfully placed in their respective Survey modes, the ***roving-Primary*** WorkForce® unit will emit two separate audible two-tone chirp sounds indicating successful signaling between the ***roving-Primary*** and ***stationary-Secondary*** WorkForce® units.

4. While the WorkForce® units are in Survey mode, the recommended method used to survey an environment is to place the ***stationary-Secondary*** WorkForce® unit at the physical location that is intended to be the monitoring place for worker alarms from all WorkForce® users, or the location that a Grace Repeater would be placed, for large areas. Then a user is to carry the ***roving-Primary*** WorkForce® unit to various locations in your facility or environment while listening to the audible chirp sounds, realizing that a change (not hearing the second two-tone audible sound) will be noticed if the signaling links between the WorkForce® units are not successful.

It is recommended that if available, a WorkForce® model WF2 is used as the ***roving-Primary*** unit as there are both audible and visual (via OLED display) indications of successful signaling performance including a resettable counter that shows the number of attempts and successes of each set of test signals sent and received every 2 seconds.

The Survey mode test signals are repeated by Grace telemetry system Repeaters and other Grace fixed monitoring equipment including MS2000 series units.

# HID WorkForce®Configuration Tool

## READ THIS FIRST

## THE WORKFORCE® DEVICE IS SHIPPED PRE-CONFIGURED TO OPERATE OUT OF THE BOX WITH YOUR SYSTEM

## USE THIS MANUAL ONLY TO MAKE CHANGES AFTER SYSTEM INSTALLATION

**WorkForce® Model WF2:** A wearable, no-motion man-down alarm designed for workers in hazardous environments. It uses independent, high-performance RF (radio-frequency) wireless signaling to provide reliable protection and rapid response in dangerous situations.

**HID WorkForce® Configuration Tool:** Allows users to customize the settings of their WorkForce® by connecting the device to a PC with a USB Micro 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.
   NOTE: WorkForce Configuration Tool User manual is included in the Configuration Tool software/program.
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 WorkForce® off and start over at step 3.

## Connection Troubleshooting Guide:

- **WorkForce® fails to show device settings after completing Step 4 (in the instructions above), or the device connects but only briefly displays the current device settings. This can occur when the USB connection is unstable.**
  1. If WorkForce® was in Low Battery when connected or the battery was exhausted - let the WorkForce® charge for 30 minutes before re-attempting to configure.
  2. It is recommended to have at least 50% (2 bars) of battery power before attempting configuration.
  3. Verify the USB connection at WorkForce® and at the computer is fully connected and not loose.
  4. Verify the 4 side status bars are blinking, indicating the WorkForce® is charging or is fully charged.
  5. Try connecting with a different USB Micro Cable. NOTE: Some USB Micro cables are for charging only and are not designed for data transfer.
  6. Try connecting with a different USB port on the computer. The best port is a directly connected port on the body of the PC. USB hubs are a common point of communications trouble.
  7. Turn computer completely off for 5 minutes and try again.

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

## 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.

## 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 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 Code or 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., Repair 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.

GRACE
INDUSTRIES, INC.

**Grace Industries, Inc.**
**724-962-9231**
**305 Bend Hill Rd**
**Fredonia, PA 16124**
sales@graceindustries.com