

WorkForce®2

Model WF2

User's Information



WorkForce® 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® 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.



Rear View with optional Grip Clip for attachment

Rear View with Swivel Clip for attachment

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 the 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) **DISTRESS 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 the Alarm: 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: Use the Device Settings option in WorkForce Configuration tool to enable/disable this feature.**

Operation of Special Features

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

ABANDON ACKNOWLEDGMENT: If an Abandon alarm message is received by 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® 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 while sounding a rapid ringing tone, 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. After the Alarm Monitoring notification has been cleared, the last alarm received can be recalled by scrolling through screens with the Select button.

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

MESSAGES RECEIVED: WorkForce® model WF2 is capable of receiving canned and freeform messages sent by other WF2 pendants, SC500, MS2000, Grace-Watch®, GMG, etc. When a message is received: the red side LEDs flash in an alternating pattern, while sounding a rapid ringing tone, and the message will be displayed on the screen.

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.

SIGNAL-LOST/OUT-of-RANGE OPERATION:

Signal-Lost/Out-of-Range 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. This feature operates using 2 way signaling between the WorkForce and the monitoring unit for the purpose of indicating to the user they may be out of the effective signaling range of the system.

When this feature is enabled and under normal operation, the user



will receive notification they are in the effective signaling range on the monitoring device within 30 seconds after powering on the WorkForce®.

This feature can be enabled through the PC software configuration tool. If this feature was not enabled, verify there is a Grace monitoring device that present that supports Signal-Lost/Out-of-Range notification and is configured to actively operate with the WorkForce® units.

LOCATION: When the WorkForce® enters a Locator Beacon Coverage Zone, the identity of the Locator Beacon will be shown on the WorkForce® display screen. If a Locator Beacon is in a low battery condition, the low battery indication will be displayed on the WorkForce® screen in reverse contrast. The WorkForce®'s last three locations can be seen by using the Left (Menu) button to scroll to the appropriate screen.

WorkForce® Mounting and Attachment

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

WorkForce® is equipped with a swivel-clip attachment designed to clip onto a horizontal belt or strap. The optional high-strength grip-clip is 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. **However, the ideal wearing position of WorkForce® is often best determined by the end user for ease of access and operation.**

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, WorkForce® is activated and put into **Sensing Mode** by disconnecting the unit from charger adapter plugged into appropriate power source.
NOTE: if power source is disconnected or lost (i.e. power outage), the WorkForce® will turn ON.

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 / Abandon 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 charger adapter plugged into an appropriate power source.

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.
- Loud, stepped de-escalating tone ending in the higher start tone.

ABANDON

- Running Man LED Flashes Red when receiving an ABANDON signal from other Grace devices or equipment.
- ABANDON message is displayed on screen.
- Loud, multi-chirp two-step pulsed tone.

ALARM MONITORING

- Red side LEDs flash in alternating pattern.
- Device info of unit in alarm is displayed on screen.
- Rapid ringing tone.

MESSAGE RECEIVED

- Red side LEDs flash in alternating pattern.
- Canned/Freeform message displayed on screen.
- Rapid ringing tone.

FALL PRE-ALERT

- **Fall Pre-Alert** message displayed on screen.
- Loud, sweeping audio tones followed by a double beep.

FALL ALARM

- **Fall Alarm** message displayed on screen.
- Loud audio alarm followed by a double beep.

LOCATION

- Location is displayed on screen when a Locator Beacon Coverage Zone is entered.
- Chirp tone will sound when a new Coverage Zone is entered.

Signal Lost / Out-of-Range Notification

- Display will show "Signal Lost".
- 3 audio down-sweeping tones.
- 3-second vibration.
- This notification repeats every minute until signal is regained

Signal Active / In Range Notification

- Display will show "Signal Active".
- 3 audio up-sweeping tones.
- 3 short vibration pulses.

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 indicates Signal Lost/Out-of-Range Notification.

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

EVACUATE/ABANDON Displays EVACUATION/ABANDON status of the WorkForce®. Flashes Red when receiving an EVACUATE or ABAANDON 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.

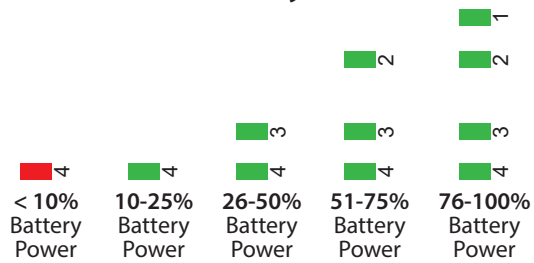
System Fault Detected: If a System Fault is detected, the LEDs will indicate the detected fault. (Please see Troubleshooting chart/diagram on Page 5 for detailed information).

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

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 hrs. for a dead battery.

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

An optional 12VDC charging adapter is available.

NOTE: Charging via computer USB port may take longer.

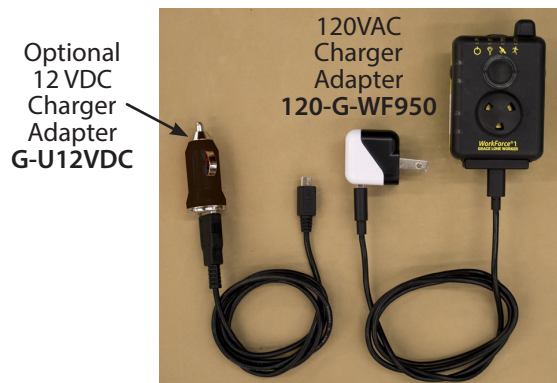
Plug the charger into an outlet. It takes approximately 10 seconds for the unit to detect a charger connection and begin to show charging status. Charging status is displayed on the side LED status bar 1-4. This battery charge status will be indicated by the number of blinking status bar LEDs.

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.

Battery Calibration: For optimum performance of the battery monitor it is recommended to run the battery through a calibration cycle every 6 months.

Calibration Procedure: Allow the Workforce to drain fully then perform a full charge before using. This step will recalibrate the battery power level gauge.

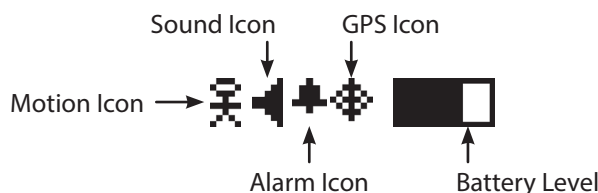


WorkForce®1 shown with Micro B USB Cord and 120VAC Charger Adapter (p/n: 120-G-WF950)
Optional 12VDC Charger Adapter shown at left

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

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

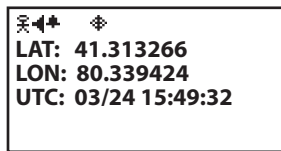


The Send Message function may be used to send one of 80 user-programmed, canned text messages. These messages are programmed into the WorkForce® through the HID WorkForce® Configuration Tool via the USB cable.

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

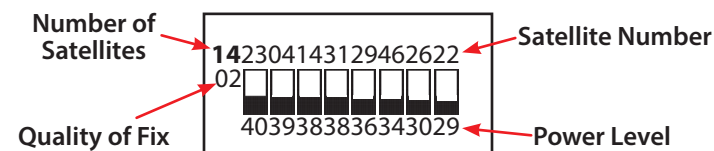
LON: 80 20.3736' W

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

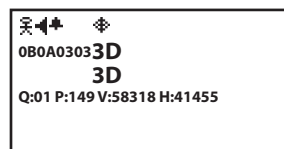
02: Excellent (01.51 -> 02.50); Icon is Solid

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



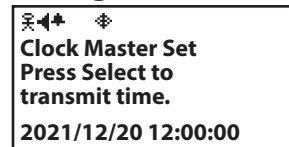
The Radio Range Test mode of the WorkForce® is used to test radio signal propagation during on-site testing and system installation.

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.

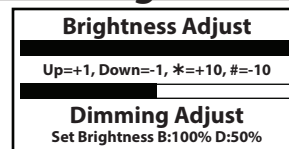
Setup Mode Page 4 - Clock Master Set



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

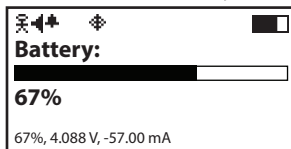
Page 2 - WorkForce® Clock

Page 3 - CPU firmware version

Page 4 - Radio firmware version

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

Page 1 - Battery Level



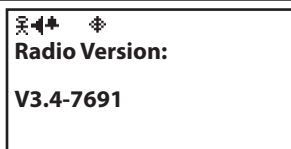
Page 2 - WorkForce® Clock



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.



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:** 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
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.



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: 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-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.**

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 are not operational 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. **Note:** 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

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.
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 unit 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 device USB connection is unstable.**
 1. If WorkForce® was in Low Battery when connected or the battery was dead - 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.**

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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.



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