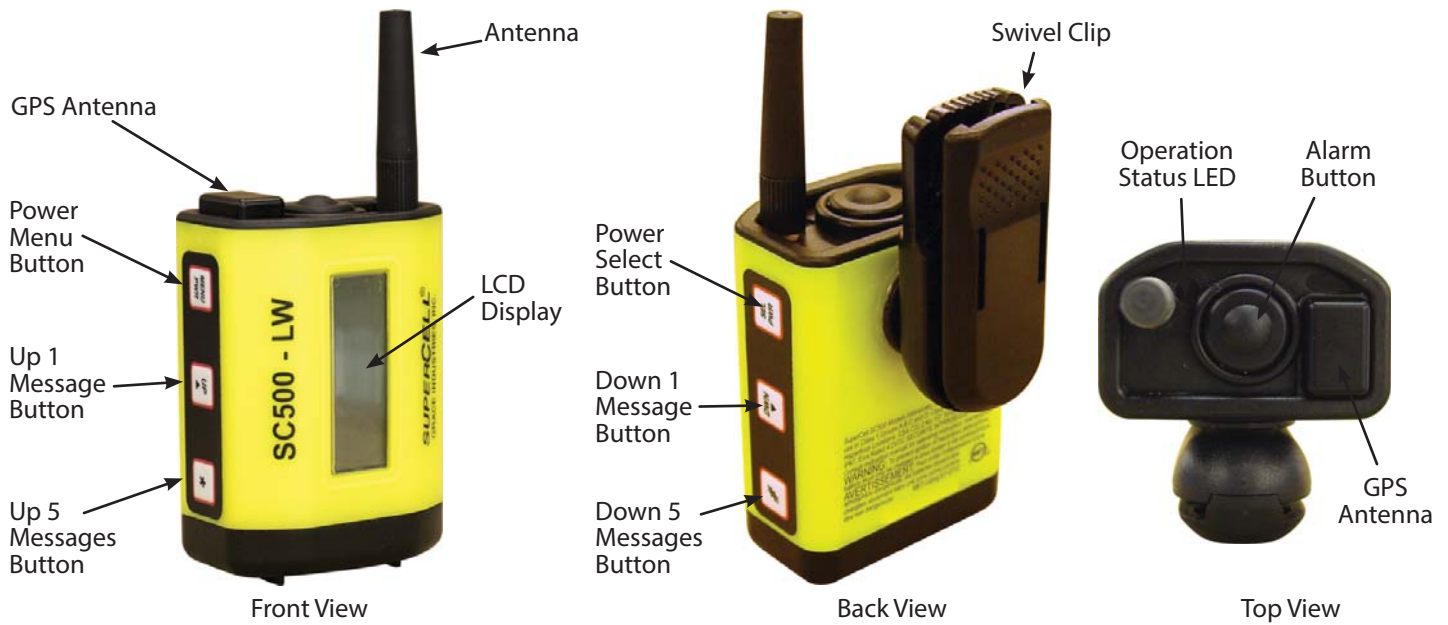


# SuperCELL® Model SC500-LW-GPS User Information



## Introduction


SuperCELL® Model SC500-LW-GPS is an intrinsically safe, high performance, RF-wireless, emergency signaling and monitoring device which provides Man-Down monitoring and notification for personnel working alone in hazardous environments.

A self-contained GPS continuously tracks location and transmits this location along with the user's status to other Grace Telemetry products, including the MX900H.

## Features

- **Location:** Tracking the location of the SuperCELL® is possible outdoors with built-in GPS, or indoors when used in conjunction with the Grace Locator Beacon and Grace-Watch® safety monitoring system.
- **Alarm Monitoring:** Alerts the Lone Worker that a GRACE Man-Down telemetry device, within signaling range, is transmitting an alarm message.
- **Auto ON/OFF:** SuperCELL® is turned On and Off by removing or inserting the device into the Charging Base.
- **Panic ALARM:** Manually activated Emergency Alarm.
- **Man Down Alarm:** A safety monitoring feature which provides the Lone Worker with motion sensing protection.
- **Alarm Acknowledgment:** When a SuperCELL® is in an alarm condition, an Alarm Acknowledgment message can be sent from an MX900 transceiver. This will clear the alarm condition and display the Alarm Ack message.
- **Canned Text Messaging:** Allows the Lone Worker to send and receive pre-set Canned Text Messages to other SuperCELL® devices and In-Command® monitoring systems.

## Specifications

- **Model:** SC500-LW-GPS, Lone Worker.
- **Dimensions:** 2-3/16" wide, 1-3/8" deep (without clip), 5" high (with antenna).
- **Weight:** 5.6 oz.
- **Internal Battery:** 3.7 V nominal, 1960 mAh, intrinsically safe, lithium-ion rechargeable.
- **Device Run Time:** Approximately 24 hrs. in Sensing Mode, and 8 hrs. in Alarm Mode.
- **Radio Frequency:** ISM license free, spread spectrum.
- **Battery Charger Operational Voltage:** 120VAC or 12VDC. Available international power adapters rated for 100-240VAC input, with UL, FCC, CE,  safety ratings.
- **Battery Charge Time:** 6 - 8 hrs.
- **Certifications:**
  - Intrinsically Safe UL913, CSA C22.2 No. 157
  - IP67
- **Radio Certifications:**
  - FCC ID: J5XT3HEP
  - IC: 5916A-T3HEP
  - Australia / New Zealand: Compliant to ACMA AS/NZS CISPR22:2006, Class A Digital Apparatus | AS/NZS 4268:2012 for Intentional Radiators
  - EMC93142C-ACMA
  - EMC93142C-AS/NZS 4268



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## Quick-Start Guide

### Always test SuperCELL® prior to use

**TURN ON:** Remove SuperCELL® from the Charging Base.

**TURN OFF:** Insert SuperCELL® into the Charging Base.

**PAGE NAVIGATION:** Pressing the MENU/PWR button cycles through the pages on the SuperCELL®.

**MOTION ALARM:** If SuperCELL® remains motionless for the preset length of time, the SuperCELL® will sound a repeating alarm tone and transmit man-down alarm messages. To clear Alarm and reset the SuperCELL®, simultaneously press the MENU/PWR and SEL/PWR buttons. **Motion Alarm cannot be disabled or adjusted by the user. Time to Alarm for SC500-LW is set to 120 seconds unless other timing is specified. Pre-Alert occurs after approximately 108 seconds of no motion detected.**

**PANIC ALARM:** Activate the Emergency Alarm by pressing the top button. A Panic Alarm signal will be sent and ALARM will be displayed. To clear Alarm and reset the SuperCELL®, simultaneously press the MENU/PWR and SEL/PWR buttons.

**EVACUATION ACKNOWLEDGMENT:** If an Evacuate message is received by the SuperCELL®, it can be manually acknowledged by simultaneously pressing the MENU/PWR and SEL/PWR buttons.

**ALARM MONITORING:** Alerts the Lone Worker that a GRACE Man-Down telemetry device, within signaling range, is transmitting an alarm message. This alert can be cleared from SuperCELL® by simultaneously press the MENU/PWR and SEL/PWR buttons.

**NOTE:** If an alarm has been received, SuperCELL® will not turn off until the alarm has been cleared or reset. To force SuperCELL® to turn off (even with an active alarm) hold down the **Up** button along with both side **PWR** buttons.

### Low Battery Indication / Battery Charging

When approximately 3 hours of operating time remain in standby mode, the SuperCELL® will display a plug icon on the display status screen. The power-on tones are not emitted when SuperCELL® has a low battery. Low battery is also indicated by the Operational Status LED changing to a periodic Red strobe. A double chirp sounds once every five minutes with audio enabled. **Warning: There are no audible low battery sounds with audio tones disabled.**

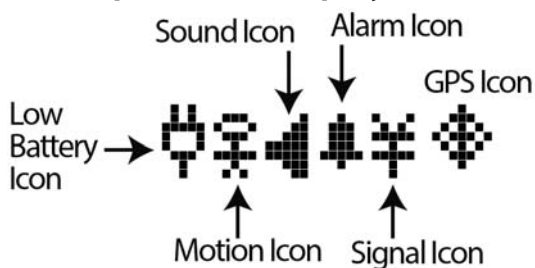
When low battery is indicated, less than 3 hours of operating time remain and the battery should be charged immediately.

With the charger provided, recharge time is approximately 6 hours from a low battery warning and 9 hours for a dead battery. Due to current limits imposed by Intrinsic Safety requirements, a unit that has gone completely dead will have to be removed from the charging base and reinserted when the charging light turns Red. Typical operation time between recharging is approximately 24 hours in standby/ready mode.

Plug the charger into an outlet. It takes approximately 20 seconds for the Green charger LED to light up. If it does not turn on or a Red LED turns on, then the battery is either too hot or cold, or has a fault.

Charging is complete when the Green charge LED starts to slowly flash.

### SuperCELL® Display Icons



## Menu Pages

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

- Page 1 - Send Message
- Page 2 - Latitude / Longitude Display
- Page 3 - Alarm History Display
- Page 4 - Event Counters Display
- Page 5 - Device Name and Run Time Display
- Page 6 - Setup Mode

### Page 1 - Send Message

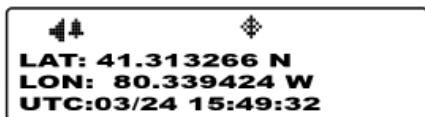


The Send Message function may be used to send one of 80 user-programmed, canned text messages. These messages are programmed into the SuperCELL® device through the SuperCELL® Database Manager Utility Program via the ACTiSYS IrDA USB Adapter, available for the SuperCELL® device. This process is explained in the IrDA Transfer section, on page 4.

To send a message, proceed to the Send Message page by pressing the MENU/PWR button. Next, cycle through the messages stored on the SuperCELL® by pressing the UP, DWN, \*, or # buttons until you find the desired message you wish to send. UP and DWN cycle the message count by one, \* and # cycle the count by five. Once you have the desired message displayed, pressing the SEL button transmits the message, and a Message Sent acknowledgment is displayed on the screen. Other messages can be selected and sent by pressing the UP, DWN, \*, or #, and then pressing SEL to send.

Pressing MENU/PWR will navigate away from the Send Message page. Resetting the device will return the SuperCELL® to the home page.

### Page 2 - Latitude / Longitude Display



Press the Up/Dwn buttons to cycle through four Latitude / Longitude display formats:

#### Degrees

LAT: 41.313266 N  
LON: 80.339424 W

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

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

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

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

## Raw Data

LAT: 00E2F0E6  
LON: FE46AE73

Press the \*/# buttons to view Quality of Fix Screen and the Time to First Fix



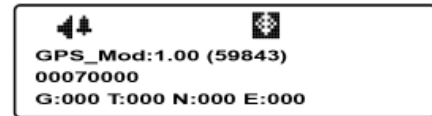
Quality of Fix / Satellites in View

### 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 ( $\geq 20.00$ ); Icon is Inverted and Solid



Time to First Fix (in Seconds)



GPS Hardware Version

Pressing MENU/PWR will navigate away from the Alarm History Display page. Resetting the device will return the SuperCELL® to the home page.

### Page 3 - Alarm History Display



The Alarm History Display page displays the name and unit ID of any Grace Industries telemetry product that has transmitted an alarm message received by the SuperCELL®.

Proceed to the Alarm History Display page by pressing the MENU/PWR button. On the Alarm History Display page, the UP and DWN buttons cycle through the stored alarm messages that were received by the SuperCELL®. The 32 most recent, unique, alarms are stored on the SuperCELL® in the order they were received. Turning the SuperCELL® off clears the Alarm History.

Pressing MENU/PWR will navigate away from the Alarm History Display page. Resetting the device will return the SuperCELL® to the home page.


## Page 4 - Event Counters Display

The Event Counters Display page shows the number of Page (Evacuate), Par, and Roll Call events received by the SuperCELL® device since it was last turned on.

Navigate to the Event Counters Display page by pressing the MENU/PWR button.

Pressing MENU/PWR will navigate away from the Event Counters Display page. Resetting the device will return the SuperCELL® to the home page. Turning the SuperCELL® device off resets each counter to zero.

## Page 5 - Device Name and Run Time Display



Cpt. J. Doe  
Run Time: 01:12:59

The Device Name and Run Time Display page displays the SuperCELL® device name which has been programmed onto the device through the SuperCELL® Database Manager Utility Program via the ACTiSYS IrDA USB Adapter, available for the SuperCELL®. This page also displays the length of time the SuperCELL® has been running (turned on), in days/hours/minutes.

Navigate to the Device Name and Run Time Display page by pressing the MENU/PWR button.

Pressing MENU/PWR will navigate away from the Device Name and Run Time Display page. Resetting the device will return SuperCELL® to the home page.

## Page 6 - Setup Mode



Hold SElect 3 sec  
for Setup Mode

The Setup Mode page allows the user to put the SuperCELL® 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/PWR button. Next, press and hold the SEL/PWR button for three seconds. The SuperCELL® device is now in Setup Mode. Press the MENU/PWR button while in Setup Mode to cycle through the Setup Mode pages.

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

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

Setup Mode Page 1 - Alarm Disabled Notification  
Setup Mode Page 2 - Firmware Versions  
Setup Mode Page 3 - IrDA Transfer Mode

Setup Mode Page 4 - View Adjust

Setup Mode Page 5 - Enable GPS

## Setup Mode Page 1 - Alarm Disabled Notification



Setup Mode  
Alarms Disabled

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

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

## Setup Mode Page 2 - Firmware Versions

The Firmware Versions page displays the model number, CPU firmware version, and radio firmware version found on the SuperCELL® device.

Navigate to the Firmware Versions page by pressing the MENU/PWR button.

The top text line displays the model number of the device.

The middle text line displays the CPU firmware version found on the device.

The Bottom text line displays the creation date of this firmware version.

Press the SEL/PWR button to display the radio firmware version.

Pressing MENU/PWR will navigate away from the Firmware Versions page; resetting the device will exit out of Setup Mode and return SuperCELL® to the home page.

## Setup Mode Page 3 - IrDA Transfer Mode



IRDA Transfer  
Hold SElect 3Sec

The IrDA Transfer Mode allows the SuperCELL® device to be loaded with over 60,000 names (254 groups of 255 names) of 16 characters each. The SuperCELL® can also be loaded with 80 user-programmed canned text messages, plus the unit ID. This information is programmed into the SuperCELL® through the SuperCELL® Database Manager Utility Program via the ACTiSYS IrDA USB Adapter, available for the SuperCELL®.

To enter the IrDa Transfer Mode, navigate to the IrDA Transfer page by pressing the MENU/PWR button. Once arriving on the IrDA Transfer page, press and hold the SEL/PWR button for three seconds to enter the IrDA Transfer Mode. In the IrDA Transfer Mode, the SuperCELL® will only respond to commands from the host computer running the SuperCELL® Database Manager Utility Program.

**WARNING:** While in IrDA Transfer Mode, the device

CANNOT monitor or send Alarm, Page, Par, or Roll Call messages, nor will these messages be logged in the SuperCELL® device's Event Counter. Any Alarm, Page, Par, or Roll Call messages received, while in IrDA Transfer Mode, will be subject to the SuperCELL® device's inhibit timer.

Interrupting an IrDA transfer while in progress may corrupt the SuperCELL® device's name database. If this should occur, the SuperCELL® name database will need to be reloaded.

Pressing the MENU/PWR button navigates away from the IrDA Transfer page. Resetting the device exits out of IrDA Transfer Mode and returns the SuperCELL® to the home page.

### Setup Mode Page 4 - View Adjust



The View Adjust page allows the display contrast to be adjusted for easier viewing of the SuperCELL® device's display. Adjusting the display contrast may be necessary if the SuperCELL® is used in extreme temperatures.

To adjust the display contrast, navigate to the View Adjust page by pressing the MENU/PWR button. At the View Adjust page, press the UP and DWN buttons to increase (or decrease) the display contrast by 1, and the \* and # to increase (or decrease) the display contrast by 10.

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

### Setup Mode Page 5 - Enable GPS



Use the SEL/PWR button to enable or disable the GPS.

### End of Setup Mode Screens

## Safety Certifications

### Intrinsically Safe, Sécurité Intrinsèque

SuperCell® SC500 Models Intrinsically Safe per ANSI/UL913 For use in Class 1, Groups A, B, C and D; Class II, Groups E, F, G; Div. 1 Hazardous Locations. CSA C22.2 No.157.

Temperature Code T6. IP67. Exia Rated 4.2VDC.

### Radio Certifications

- FCC ID: J5XT3HEP
- IC: 5916A-T3HEP
- Australia / New Zealand: Compliant to ACMA AS/NZS CISPR22:2006, Class A Digital Apparatus | AS/NZS 4268:2012 for Intentional Radiators
- EMC93142C-ACMA
- EMC93142C-AS/NZS 4268



## WARNINGS, AVERTISSEMENTS

**WARNING!** To prevent ignition of hazardous atmosphere, battery must only be charged in area known to be nonhazardous.

**AVERTISSEMENT!** Pour éviter l'inflammation d'une atmosphère dangereuse, les batterie doivent être chargées seulement dans une zone connu comme être non dangereuse.

### 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.

## Definition of Terms

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

**Alarm Message:** A radio transmitted signal sent from a SuperCELL®, or other GRACE Industries telemetry device, when the panic button is pressed for the purpose of notifying monitoring personnel that an emergency situation is present and rescue action is requested.

**Alarm Mode:** A SuperCELL®, or other GRACE Industries telemetry device, is placed in alarm mode by pressing the device's panic button. When this occurs, the device transmits an alarm signal and emits a loud alarm audio tone.

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

**Device Name:** The Device Name is a pre-programmed name assigned to the SuperCELL® device that can be viewed on the Device Name and Run Time Display page.

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

**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 SuperCELL® that is displayed on startup and any time the device is reset. Displayed on this page is the status icons, motion sensing timer, device OEM and ID numbers, and the firmware versions loaded on the device.

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

**Man-Down Alarm Mode:** A SuperCELL, or other GRACE Industries telemetry device, enters Man-Down Alarm Mode when the Motion Sensing Timer counts down to zero.

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

**Motion Sensing Activation Icon:** The Motion Sensing Activation Icon appears on the Icon Line of the Home Page when the Motion Sensing feature is active. The icon changes as the devices senses motion.

**Motion Sensing Timer:** The Motion Sensing Timer indicates the seconds of lack-of-motion required before the SuperCELL® enters the Man-Down 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 MENU/PWR and SEL/PWR resets the SuperCELL® and returns the display to the Home Page.

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

**Setup Mode:** Setup Mode allows certain characters and functions on the SuperCELL® to be activated, deactivated, or modified.

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

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

**Unit ID:** The Unit ID is the unique ID number assigned to the SuperCELL® device for purposes of radio communication. It can be viewed on the device's home page.

**Unit OEM:** The Unit OEM is a number assigned to the SuperCELL® device, 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 SuperCELL® devices will have the same OEM number; from the factory this number will usually be 9090.

## Warranty Information

Grace industries, Inc. warrants SuperCELL® & related Grace telemetry products to be free from defects in workmanship and materials for a period of one year from the date of purchase. This warranty is valid only when the returned product is accompanied by a sales slip or other proof of purchase that states the date and location of purchase. Grace Industries, Inc. will not repair or replace any merchandise under warranty which has been damaged because of accident, misuse or abuse while in possession or control of the consumer. This warranty is void if any attempt to repair or replace parts was made or attempted by other than qualified Grace Industries, Inc. personnel. This warranty is void if any of the sealed compartments are opened or tampered with. Send all returned merchandise, prepaid and accompanied by proof of purchase to: Grace Industries, Inc., Repair Division, 305 Bend Hill Road, Fredonia, PA 16124 USA. Grace Industries, Inc. shall not be liable for any direct, incidental or other consequential loss or damage arising out of the failure of the product to operate. End-user or customer is responsible for return shipping/freight charges.

The sole and exclusive remedy under all guarantees or warranties, express or implied, is strictly limited to repair or replacement as herein provided. ALL IMPLIED WARRANTIES, INCLUDING BUT NOT LIMITED TO, WARRANTIES OF FITNESS AND MERCHANTABILITY, ARE HEREBY LIMITED IN DURATION TO A PERIOD ENDING ONE (1) YEAR FROM THE DATE OF PURCHASE. The warranty and liability set forth in the prior paragraphs are in lieu of all other warranties, expressed or implied, in law or in fact, including implied warranties of merchantability and fitness for a particular purpose. Some states do not allow limitations on how long an implied warranty lasts, so the above limitations may not apply to you.

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

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

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

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



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