CORI-GPS
GPS CURRENT INTERRUPTER
USER'S MANUAL
RCS PN 720600-MANUAL REV B

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INTRODUCTION

The CORI-GPS allows you to program synchronized interruption cycles. With the CORI-GPS you can, for example, program the simultaneous interruption along a pipeline of several rectifiers connected to CORI-GPS units. Since each CORI-GPS obtains its synchronization signal via satellite, interruption can be performed with an accuracy of ±5 milliseconds. This means that you can perform close-interval surveys along a pipeline without the risk of obtaining "Instant OFF" readings which would be skewed by badly synchronized interruption.

The CORI-GPS obtains its timing information via satellite signals available free of charge world-wide. Since the satellite information received is based on *Universal Coordinated Time* it must be converted into a 'Pipeline Time' common to all current interruption units used in a particular survey.

WARNING It is very important to shut off and unplug the CORI-GPS before connecting or disconnecting the GPS antenna.

CORI-GPS Features

GPS Synchronization

The CORI-GPS can synchronize rectifier interruption with an accuracy of ±5 milliseconds.

Programmable Interruption Scheduling

The CORI-GPS can be programmed to perform interruption according to a schedule defined by the user. This allows the rectifier to be in normal operation when the unit is not performing interruption. The unit relay is closed until the start time commences; then the relay opens on the :00 seconds of that time (On/Off L.E.D. turns off).

Wide Rectifier Compatibility

CORI-GPS synchronization output is compatible with most currently available rectifiers.

Multiple Interruption Capacities

The CORI-GPS is available in interruption capacities of 60 and 100 amps.

Dual Power Source

The CORI-GPS can operate on AC line or for up to 4 days on a full charge of the battery included with every unit.

`Heavy Duty Construction`
The unit is enclosed in a rugged and water-resistant NEMA-4 case.

`User-Definable ON/OFF Compensation`
ON to OFF and OFF to ON compensation settings are independently definable by the user.

`Drift Verification and Synchronization of Non-GPS Interrupter`
The `CORI-GPS` can be used to check the synchronization drift of a non-GPS interrupter and (re)synchronize it.

Rohrback Cosasco Technical Support

This manual has been designed to provide you with all of the information needed to correctly install, configure and operate your `CORI-GPS` system. Should you still require assistance after having consulted the appropriate sections of the manual, contact Rohrback Cosasco Systems Inc. Technical Support:

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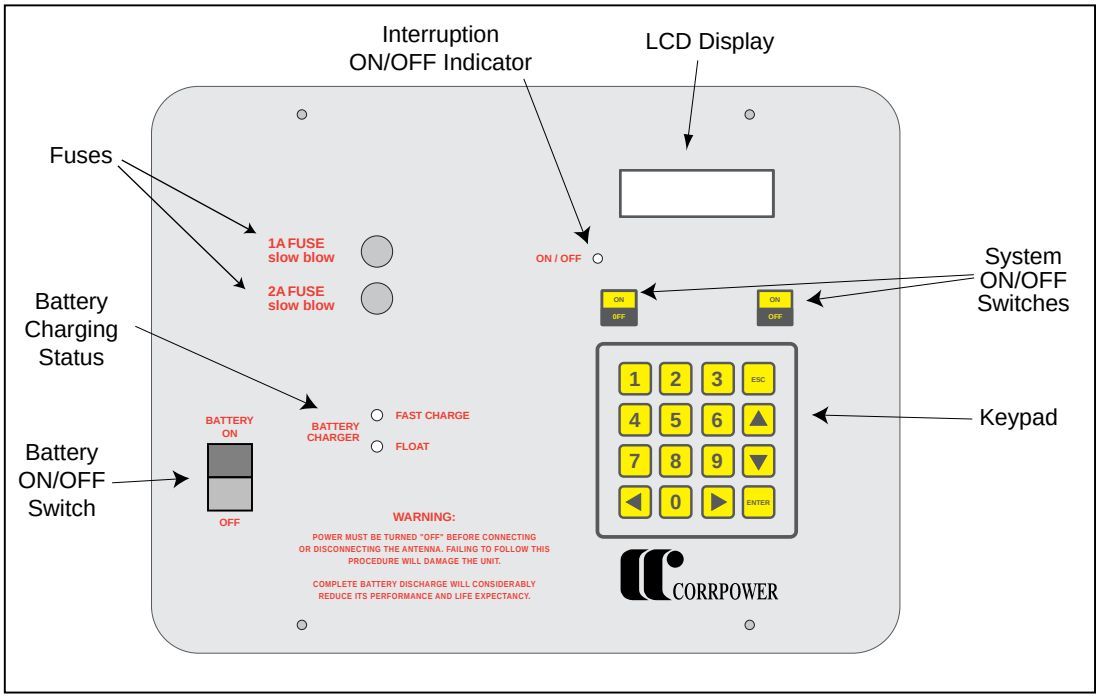
USING THE CORI-GPS

The CORI-GPS Unit

The CORI-GPS is enclosed in a rugged and water-resistant NEMA-4 case. The case may be opened by flipping the two large plastic clasps located near the carrying handle.

Once the case is open, you can access the CORI-GPS control panel. The layout of the control panel appears in Figure 1, ***The CORI-GPS Control Panel*** below.



(REM CORRPOWER)Figure 1 The CORI-GPS Control Panel

Installing the GPS Antenna

For proper operation, the GPS antenna that comes with the unit must be installed so that it can receive GPS timing signals originating from satellites. The antenna must therefore be installed outdoors at a height of at least 2 meters (6 feet) and must have direct and unobstructed access to the sky, i.e. with no interference from man-made structures, trees, rocks, etc.

Long-term Storage

Before storing the CORI-GPS for an extended period of time, it is important to turn the unit OFF using the **Battery ON/OFF** switch. Please note, however, that it may take up to one hour for the CORI-GPS to log back on to a satellite when you turn the unit back on.

Battery Care

Your CORI-GPS is equipped with a rechargeable battery that requires periodic recharging in order to keep it in proper working condition. If you intend to store your unit for an extended period of time (several months), it is important that your fully recharge the battery at least once every three months. Failure to do so will result in decreased battery life.

Turning ON and Shutting OFF the CORI-GPS

The CORI-GPS must always remain ON in order to perform the interruption cycles for which it has been programmed. The unit will *not* automatically turn itself ON to begin cycling.

WARNING The mercury relay coil used by the CORI-GPS to interrupt current requires that the unit be placed in a vertical position (with the handle at the top) for proper operation. Operating the unit in any other position may cause interruption irregularities.

❖ **To turn ON the CORI-GPS**

➢ Simultaneously press on the two ON/OFF keys located above the numeric keypad. The ON/OFF LED, located to the left between the numeric keypad and the screen should light up and the following message should appear briefly on the screen:

```
CORI-GPS V:03.12
   CORRPOWER
```

(CHANGE TO CORI-GPS V4.30, RCS, Inc.)

The unit is now ON and you can now proceed with the configuration of interruption parameters.

❖ **To shut OFF the CORI-GPS**

➢ Simultaneously press the two ON/OFF keys located above the numeric keypad. The ON/OFF LED, located to the left between the numeric keypad and the screen should go out and the screen should now be clear.

The CORI-GPS Menu Structure

Interaction with the CORI-GPS takes place via a series of display and input screens that have been structured into different groupings called **Menus**. The **General Status Menu**, for instance, provides the user with information on the actual status of the unit. By pressing on the *Enter* anywhere in the **General Status Menu**, you can go to the **Main Menu**, where you have access to all of the CORI-GPS configuration menus.

General Status Menu

The **General Status Menu** level, indicated by the ***GENERAL STATUS*** heading on the first line of the screen, provides you with information on the actual status of your CORI-GPS. At this menu level you can find information on the state of the battery, GPS status, satellite communications status, interruption cycle status and rectifier status.

When you turn on the CORI-GPS, the unit will automatically display a series of messages until it reaches the **General Status Menu**. It will then advance through a series of displays indicating the current status of the battery, GPS communications, interruption cycling, etc (see ***Figure 2*** below). If you turn the unit ON during a period when no interruption cycling is scheduled, the unit will continue to scroll through these displays as well as the following display:

```
*GENERAL STATUS*
WAITING START T
```

This display indicates that the CORI-GPS unit is waiting for the designated **Start Time** before beginning interruption cycling. During a period of interruption cycling, the unit will stop scrolling through the **General Status Menu** screens and will display the following screen:

```
*GENERAL STATUS*
RECT OUTPUT: ON
```

The display will then toggle between **ON** and **OFF** to indicate the ON and OFF state of the rectifier.

Figure 2 shows the different displays which appear in the **General Status** menu in the order in which they scroll by on the screen.

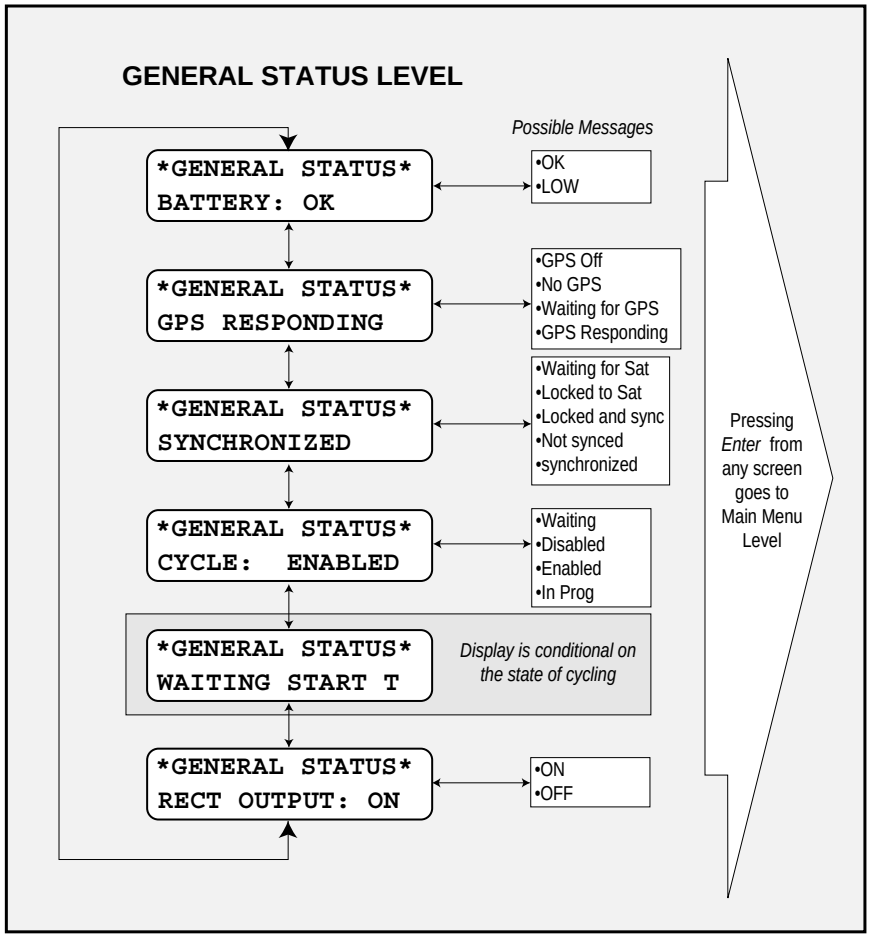


Figure 2 The General Status Menu

To go to the **Main Menu Level** simply press on the *Enter* key.

NOTE It is also possible to manually scroll through the **General Status Menu** by using the *Down-Arrow* and *Up-Arrow* keys.

The Main Menu Level

The **Main Menu Level** consists of a series of displays which give you access to the configuration and status menus for all CORI-GPS features and functions such as interruption cycle programming, compensation, time, system parameters, and the GPS.

You can access the **Main Menu Level** by pressing on the *Enter* key from anywhere in the **General Status Menu**. Once you are at the **Main Menu Level** (as indicated by the ***MAIN MENU*** heading on the first line of the display) you can scroll through the various displays by pressing on the *Up-Arrow* and *Down-Arrow* keys. To enter one of the configuration menus scroll through the displays until the one you would like to access is displayed and press *Enter*. ***Figure 3*** shows the different displays which appear at the **Main Menu Level** in the order in which they scroll by on the screen.

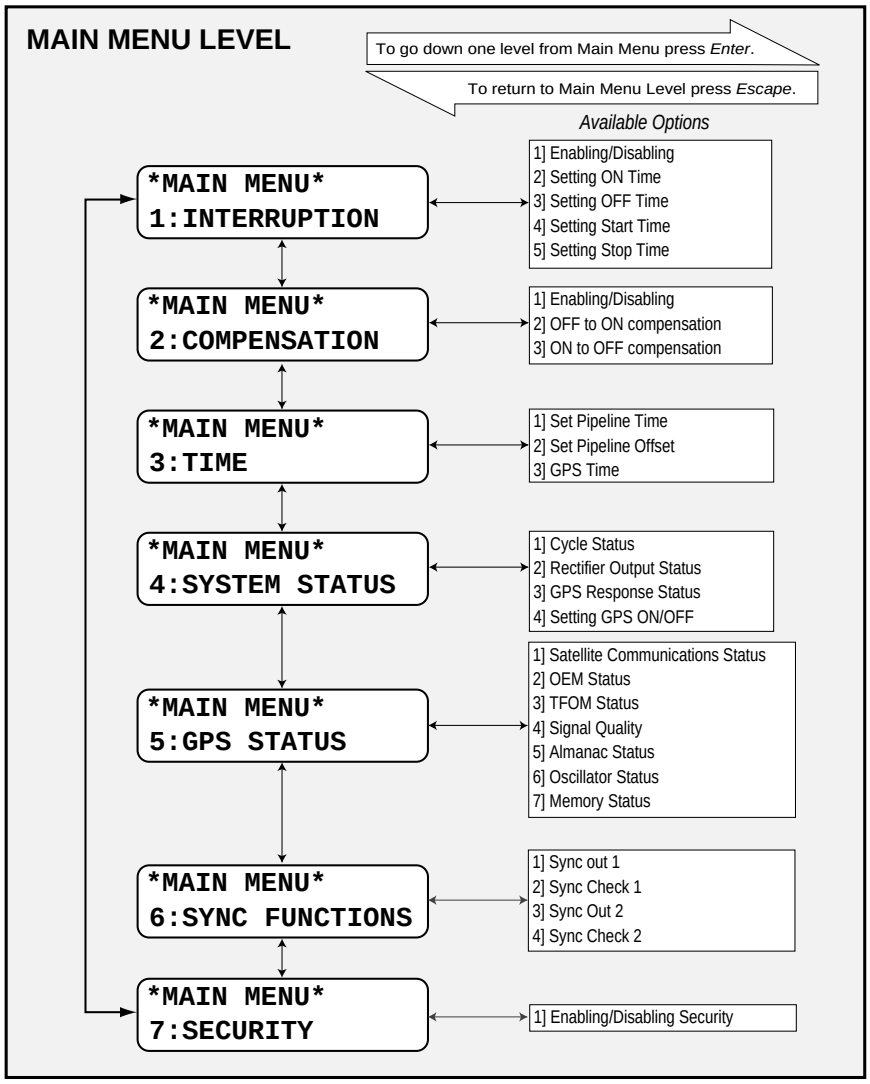


Figure 3 The Main Menu Level

CONFIGURING THE CORI-GPS

General Concepts

The CORI-GPS's alphanumeric keypad allows you to easily select and configure all GPS interruption parameters. To move from one **Main Menu Level** display to another just press on the *Up-Arrow* and *Down-Arrow* keys. To enter a configuration menu press *Enter* while the desired configuration screen is displayed. Once you are in one of the configuration menus (as indicated by a blinking cursor), it is possible enter/modify the current value by using either the number keys 1 to 9, in the case of a numeric entry, or the *Left-Arrow* and *Right-Arrow* keys, in the case of a selection from a list of options. In the case of a numeric value you can also use the *Left-Arrow* and *Right-Arrow* keys to move the cursor from digit to digit and use the numeric keypad to enter the value for that digit.

NOTE You must press *Enter* to save any changes you have made. If you omit to do so the CORI-GPS will revert to previously saved values.

Enabling or Disabling CORI-GPS Configuration Security

In order to prevent unauthorized modifications to your interruption cycle programming, the CORI-GPS has provisions for configuration security. Configuration security can be set by default to be enabled or disabled (see ***Changing Configuration Security Default*** on page 10) or it can be temporarily disabled by entering the security code according to the procedure in the section ***Temporarily Disabling Configuration Security*** on page 9.

NOTE The CORI-GPS has been shipped with configuration security *disabled*. Should you wish to enable it refer to the section below entitled ***Changing Configuration Security Default***.

Temporarily Disabling Configuration Security

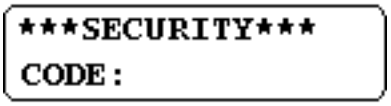
When configuration security has been enabled no changes to CORI-GPS configuration can be made. By entering the correct security code, CORI-GPS security is temporarily disabled to allow you to make changes. Once the unit is turned off, however, it will

revert to the default state of security, either enabled or disabled, as set in ***To set default for CORI-GPS security*** below.

❖ **To temporarily disable CORI-GPS security**

1. From the **Main Menu Level** scroll through the displays until the following is displayed:

2. Press *Enter* to go to the **Security Menu**. The following display will appear:



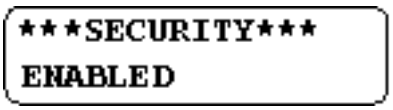
3. Enter the following security code: **152**. Press *Enter* to confirm your entry.
4. To return to the **Main Menu Level** press *Escape* You will now be able to configure all CORI-GPS parameters.

Changing Configuration Security Default

If configuration security has been enabled it can be temporarily disabled by entering the security code. It is possible, however, to change the configuration security's default by following the instructions below.

❖ **To set default for CORI-GPS security**

1. Perform steps 1 to 3 in the instructions ***To temporarily disable CORI-GPS security***.
2. Press the Down-Arrow key to go to the following screen:



3. Use the *Left-Arrow* key to toggle between ENABLED and DISABLED and press *Enter* to confirm your selection.

Setting CORI-GPS Time

As has already been mentioned, the timing signal the CORI-GPS obtains from satellites is based on Universal Coordinated Time (UTC). In order to generate a "Pipeline Time" adjusted to local time and common to all units to be used in a particular survey, a value corresponding to the number of times zones west of UTC.

In the **Time Menu** (as shown in ***Figure 4*** below) "PIPE" refers to local "pipeline" time and "GPS" refers to Universal Coordinated Time, as received from the satellite signal.

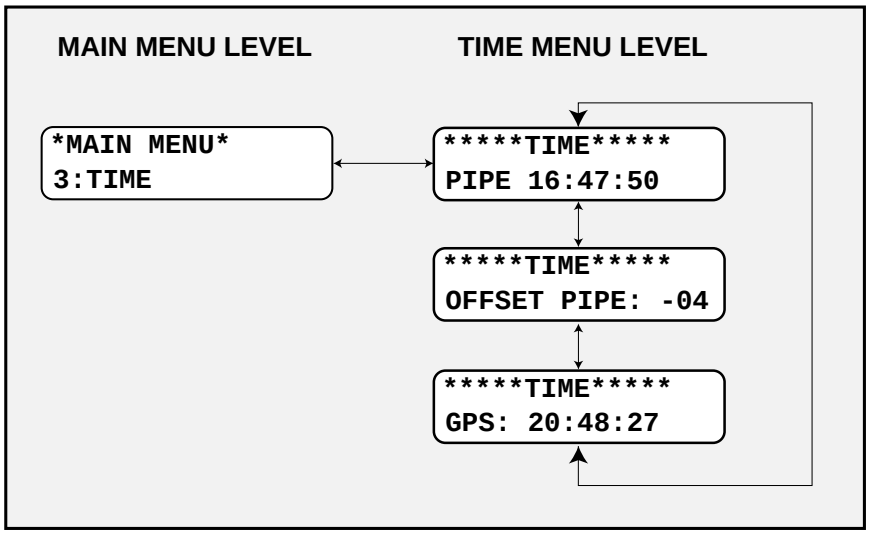
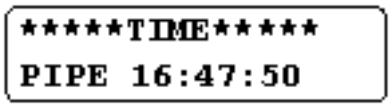


Figure 4 Time Menu

❖ **To set CORI-GPS time**

1. From the **Main Menu Level** scroll through the displays until the following is displayed:

2. Press *Enter* to go to the **Time Menu**. The following will be displayed on the screen (second line may differ):



3. The time indicated in the "PIPE" display should correspond to local time already adjusted for the difference in time zones from UTC. If such is not the case you will need to modify the offset value. To do so proceed to step 4.

4 Scroll through the **Time Menu** displays until the following is displayed (second line may differ):

```
*****TIME*****
OFFSET PIPE: -04
```

5 Using the numeric keypad enter the appropriate value for your time zone. The value to be entered corresponds to the number of time zones *West* of UTC and can range from 0 to 23. For example, if your pipeline is located in the Eastern Standard Time zone, you should enter the number five since it is five time zones to the West of UTC. If your pipeline is located in the Central European Time zone, you should enter 23, since it is located 23 time zones to the West of UTC. Once you have entered the desired value press *Enter* to save it and compare the time displayed with local time to make sure you have entered the proper offset value. If the correct value is displayed press on *Escape* to return to the **Main Menu Level**.

NOTE Multiple CORI-GPS interruption units used simultaneously should all be set to the same **Pipe Offset** value.

Programming Synchronized Interruption Cycles

To program interruption cycles, the following parameters must be set:

- "ON" time of each interruption cycle
- "OFF" time of each interruption cycle
- Start time of interruption cycling
- Stop time of interruption cycling
- Enabling/disabling of interruption cycling

The configuration of all available GPS parameters can be carried out via the menu interface and the keypad on the CORI-GPS.

The configuration of interruption cycle parameters takes place via the **Interruption Menu**. A diagram of the structure of this menu can be found in ***Figure 5*** below.

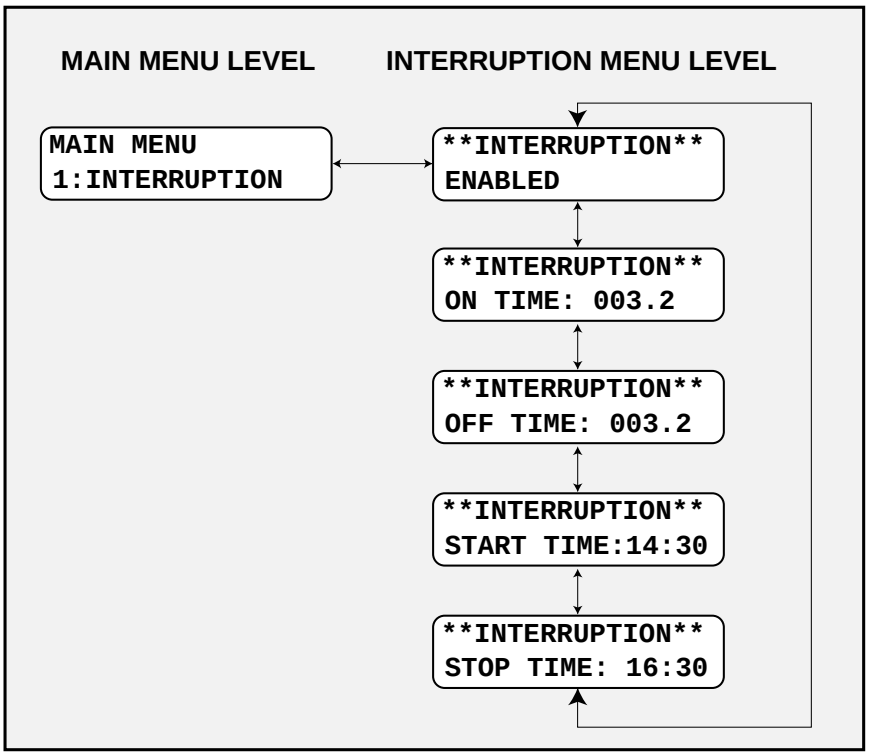


Figure 5 Interruption Menu

NOTE It is not possible to modify interruption cycle parameters while the unit is performing interruption cycles. In order to make changes you must first turn off interruption cycling according to the procedure described below.

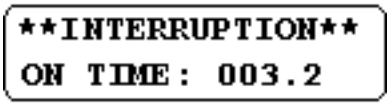
❖ **To program interruption cycles**

1. From the **Main Menu Level** scroll through the displays until the following is displayed:

2. Press *Enter* to go to the **Interruption Menu**. The following display will appear (the second line may differ):

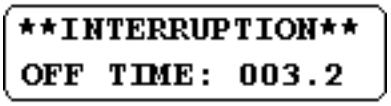
3. If interruption is *Disabled*, proceed to step 4. If interruption is *Enabled*, it must first be disabled. To disable interruption, press on the *Left-Arrow* key. The message on line 2 should switch from **ENABLED** to **DISABLED**. Press *Enter* to accept this selection and proceed with configuration.

4a To modify ON Time:
Scroll through the **Interruption Menu** displays until the following is displayed:



A cursor will appear on the first digit of the current **ON Time** to indicate that it is possible to make changes. Enter the desired value (between 0.1 and 999.9 seconds). Press *Enter* to save your entry.

4b To modify OFF Time:
Scroll through the **Interruption Menu** displays until the following is displayed:

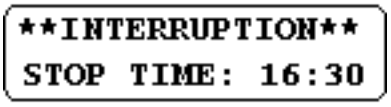


A cursor will appear on the first digit of the current **OFF Time** to indicate that it is possible to make changes. Enter the desired value (between 0.1 and 999.9 seconds). Press *Enter* to save your entry.

4c To modify interruption cycling start time
Scroll through the **Interruption Menu** displays until the following is displayed:

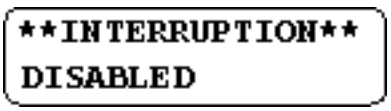
A cursor will appear on the first digit of the current **Start Time** to indicate that it is possible to make changes. Enter the desired time using 24 hour time. Press *Enter* to save your entry.

4d To modify interruption cycling stop time
Scroll through the **Interruption Menu** displays until the following is displayed:



A cursor will appear on the first digit of the current **Stop Time** to indicate that it is possible to make changes. Enter the desired time using 24 hour time. Press *Enter* to save your entry.

5 To once again enable interruption cycling scroll through the **Interruption Menu** displays until the following is displayed:



and press the *Left-Arrow* key. The message on line 2 should now read **ENABLED**. Press *Enter* to save your selection. To return to the **Main Menu Level** press on the *Escape* key.

Setting Interruption Compensation

For each cycle of ON and OFF, the CORI-GPS must send 2 signals to the rectifier: one to turn the rectifier ON, the other to turn it OFF. There are, however, delays between the moment the signal is sent to the rectifier, and the time at which it finally responds to the signal. This delay depends on the type of relay, type of rectifier, type of cables, etc. being used. In order to compensate for these delays in switching response it is possible to enter compensation values for either the **ON to OFF** or **OFF to ON** delays. **OFF to ON** compensation allows you to make adjustments for the delays in going from the OFF state of the rectifier to the ON state. **ON to OFF** compensation allows adjustments for delays in going from the ON state to the OFF state.

Compensation configuration takes place via the **Compensation Menu**. A diagram of the structure of this menu can be found in ***Figure 6*** below.

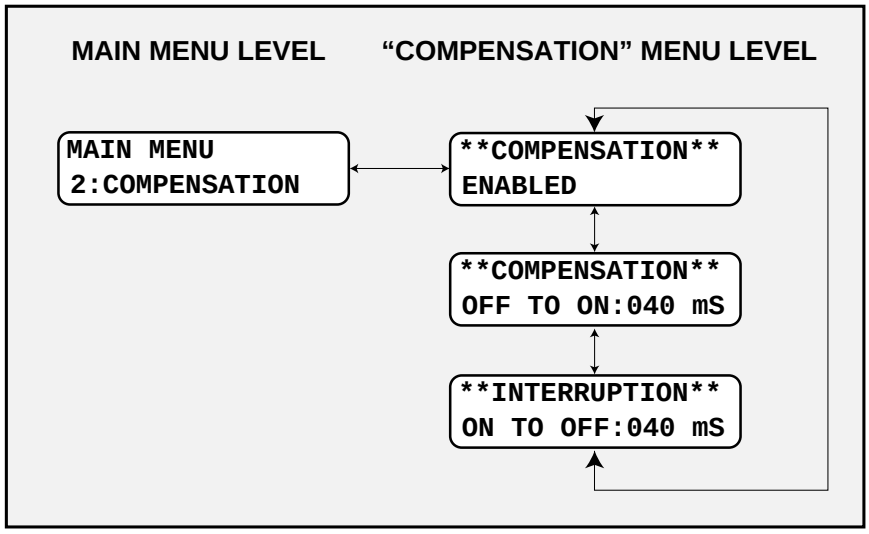


Figure 6 Compensation Menu

NOTE 1 It is not possible to modify compensation parameters while the unit is performing interruption cycles. In order to make changes you must first turn off interruption cycling according to the procedure described in the section entitled ***Programming Synchronized Interruption Cycles*** starting on page 12.

NOTE 2 In order to enter compensation values, **ON Time** and **OFF Time** values must have already been entered (see ***Programming Synchronized Interruption Cycles*** starting on page 12).

Recommended Compensation Values

The compensation values indicated in the table below are intended to provide you with typical compensation times used for each of the two CORI-GPS current ratings. These values should be adequate for most set ups, however, ideal values for your particular set up may differ from those recommended below. If you are not sure which values you should use please contact RCS **Technical Support**.

Table 1 Recommended Compensation Values

CORI-GPS Rating	Compensation Type	Recommended Compensation Time (ms)
60 amps	ON to OFF	120
	OFF to ON	90
100 amps	ON to OFF	200
	OFF to ON	100

❖ **To set compensation values**

1 From the **Main Menu Level** scroll through the displays until the following is displayed:

2 Press *Enter* to go to the **Compensation Menu**. The following display will appear (the second line may differ):

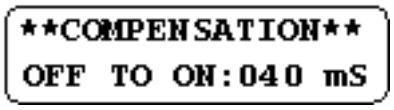
3a To enable/disable compensation

To change the enabled/disabled state of compensation scroll through the displays until the following is displayed (second line may differ):

A cursor will appear on the second line to indicate that it is possible to make changes. Press on the *Right-Arrow* key until the desired state (enabled or disabled) is displayed. Press *Enter* to select this entry.

3b To modify OFF to ON time

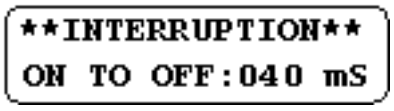
To modify OFF to ON time scroll through the displays until the following is displayed (second line may differ):



A cursor will appear on the second line to indicate that it is possible to make changes. Enter the desired value (which must be less than the **OFF Time** value used for interruption). Press *Enter* to save this entry.

3c To modify ON to OFF time

To modify ON to OFF time scroll through the displays until the following is displayed (second line may differ):



A cursor will appear on the second line to indicate that it is possible to make changes. Enter the desired value (which must be less than the **ON Time** value used for interruption). Press *Enter* to save this entry.

4 To return to the **Main Menu Level** press on the *Escape* key.

Miscellaneous Functions

The **System Status Menu** contains several functions which allow you to control and verify interruption status. You can, for instance, turn the rectifier ON or OFF, check status of the GPS module, and view power status of the GPS module.

Turning the Rectifier ON or OFF

❖ **To turn the rectifier ON or OFF**

1. From the **Main Menu Level** scroll through the displays until the following is displayed:

```
*MAIN MENU*
4:SYSTEM STATUS
```

2. Press *Enter* to go to the **System Status Menu**. The following display will appear (the second line may differ):

```
*SYSTEM STATUS*
CYCLE: ENABLED
```

3. Press on the *Down-Arrow* to go to the following display:

```
*SYSTEM STATUS*
RECT STATUS: ON
```

   This display shows the rectifier's present status and allows you to change it. The changes made here, however, are only temporary and the rectifier will revert to being ON when you exit the **System Status Menu**.

4. To make changes in the rectifier's ON or OFF state press on the *Right-Arrow* key until the desired state (ON or OFF) is displayed and press *Enter* to select this entry.

NOTE It is not possible to modify the ON/OFF state of the rectifier while the unit is performing interruption cycles. In order to make changes you must first turn off interruption cycling according to the procedure described in the section entitled ***Programming Synchronized Interruption Cycles*** starting on page 12.

Verifying Status of GPS Module

The **GPS Module** is the component in the CORI-GPS that is responsible for dealing with GPS communications. You can verify the status of this module by using the following procedure.

❖ **To verify the status of the GPS module**

1. From the **Main Menu Level** scroll through the displays until the following is displayed:

```
*MAIN MENU*
4:SYSTEM STATUS
```

2. Press *Enter* to go to the **System Status Menu**. The following display will appear (the second line may differ):

```
*SYSTEM STATUS*
CYCLE: ENABLED
```

3. Press on the *Down-Arrow* until the following is displayed (the second line may differ):

```
*SYSTEM STATUS*
GPS: RESPONDING
```

A **GPS RESPONDING** message on line 2 indicates that the **GPS Module** is functioning properly, whereas a **GPS:NO RESP** means that there are hardware problems with **GPS Module**. If you are getting the latter message, please contact **RCS Technical Support**.

Verifying GPS Module Power Status

In order to conserve battery power, the CORI-GPS turns off the power to the **GPS Module** between scheduled interruption cycles. You can verify the power status of the **GPS Module** by using the following procedure.

❖ **To verify GPS module power status**

1. From the **Main Menu Level** scroll through the displays until the following is displayed:

```
*MAIN MENU*
4:SYSTEM STATUS
```

2. Press *Enter* to go to the **System Status Menu**. The following display will appear (the second line may differ):

```
*SYSTEM STATUS*
CYCLE: ENABLED
```

3 Press on the *Down-Arrow* until the following is displayed (the second line may be different):

```
*SYSTEM STATUS*
GPS: ON
```

An **ON** message indicates that the **GPS Module** is turned ON; an **OFF** message indicates that the **GPS Module** is turned OFF.

4 Press *Escape* to return to the previous menu level.

Synchronizing a Non-GPS Interrupter

The CORI-GPS can be used to check the synchronization drift of a second non-GPS interrupter and (re)synchronize it.

NOTE 1 In order for synchronization to successfully take place interruption cycles must be set according to the instructions found in the section ***Programming Synchronized Interruption Cycles*** starting on page 12. Interruption compensation must also be disabled. For information on how to disable compensation, refer to the section ***Setting Interruption Compensation*** starting on page 15.

NOTE 2 For synchronization instructions specific to the JR-2 Interrupter refer to ***Appendix B JR-2 Interrupter Synchronization*** on page 25.

❖ **To check drift of, and/or resynchronize, a non-GPS interrupter**

1 Connect the CORI-GPS to the non-GPS interrupter.

2 From the **Main Menu Level** scroll through the displays until the following is displayed:

```
*MAIN MENU*
6:SYNC FUNCTIONS
```

2 Press *Enter* to go to the **Synchronization Functions Menu**. The following display will appear:

```
*SYNC FUNCTIONS*
SYNC OUT 1
```

3a To verify the synchronization drift of the non-GPS interrupter press on the *Down-Arrow* until the desired synchronization verification type (sync check 1 or 2) function is displayed and press *Enter*.

3b To synchronize the non-GPS interrupter press on the *Down-Arrow* until the desired synchronization type (sync out 1 or 2) function is displayed and press *Enter*.

NOTE The type of synchronization or check (Type 1 or 2) you should use depends on the type of non-GPS interruption unit you are trying to synchronize. If you are not sure which type to use contact **RCS Technical Support.**

APPENDIX A NOMINAL CORI-GPS OUTPUT RATING

Nominal CORI-GPS Output Rating and Rectifier Voltage

The CORI-GPS is available in interruption capacities of 60 and 100 amperes. These ratings are nominal ratings which vary depending on the DC voltage of the rectifier being interrupted. ***Figure 7***, ***CORI-GPS Power Derating Curve*** below shows how the interruption capacity of each of the two versions varies according to the rectifier's voltage.

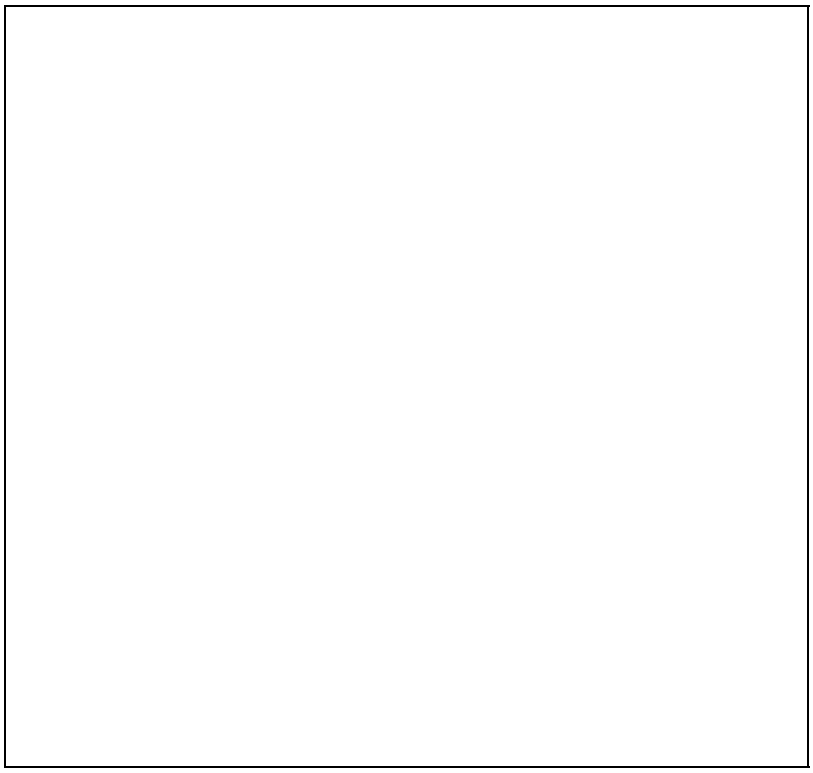


Figure 7 CORI-GPS Power Derating Curve

WARNING The above values represent the *interruption capacity* of the CORI-GPS and *not* the input voltage used for recharging batteries from power supply.

APPENDIX B JR-2 INTERRUPTER SYNCHRONIZATION

The procedure for synchronizing a JR-2 Interrupter to a CORI-GPS unit varies slightly from the standard procedure described in the section ***Synchronizing a Non-GPS Interrupter*** described on page 20 and is covered separately in this section.

Synchronizing a JR-2 Interrupter using CORI-GPS

Use the following procedure to synchronize a JR-2 Interrupter to a CORI-GPS unit.

NOTE In order for the synchronization procedure to work properly, the interruption cycle settings (see step 3 below) must be selected according to the following formula:

60/(ON time + OFF time)=whole number

In other words, the number 60 divided by the sum of the ON and OFF times must produce a *whole number*. The sum of the ON and OFF times must therefore equal 1, 2, 3, 4, 5, 6, 10, 12, 15, 20, 30 or 60.

❖ **To synchronize a JR-2 interrupter using CORI-GPS**

1. Turn ON CORI-GPS (refer to the section ***Turning ON and Shutting OFF the CORI-GPS*** on page 4.).
2. Set interruption compensation values to the following:

   ON to OFF: 60 msec

   OFF to ON: 60 msec

   and enable compensation. For more information on setting compensation values, refer to the section ***Setting Interruption Compensation*** on page 15.
3. Once the CORI-GPS has logged on to a GPS satellite (this may take up to 60 minutes) program and enable desired interruption cycle. For more information on how to do this, refer to the section ***Programming Synchronized Interruption Cycles*** on page 12. The following is an example of typical interruption cycle settings:

   ON: 3 seconds

   OFF: 1 second

4 From the **Main Menu Level** scroll through the displays until the following is displayed:

```
*MAIN MENU*
6:SYNC FUNCTIONS
```

5 Press *Enter* to go to the **Synchronization Functions Menu**. To synchronize the JR-2 interrupter press on the *Down-Arrow* until the following display appears:

```
*SYNC FUNCTIONS*
SYNC OUT 2
```

6 Press *Enter* to go to the **Sync Out 2 Configuration Screen**:

```
***SYNC OUT 2***
Wait: HH:MM:SS
```

where **HH**=hours, **MM**=minutes, and **SS**=seconds.

7 Turn on the JR-2 Interrupter and switch the **Start Relay** to **CLOSED**, program desired interruption schedule and interruption cycles (set to the same as CORI-GPS above):

ON: 3 seconds

OFF: 1 second

8 Still on the JR-2, set time to time on CORI-GPS *plus one minute* and press *Enter*.

9 Using cable supplied for the JR-2, connect the CORI-GPS to the JR-2 interrupter.

10 On CORI-GPS press *Enter*. The following should be displayed:

```
***SYNC OUT 2***
SYNC: HH:MM:SS
```

The CORI-GPS will send a synchronization signal once per minute. Once a synchronization signal has been received by the JR-2, the message *LOch 8* will appear and the JR-2 unit will begin a countdown to zero (lasting approximately 5 seconds) before beginning interruption cycling.

Verifying Synchronization Drift of a JR-2 Interrupter

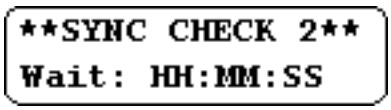
To perform a verification of synchronization drift you must have a CORI-GPS unit which is logged on to a satellite and a JR-2 unit with interruption cycling in progress.

❖ **To verify synchronization drift of a JR-2 interrupter using CORI-GPS**

1. Using cable supplied for the JR-2, connect the CORI-GPS to the JR-2 interrupter.
2. From the **Main Menu Level** scroll through the displays until the following is displayed:

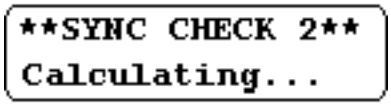
3. Press *Enter* to go to the **Synchronization Functions Menu**. To verify synchronization drift of the JR-2 interrupter press on the *Down-Arrow* until the following display appears

4. Press *Enter* to proceed to **Sync Check 2 Menu**:



where **HH**=hours, **MM**=minutes, and **SS**=seconds.

5. The JR-2 will send a synchronization signal once per minute. Once the CORI-GPS has received a signal, the following message appears:



The CORI-GPS will calculate the difference between the time signal received from the JR-2 and GPS time and will display this value (in msec) on the screen. The calculation of this value may take up to one minute, depending on the amount of drift on the JR-2.

TECHNICAL SPECIFICATIONS

Case

Dimensions	30.7 x 33.3 x 15.3 cm (12 x 13.1 x 6 inches)
Weight	6.5 kg (14.3 lbs)
Material	Corrosion-proof structural resin foam

Interruption Type

GPS synchronized with ±5 ms maximum drift at any time.

Display

LCD-2 lines x 16 characters

Keyboard

16 key alphanumeric keypad

Interruption Capacity

Standard	60 or 100 amps, AC or DC

Power supply

Direct Current	One 12V, 7 amp-hour battery
AC Input	115 VAC (N. America) or 220 VAC (Europe-special order) 50/60 Hz

Operating Environment

Temperature	0 to 50°C (32 to 122°F)
Humidity	0 to 90%

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