

## GPS360 Installation & Configuration Quick Reference Guide

### Derating Table

Ambient Temperature		Maximum Current (A)	
Celsius	Fahrenheit	Setup 1	Setup 2
25 °C	77 °F	83	100
35 °C	95 °F	76	100
45 °C	113 °F	66	90
55 °C	131 °F	56	80
65 °C	149 °F	42	65



**Setup 1** — GPS360 with magnets **installed**; not in contact with rectifier cabinet; **any** interruption cycle.

**Setup 2** — GPS360 with magnets **removed**; with heatsink surface in **good** contact with rectifier cabinet; **any** interruption cycle.

### Required Tools

- ▶ Voltmeter

### Optional Tools

- ▶ Windows<sup>®</sup> Laptop PC
- ▶ Bullhorn<sup>®</sup> Tools configuration software
- ▶ USB to mini-USB cable



**WARNING:** Before beginning any wiring to the MicroMax GPS360, ensure that power has been turned off at the rectifier.



**CAUTION:** Metal relay casing on the MicroMax GPS360 will get hot. Allow 5 - 10 minutes after interruption stops before handling the unit.



**CAUTION:** Do not connect the MicroMax GPS360 to primary mains power.



**CAUTION:** The MicroMax GPS360 is set to use **Normally Closed** relays by default. If you plan to use a Normally Open relay, check the **Options > Output Parameters** menu to ensure the interrupter is configured to the desired relay setting (refer to Page 4).

### NOTES FOR GPS360

- On power up, the unit will stay on as long as it takes to acquire a GPS signal. Once it acquires a 3D fix, it takes approximately two minutes to synchronize to GPS time and automatically enter the main menu or a previously loaded interruption program.
  - The unit will not go to sleep while in this mode, which could potentially drain the battery. The unit must get a GPS lock to enable power saving features. You can bypass the GPS screen by pressing **PREV**.
- The unit will turn off the LCD screen (power save mode) 60 seconds after the last key press. If an interruption program was not selected to run, the unit will enter deep sleep mode 5 minutes after the last key press.
- While an interruption program is running, the unit will enter power save mode but continue to interrupt. You can press a key at any time to check the status of the interruption program.
  - When using start/stop or daily interruption modes, the unit will go into deep sleep during non-interruption hours. Press any key to "wake up" the unit (see 1a).
  - If you wake up a unit from power save mode during interruption, it takes two minutes for the GPS to resynchronize. The unit will continue interrupting during resynchronization.
- To put the unit in deep sleep mode, press and hold the **PREV** key until the screen flashes (approximately 10 seconds) then release the key.

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## Installing the Equipment

The following procedures are general steps for a typical installation. For specific instructions, see the *MicroMax Interrupters User Guide* (part no. 122204-000) available from your website account under the **Help** menu.

### 1 GPS360 Power Source

- 1 If line power is available, use an external power source, such as one of the following:
  - a The rectifier — with power turned **on** to the rectifier, use a voltmeter to locate a power source across any two available AC taps. The GPS360 require 8 - 42 V AC.
  - b A 120 V AC convenience outlet with the 12 V DC wall adapter.
  - c A USB cable connected to a computer.
- 2 If no line power is available, use the internal battery on the unit.

**NOTE:** See **Step 3** on page 3 for instructions on connecting the GPS360 to rectifier line power and/or **if using an external relay**.

### 2 Connect Relay to Rectifier

Ensure that power is turned off to the rectifier.

- 1 To interrupt the AC power:
  - a Remove the tap change bar from the taps.



Tap Change Bar

- b Connect the two GPS360 relay wires to the taps.

**NOTE:** Connect relay wires to the same taps that were connected by the change bar.



GPS360 Relay Connected to Rectifier AC

- 2 To interrupt the DC power:

**NOTE:** These connections **are not** polarity sensitive.

- a Disconnect the DC output cable. Then connect one of the GPS360 relay cables to output.



GPS360 Relay Connected to Rectifier Positive

- b Slide shrink wrap tube (provided) onto the second GPS360 relay cable.



GPS360 Relay Cable & DC Output Cable

- c Connect the GPS360 relay cable to the DC output cable using available hardware.

- d Wrap assembly with shrink wrap to prevent equipment shorting.



GPS360 Relay Cable & DC Output Cable Wrapped

**NOTE:** If installing the GPS360 on a **bond**, the relay wires must be connected in series with the two structure wires, one from each of the pipelines.

(Continued)

**CAUTION:** Do not connect the MicroMax GPS360 to primary mains power.

### 3 External Relay and Line Power

**NOTE:** If you are using the internal battery and relay, skip this step. The GPS360 has to be connected to line power when using an **external** relay.

- 1 Connect Power Cable to the GPS360 **Power** connection.



Power Cable

GPS360 Power Connection

- 2 Connect relay control or coil to Power Cable **OUTPUT**. Be sure to observe proper polarity, especially if a flyback diode is present on a mercury relay coil.

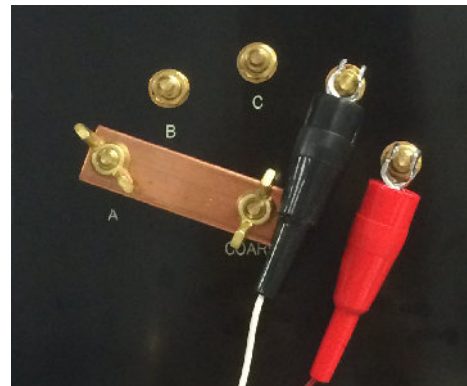


Power Cable  
OUTPUT

- 3 Connect red/white twisted wire cable to **INPUT** connection on Power Cable. Then clip alligator clips to rectifier AC taps. Voltage range is 8 - 42 V AC.



Twisted Wire Cable Connected to Power Cable



Alligator Clips  
on Rectifier Taps

### 4 Connect GPS Antenna Cable to GPS360

- 1 Connect GPS antenna cable to GPS360 **GPS Antenna** connection.
- 2 Place GPS antenna outside of rectifier in an area with a clear view of the sky.



GPS Antenna

GPS360 GPS  
Antenna Connection

(Continued)

**WARNING:** Ensure that the antenna connection does not come into contact with any conductive surface of the rectifier.

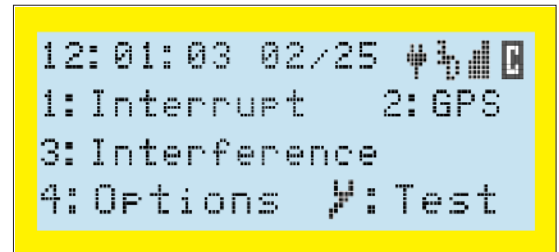
## 5

**Program MicroMax GPS360**

The following procedures are general steps for programming the GPS360 using the unit keypad. For instructions on programming the unit with Bullhorn Tools, refer to the online help available from the Bullhorn Tools **Help** menu or to the *MicroMax Interrupters User Guide*.

**Set Up Interrupter**

- 1 Power on the rectifier.
- 2 Power on the unit by pressing any button on the keypad..
- 3 Press **2** to view GPS information.
- 4 Press and hold **▲** and **▼** to change display contrast.
- 5 **OPTIONAL:** From the main menu, press **⚙** to run Test Mode.  
Press **PREV** to return to main menu.
- 6 Press **1** to set up an **Interruption** program **OR** **3** to set up an **Interference** program.

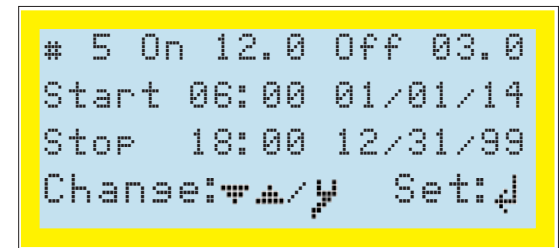


GPS360 Main Menu

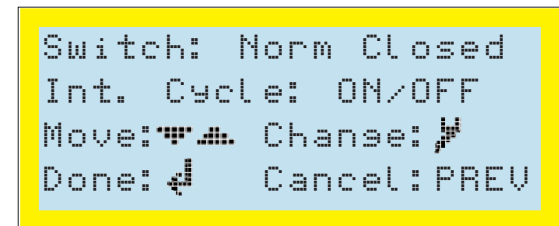
**NOTE:** While the GPS360 battery is charging, a **[charging icon]** displays in the top right corner. When the unit is fully charged, the icon is replaced by a full battery icon **[full battery icon]**.

**Configure Programs**

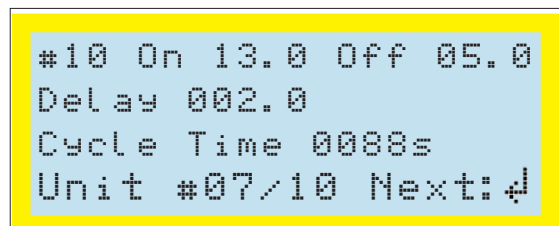
- 1 For Interruption, enter a number between 1 and 9 for the program number.
  - a Press **⚙** to select interruption schedule - Daily, Continuous, or Start/Stop.
  - b Use **▲** and **▼** to move through fields; use keypad to change settings.
  - c Press **[enter]** to load program.
- 2 For **Interruption Output Parameters:**
  - a From the main menu, press **4** to access a list of **Options** and then **5** to view or edit **Switch** and **Int. Cycle** options.
  - b To change settings, move cursor to the option and press **⚙**.
- 3 For **Interference:**
  - a Use **▲** and **▼** to move through fields. Use keypad to change settings.
  - b Press **[enter]** to select type of interruption.
  - c Press **⚙** to select interruption schedule - **Daily, Continuous,** or **Start/Stop.**
  - d Use **▲** and **▼** to move through fields; use keypad to change settings.
  - e Press **[enter]** to load program.



Interruption Program



Out Parameters



Interference Program

When finished, close and lock the clear cover on the GPS360.

Place interrupter inside the rectifier.

**NOTE:** When adjusting the UTC offset (time-zone), the unit must resynchronize with satellites, which can take up to 2 minutes if reliable GPS signal is established.