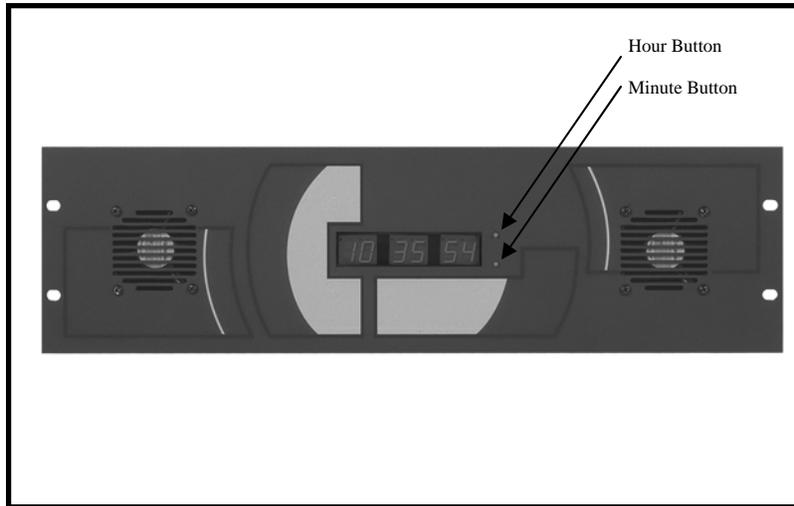




GPS Receiver Programming Manual (v2)



Note: To enter programming mode, press the hour and minute button together.

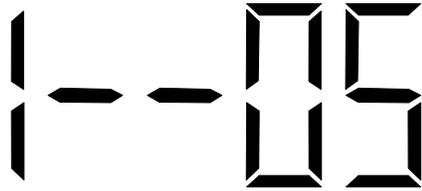
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Note: When setting the time, the hour needs to be manually set. The GPS Receiver will only pick up the minutes, seconds and date from the satellite.

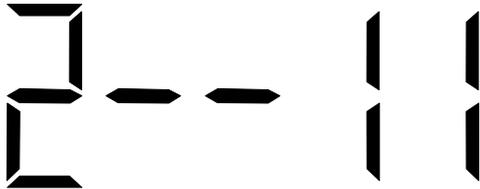


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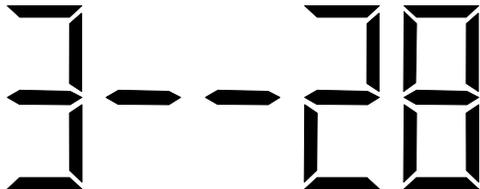
Set the Year

Once programming mode has been entered, the number "1" will appear in the far left position (see diagram). This prompt allows you to set the year. Use the "Set Minute" button to scroll from "00-99" on the display and set the year.



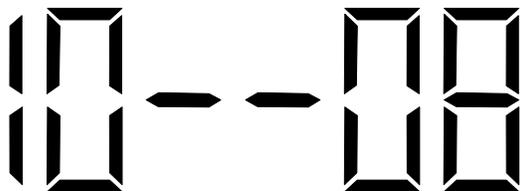
Set the Month

Press the "Set Hour" button to advance to option 2. The number "2" will appear on the left side of the LED display. This prompt allows you to set the month. Use the "Set Minute" button to scroll between "01-12".



Set the Day

Press the "Set Hour" button to advance to option 3. The number "3" will appear on the left side of the LED display. This prompt allows you to set the day. Use the "Set Minute" button to scroll between "01-31".

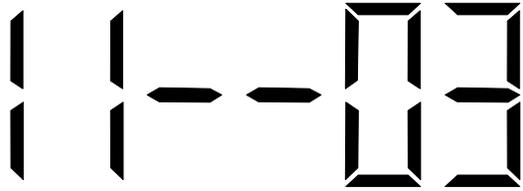


Enter Technician Mode

Press the "Set Hour" button to advance to option 10. The number "10" will appear on the left side of the LED display. This prompt allows you to enter into technical mode. If the user wishes to enter technical mode, press the "Set Minute" to "08" to enter technical mode. The scrolling will scroll through "00-99". Any other character will go directly to option "20".



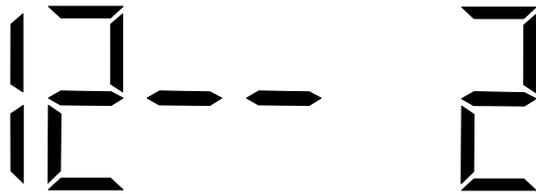
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Set the RS485 Data Rate

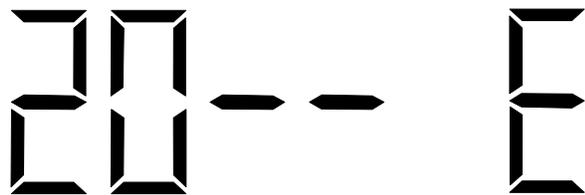
Press the “Set Hour” button to enter technical mode which starts with option 11. The number “11” will appear on the left side of the LED display, if the option was chosen in option 10. This prompt allows you to set the data transmission. Press the “Set Minute” button to scroll between “01-12”.

- | | |
|---|---|
| 01 - Data is transmitted every second | 07 - Data is transmitted every 2 minutes |
| 02 - Data is transmitted every 5 seconds | 08 - Data is transmitted every 5 minutes |
| 03 - Data is transmitted every 10 seconds | 09 - Data is transmitted every 10 minutes |
| 04 - Data is transmitted every 15 seconds | 10 - Data is transmitted every 15 minutes |
| 05 - Data is transmitted every 30 seconds | 11 - Data is transmitted every 30 minutes |
| 06 - Data is transmitted every minute | 12 - Data is transmitted every hour |



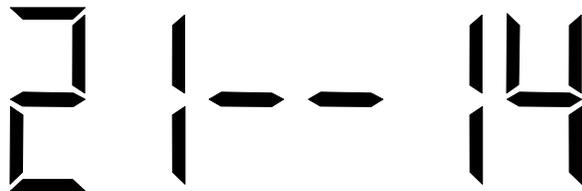
Set Daylight Savings Time

Press the “Set Hour” button to enter option 12. The number “12” will appear on the left side of the LED display. This option allows the user to enable or disable Daylight Savings Time. Press the “Set Minute” button to scroll between “1”, or “2”. “1” will enable daylight savings pre 2007. “2” will enable daylight savings post 2007.



Enter Programmable Relay Output Mode

Press the “Set Hour” button to enter option 20. The number “20” will appear on the left side of the LED display. This option allows you to enter a programmable relay output mode. Press the “Set Minute” button to scroll through “d”, “1”, “2”, “3”, “4”, “5”, “6”, “7” & “8”. Please refer to relay selection mode on page 8.



Set the Hour for the Relay to Close At

This option is only available if “7” is selected in option 20. Press the “Set Hour” button to enter option 21. The number “21” will appear on the left side of the LED display. This option allows you to set the hour that the user wishes the relay to close at. Press the “Set Minute” button to scroll through “00-23”.



22--30

Set the Minutes for the Relay to Close At

This option is only available if "7" is selected in option 20. Press the "Set Hour" button to enter option 22. The number "22" will appear on the left side of the LED display. This option allows the user to set the minute(s) they want the relay to close at. Press the "Set Minute" button to scroll between "00-59".

23--45

Set the Seconds for the Relay to Close At

This option is only available if "7" is selected in option 20. Press the "Set Hour" button to enter option 23. The number "23" will appear on the left side of the LED display. This option allows the user to set the second(s) they want the relay to close at. Press the "Set Minute" button to scroll between "00-59".

24--56

Set the Duration for the Relay to Close

This option is only available if "7" is selected in option 20. Press the "Set Hour" button to enter option 24. The number "24" will appear on the left side of the LED display. This option allows the user to set the duration of the relay closure. Press the "Set Minute" button to scroll between "00-99" (seconds).

30--00

Temperature of the Clock

Press the "Set Hour" button to enter option 30. The number "30" will appear on the left side of the LED display. This option displays the current temperature of the clock itself. The temperature will display in °C. This option is a read-only option.



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31--00

Temperature of the Converter

Press the "Set Hour" button to enter option 31. The number "31" will appear on the left side of the LED display. This option displays the current temperature of the converter. The temperature will display in °C. This option is a read-only option. The converter is an option.

32--32

Current of the Converter

Press the "Set Hour" button to enter option 32. The number "32" will appear on the left side of the LED display. This option displays the current of the converter. The current will be measured in Amps. This option is a read-only option. The converter is an option.

Example: 43 -- 32 = 3.2 Amps

40--15

Enter Self-Test Mode

Press the "Set Hour" button to enter option 40. The number "40" will appear on the left side of the LED display. This option enters the self testing feature. Press the "Set Minute" button to scroll between 00-99. To enter the Self Test mode, press the "Set Minute" button until a "15" is displayed to the right. Any other character will go directly to option 50. After it is set to "15", press the "Set Hour" button to enter the Self Test mode.

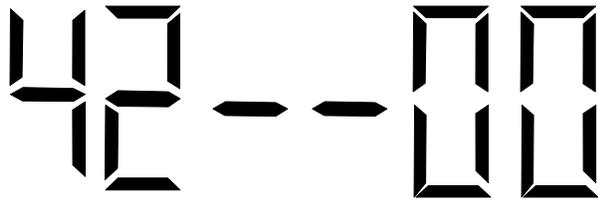
41--57

Real-Time Clock Test

Press the "Set Hour" button to enter option 41. The number "41" will appear on the left side of the LED display. This option tests the Real-Time Clock. When the "Set Minute" button is pressed, the display will count up from 57 to 00. If the Real Time Clock is working properly, the GPS will advance to option 42. If it does not, it will stay at option 41.

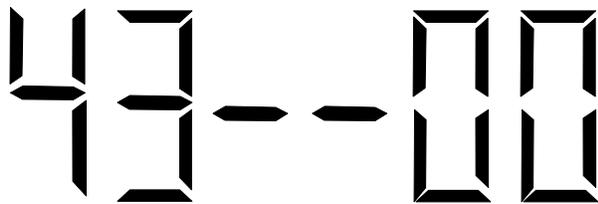


GPS Receiver Programming Manual (v2)



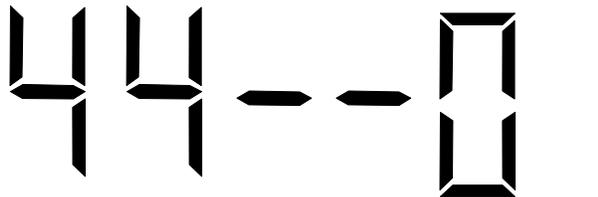
Output Relay Test

Press the “Set Hour” button to enter option 52. The number “42” will appear on the left side of the LED display. This option tests the output relay. When the “Set Minute” button is pressed, the relay will close. When the “Set Hour” button is pushed, the relay will open and advance to the next option.



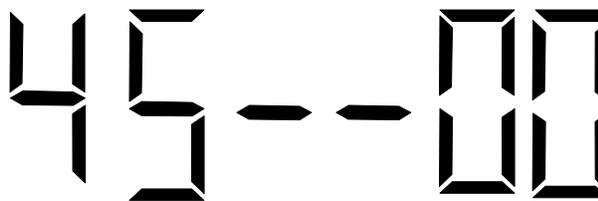
LED Segment Test

Press the “Set Hour” button to enter option 43. The number “43” will appear on the left side of the LED display. This option tests the segments of the LED display. When the “Set Minute” button is pressed, the segments will test the segments. To advance to the next option, press the “Set Hour” button.



Input Test

Press the “Set Hour” button to enter option 44. The number “44” will appear on the left side of the LED display. This option tests the GPS to see if it recognizes an input. If there is no input, the digits to the right will read “00”. If there is an input, the digits to the right will read “01”.



↑ Left Digit ↑ Right Digit

RS485 and RS232 Test

Press the “Set Hour” button to enter option 45. The number “45” will appear on the left side of the LED display. On the right side of the display, the left digit will be alternating every 200ms between “0” and “1”. The right digit will stay at “0”. This option tests the RS485 and RS232 input and output. To test the RS485, short the input and the output. When this occurs, the right digit will synchronize with the left digit. To test the RS232, short the input and the output. When this occurs, the right digit will synchronize with the left digit.



GPS Receiver Programming Manual (v2)

50--E

Enter Diagnostic Mode

Press the “Set Hour” button to enter option 50. The number “50” will appear on the left side of the LED display. This option allows the user to enter diagnostic mode. Press the “Set Minute” button scroll between “E-D”. Setting the option to “E” will enter diagnostic mode. Setting the option to “d”, then pressing the “Set Hour” button will bring the display back to the set time.

51--03

Send Diagnostics to Slave Clocks

Press the “Set Hour” button to enter option 51. The number “51” will appear on the left side of the LED display. This option allows the user to send the diagnostic to the slave clocks. Pressing the “Set Minute” button will scroll from “01-05 and 09”.

- 01 - Protocol Verification
- 02 - Comprehensive Test
- 03 - Manufacturer’s Default
- 04 - Combination of 02 & 03 (button must be pressed on SAM)
- 05 - Combination of 02 & 03 (no need to press button on SAM)
- 09 - Overrides the Previous Diagnostic and Goes Back to the Time

52--41

Set Length that Information Will Display on Clock

Pressing the “Set Hour” button will advance to option 52. The number “52” will appear on the left of the LED display. This option allows the user to set how long (in minutes) that the information display from the diagnostic will stay on the clock. Pressing the “Set Minute” button will scroll from “00-99”. Pressing the “Set Hour” button will take the clock out of programming mode to display the real time.



GPS Receiver Programming Manual (v2)

Relay Selection Mode

“d” = Relay is disabled.

“1” = 58th minute - The hourly correction for 55 seconds every hour from XX:58:05 to XX:59:00. The daily correction (5 a.m. & 5 p.m.) is ten correction cycles sent to the relay (each for 95 seconds) beginning at 5:05:00, 5:07:00, 5:09:00, 5:11:00, 5:13:00, 5:15:00, 5:17:00, 5:19:00, 5:21:00, and 5:23:00.

“2” = 58th minute - The hourly correction for 60 seconds every hour from XX:58:00 to XX:59:00. The daily correction (5 a.m. & 5 p.m.) is twelve correction cycles sent to the relay (each for 65 seconds on and 25 seconds off) beginning at 5:05:00 to 5:22:35.

“3” = 58th minute - The hourly correction for 60 seconds every hour from XX:58:00 to XX:59:00. The daily correction (5 a.m. & 5 p.m.) is twelve correction cycles sent to the relay (each for one minute on and two minutes off) beginning at 5:06:00.

“4” = 59th minute - The hourly correction for 8 seconds every hour from XX:57:54 to XX:58:02. The daily correction (5 a.m. & 5 p.m.) is a 14 second pulse from 5:57:54 to 5:58:58.

“5” = National Time & Rauland – There is only hourly corrections (NO DAILY CORRECTIONS) for 25 seconds every hour from XX:00:00 to XX:00:25.

“6” = National Time & Rauland - The hourly correction is for 25 seconds every hour from XX:00:00 to XX:00:25. The daily correction (6 a.m. & 6 p.m.) is 25 seconds on, 35 seconds off every minute for 24 minutes.

“7” = Enable relay for once a day closure.

“8” = Rauland digital out.