# TABLE OF CONTENTS

## MAIN OPERATING SCREEN

- Menu Screen .......................................................................................................................... 3
- Automatic Control Setup Screen .......................................................................................... 4
- Timed Events Menu Screen .................................................................................................. 5
- Timed Events Screen ............................................................................................................ 6
- Copy Day Events Screen ....................................................................................................... 7
- Block Heater Setup Screen ................................................................................................... 8
- Auto-Mode – Sunset/Sunrise-based Start/Stop Screen ....................................................... 9
- GPS Location Setup Screen ................................................................................................ 10
- System Screen ...................................................................................................................... 11
- Update Programming Screen ............................................................................................. 12
- Clock Setup Screen ............................................................................................................ 13
  - Day Light Savings Time Setup Screen ............................................................................... 14
- System Options Screen ........................................................................................................ 16
- Maintenance Screen ............................................................................................................ 18
- Clear Fault ............................................................................................................................. 19
- Input Diagnostics Screen ..................................................................................................... 20
- Output Diagnostics Screen ................................................................................................. 21

## SLS STATE DIAGRAM........................................................................................................... 22

## LSC STATE DIAGRAM.......................................................................................................... 23

## UTC TIME ZONES.................................................................................................................. 24

## FAULT MESSAGES................................................................................................................ 28
The orange bar that runs across the top of the Main Operating screen displays:

- Any applicable fault messages (item 13 in Figure 1)
- The current date and time (item 2 in Figure 1).

For a list of possible fault messages, see FAULT MESSAGES on page 28.

To change the date and time, see Clock Setup Screen on page 13.

The middle of the Main Operating screen displays:

- Engine oil pressure gauge (item 11 in Figure 1)
- Fuel level gauge (item 1 in Figure 1)
- Engine coolant temperature gauge (item 4 in Figure 1)
- Battery DC voltage (item 12 in Figure 1)
- Accumulated engine run hours (item 3 in Figure 1)
- The time at which the next start-up or shutdown will occur (item 8 in Figure 1)
The bottom of the Main Operating screen has the glow plug–on symbol (item 7 in Figure 1) as well as four buttons.

- **Auto-Start button (item 10 in Figure 1):** Press the Auto-Start button to activate the auto-start/stop program, which will start the engine at or near sunset and stop the engine at or near sunrise. Press the Auto-Start button again to turn off the program. For more information on setting up the sunrise and sunset times, see *Auto-Mode – Sunset/Sunrise-based Start/Stop Screen on page 9.*

- **Time-Start button (item 9 in Figure 1):** Press the Time-Start button to activate the time-start/stop program, which will start or stop the engine at preset times of the day. Press the Time-Start button again to turn off the program. For more information on setting up the timed start/stop program, see *Automatic Control Setup Screen on page 4.*

- **Start button (item 6 in Figure 1):** Press the Start button to start the engine. The engine will start after a 15-second delay, and the display will change from Start to Stop. Press the Stop button to stop the engine.

- **Menu button (item 5 in Figure 1):** Press the Menu button to make programming changes (see *Menu Screen on page 3.*)
Menu Screen

On the Main Operating screen, press the Menu button. The Menu screen will appear (see Figure 2).

![Menu Screen]

There are three choices to select from on the Menu screen:

- Automatic Control Setup (see Automatic Control Setup Screen on page 4)
- System (see System Screen on page 11)
- Maintenance (see Maintenance Screen on page 18)

Use the UP and DOWN arrows to move between the items. Press the Enter button to select an item.

Press the Exit button to return to the Main Operating screen.
Automatic Control Setup Screen

How to navigate to the Automatic Control Setup screen:

1. On the Main Operating screen, press the Menu button. The Menu screen will appear.
2. Press the Enter button. The Automatic Control Setup screen will appear (see Figure 3).

There are four items to choose from on the Automatic Control Setup screen:

- Timed Event Setup (see Timed Events Menu Screen on page 5)
- Block Heater Setup (see Block Heater Setup Screen on page 8)
- Sun-Set Control Setup (see Auto-Mode – Sunset/Sunrise-based Start/Stop Screen on page 9)
- GPS Location Setup (see GPS Location Setup Screen on page 10)
**Timed Events Menu Screen**

How to navigate to the Timed Events Menu screen:

1. On the Main Operating screen, press the Menu button. The Menu screen will appear.
2. Press the Enter button. The Automatic Control Setup screen will appear.
3. Press the Enter button. The Timed Events Menu screen will appear (see Figure 4).

![Timed Events Menu Screen](image)

**Figure 4**

The Timed Events Menu screen is designed for setting up the start/stop times used with the Time-Start button on the Main Operating screen. Timed events are available for all seven days of the week. Two start/stop-time event cycles are available for each day.

Use the UP and DOWN arrows to highlight the desired day, and press Enter to select that day. After Enter is pressed, the Timed Events screen will appear (see *Timed Events Screen on page 6*).

The Copy Day button is at the bottom left of the Timed Events Menu screen. Press the Copy Day button to go to the Copy Day Events screen (see *Copy Day Events Screen on page 7*). The Copy Day feature can be used to quickly copy event settings from one day to other days.
Timed Events Screen

How to navigate to the Timed Events screen:
1. On the Main Operating screen, press the Menu button. The Menu screen will appear.
2. Press the Enter button. The Automatic Control Setup screen will appear.
3. Press the Enter button.
4. Use the UP and DOWN arrows to highlight the desired day, and press the Enter button. The Timed Events screen for that day will appear (see Figure 5).

Figure 5

Use the UP/DOWN and LEFT/RIGHT arrows to move to the event that needs to be changed.
To change between Enabled and Disabled:
1. Press the Adjust button. The selection will begin flashing green.
2. Use the UP (Enabled) and DOWN (Disabled) arrows to change the selection.
3. Press the Save button.

To change the hour and minutes:
1. Press the Adjust button. The selection will begin flashing green.
2. Use the UP and DOWN arrows to change the hour.
3. Use the LEFT and RIGHT arrows to change the minutes (10-minute increments).
4. Press the Save button.

To change between AM and PM:
1. Press the Adjust button. The selection will begin flashing green.
2. Use the UP (AM) and DOWN (PM) arrows to change the selection.
3. Press the Save button.
Copy Day Events Screen

How to navigate to the Copy Day Events screen:

1. On the Main Operating screen, press the Menu button. The Menu screen will appear.
2. Press the Enter button. The Automatic Control Setup screen will appear.
3. Press the Enter button. The Timed Events Menu screen will appear.
4. Press the Copy Day button. The Copy Day Events screen will appear (see Figure 6).

The Copy Day feature can be used to quickly copy event settings from one day to other days.

Copying day events is a two-part process:

1. Select the day to copy from.
   a. Use the UP and DOWN arrows to select the day to copy from.
   b. Press the Enter button. The day is now copied.
2. Select the day(s) to copy to.
   a. Use the UP and DOWN arrows to select the day(s) to copy the events to.
   b. Press the Enter button. A check mark will appear next to the selected day.
   c. Press the Enter button again to remove a check mark.
   d. Repeat steps (a) and (b) to select more days.
   e. Press the Apply button. The copy day process is now complete. The display will return to the Timed Events Menu screen.

In Figure 6, the settings for Sunday will be copied to the other six days.

Figure 6
Block Heater Setup Screen

How to navigate to the Block Heater Setup screen:

1. On the Main Operating screen, press the Menu button. The Menu screen will appear.
2. Press the Enter button. The Automatic Control Setup screen will appear.
3. Press the DOWN arrow once to highlight Block Heater Setup.
4. Press the Enter button. The Block Heater Setup screen will appear (see Figure 7).

![Block Heater Setup Screen](image)

Figure 7

The Block Heater Setup screen is used to set the amount of time the engine block heater runs before engine start-up.

Use the UP and DOWN arrows to move between Block Heater and Run Time Before Start.

To change between Enabled and Disabled for the block heater:

1. Press the Adjust button. The selection will begin flashing green.
2. Use the UP (Enabled) and DOWN (Disabled) arrows to change the selection.
3. Press the Save button.

To change the Run Time Before Start minutes:

1. Press the Adjust button. The selection will begin flashing green.
2. Use the UP and DOWN arrows to change the number of minutes. The range is 1 to 60 minutes.
3. Press the Save button.
Auto-Mode – Sunset/Sunrise-based Start/Stop Screen

How to navigate to the Auto-Mode screen:
1. On the Main Operating screen, press the Menu button. The Menu screen will appear.
2. Press the Enter button. The Automatic Control Setup screen will appear.
3. Press the DOWN arrow twice to highlight Sun-Set Control Setup.
4. Press the Enter button. The Auto-Mode screen will appear (see Figure 8).

The Auto-Mode screen is used for changing the Auto-Start program’s sunrise and sunset settings.

To change the number of minutes:
1. Use the UP and DOWN arrows to toggle between the two fields.
2. Press the Adjust button to select a field. The selection will begin flashing green.
3. Use the UP and DOWN arrows to change the number of minutes. The range is 0 to 180 minutes, in 10-minute increments.
4. Press the Save button.
GPS Location Setup Screen

How to navigate to the GPS Location Setup screen:

1. On the Main Operating screen, press the Menu button. The Menu screen will appear.
2. Press the Enter button. The Automatic Control Setup screen will appear.
3. Press the DOWN arrow three times to highlight GPS Location Setup.
4. Press the Enter button. The GPS Location Setup screen will appear (see Figure 9).

The GPS Location Setup screen is used for setting up the GPS location of the unit. The GPS location is used to determine the sunrise and sunset times.

The GPS latitude and longitude are in decimal degrees. The coordinates in Figure 9 are for Allmand Bros., Inc., Holdrege, Nebraska, USA.

Choose positive or negative latitude and longitude according to these rules:

- If the location is in the Northern Hemisphere, use a plus sign (+) for the latitude.
- If the location is in the Southern Hemisphere, use a minus sign (−) for the latitude.
- If the location is in the Eastern Hemisphere, use a plus sign (+) for the longitude.
- If the location is in the Western Hemisphere, use a minus sign (−) for the longitude.

To change the coordinates:

1. Use the UP/DOWN and LEFT/RIGHT arrows to move between the fields.
2. Press the Adjust button to select a field. The selection will begin flashing green.
3. Use the UP and DOWN arrows to change the number.
4. Press the Save button.
5. Repeat this process until the correct coordinates are displayed.

**System Screen**

How to navigate to the System screen:

1. On the Main Operating screen, press the Menu button. The Menu screen will appear.
2. Press the DOWN arrow once to highlight System.
3. Press the Enter button. The System screen will appear (see Figure 10).

![System Screen Diagram]

**Figure 10**

There are three choices to select from on the System screen:

1. Update Programming (see Update Programming Screen on page 12)
2. Clock Setup (see Clock Setup Screen on page 13)
3. System Options (see System Options Screen on page 16)

Use the UP and DOWN arrows to move between the items. Press the Enter button to select an item.
Press the Exit button twice to return to the Main Operating screen.
Update Programming Screen

How to navigate to the Update Programming screen:

1. On the Main Operating screen, press the Menu button. The Menu screen will appear.
2. Press the DOWN arrow once to highlight System.
3. Press the Enter button. The System screen will appear.
4. Press the Enter button. The Update Programming screen will appear (see Figure 11).
5. Follow the update instructions that came with the update package.

Figure 11
Clock Setup Screen

How to navigate to the Clock Setup screen:

1. On the Main Operating screen, press the Menu button. The Menu screen will appear.
2. Press the DOWN arrow once to highlight System.
3. Press the Enter button. The System screen will appear.
4. Press the DOWN arrow once to highlight Clock Setup.
5. Press the Enter button. The Clock Setup screen will appear (see Figure 12).

Figure 12

To change the month, day, year, hour, minute, AM/PM, and time zone:

1. Use the UP/DOWN and LEFT/RIGHT arrows to move between the fields on the screen.
2. Press the Adjust button to select a field. The selection will begin flashing green.
3. Use the UP and DOWN arrows to change the value.
4. Press the Save button.
5. Repeat until all fields are correct.

See UTC TIME ZONES on page 24 for a list of time zones.

Note: Make sure the time zone and the GPS coordinates match up.

When the Day Light Savings Time Setup is highlighted and the Adjust button is pressed, the Day Light Savings Time Setup screen will appear (see Day Light Savings Time Setup Screen on page 14).
Day Light Savings Time Setup Screen

How to navigate to the Day Light Savings Time Setup screen:

1. On the Main Operating screen, press the Menu button. The Menu screen will appear.
2. Press the DOWN arrow once to highlight System.
3. Press the Enter button. The System screen will appear.
4. Press the DOWN arrow once to highlight Clock Setup.
5. Press the Enter button. The Clock Setup screen will appear.
6. Press the UP arrow once to highlight Day Light Savings Time Setup.
7. Press the Adjust button. The Day Light Savings Time Setup screen will appear (see Figure 13).

Figure 13
To change the Start Date (Month/Day) and End Date (Month/Day):

1. Press the UP and DOWN arrows to move between Start Date and End Date.
2. Press the Adjust button to select a field. The selection will begin flashing green.
3. Press the UP/DOWN arrows to change the month and the LEFT/RIGHT arrows to change the day.
4. Press the Save button.
5. Repeat until both dates are correct.

To change the Day Light Savings Time: Enabled/Disabled option:

1. Press the UP and DOWN arrows until Day Light Savings Time is highlighted.
2. Press the Adjust button to select the field. The selection will begin flashing green.
3. Use the UP arrow to change to Enabled and the DOWN arrow to change to Disabled.
4. Press the Save button.
System Options Screen

How to navigate to the System Options screen:

1. On the Main Operating screen, press the Menu button. The Menu screen will appear.
2. On the Menu screen, press the DOWN arrow once to highlight System.
3. Press the Enter button. The System screen will appear.
4. Press the DOWN arrow twice to highlight Clock Setup.
5. Press the Enter button. The System Options screen will appear (see Figure 14).

![System Options Screen](image)

Figure 14
The low fuel alarm will sound when the fuel level drops below the specified percentage.

To change the Low Fuel Alarm Percent setting:
1. Use the UP and DOWN arrows to highlight Low Fuel Alarm Percent.
2. Press the Adjust button to select the field. The selection will begin flashing green.
3. Use the UP and DOWN arrows to change the percentage. The range is between 10% and 50%.
4. Press the Save button.

The engine crank time is how long the engine will crank before it starts.

To change the Engine Crank Time setting:
1. Use the UP and DOWN arrows to highlight Engine Crank Time.
2. Press the Adjust button to select the field. The selection will begin flashing green.
3. Use the UP and DOWN arrows to change the number of seconds. The time range is between 3 and 20 seconds.
4. Press the Save button.

To change the Glow Plug Cycle Time setting:
1. Use the UP and DOWN arrows to select Glow Plug Cycle Time.
2. Press the Adjust button to select the field. The selection will begin flashing green.
3. Use the UP and DOWN arrows to change the number of seconds. The time range is between 5 and 30 seconds.
4. Press the Save button.
Maintenance Screen

How to navigate to the Maintenance screen:

1. On the Main Operating screen, press the Menu button. The Menu screen will appear.
2. Press the DOWN arrow twice to highlight Maintenance.
3. Press the Enter button. The Maintenance screen will appear (see Figure 15).

![Maintenance Screen]

There are three items to choose from on the Maintenance screen:

- Clear Fault (see Clear Fault on page 19)
- Input Diagnostics (see Input Diagnostics Screen on page 20)
- Output Diagnostics (see Output Diagnostics Screen on page 21)
Clear Fault

Whenever a fault occurs, the fault must be cleared before the LSC control will allow the engine to start again.

Follow these steps to clear a fault:

1. From the Main Operating screen, press the Menu button. The Menu screen will appear.
2. Press the DOWN arrow twice to highlight Maintenance.
3. Press the Enter button. The Maintenance screen will appear.
4. With Clear Fault highlighted (see Figure 16), press the Enter button. The display will return to the Main Operating screen. The fault message will no longer be displayed in the upper left corner of the Main Operating screen.

Figure 16
Input Diagnostics Screen

How to navigate to the Input Diagnostics screen:

1. On the Main Operating screen, press the Menu button. The Menu screen will appear.
2. Press the DOWN arrow twice to highlight Maintenance.
3. Press the Enter button. The Maintenance screen will appear.
4. Press the DOWN arrow once to highlight Input Diagnostics.
5. Press the Enter button. The Input Diagnostics screen will appear (see Figure 17).

![Input Diagnostics Screen](image)

Figure 17
Output Diagnostics Screen

How to navigate to the Output Diagnostics screen:

1. On the Main Operating screen, press the Menu button. The Menu screen will appear.
2. Press the DOWN arrow twice to highlight Maintenance.
3. Press the Enter button. The Maintenance screen will appear.
4. Press the DOWN arrow twice to highlight Output Diagnostics.
5. Press the Enter button. The Output Diagnostics screen will appear (see Figure 18).

![Output Diagnostics](image)

Figure 18
SLS STATE DIAGRAM

Figure 19
LSC STATE DIAGRAM

Figure 20
# UTC TIME ZONES

<table>
<thead>
<tr>
<th>Time Zone</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>GMT</td>
<td>Greenwich Mean Time UTC</td>
</tr>
<tr>
<td>EGST</td>
<td>Eastern Greenland Summer Time UTC+00</td>
</tr>
<tr>
<td>BST</td>
<td>British Summer Time UTC+01</td>
</tr>
<tr>
<td>CET</td>
<td>Central European Time UTC+01</td>
</tr>
<tr>
<td>DFT AIX</td>
<td>UTC+01</td>
</tr>
<tr>
<td>IST</td>
<td>Irish Standard Time UTC+01</td>
</tr>
<tr>
<td>MET</td>
<td>Middle European Time UTC+01</td>
</tr>
<tr>
<td>WAT</td>
<td>West Africa Time UTC+01</td>
</tr>
<tr>
<td>WEDT</td>
<td>Western European Daylight Time UTC+01</td>
</tr>
<tr>
<td>WEST</td>
<td>Western European Summer Time UTC+01</td>
</tr>
<tr>
<td>CAT</td>
<td>Central Africa Time UTC+02</td>
</tr>
<tr>
<td>CEDT</td>
<td>Central European Daylight Time UTC+02</td>
</tr>
<tr>
<td>CEST</td>
<td>Central European Summer Time UTC+02</td>
</tr>
<tr>
<td>EET</td>
<td>Eastern European Time UTC+02</td>
</tr>
<tr>
<td>HAEC</td>
<td>Heure Avancée d'Europe Central UTC+02</td>
</tr>
<tr>
<td>IST</td>
<td>Israel Standard Time UTC+02</td>
</tr>
<tr>
<td>MEST</td>
<td>Middle European Saving Time UTC+02</td>
</tr>
<tr>
<td>SAST</td>
<td>South African Standard Time UTC+02</td>
</tr>
<tr>
<td>WAST</td>
<td>West Africa Summer Time UTC+02</td>
</tr>
<tr>
<td>AST</td>
<td>Arabia Standard Time UTC+03</td>
</tr>
<tr>
<td>EAT</td>
<td>East Africa Time UTC+03</td>
</tr>
<tr>
<td>EEDT</td>
<td>Eastern European Daylight Time UTC+03</td>
</tr>
<tr>
<td>EEST</td>
<td>Eastern European Summer Time UTC+03</td>
</tr>
<tr>
<td>FET</td>
<td>Further-eastern European Time UTC+03</td>
</tr>
<tr>
<td>IDT</td>
<td>Israel Daylight Time UTC+03</td>
</tr>
<tr>
<td>IOT</td>
<td>Indian Ocean Time UTC+03</td>
</tr>
<tr>
<td>SYOT</td>
<td>Showa Station Time UTC+03</td>
</tr>
<tr>
<td>IRST</td>
<td>Iran Standard Time UTC+03:30</td>
</tr>
<tr>
<td>AMT</td>
<td>Armenia Time UTC+04</td>
</tr>
<tr>
<td>AZT</td>
<td>Azerbaijan Time UTC+04</td>
</tr>
<tr>
<td>GET</td>
<td>Georgia Standard Time UTC+04</td>
</tr>
<tr>
<td>GST</td>
<td>Gulf Standard Time UTC+04</td>
</tr>
<tr>
<td>MSK</td>
<td>Moscow Time UTC+04</td>
</tr>
<tr>
<td>MUT</td>
<td>Mauritius Time UTC+04</td>
</tr>
<tr>
<td>RET</td>
<td>Réunion Time UTC+04</td>
</tr>
<tr>
<td>SAMT</td>
<td>Samara Time UTC+04</td>
</tr>
<tr>
<td>SCT</td>
<td>Seychelles Time UTC+04</td>
</tr>
<tr>
<td>VOLT</td>
<td>Volgograd Time UTC+04</td>
</tr>
<tr>
<td>AFT</td>
<td>Afghanistan Time UTC+04:30</td>
</tr>
<tr>
<td>IRDT</td>
<td>Iran Daylight Time UTC+04:30</td>
</tr>
<tr>
<td>AMST</td>
<td>Armenia Summer Time UTC+05</td>
</tr>
<tr>
<td>HMT</td>
<td>Heard &amp; McDonald Islands Time UTC+05</td>
</tr>
<tr>
<td>MAWT</td>
<td>Mawson Station Time UTC+05</td>
</tr>
<tr>
<td>MVT</td>
<td>Maldives Time UTC+05</td>
</tr>
<tr>
<td>ORAT</td>
<td>Oral Time UTC+05</td>
</tr>
<tr>
<td>PKT</td>
<td>Pakistan Standard Time UTC+05</td>
</tr>
<tr>
<td>TFT</td>
<td>Indian/Kerguelen UTC+05</td>
</tr>
<tr>
<td>TJT</td>
<td>Tajikistan Time UTC+05</td>
</tr>
<tr>
<td>TMT</td>
<td>Turkmenistan Time UTC+05</td>
</tr>
<tr>
<td>UZT</td>
<td>Uzbekistan Time UTC+05</td>
</tr>
<tr>
<td>IST</td>
<td>Indian Standard Time UTC+05:30</td>
</tr>
<tr>
<td>SLST</td>
<td>Sri Lanka Time UTC+05:30</td>
</tr>
<tr>
<td>NPT</td>
<td>Nepal Time UTC+05:45</td>
</tr>
<tr>
<td>BIOT</td>
<td>British Indian Ocean Time UTC+06</td>
</tr>
<tr>
<td>BST</td>
<td>Bangladesh Standard Time UTC+06</td>
</tr>
<tr>
<td>BTT</td>
<td>Bhutan Time UTC+06</td>
</tr>
<tr>
<td>KGT</td>
<td>Kyrgyzstan Time UTC+06</td>
</tr>
<tr>
<td>VOST</td>
<td>Vostok Station Time UTC+06</td>
</tr>
<tr>
<td>YEKT</td>
<td>Yekaterinburg Time UTC+06</td>
</tr>
<tr>
<td>Time Zone</td>
<td>UTC Time difference</td>
</tr>
<tr>
<td>-----------------------------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>CCT Cocos Islands Time</td>
<td>UTC+06:30</td>
</tr>
<tr>
<td>MMT Myanmar Time</td>
<td>UTC+06:30</td>
</tr>
<tr>
<td>MST Myanmar Standard Time</td>
<td>UTC+06:30</td>
</tr>
<tr>
<td>CXT Christmas Island Time</td>
<td>UTC+07</td>
</tr>
<tr>
<td>DAVT Davis Time</td>
<td>UTC+07</td>
</tr>
<tr>
<td>HOVT Khovd Time</td>
<td>UTC+07</td>
</tr>
<tr>
<td>ICT Indochina Time</td>
<td>UTC+07</td>
</tr>
<tr>
<td>KRAT Krasnoyarsk Time</td>
<td>UTC+07</td>
</tr>
<tr>
<td>OMST Omsk Time</td>
<td>UTC+07</td>
</tr>
<tr>
<td>THA Thailand Standard Time</td>
<td>UTC+07</td>
</tr>
<tr>
<td>WIT Western Indonesian Time</td>
<td>UTC+07</td>
</tr>
<tr>
<td>ACT ASEAN Common Time</td>
<td>UTC+08</td>
</tr>
<tr>
<td>AWST Australian Western Standard Time</td>
<td>UTC+08</td>
</tr>
<tr>
<td>BDT Brunei Time</td>
<td>UTC+08</td>
</tr>
<tr>
<td>CHOT Choibalsan Time</td>
<td>UTC+08</td>
</tr>
<tr>
<td>CIT Central Indonesia Time</td>
<td>UTC+08</td>
</tr>
<tr>
<td>CST China Standard Time</td>
<td>UTC+08</td>
</tr>
<tr>
<td>CT China Time</td>
<td>UTC+08</td>
</tr>
<tr>
<td>HKT Hong Kong Time</td>
<td>UTC+08</td>
</tr>
<tr>
<td>MST Malaysia Standard Time</td>
<td>UTC+08</td>
</tr>
<tr>
<td>MYT Malaysia Time</td>
<td>UTC+08</td>
</tr>
<tr>
<td>PHT Philippine Time</td>
<td>UTC+08</td>
</tr>
<tr>
<td>SGT Singapore Time</td>
<td>UTC+08</td>
</tr>
<tr>
<td>SST Singapore Standard Time</td>
<td>UTC+08</td>
</tr>
<tr>
<td>ULAT Ulaanbaatar Time</td>
<td>UTC+08</td>
</tr>
<tr>
<td>WST Western Standard Time</td>
<td>UTC+08</td>
</tr>
<tr>
<td>CWST Central Western Standard Time</td>
<td>UTC+08:45</td>
</tr>
<tr>
<td>AWDT Australian Western Daylight Time</td>
<td>UTC+09</td>
</tr>
<tr>
<td>EIT Eastern Indonesian Time</td>
<td>UTC+09</td>
</tr>
<tr>
<td>IRKT Irkutsk Time</td>
<td>UTC+09</td>
</tr>
<tr>
<td>JST Japan Standard Time</td>
<td>UTC+09</td>
</tr>
<tr>
<td>KST Korea Standard Time</td>
<td>UTC+09</td>
</tr>
<tr>
<td>TLT Timor Leste Time</td>
<td>UTC+09</td>
</tr>
<tr>
<td>ACST Australian Central Standard Time</td>
<td>UTC+09:30</td>
</tr>
<tr>
<td>CST Central Standard Time</td>
<td>UTC+09:30</td>
</tr>
<tr>
<td>AEST Australian Eastern Standard Time</td>
<td>UTC+10</td>
</tr>
<tr>
<td>ChST Chamorro Standard Time</td>
<td>UTC+10</td>
</tr>
<tr>
<td>CHUT Chuuk Time</td>
<td>UTC+10</td>
</tr>
<tr>
<td>DDUT Dumont d’Urville Time</td>
<td>UTC+10</td>
</tr>
<tr>
<td>EST Eastern Standard Time</td>
<td>UTC+10</td>
</tr>
<tr>
<td>PGT Papua New Guinea Time</td>
<td>UTC+10</td>
</tr>
<tr>
<td>VLAT Vladivostok Time</td>
<td>UTC+10</td>
</tr>
<tr>
<td>YAKT Yakutsk Time</td>
<td>UTC+10</td>
</tr>
<tr>
<td>ACDT Australian Central Daylight Time</td>
<td>UTC+10:30</td>
</tr>
<tr>
<td>CST Central Summer Time</td>
<td>UTC+10:30</td>
</tr>
<tr>
<td>LHST Lord Howe Standard Time</td>
<td>UTC+10:30</td>
</tr>
<tr>
<td>AEDT Australian Eastern Daylight Time</td>
<td>UTC+11</td>
</tr>
<tr>
<td>KOST Kosrae Time</td>
<td>UTC+11</td>
</tr>
<tr>
<td>LHST Lord Howe Summer Time</td>
<td>UTC+11</td>
</tr>
<tr>
<td>MIST Macquarie Island Station Time</td>
<td>UTC+11</td>
</tr>
<tr>
<td>NCT New Caledonia Time</td>
<td>UTC+11</td>
</tr>
<tr>
<td>PONT Pohnpei Standard Time</td>
<td>UTC+11</td>
</tr>
<tr>
<td>SAKT Sakhalin Island Time</td>
<td>UTC+11</td>
</tr>
<tr>
<td>SBT Solomon Islands Time</td>
<td>UTC+11</td>
</tr>
<tr>
<td>VUT Vanuatu Time</td>
<td>UTC+11</td>
</tr>
<tr>
<td>NFT Norfolk Time</td>
<td>UTC+11:30</td>
</tr>
<tr>
<td>FJT Fiji Time</td>
<td>UTC+12</td>
</tr>
<tr>
<td>GILT Gilbert Island Time</td>
<td>UTC+12</td>
</tr>
<tr>
<td>MAGT Magadan Time</td>
<td>UTC+12</td>
</tr>
<tr>
<td>MHT Marshall Islands</td>
<td>UTC+12</td>
</tr>
<tr>
<td>NZST New Zealand Standard Time</td>
<td>UTC+12</td>
</tr>
<tr>
<td>PETT Kamchatka Time</td>
<td>UTC+12</td>
</tr>
</tbody>
</table>
TVT Tuvalu Time UTC+12
WAKT Wake Island Time UTC+12
CHAST Chatham Standard Time UTC+12:45
NZDT New Zealand Daylight Time UTC+13
PHOT Phoenix Island Time UTC+13
TKT Tokelau Time UTC+13
TOT Tonga Time UTC+13
CHADT Chatham Daylight Time UTC+13:45
LINT Line Islands Time UTC+14
AZOST Azores Standard Time UTC−01
CVT Cape Verde Time UTC−01
EGT Eastern Greenland Time UTC−01
FNT Fernando de Noronha Time UTC−02
GST South Georgia and the South Sandwich Islands Time UTC−02
PMDT Saint Pierre and Miquelon Daylight Time UTC−02
UYST Uruguay Summer Time UTC−02
NDT Newfoundland Daylight Time UTC−02:30
ADT Atlantic Daylight Time UTC−03
AMST Amazon Summer Time UTC−03
ART Argentina Time UTC−03
BRT Brasilia Time UTC−03
CLST Chile Summer Time UTC−03
FKST Falkland Islands Standard Time UTC−03
FKST Falkland Islands Summer Time UTC−03
GFT French Guiana Time UTC−03
PMST Saint Pierre and Miquelon Standard Time UTC−03
PYST Paraguay Summer Time UTC−03
ROTT Rothera Research Station Time UTC−03
SRT Suriname Time UTC−03
UYT Uruguay Standard Time UTC−03
NST Newfoundland Standard Time UTC−03:30
NT Newfoundland Time UTC−03:30
AMT Amazon Time UTC−04
AST Atlantic Standard Time UTC−04
BOT Bolivia Time UTC−04
CDT Cuba Daylight Time UTC−04
CLT Chile Standard Time UTC−04
COST Colombia Summer Time UTC−04
ECT Eastern Caribbean Time UTC−04
EDT Eastern Daylight Time UTC−04
FKT Falkland Islands Time UTC−04
GYT Guyana Time UTC−04
PYT Paraguay Time UTC−04
VET Venezuelan Standard Time UTC−04:30
CDT Central Daylight Time UTC−05
COT Colombia Time UTC−05
CST Cuba Standard Time UTC−05
EASST Easter Island Standard Summer Time UTC−05
ECT Ecuador Time UTC−05
EST Eastern Standard Time UTC−05
PET Peru Time UTC−05
CST Central Standard Time UTC−06
EAST Easter Island Standard Time UTC−06
GALT Galapagos Time UTC−06
MDT Mountain Daylight Time UTC−06
MST Mountain Standard Time UTC−07
PDT Pacific Daylight Time UTC−07
AKDT Alaska Daylight Time UTC−08
CIST Clipperton Island Standard Time UTC−08
PST Pacific Standard Time UTC−08

AKST Alaska Standard Time UTC−09
GAMT Gambier Islands Time UTC−09
GIT Gambier Island Time UTC−09
HADT Hawaii-Aleutian Daylight Time UTC−09
MART Marquesas Islands Time UTC−09:30
MIT Marquesas Islands Time UTC−09:30

CKT Cook Island Time UTC−10
HAST Hawaii-Aleutian Standard Time UTC−10
HST Hawaii Standard Time UTC−10
TAHT Tahiti Time UTC−10

NUT Niue Time UTC−11
SST Samoa Standard Time UTC−11

BIT Baker Island Time UTC−12
FAULT MESSAGES

Fault: Shutdown for Low Fuel

Fault: Shutdown for High Coolant Temperature

Fault: Shutdown for Low Oil Pressure

Fault: Locked out for Engine Failed Start – The engine will attempt to start 3 times and then lock out to prevent running the battery dead from start attempts.

Fault: Locked out for LSC Sun Rise/Set Calculation Error – If the GPS coordinates are entered incorrectly, it is not possible to calculate the appropriate engine start and stop times.

Fault: SLS module Communication Loss – This would indicate an issue with the CAN wiring/communication between the LSC module and the SLS module.