Meade LX65 Troubleshooting

Can be freely distributed while it remains unaltered
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While rare, the telescope may not operate as expected for a number of simple reasons. The following text offers advice on how to identify and resolve such issues.

Traversing the Handset Menus

The **MODE** Key on the Audiostar handset cycles the telescope through its different modes i.e. Object, Event, Guided Tour, Utilities and Setup.

Pressing the **MODE** key repeatedly will take you to the top of the Menu.

During most telescope operations, pressing the **MODE** key will stop the current operation.

Power Related Issues

The LX65 requires 12VDC and 5A+ of power (PIN positive) to run smoothly. Alkaline batteries can be used to power the telescope but poor quality batteries nay not be able to supply enough current. In such cases the telescope may show a 'motor fault' or switch off.

To power the telescope via an external battery pack or mains power supply the power cable should use a plug of 5.5mm external diameter and with 2.5mm pin (positive).

We highly recommend using the Meade LXPS7/LXPS17 rechargeable battery pack or a high quality, 12VDC 5A regulated mains power supply to power your telescope.

Resetting to Factory Settings

The Audiostar handset that has been included with LX65 telescopes has been designed to work with a variety of Meade telescopes. Resetting the handset to factory settings may be required to make the telescope work with your LX65 and is necessary when buying a new replacement Meade Audiostar handset.

The handset can be reset to factory default settings via the handset's **Setup** menu and by choosing the **Reset** option.

Following a successful reset, the handset will always ask for the first time to choose a language (i.e. English or Spanish) and offer the option to Align the telescope by pressing the [0] handset key or the [MODE] handset key to gain access to the handset's menus.

Please note that following a Reset, any user settings will be restored to factory settings including Cord Wrap that will be OFF, Location, date, time etc.

GOTO Issues

Assuming that you have followed the instructions in the manual and your telescope has aligned successfully, there are still a number of pitfalls that have been outlined below.

If you issue a GOTO command to a target under the Horizon, the scope will beep but will not move.

If you issue a GOTO command to a target the telescope is already tracking, the handset will show 'telescope slewing…' or 'Spiral search' but the telescope will not visibly move since it is already on the target.

In such case, simply wait for the telescope to go through this operation that should take 30-60 seconds to complete."

Depending on the menu you are in when you issue a GOTO command, this will execute when you press the Enter button or the GOTO button. Try both if you are not certain.

LX65 Handset Socket (HBX)

Always make certain that the handset cable clicks in place when the plugs on either side of the cable are inserted to the handset's and telescope's sockets.
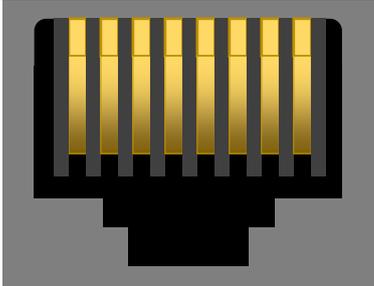
Check the handset socket (HBX) on the telescope and on the handset to confirm that the 8 wires in the sockets are in position and run parallel to each other as in the image on the left.
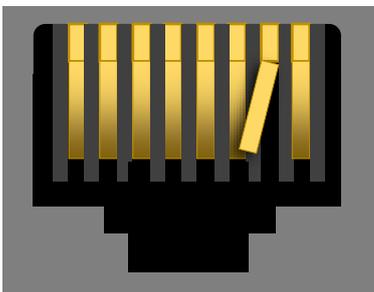
There is a possibility that one of the wires may have come out of position in which case use a pen knife or similar to straighten the wire. The image on the left shows how an out of place wire could look like.

Stretched Cables

Stretched cables can cause various issues including poor communication connections, power loss and other more serious issues. These, can affect alignment and operation.

You may wish to set Cord Wrap to ON following a Reset or when you set up your telescope for the first time. This will ensure that the handset cable will not be stretched. With Cord Wrap set to ON, the telescope may not take to fastest route to this target but this may be a small price to pay.

Over-stretched cables may damage the Handset (HBX) socket and/or power socket.

Troubleshooting the GPS Module – Test A

To ascertain that the GPS module is operational, without going through the "Alignment procedure" go to the Objects menu → Solar System, then scroll to Mercury and press **ENTER**. This would automatically make the telescope search for the GPS signal.

If there is an issue with a damaged cable, you would get a message that says "NO DATA GPS" or if the GPS module itself is damaged then the unit will keep looking for the GPS signal on an endless cycle. This test can only be performed in the open.

Confirming the Working State of the Telescope – Test B

To check that your LX90 is operational with no major issues, first Reset to factory settings. Enter Location Date, Time and Daylight Saving making certain that you have selected the LX90 as the telescope model.

Then, perform a 'dummy' Easy Align. During Easy Alignment, when the telescope slews to the first and then second target star and asks you to centre it simply press ENTER, do not centre the stars.

Once you have aligned the telescope on the two target stars the handset should show 'Alignment successful'. This would suggest that there are no major issues with the telescope hardware.

This can be done during the day.

Confirming the Working State of the Encoders – Test C

You can use a terrestrial target to confirm that the encoders are functioning correctly, this can be done during the day. First ensure that the telescope is reasonably level.

Select a target and use the left and right arrow keys to centre it. Hold the MODE key down for 5 sec to bring up the alternate menu. Then go to the Alt/Az screen and note the AZ value.
Now use the left and right arrow keys to slew a full 360 degrees until the target is re-centred. If the handset display still reads the 'same' AZ value, the encoder is functioning as expected. High magnification or a cross-hair eyepiece will help but is not required.

Now level the OTA using a spirit level and note the Alt value.
Use the up and down arrow keys to slew the OTA upwards until it is has moved 90 degrees; check that with bubble level or inclinometer. If the handset display reads ~90 degrees the encoder is functioning as expected.

Completing Tests A, B & C

If you have successfully completed tests A, B and C as outlined earlier in this document, it is highly unlikely that there is something wrong with the telescope itself.

It is most likely that issues are related to power, the handset, firmware or simply user error. The next step would be to ensure that:

1. The telescope receives enough power.
2. The handset cable socket on the handset and telescope panel are in good order with all wires in position running parallel to each other.
3. The handset cable has been fully inserted and has clicked in place at either end i.e. handset & telescope.
4. You use the latest firmware i.e. A4S4 at the time of writing (19th, December 2019).
5. Check that all user settings are correct.

Select Item: Object
- Solar System
  - Mercury
  - *Etc.*
  - Moon
  - Asteroids
  - Comets
- Constellations
  - Andromeda
  - *Etc.*
- Deep Sky
  - Named Object
  - Galaxies
  - Nebulae
  - Messier
  - *Etc.*
- Star
  - Named
  - SAO Catalog
  - Double
  - Variable
  - *Etc.*
- Satellite
  - Select
  - Add
  - Delete
  - Edit
- User Objects
  - Select
  - Add
  - Delete
  - Edit
- Landmarks
  - Select
  - Add
  - Delete
- Identify
- Browse
  - Start Search
  - Edit Parameters

Select Item: Event
- Sunrise
- Sunset
- Moonrise
- Moonset
- Moon Phases
  - Next Full Moon
  - Next New Moon
  - Next 1st Qtr
  - Next 3rd Qtr
- Meteor Showers
  - Quadrantids
  - Lyrids
  - Eta Aquarids
  - Delta Aquarids
  - Perseids
  - Orionids
  - Taurids
  - Leonids
  - Geminids
  - Ursids
- Solar Eclipses
- Lunar Eclipses
- Min. of Algol
- Autumn Equinox
- Vernal Equinox
- Winter Solstice
- Summer Solstice

Select Item: Guided Tour
- Tour Objects
  - Tonight's Best
  - A Star's Life
  - How Far is Far

Select Item: Glossary
- A...
  - Accretion Disk
  - Etc.
- B...
- C...
- D...
- E...
- F...
- G...
- H...
- I...
- J...
- K...
- L...
- M...
- N...
- O...
- P...
- Q...
- R...
- S...
- T...
- U...
- V...
- W...
- X...
- Y...
- Z...

Select Item: Utilities
- Timer
  - Set
  - Start & Stop
- Alarm
  - Set
  - On & Off
- Eyepiece Calc.
  - Field of View
  - Magnification
  - Suggest
- Brightest Star
- Brightness Adj.
- Contrast Adj.
- Beep
- Battery Alarm
- Landmark Survey
- Sleep Scope
- Park Scope
- Language
- Audio Clip
- <mark>Cord Wrap</mark>

Select Item: Setup
- Align
  - Easy
  - One Star
  - Two Star
  - Three Star
- Date
- Time
- Daylight Saving
- Telescope
  - Telescope Model
  - Az/RA Ratio
  - Alt/Dec Ratio
  - Mount
  - LXD-75 Adjust
  - Focal Length
  - Az/RA Percent
  - Alt/Dec Percent
  - Smart Drive
  - Train Drive
  - Tracking Rate
  - Reverse L/R
  - Reverse Up/Dn
  - Quiet Slew
  - Max Elevation
  - Min AOS
  - Calibrate Motor
  - High Precision
- Targets
  - Astronomical
  - Terrestrial
- Site
  - Select
  - Add
  - Delete
  - Edit
- Owner Info
- Clone
- Download
- Statistics
- <mark>Reset</mark>

LX65

After setting up your telescope for the first time or following a Reset, please ensure that Cord Wrap is set to ON to avoid cable stretching.