ALLOS

INSTRUCTION MANUAL

Computer controlled Focuser and Mount Control for
Takahashi Mewlon 250/300 and EM/NJP Mounts

Attention:

Any use of the ALLOS hardware and software is at your own risk.

Read this instruction manual carefully before using ALLOS hardware or software.

Make sure that you can watch your mount and telescope while operating it with the ALLOS device, so you are able to interrupt any undesired moving or focusing by powering down the mount and/or ALLOS.

Warning:

You can use the same power supply for ALLOS as for your mount and/or computer only, if all connected devices have the minus pole as the common pole or if the common pole is insulated to the power supply.

Introduction

ALLOS allows computer control of your Mewlon`s motorized focuser and your EM/NJP mount. By using ALLOS it is possible to operate your focuser from astronomy software packages like MAXIM DL, ASTROART, FOCUS MAX and many others. ALLOS can be used to operate the Mewlon`s motorized focuser with any software application which support ASCOM or a LX200 motor focuser and a serial COM port. ALLOS comes also with a build in guide port. By connecting ALLOS to the guide port of your mount and by using a webcam and widely available software like Guide Dog or K3CCDTool you are able to auto guide your mount. With an optional cable you can connect ALLOS to the control port of your EM/NJP mount. Then you have access to the shift keys S1 and S2 as well as to the mount's speed settings.

ALLOS is provided with a dedicated MS Windows software application. This software application can be used to configure all features of the ALLOS device. It can also be used for convenient operation of the focuser and the mount.

ALLOS is also provided with a Public Domain ASCOM driver for the focuser feature of ALLOS

Overview

You ALLOS package contain the following items:

- ❑ The ALLOS device
- ❑ A power cord to connect the ALLOS device to the power supply of your Takahashi mount
- ❑ A cable to connect the Mewlon`s focuser to the ALLOS device (5pin DIN plug to 6pin Western plug)
- ❑ A cable to connect the EM/NJP mount's guide port to the ALLOS device (6pin DIN plug to 8pin Western plug)
- ❑ A cable to connect your computer's COM port to the ALLOS device (9pin DSUB plug to 4pin Western plug)
- ❑ A compact disc with software for MS windows to operate the ALLOS device and some useful documents including this instruction manual

For further information about the ALLOS project please visit my website at http://www.astrofactum.de/allos

If you like to keep informed about software updates or firmware updates please send an email with the word "register" in the email body to allos@astrofactum.de

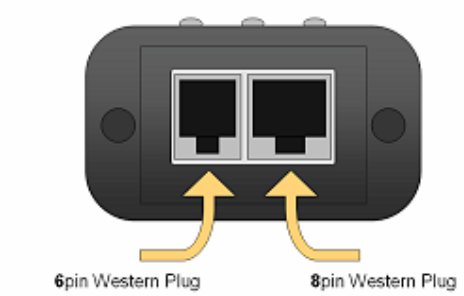
ALLOS Device

ALLOS needs at least a connection to a power supply, a connection to the serial port of a computer and a connection to your mount or Mewlon focuser.
All plugs are differently formed.

First connect your mount and/or Mewlon.

- Connect the cable with the 6pin Western plug to the left receptacle. Connect the 5pin DIN plug at the opposite side of this cable to your Mewlon`s focuser.

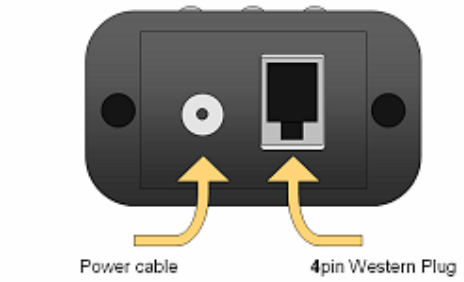
- Connect the cable with the 8pin Western plug to the right receptacle. Connect the opposite side of this cable to your mount
  6pin DIN plug ➔ Guide port
  8pin DIN plug ➔ Control port



Then connect your computer and the power supply.

- Connect the cable with the 4pin Western plug to the right receptacle. Connect the 9pin DSUB plug at the opposite side of this cable to a COM port of your computer.

- Connect the cable with round plug to the left receptacle. Connect the opposite side of this cable to your power supply.
  Red marked clamp ➔ + pole
  Black marked clamp ➔ – pole



You can use any power supply which provides 12V to 25V and at least 200mA direct current.

Attention: Use a power supply with an output voltage level from 12V – 25V DC!
Do not use a power supply with AC output or DC output higher than 30V!
False connected power supply poles will not destroy ALLOS but it is more save to prevent a false connected power supply.

- **Left LED = Mount movement**
  While ALLOS performs any mount movement this LED is illuminated
- **Middle LED = Power and Mount speed**
  This LED is illuminated while ALLOS is powered.

  Green light indicates that the mount is operating in normal speed mode.

  Red light indicates that the mount is operating in high speed mode.
- **Right LED = Focuser operation**
  This LED is continuously illuminated when the focusing engine is moving.
  The LED is flashing when focuser movement is interrupted by a last detent.

Notice: When connected to a power supply ALLOS performs a power on test. This is indicated by flashing all three LED`s. If no focuser is connected, ALLOS performs an extended power on test for about 5 seconds.

ALLOS Control Software V1.03

This MS windows software application can be used to operate the ALLOS device as well as configuring all device settings.

Getting Started

To install the ALLOS Control Software execute the file setup.exe and follow the instructions.

ALLOS control software communicates with the ALLOS device using the following interface settings of the COM port.

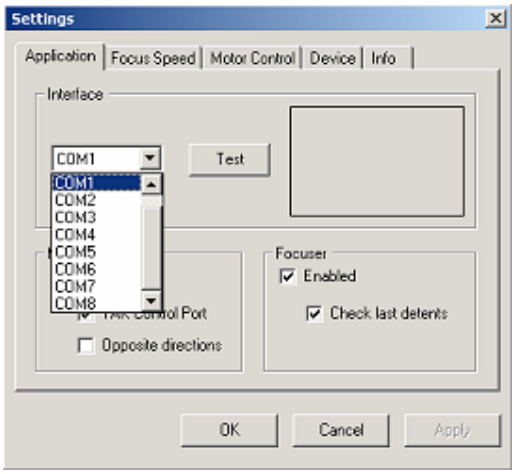
Speed:	**9600 baud**
Data Bits:	**8**
Parity:	**none**
Stop Bits:	**1**
Handshaking:	**No**

There is no need to configure the COM port manually. ALLOS Control Software set the parameters automatically.

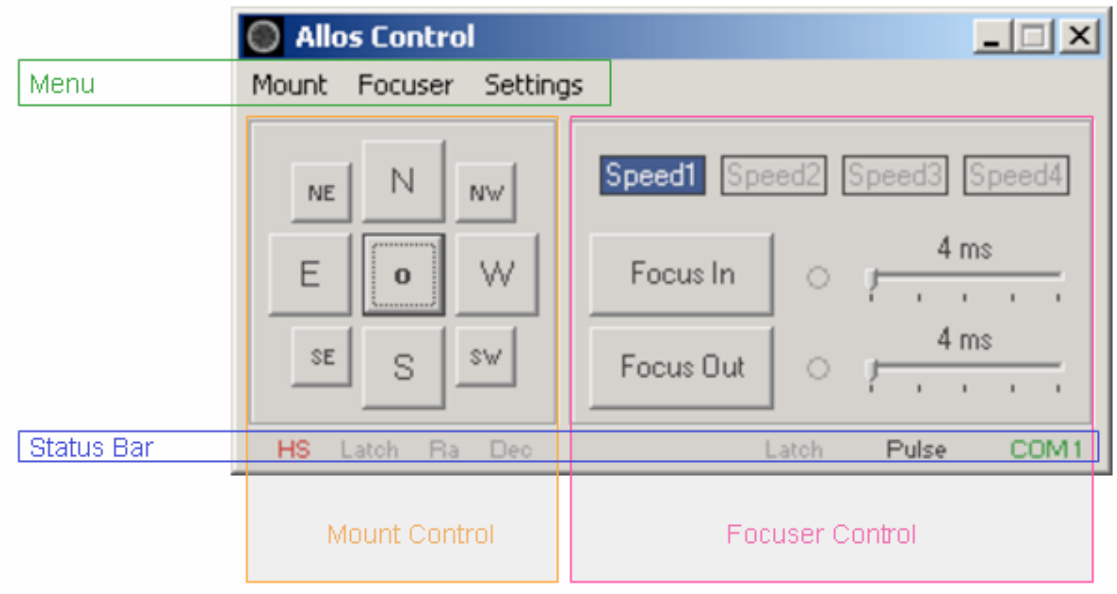
Connect the ALLOS device to your computer and make sure that ALLOS is powered.

When you start ALLOS Control for the first time it ask you for the COM port the ALLOS device is connected to. If you do not found the COM port in the port list, there the ALLOS device is connected to, try to disable the check box “Hide unavailable ports”.

Test the connection to the ALLOS device by pressing the test button in the menu window. If a connection is established information’s about the connected ALLOS device will appear in the panel right to the test button. You find a detailed description of all settings in this menu window at the end of this document.



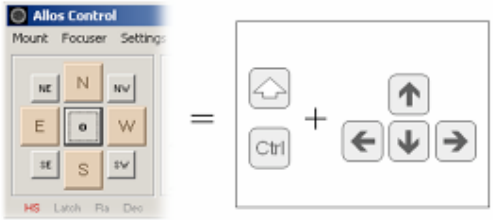
The Main Application Window



Mount Control

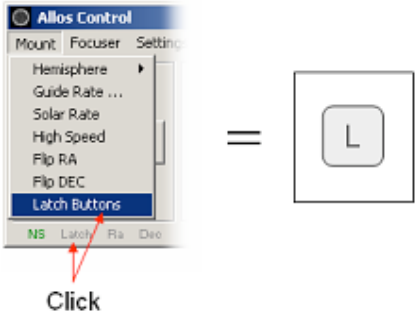
Mount Movement

To move the mount click one of the direction buttons or use the arrow keys of you computer keypad. Press one of the arrow keys while holding down the Shift or the Ctrl key.



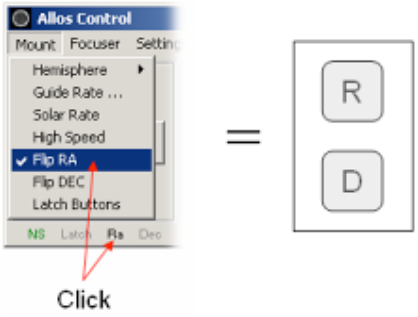
Button Latch

Mount movement is performed as long as you press any of the direction buttons. You can change settings so that pressing a direction button will toggle the mount movement. Use the mount menu entry or click on the **Latch** entry in the Status bar or press the L-key of you computer key pad.



Flip movement directions

To adapt the mount's movement direction to the view on you computer display or in your eyepiece it is possible to flip the RA and DEC buttons. Flip the buttons by using the Mount menu or clicking on the Ra or Dec entries in the status bar or pressing the R or D- key.



Extended Mount Control

If you connect the ALLOS device to the control port of your Takahashi mount you can use the following extended features of the ALLOS control software. Make also sure that you have enabled the TAK Control Port check box in the Application menu windows of the Advanced Settings menu and that you have connected an ALLOS device to your computer.

Set Hemisphere

The Takahashi mount can be set for operation in northern or southern hemisphere. To change the mounts hemisphere setting click the mount menu entry and follow the instructions.

Solar Rate

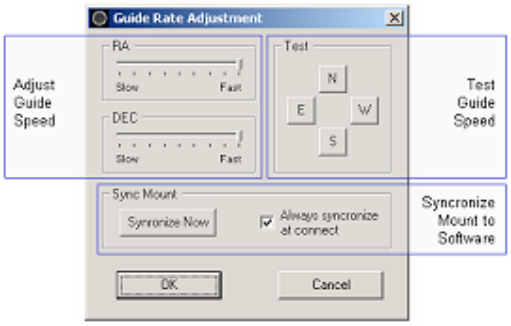
Toggle between sidereal and solar drive rate by clicking the entry in the mount menu.

High Speed

Your Takahashi EM/NJP mount provides two different speed settings. To toggle the speed use the mount menu entry or click on the NS/HS entry in the status bar or press the H key of you computer key pad.

Guide Rate

If your EM/NJP mount is in Normal Speed it is possible to adjust the guide speed rate. There are 9 different speed settings each in RA and DEC. Consult your EM/NJP instruction manual for details.



The ALLOS control software supports the adjustment of the guide speed in a convenient way. Use the Mount menu entry **Guide Rate** to adjust the guide speed by moving the sliders for RA and DEC. Test the settings with the mount movement buttons in the Test Panel of the menu window.

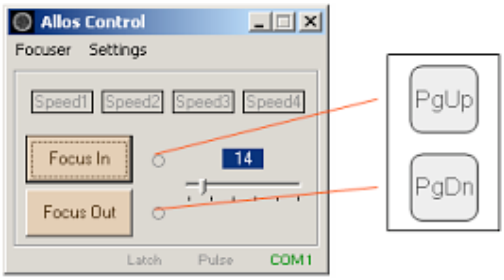
When powered up your Takahahsi mount is always in the highest guide speed setting. To insure that the settings in your mount and in ALLOS control software are the same you have to synchronize the mount to the ALLOS control software. Click the Synchronize button to synchronize the mount to the software settings. If the Always Synchronize check box is enabled, ALLOS control software synchronizes your mount every time the software connects to the ALLOS device. If you notice any difference between the guide speed settings of you mount and the software resynchronize your mount to the ALLOS control software.

Focuser Control

Focusing

For focusing click on the Focus In or Focus Out button.

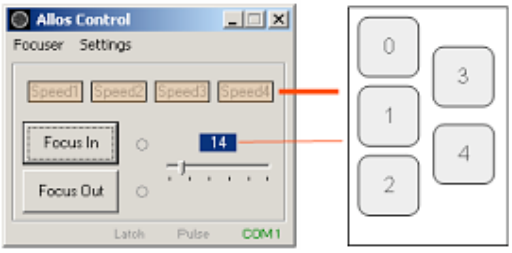
You can also use the PgUp / PgDn keys for focusing.



Speed Control

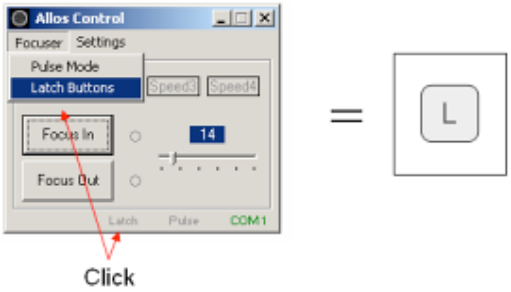
Click on the Speed buttons or use the Num keys to adjust the focusing speed.

The values of the Speed Registers 1-4 can be adjusted in the Advanced Settings Menu.



Button Latch

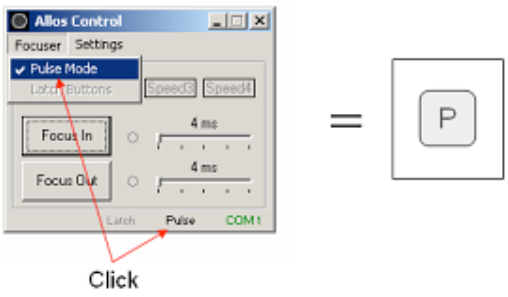
Focusing is performed as long as you press any of the Focuser buttons. You can change settings so that pressing these buttons will toggle the focusing On/Off. Use the Focuser menu entry or click on the **Latch** entry in the Status bar or press the L- key.



Pulse Focus Mode

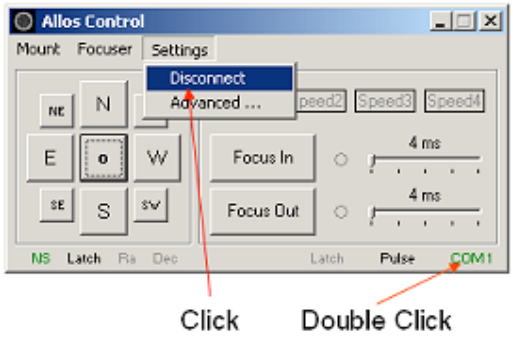
To toggle between normal focusing and Pulse focusing click the Focuser menu entry or the **Pulse** entry in the status bar or press the P- key.

In Pulse Focus Mode the focuser moves for a defined time and stops then automatically. You can adjust the pulse time for each focusing direction by moving the sliders. Furthermore you can adjust focusing speed in the same way as in normal focusing mode.



Settings Menu

Connect or disconnect the ALLOS device by using the Connect / Disconnect entry in the Settings Menu. You can also double click on the most right entry in the status bar. When connected the status bar entry shows the used COM port. When disconnected the status bar entry shows "---" and the COM port is no longer claimed. Use the Disconnect / Connect procedure also when you attach the ALLOS device to your computer after starting the ALLOS control software or when the ALLOS device was powered down during an active session.



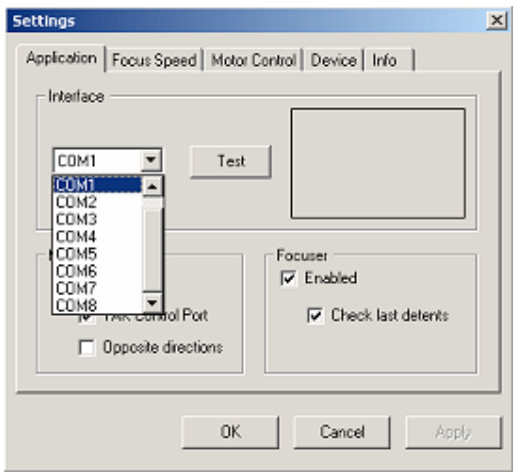
Advanced Settings Menu

The Application Section

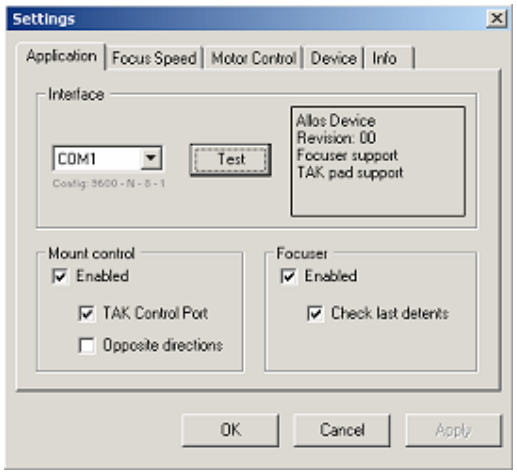
Serial Communication Port

Select the COM port the ALLOS device is connected to. If you do not found the COM port in the port list, there the ALLOS device is connected to, try to disable the check box "Hide unavailable ports".

To test the connection to the ALLOS device press the test button. If the software communicates with the ALLOS device you will see information's about the currently connected ALLOS device in the panel right to the test button.



Panel Mount Control



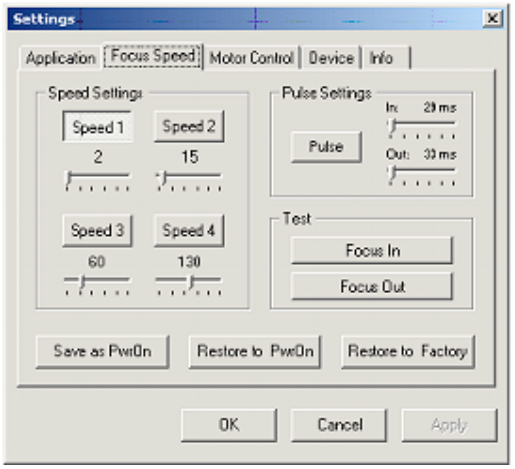
- Enable the Enable check box if you like to use the mount control property of ALLOS.
- Enable the TAK Control Port check box if you have ALLOS connected to the control port of you mount instead of the guide port.
- When the Opposite Direction check box is enabled you can adjust the mount speed in high speed mode by pressing both RA buttons at the same time (this is also true for the DEC buttons).

Panel Focuser

Enable the Enable check box if you like to use the focuser property of ALLOS.

By enabling the Check Last detent check box the ALLOS control software show the state of the last detents of the focuser in the main window.

The Focus Speed Section



The ALLOS device contains 4 Speed Registers and 2 Pulse Time Registers. You can change the values of the registers by moving the sliders. Test the new register values by using the Focus buttons in the Test Panel.

- Press the Restore to PwrOn button to recall the actual Power On default setting of the ALLOS device.
- Press the OK button to use the slider values with the ALLOS control software
- Press the Restore to PwrOn button to recall the actual used power on register settings of the ALLOS device.
- Press the Save as PwrOn button to save the values also to the ALLOS device as new power on default register settings.
- Recall the factory default settings of the register values by pressing the Restore to Factory button.

The Motor Control Section

The micro processor of the ALLOS device uses a PI regulator to control the speed of the Mewlon`s focusing motor. To optimize the regulation you can change the parameters.

The Device Section

The ALLOS device can be used with many software applications which support LX200 electric focusers. ALLOS is more sophisticated than a LX200 electric focuser. The behavior of the ALLOS device could confuse LX200 focuser software. If ALLOS does not properly communicate with such a software, try to set ALLOS in it's generic LX200 mode. When you do so, ALLOS will go in this LX200 mode after power on.

The Info Section

In this section you find information's about the version of ALLOS control software as well as version information's about a connected ALLOS device.

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