

MHWS – Cabinets Electrical Interface

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| Interface Document: LN-MPIA-FDR-INT-313 | Issue: 1.1 | |
| Relevant Documents: LN-MPIA-FDR-ELEC-005, SciMeasure manual | | |
| Brief Description: This document describes the electrical connection of the MHWS to the cabinets. | | |
| Prepared: L. Mohr Date: 14 April 2005 | Approved: J. Farinato Date: 04 May 2005 | Released: M. Kürster Date: 18 May 2005 |

Interface Description

This document describes the electrical interface between the cabinet and the MHWS star enlarger positioning motor stages and from the MHWS CCDs to the cabinets. The patchbox represents the interface between the motor electronics (cabinet) and the motor unit (mounting stage).

Interface Specification

One motor unit (mounting stage) gets two connectors from the patchbox, one connector for motor signals, limits-/ref. switch and incremental encoder and one connector for the power supply. All cables from the patchbox to a motor unit should be shielded. The maximum cable length is three meters, this is the maximum distance between the patchbox and the MHWS.

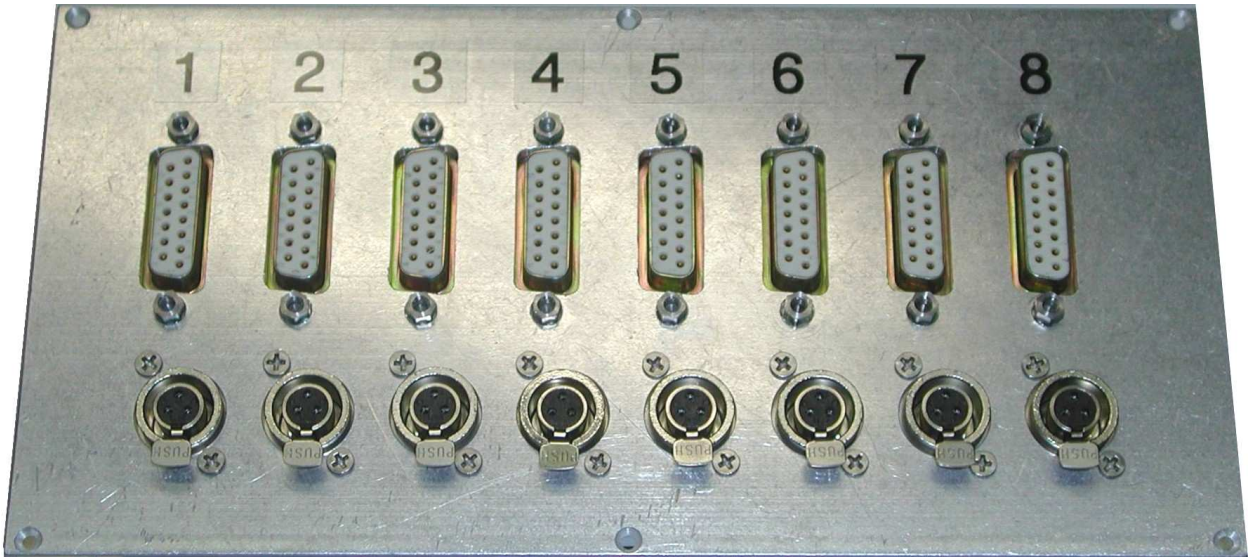
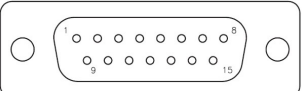
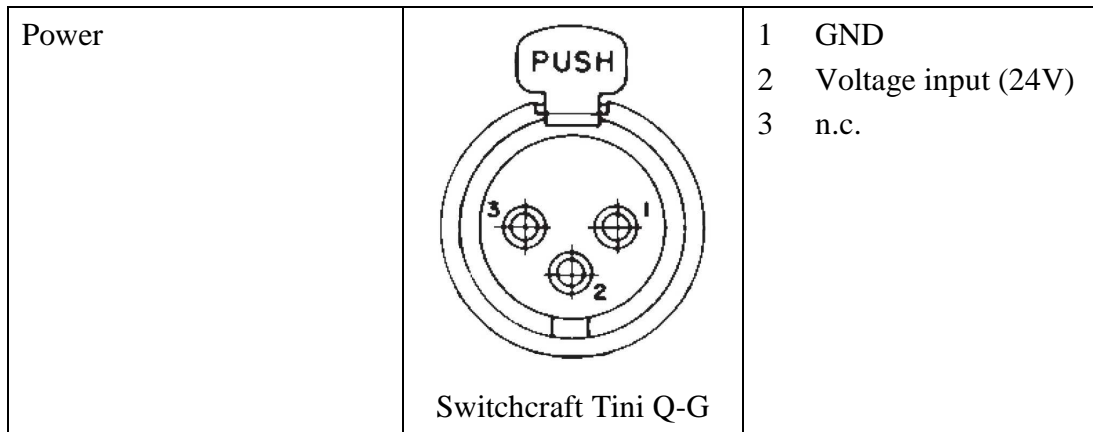


Figure 1: The patchbox; in the bottom part there are the plugs for the power supply cables, while in the top part there are the plugs for the signal cables.

The following table shows the pin configuration of each of the two connectors:

| Description | Connector type | Pin configuration | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|--|--|---|------|-----------------|-----------|-----------------|-----------|----|-----------|-----------------|------|------------------|------|---|-----------|----|--------|---|--------|----|------|---|-------------|----|------------|---|------------|----|------------|---|------------|
| Motor signals, limit switch, reference switch and incremental encoder |  <p>15-pin Sub-D female</p> | <table border="0"> <tr> <td>1</td> <td>n.c.</td> </tr> <tr> <td>9²⁾</td> <td>Motor (-)</td> </tr> <tr> <td>2²⁾</td> <td>Motor (+)</td> </tr> <tr> <td>10</td> <td>Power GND</td> </tr> <tr> <td>3¹⁾</td> <td>MAGN</td> </tr> <tr> <td>11¹⁾</td> <td>SIGN</td> </tr> <tr> <td>4</td> <td>+5V input</td> </tr> <tr> <td>12</td> <td>NLIMIT</td> </tr> <tr> <td>5</td> <td>PLIMIT</td> </tr> <tr> <td>13</td> <td>REFS</td> </tr> <tr> <td>6</td> <td>GND (Limit)</td> </tr> <tr> <td>14</td> <td>Encoder A+</td> </tr> <tr> <td>7</td> <td>Encoder A-</td> </tr> <tr> <td>15</td> <td>Encoder B+</td> </tr> <tr> <td>8</td> <td>Encoder B-</td> </tr> </table> | 1 | n.c. | 9 ²⁾ | Motor (-) | 2 ²⁾ | Motor (+) | 10 | Power GND | 3 ¹⁾ | MAGN | 11 ¹⁾ | SIGN | 4 | +5V input | 12 | NLIMIT | 5 | PLIMIT | 13 | REFS | 6 | GND (Limit) | 14 | Encoder A+ | 7 | Encoder A- | 15 | Encoder B+ | 8 | Encoder B- |
| 1 | n.c. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9 ²⁾ | Motor (-) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 ²⁾ | Motor (+) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | Power GND | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 ¹⁾ | MAGN | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 ¹⁾ | SIGN | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | +5V input | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12 | NLIMIT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | PLIMIT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 13 | REFS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | GND (Limit) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 14 | Encoder A+ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | Encoder A- | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 15 | Encoder B+ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 | Encoder B- | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>¹⁾ For the servo motor version (M-405.CG), pin 3 and 11 are not connected and the power connector is not used.</p> <p>²⁾ For the activeDrive motor version (M-505K023), pin 2 and 9 are not connected and the power connector is used.</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |



Special Requirements

The MHWS has servo motors and activeDrive motors, but it is not possible to mix the different motor systems at the patchbox. Either the patchbox is for activeDrive motors or for servo motors. One MHWS has 16 activeDrive motors (2 dedicated patchboxes) and one servo motor (1 dedicated patchbox which is shared with other servo motors).

CCD

See SciMeasure manual.