

Kohzu stages customization for *XFEL* (Date: 17. March 2024)

1. Air Stages

This customisation is standardized and agreed on with some customers of the facility and usually with the controls group. Please check each modification and let us know if you think something should be different.

It includes following modifications:

1.1 Motor

The standard motor (5 phase) on Kohzu stages will be exchanged to a 2 phase motor (Vexta Orientalmotors). For some stage-sizes high-resolution types (400 steps instead of 200 steps per revolution) are available.

1.2 Shielding

The leads from the motor to the connectors are shielded.



1.3 Stage connector

The connection on the stage is a *LEMO FWG.3B.308*



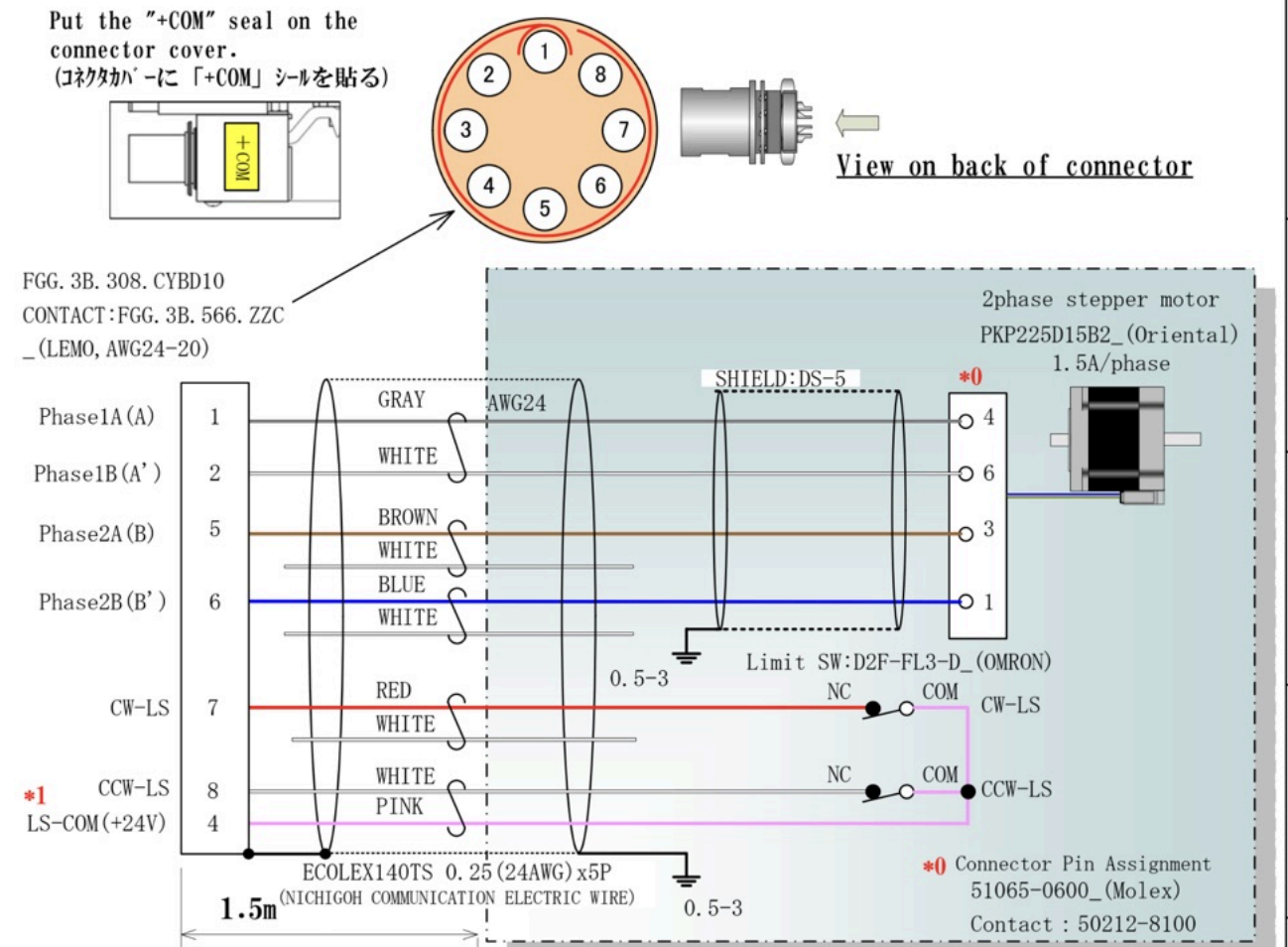
1.4 Limit-Switches

Standard Limits on Kohzu stages are optically (normally closed, “OK-output”).
Kohzu exchanges the limits on request to *mechanical limit-switches (normally closed) switching the 24V supply to the output*.
Available signals: clockwise (CW-LS), counter-clockwise (CCW-LS), no home-signal.



1.5 Cabling

The standard cabling will be changed to be customer specific.



Kohzu wiring diagram of a specific stage

Typical Name: C-2

Article No.: FWG.3B.308.CYC

| Pin | Signal |
|-----|----------------|
| 1 | Phase 1 A (A) |
| 2 | Phase 1 B (A') |
| 3 | GND |
| 4 | Ub+ (24V) |
| 5 | Phase 2 A (B) |
| 6 | Phase 2 B (B') |
| 7 | Limit CW |
| 8 | Limit CCW |

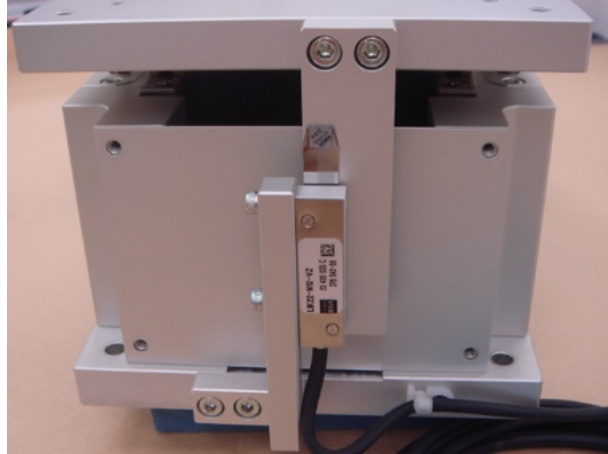


copy from document: Standard Pinout for Connectors at XFEL Version 3.7 Sept. 2016

1.6 Encoders

Kohzu provides absolute and incremental encoders (Renishaw) for air and vacuum applications as an option on all stages.

Incremental Encoder



Absolute Encoder (Renishaw Resolute)



2. Vacuum Stages (single shielded)

2.1 Motor

The standard motor (5 phase) on Kohzu stages will be exchanged to a 2 phase motor (Phytron motor). For some stage-sizes high-resolution types (400 steps instead of 200 steps per revolution) are available.

2.2 Shielding

The leads from the motor to the connectors are shielded.



2.3 Stage connector

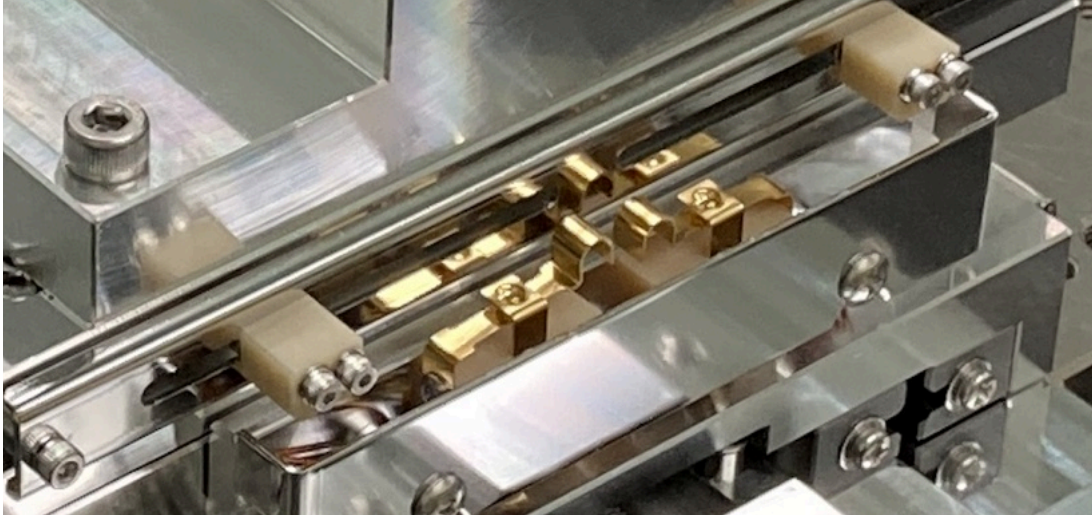
LEMO FGG.2B.308 connector on the Kapton wires.



2.4 Limit-Switches

On vacuum stages there are adjustable *mechanical limit-switches (normally closed) switching the 24V supply to the output.*

Available signals: clockwise (CW-LS), counter-clockwise (CCW-LS), no home-signal.



2.5 Vacuum Cabling (single shielded)

