Interlock setup schematic

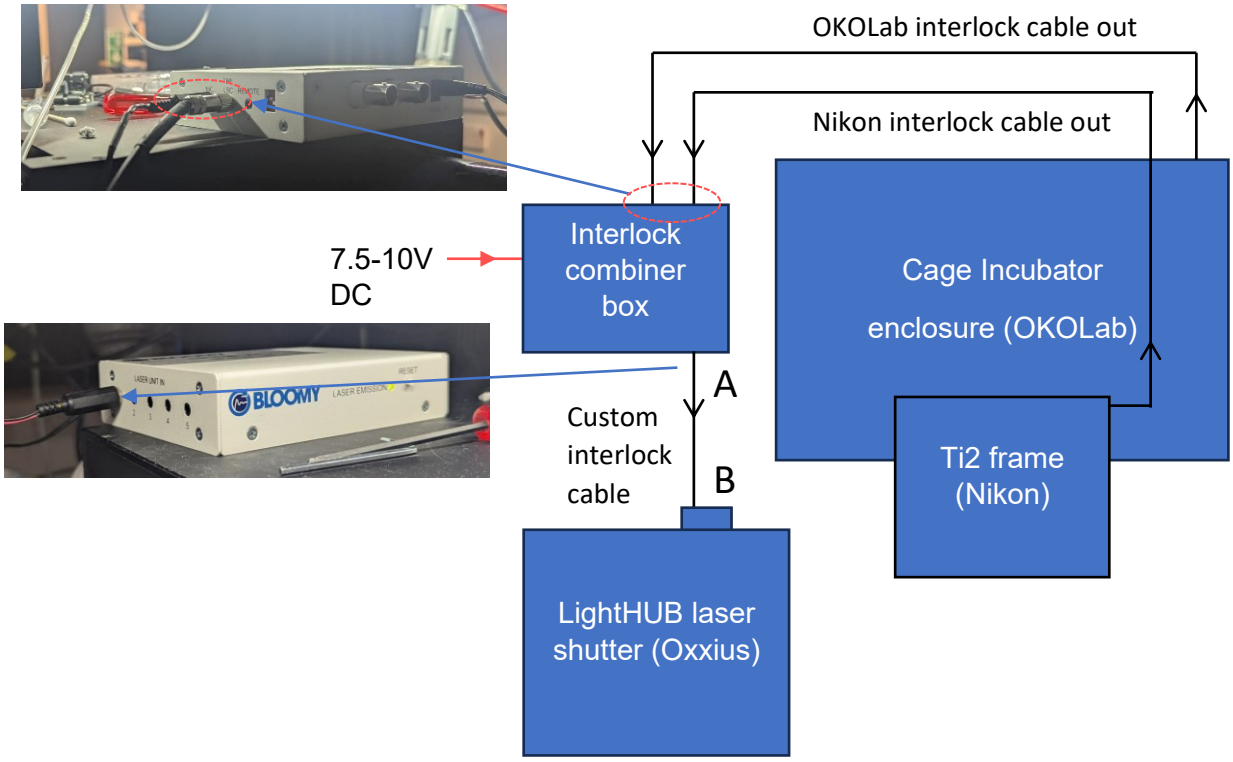

Figure 1: Schematic of interlock setup. A and B correspond to the two ends of the custom interlock cable.Cables used to connect incubator and frame interlocks to interlock combiner box are supplied by Okolab and Nikon respectively, and are both 5-pin connectors to TRS.

Wiring of custom interlock cable

The interlock is simply a circuit formed by the wires in 3.5mm mono/stereo audio jack cables, and when the circuit is open (connection is broken), the shutter closes, and when closed the shutter is open. Stereo (TRS) cables have three wires/pins for the tip, ring and sleeve connections at the jack, while mono (TS) just have tip and sleeve. Which wires/pins the interlock system uses depends on the interlock source (e.g. enclosure), the interlock combiner box, and the input of the shutter.

Currently, the interlock combiner box (PN1SUPLAS4) takes a TRS (3-pin) input and the gravity-fed shutter interlock connection takes TS (2-pin) input, so a custom cable is required to connect the box and shutter, see Figure 1.

For this custom cable, the **T**ip of the interlock box end (A) is connected to the **T**ip of the shutter end (B), but the **R**ing and **S**leeve of end A are connected together to the **S**leeve of end B. This is achieved by soldering the two jacks at the A and B ends to two wires total, red and black.

The wiring is as follows, and is illustrated in Figure 2 and Figure 3:

- End A: Black—tip, Red—ring and sleeve
- End B: Black—tip, Red—sleeve

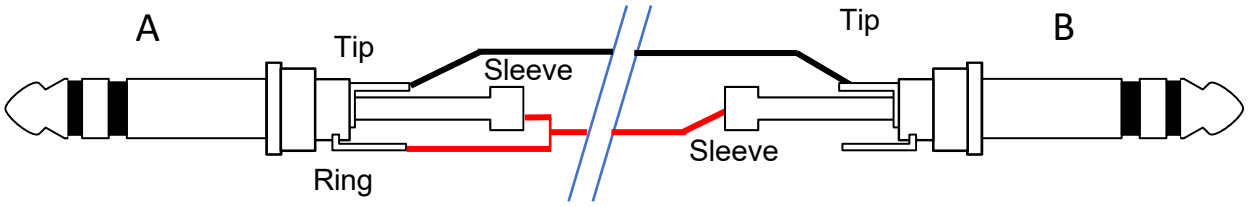

Figure 2: Custom cable wiring diagram.

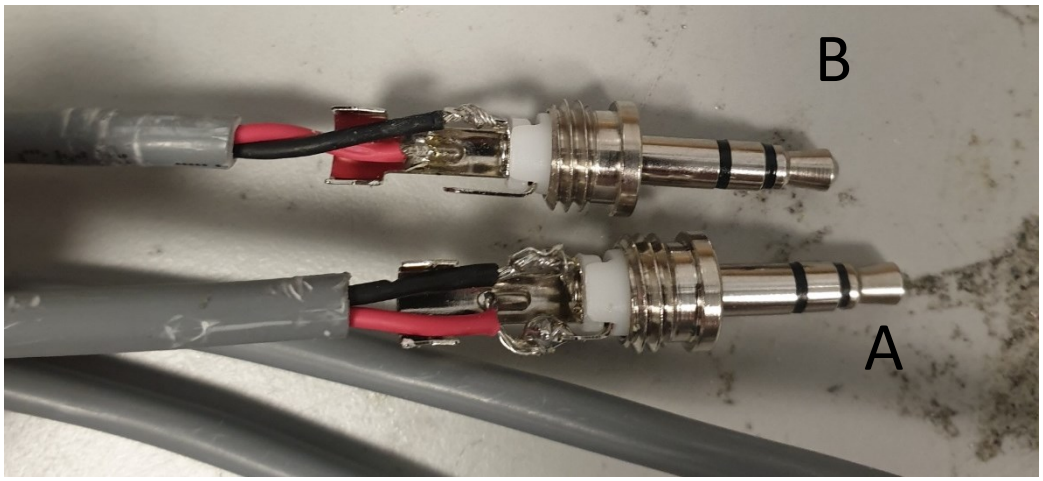

Figure 3: Photo of wires soldered to TRS jack terminals.