FB10000 Error Messages Troubleshooting

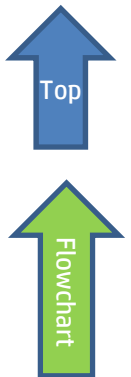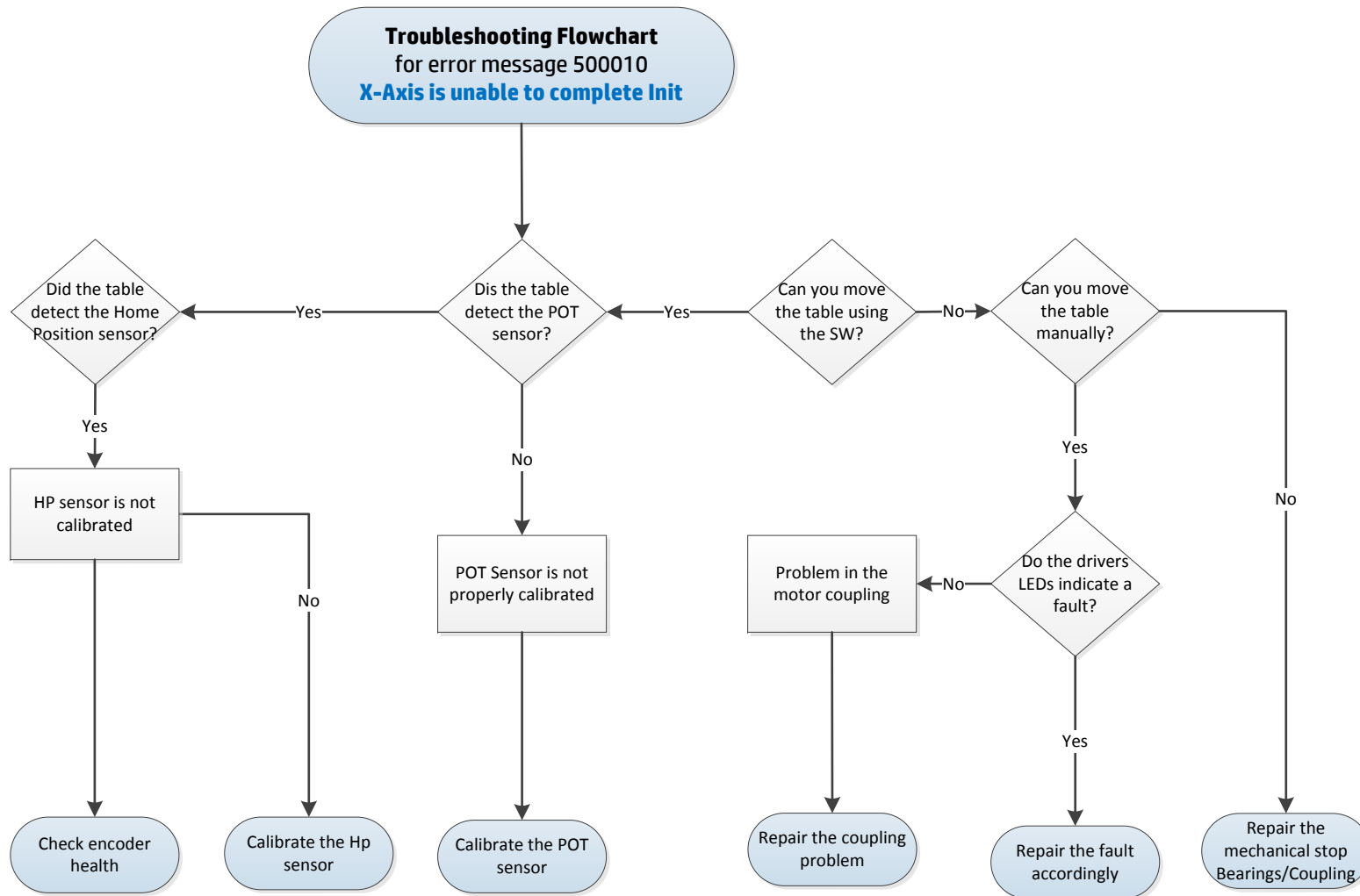## Error ID: 50010: Motion – X-Axis is unable to complete Init

Error Severity: Critical

Possible Causes

- [POT or HP sensors are faulty or not calibrated](#)
- [Encoder X is disconnected or not calibrated](#)
- [X –Motor driver error](#)
- [X- driver cable connection error](#)
- [X- Motor error](#)
- [Motor Phase connection error](#)
- [Dynamic Break (2K10) was activated due to safety event](#)

[Troubleshooting Flowchart]

Troubleshooting Flowchart

Troubleshooting Flowchart
for error message 500010
X-Axis is unable to complete Init

Did the table detect the Home Position sensor?

Dis the table detect the POT sensor?

Can you move the table using the SW?

Can you move the table manually?

Yes

Yes

No

Yes

No

No

HP sensor is not calibrated

POT Sensor is not properly calibrated

Problem in the motor coupling

No

Do the drivers LEDs indicate a fault?

Yes

No

Check encoder health

Calibrate the Hp sensor

Calibrate the POT sensor

Repair the coupling problem

Repair the fault accordingly

Repair the mechanical stop Bearings/Coupling

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Flowchart

Recommended Actions

### POT or HP sensors are faulty/not calibrated

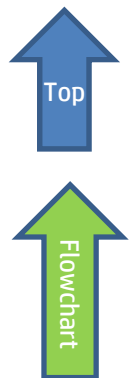1. Open the Control Tools application.
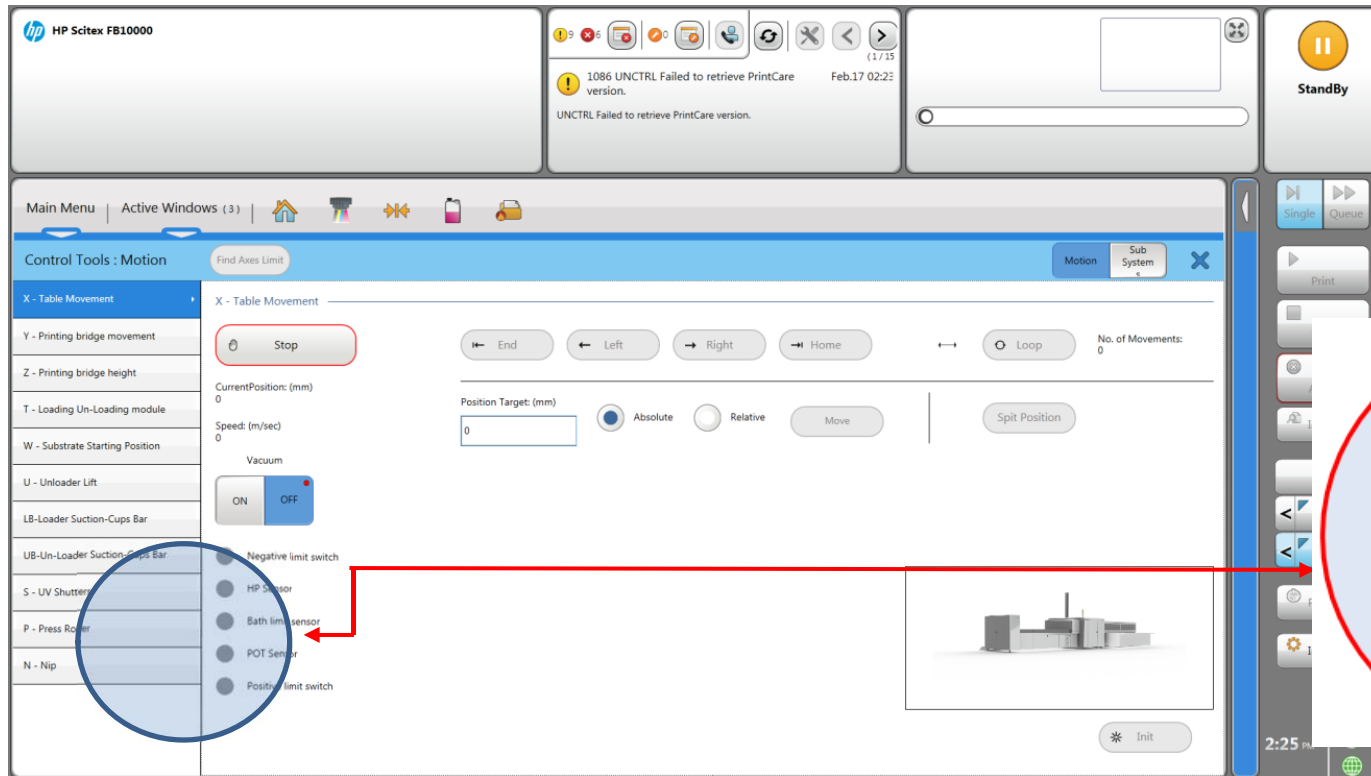
2. Verify that all indicators are OFF – if one of them is ON, check this specific one!


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3. Try to activate manually the two sensors by crossing them with a metal filler gage.

4. If sensors are ok move to the next possible cause.

5. If sensors do not react properly, try checking their position and if required calibrate them so they react to every table crossing.

6. If the sensors do not react, check the wiring path from the specific sensor/limit to the B&R module.

7. If wiring is ok, then the sensors are faulty and should be replaced.
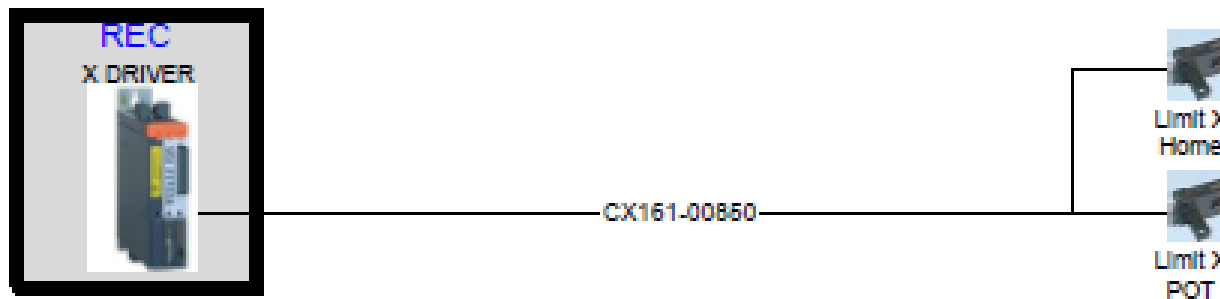
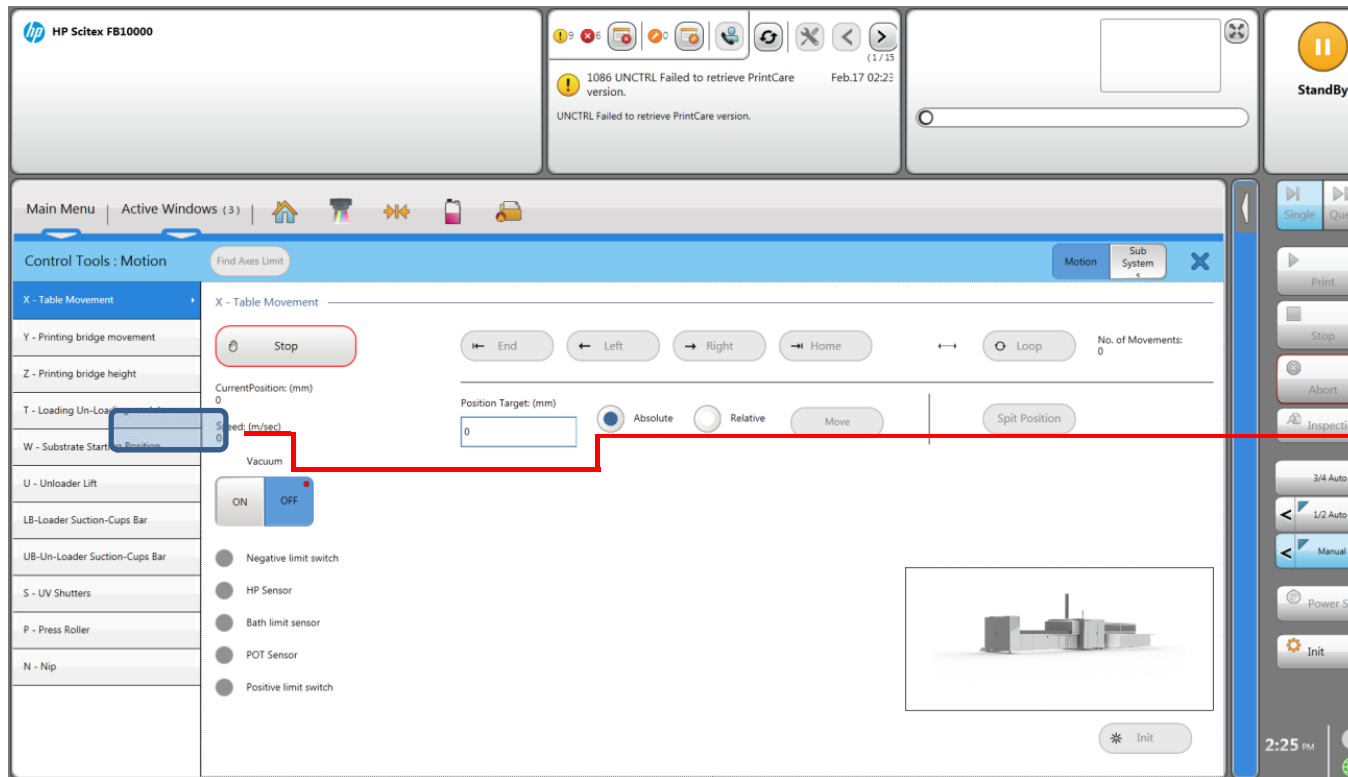**Note:** See wiring path diagram in the figure below

The following diagram describes the sensors wiring path:
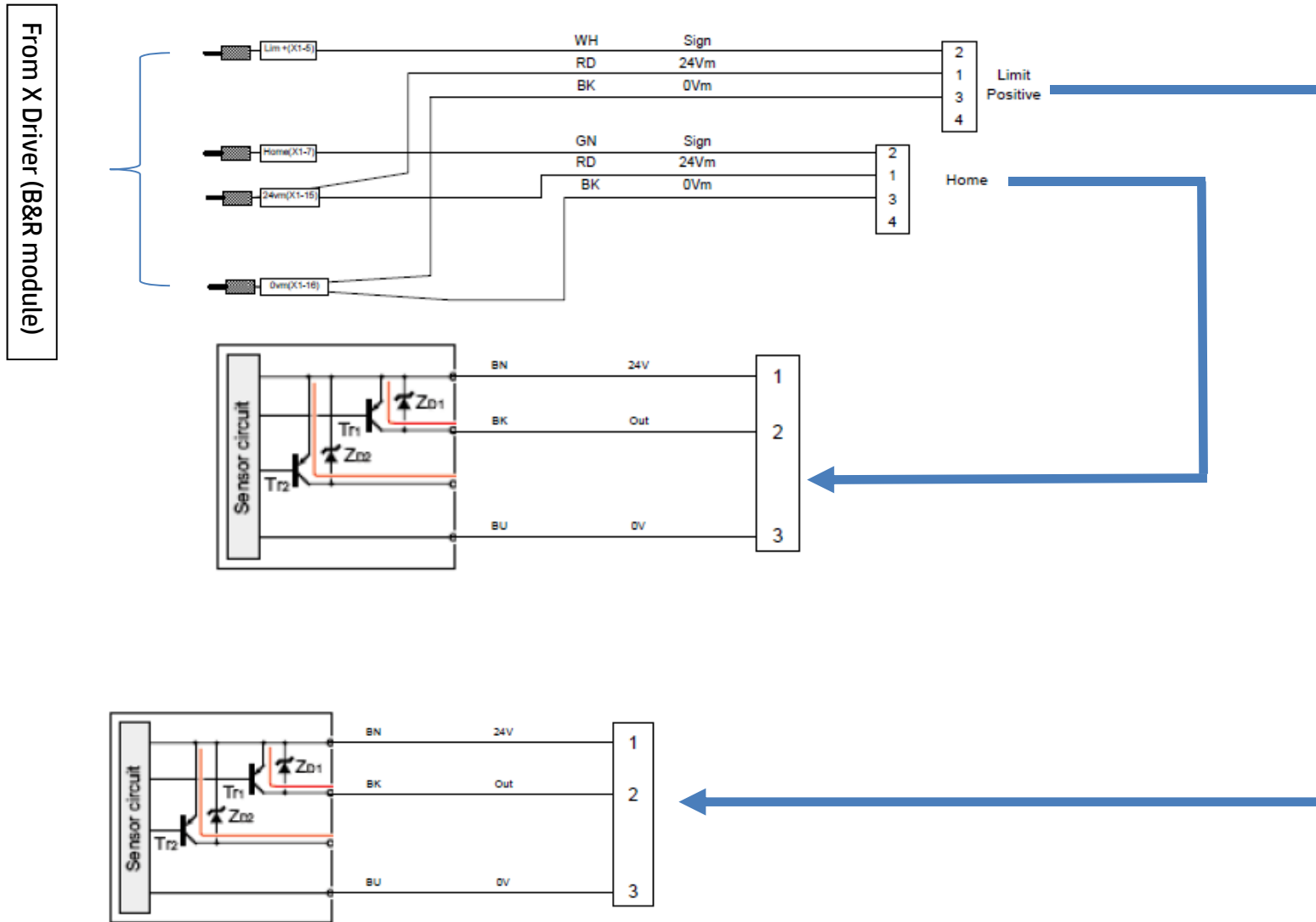
Encoder is not properly calibrated or is disconnected

1. Open the Control Tools application and get tX-Table Movement.

2. In the speed (m/s) box, view the reading of the table position provided by the encoder.

8. Move the table manually and look in the speed (m/s) box if the digits change according to the movement of the table.

   Note: In order to move the table manually you must release the dynamic break (see TN).

9. If the table cannot move, check for any possible mechanical obstruction.

10. If the digits do not change while you move the table, check the encoder LEDs and try calibrating the encoder.
The encoder LEDs should display as follows:

- LED on – 5V is applied.
- LED green - calibration is O.K
- LED orange – need fine-tuning calibration
- LED red – need to be calibrated!
- LED Off – need to replace

11. Verify that the encoder amplifier LEDs behave as follows:

- LED is on – 5v is applied
- LED purple – strong signal
- LED blue – optimum signal
- LED green – normal signal
- LED orange – acceptable signal
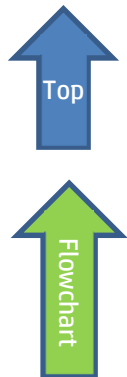- LED red – poor signal
- LED Off – need to replace

12. Check encoder interface & cable:
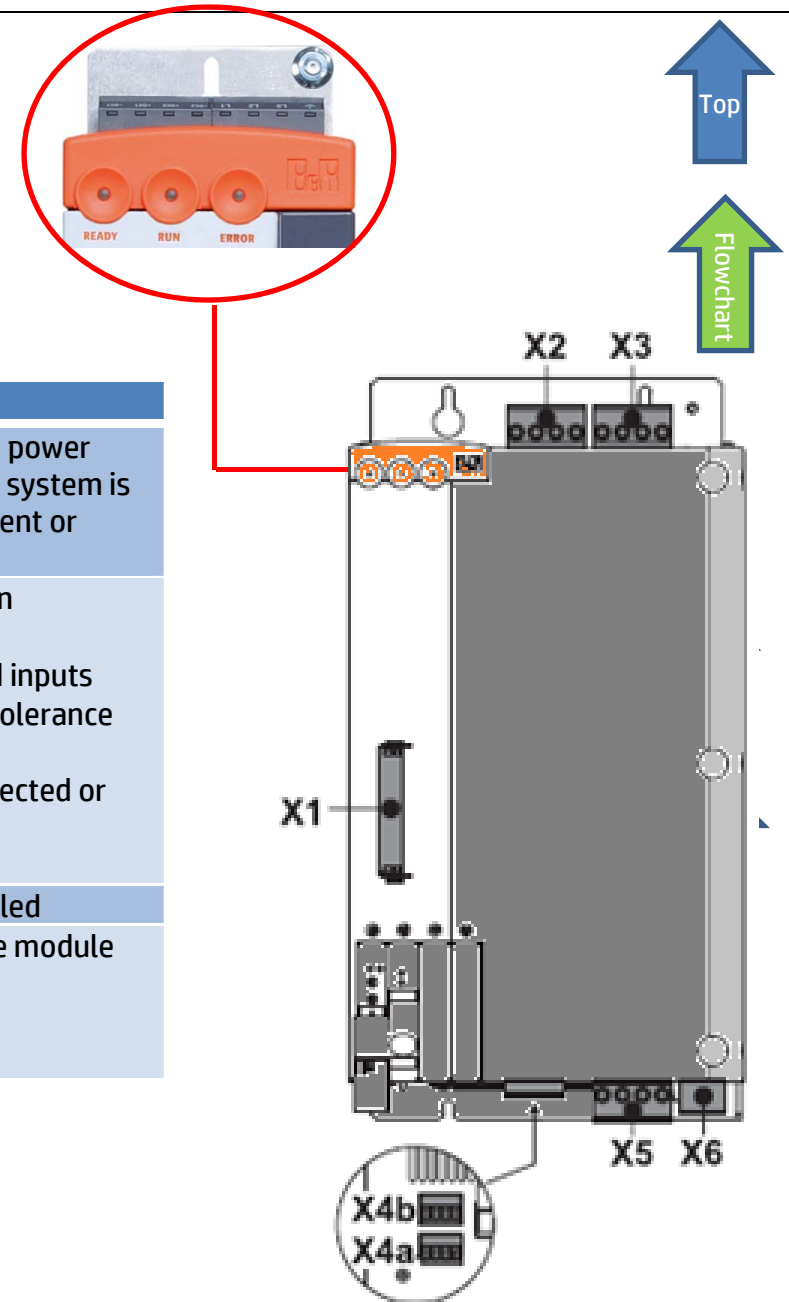
- Verify that the encoder cable is properly attached to the interface
- Verify that the two LEDs are flashing during the table movement

Readhead set-up LED status

Green Orange Red

Encoder
Amplifier

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Flowchart

X – Motor Driver error

1. Go to the REC cabinet and take notice of the Motor X driver LED indications

2. If none of the LEDs is lit, verify that circuit breakers 2CB10 & 2CB1 are ON.

13. Check all cable connections.

The following table displays the X-Motor Driver LED statuses and errors announced through the LEDs

Label	Color	Function	LED	Description
Ready	Green	Ready	Constant green 🟢	The driver is operational and the power stage can be enabled (Operating system is present and booted), no permanent or temporary errors are signaled.
Ready	Green	Ready	Blinking green 🟢⚪	Module is not ready for operation Examples: • No signal in both enabled inputs • DC Bus voltage exceeds tolerance range • Motor feedback not connected or defective • Network fault
Run	Orange		Constant orange 🟠	The module power stage is enabled
Error	Red		Constant red 🔴	There is a permanent error in the module Examples: • Permanent overcurrent • Data EPROM is not valid

No signal in both enabled inputs

• Check 24V in X1-8 TP

DC Bus voltage exceeds tolerance range

• Check 24V in the driver X-1 14 TP

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Flowchart

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Motor feedback

1. Check encoder interface
2. Check encoder reader
3. Check encoder amplifier

Network fault

14. Check driver configuration
15. Check Ethernet cable

Permanent overcurrent

1. Look for mechanical stop
16. Repair mechanical stop

Data EPROM is not valid

1. Look for missing software
17. Check for main PLC error.

X-Drivers Cable connections

| Connection	Description
X1	I/O's
X2	DC Bus – Not in use
X3	Main Power 3Ø (Driver feeding Power)
X4a	Motor holding brake, temperature sensor - Not in use
X4b	Motor holding brake, temperature sensor- Not in use
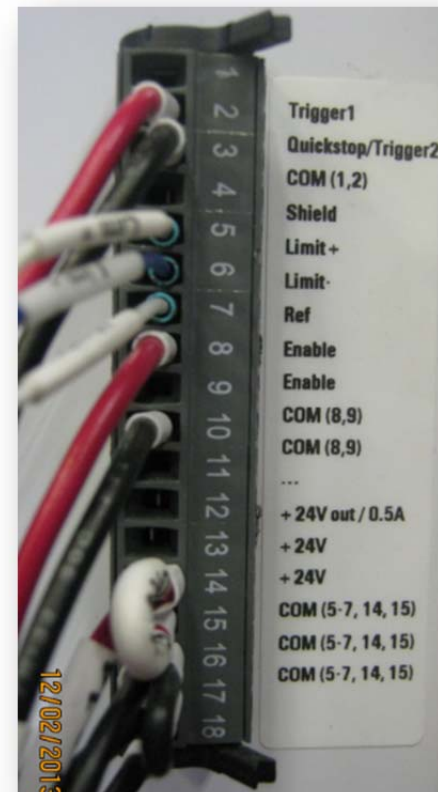
X5	Motor Power (U,V,W)
X6	External braking resistor
Slot 1	Ethernet PWR Link
Slot 2	Motor Encoder

18.
19.
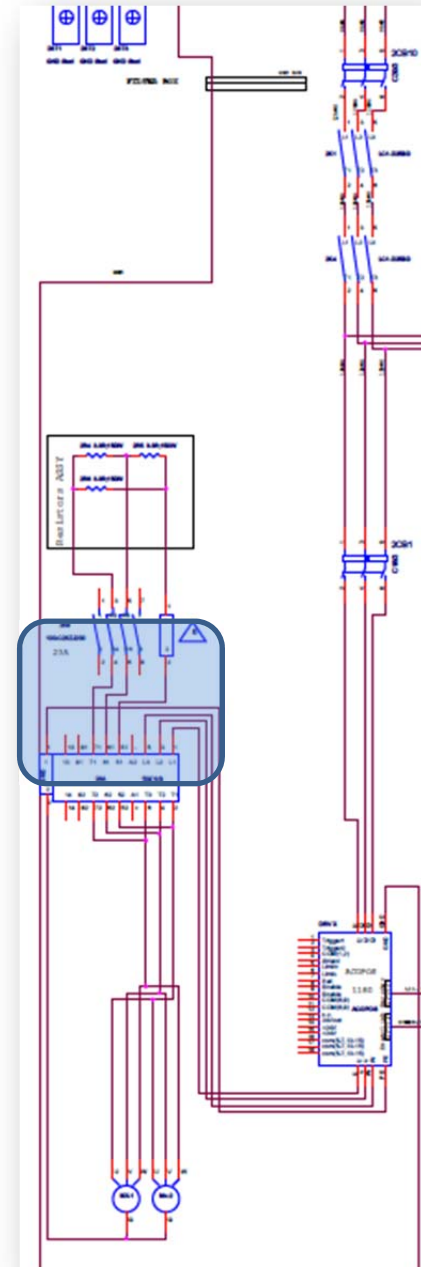20.

X - Motor error

1. Check the power cable to the motor.

   21. Check the resistance between etch coil inside the motor (U, V, W)

   Note: the motor must be disconnected from the cable!

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Flowchart
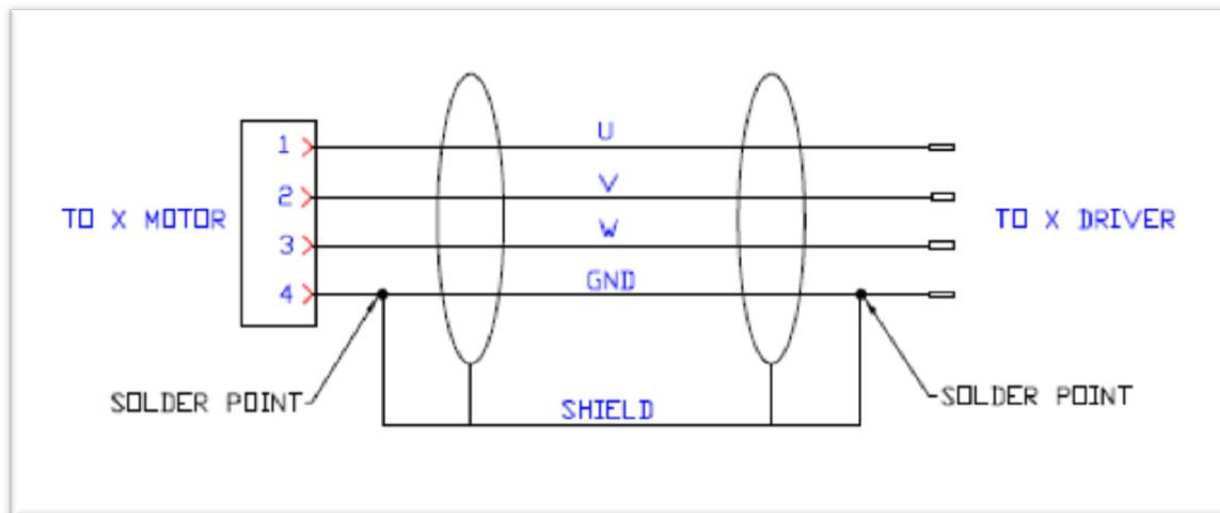
Wrong Motor Phase connection (2K10)

1. Check that 2K10 is energized

22. Check that all the wires are properly attached to the contactor poles

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Flowchart

Dynamic break was activated due to safety event

1. Check that 2K1 & 2K4 are energized

    23. Check that all the wires are properly attached to the contactors poles