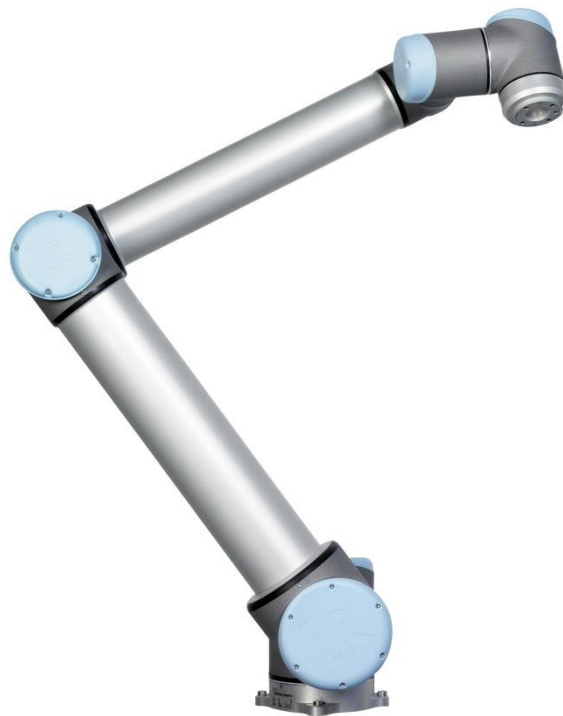




# UNIVERSAL ROBOTS

## OEM installation guide



**UR5 & UR10 / CB3**



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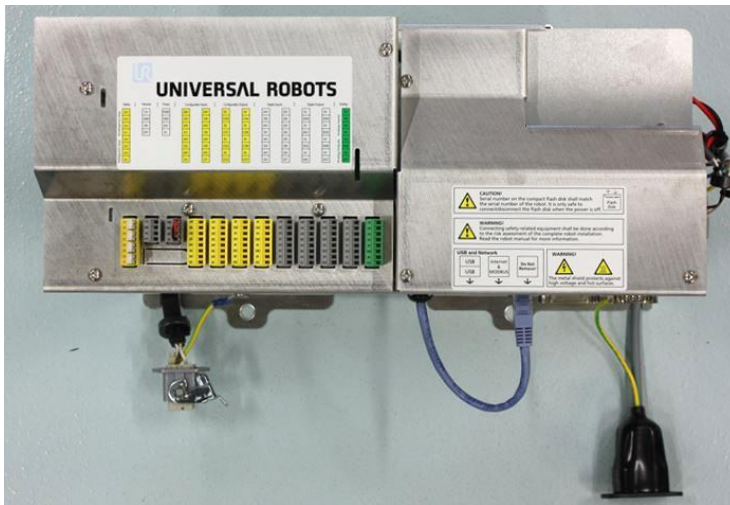
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# 1 Introduction

An OEM UR Robot is a standard robot without teach pendant and controller cabinet



- This document provides guidelines for installing OEM controller.
- It is solely intended for advanced integrators of UR robots.
- This document is not public information. It shall be considered confidential by the integrator, and thus shall be handled as such.
- Copies of this document or parts of this document are allowed by the integrator, for documentation purposes only.



## WARNING:

1. Read and understand the UR user manual before using this guide. Special attention shall be paid to safety, maintenance and repair precautions.
2. Always perform a thorough risk assessment for the specific application.
3. Universal Robots disclaims any liability, even though all guidelines contained within this document are followed.
4. The instructions in this document shall be considered as general guidelines. It is assumed that the integrator has a high level of technical knowledge.
5. Incorrect grounding and/or chassis connections can cause unpredictable behavior and in some cases damage the robot or its components. The grounding guidelines in this document must be followed closely.
6. Observe ESD precautions when handling the electronics.
7. Consult the safety section in the UR USER MANUAL for general precautions.

## 2 Installation

### 2.1 ESD protection

When handling the controller always wear your wrist strap



To prevent damage to ESD-sensitive parts, follow all the usual precautions, such as turning off power before removing logic cards

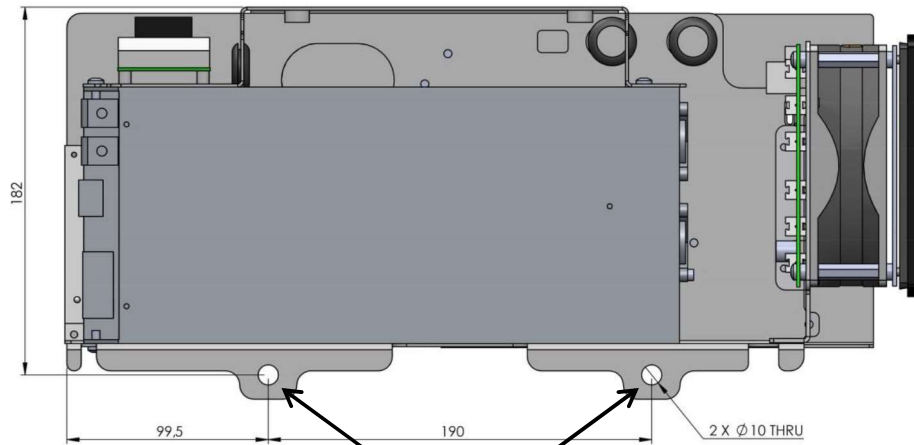
**Be extra careful in working with ESD-sensitive parts when cold-weather and heating is used**, because low humidity increases static electricity.

### 2.2 Handling with care

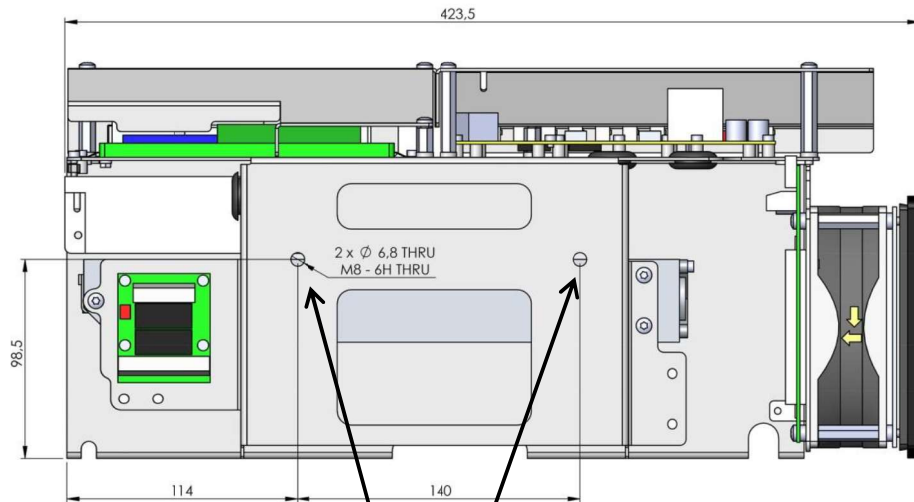
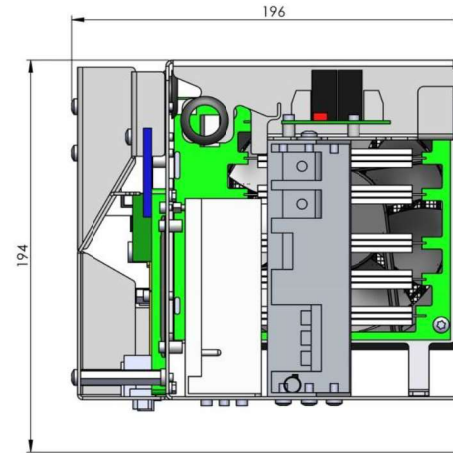
The controller is delivered without the cabinet. Please be aware of that when handling and installing the controller.



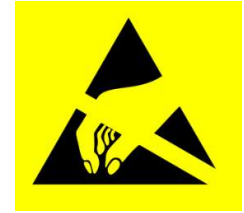
### 2.3.4 OEM controller dimensions - Version 1



Holes for mounting the control unit



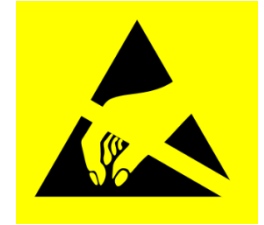
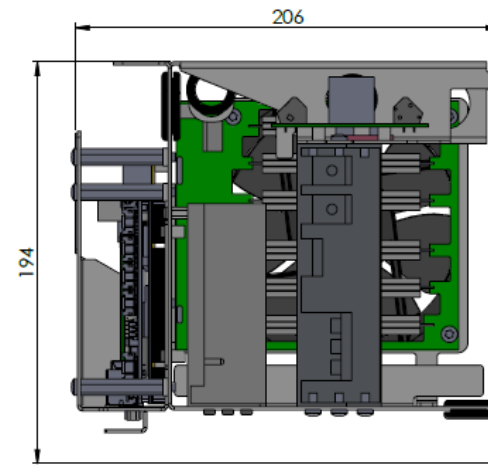
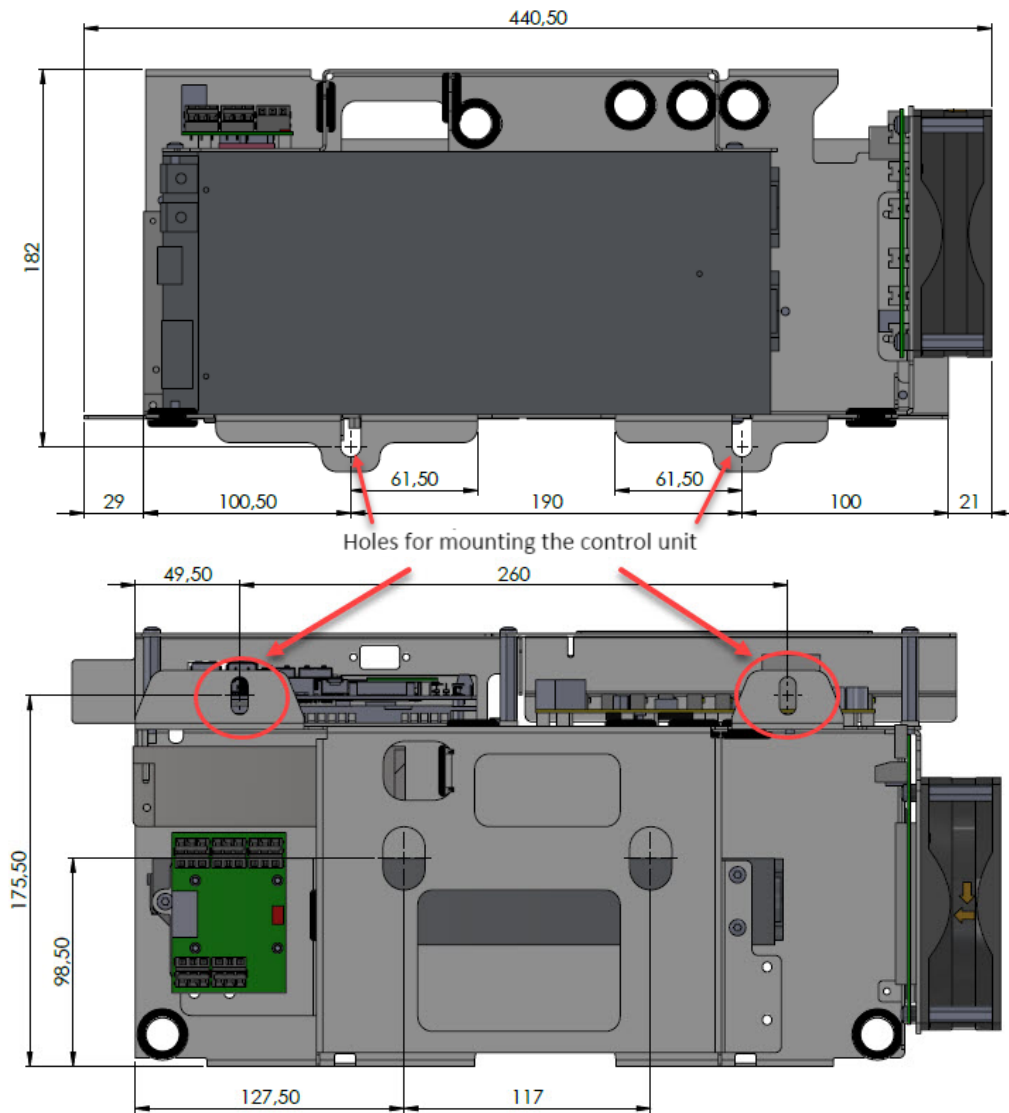
Nuts for mounting the control unit



V1 is until Serial Number 2020300962 for UR10 CB3 OEM, after this, V2 started being used.

Note: UR3 and UR5 OEM are still using V1 and will be until further notice.

### 2.3.4 OEM controller dimensions - Version 2

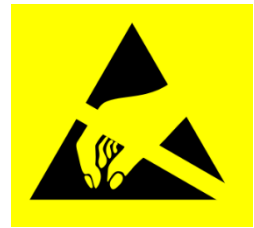


V1 is until Serial Number 2020300962 for UR10 CB3 OEM, after this, V2 started being used.

Note: UR3 and UR5 OEM are still using V1 and will be until further notice.



## 2.4 Electrical installation of the OEM controller.



Find more information in the manual on the support website (<http://support.universal-robots.com>) for sharing emergency stop with other machines and other safety settings.

### 2.4.1 Grounding

Ensure good grounding practices for each controller and the cabinet. Ground on controller and cabinet is connected to the application ground and to factory ground.

### 2.4.2 Cable attachment

Attach all controller cables to cabinet backplane to prevent damaging cables and connections.

### 2.4.3 ON and OFF

The illustration below shows how to connect a remote ON and OFF



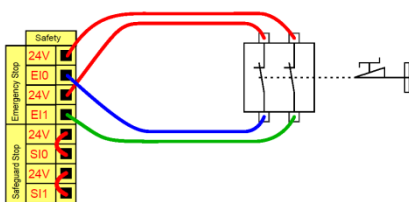
Find more information in the manual on the support website (<http://support.universal-robots.com>)

### 2.4.4 Emergency stop

It is very important to notice that an external E-stop must be connected to the controller.

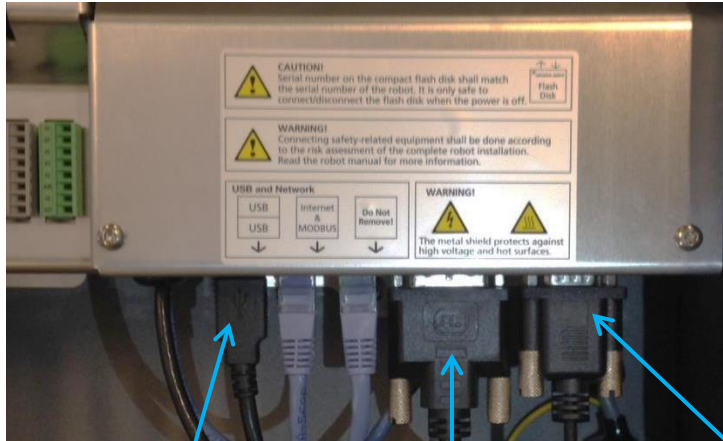
When the controller is without the teach pendant there is no emergency stop as default.

Minimum emergency stop installation is:



### 2.4.5 Connecting screen, keyboard and mouse

A possibility is to connect screen, keyboard and mouse to the controller to achieve interface for programming etc. It is very important to notice that an external E-stop must be connected to the controller.

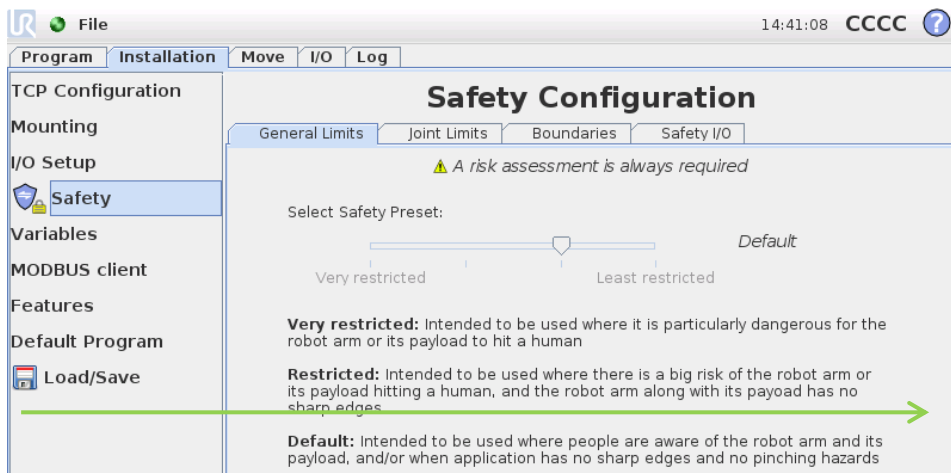


USB Keyboard/(mouse)      VDI connection to screen      (RS232 connection to mouse)

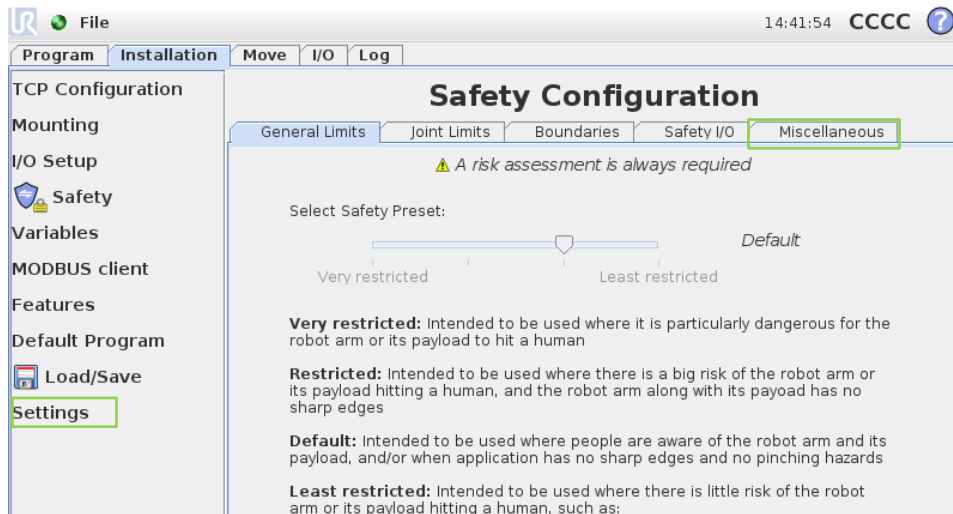
### 2.4.6 Enabling the teach pendant

The OEM controller has the default setting to run without teach pendant. If a teach pendant must be connected follow the guide here:

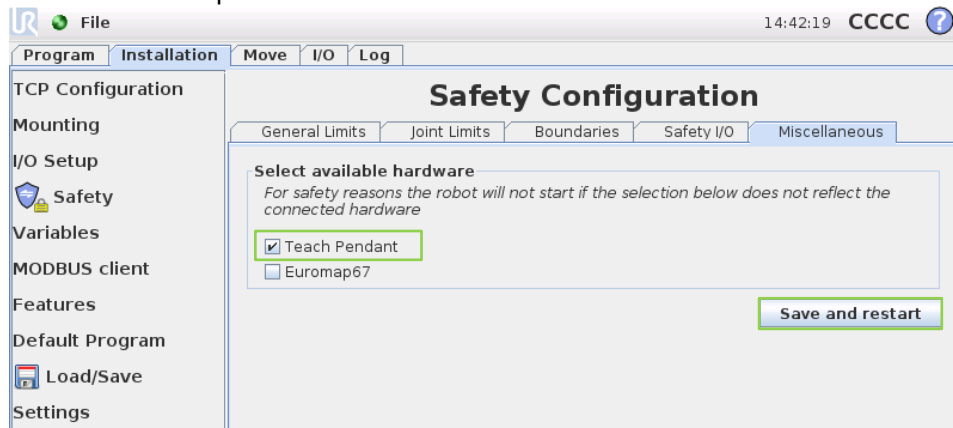
- Connect a normal screen and a mouse. Go to Safety Configuration and slide from left to right, to get the Settings/Miscellaneous menu



- Select the Miscellaneous menu

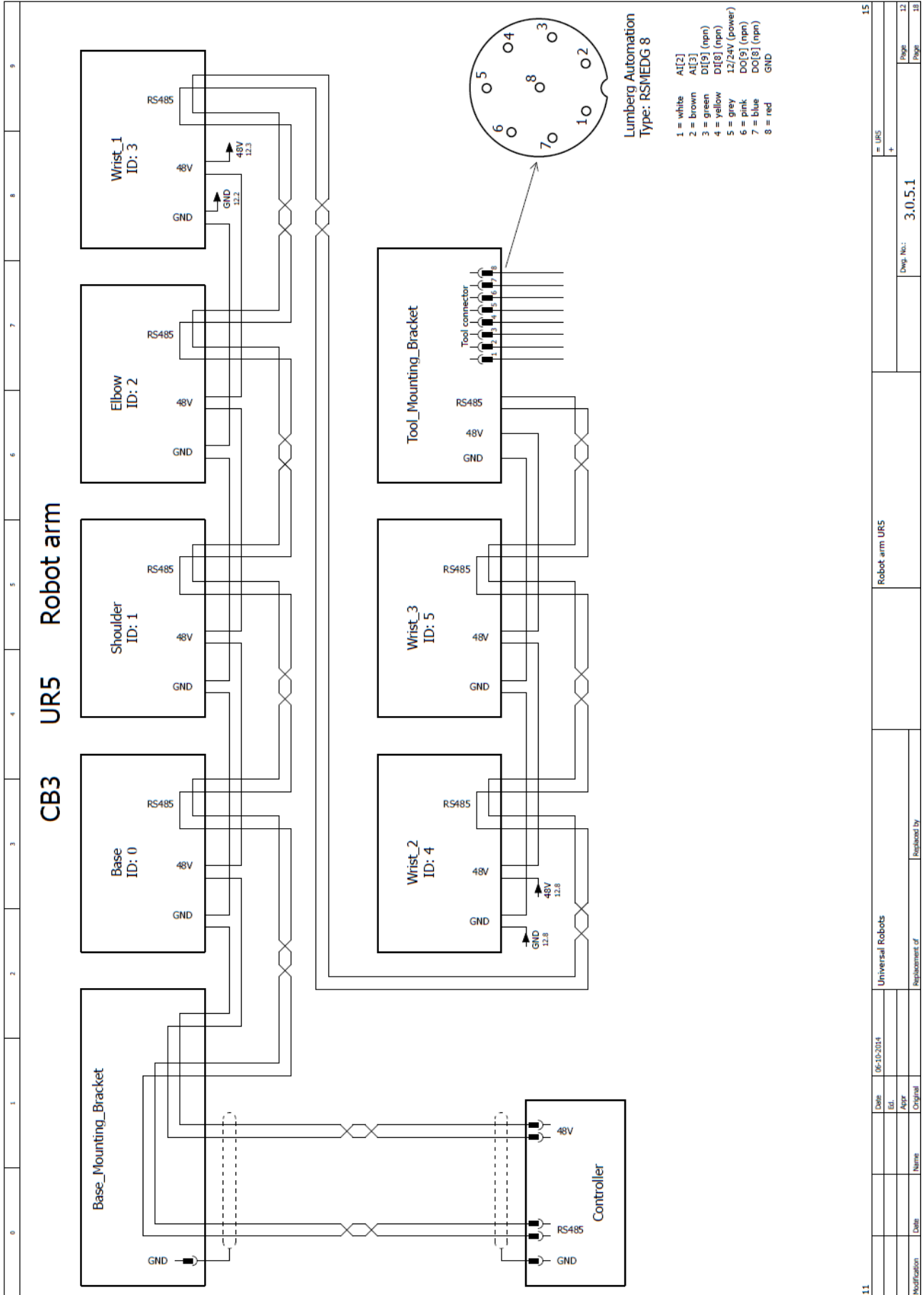


- Enable the teach pendant and Save and restart



- After restart, an error will occur because the teach pendant is not present and it does not reflect the choice.
- Now, power down the robot, disconnect the normal screen and mouse and connect the teach pendant and the robot will start without error.
- After power up the Setting and Miscellaneous menus are hidden again.





### 2.4.8 Schematic overview UR10

Diagrams in pdf or in E-plan format, can be found on the support website under the download section.

