

# Installing and configuring the UR20 flange

## What's in the box

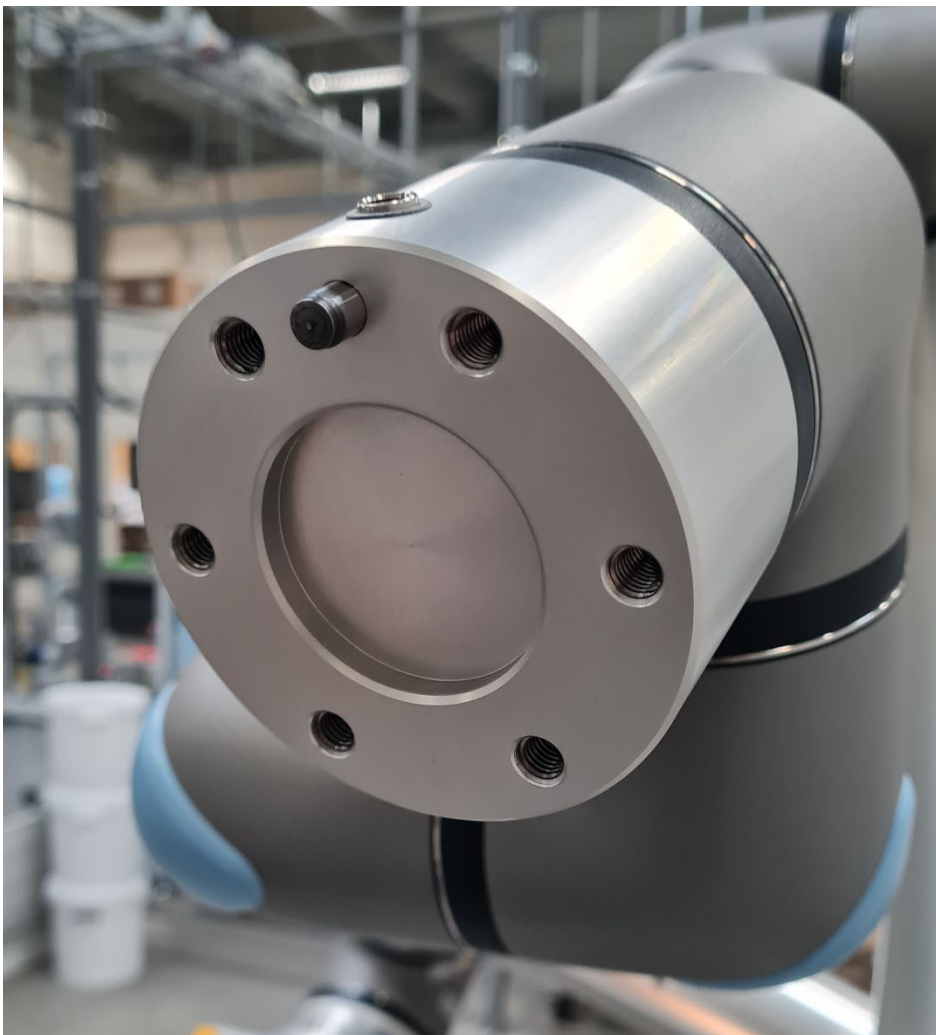
- UR20 flange
- 4 bolts and an alignment pin
- 5m M8 cable
- 4 x Velcro band
- Software and license dongle

*The following guide consists of both [hardware](#) and [software](#) installation. Make sure to read and complete all the steps in order to ensure optimal performance of the flange.*

## Hardware installation

Mount and connect the UR20 flange by following the steps below:

1. Insert the alignment pin into the UR20 Flange.



2. Mount the UR20 flange with 4 bolts using a *no.5 hex key*.

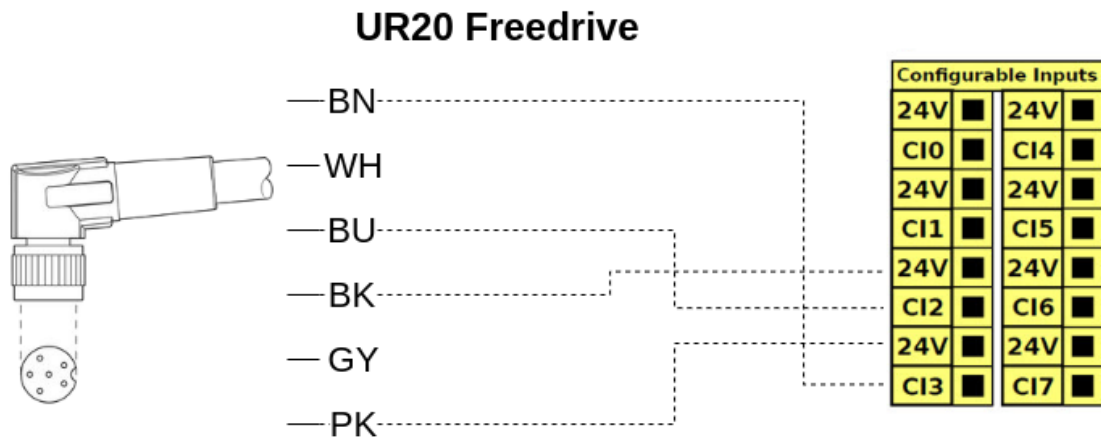


3. Connect the short, embedded cable from the Programming flange to the Robot flange.
4. Attach the 5m cable to the flange and drag it along the robot arm or your welding cable to the Universal Robots control box.



5. Tighten the cable around the robot arm or welding cable using the Velcro bands.

6. Connect the pins inside the control box using the following wiring diagram:



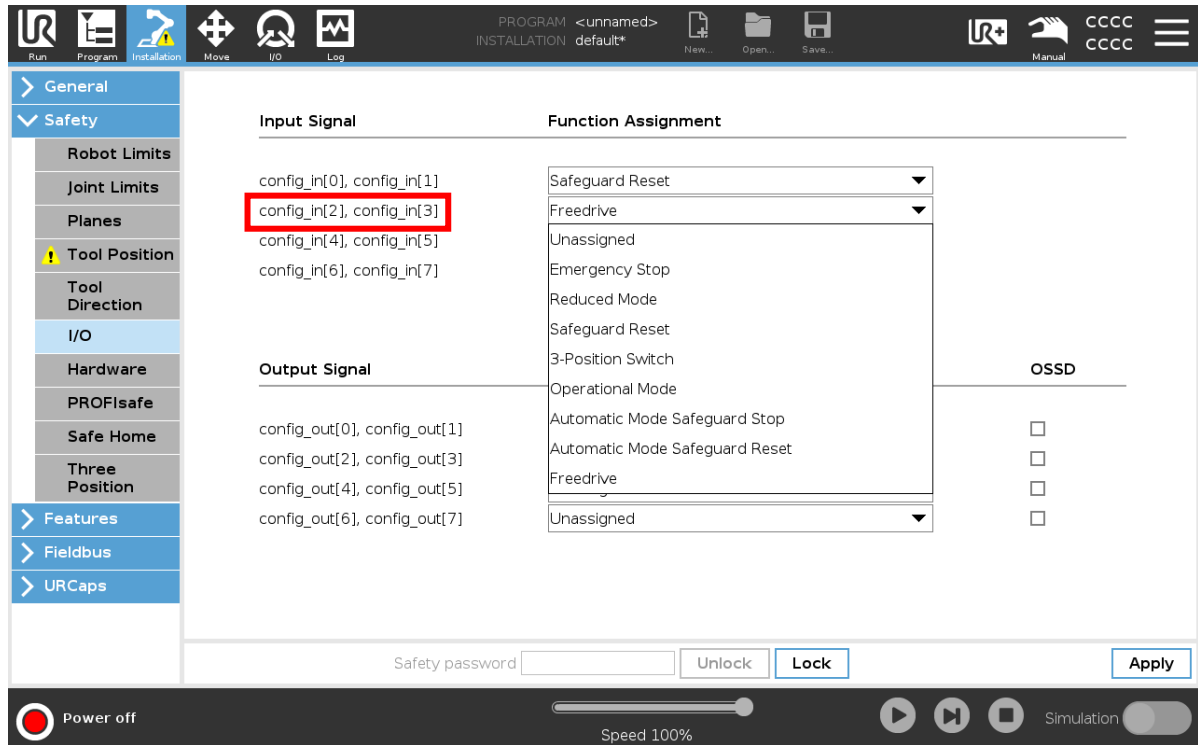
| Connection table |                     |
|------------------|---------------------|
| Black            | 24V                 |
| Blue             | CI2                 |
| Pink             | 24V                 |
| Brown            | CI3                 |
| White            | Isolated (not used) |
| Grey             | Isolated (not used) |

## Software configuration

After mounting the flange and connecting the pins, turn on the robot and follow the steps below on the teach pendant:

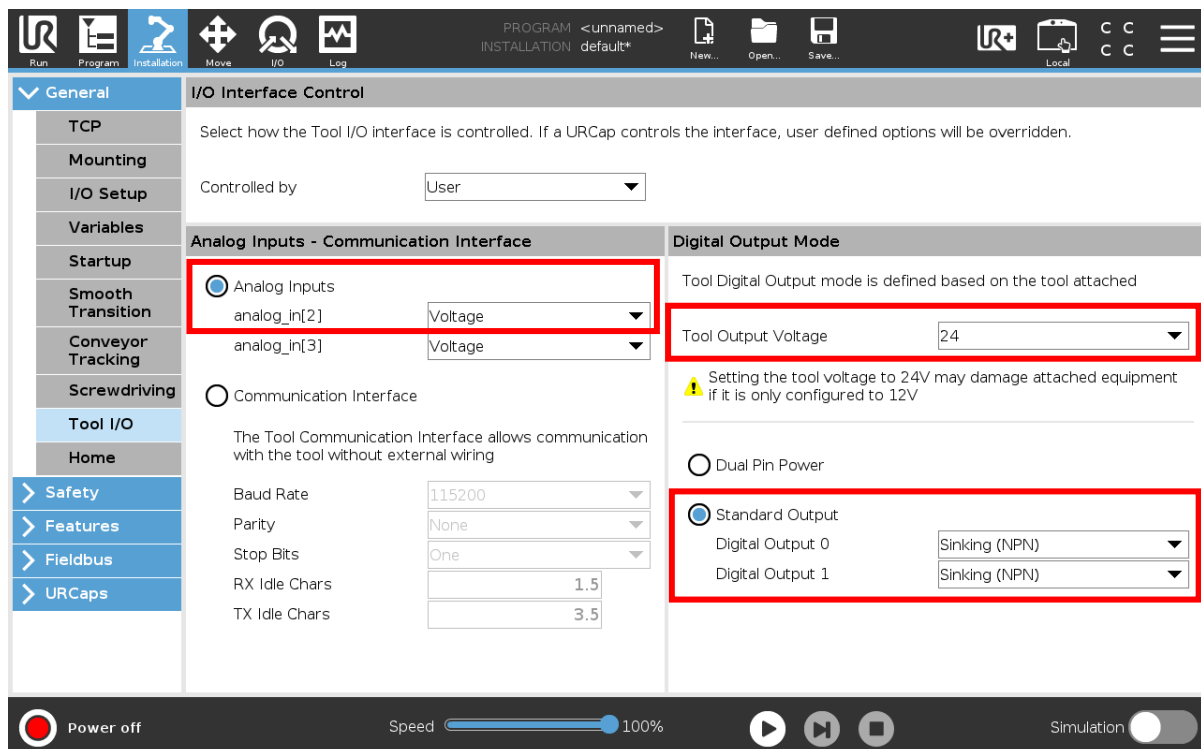
### Step 1: Configuring the freedrive button

- Go to Installation -> I/O
- Enter the *Safety password* and press *Unlock*.
- Set *config\_in[2]*, *config\_in[3]* to *Freedrive* (as illustrated below)



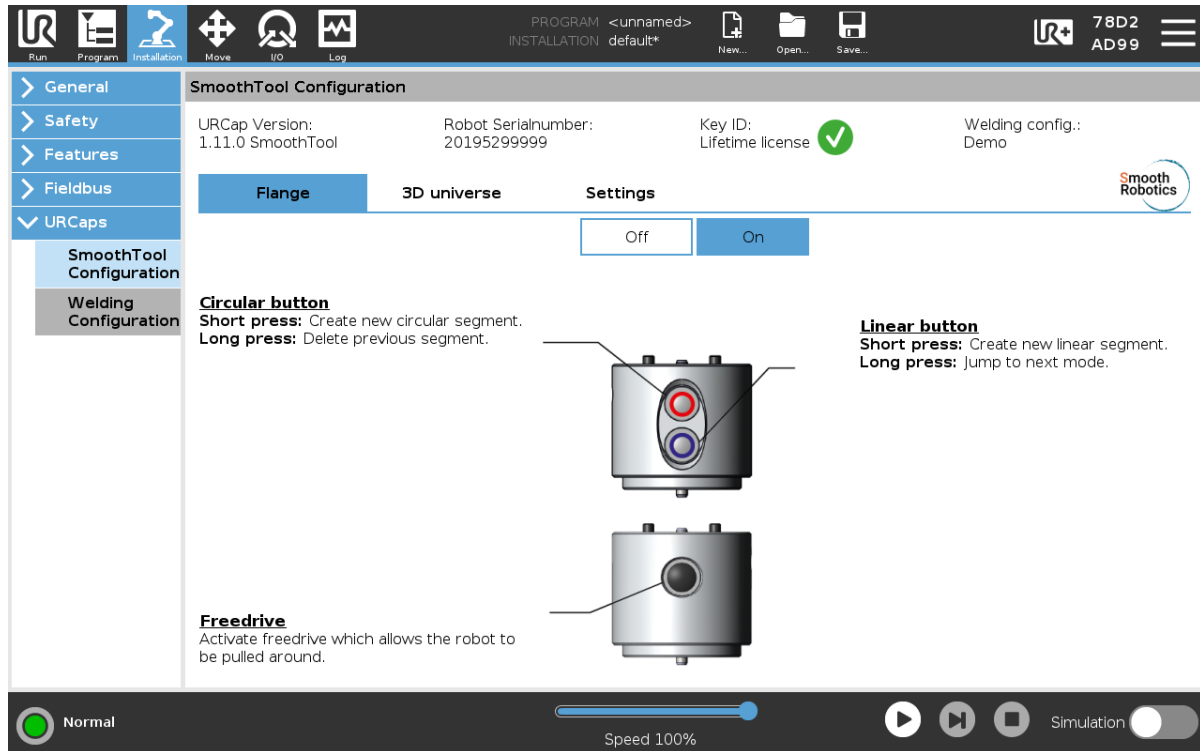
## Step 2: Configure the Digital/Analog Inputs/Outputs

- Go to Installation → General → Tool I/O.
- Make sure *analog\_in[2]* under Analog Inputs is set to Voltage.
- Set *Tool Output Voltage* to 24.
- Set *Digital Output 0* and *Digital Output 1* to Sinking (NPN).



## Step 3: Turn on the Flange

- Go to Installation → URCaps → SmoothTool configuration → Flange.
- Tap On.



## Step 4: Save the configuration.

- Save the installation by tapping Save... → Save Installation As...  
Overwrite the file "default.installation" in order to make the setup permanent and applied as default each time the robot is turned on.

