

OPERATING INSTRUCTIONS

Comfort App

for Universal Robots
DIO/Analog
DDOC01738

THE KNOW-HOW FACTORY

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1 Supporting documents

NOTICE



Read through the installation and operating instructions before installing or working with the product.

The installation and operating instructions contain important notes for your personal safety. They must be read and understood by all persons who work with or handle the product during any phase of the product lifetime.



The documents listed below are available for download on our website www.zimmer-group.com.

- Installation and operating instructions
 - Catalogs, drawings, CAD data, performance data
 - Information on accessories
 - Technical data sheets
 - General Terms and Conditions, including warranty information.
- ⇒ Only those documents currently available on the website are valid.

In these installation and operating instructions, "product" refers to the product designation on the title page!

1.1 Notices and graphics in the installation and operating instructions

DANGER



This notice warns of an imminent danger to the life and health of people. Ignoring these notices can lead to serious injury or even death.

- ▶ You absolutely must comply with the described measures for avoiding these dangers!
- ⇒ The warning symbols are assigned according to the type of danger.

WARNING



This notice warns of a situation that is potentially hazardous to personal health. Ignoring these notices can cause serious injury or damage to health.

- ▶ You absolutely must comply with the described measures for avoiding these dangers!
- ⇒ The warning symbols are assigned according to the type of danger.

CAUTION



This notice warns of a situation that is potentially hazardous to persons. Ignoring these notices can cause minor, reversible injuries.

- ▶ You absolutely must comply with the described measures for avoiding these dangers!
- ⇒ The warning symbols are assigned according to the type of danger.

NOTICE



This notice warns of possible material and environmental damage. Ignoring these notices can result in damage to the product or the environment.

- ▶ You absolutely must comply with the described measures for avoiding these dangers!
- ⇒ The warning symbols are assigned according to the type of danger.

INFORMATION



This category contains useful tips for handling the product efficiently. Failure to observe these tips will not result in damage to the product. This information does not include any information relevant to health or workplace safety.

2 Proper use

NOTICE



Material damage and malfunction in case of non-compliance

The product is only to be used in its original state with its original accessories, with no unauthorized changes and within the stipulated parameter limits and operating conditions.

Any other or secondary use is deemed improper.

- ▶ Operate the product only in compliance with the associated installation and operating instructions.
- ▶ Operate the product only when it is in a technical condition that corresponds to the guaranteed parameters and operating conditions.
- ⇒ Zimmer GmbH shall accept no liability for any damage caused by improper use. The operator bears sole responsibility.

The product is intended for installation and operation on the robot control panel *3PE* of the *OEM* robot control system.

3 Personnel qualification

WARNING



Inadequate qualification can cause injury and material damage

If inadequately qualified personnel perform work on the product, this can cause serious injuries and significant material damage.

- ▶ All work on the product must be performed by qualified personnel.
- ▶ Before working with the product, read the document in its entirety and make sure that you have understood everything.
- ▶ Observe country-specific accident prevention regulations and the general safety notices.

The following qualifications are a prerequisite for performing various work on the product.

3.1 Electricians

Electricians are able to perform work on electrical systems, can recognize and avoid possible dangers and know the relevant standards and provisions due to their technical training, knowledge and experience.

3.2 Specialists

Specialists are able to perform the assigned work, can recognize and avoid possible dangers and know the relevant standards and provisions due to their technical training, knowledge and experience.

3.3 Instructed personnel

Instructed personnel have been trained by the operating company on the tasks and possible dangers of improper behavior.

3.4 Service personnel

Service personnel are able to perform the assigned work and can recognize and avoid possible dangers due to their technical training, knowledge and experience.

3.5 Additional qualifications

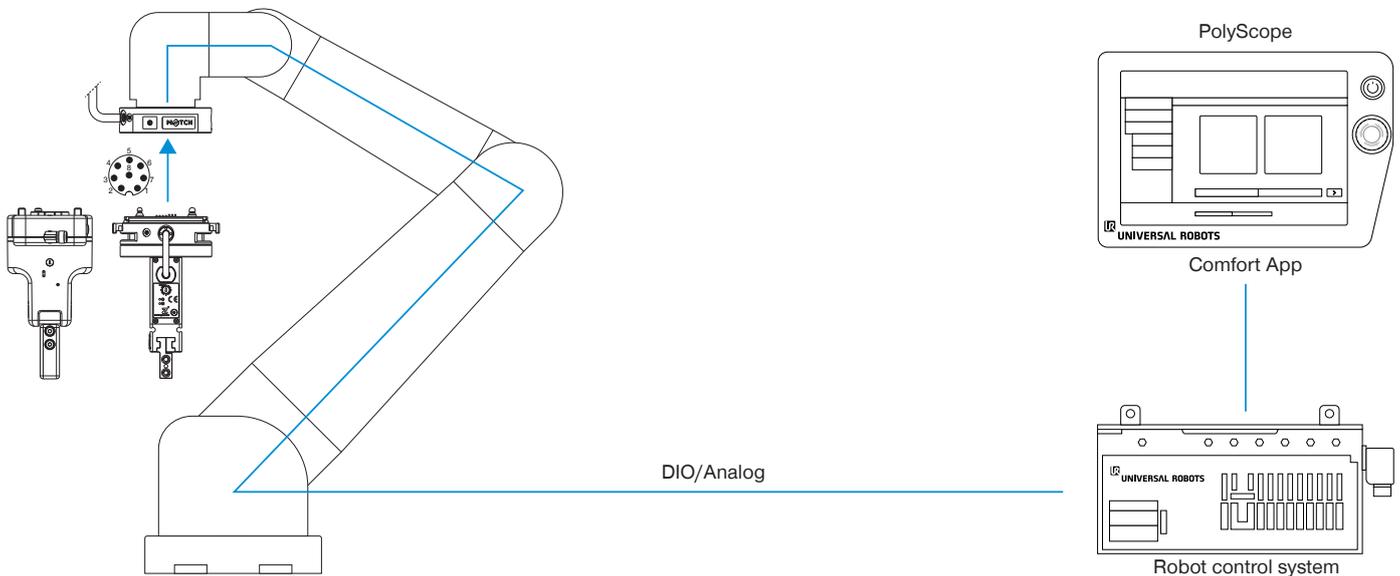
Persons who work with the product must be familiar with the valid safety regulations and laws as well as the standards, guidelines and laws listed in this document.

Personnel who work with the product must have facility-issued authorization to commission, program, configure, operate, maintain and also decommission this product.

4 Product description

The Comfort App enables you to control digital IO grippers connected at the tool connection using predefined program nodes. It also gives you the option of manual operation and teaching the workpiece position.

The image shows a simplified view of the structure of the overall system. All parts for the electrical connection of a gripper with the robot are included or are available from Zimmer GmbH as optional accessories.



5 Functional description

Using the Comfort App, Zimmer GmbH grippers can be controlled directly from the robot control panel and generated robot jobs can be configured.

The generated robot tasks simplify the use of Zimmer GmbH grippers in the customer program and reduce the development time.

The names of the newly configured robot jobs remain unchanged. This means that the basic program does not have to be modified for configuration changes.

6 Accessories/scope of delivery

INFORMATION



If any accessories not sold or authorized by Zimmer GmbH are used, the function of the product cannot be guaranteed. Zimmer GmbH accessories are specifically tailored to the individual products.

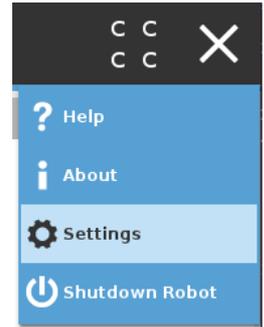
- For optional accessories and those included in the scope of delivery, refer to our website.

7 Installation

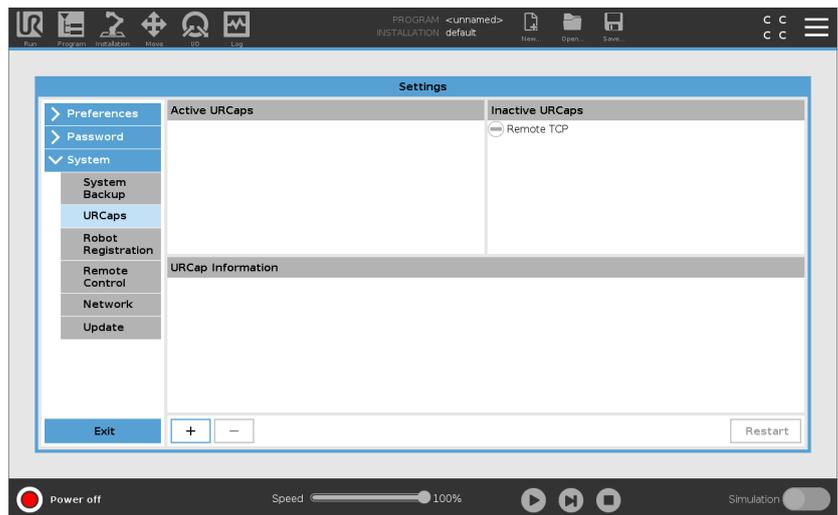
7.1 Installing the Comfort App

The Comfort App is installed to the robot control panel to enable direct control of the grippers.

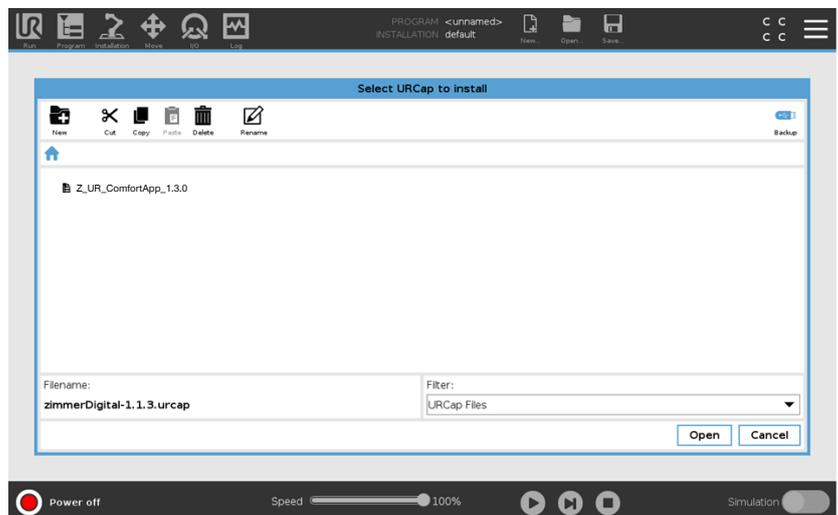
- ▶ Download the robot app from our website.
- ▶ Copy the installation file to a USB memory device.
- ▶ Make sure that the robot control panel is already connected to the robot control system.
- ▶ Switch off the voltage supply on the robot tool I/O via the emergency stop button.
- ▶ Plug the USB memory stick with the installation files for the Comfort App into the robot control panel.
- ▶ Press the button in the header.
- ▶ Press *Settings*.



- ▶ In the menu, press *System*.
- ▶ In the *System* menu item, press *URCaps*.
- ▶ Press the + Button.

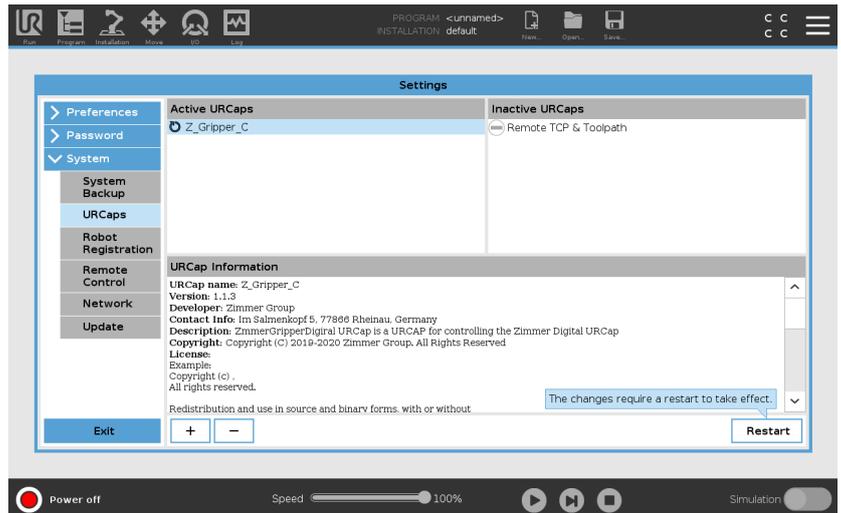


- ▶ Navigate to the file *zimmerDigital-urcap*.
- ▶ Select the file *Z_UR_ComfortApp_X.X.X*.
- ▶ Press the *Open* button.

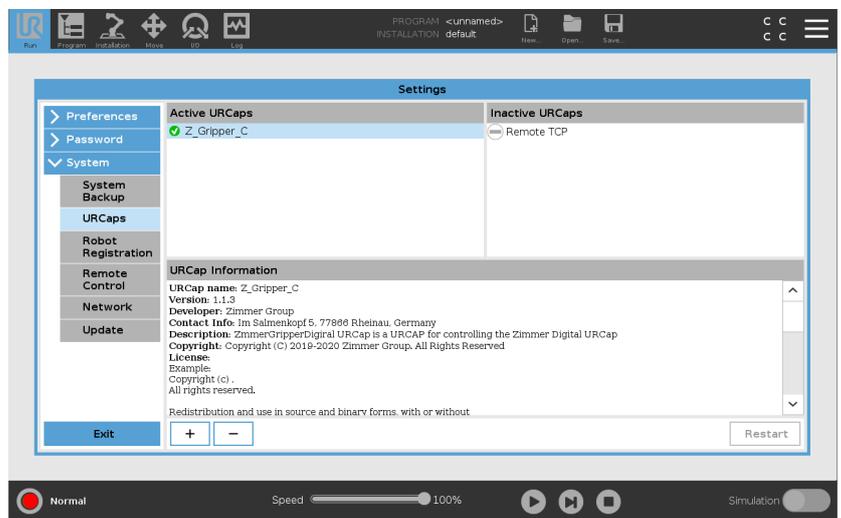


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- ▶ Press the *Restart* button to activate the firmware.
- ⇒ The robot control panel performs a restart.

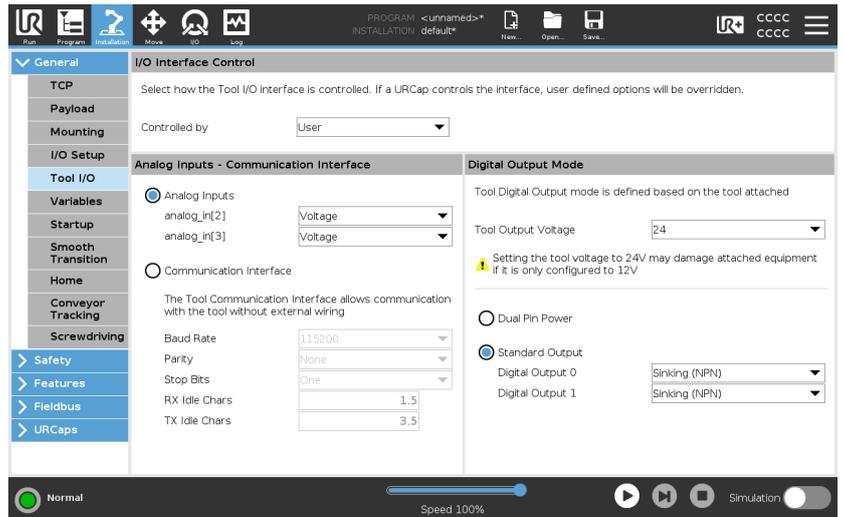


- ▶ After the restart, check whether the Comfort App has been installed correctly.
- ⇒ The Comfort App has been installed correctly if the green checkmark is displayed in the *Active URCaps* area.



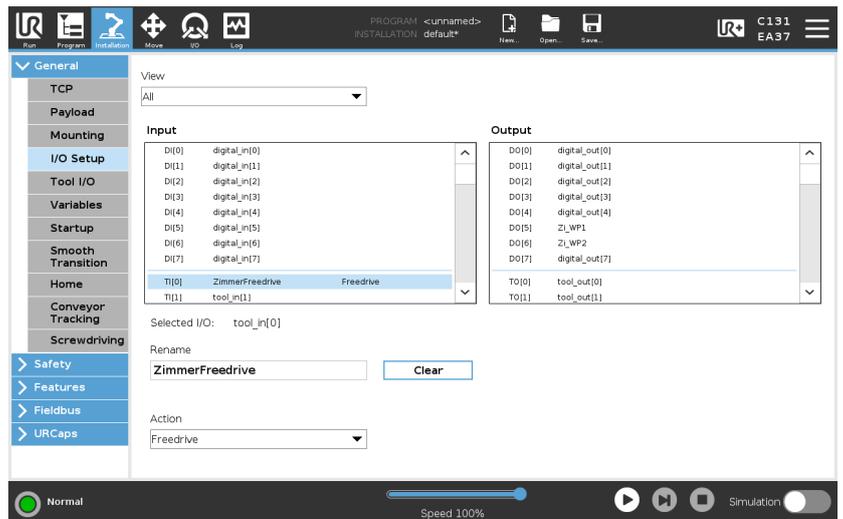
8 Commissioning

- ▶ Press *Installation* in the menu bar.
 - ▶ In the *General* menu, press *Tool I/O*.
 - ▶ In the *Controlled by* drop-down menu, select the *User* option.
 - ▶ Activate the *Analog Inputs* option field.
 - ▶ Select *Voltage* in the drop-down menu.
 - ▶ Activate the *Digital Outputs* option field.
 - ▶ Select *Sinking (PNP)* in the drop-down menu for all Match grippers.
 - ▶ Select *Sinking (NPN)* in the drop-down menu for the HRC series.
 - ▶ In the *Tool Output Voltage* drop-down menu, select the *24* option.
- ⇒ Settings can only be made via the Comfort App.
- ▶ Install the gripper to the robot.
 - ▶ Switch the robot on.



8.1 Activate Freedrive

- ▶ Press *Installation* in the menu bar.
- ▶ In the *General* menu, press *I/O Setup*.
- ▶ Press *TI[0]* in the *Input* window.
- ▶ Enter *ZimmerFreedrive* in the *Rename* window for *TI[0]*.

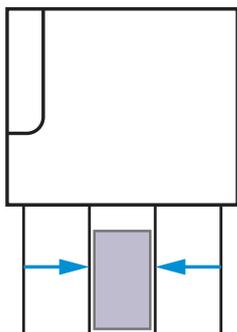


8.2 Creating a gripper configuration

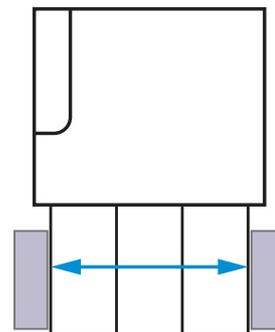
- ▶ In the *URCaps* menu, press *Zimmer*.

8.2.1 Selecting the gripping direction

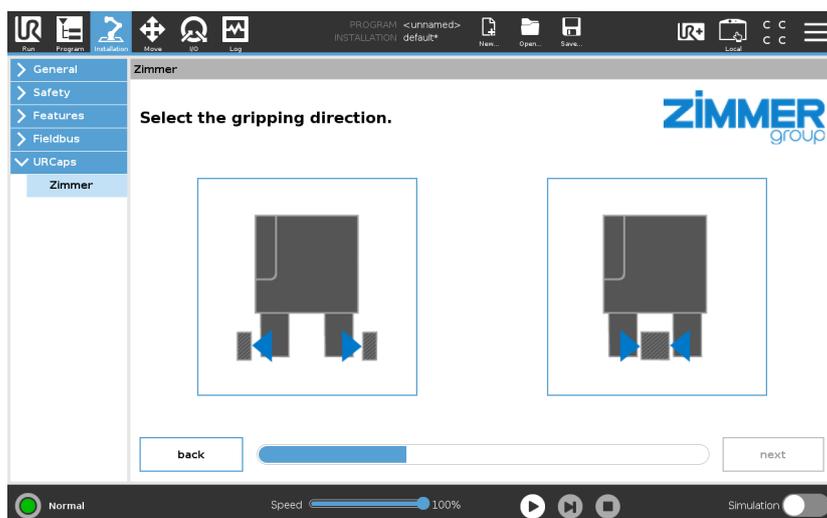
Outside gripping



Inside gripping



► Select the gripping direction.



8.2.2 Manual control

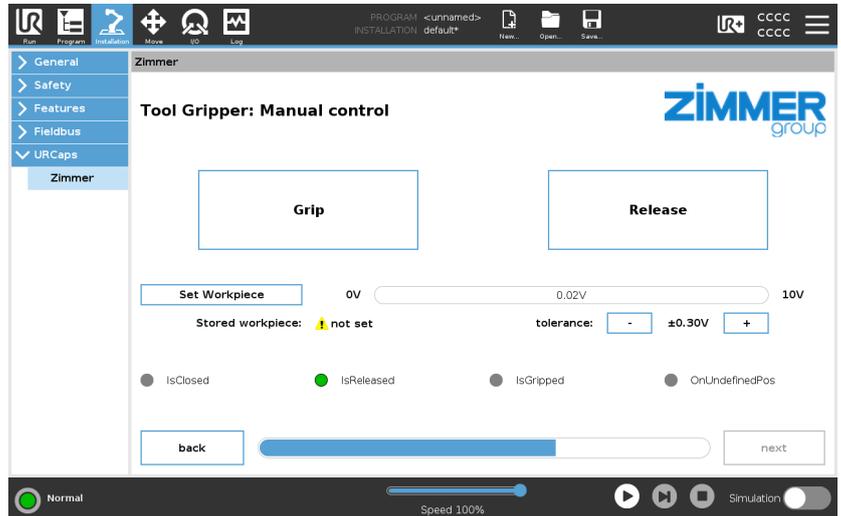
NOTICE



The prerequisite for the function test is that the robot and robot module are connected and that the robot, robot module and gripper are switched on.

You can test and operate the function of the gripper and view its status in the lower area of the screen.

- ▶ Press the *Grip* button to set the voltage for gripping the workpiece.
- ▶ Press the *Release* button to open the gripper and/or release the gripped workpiece.
- ▶ Move the bar to the desired value to set the voltage in V.
- ▶ Press the - and + buttons to set the tolerance.
- ▶ Press the *Set Workpiece* button to save the settings.



- ▶ Click the *next* button.

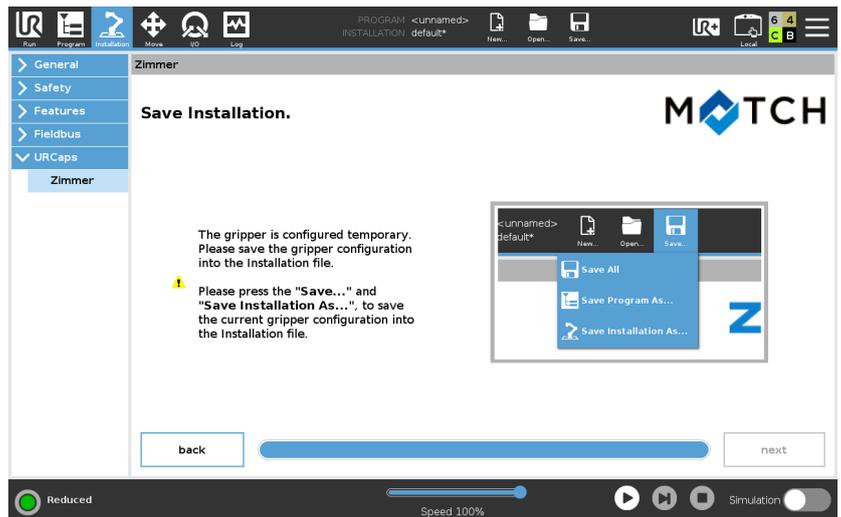
8.2.3 Saving the gripper configuration

NOTICE



The settings are temporary.
▶ Save the settings to the installation file.

- ▶ In the prompt, press the *Save All* or *Save Installation As* button.
- ⇒ The gripper configuration has been stored.
- ▶ In the prompt, click the *Ok* button.
- ⇒ The gripper configuration is complete.
- ⇒ The function blocks/subprograms have been created and are available for programming.



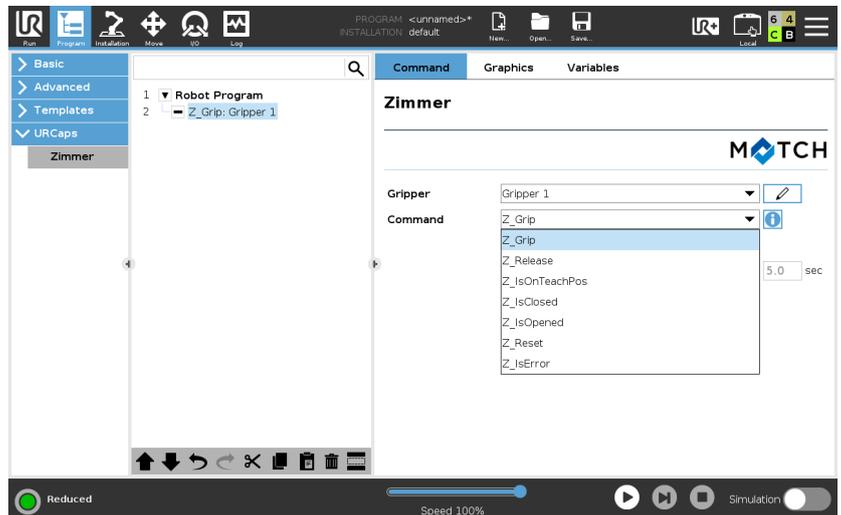
8.3 URCaps

Program nodes can be set in the *URCaps* menu item.

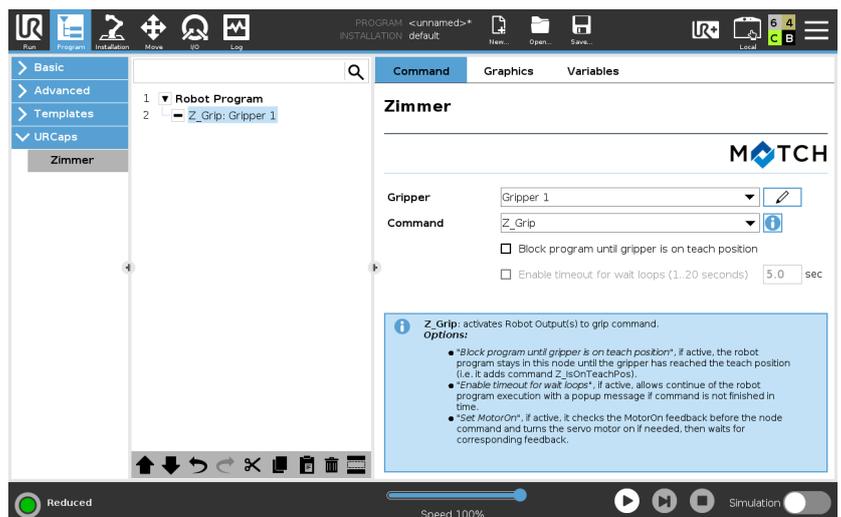
- ▶ Press *Program* in the menu bar.
- ▶ In the *URCaps* menu, press *Zimmer*.

8.3.1 URCaps Zimmer

- ▶ In the *Command* drop-down menu, select the robot job that you want to define for the gripper.



- ▶ Activate the desired checkboxes.



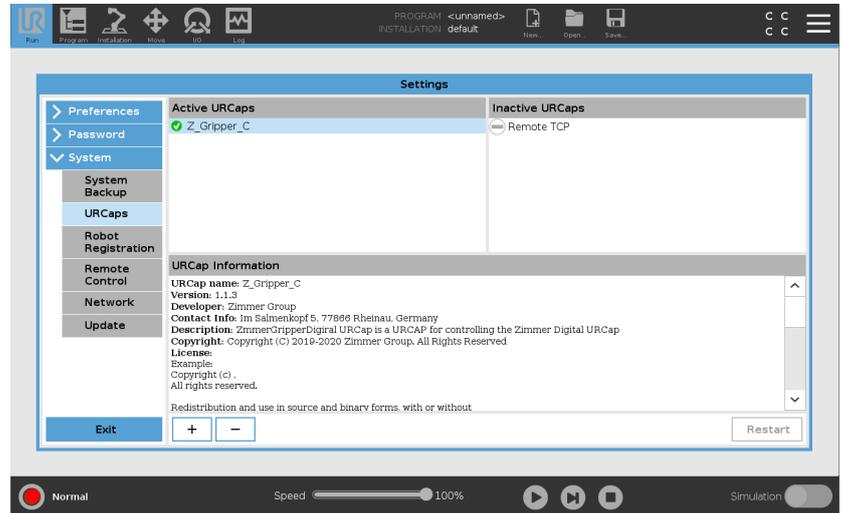
9 Operation

9.1 Control principle of the gripper

- ▶ Grip (Z_Grip) or release (Z_Release) the workpiece.
- ▶ Check the position of the gripper jaw (Z_IsOnTeachPos, Z_IsOpened, Z_IsClosed or Z_IsOnUndefPos).

10 Uninstalling the Comfort App

- ▶ Press the button in the header.
- ▶ Press *Settings*.
- ▶ In the menu, press *System*.
- ▶ In the *System* menu item, press *URCaps*.
- ▶ In the *Active URCaps* area, press *Z_Gripper_C*.
- ▶ Press the - Button.
- ⇒ Uninstallation is complete.
- ▶ Press the *Restart* button to activate the firmware.
- ⇒ The robot control panel performs a restart.



11 Error diagnosis

INFORMATION



- ▶ More information can be found in the installation and operating instructions of the gripper.
- ▶ Please contact Customer Service if you have any questions.