



Nuevas técnicas de automatización industrial S.L.

February 22nd, 2024

# RECDrive User Manual

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# Introduction


## What is *RECDrive*?

*RECDrive* is a hardware and software solution, which allows the activation of the *freeDrive* mode without the use of the *teach pendant*. It also allows the capture of the robot's trajectory.

Available with two working modes, manual or automatic. The software allows different parameters to be configured for customised point capture, such as the point capture time or the radius between points.

## Possible applications

- Use free movement
- Point capture
- Path capture
- Compatibility with any gripper

 **Warning:** we are not responsible for damage caused by misuse of this product. An e-series robot is used in this manual, the software is not compatible with the CB series.

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This section explains everything related to the product specifications. It is divided into the following subsections:

## **1. Hardware**

Specifications with respect to mechanical design.

## **2. Software**

URCap software specifications.

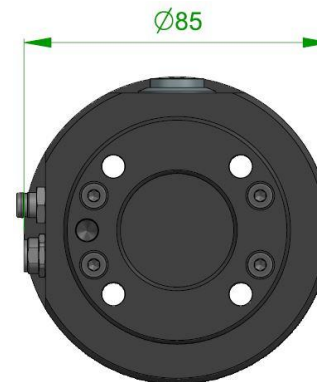
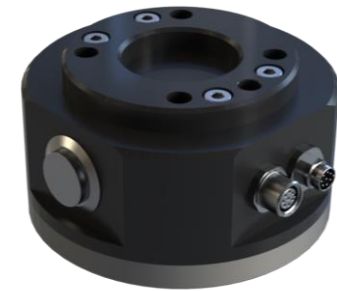
1

## Hardware

# Specifications

## RECDrive product hardware specifications:

- Dimensions: W=85mm, L=85mm , H=46,5mm
- Weight: 212 grams
- Connectors M8 male and female
- Push button





# Specifications

## RECDrive product hardware specifications:

### **Mechanical compatibility:**

- UR3e / CBSeries
- UR5e / CBSeries
- UR10e / CBSeries
- UR16e

### **Connector compatibility:**

- UR3e / CBSeries
- UR5e / CBSeries
- UR10e / CBSeries
- UR16e

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## Software

# Specifications

## **RECDrive Product Software Specifications:**

- Point-to-point trajectory saving.
- Continuous trajectory capture.
- Input configuration for free movement.
- Setting of capture time period in automatic mode.
- Radius setting for transition between movements.

# Specifications

## RECDrive Product Software Specifications:

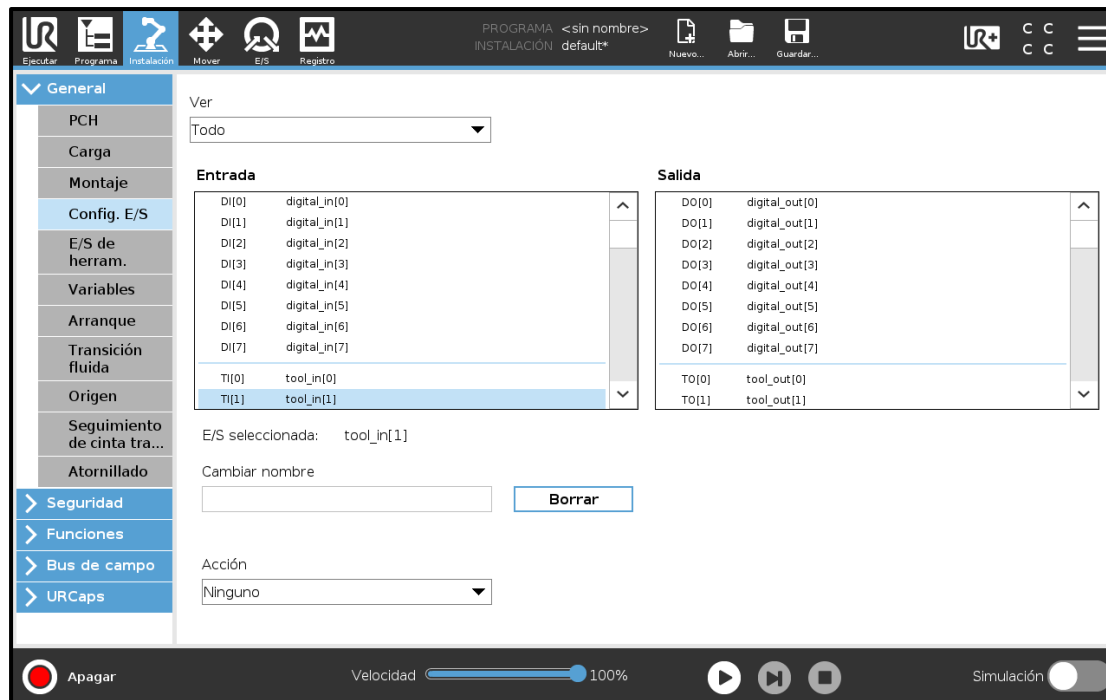
- CB series
  - No compatible
  
- E- series
  - UR3e: Polyscope 5.5.1 and above.
  - UR5e: Polyscope 5.5.1 and above.
  - UR10e: Polyscope 5.5.1 and above.
  - UR16e: Polyscope 5.5.1 and above.
  - UR20e: Polyscope 5.15.1 and above.
  - UR30e: Polyscope 5.15.1 and above.


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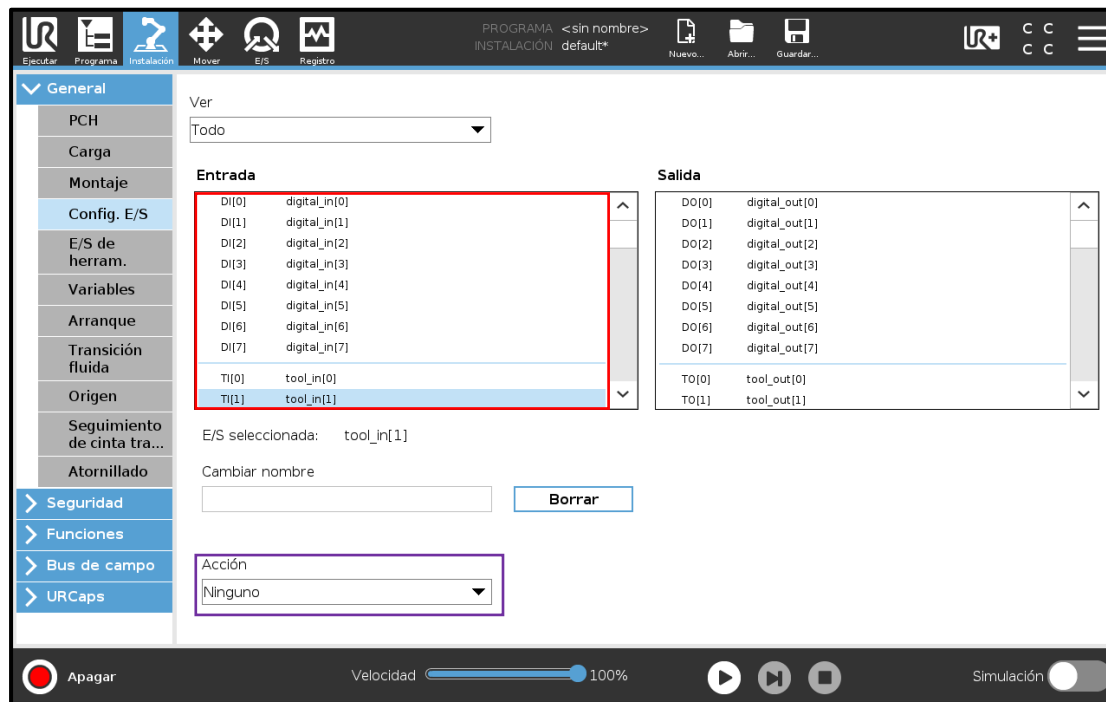
# Connection

This section will explain how to configure the UR robot to use free motion mode. The UR setup node is presented below.



 The default input shall be `tool_int[1]`.

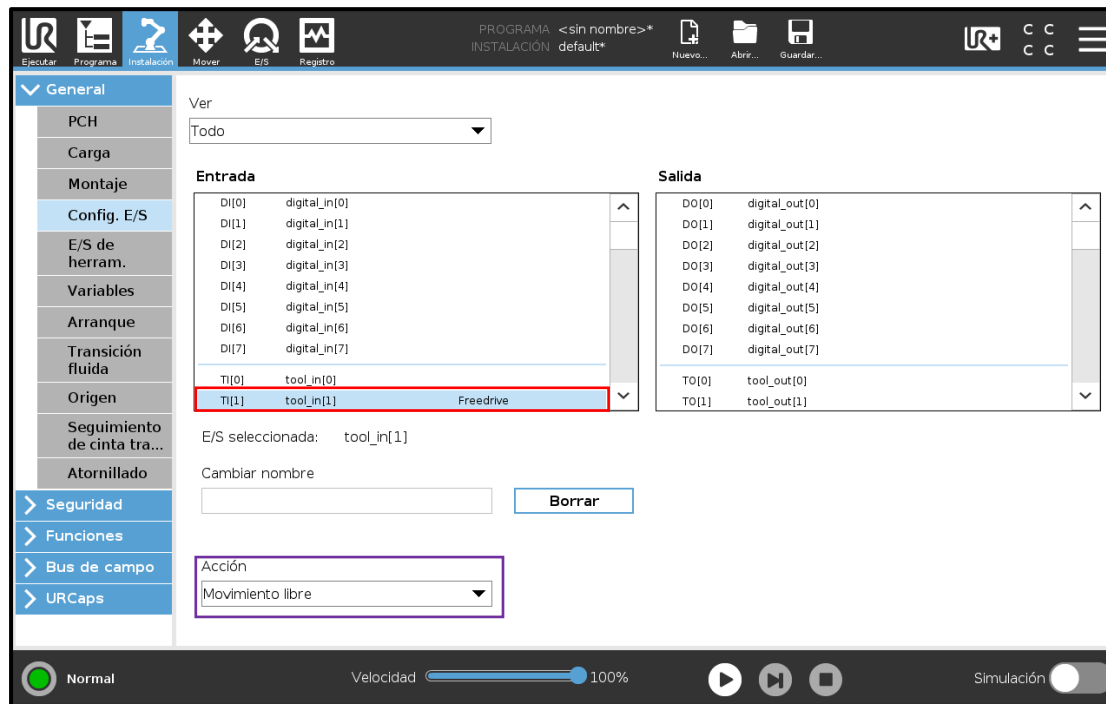
To use the free motion, the desired input must be associated with the free motion function of the robot. Available inputs (□)



(□) Action associated with selected input.

# Connection

Once configured, the selected function will be observed at the input(□)



(□) Free movement selected.



The internal connections used by the hardware are presented below:

UR	GRIPPER
GND	GND
VCC	VCC
DO0	DO0
DO1	DO1
DIO	DIO
DI1	Switch free Drive
AI0	AI0
AI1	AI1

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This section explains everything related to the functionalities of the URCap software. It is divided into the following subsections:

## **1. Programme Panel**

Configuration of work mode parameters.

## **2. Installation Panel**

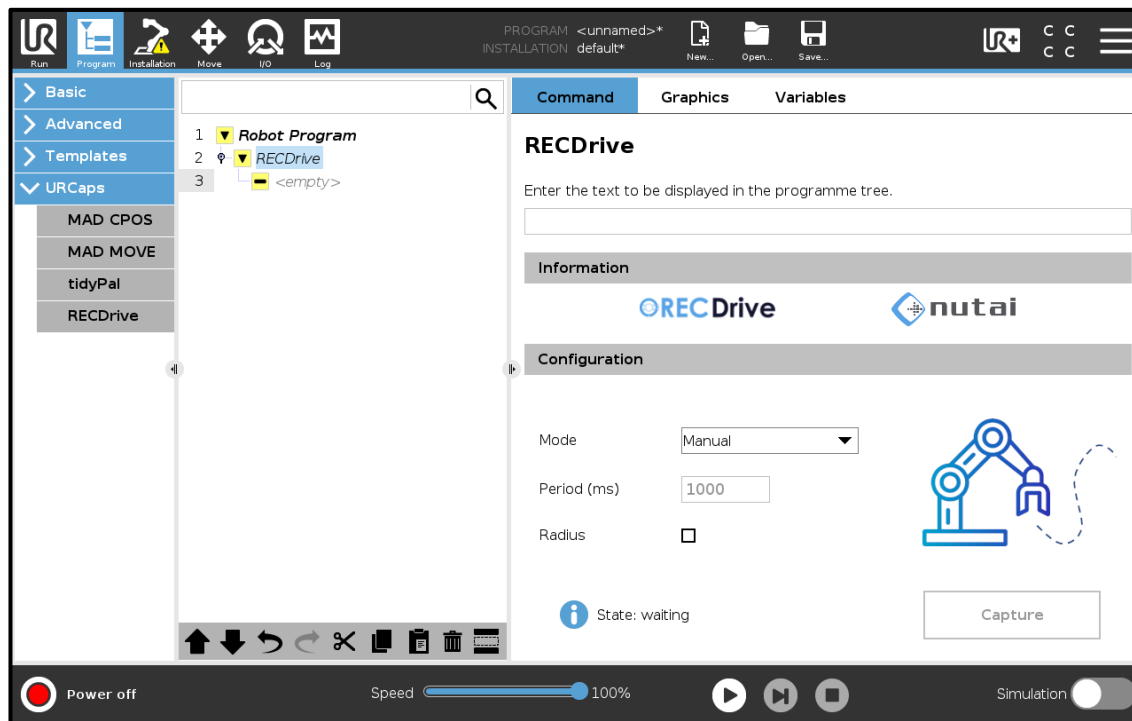
Configuration of general sequence parameters.

## 1 Programme Panel

# Software URCap



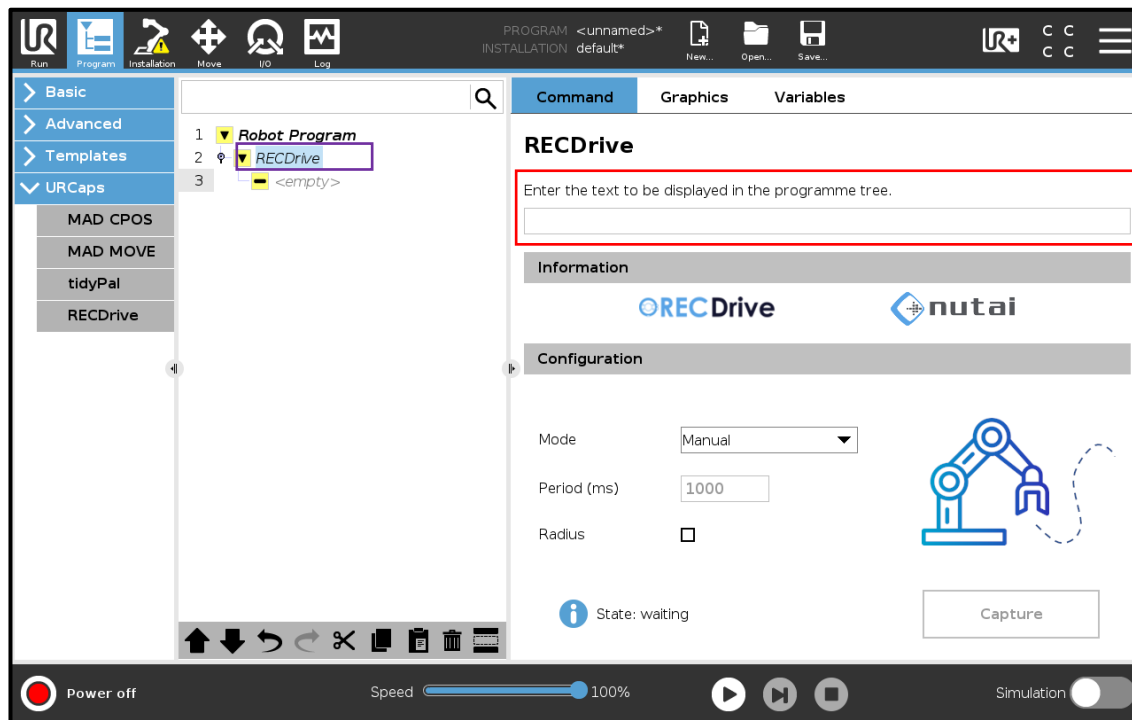
This section explains everything related to the functionalities of the URCap software found in the programme node.



# Software URCap



You can change the name of the programme node for better identification via the pop-up keyboard. (□)

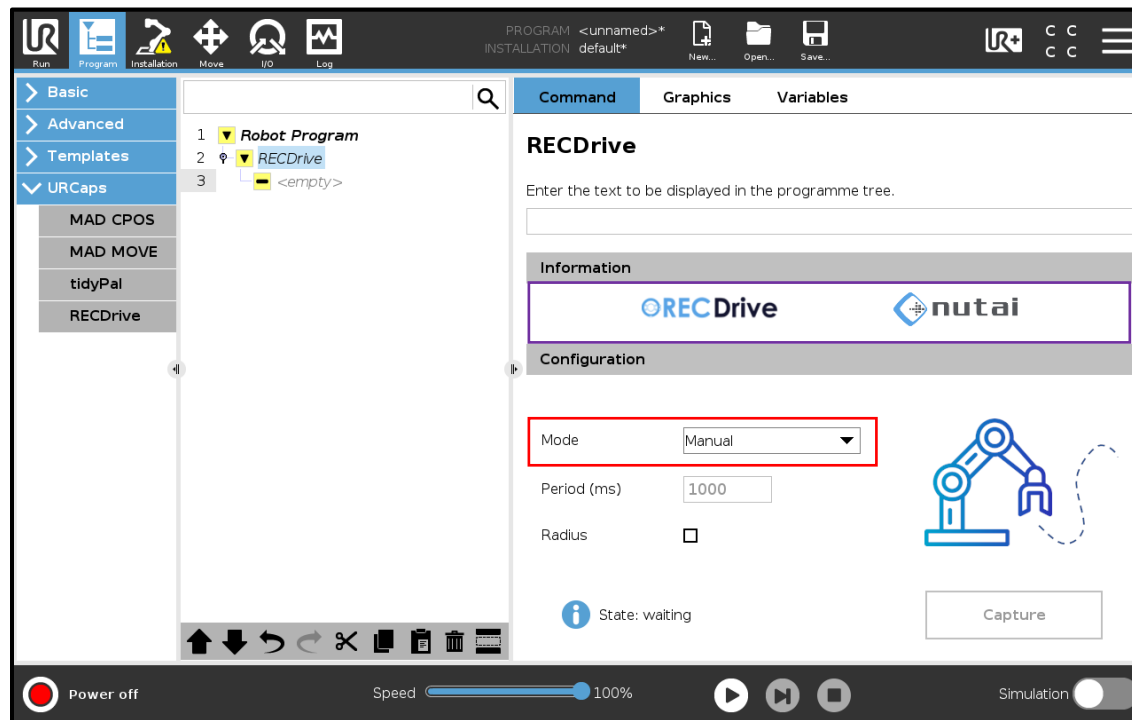


(□) Programme node name.

# Software URCap



You can choose between two working modes: manual or automatic mode. In manual mode, the required points are captured by double-clicking the push button available on the hardware. (□)

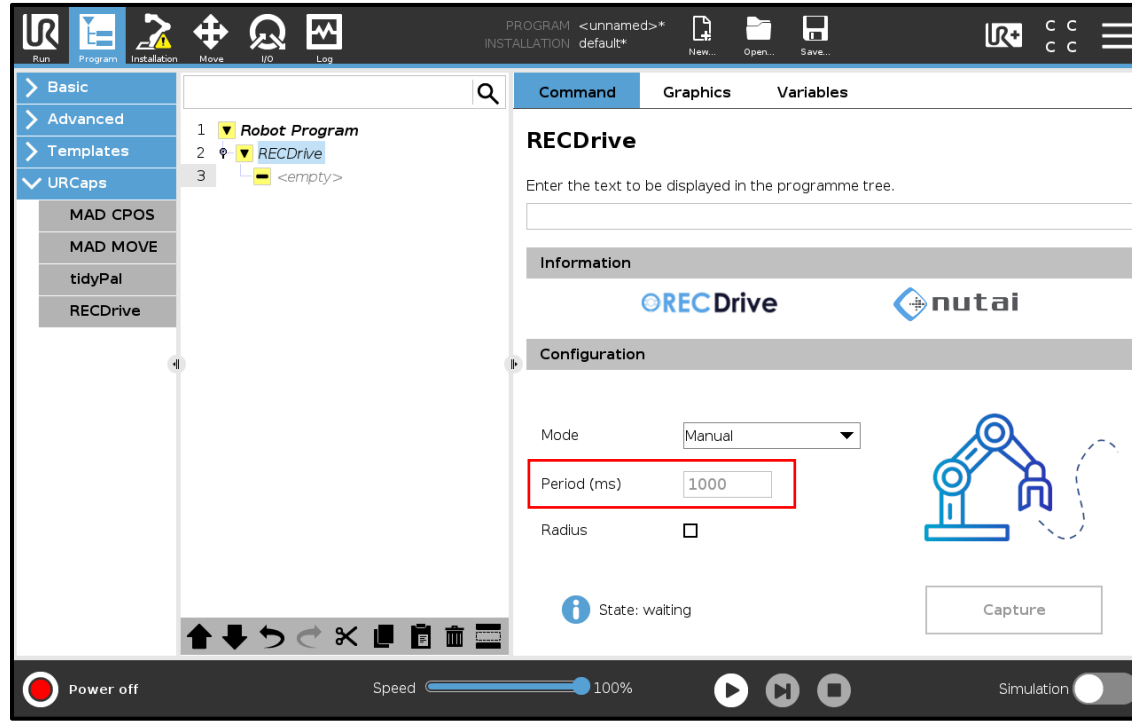


(□) URCap and company logos.

# Software URCap



In automatic mode, you will also set the time period when you want to add a new point to the trajectory. The software will start capturing once the button is activated.  
(□)

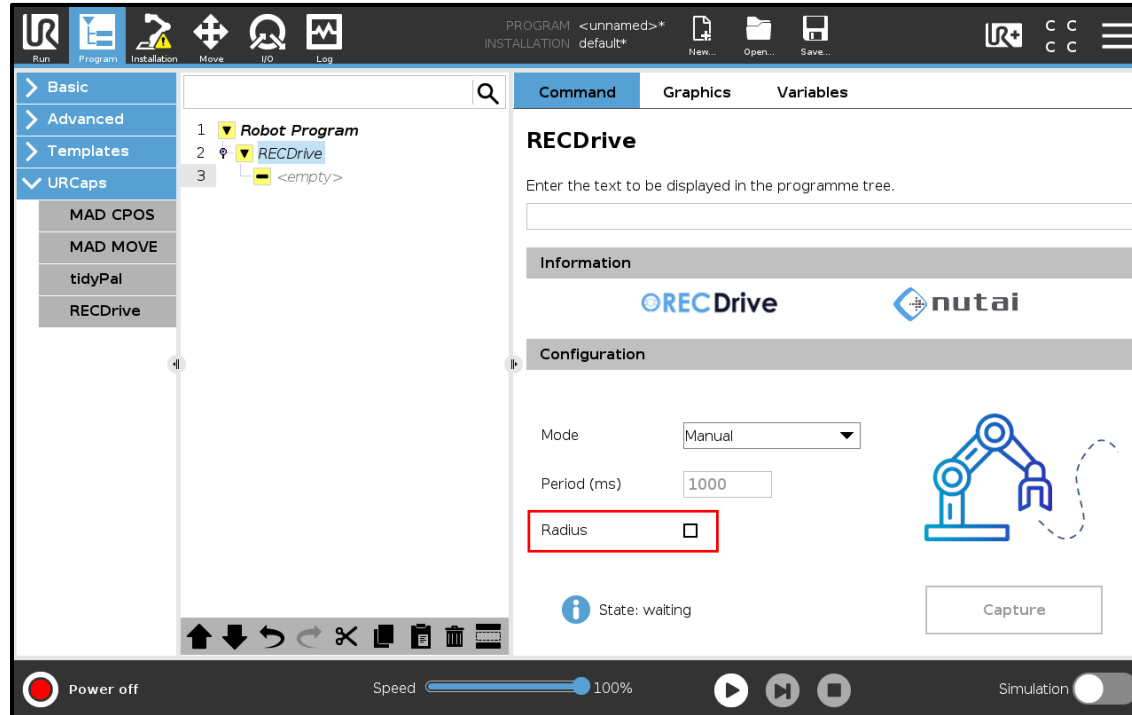




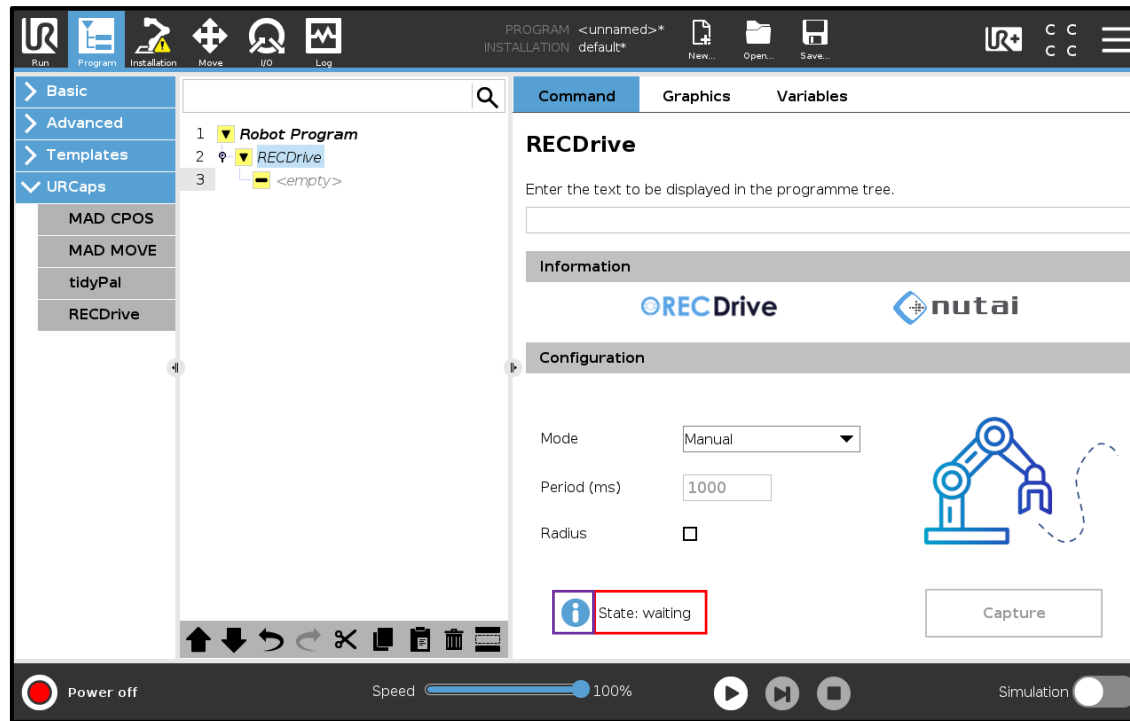
# Software URCap



The points obtained during the capture can be configured to add a radius between the transitions of the movements. This way the robot will make a continuous movement without stopping at each point. (☐)




The status of the trajectory capture can be observed at any time. (□)

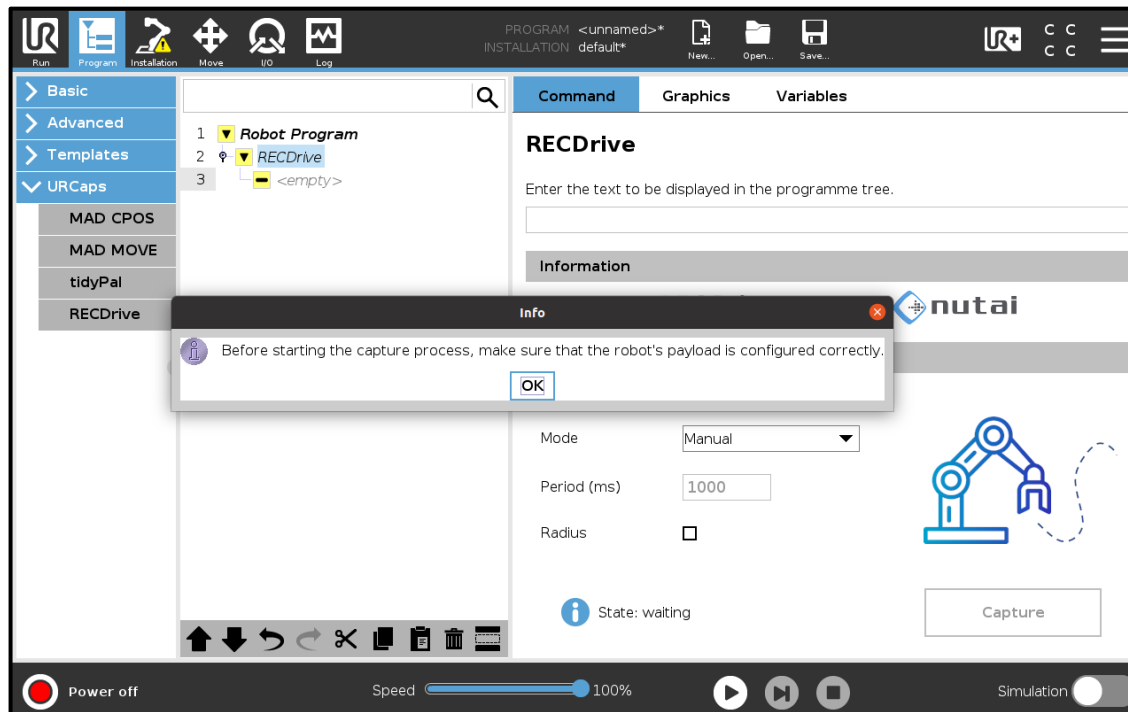


(□) An information icon is displayed

# Software URCap



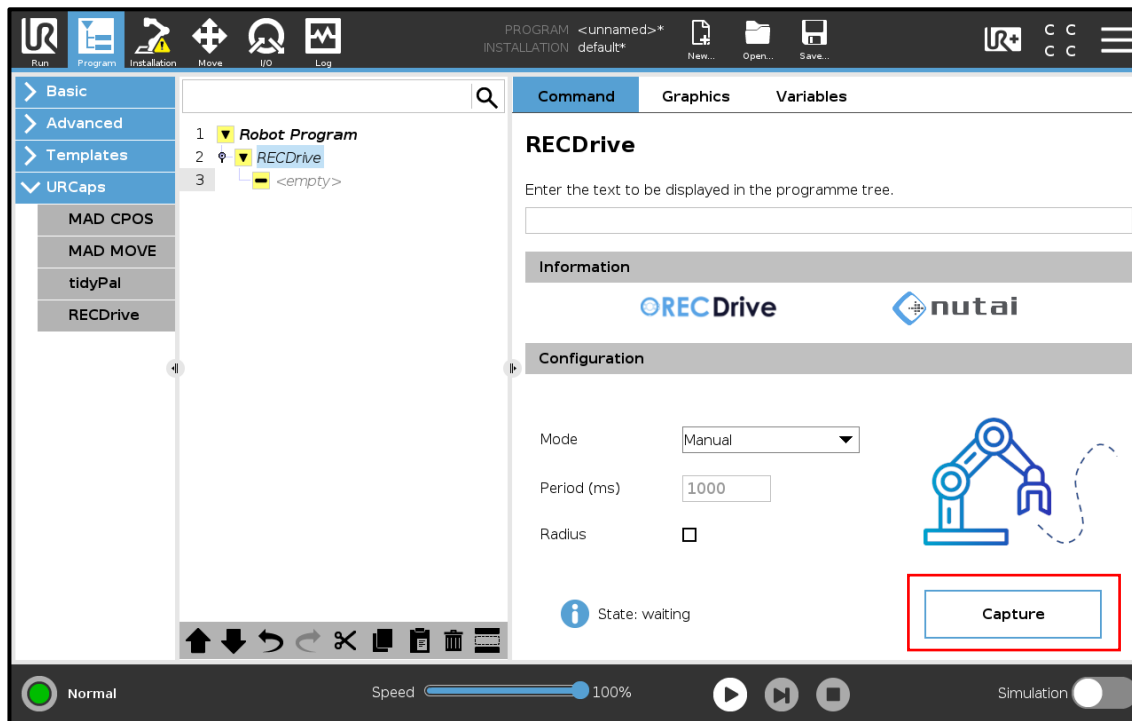
When you click on the info icon , a pop-up with information will appear.



# Software URCap



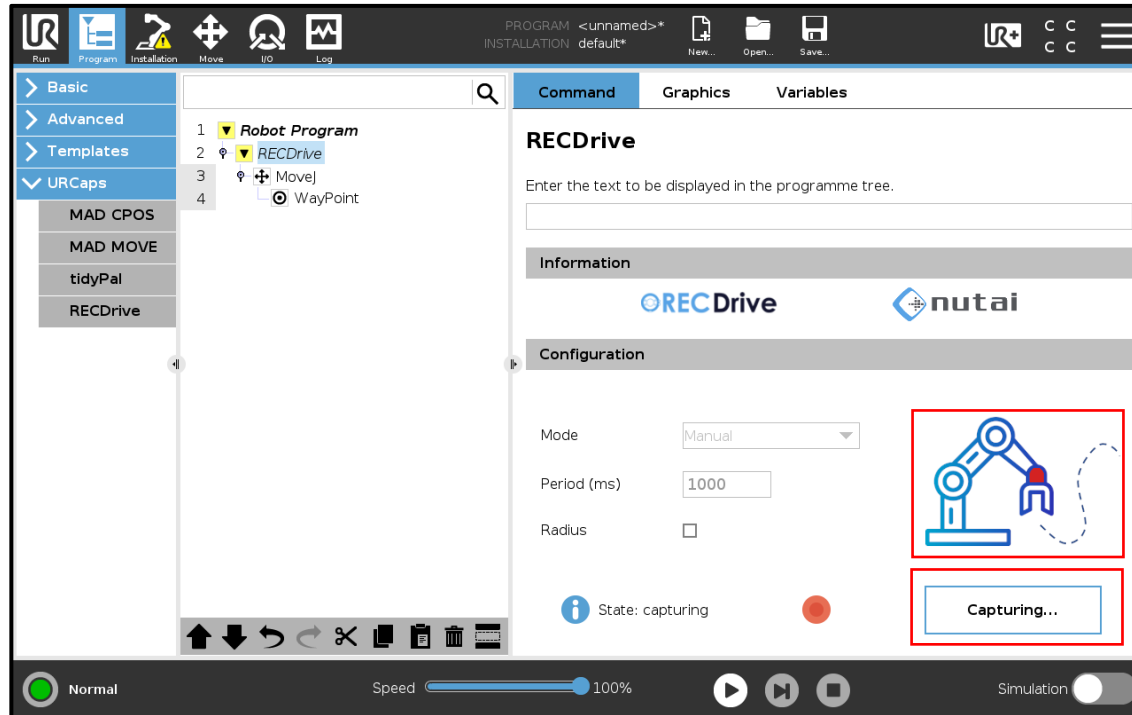
Once the different parameters have been configured, the Capture button must be pressed to start capturing points. (□)



# Software URCap



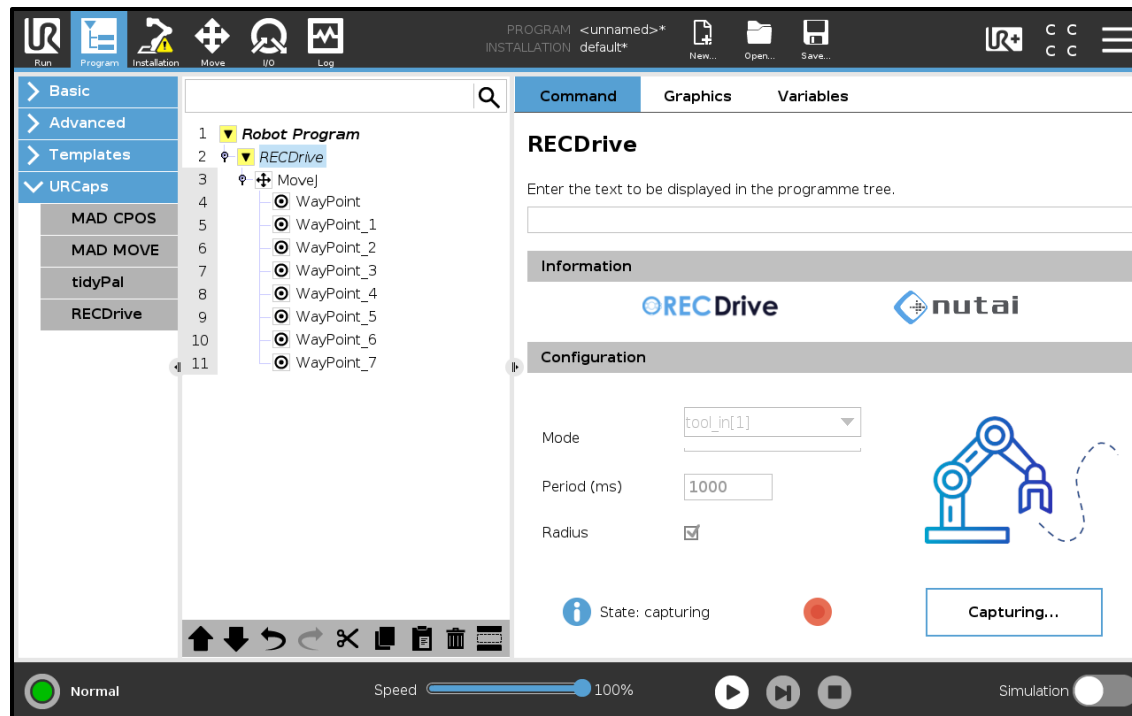
Each time a point is captured in manual mode, the gasket on the robot icon will light up to indicate that a new point has been added. (□)



# Software URCap



In automatic mode, the software will periodically add new points to the trajectory, as long as the push button is pressed and the points are not too close to each other.

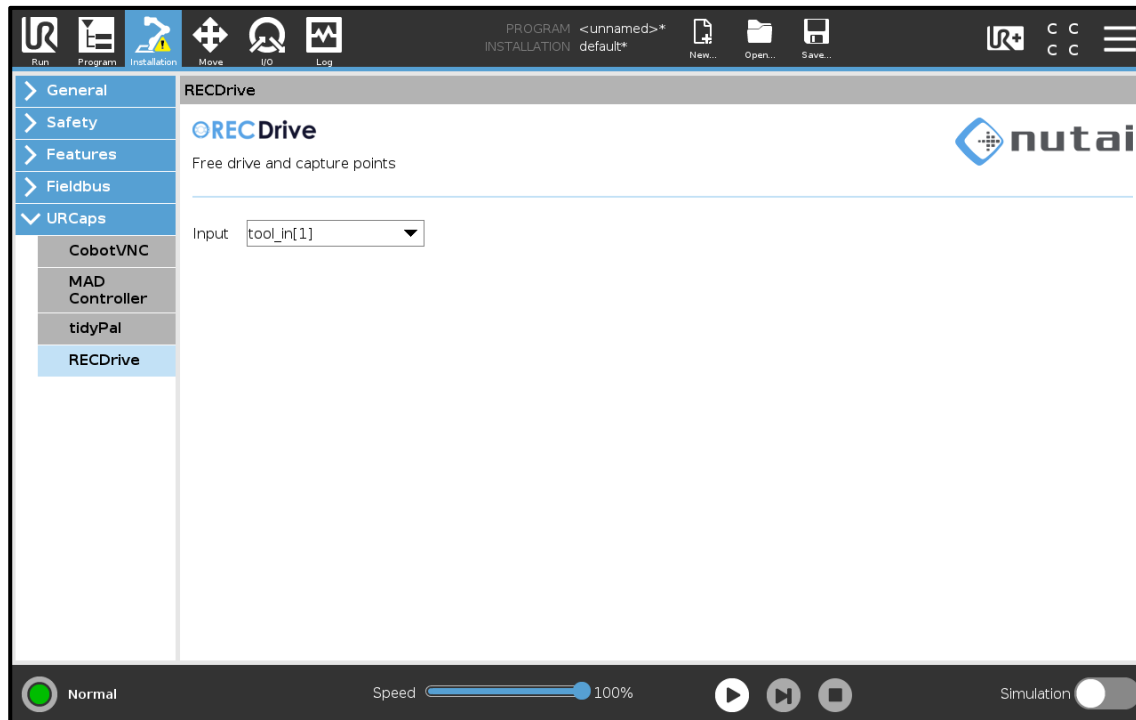


## 2 Installation Panel

# Software URCap



This section explains everything related to the functionalities of the URCap software found in the installation node.

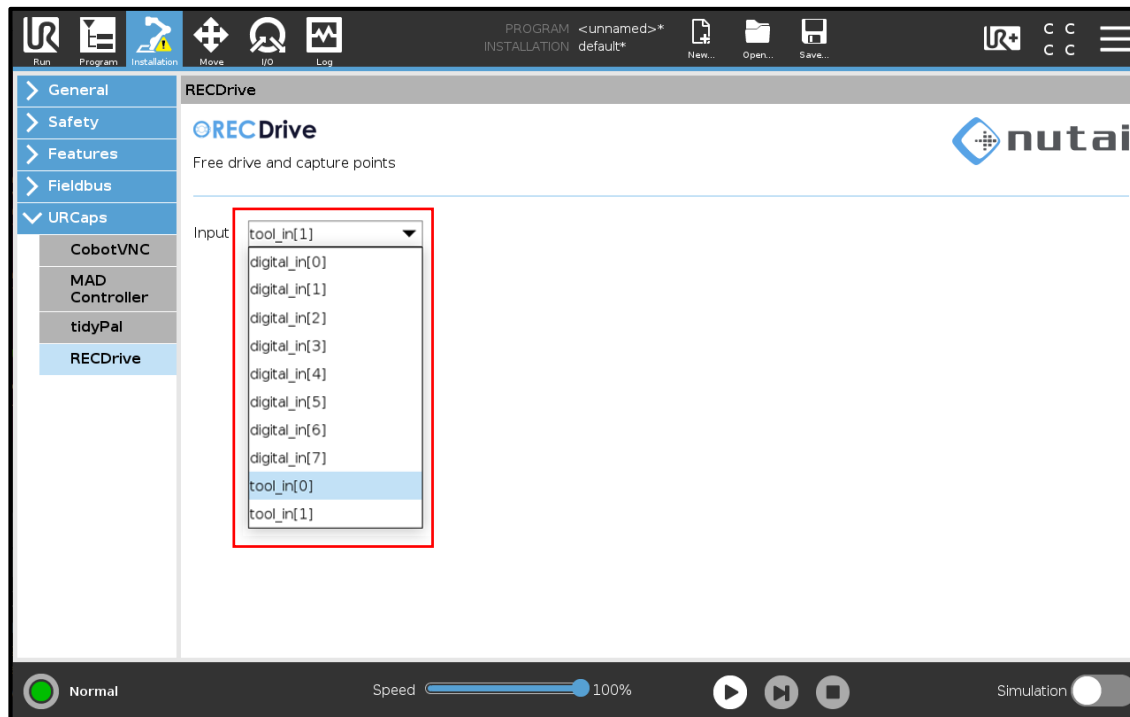




# Software URCap



Any digital input of the controller or digital input of the tool can be configured to perform the point capture. For our mechanical design, input 1 of the tool (□) will be used.



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# Best practices

 **We advise you to follow the recommendations below:**

- Before starting a cycle, check that there is no risk of collision.
- The components may only be handled by qualified technical personnel.
- During a cycle, position the teach pendant in the cabinet.
- Carry out regular and correct maintenance of your mechanical components.

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