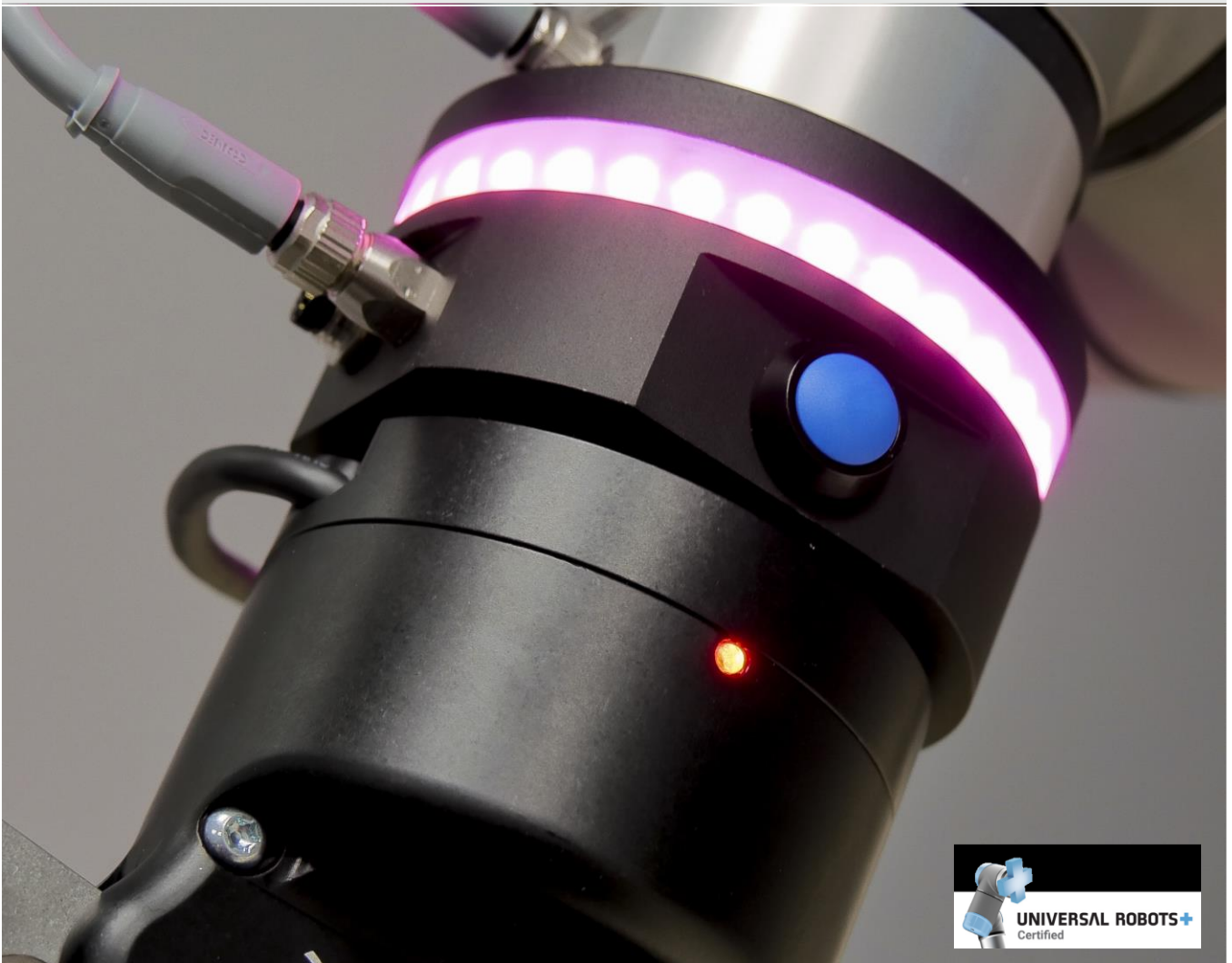


USER MANUAL

YOUring

Smart Light Tool



tools.alumotion.eu

Index

Index..... 1

What’s in the box 2

Specifications 3

Description 4

Mounting 5

URcap Installation 7

Configuration 8

 YOUring communication..... 8

 YOUring power supply and TCI 9

 Enable YOUring 10

 Pair device with USB key for bluetooth connection 15

YOUring Program Instructions 17

 YOUring 17

 Wait YouRing Button..... 19

 YouTeach node 19

 Enable YOUring TCI node 22

Troubleshooting..... 23

What's in the box

- YOuring
- Connecting tool cable
- USB bluetooth key
- USB Alumotion key (manual and software)
- 4 Screws (TCEIR M6 x 50mm)
- 8 Flat Washers



Figure 1 YOuring Set. Screws are suitable for Robotiq 2F185/140 grippers. Flat washers, two for any screw, are just for testing YOuring in standalone mode

Specifications

Diameter / Height	82 mm / 40-46 mm
Weight	300 g
Peak current request	400 mA
[buzzer	100 mA]
[all white led on	300 mA]



Figure 2 YOUring view, with a tool mounted

Description

The YOuring is a tool for enhancing the efficiency and collaboration between the user and the robot, ensures safety and free of movement.

The robot with the YOuring can show the **direction of the movement**, by tracing the positions with the led.

The user can benefit of a **new freedrive button**, directly on the tool flange of the robot and **setup specific colors** in order to trace specific behaviors, during the execution of a program, or also to signal a particular safety mode of the robot.

Setting waypoints is very easy: just move by pressing the black button in freedrive and save the position by pressing the **blue button** directly on the flange (see Figure 3).

From software version 3.0.0, the YouRing is able to communicate with the robot through bluetooth or serial RS485. The user can define the preferred communication method and save it as default, so that the YouRing will automatically start in the correct configuration when switched on.

With the installation of the YOuring, new Polyscope commands are available to the user:

- **YOuring** instruction to setup lights and buzzer
- **Wait YOuring button** instruction to wait when the user presses one or more of the YOuring buttons
- **YOUteach** instruction to save the points in freedrive mode and record the points of the robot on the fly
- **Enable YOuring TCI** instruction to automatically set the parameters in the installation tab for the TCI communication at the beginning of the program, useful when using RS485 communication.



Figure 3 Black and blue button.

Mounting

1. Physical mounting of the YOuring on the tool flange with screws and flat washers



Figure 4 Physical mounting of the YOuring.

2. Connect the cable between the YOuring and the tool flange. Be careful to the guide on the jack for a correct mounting.



Figure 5 Physical mounting of the YOuring.

3. Insert the USB bluetooth key in the control box



Figure 6 USB Bluetooth Key connected

URcap Installation

For the URcap installation, please follow the steps:

- insert the provided Alumotion USB key in the teach pendant
- click on menu with three bars at the top right and click on *Settings*
- go to *System/URCaps* and click on +
- Select the *YOUring-v3.0.0.urcap* file
- Restart the robot

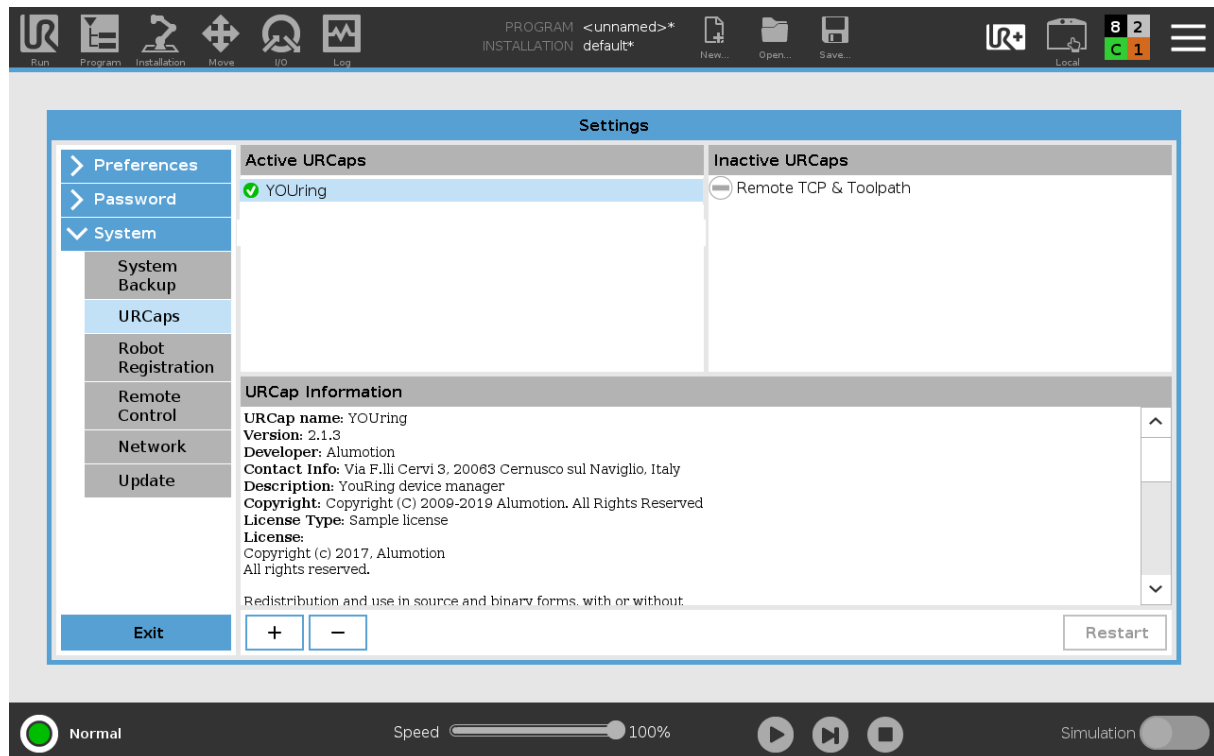


Figure 7 URcap installation

Configuration

YOUring communication

From software version 3.0.0 the user can decide between two methods for the communication between the robot and the YOUring:

- Bluetooth, through a USB Key
- RS485, exploiting the Tool Communication Interface (TCI) of the robot. In this case the Tool I/O are not available for other tools connected after the YOUring.

When the YOUring is waiting for a new connection, a lights game indicates communication method that is active:

- Bluetooth: green and blue blinking lights
- RS485: red and green blinking lights

To change the communication method, when the YOUring led are blinking as described before, the user has to press and hold for 5 seconds the blue button. After 5 seconds the lights game will change moving to the opposite one.

The user can save a communication method as default, so that the YOUring automatically activate the correct method when switched on. To save RS485 or Bluetooth as default is enough to press both the buttons on the YOUring at the same time when the tool is in waiting mode.

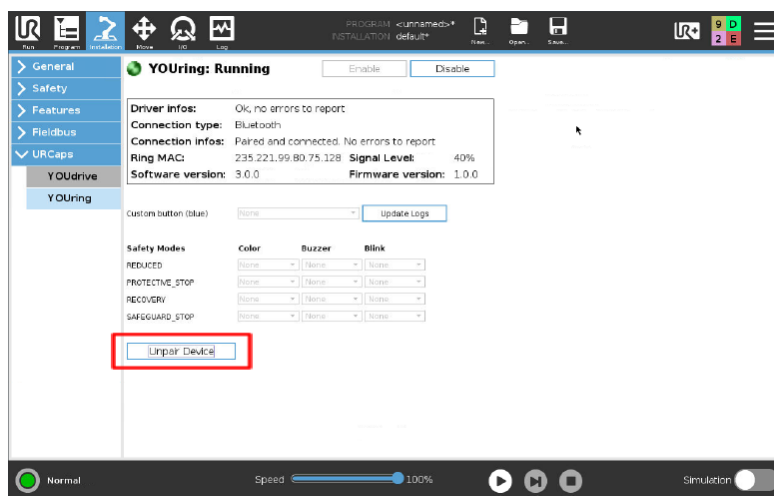
A Green light will confirm the correct definition of the default communication method, from this moment on the YOUring will turn on in the default configuration.

The user can always change the default communication method by repeating the above procedure.

Once the communication method has been defined the YOUring will wait for a communication to be established. If the system is in Bluetooth mode the waiting mode will end when a USB key is connected to the robot Control Box and the pairing procedure has been completed. In case of Serial RS485 communication the waiting mode ends when a regular contact has been created between the two devices.

In both cases all the lights of the YOUring will switch off when the communication is running correctly.

It's always possible to come back to the waiting mode by clicking the 'Unpair Device' button in the Installation tab:



YOUring power supply and TCI

- For e-series: Go to Installation/General/Tool I/O and set 24 V in the Tool Output Voltage
If the user needs to use Serial RS485 communication, the 'Communication Interface' option must be selected and the parameters set up as following:

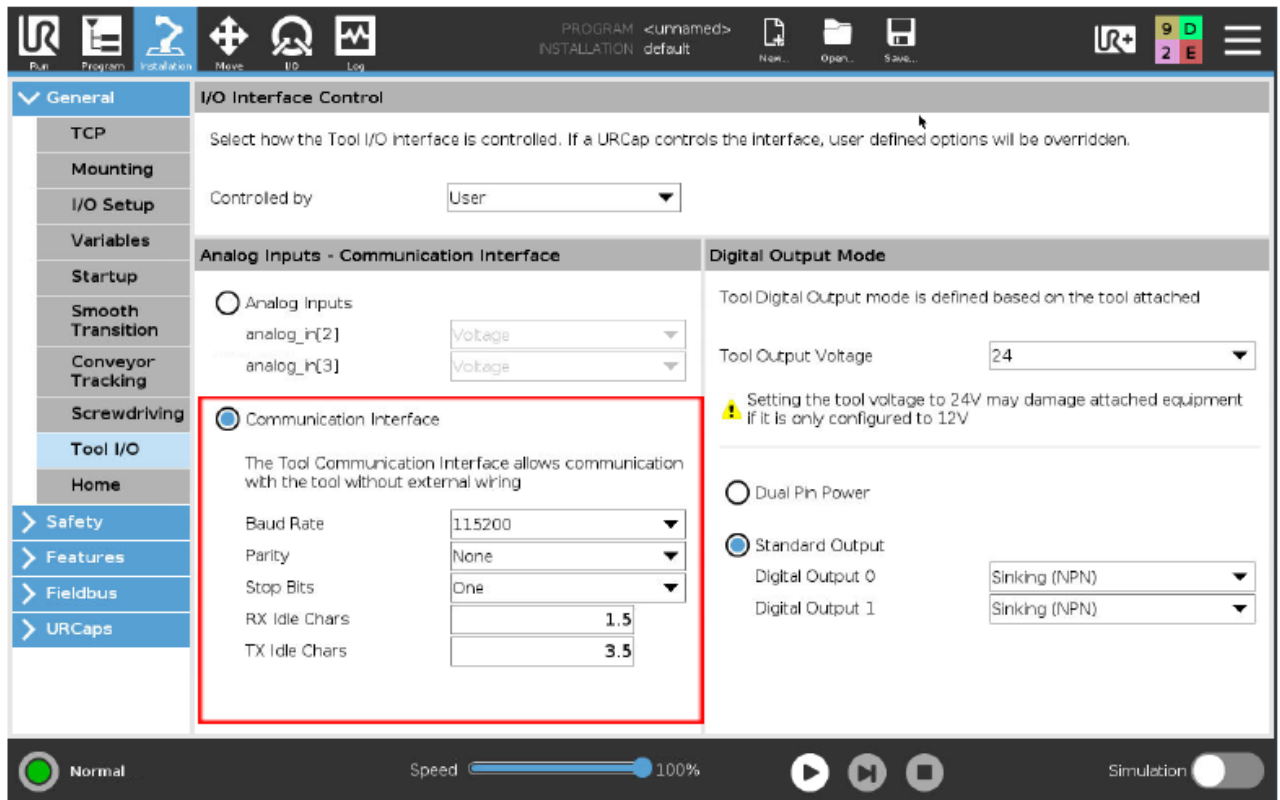


Figure 8 TCI definition for YouRing

Anyway, it's always possible to set up the Tool Communication Interface (TCI) at the beginning of the robot program through the node *Enable YOUring TCI*.

For CB3: Check the 24V on the tool voltage in the I/O tab and save the installation

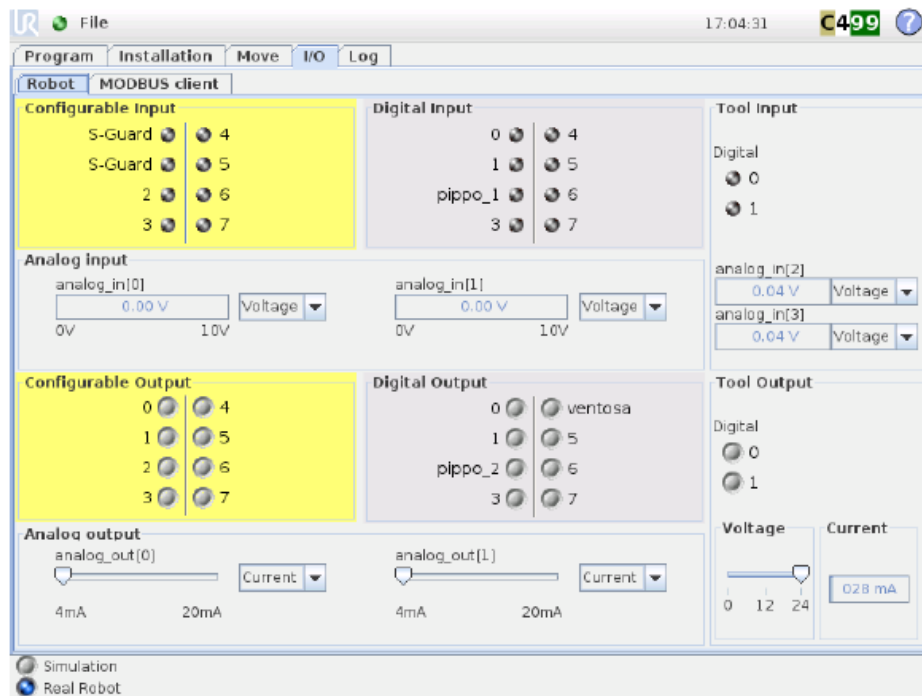


Figure 9 YOUNG power supply for CB3.

Enable YOUNG

Go to Installation/URCaps/YouRing

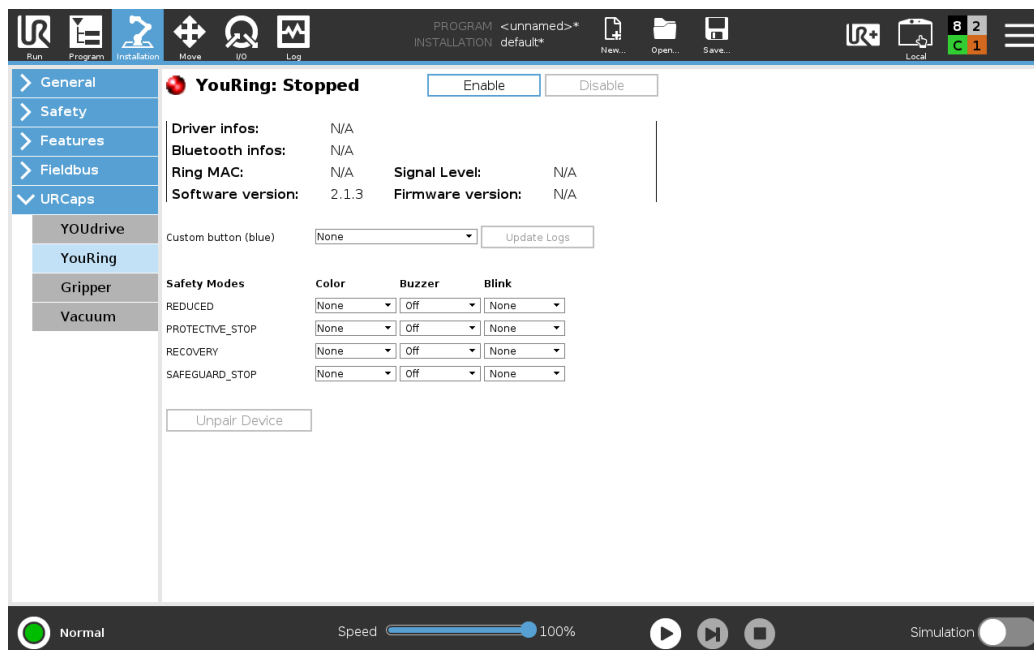


Figure 10 YOUNG stopped

When the YouRing is not activated it's possible to:

1. Configure the blue button, which corresponds to the custom button, in order to activate the script chosen in the drop-down menu (see the figure below).

Once the YouRing has been activated, the pressing of the blue button will activate the script.

Please remember to save the installation every time a script is modified.

Attention: this functionality is available with the robot in stop program, not in running program.

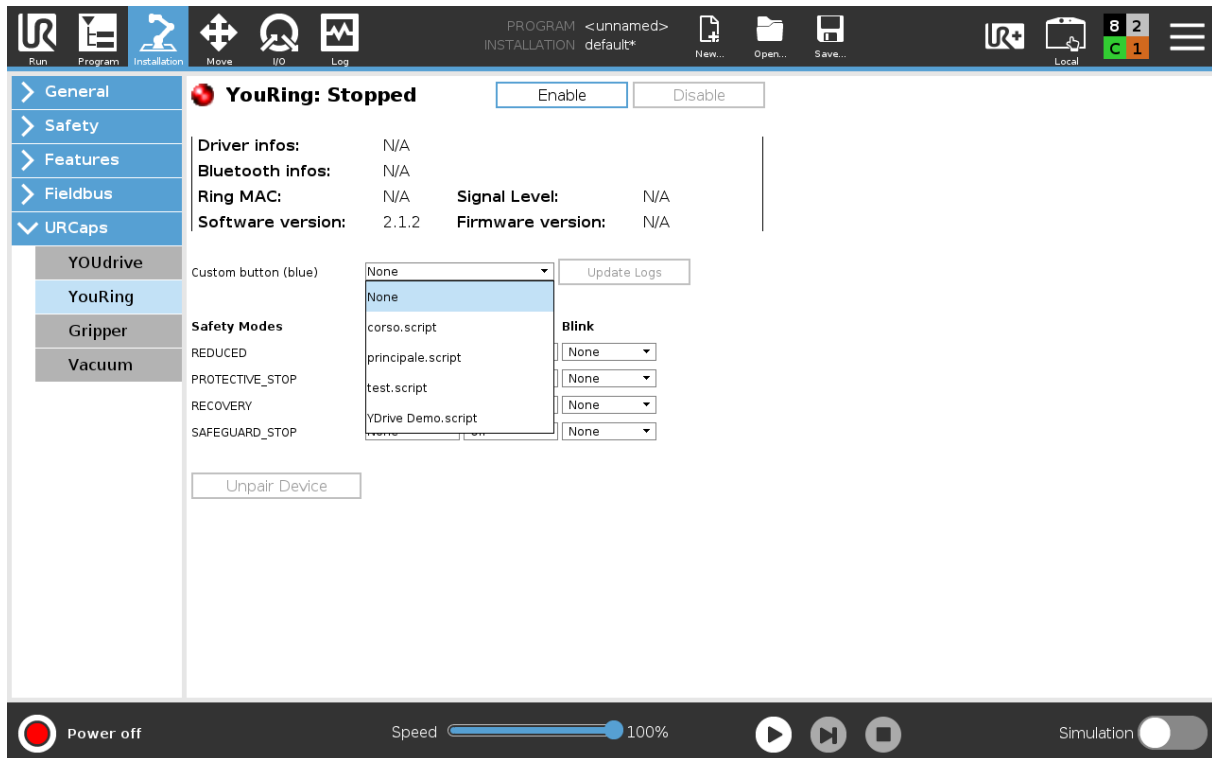


Figure 11 Setup of the user scripts for the custom button. Note: the script chosen works only when the program is not in execution



Figure 12 View of the custom button



Figure 13 View of the freedrive button

2. Configure light, sound and blinking for the safety modes indicated in the figures. E.g. when the robot goes in protective stop mode, the YOUring starts blinking yellow.

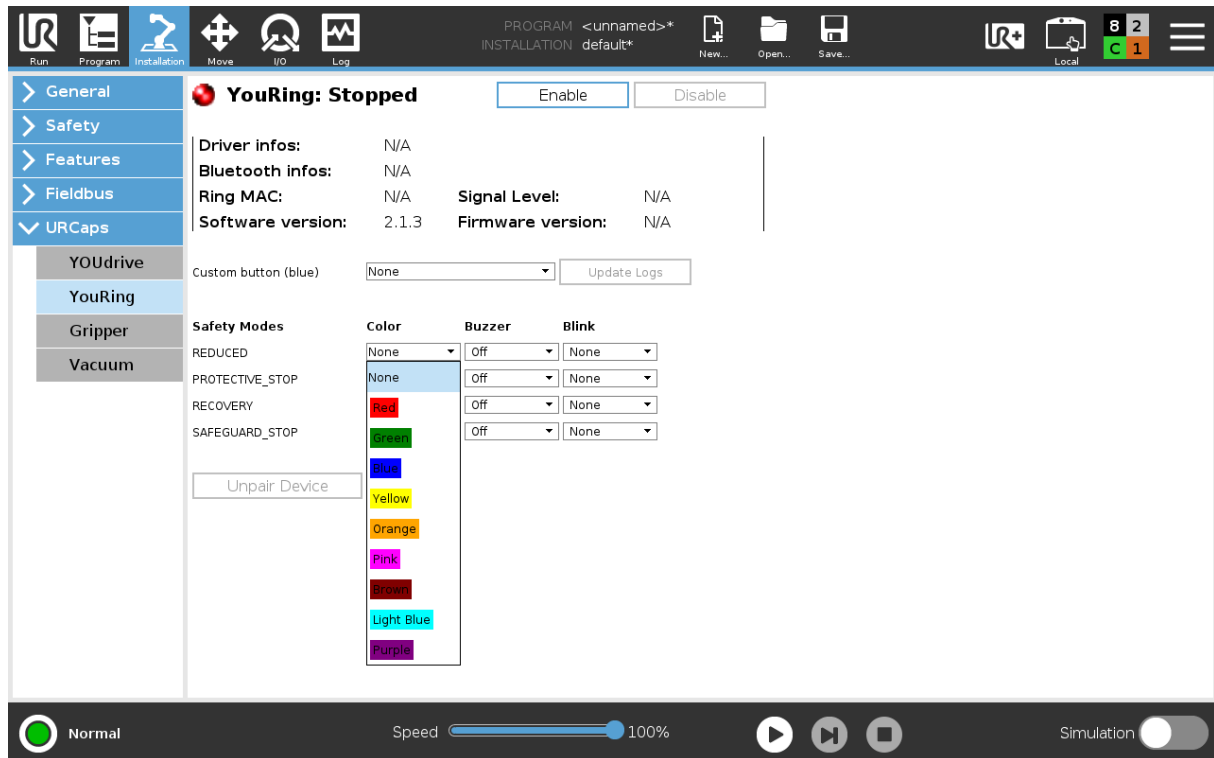


Figure 14 Configuration of light in safety modes setting

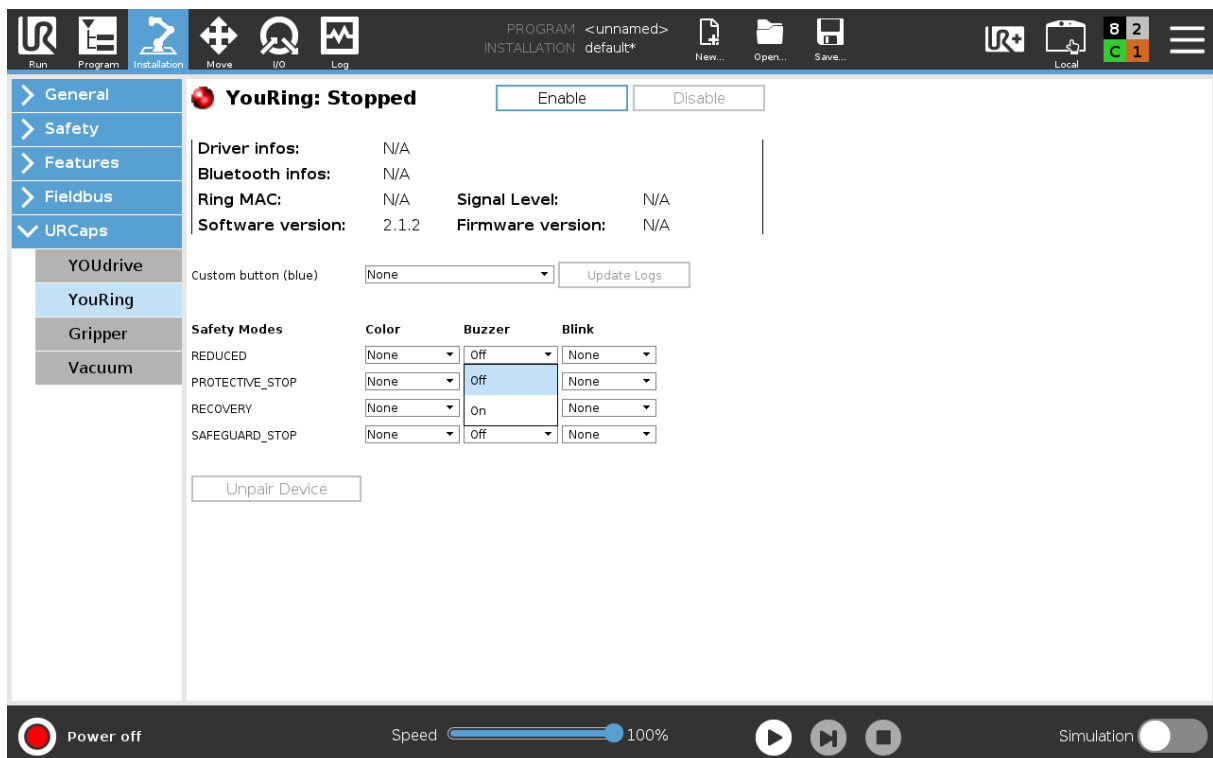


Figure 15 Configuration of buzzer in safety modes setting.

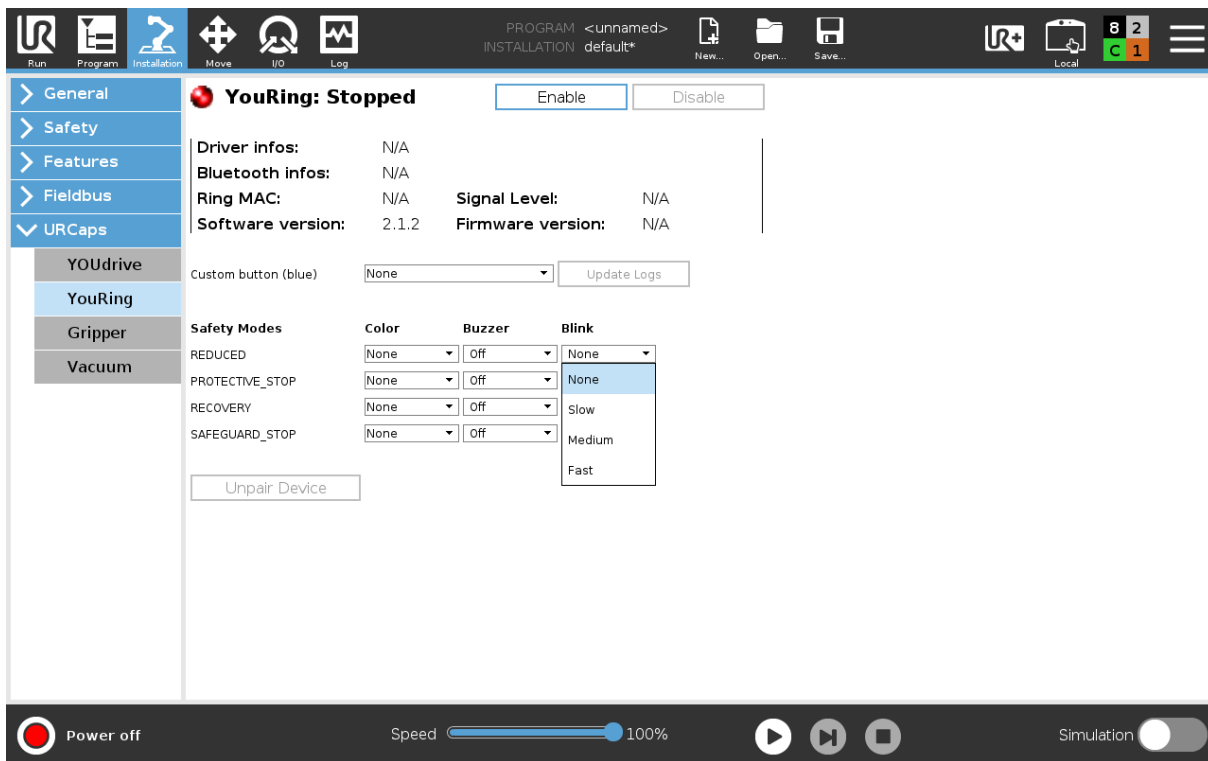


Figure 16 Configuration of blink in safety modes setting.

For *YouRing* activation click enable and save the installation. You can see that the red led turns green as in the figure below.

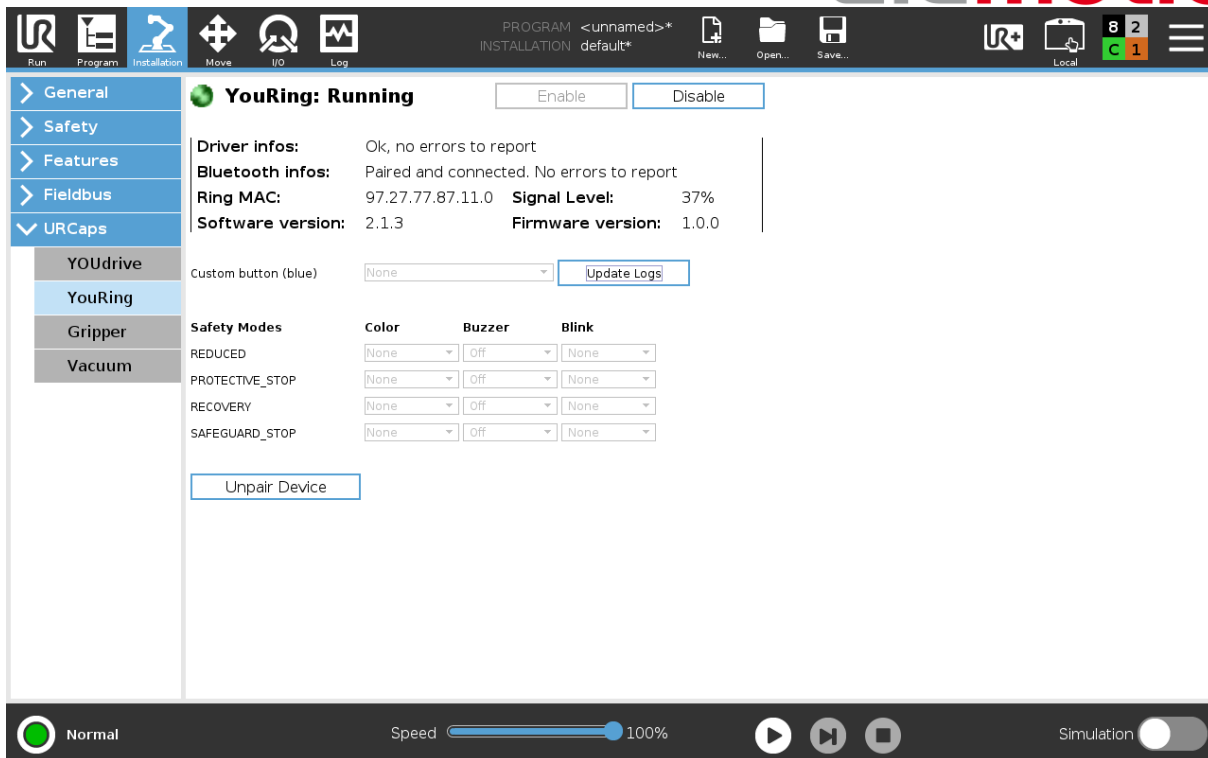


Figure 17 YOUring up and running

Once the installation is complete and saved, when the user starts the robot, a 'bip' sound is earable and the YOUring is ready to work.

Pair device with USB key for bluetooth connection

The pairing procedure saves the ID of the YOUring inside of the USB key so that they are able to connect.

This procedure is done once in a lifetime: we do this in our lab when testing each YOUring kit we deliver. In this way the customer receives the kit ready to work.

When a YOUring device is paired to an USB key, each time you power up the device and you power up the USB key they automatically connect. A YOUring cannot connect to any USB key if they are not previously paired.

As described above normally is not necessary to unpair and pair a bluetooth key, but if you have problems on connecting YOUring or you need to pair a YOUring device with a new USB key, you can follow the step below:

1. Go to *Installation/URCaps/YouRing* (see the figure below).
2. Unpair the YOUring and the Bluetooth key by pressing the 'Unpair Device' button using the default password 'alumotion'
3. Pair the YOUring and the Bluetooth key by pressing the two buttons (blue and black) on the YOUring for less than a second (you will hear a short sound from the buzzer) to start the automatic procedure of pairing

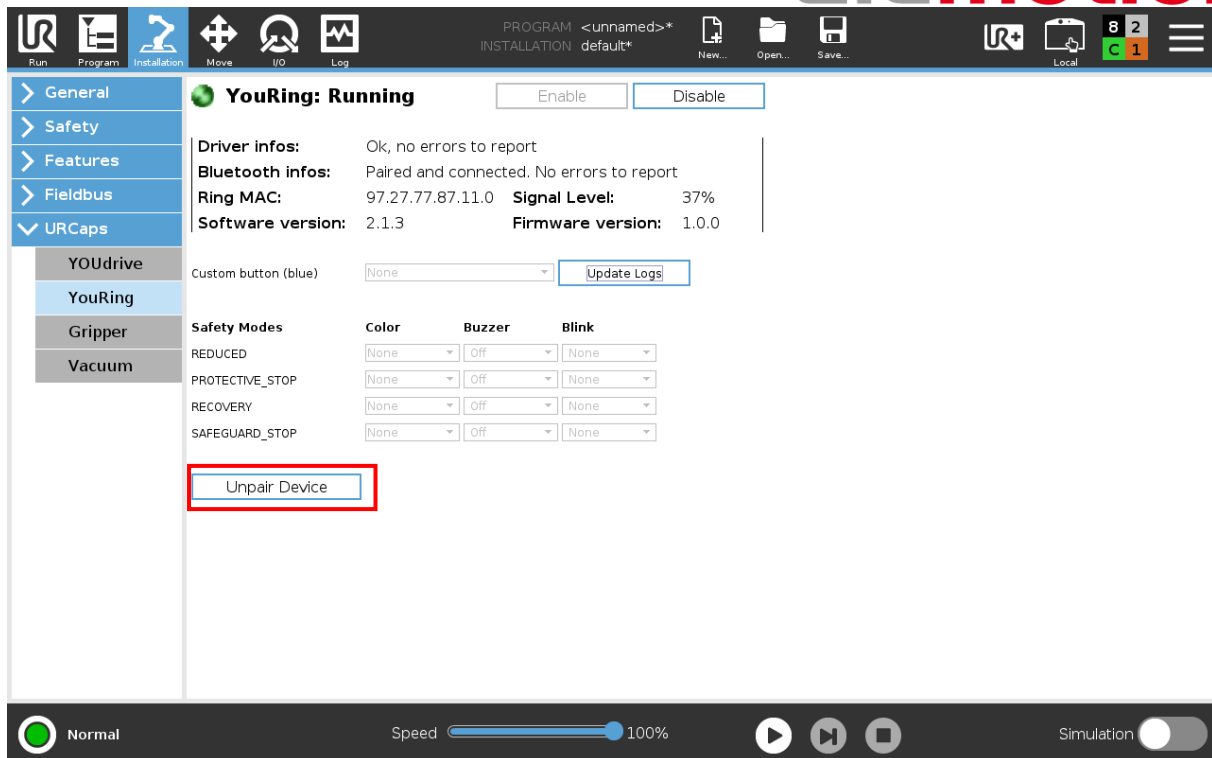


Figure 18 Unpair Device

The *Driver and Bluetooth infos* are shown at the top of Figure 18.

Possible Driver Infos are:

- **“Ok, no errors to report”**: YOUring daemon is up and running without errors and USB key is correctly connected and recognized.
- **“Usb is not connected or another device is trying to access to it”**
 1. USB not connected or not properly connected
 2. You have another URCaps that force the use of youring connection channel. Please try to remove that URCap and try again

Possible Bluetooth transmission Infos are:

- **“Paired and connected. No errors to report”**: YOUring correctly paired and connected
- **“Paired and connected. Generic error reported”**: YOUring correctly paired and connected but unfortunately we have internal error on YOUring board
- **“Paired but not connected”**: YOUring correctly paired but not connected. Please try to fix with instruction in the other article
- **“Not paired”**: You need to pair YOUring for first time

YOUring Program Instructions

In *Program/URCaps* now you can see four instructions:

- YOURing
- Wait YOURing Button
- YouTeach
- Enable YOURing TCI

YOURing

Click on *YOURing* instruction and then click on Configure.

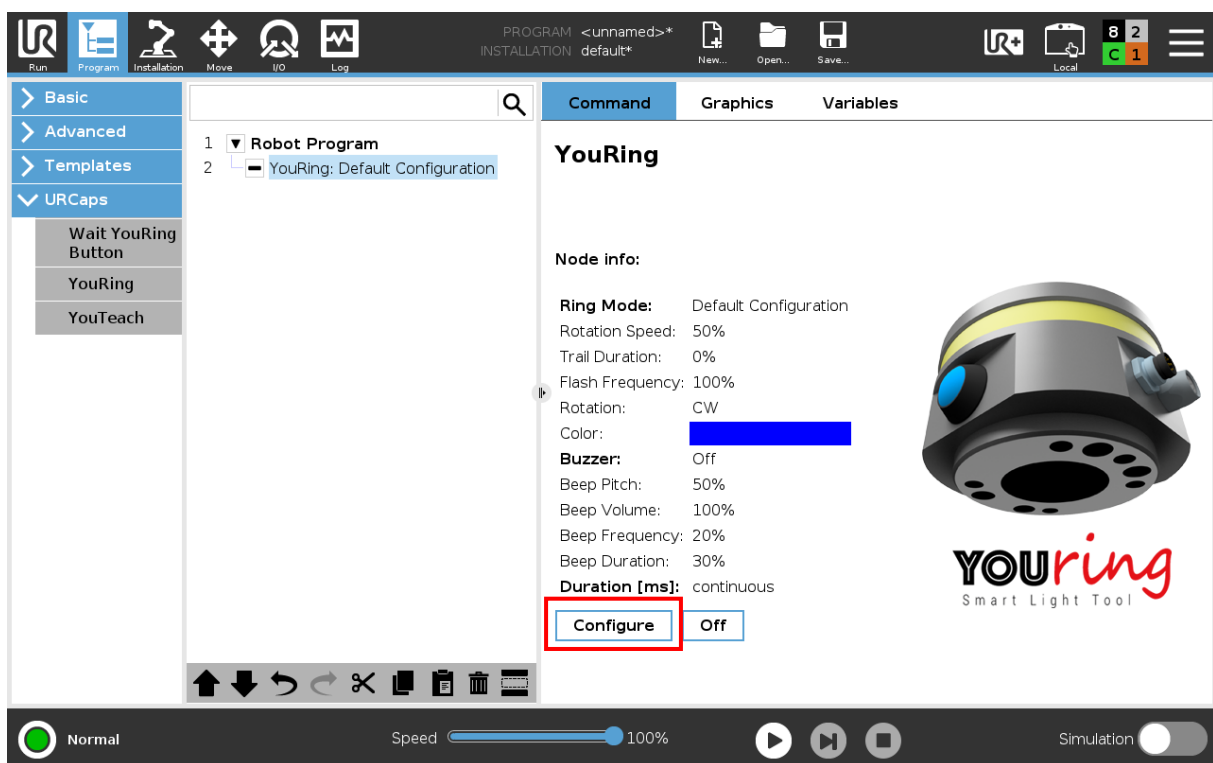


Figure 19 Command view of the YOURing button

In the *Led Setup* the user can manage the leds on the tool, by selecting one of the options: a single or more led, a moving led, rainbow, or the motion tracker.

The motion tracker let the user see where the tool flange of the robot is moving, by showing leds in the direction of the movement, with the color and behavior chosen.

In the right part it's possible to choose the flash frequency, speed of the rotation and the trail duration of the leds.

In the ring section it's possible to choose manually which leds has to activate or not.

In the lower section there is the color choose palette.

Finally in the lower left section it's possible to change the rotation wise and the duration of the lights, which can be turned off after a defined time.

Led

Buzzer

Led Setup

☐ Led Off
 ☒ Led Selector
 ☐ Moving Single
 ☐ Rainbow
 ☐ Motion Tracker

Back

Rotation wise

☒ Clockwise
 ☐ Counterclockwise

Duration

☒ Continuous
 ☐ Stop after:
 ms

Test Led

Test it!

Ring

Led Selector

Total Slices:

Starting Led:

Rotation speed

Low Medium High

Flash frequency

Low Medium High

Color

☒ Red
 ☐ Green
 ☐ Blue

Color Code

Figure 20 Led settings

In the *Buzzer tab* it's possible to activate a sound from the internal buzzer of the YOuring, by the selection of pitch, volume, frequency and duration.

Led

Buzzer

Buzzer Setup

☒ Off
 ☐ On

Beep Pitch

Low Medium High

Beep Volume

Low Medium High

Beep Frequency

Low Medium High

Beep Duration

Low Medium High

Back

Test Buzzer

Test it!

Figure 21 Buzzer settings

ALUMOTION srl - Via F.lli Cervi n°3- 20063 Cernusco Sul Naviglio
 Codice Fiscale e partita IVA – 07005280966
info@alumotion.eu - www.alumotion.eu

18

The user can test the settings before clicking “back” to return to the programming interface.

Wait YouRing Button

With the *Wait YouRing Button* it's possible to pause the execution of the program until the user presses the blue, black or both the buttons on the YOUring.

In the select menu it's possible to choose a script to execute while the program is running and when one or both the buttons are pressed.

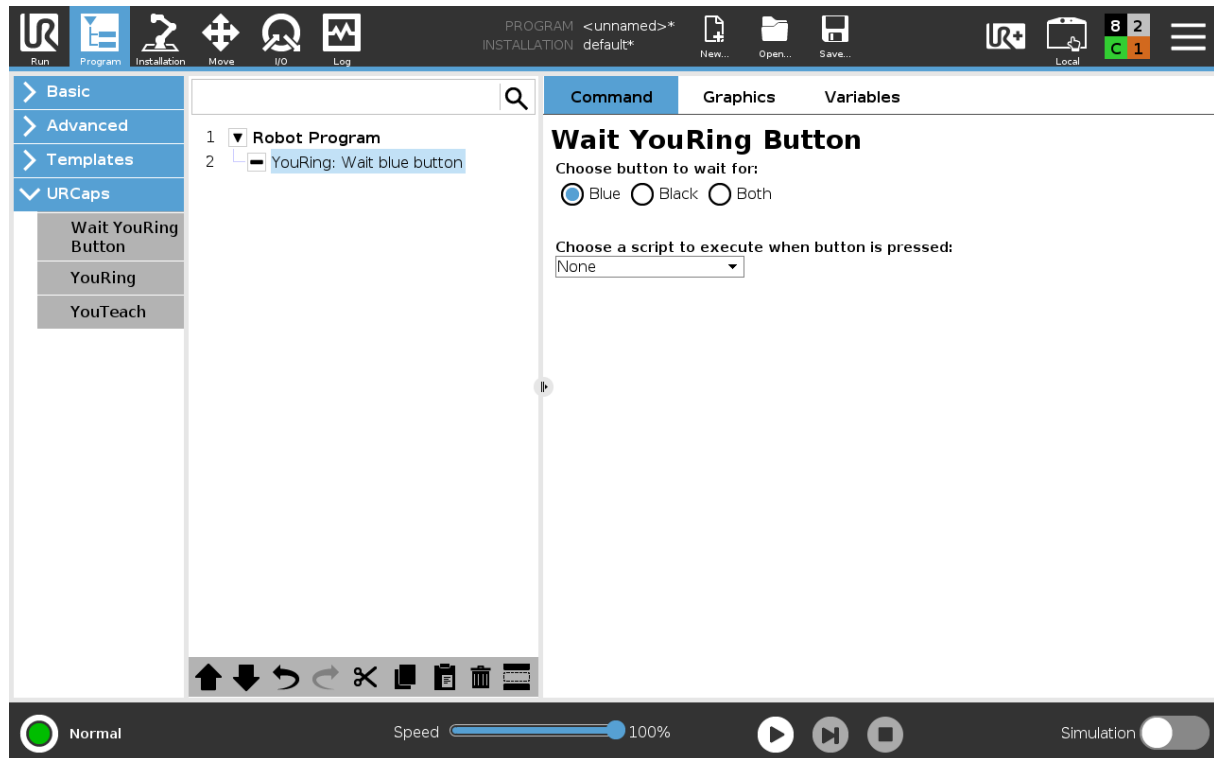


Figure 22 Command view of the Wait YOUring Button instruction

YouTeach node

The *YouTeach* feature allows the user to save with the blue button a point taken in freedrive mode (black button); it only needs a single press of the blue button to save the point: the device emits a beep and a single flash green light.

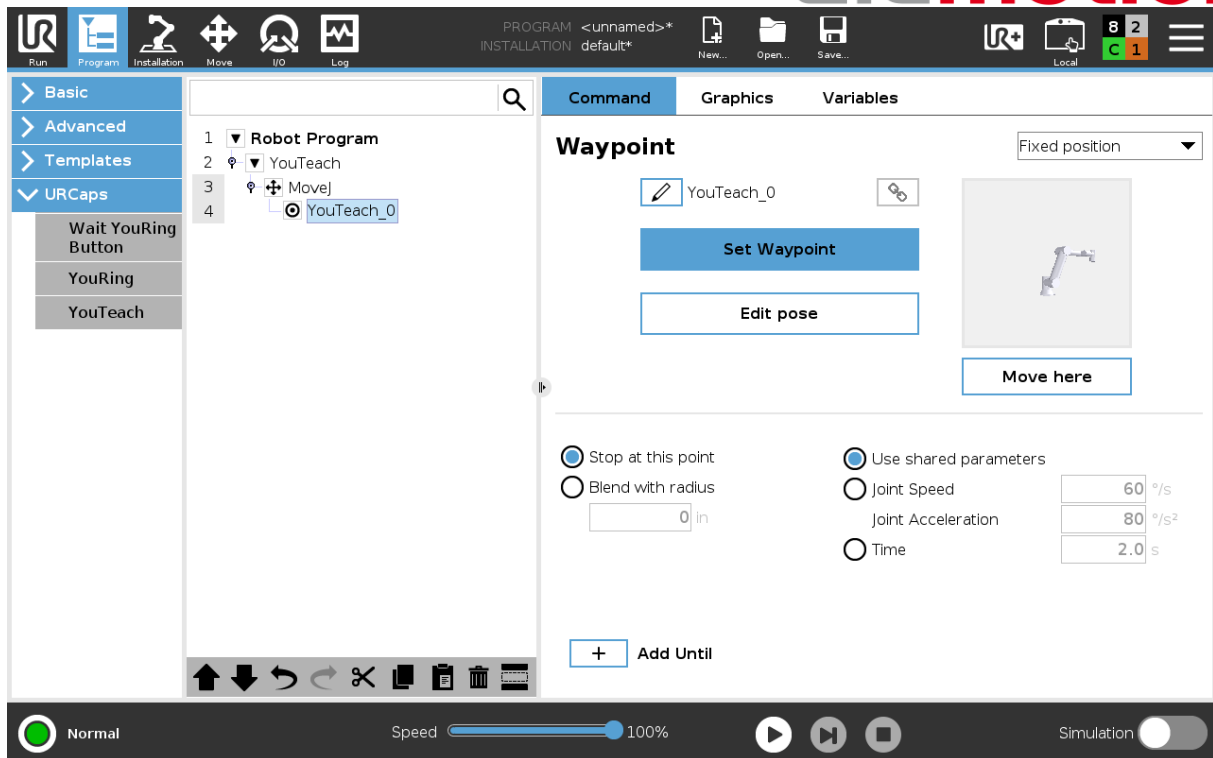


Figure 23 The YouTeach feature works only with the 'command' tab active and the YouTeach instruction selected in the program tree.

For a correct use of the YouTeach node it is necessary to follow these steps:

1. In Program/URCaps click on YOUteach instructions

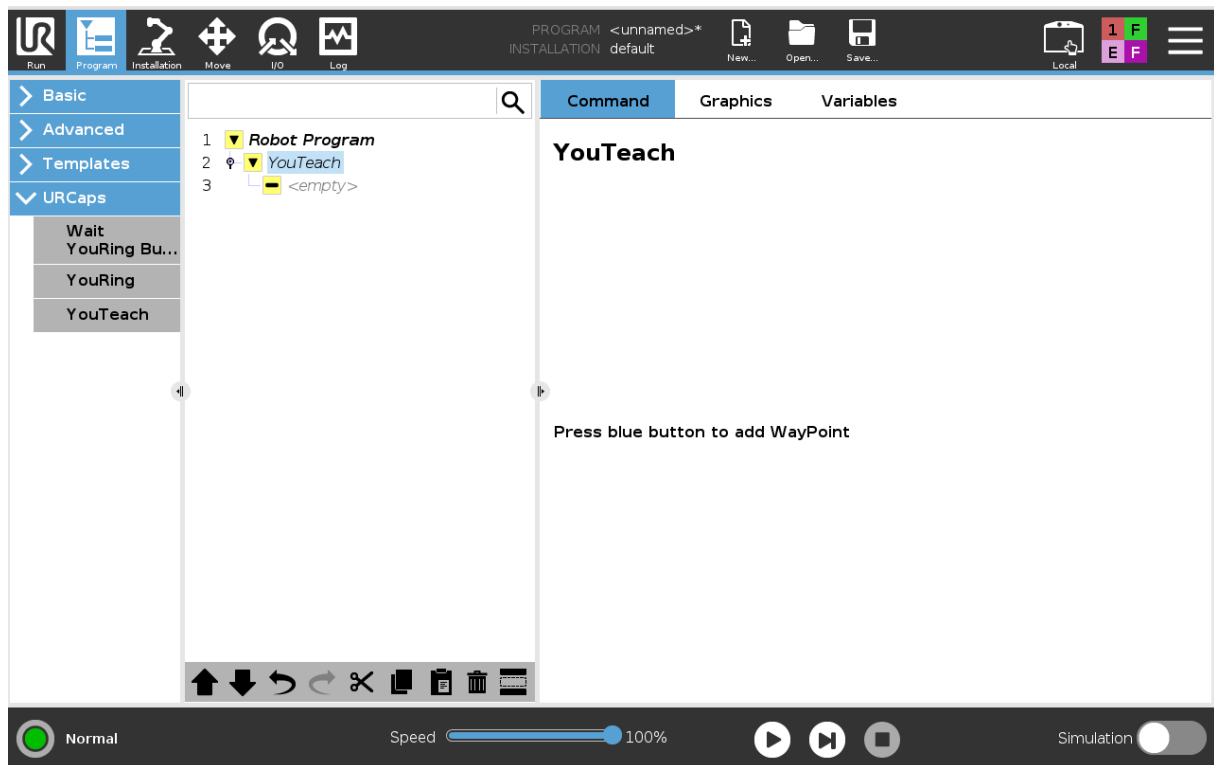


Figure 24 YouTeach instruction

2. Enable the freedrive mode by clicking the black button

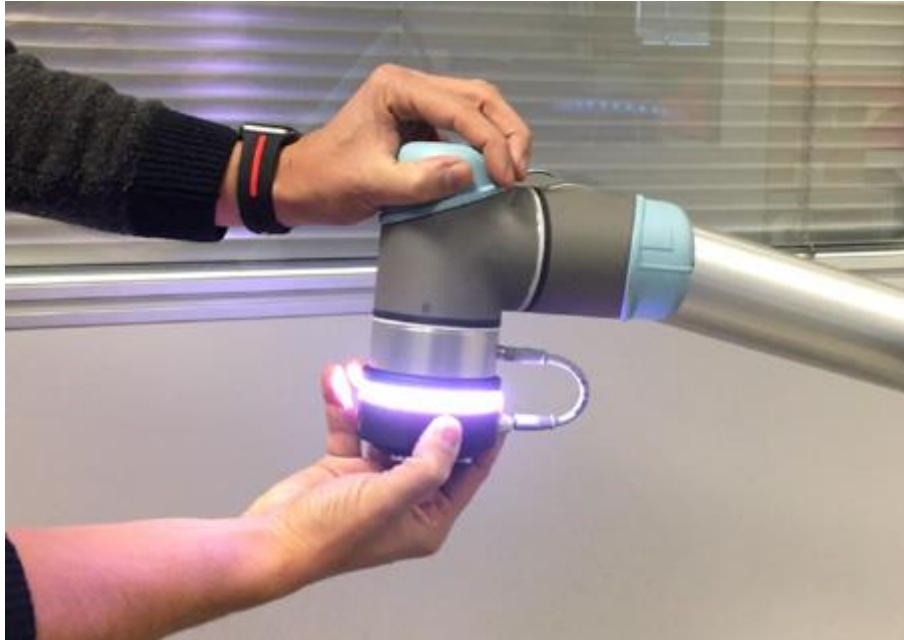


Figure 25 Freedrive mode

3. Save the current point by clicking the blue button

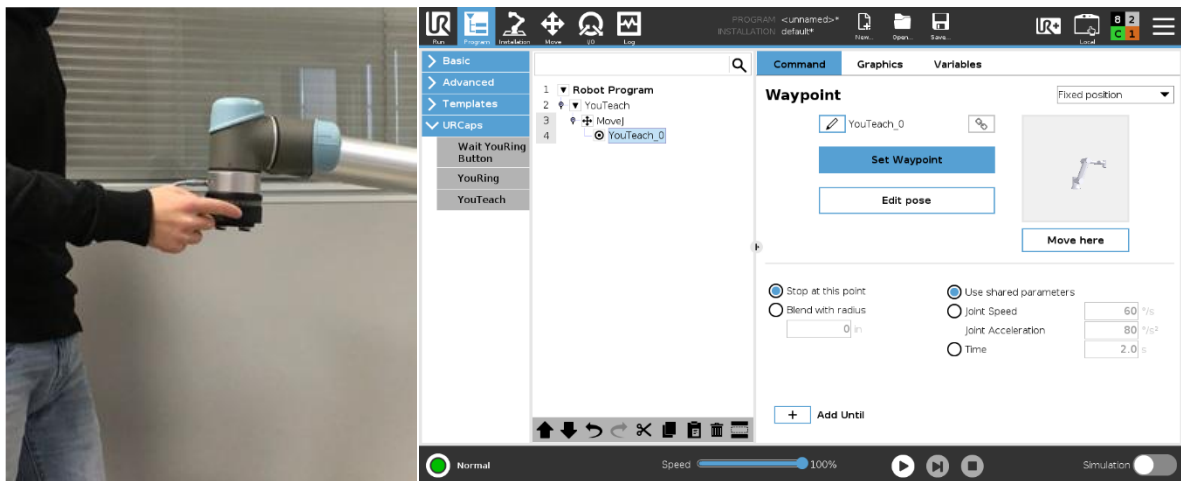


Figure 26 Click on blue button and save waypoint.

4. Now, leaving the YouTeach node highlighted in the program tree, you can save on the fly other points by clicking the blue button

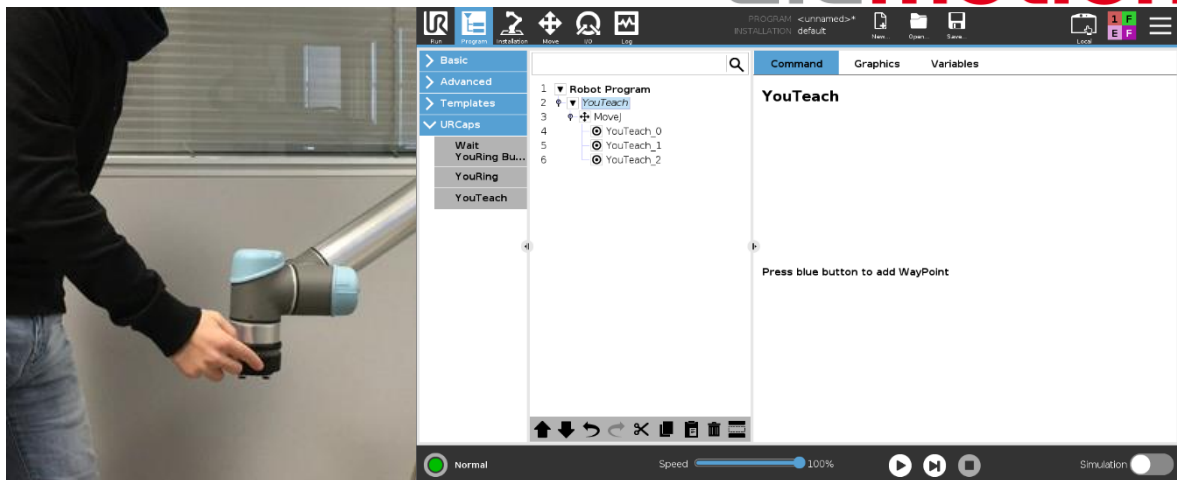


Figure 27 Click on blue button and save multiple waypoint.

Note: the YOUteach feature requires at least a > 3.5 Polyscope software version.

Enable YOuring TCI node

The *Enable YOuring TCI* instruction executes automatically all the modifications required in the installation tab

Troubleshooting

Connection of two YOURing

With two YOURing and two USB bluetooth keys, it's important to pair one YOURing at a time, in order to be sure to pair the correct device with its USB key (just in case of unpair-pair procedure). You can follow the instruction in cap *Pair device with USB key*

After completion of the correct double-pairing procedure, it is possible to use independently the two YOURings.

What does the second connector do?

The second connector on the YOURing is a pass-through connector. It gives power depending on the actual power consumption of the YOURing; on the peak (see the specifications) are available 200 mA (600 mA of UR connector - 400 mA of the YOURing).

Problem with YouTeach node

- After saving a point with the *YouTeach* instruction, if you want to save additional points, you have to highlight the *YouTeach* instruction in the program tree and then you can click on blue button (see cap *YouTeach instruction*). If you don't follow the above procedure, Polyscope will show a java exception.
- The *YouTeach* function can only acquire new points, unfortunately there is no way to change existing waypoints by using the YOURing.
- If you need to use the YOUteach function we recommend you to update the YOURing URCap at least at version 2.1.3. You can download it from our support site: <https://tools.alumotion.eu/youring/support/>
- Note that the *YouTeach* feature requires at least a > 3.5 Polyscope software version.
- If none of the above suggestions solve the node problem, try to set the UR language to English, it could be a translation problem, if so, we will fix it as soon as possible.

Problem with Bluetooth connection

If a YOURing is correctly powered but is not connected it will show a rotating animation of **blue and green** light until it connects. This situation can happen if there is **weak signal** between a USB key and YOURing.

Possible causes that lead to a weak signal could be:

- high distance: we suggest to maintain max 5m distance between YOURing and USB device
- obstacles presence between the USB key and YOURing that can act as a "shield" for the signal

If you have similar situation, please try the following tips:

- Get an USB extension cable and put USB key out of UR control Box
- Put USB key in teach pendant

In standard conditions, without obstacles and with the USB key in the controller or a distance of 3 m, we expect to reach 20% of the signal. This condition does not affect the connection, however you can use an extension cable and you will raise to 40%.

How to generate YOURing log file

If none of the above suggestions solve the node problem, you can send a log file to youring-support@alumotion.eu.

To generate YOURing log file follows these steps:

1. Go to *Installation/URCaps/YouRing* and click on *Update Logs*.

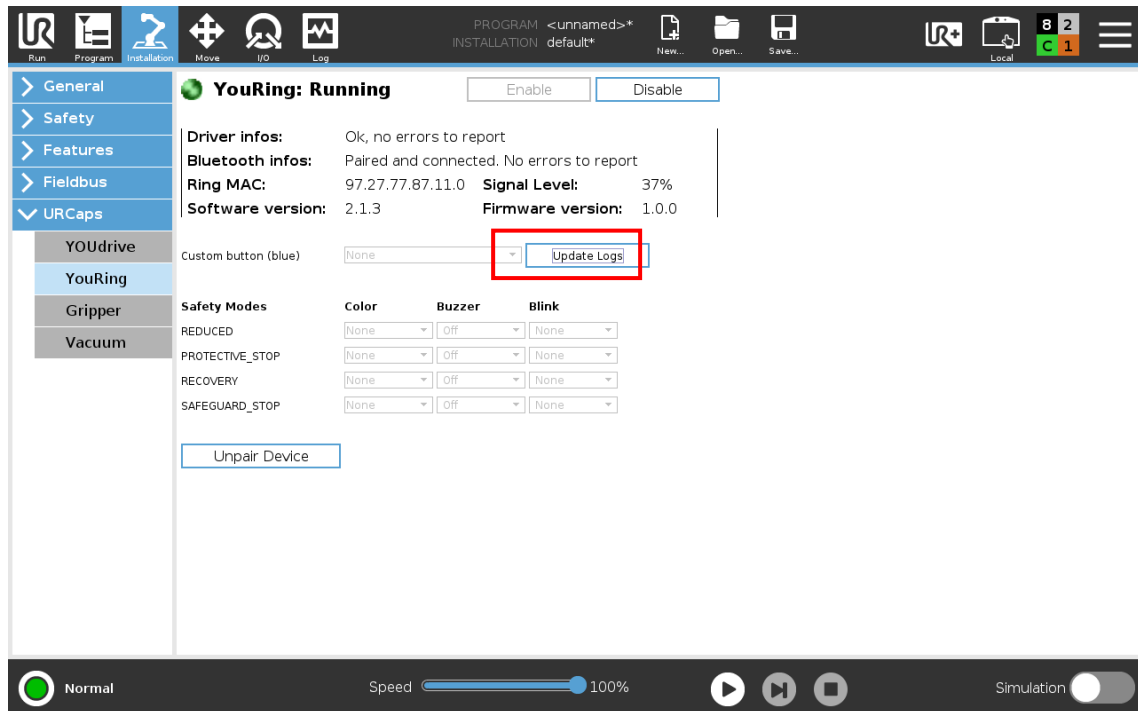


Figure 28 How to make YOURing log file

2. In program folder you will find a folder called *youring_logs*

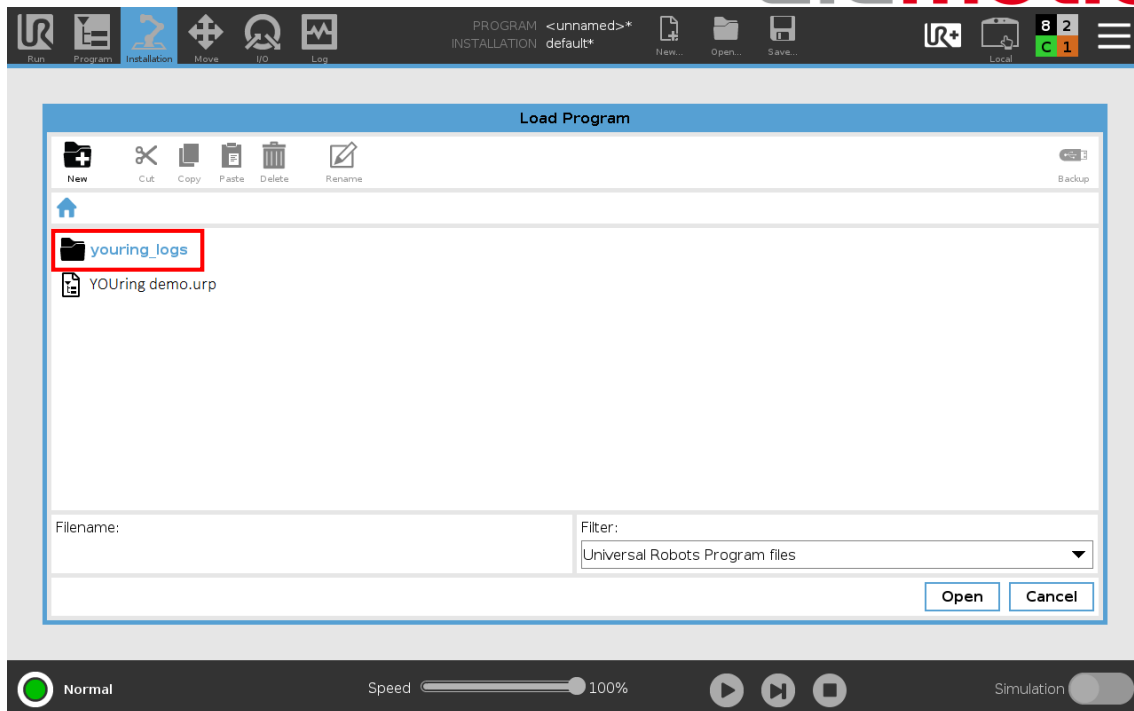


Figure 29 Youring_logs folder

3. Insert an USB key in teach pendant
4. Copy *youring_logs* folder in the USB key
5. Send it to youring-support@alumotion.eu

WARNING

Do not open or deassemble the YOuring!

Please be aware that in case of opening or deassembling of the device, the YOuring will be out of warranty and Alumotion reserves to charge the entire cost of the YOuring.



For any further information, please visit

tools.alumotion.eu