

VERSION 01  
MAY 24, 2021

# IOFIREBUG ENGINE FOR UNIVERSAL ROBOTS

APPLICATION NOTE 01

Connecting the IOFirebug Engine for Universal Robots to the Tool interface



4EACH S.R.O.  
[WWW.4EACH.CZ](http://WWW.4EACH.CZ)

## TABLE OF CONTENTS

APPLICATION NOTE 01 .....	0
Intended audience .....	2
Disclaimer.....	2
Copyright.....	2
application goal .....	3
Pre-requisites .....	3
Hardware.....	3
software .....	3
Hardware configuration and wiring .....	4
Installation on the robot .....	5

# Notes on the documentation

## INTENDED AUDIENCE

This description is only intended for the use of trained specialists in control and automation engineering who are familiar with the applicable national standards.

It is essential that the following notes and explanations are followed when installing and commissioning these components.

The responsible staff must ensure that the application or use of the products described satisfy all the requirements for safety, including all the relevant laws, regulations, guidelines and standards.

## DISCLAIMER

The documentation has been prepared with care. The product described is, however, constantly under development. For that reason, the documentation is not in every case checked for consistency with performance data, standards or other characteristics. If it contains technical or editorial errors, we retain the right to make alterations at any time and without warning. No claims for the modification of products that have already been supplied may be made based on the data, diagrams and descriptions in this documentation.

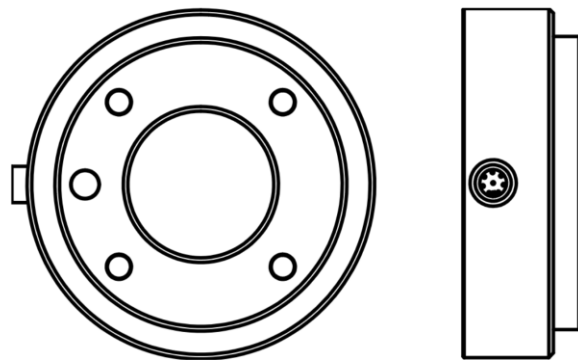
## COPYRIGHT

4Each and IOFireBug are registered trademarks of and licensed by 4Each s. r. o., Czech Republic

# Application

## APPLICATION GOAL

The goal of this application note is the usage of IOFirebug Engine as an end- effector using the Tool I/O connector of the Universal robots e-Series.



## PRE-REQUISITIES

### HARDWARE

- Universal robots e-Series (UR3e, UR5e, UR10e, UR16e)
- IOFirebug Engine for Universal robots (<https://4each.cz/iofirebug-engine-for-universal-robots> )
- Cable for Tool I/O RKMV 8-354/2 M (Available [HERE](#))
- Power supply DC 24V or DC 12V with ultra-flexible cable
- Jumper – pitch 2.54mm (Datasheet [HERE](#) )

### SOFTWARE

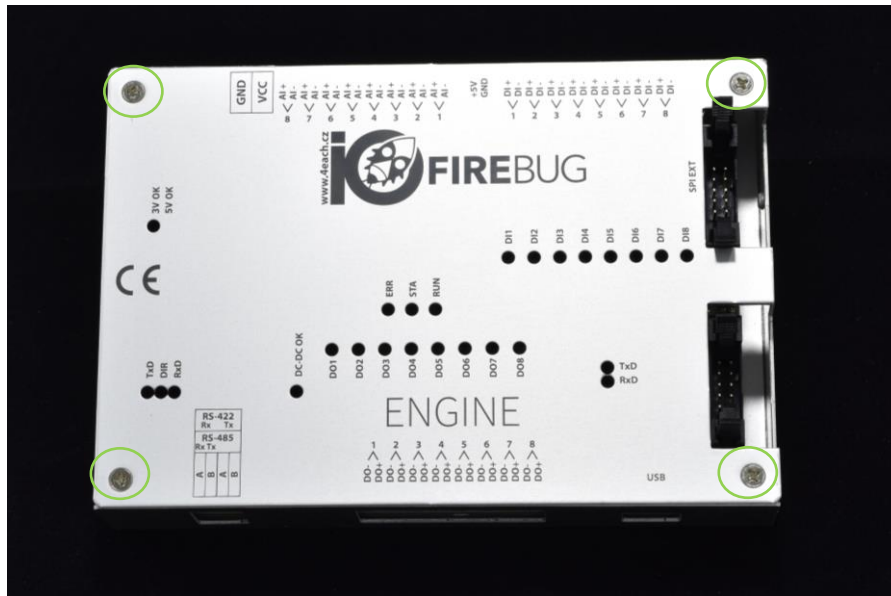
- URCap v 2.5.8.3

•

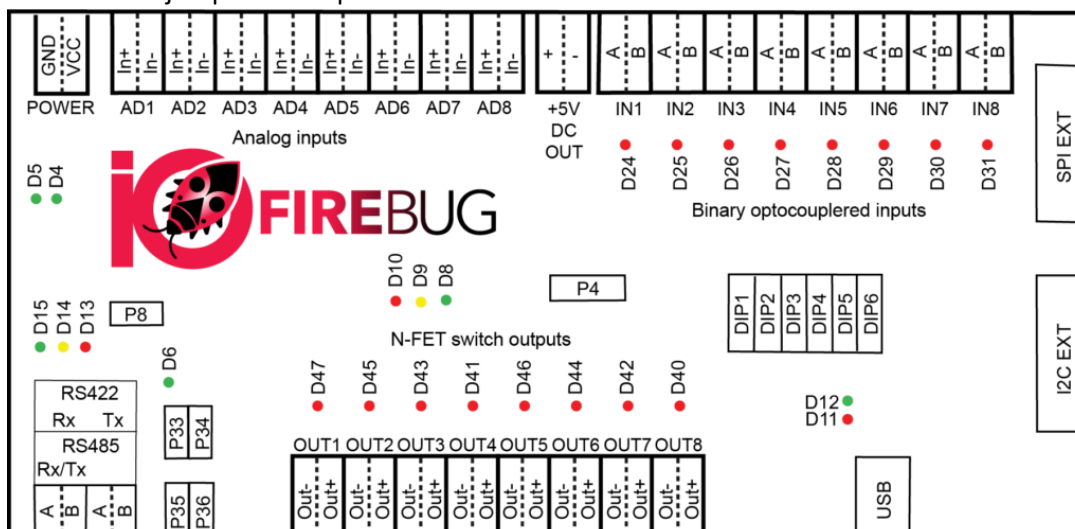
# application procedure

## HARDWARE CONFIGURATION AND WIRING

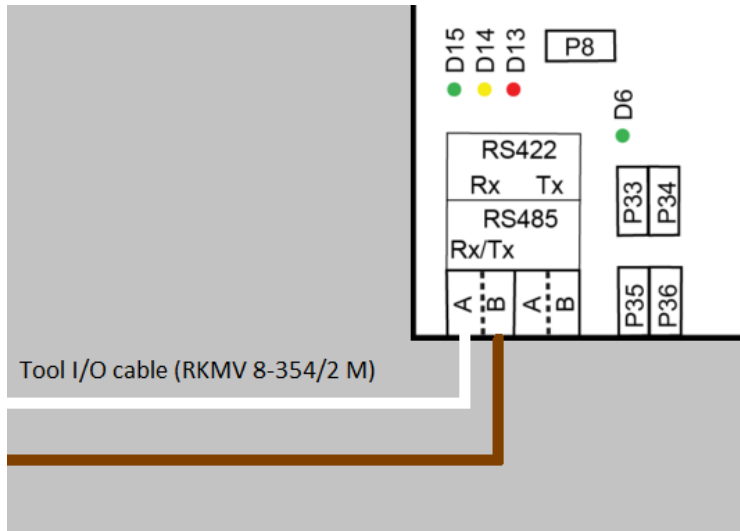
1. Remove the front cover of the IOFirebug Engine module using four screws in corners.



2. Add the jumper to the position P8



3. Connect the Tool I/O communication wire  
 White – RS-485+  
 Brown – RS-485-

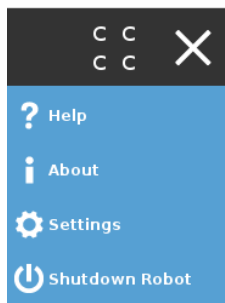


4. Connect the power supply and turn it on

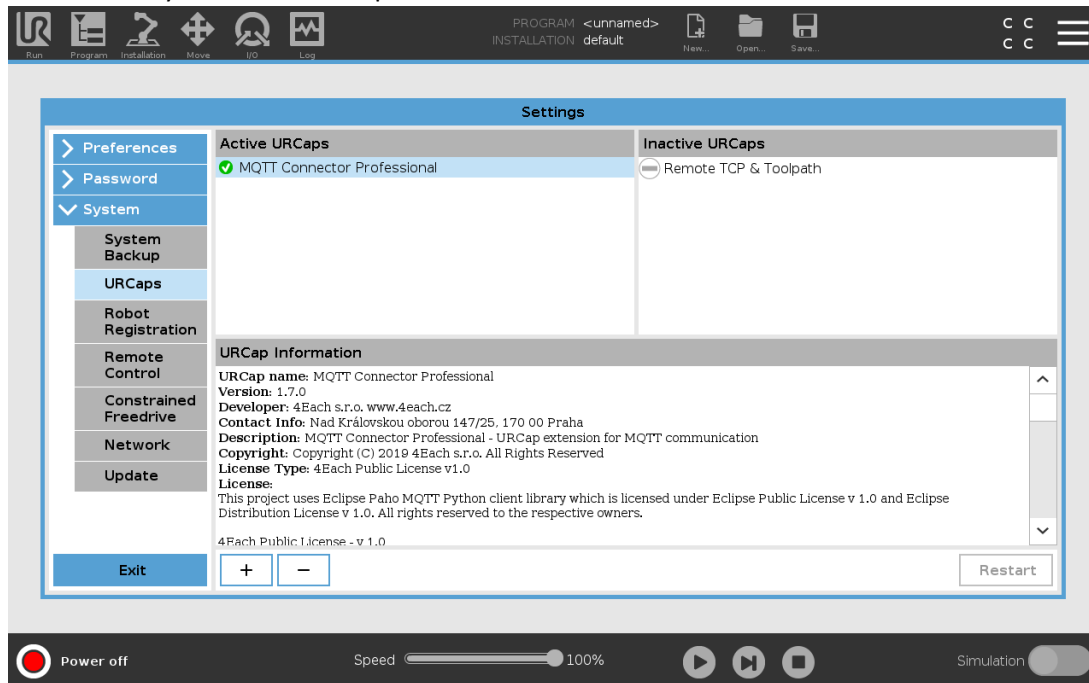
## INSTALLATION ON THE ROBOT

Plug-in installation procedure is following:

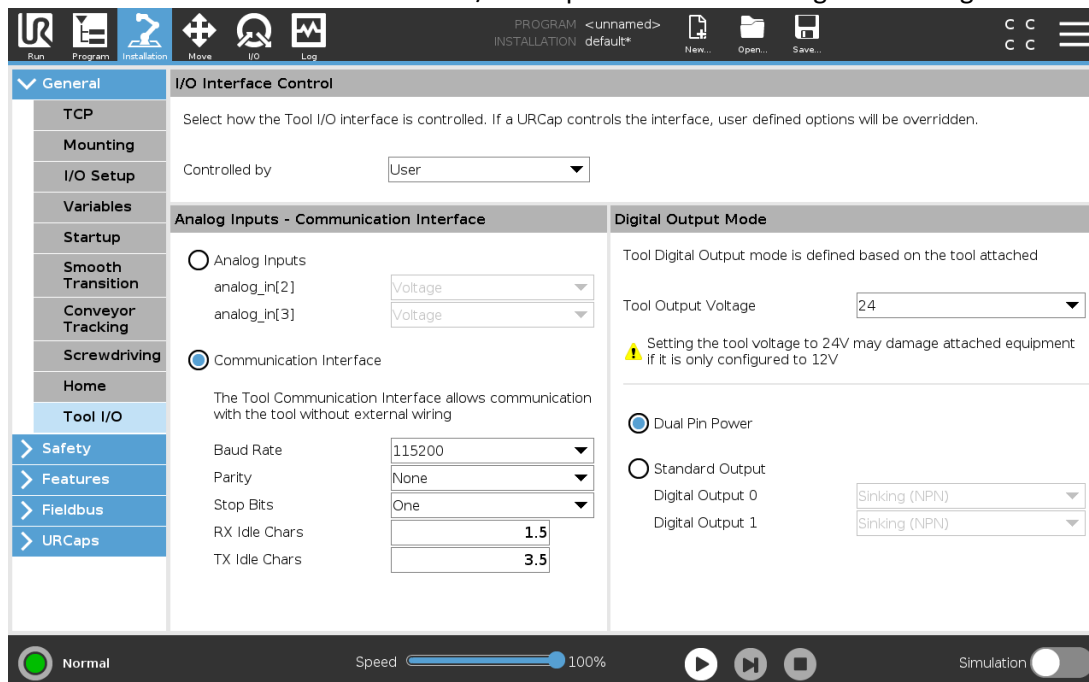
- 1) Download the URCap v 2.5.8.3 at: <https://4each.cz/iofirebug-engine-for-universal-robots>
- 2) Copy .urcap file on the flash disk and insert it in the teach pedant of the robot
- 3) Perform Hardware configuration and wiring
- 4) Choose the “hamburger menu in the right-top corner” – Settings.



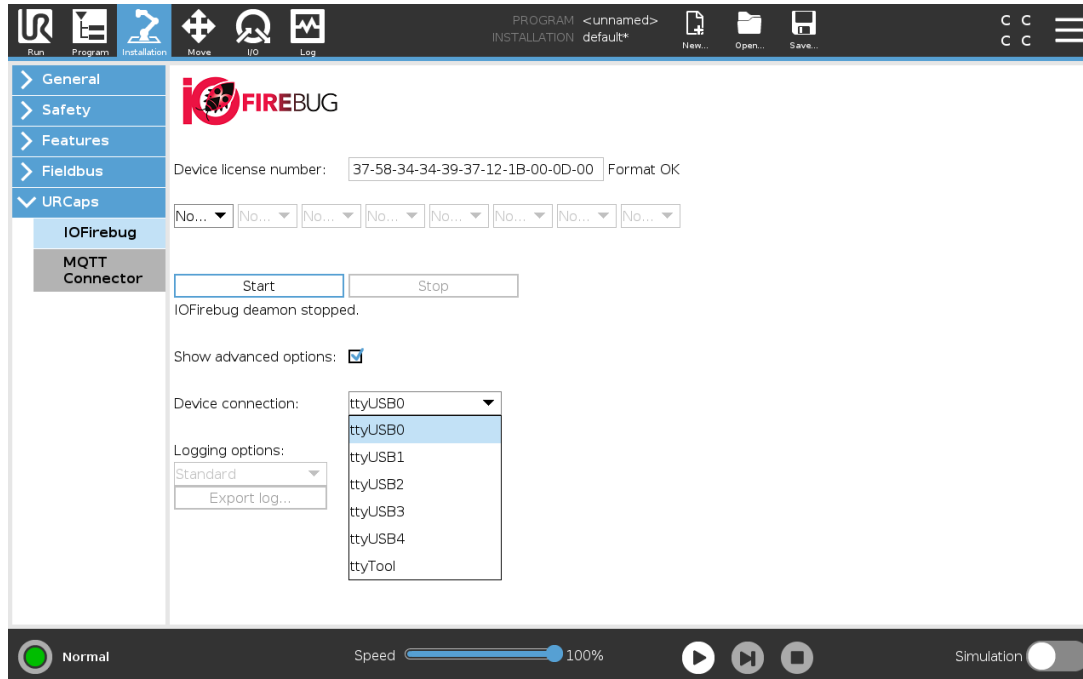
## 5) Choose the System tab – URCaps



- 6) Click the “+” button and browse for your URCap file
- 7) Perform the restart of the robot.
- 8) After restart, power-on the robot and perform the robot start
- 9) Go to the Installation – General – Tool I/O and perform the following Tool setting



- 10) Go to the Installation – URCaps – IOFirebug, check Show advanced options, select ttyTool as a Device connection and enter the correct Device license number.



- 11) Press the Start button for activating the configuration  
 12) If the daemon status is “Successfully initialized”, your IOFirebug is ready to use.