

# QUICK START GUIDE

HIWIN 7th Axis Kit for UR



This Quick Start Guide will get you started with your HIWIN 7<sup>th</sup> Axis Kit for UR. We do advise to read the user-manuals before installation.

## 1. What is supplied

HIWIN linear axis HT-B/-S

- With belt or ballscrew drive
- Limit switches
- Possibly gearbox
- Robot adapter
- Cable chain
- Cables
- Instruction manuals for HIWIN Linear Axis HT-B/S
- Instruction manual for HIWIN Adapters for Robot Axes

Linear Motion Kit

- Control Box
- SEW servo motor & Drive
- USB with URcap software
- Instruction manuals for Linear Motion Kit (LMK)

## 2. LMK updates

To get the latest updates for the Linear Motion Kit:

- ▶ Visit [www.cobotracks.com/LMK](http://www.cobotracks.com/LMK)
- ▶ Download the latest LMK software and user manual.

## 3. Assembly

### 3.1 Mechanical

- ▶ Mount the HIWIN Linear Axis
- ▶ Mount the HIWIN Adapter for Robot Axes on the HIWIN Linear Axis
- ▶ Attach the motor to the gearbox at the HIWIN Linear Axis
- ▶ Mount the UR robot on the carriage

### 3.2 Electrical

From the control cabinet, the following electrical connections have to be made:

- ▶ Motor control: Orange and green cables from the cabinet to the SEW motor connector
- ▶ Data connection: Connect the Ethernet cable coming from the cabinet to the UR controller box, either directly or through an Ethernet network/switch.

- ▶ Sensor connection: Connect the limit switch cables coming from the HIWIN Linear Axis to the cabinet.
- ▶ Safety signals: Connect the bundle of wires coming from the cabinet to the safety I/Os inside the UR Controller box.
- ▶ Grounding wire: connect the grounding wire to the application grounding pin inside the UR controller box.

#### 4. URCap Installation

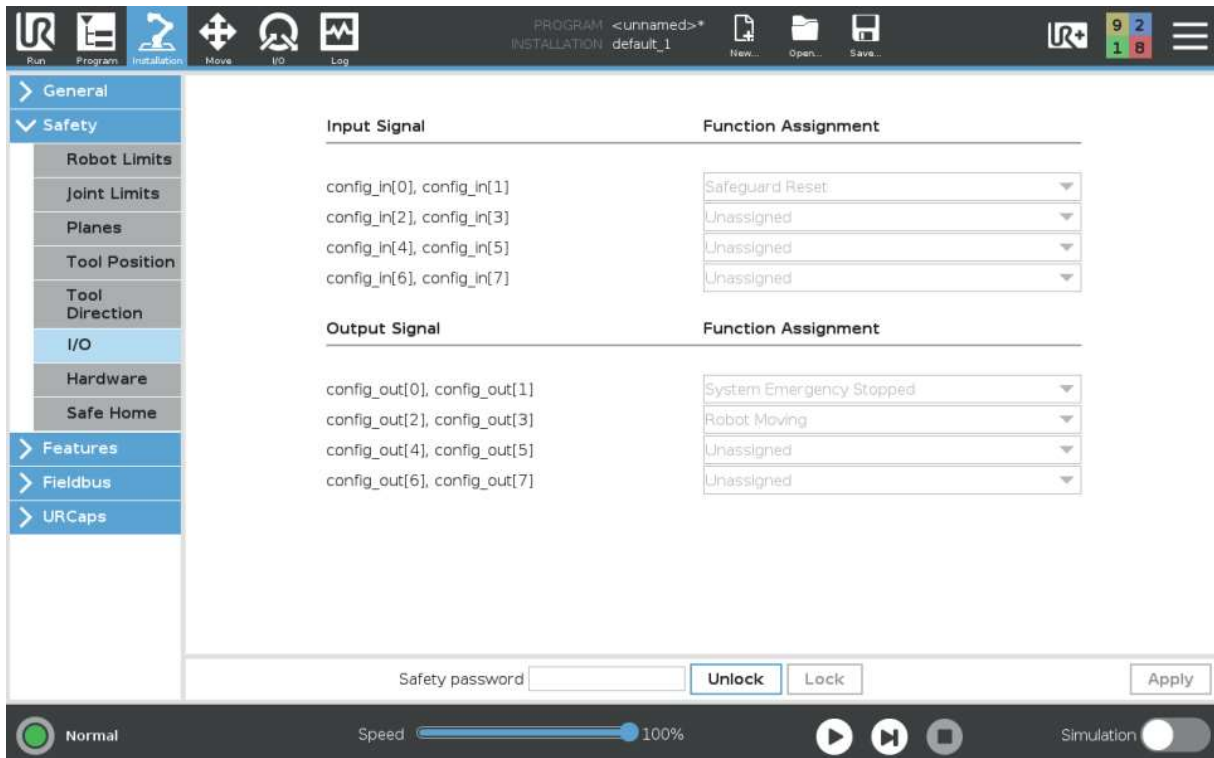
- ▶ Insert the USB flash drive into the teach pendant
- ▶ Go to settings – Systems – URCaps and press the + button
- ▶ CoboTrack.urcap will be added to the robot
- ▶ Press restart to activate the URCap

#### 5. Safety setup

The required safety settings can be set in the Installation -> safety -> I/O menu.

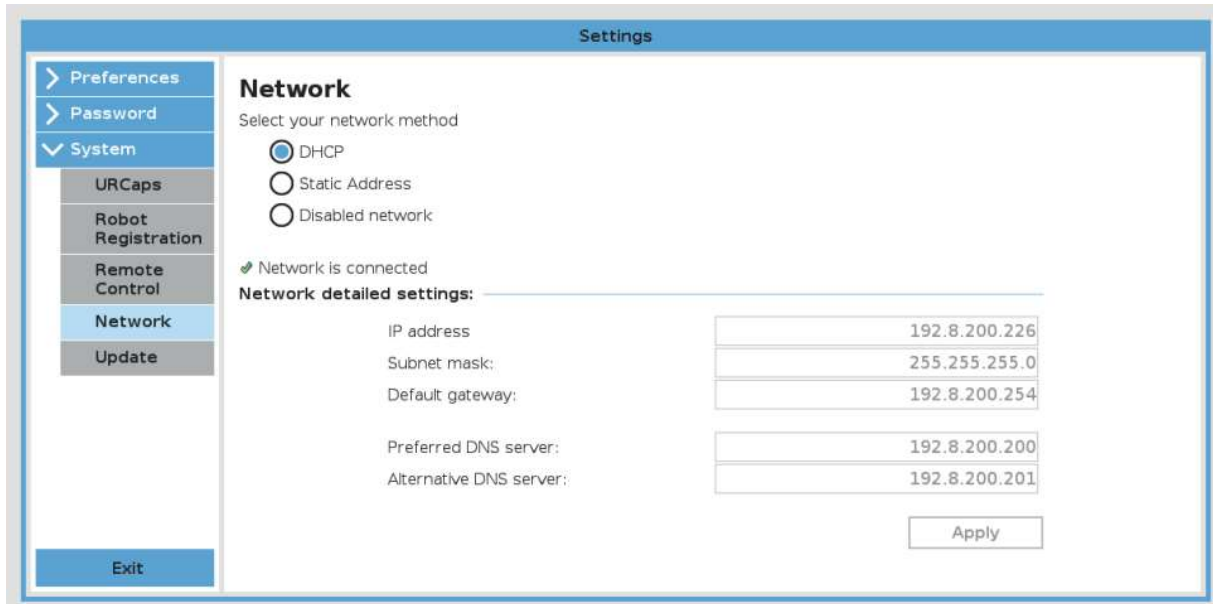
For safe operation it is required that:

- ▶ “config\_in[0], config\_in[1]” is set to “Safeguard Reset”
- ▶ “config\_out[0], config\_out[1]” is set to “System Emergency Stopped”
- ▶ “config\_out[2], config\_out[3]” is set to “Robot Moving”



## 6. Network setup

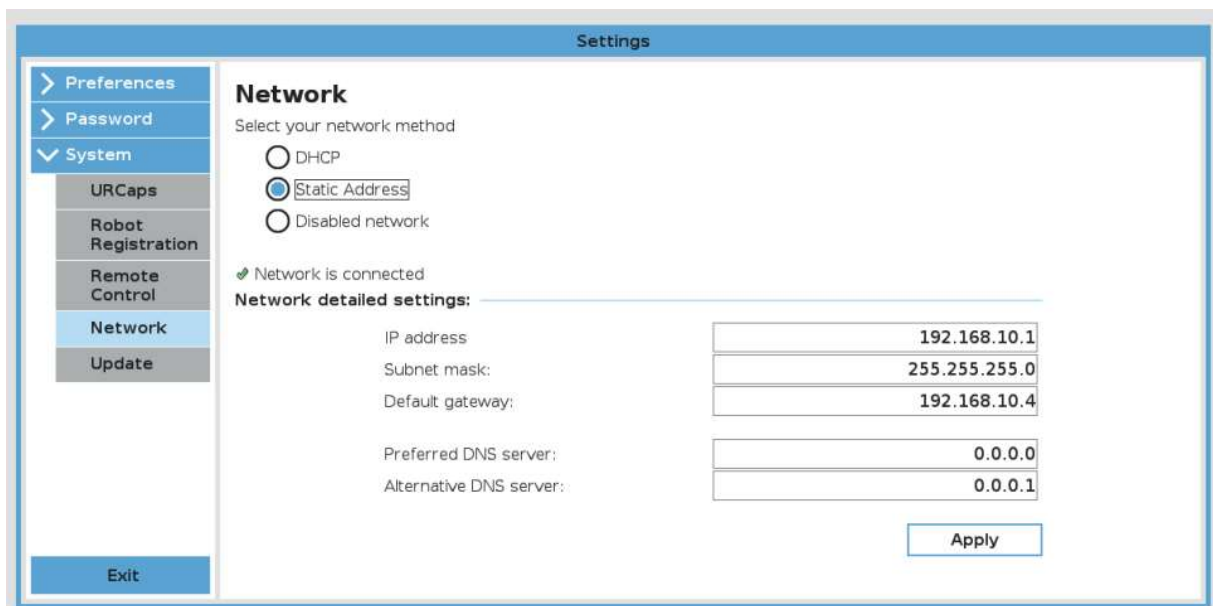
When connecting the LMK to an existing network (supporting DHCP) the robot's network should be setup using the DHCP method shown in the following image:



The dip switches inside the LMK controller should be set as follows, and make sure DHCP is enabled by checking, and/or adjusting parameter P785 of the LMK drive:

Def IP: ..... 0  
AS: ..... 1

When connecting the LMK directly to the UR controller box, the robot is to be setup with a Static Address configuration. The Network detailed settings are to be set as follows:



The dip switches inside the LMK controller should be set as follows:

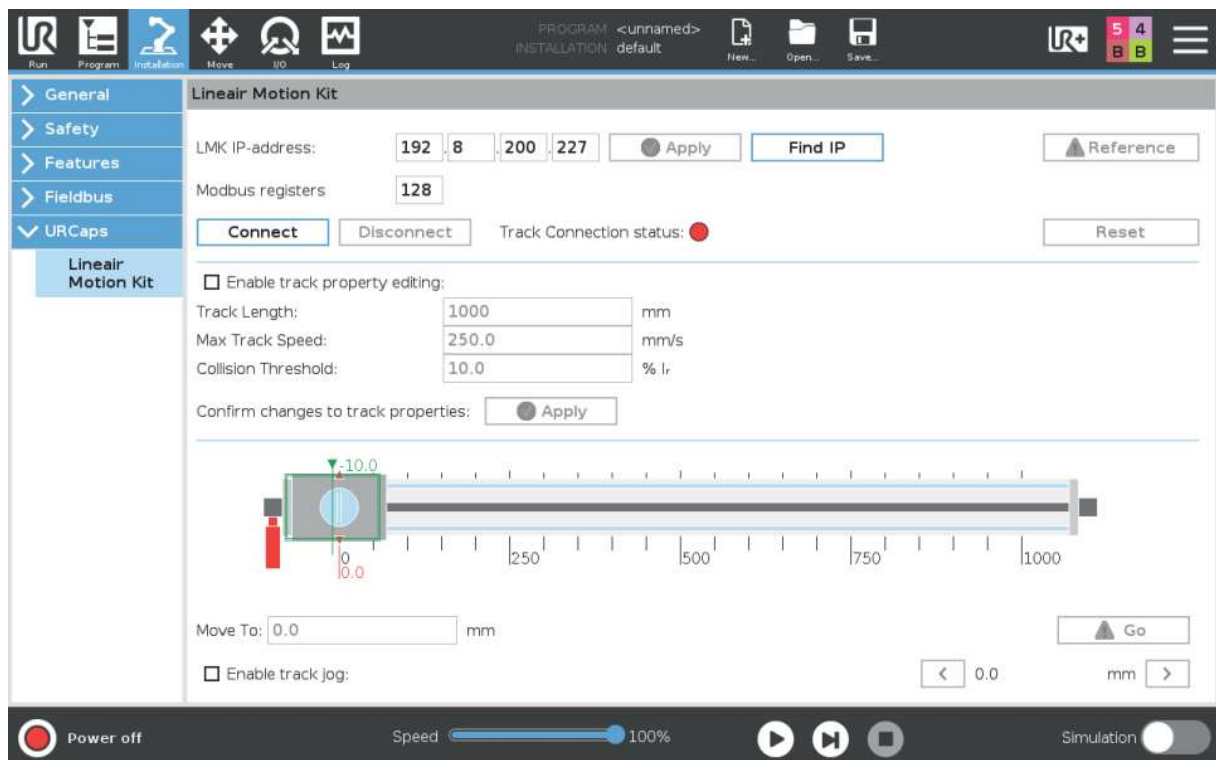
Def IP: ..... 1  
AS: ..... 0

## 7. Configuring installation

The Linear Motion Kit installation can be configured from:

Installation -> URcaps -> Linear Motion Kit menu.

- ▶ Setup the LMK IP-address by pushing the “Find IP”-button.
- ▶ Setup Modbus starting register, change as required by other applications running on the robot.
- ▶ Adjust the track length to match the physical track available.
- ▶ Adjust the collision threshold as required by the intended application.
- ▶ Push the “Connect”-button to start the MODBUS connection to the track.
- ▶ Reference the track by pushing and holding the reference button until the connection status symbol turns green.



- ✓ Linear Motion Kit is now ready for use.