Robot project journal

Started: Monday 6/10/2024

By: Calvin

Monday I worked on assembling everything except the robot itself. I physically mounted the UR controller box, the MachineMotionV2, the robot safety module, and the emergency stop. To do this I had to take all the boxes apart and find the screws, allen wrenches,

No instructions. No wiring diagram

Had to wire all the shit together. Screwdriver

Found weights to counterbalance

Got the robot mounted on with a forklift

Needed to know that my ip address wasn’t going to be in the pool of florida ip addresses

Robot safety module was preventing the lift column from operating so I removed that

Installed the urcap software via the usb drive onto the ur

Linked machinemotion and ur via static ip addresses and ethernet cable.

I learned that program files are saved as program files on the pendant.

I learned that installation setups are saves as installation files on the pendant. If you plug in a usb into the pendant, I think you can transfer files into or out of the ur.

I think you don’t need the vention usb inserted into the pendant to access urcap functionality. It installs the program on the pendant itself and connects via the ethernet cable and staticip.

I got the robot oriented correctly in virtual 3D space, saved it as default.installation, backed it up onto flash drive, and saved it to github.

I calibrated the TCP and payload for a robot with no end effector.

Reminder: On page 125 of the manual, it talks about Manual Mode vs automatic mode. Manual Reduced Speed is the default. I need to figure out how to switch to Manual High Speed and have it set to do that as the default.

Reminder: Installation -> Safety -> Tool Position has a warning symbol. I need to read section 1.24 in the manual Software Safety Configuration to figure out what the warning is.

Reminder: set the Home position

Software Safety Settings. Password is plastic

Discovered joint limits for every axis is 363 degrees to -363. So, almost two full rotations around. The maximum speed for each joint in “Normal” or “Reduced” mode is 131 degrees per second, or 221 degrees per second for the wrist joints. 161 for elbow. So far, the robot has not come close to that speed.

I was able to do a full backup of the robot. I went to the pendant’s hamburger menu -> settings -> backup restore or whatever. I gave a huge .urb file, which I think included the entire operating system of the robot, not just programs, installations, and variables. I was able to push this file into fork on the local branch, but I couldn’t push it to github because the file size was too large. So, I “Reset main to here” in fork to remove that commit. The file is one folder up in the “C:\Users\cbaumgartner\Documents\UPF source code”.