RPX-L132

Delta Demo Manual

Project: tpm_robot_ros2

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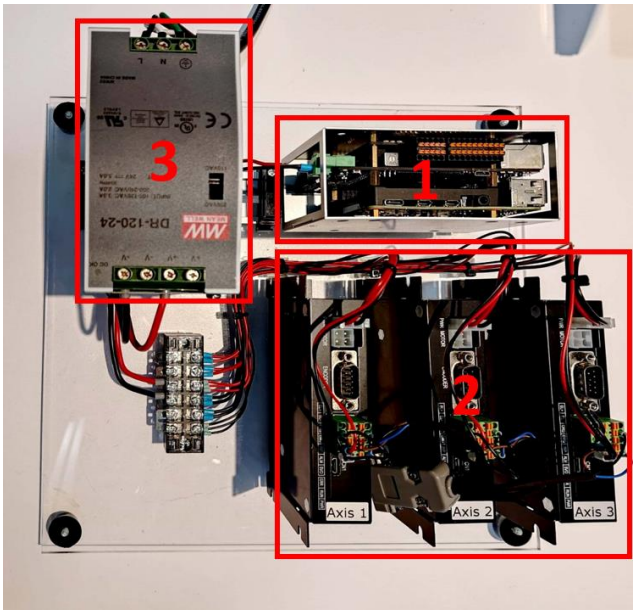
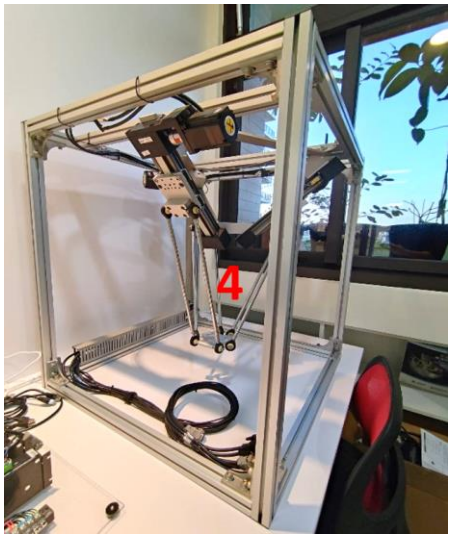
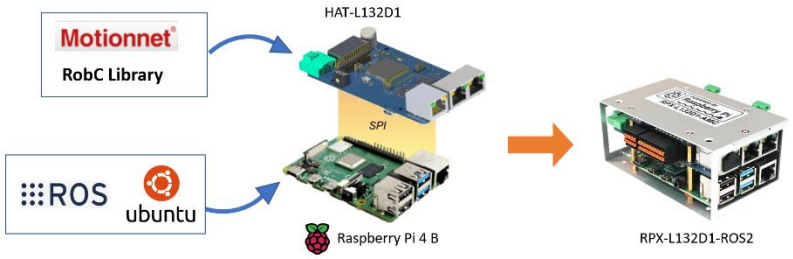
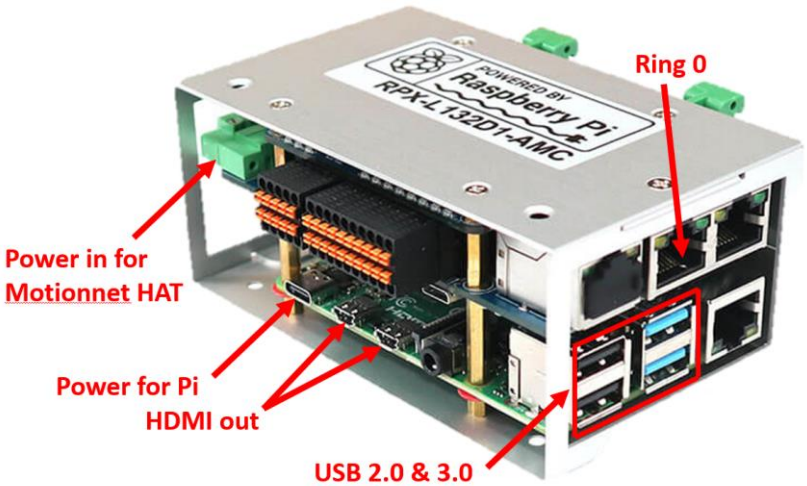
1. Hardware Introduction





1. Controller **(RPX-L132D1-ROS2)**: a Raspberry Pi with a Motionnet Master add-on board **HAT-L132D1**.

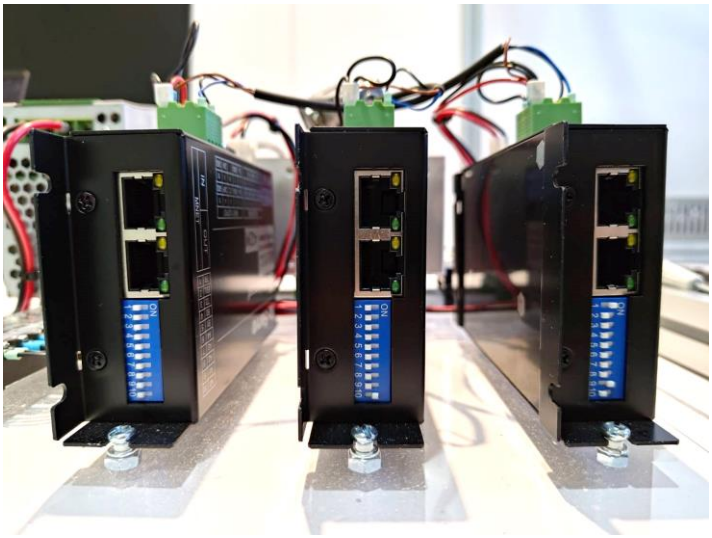




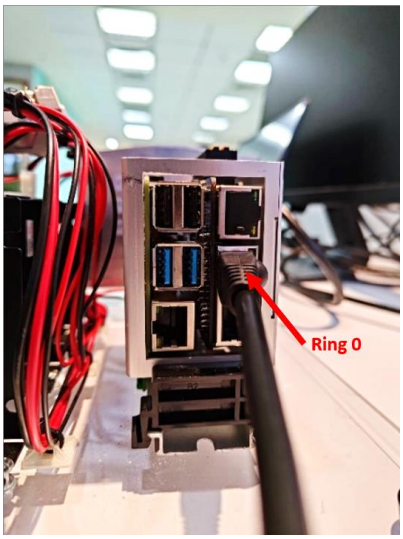
2. Drivers: TPM SVR-M111 series * 3.
3. Power Supply for **HAT-L132D1**, Drivers, Motors and sensors (should be already connected).
4. Delta robot arm.

2. Hardware Setup

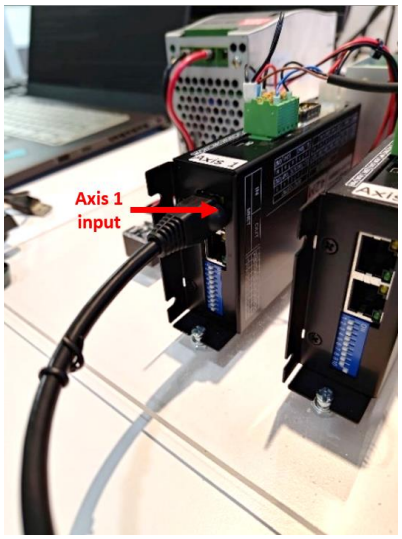
1. Check the DIP switch of each driver (the definition can be found on the case): The Axis ID must match the sum of the switch values (e.g. for Axis 1, all switchs should be off. For Axis 2, A0 switch should be on for 1*2^0 = 1. For Axis 3, A1 switch should be on for 1*2^1 = 2.). Baud rate and Err switch should be off for all axes. TD switch should be off except for the last axis (Axis 3).



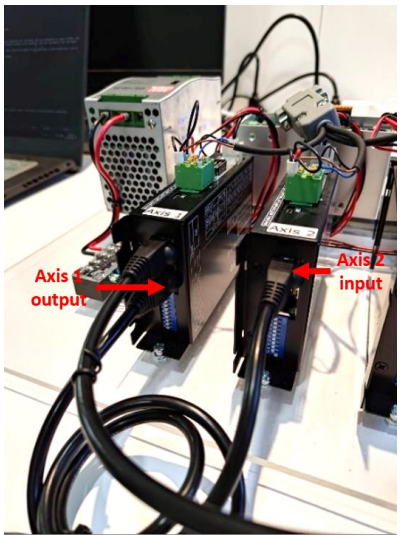
2. Connect drivers: Ring 0 (1) is the default output of RPX-L132, connect it to the input of the first Axis (2). Then connect the output of the first Axis to the input of the second Axis (3), and so on (4).



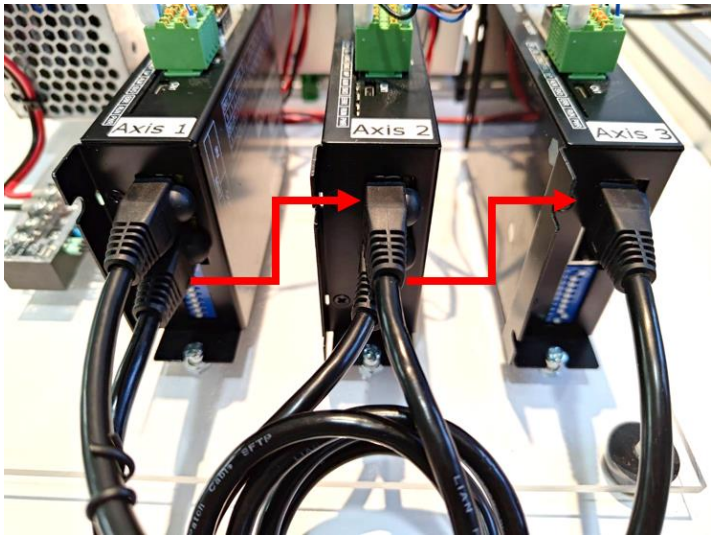
(1)



(2)

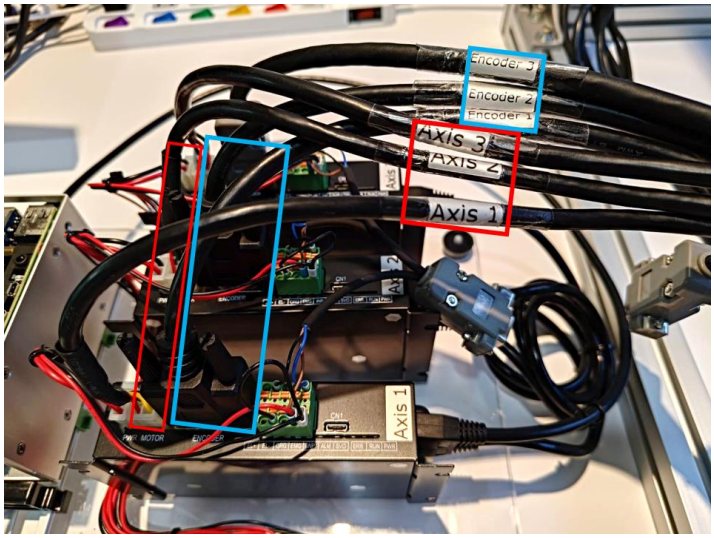


(3)

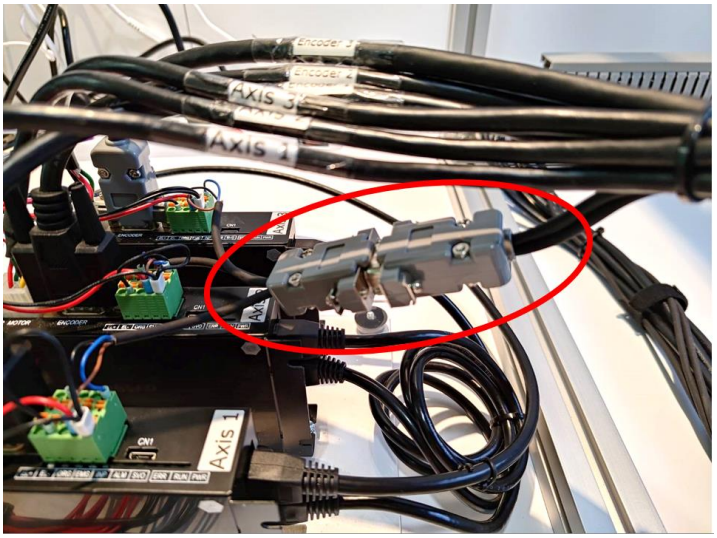


(4)

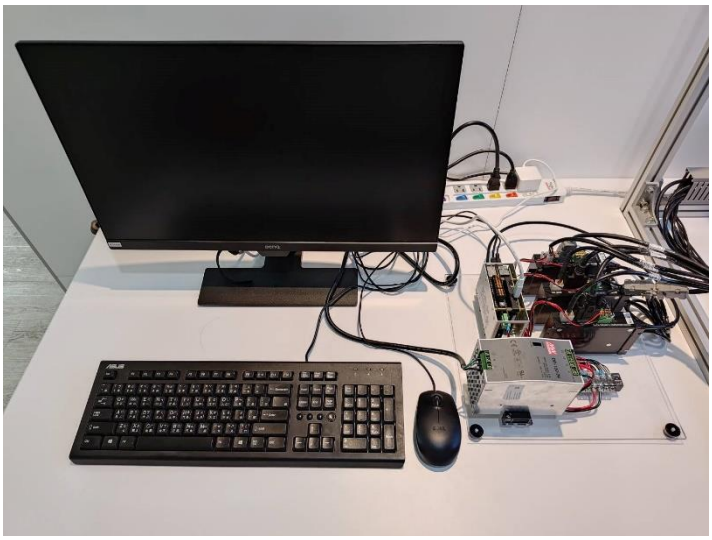
3. Connect motors: connect the motors and their encoders to the corresponding drivers following the labels on the cables.



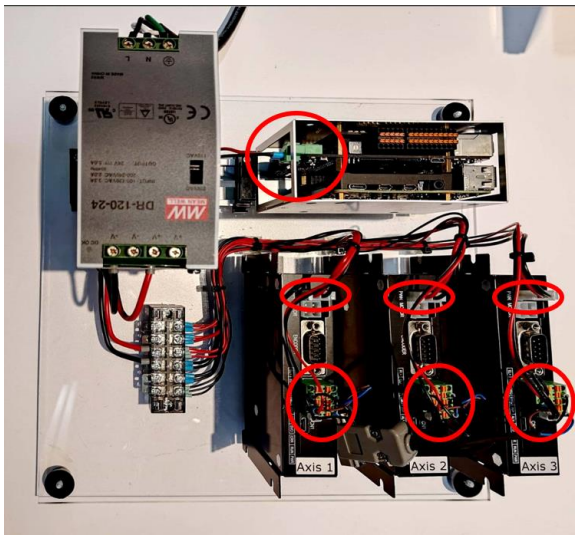
4. Connect sensors: connect the sensors to the drivers (a pair of VGA connector).



5. Connect devices: connect mouse and keyboard to the USB ports and monitor to HDMI out of RPX-L132.

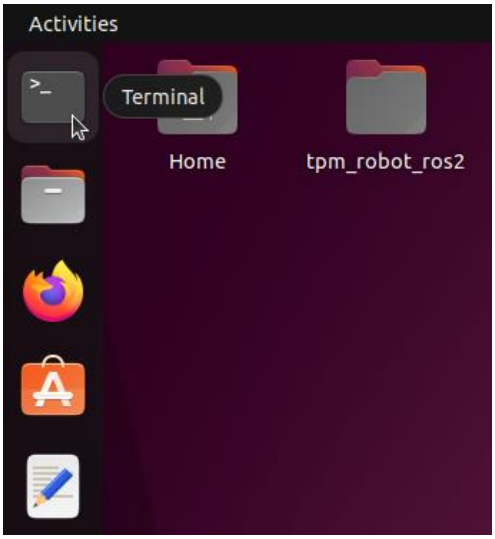


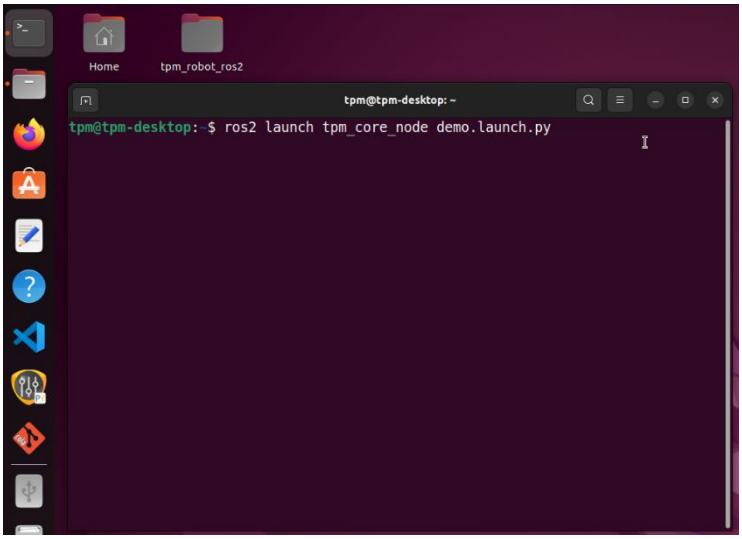
6. Connect power: Check if the power supply is connected to HAT-L132, Drivers and sensors(should be already connected). Then connect and switch on the power of RPX-L132 and power supply.



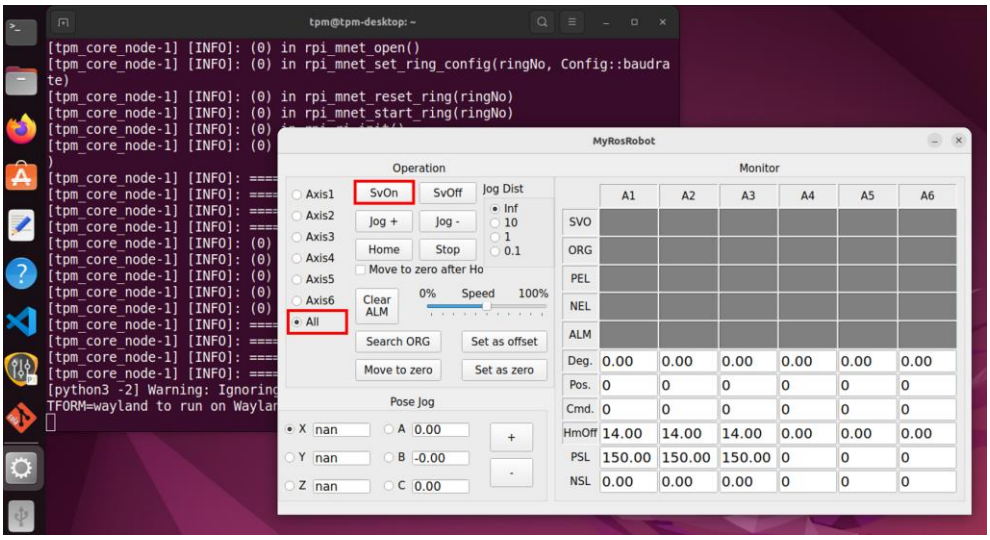
3. Program Setup

1. Open terminal and enter the following command to launch **MyRosRobot**:
   ```
   $ ros2 launch tpm_core_node demo.launch.py
   ```

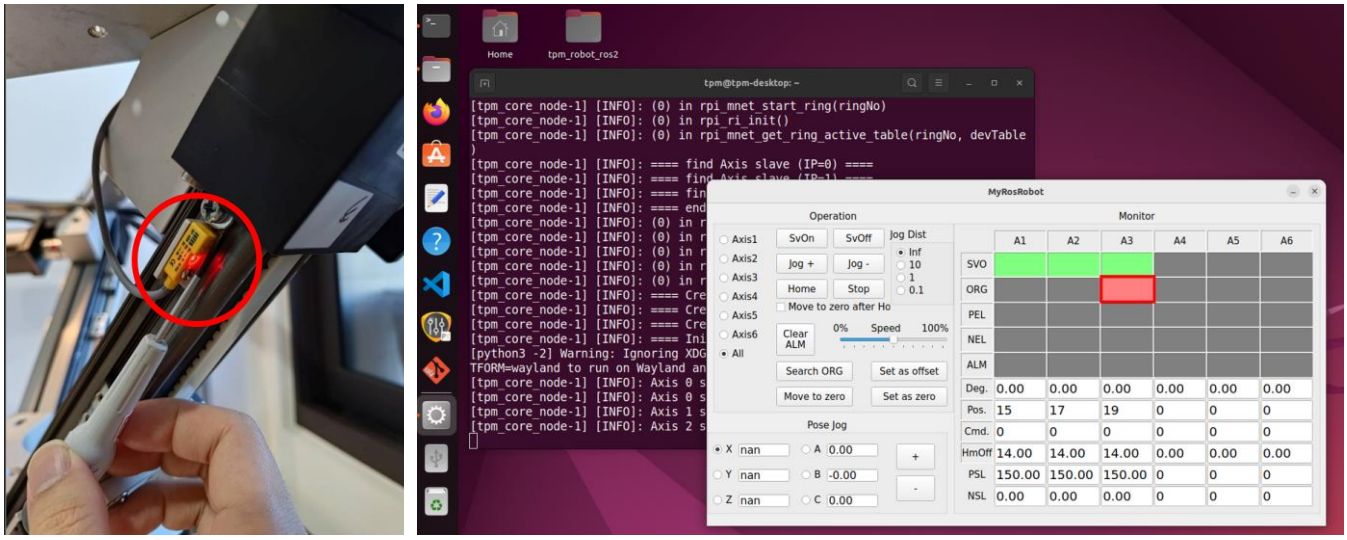




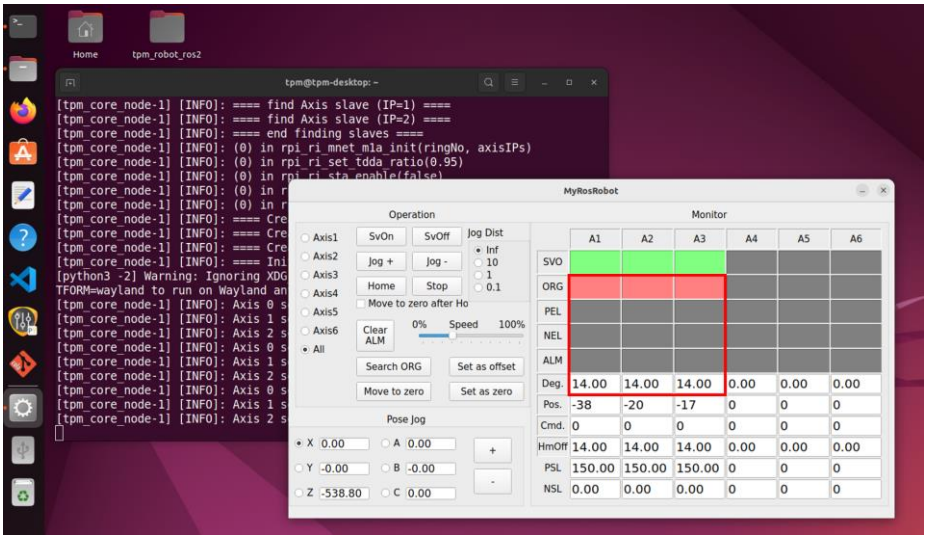
2. Select all axes control and click **SvOn**.



3. Check if the **ORG** sensors functions with metal parts.

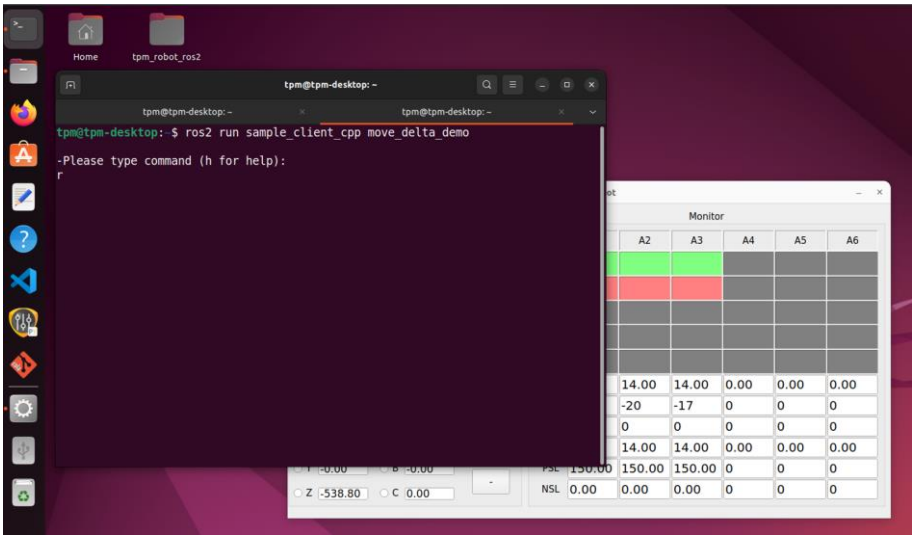


4. Select all axes control and click **Home**. **ORG** of each axis should be triggered and the **Deg**s should be set as **Hmoff**.



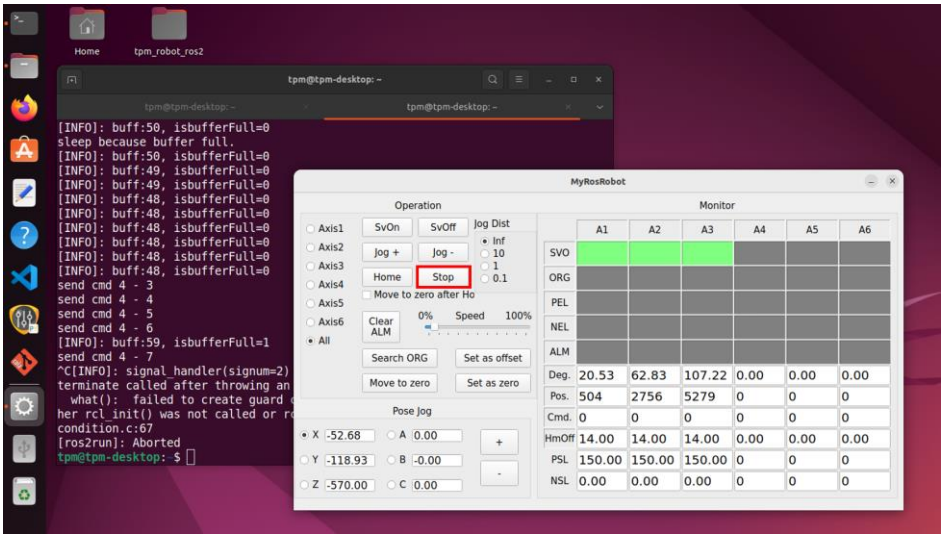
5. Open another terminal and enter the following command to run the script:
   `$ ros2 run sample_client_cpp move_delta_demo`

Enter ‘r’ to run the endless loop script.



To end the program:

1. Enter “Left ctrl + C” on the script terminal to stop sending commands. To end the movement immediately, select all axes control and click **Stop** on MyRosRobot window.



2. Select all axes control and click **SvOff**.
3. Close all windows and power off the system.
4. Disconnect hardware.