FANUC Library Definitions

Version 1.0

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# FANUC Programs

Two programs required to be running on FANUC

**Foreground:**

ROS2\_EIP\_MAIN Version 1.00

Holds code for moving the robot arm.

1. set PR[1] to the desired robot position
2. set R[1] Move Arm to 1 to move arm
3. ROS2\_EIP\_MAIN clears R[1] when move is finished

**Background Program:**

ROS2\_EIP\_BACK Version 1.00

Holds code for copying Gripper and Conveyor Control and Sensor Bits

Uses R[2] as sync output bits

1. Set desired output bits
2. Set R[2] to 1 to write output bits from R[] to specific DO[] or RO[] bits
3. R[2] cleared by program after copy

Also continuously updates R[30] – R[33]

# FANUC Register Maps

**Position Control Registers**

PR[1] – Position register for Move

PR[2-5] – Reserved

**Sync registers**

R[1] – Move Arm (1), set to zero by ROS2\_EIP\_MAIN after move complete

R[2] – Update Output bits (1), set to zero by RS2\_EIP\_BACK after update

R[3] – Call Onrobot RG6 IO: Value (1): open gripper, Value (2): Close gripper, Value (3): Get Data

R[4] – Reserved

**Control Registers for Arm Movement**

R[5] – Arm Speed in mm/second

**FANUC Gripper and Conveyor Output Control bits**

Specific to CRX10 (Bill, DJ, Beaker, Bunsen) Shunk Grippers and installed conveyor belts

R[20] - Shunt Gripper Close (1) and Open (0) – RO[2]

R[21] - Conveyor Belt Forward (1) and Off (0) – DO137

R[22] – Conveyor Belt Reverse (1) and Off (1) – DO138

**FANUC Gripper and Conveyor Input Bits**

Specific to CRX10 (Bill, DJ, Beaker, Bunsen) Shunk Grippers and installed conveyor belts

R[30] – Conveyor Left Proximity Sensor – DI137

R[31] – Conveyor Right Proximity Sensor – DI139

R[32] – Shunk Gripper Open Status – RI2

R[33] – Shunk Gripper Closed Status – RI1

**CRX10 OnRobot RG6 Gripper**

R[35] – Instance (typically 1)

R[36] – Open width in mm

R[37] – Open force in newtons

R[38] – RG6 wait

R[39] – Close width in mm

R[40] – Close force in newtons

R[41] – RG6 Data function

R[42] – Instance (typically 1)

R[43] – Result register (Where to put results)