Gripper_UR Control Class

V1.0

Generated by Doxygen 1.8.11

Contents

Chapter 1

Class Documentation

1.1 GripperUR Class Reference

This class controls the robotiq 85 gripper through UR3 controller via sockets.

`#include <gripper_ur_control.h>`

Public Member Functions

- GripperUR ()
- void gripper85_statusCallback (const ur_msgs::IOStates::ConstPtr &msg_in)
- void init ()
- void open ()
- void close ()
- void moveto (int goal)
- void setSpeed (int s=255)
- void setForce (int f=0)
- void setPoseTolerance (int t=0)
- void setTimeOut (int t=8)
- void setCheckpointAddress (int address=15)
- int getSpeed ()
- int getForce ()
- int getPoseTolerance ()
- int getTimeOut ()
- int getCheckpointAddress ()

1.1.1 Detailed Description

This class controls the robotiq 85 gripper through UR3 controller via sockets.

This class uses rostopics URDriver/URScript, and URDriver/IOstates and rosservice setIO to control robotiq 85 model gripper. This class publishes commands in ur script format to control the robotiq gripper. This class requires that the robotiq's URcaps is installed in the controller and that the URDriver/URScript in published. The execution verification is done through a configurable digital output named checkpoint this is why the class verifies the IO states. ur_driver, ur_msgs are comonents required.

Author

Barrero Lizarazo, Nicolas

Date

September 2018

1.1.2 Constructor & Destructor Documentation

1.1.2.1 GripperUR::GripperUR ( )

The constructor initializes the subscriptor and publisher functions. Advertices the URdriver/URScript topic. Initialices variables.

1.1.3 Member Function Documentation

1.1.3.1 void GripperUR::close ( )

This function closes the gripper.

1.1.3.2 int GripperUR::getCheckpointAddress ( )

Gets the current output address used as checkpoint

Returns

int from 8->2x00 to 15->2x07 see setCheckpointAddress()

1.1.3.3 int GripperUR::getForce ( )

Gets the current gripper's force

Returns

int 0-255 see setForce()

1.1.3.4 int GripperUR::getPoseTolerance ( )

Gets the current gripper's pose tolerance

Returns

int 0-255 see setPoseTolerance()

1.1.3.5 int GripperUR::getSpeed ( )

Gets the current gripper's speed

Returns

int 0-255 see setSpeed()

1.1.3.6 int GripperUR::getTimeOut ( )

Gets the current waiting time

Returns

int seconds see setTimeOut()

1.1.3.7 void GripperUR::gripper85_statusCallback (const ur_msgs::IOStates::ConstPtr & *msg_in*)

This is the regular Callback from a ros node, this function updates the checkpoint data used as a feedback from the UR controller.

Parameters

msg	is the message type the nodes subscribes to: const ur_msgs::IOStates::ConstPtr&

1.1.3.8 void GripperUR::init ( )

The init function must be executed at first. It resets the gripper and executes the initialization routine. This function overrides other configured parameters previously defined. Once the init routine is done the gripper will move.

1.1.3.9 void GripperUR::moveto (int *goal*)

This function moves the gripper to a given position between 0-255. It executes the trayectory and waits until the goal is reached. If an object is detected the gripper stops the movement, should be called after init()

Parameters

goal	0-255 where 0 is totally open and 255 totally closed

1.1.3.10 void GripperUR::open ( )

This function opens the gripper.

1.1.3.11 void GripperUR::setCheckpointAddress (int *address* = 15)

This function sets checkpoint address used for feedback. Only digital addresses are avaible: from 2x00 to 2x07. (default 2x07)

Parameters

int	Address ID from 8->2x00 to 15->2x07

1.1.3.12 void GripperUR::setForce (int *f* = 0)

This function sets gripper's force

Parameters

int	force 0-255 where 255 is max force (default 0)

1.1.3.13 void GripperUR::setPoseTolerance (int *t* = 0)

This function sets gripper's pose tolerance +/- (default 0)

Parameters

int	tolerance en 0-255 units.

1.1.3.14 void GripperUR::setSpeed (int *s* = 255)

This function sets gripper's speed

Parameters

int	speed 0-255 where 255 is max speed (default 255)

1.1.3.15 void GripperUR::setTimeOut (int *t* = 8)

This function sets controller time out (default 8s)

Parameters

int	waiting time in seconds

The documentation for this class was generated from the following file:

- /home/ctai/catkin_ws2/src/universal_robot/robotiq_85_control/include/robotiq_85_control/gripper_ur_↩ control.h