**Reference**

# **Argon C/C++ API**

## **Argon Library**

Argon library has a number of built in sensors and actuators. The library is designed to easily access the Argon robot’s functionality.

Argon has two modules, a mobile 4 mecanum wheeled base and robotic arm. Each module has a separate programmable processor.

The library enables you to do various things with mobile base, robotic arm and each joint/motor:

* Read the state of different sensors
* Access I/O pins on the board
* Control I2C, SPI and UART ports
* Communicate with on board Raspberry over serial

**Argon Joint / Motor**

* Get and set motor settings
* Get motor position and speed
* Control motor speed and direction
* Control motor position
* Sense the current used by each motor

**Argon Mobile Base**

* Get and set Argon Base dimensions and settings
* Get Argon Base position and speed
* Control Argon Base speed and direction
* Control Argon Base position

**Argon Robotic Arm**

* Get and set Argon Arm dimensions and settings
* Get Argon Arm position and speed
* Control Argon Arm speed and direction
* Control Argon Arm position

### **ArgonJoint Class**

Use this to make your own firmware for the Argon Control Board. This class commands the Argon Control Board as well as the I/Os and motors on the board. ArgonJoint objects are already pre-created under ArgonBase and ArgonArm classed. You do not need to create an object of type ArgonJoint.

* [**ArgonJoint**](ArgonJoint_constructor.docx)Constructor
* [setPWM()](ArgonJoint_setPWM.docx)
* [setPower()](ArgonJoint_setPower.docx)
* [getAvailable()](ArgonJoint_getAvailable.docx)
* [getNumber()](ArgonJoint_getNumber.docx)
* [getGearRatio()](ArgonJoint_getGearRatio.docx)
* [getEncoderTicksPerRound()](ArgonJoint_getEncoderTicksPerRound.docx)
* [getEncodingMode()](ArgonJoint_getEncodingMode.docx)
* [getPwm()](ArgonJoint_getPwm.docx)
* [getPwmResolution()](ArgonJoint_getPwmResolution.docx)
* getPower()
* getDirection()
* getEncoderCount()
* getJointPosition()
* getMotorPosition()
* getMotorRPM()
* getJointRPM()
* getMotorAngVel()
* getJointAngVel()

### **ArgonBase Class**

Use this to make your own firmware for the Argon Base Control Board. This class commands the Argon Base control board as well as the I/Os and motors on the board. You do need to create an object of type ArgonBase.

* ArgonBase Constructor
* getWheelRadius()
* getLengthBetweenFrontAndRearWheels()
* getLengthBetweenFrontWheels()
* getGeomFactor()
* getVelocity()
* getLongitudinalVelocity()
* getTransversalVelocity()
* getAngularVelocity()
* getPosition()
* getLongitudinalPosition()
* getTransversalPosition()
* getAngularPosition()
* setPWM()
* setPower()
* getAvailable()
* getNumber()
* getGearRatio()
* getEncoderTicksPerRound()
* getEncodingMode()
* getPwm()
* getPwmResolution()
* getPower()
* getDirection()
* getEncoderCount()
* getJointPosition()
* getMotorPosition()
* getMotorRPM()
* getJointRPM()
* getMotorAngVel()
* getJointAngVel()

### **ArgonArm Class**