

Dynamixel library for Arduino .

Version 1.2.0

begin ()

Description

Initialize the serial communication arduino .

Syntax

begin (baudRate);
begin (baudRate , DATACONTROL)

SoftSerial version

begin (baudRate , rxPin , TxPin)
begin (baudRate , rxPin , TxPin , DATACONTROL)

Parameters

baudRate - serial transmission rate in bps
DATACONTROL - pin control for data transmission and reception
RxPin - pin for receiving data
TxPin - pin for data transmission

Example

Dynamixel.begin (1000000) ; Dynamixel.begin (1000000 2) ;
SoftSerial Version: Dynamixel.begin (1000000 , 2, 3) ;
Dynamixel.begin (1000000 , 2 , 3 , 4) ;

ping ()

Description

Send a question to the servo motor status .

Syntax

ping (ID) ;

Parameters

ID - identification number of the servomotor

returns

- 1 If there was no response from the servomotor
- # Error found servomotor called

Example

Dynamixel.ping (1) ;

reset ()

Description

Return to the factory settings of the servomotor.

Syntax

reset (ID) ;

Parameters

ID - identification number of the servomotor

returns

- 1 If there was no response from the servomotor
- # Error found servomotor called

Example

Dynamixel.reset (1) ;

setId ()

Description

Change the ID of the servomotor.

Syntax

setId (ID , newID) ;

Parameters

ID - identification number of the servomotor newID - new servomotor ID

returns

- 1 If there was no response from the servomotor
- # Error found servomotor called

Example

Dynamixel.setID (1, 2);

setBD ()

Description

Change the Baud Rate of the servomotor.

Syntax

setBD (ID , baudRate);

Parameters

*ID - identification number of the servomotor
baudRate - serial transmission speed in bps*

returns

- 1 If there was no response from the servomotor
- # Error found servomotor called

Example

Dynamixel.setBD (1, 115200);

move ()

Description

Move the actuator to the position indicated.

Syntax

move (ID , Position);

Parameters

*ID - identification number of the servomotor
Position - servo position 0 to 1023 (0 to 300 degrees)*

returns

- 1 If there was no response from the servomotor
- # Error found servomotor called

Example

Dynamixel.move (1, 512) ;

movespeed ()

Description

Move the actuator to the position indicated airtspeed .

Syntax

movespeed (ID , Position, Speed) ;

Parameters

ID - identification number of the servomotor

Position - servo position 0 to 1023 (0 to 300 degrees) Speed - speed that will move the servo 0 to 1023

returns

- 1 If there was no response from the servomotor
- # Error found servomotor called

Example

Dynamixel.moveSpeed (1, 512 , 1023);

moveRW ()

Description

Save the instruction that moves the actuator to the position indicated.

Syntax

moveRW (ID , Position) ;

Parameters

ID - identification number of the servomotor

Position - servo position 0 to 1023 (0 to 300 degrees)

returns

- 1 If there was no response from the servomotor
- # Error found servomotor called

Example

Dynamixel.moveRW (1, 512) ;

moveSpeedRW ()

Description

*Save the instruction that moves the actuator to the position indicated
airspeed .*

Syntax

moveSpeedRW (ID , Position, Speed) ;

Parameters

ID - identification number of the servomotor

Position - servo position 0 to 1023 (0 to 300 degrees)

Speed - speed that will move the servo 0 to 1023

returns

- 1 If there was no response from the servomotor
- # Error found servomotor called

Example

Dynamixel.moveSpeedRW (1, 512 , 1023) ;

action ()

Description

Executes the instruction stored in the servomotor.

Syntax

action () ;

Parameters

none

returns

- 1 If there was no response from the servomotor
- # Error found servomotor called

Example

Dynamixel.action () ;

setEndless ()

Description

Enables or disables continuous mode servomotor rotation .

Syntax

setEndless (ID , Status) ;

Parameters

ID - identification number of the servomotor

Status - on or off the Endless (ON or OFF) mode

returns

- 1 If there was no response from the servomotor
- # Error found servomotor called

Example

Dynamixel.setEndless (1, ON) ;

turn Q

Description

Servomotor rotates to the right or left and the speed indicated only if in continuous rotation mode .

Syntax

turn (ID , Side, Speed) ;

Parameters

ID - identification number of the servomotor

Side - direction in which to rotate (RIGTH or LEFT)

Speed - speed that will move the servo 0-1020

returns

- 1 If there was no response from the servomotor
- # Error found servomotor called

Example

Dynamixel.turn (1, LEFT, 1000) ;

torqueStatus ()

Description

Enables or disables the torque on the servomotor.

Syntax

torqueStatus (ID , Status) ;

Parameters

ID - identification number of the servomotor

Status - on or off the touch (ON or OFF)

returns

- 1 If there was no response from the servomotor
- # Error found servomotor called

Example

Dynamixel.torqueStatus (1 , ON) ;

LEDStatus ()

Description

Turns the LED on the back of the servomotor.

Syntax

LEDStatus (ID , Status) ;

Parameters

ID - identification number of the servomotor

Status - on or off (ON or OFF) LED

returns

- 1 If there was no response from the servomotor
- # Error found servomotor called

Example

Dynamixel.ledStatus (1, ON) ;

setTempLimit ()

Description

Configures a maximum operating temperature of the servomotor.

Syntax

setTempLimit (ID , Temperature) ;

Parameters

ID - identification number of the servomotor

Temperature - the maximum temperature to which the servomotor work

returns

- 1 If there was no response from the servomotor
- # Error found servomotor called

Example

Dynamixel.setTempLimit (1, 80) ;

setAngleLimit ()

Description

Sets a maximum angle CW and CCW operating servomotor.

Syntax

setAngleLimit (ID , CW , CCW) ;

Parameters

ID - identification number of the servomotor

CW - maximum angle to clockwise

CCW - maximum angle against clockwise

returns

- 1 If there was no response from the servomotor
- # Error found servomotor called

Example

Dynamixel.setAngleLimit (1, 45 , 45) ;

setVoltageLimit ()

Description

Set a minimum and maximum operating voltage on the actuator .

Syntax

setVoltageLimit (ID , minVoltage , maxVoltage);

Parameters

ID - identification number of the servomotor

minVoltage - minimum operating voltage of the servomotor maxVoltage -

maximum operating voltage of the servomotor

returns

- 1 If there was no response from the servomotor
- # Error found servomotor called

Example

Dynamixel.setVoltageLimit (1, 70 , 160) ;

setMaxTorque ()

Description

Sets a maximum torque on the actuator .

Syntax

setMaxTorque (ID , Maxtorque);

Parameters

ID - identification number

Maxtorque - servomotor maximum torque (0-1023)

returns

- 1 If there was no response from the servomotor
- # Error found servomotor called

Example

Dynamixel.setMaxTorque (1, 1023) ;

setSRL ()

Description

Sets the Status Return Level of servomotor.

Syntax

setSRL (ID , SRL) ;

Parameters

ID - identification number of the servomotor

SRL - (0 Return none), (read Return 1) , (2 Return all)

returns

- 1 If there was no response from the servomotor
- # Error found servomotor called

Example

Dynamixel.setSRL (1, 2) ;

setRDT ()

Description

Return Delay Time Sets the servomotor .

Syntax

setRDT (ID , RDT) ;

Parameters

ID - identification number of the servomotor

*RDT - time information return (0-255) * 2us*

returns

- 1 If there was no response from the servomotor
- # Error found servomotor called

Example

`Dynamixel.setRDT (1, 255) ;`

setLEDAAlarm ()

Description

Set the alarm LED servomotor.

Syntax

`setLEDAAlarm (ID , LEDAlarm) ;`

Parameters

ID - identification number of the servomotor
LEDAlarm - alarm LED (0-255)

returns

- 1 If there was no response from the servomotor
- # Error found servomotor called

Example

`Dynamixel.setLEDAAlarm (1 , 255) ;`

setShutdownAlarm ()

Description

Set the alarm off the booster.

Syntax

`setShutdownAlarm (ID , shutdownAlarm) ;`

Parameters

ID - identification number of the servomotor shutdownAlarm - shutdown

alarm (0-255)

returns

- 1 If there was no response from the servomotor
- # Error found servomotor called

Example

Dynamixel.setShutdownAlarm (1, 255) ;

setCMargin ()

Description

Compliance Margin Sets the servomotor .

Syntax

setCMargin (ID , CWCM , CCWCM) ;

Parameters

ID - identification number of the servomotor CWCM - CW Compliance Margin (0-255) CCWCM - CCW Compliance Margin (0-255)

returns

- 1 If there was no response from the servomotor
- # Error found servomotor called

Example

Dynamixel.setCMargin (1, 1 , 1) ;

setCSlope ()

Description

Set the servomotor Compliance Slope .

Syntax

setCSlope (ID , CWCS , CCWCS) ;

Parameters

ID - identification number of the servomotor CWCS - CW Compliance Slope (0-255) CCWCS - CCW Compliance Slope (0-255)

returns

- 1 If there was no response from the servomotor
- # Error found servomotor called

Example

Dynamixel.setCSlope (1, 64, 64) ;

setPunch ()

Description

Punch Sets the maximum current or servomotor.

Syntax

setPunch (ID , Punch) ;

Parameters

ID - identification number of the servomotor

Punch - current in the servomotor (0-1023)

returns

- 1 If there was no response from the servomotor
- # Error found servomotor called

Example

Dynamixel.setPunch (1, 1023) ;

moving ()

Description

Check or read if the servomotor is moving.

Syntax

moving (ID) ;

Parameters

ID - identification number of the servomotor

returns

- 1 If there was no response from the servomotor
- # Error found servomotor called
- 0 If the actuator is not in motion
- 1 If the servo is still moving

Example

```
var = Dynamixel.moving int ( 1 ) ;
```

RWStatus ()

Description

Lee REG_WRITE state servomotor .

Syntax

```
RWStatus (ID ) ;
```

Parameters

ID - identification number of the servomotor

returns

- 1 If there was no response from the servomotor
- # Error found servomotor called
- 0 if the servo does not have a saved instruction
- 1 if the actuator has a saved statement

Example

```
var = Dynamixel.RWStatus int ( 1 ) ;
```

lockRegister ()

Description

Blocks 24 to 35 records of the servomotor.

Syntax

```
lockRegister (ID ) ;
```

Parameters

ID - identification number of the servomotor

returns

- 1 If there was no response from the servomotor
- # Error found servomotor called

Example

Dynamixel.lockRegister (1);

readTemperature ()

Description

Reads the internal temperature of the servomotor .

Syntax

readTemperature (ID) ;

Parameters

ID - identification number of the servomotor

returns

- 1 If there was no response from the servomotor
- # Error found servomotor called
- # Internal temperature of the servomotor

Example

var = Dynamixel.readTemperature int (1) ;

readVoltage ()

Description

Read the supply voltage of the servomotor.

Syntax

readVoltage (ID) ;

Parameters

ID - identification number of the servomotor

returns

- 1 If there was no response from the servomotor
- # Error found servomotor called
- # Supply voltage servomotor

Example

```
var = Dynamixel.readVoltage int ( 1 ) ;
```

readPosition ()

Description

Reads the position in which the actuator is located .

Syntax

```
readPosition (ID ) ;
```

Parameters

ID - identification number of the servomotor

returns

- 1 If there was no response from the servomotor
- # Error found servomotor called
- # Position of the servomotor

Example

```
var = Dynamixel.readPosition int ( 1 ) ;
```

readSpeed ()

Description

Read the rpm of the servomotor.

Syntax

```
readSpeed (ID ) ;
```

Parameters

ID - identification number of the servomotor

returns

- 1 If there was no response from the servomotor
- # Error found servomotor called
- # Speed in rpm of the servomotor

Example

```
var = Dynamixel.readSpeed int ( 1 ) ;
```

readLoad ()

Description

Read the current used by the servomotor.

Syntax

```
readLoad (ID ) ;
```

Parameters

ID - identification number of the servomotor

returns

- 1 If there was no response from the servomotor
- # Error found servomotor called
- # Used by current servomotor

Example

```
var = Dynamixel.readLoad int ( 1 ) ;
```