com._604robotics.utils

Class UpDownPIDController

java.lang.Object
  edu.wpi.first.wpilibj.PIDController
    com._604robotics.utils.UpDownPIDController

All Implemented Interfaces:

IDevice, IUtility

```
public class UpDownPIDController
extends PIDController
```

A PIDController with different gains for up and down.

Author:

Michael Smith

Nested Class Summary

Nested Classes

Modifier and Type	Class and Description
static class	**UpDownPIDController.Gains** A structure containing the P, I, and D gains.

Field Summary

Fields inherited from class edu.wpi.first.wpilibj.PIDController

kDefaultPeriod

Constructor Summary

Constructors

Constructor and Description
UpDownPIDController(**UpDownPIDController.Gains** upGains, **UpDownPIDController.Gains** downGains, **PIDSource** source, **PIDOutput** output) Initializes a new UpDownPIDController.

Method Summary

Methods

Modifier and Type	Method and Description
UpDownPIDController.Gains	**getDownGains**() Gets the Gains for going down.
UpDownPIDController.Gains	**getUpGains**() Gets the Gains for going up.
void	**refreshGains**() Updates the gains for the current direction.
void	**setDownGains**(**UpDownPIDController.Gains** downGains) Sets the gains for going down.
void	**setSetpoint**(double setpoint) Sets the setpoint to go to.
void	**setUpGains**(**UpDownPIDController.Gains** upGains) Sets the gains for going up.

Methods inherited from class edu.wpi.first.wpilibj.PIDController

disable, enable, free, get, getD, getError, getI, getP, getSetpoint, isEnable, onTarget, reset, setContinuous, setContinuous, setInputRange, setOutputRange, setPID, setTolerance

Methods inherited from class java.lang.Object

clone, equals, finalize, getClass, hashCode, notify, notifyAll, toString, wait, wait, wait

Constructor Detail

UpDownPIDController

```
public UpDownPIDController(UpDownPIDController.Gains upGains,
                   UpDownPIDController.Gains downGains,
                   PIDSource source,
                   PIDOutput output)
```

Initializes a new UpDownPIDController.

Parameters:

- `upGains` - The gains to use when going up.
- `downGains` - The gains to use when going down.
- `source` - The PIDSource to plug in.
- `output` - The PIDOutput to plug in.

Method Detail

getUpGains

```
public UpDownPIDController.Gains getUpGains()
```

Gets the Gains for going up.

Returns:

The gains for going up.

getDownGains

```
public UpDownPIDController.Gains getDownGains()
```

Gets the Gains for going down.

Returns:

The gains for going down.

refreshGains

```
public void refreshGains()
```

Updates the gains for the current direction.

setUpGains

```
public void setUpGains(UpDownPIDController.Gains upGains)
```

Sets the gains for going up.

Parameters:

- `upGains` - The gains to use when going up.

setDownGains

```
public void setDownGains(UpDownPIDController.Gains downGains)
```

Sets the gains for going down.

Sets the gains for going down.

Parameters:

`downGains` - The gains to use when going down.

setSetpoint

```
public void setSetpoint(double setpoint)
```

Sets the setpoint to go to.

Overrides:

`setSetpoint` in class `PIDController`

Parameters:

`setpoint` - The setpoint to go to.