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com._604robotics.utils

Class ConvertingPIDController

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

All Implemented Interfaces:

IDevice, IUtility

```
public class ConvertingPIDController
extends PIDController
```

An extender of a PIDController that converts between units when getting and setting a setpoint.

Author:

Michael Smith

Field Summary

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

`kDefaultPeriod`

Constructor Summary

Constructors

Constructor and Description
`ConvertingPIDController(double Kp, double Ki, double Kd, PIDSource source, PIDOutput output)` Allocate a PID object with the given constants for P, I, D, using a 50ms period.
`ConvertingPIDController(double Kp, double Ki, double Kd, PIDSource source, PIDOutput output, double period)` Allocate a PID object with the given constants for P, I, D

Method Summary

Methods

Modifier and Type	Method and Description
`double`	`getRealSetpoint()` Gets the "real" setpoint of the PIDController.
`double`	`getSetpoint()` Returns the current setpoint of the PIDController
`void`	`setConversionFactor(double conversionFactor)` Sets the factor to use when doing conversion on setSetpoint and getSetpoint.
`void`	`setRealSetpoint(double setpoint)` Sets the "real" setpoint of the PIDController.
`void`	`setSetpoint(double setpoint)` Set the setpoint for the PIDController

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

`disable, enable, free, get, getD, getError, getI, getP, 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

ConvertingPIDController

```
public ConvertingPIDController(double Kp,
                               double Ki,
                               double Kd,
                               PIDSource source,
                               PIDOutput output)
```

Allocate a PID object with the given constants for P, I, D, using a 50ms period.

Parameters:

`Kp` - the proportional coefficient

`Ki` - the integral coefficient

`Kd` - the derivative coefficient

`source` - The PIDSource object that is used to get values

`output` - The PIDOutput object that is set to the output value

ConvertingPIDController

```
public ConvertingPIDController(double Kp,
                               double Ki,
                               double Kd,
                               PIDSource source,
                               PIDOutput output,
                               double period)
```

Allocate a PID object with the given constants for P, I, D

Parameters:

`Kp` - the proportional coefficient

`Ki` - the integral coefficient

`Kd` - the derivative coefficient

`source` - The PIDSource object that is used to get values

`output` - The PIDOutput object that is set to the output value

`period` - the loop time for doing calculations. This particularly effects calculations of the integral and differential terms. The default is 50ms.

Method Detail

getRealSetpoint

```
public double getRealSetpoint()
```

Gets the "real" setpoint of the PIDController.

Returns:

The "real" setpoint of the PIDController.

getSetpoint

```
public double getSetpoint()
```

Description copied from class: `edu.wpi.first.wpilibj.PIDController`
Returns the current setpoint of the PIDController

Overrides:

`getSetpoint` in class `PIDController`

Returns:

the current setpoint

setRealSetpoint

```
public void setRealSetpoint(double setpoint)
```

Sets the "real" setpoint of the PIDController.

Sets the "real" setpoint of the PIDController.

Parameters:

`setpoint` - The "real" setpoint to set.

setSetpoint

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

Description copied from class: `edu.wpi.first.wpilibj.PIDController`
Set the setpoint for the PIDController

Overrides:

`setSetpoint` in class `PIDController`

Parameters:

`setpoint` - the desired setpoint

setConversionFactor

```
public void setConversionFactor(double conversionFactor)
```

Sets the factor to use when doing conversion on setSetpoint and getSetpoint.

Parameters:

`conversionFactor` - The conversion factor to use.

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