PIDLibrary

0.1

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Class Index

1.1 Class List

Here are the classes, structs, unions and interfaces with brief descriptions:

Chapter 2

File Index

2.1 File List

Here is a list of all documented files with brief descriptions:

Chapter 3

Class Documentation

3.1 PID Class Reference

PID loop object.

`#include <PID.h>`

Public Member Functions

- PID (double p, double i, double d, double b=0, bool r=false)
  Constructor.
- void reset ()
  Resets the PID loop.
- double process (double act, double sp, double dt)
  Calculates the current PID output.

Public Attributes

- double p_factor
  Proportional factor.
- double i_factor
  Integral factor.
- double d_factor
  Derivitive factor.
- double bias
  Output bias.
- double min_i
  Minimum integral.
- double max_i
  Maximum integral.

- double min_out

  Minimum output.
- double max_out

  Maximum output.
- bool reverse

  Indicates a reverse-action PID loop.

Private Member Functions

- double calc_i (double err, double dt)

  Calculates the integral value.
- double calc_i (double err, double dt)

  Calculates the derivitive value.
- double calc_out (double p, double i, double d)

  Calculates the final output value.

Private Attributes

- double last_err

  The last error value.
- double last_i

  The last integral value.

3.1.1 Detailed Description

PID loop object.

3.1.2 Constructor & Destructor Documentation

3.1.2.1 PID::PID (double *p*, double *i*, double *d*, double *b* = `0`, bool *r* = `false`)

Constructor.

Parameters

p	Proportional factor.
i	Integral factor.
d	Derivitive factor.
b	Output bias.
r	Indicates a reverse-action PID loop.

3.1.3 Member Function Documentation

3.1.3.1 double PID::calc_i (double *err*, double *dt*) [private]

Calculates the integral value.

Parameters

err	The current error value.
dt	The time since the last calculation.

Returns

The calculated value.

3.1.3.2 double PID::calc_i (double *err*, double *dt*) [private]

Calculates the derivitive value.

Parameters

err	The current error value.
dt	The time since the last calculation.

Returns

The calculated value.

3.1.3.3 double PID::calc_out (double *p*, double *i*, double *d*) [private]

Calculates the final output value.

Parameters

p	The proportional value.
i	The integral value.
d	The derivitive value.

Returns

The calculated output.

3.1.3.4 double PID::process (double *act*, double *sp*, double *dt*)

Calculates the current PID output.

Parameters

act	The measured value. âram sp The desired setpoint.
dt	The time since the last calculation.

Returns

The calculated output.

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

- PID.h
- PID.cpp

Chapter 4

File Documentation

4.1 PID.h File Reference

Classes

- class PID

  PID loop object.

4.1.1 Detailed Description

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