

Zmotor 3 Library

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1 Deprecated List

Global [Zmotor3::check\(\)](#)

2 Hierarchical Index

2.1 Class Hierarchy

This inheritance list is sorted roughly, but not completely, alphabetically:

PinExtender

Zmotor3 2

3 Data Structure Index

3.1 Data Structures

Here are the data structures with brief descriptions:

Zmotor3
Class that stores state and functions for interacting with ZPCA9685 PWM chip 2

4 File Index

4.1 File List

Here is a list of all files with brief descriptions:

Zmotor3.cpp 11

Zmotor3.h 12

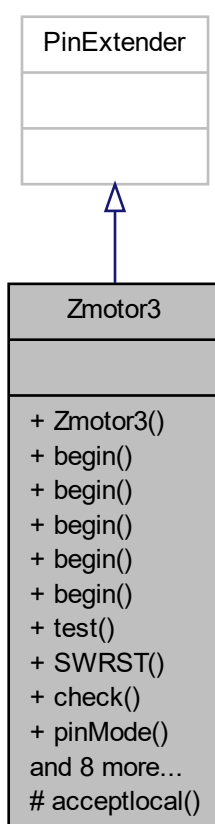
5 Data Structure Documentation

5.1 Zmotor3 Class Reference

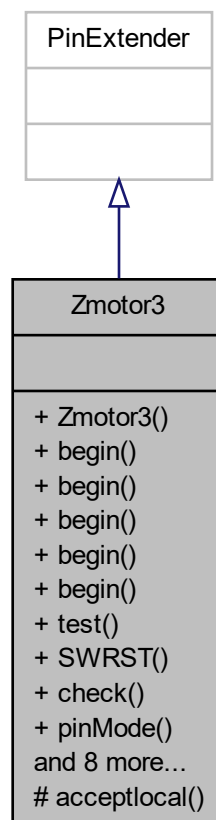
Class that stores state and functions for interacting with ZPCA9685 PWM chip.

```
#include <Zmotor3.h>
```

Inheritance diagram for Zmotor3:



Collaboration diagram for Zmotor3:



Public Member Functions

- [Zmotor3](#) ()
Instantiates a new [Zmotor3](#) PWM driver chip with the I2C address on the Wire interface. On Due we use Wire1 since its the interface on the 'default' I2C pins.
- void [begin](#) (TwoWire *MyWire, uint8_t addr1)
Setups the I2C interface and hardware.
- void [begin](#) (TwoWire *i2c, uint8_t addr1, uint8_t addrpwm)
- void [begin](#) (uint8_t addr, uint8_t addr2)
- void [begin](#) (uint8_t addr)
Setups the I2C interface and hardware.
- void [begin](#) (void)
Setups the I2C interface and hardware.
- bool [test](#) ()
- void [SWRST](#) (void)
- bool [check](#) ()
- void [pinMode](#) (uint32_t p, uint8_t d)
- void [digitalWrite](#) (uint32_t p, uint8_t d)
- uint8_t [digitalRead](#) (uint32_t p)

- void [analogWrite](#) (uint32_t ulPin, uint32_t ulValue)
Writes an analog value (PWM wave) to a pin.
- void [analogWriteResolution](#) (int res)
- uint32_t [getPin](#) (uint32_t ulPin)
- void [reset](#) (void)
Sends a reset command to the [Zmotor3](#) chip over I2C.
- uint32_t [analogRead](#) (uint32_t pin)
- void [setPWMFreq](#) (float freq)
Sets the PWM frequency for the entire chip, up to ~1.6 KHz.

Protected Member Functions

- bool [acceptlocal](#) (uint32_t p)

5.1.1 Detailed Description

Class that stores state and functions for interacting with ZPCA9685 PWM chip.

Definition at line 118 of file Zmotor3.h.

5.1.2 Constructor & Destructor Documentation

5.1.2.1 Zmotor3()

```
Zmotor3::Zmotor3 ( )
```

Instantiates a new [Zmotor3](#) PWM driver chip with the I2C address on the Wire interface. On Due we use Wire1 since its the interface on the 'default' I2C pins.

Parameters

<i>addr</i>	The 7-bit I2C address to locate this chip, default is 0x40
-------------	--

Definition at line 25 of file Zmotor3.cpp.

5.1.3 Member Function Documentation

5.1.3.1 acceptlocal()

```
bool Zmotor3::acceptlocal (
    uint32_t p ) [protected]
```

test if the pin number exists on the current board.

Definition at line 94 of file Zmotor3.cpp.

5.1.3.2 `analogRead()`

```
uint32_t Zmotor3::analogRead (
    uint32_t pin )
```

same function as Arduino API : [analogRead\(\)](#)

Definition at line 177 of file Zmotor3.cpp.

5.1.3.3 `analogWrite()`

```
void Zmotor3::analogWrite (
    uint32_t ulPin,
    uint32_t ulValue )
```

Writes an analog value (PWM wave) to a pin.

same function as Arduino API : [analogWrite\(\)](#)

Parameters

<i>ulPin</i>	
<i>ulValue</i>	

Definition at line 140 of file Zmotor3.cpp.

5.1.3.4 `analogWriteResolution()`

```
void Zmotor3::analogWriteResolution (
    int res )
```

same function as Arduino API : [analogWriteResolution\(\)](#)

Parameters

<i>res</i>	possible value 8 10 12
------------	------------------------

Definition at line 133 of file Zmotor3.cpp.

5.1.3.5 `begin()` [1/5]

```
void Zmotor3::begin (
    TwoWire * MyWire,
    uint8_t addr1 )
```

Setups the I2C interface and hardware.

initialise the board, the Wire interface must be initialize before. see `wire.begin()`

Parameters

<i>MyWire</i>	the Wire interface like &Wire for board that handle several one.
<i>addr1</i>	the I2C address custom bit,the PCA9685_ADDR_BASE , MCP23017_ADDR_BASE will be added to target each chip.

Definition at line 35 of file Zmotor3.cpp.

References [begin\(\)](#), [MCP23017_ADDR_BASE](#), and [PCA9685_ADDR_BASE](#).

Here is the call graph for this function:

5.1.3.6 `begin()` [2/5]

```
void Zmotor3::begin (
    TwoWire * i2c,
    uint8_t addr1o,
    uint8_t addrpwm )
```

initialise the board, the Wire interface must be initialize before. see [wire.begin\(\)](#)

Parameters

<i>i2c</i>	the Wire interface like &Wire for board that handle several one.
<i>addr1o</i>	the I2C address of MCP23017
<i>addrpwm</i>	the I2C address of PCA9685

Definition at line 39 of file Zmotor3.cpp.

5.1.3.7 `begin()` [3/5]

```
void Zmotor3::begin (
    uint8_t addr,
    uint8_t addr2 )
```

initialise the board, the Wire interface must be initialize before. see [wire.begin\(\)](#)

Parameters

<i>addr</i>	the I2C address of MCP23017
<i>addr2</i>	the I2C address of PCA9685

5.1.3.8 begin() [4/5]

```
void Zmotor3::begin (
    uint8_t addr )
```

Setups the I2C interface and hardware.

initialise the board, the Wire interface must be initialize before. see `wire.begin()`

Parameters

<i>addr</i>	the I2C address custom bit,the PCA9685_ADDR_BASE , MCP23017_ADDR_BASE will be added to target each chip.
-------------	--

Definition at line 55 of file Zmotor3.cpp.

References `begin()`.

Here is the call graph for this function:

**5.1.3.9 begin()** [5/5]

```
void Zmotor3::begin (
    void )
```

Setups the I2C interface and hardware.

initialise the board, the Wire interface must be initialize before. see `wire.begin()` default Wire and addresses will be used : [PCA9685_ADDR_BASE](#), [MCP23017_ADDR_BASE](#)

Definition at line 65 of file Zmotor3.cpp.

Referenced by `begin()`.

Here is the caller graph for this function:



5.1.3.10 `check()`

```
bool Zmotor3::check ( )
```

check the board

Deprecated

5.1.3.11 `digitalRead()`

```
uint8_t Zmotor3::digitalRead (
    uint32_t ulPin )
```

same function as Arduino API : [digitalRead\(\)](#)

dummy function

Definition at line 107 of file `Zmotor3.cpp`.

5.1.3.12 `digitalWrite()`

```
void Zmotor3::digitalWrite (
    uint32_t p,
    uint8_t d )
```

same function as Arduino API : [digitalWrite\(\)](#)

Definition at line 181 of file `Zmotor3.cpp`.

5.1.3.13 `getPin()`

```
uint32_t Zmotor3::getPin (
    uint32_t ulPin )
```

return the pin number of the current instance for the generic pin `ulPin`

This allow to use Aduino API see `PinExtender` documentation

Parameters

<i>ulPin</i>	the generic pin name like #PIN_MOTOR2_IO_0 #PIN_PIN_MOTOR3_PWM_0
--------------	---

Definition at line 158 of file Zmotor3.cpp.

References MCP23017_ADDR_BASE, and PCA9685_ADDR_BASE.

5.1.3.14 pinMode()

```
void Zmotor3::pinMode (
    uint32_t ulPin,
    uint8_t mode )
```

same function as Arduino API : [pinMode\(\)](#)

Sets the pin mode to either INPUT or OUTPUT but for all, and input doesn't exist

Definition at line 121 of file Zmotor3.cpp.

5.1.3.15 reset()

```
void Zmotor3::reset (
    void )
```

Sends a reset command to the [Zmotor3](#) chip over I2C.

Reset the board like a power up.

Definition at line 78 of file Zmotor3.cpp.

5.1.3.16 setPWMFreq()

```
void Zmotor3::setPWMFreq (
    float freq )
```

Sets the PWM frequency for the entire chip, up to ~1.6 KHz.

set up the frequency of the PWM note max is about 1500 Hz

Parameters

<i>freq</i>	Floating point frequency that we will attempt to match
-------------	--

Parameters

<i>freq</i>	Frequency in Hz
-------------	-----------------

Definition at line 89 of file Zmotor3.cpp.

5.1.3.17 SWRST()

```
void Zmotor3::SWRST (
    void )
```

Reset the board like a power up.

5.1.3.18 test()

```
bool Zmotor3::test ( )
```

Test the Hardware to be sure that the connection is good. else it return false.

Returns

true : if the communication work well and it look like that it is the good chip behing I2C interface

Definition at line 151 of file Zmotor3.cpp.

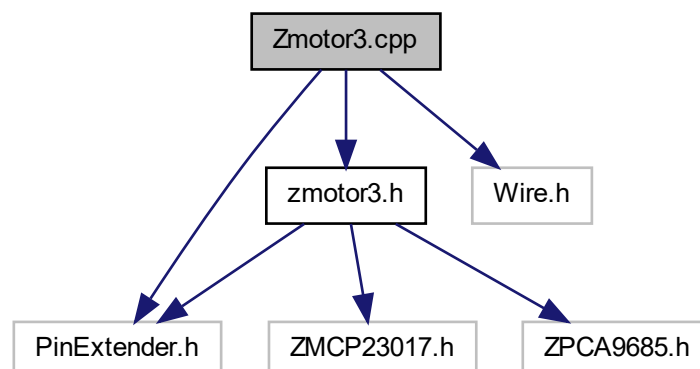
The documentation for this class was generated from the following files:

- [Zmotor3.h](#)
- [Zmotor3.cpp](#)

6 File Documentation

6.1 Zmotor3.cpp File Reference

```
#include "zmotor3.h"
#include <Wire.h>
#include "PinExtender.h"
Include dependency graph for Zmotor3.cpp:
```



Variables

- uint32_t `MOTOR3_PWM[]`={`PIN_MOTOR3_PWM_0`,`PIN_MOTOR3_PWM_1`,`PIN_MOTOR3_PWM_2`,`PIN_MOTOR3_PWM_3`,`PIN_MOTOR3_PWM_4`,`PIN_MOTOR3_PWM_5`,`PIN_MOTOR3_PWM_6`,`PIN_MOTOR3_PWM_7`,`PIN_MOTOR3_PWM_8`,`PIN_MOTOR3_PWM_9`,`PIN_MOTOR3_PWM_10`,`PIN_MOTOR3_PWM_11`,`PIN_MOTOR3_PWM_12`,`PIN_MOTOR3_PWM_13`,`PIN_MOTOR3_PWM_14`,`PIN_MOTOR3_PWM_15`}
- uint32_t `MOTOR3_IO[]`={`PIN_MOTOR3_IO_0`,`PIN_MOTOR3_IO_1`,`PIN_MOTOR3_IO_2`,`PIN_MOTOR3_IO_3`,`PIN_MOTOR3_IO_4`,`PIN_MOTOR3_IO_5`,`PIN_MOTOR3_IO_6`,`PIN_MOTOR3_IO_7`,`PIN_MOTOR3_IO_8`,`PIN_MOTOR3_IO_9`,`PIN_MOTOR3_IO_10`,`PIN_MOTOR3_IO_11`,`PIN_MOTOR3_IO_12`,`PIN_MOTOR3_IO_13`,`PIN_MOTOR3_IO_14`,`PIN_MOTOR3_IO_15`}

6.1.1 Detailed Description

Inspired from Adafruit 16-channel PWM & Servo driver library

6.1.2 Variable Documentation

6.1.2.1 MOTOR3_IO

```
uint32_t MOTOR3_IO[] = {PIN_MOTOR3_IO_0, PIN_MOTOR3_IO_1, PIN_MOTOR3_IO_2, PIN_MOTOR3_IO_3, PIN_MOTOR3_IO_4, PIN_MOTOR3_IO_5, PIN_MOTOR3_IO_6, PIN_MOTOR3_IO_7, PIN_MOTOR3_IO_8, PIN_MOTOR3_IO_9, PIN_MOTOR3_IO_10, PIN_MOTOR3_IO_11, PIN_MOTOR3_IO_12, PIN_MOTOR3_IO_13, PIN_MOTOR3_IO_14, PIN_MOTOR3_IO_15}
```

Definition at line 16 of file Zmotor3.cpp.

6.1.2.2 MOTOR3_PWM

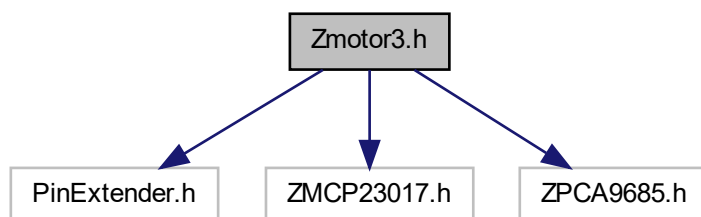
```
uint32_t MOTOR3_PWM[] = {PIN_MOTOR3_PWM_0, PIN_MOTOR3_PWM_1, PIN_MOTOR3_PWM_2, PIN_MOTOR3_PWM_3, PIN_MOTOR3_PWM_4, PIN_MOTOR3_PWM_5, PIN_MOTOR3_PWM_6, PIN_MOTOR3_PWM_7, PIN_MOTOR3_PWM_8, PIN_MOTOR3_PWM_9, PIN_MOTOR3_PWM_10, PIN_MOTOR3_PWM_11, PIN_MOTOR3_PWM_12, PIN_MOTOR3_PWM_13, PIN_MOTOR3_PWM_14, PIN_MOTOR3_PWM_15}
```

Definition at line 15 of file Zmotor3.cpp.

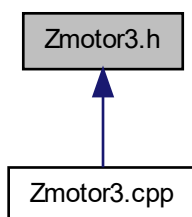
6.2 Zmotor3.h File Reference

```
#include "PinExtender.h"
#include <ZMCP23017.h>
#include <ZPCA9685.h>
```

Include dependency graph for Zmotor3.h:



This graph shows which files directly or indirectly include this file:



Data Structures

- class [Zmotor3](#)

Class that stores state and functions for interacting with ZPCA9685 PWM chip.

Macros

I2C base address

- #define [MCP23017_ADDR_BASE](#) 0x20
- #define [PCA9685_ADDR_BASE](#) 0x40

generic pin name accoding to the channel number : [MOTOR3_\[pin\]_\[channel\]](#)

- #define [PIN_MOTOR3_IO_0](#) (MCP23017_GPB1 | [MCP23017_ADDR_BASE](#)<<16)
- #define [PIN_MOTOR3_IO_1](#) (MCP23017_GPB3 | [MCP23017_ADDR_BASE](#)<<16)
- #define [PIN_MOTOR3_IO_2](#) (MCP23017_GPB5 | [MCP23017_ADDR_BASE](#)<<16)
- #define [PIN_MOTOR3_IO_3](#) (MCP23017_GPB7 | [MCP23017_ADDR_BASE](#)<<16)
- #define [PIN_MOTOR3_IO_4](#) (MCP23017_GPA1 | [MCP23017_ADDR_BASE](#)<<16)
- #define [PIN_MOTOR3_IO_5](#) (MCP23017_GPA3 | [MCP23017_ADDR_BASE](#)<<16)
- #define [PIN_MOTOR3_IO_6](#) (MCP23017_GPA5 | [MCP23017_ADDR_BASE](#)<<16)
- #define [PIN_MOTOR3_IO_7](#) (MCP23017_GPA7 | [MCP23017_ADDR_BASE](#)<<16)
- #define [PIN_MOTOR3_EN_0](#) (MCP23017_GPB0 | [MCP23017_ADDR_BASE](#)<<16)
- #define [PIN_MOTOR3_EN_1](#) (MCP23017_GPB2 | [MCP23017_ADDR_BASE](#)<<16)
- #define [PIN_MOTOR3_EN_2](#) (MCP23017_GPB4 | [MCP23017_ADDR_BASE](#)<<16)
- #define [PIN_MOTOR3_EN_3](#) (MCP23017_GPB6 | [MCP23017_ADDR_BASE](#)<<16)
- #define [PIN_MOTOR3_EN_4](#) (MCP23017_GPA0 | [MCP23017_ADDR_BASE](#)<<16)
- #define [PIN_MOTOR3_EN_5](#) (MCP23017_GPA2 | [MCP23017_ADDR_BASE](#)<<16)
- #define [PIN_MOTOR3_EN_6](#) (MCP23017_GPA4 | [MCP23017_ADDR_BASE](#)<<16)
- #define [PIN_MOTOR3_EN_7](#) (MCP23017_GPA6 | [MCP23017_ADDR_BASE](#)<<16)
- #define [PIN_MOTOR3_PWM_0](#) (PCA9685_LED3 | [PCA9685_ADDR_BASE](#)<<16)
- #define [PIN_MOTOR3_PWM_1](#) (PCA9685_LED2 | [PCA9685_ADDR_BASE](#)<<16)
- #define [PIN_MOTOR3_PWM_2](#) (PCA9685_LED1 | [PCA9685_ADDR_BASE](#)<<16)
- #define [PIN_MOTOR3_PWM_3](#) (PCA9685_LED0 | [PCA9685_ADDR_BASE](#)<<16)
- #define [PIN_MOTOR3_PWM_4](#) (PCA9685_LED4 | [PCA9685_ADDR_BASE](#)<<16)
- #define [PIN_MOTOR3_PWM_5](#) (PCA9685_LED5 | [PCA9685_ADDR_BASE](#)<<16)
- #define [PIN_MOTOR3_PWM_6](#) (PCA9685_LED6 | [PCA9685_ADDR_BASE](#)<<16)
- #define [PIN_MOTOR3_PWM_7](#) (PCA9685_LED7 | [PCA9685_ADDR_BASE](#)<<16)

generic pin name accoding the the board connector : [MOTOR3_\[connector\]_\[pin\]](#)

- #define MOTOR3_P8_PWM PIN_MOTOR3_PWM_0
- #define MOTOR3_P8_IO PIN_MOTOR3_IO_0
- #define MOTOR3_P8_EN PIN_MOTOR3_EN_0
- #define MOTOR3_P12_PWM PIN_MOTOR3_PWM_1
- #define MOTOR3_P12_IO PIN_MOTOR3_IO_1
- #define MOTOR3_P12_EN PIN_MOTOR3_EN_1
- #define MOTOR3_P7_PWM PIN_MOTOR3_PWM_2
- #define MOTOR3_P7_IO PIN_MOTOR3_IO_2
- #define MOTOR3_P7_EN PIN_MOTOR3_EN_2
- #define MOTOR3_P11_PWM PIN_MOTOR3_PWM_3
- #define MOTOR3_P11_IO PIN_MOTOR3_IO_3
- #define MOTOR3_P11_EN PIN_MOTOR3_EN_3
- #define MOTOR3_P6_PWM PIN_MOTOR3_PWM_4
- #define MOTOR3_P6_IO PIN_MOTOR3_IO_4
- #define MOTOR3_P6_EN PIN_MOTOR3_EN_4
- #define MOTOR3_P10_PWM PIN_MOTOR3_PWM_5
- #define MOTOR3_P10_IO PIN_MOTOR3_IO_5
- #define MOTOR3_P10_EN PIN_MOTOR3_EN_5
- #define MOTOR3_P9_PWM PIN_MOTOR3_PWM_6
- #define MOTOR3_P9_IO PIN_MOTOR3_IO_6
- #define MOTOR3_P9_EN PIN_MOTOR3_EN_6
- #define MOTOR3_P13_PWM PIN_MOTOR3_PWM_7
- #define MOTOR3_P13_IO PIN_MOTOR3_IO_7
- #define MOTOR3_P13_EN PIN_MOTOR3_EN_7

6.2.1 Detailed Description

dependency :

this library use the folowing ones : ZMCP23017, ZPCA9685, PinExtender,Rosserial_Arduino_Library you can find it on <https://github.com/zoubworldArduino/>

description

This lib support a board called Motor3 based on MCP23017 and PCA9685 with L298 as power stage. This board offers 8 motor channels 5-35V up to 2A DC. Each channel have 2 pin, one where we can apply LOW or HIGH level thanks to digitalWrite(), and one where we can apply PWM value thanks to analogWrite() The pin can be identify by the generic name like #PIN_MOTOR2_IO_0 PIN_MOTOR3_PWM_0, in this case you have to do instanceBoard.digitalWrite(PIN_MOTOR3_IO_0,LOW) The pin can be identify by the instance name like pin=instanceBoard.getpin(#PIN_MOTOR2_IO_0) or pin=instanceBoard.getpinIo(MOTOR2_0) or or pin=instanceBoard.getpinPwm(MOTOR2_0), in this case you have to do digitalWrite(pin,LOW); from arduino API, this offer a compatibility with any library, but before you should link your board to arduino API by calling setPinExtender(&instanceBoard); if you have 2 board, then do it :instanceBoard.setPinExtender(&instanceBoard_2);

generic name is used inside the instance of board, and the instance pin name allow to use generic arduino IPA, it content on it the I2C addresse of the device and the channel. note that instanceBoard.getpin() must be called after instanceBoard creation and initialisation with begin(), the pin number is a 32bit number.

The cmd(channel, pwm) function allow to manage easily the motor control, channel is between 0 and 15 like on skillprint of the board. The pwm value is between -4096 and 4095, 0 give no power.

The name PIN_MOTOR3_IO_0 can be replace by MOTOR3_IO[0]. The name PIN_MOTOR3_PWM_0 can be replace by MOTOR3_PWM[0]. The name PIN_MOTOR3_PWM_0 can be replace by MOTOR3_EN[0].

6.2.2 Macro Definition Documentation

6.2.2.1 MCP23017_ADDR_BASE

```
#define MCP23017_ADDR_BASE 0x20
```

Definition at line 41 of file Zmotor3.h.

Referenced by Zmotor3::begin(), and Zmotor3::getPin().

6.2.2.2 MOTOR3_P10_EN

```
#define MOTOR3_P10_EN PIN_MOTOR3_EN_5
```

Definition at line 102 of file Zmotor3.h.

6.2.2.3 MOTOR3_P10_IO

```
#define MOTOR3_P10_IO PIN_MOTOR3_IO_5
```

Definition at line 101 of file Zmotor3.h.

6.2.2.4 MOTOR3_P10_PWM

```
#define MOTOR3_P10_PWM PIN_MOTOR3_PWM_5
```

Definition at line 100 of file Zmotor3.h.

6.2.2.5 MOTOR3_P11_EN

```
#define MOTOR3_P11_EN PIN_MOTOR3_EN_3
```

Definition at line 94 of file Zmotor3.h.

6.2.2.6 MOTOR3_P11_IO

```
#define MOTOR3_P11_IO PIN_MOTOR3_IO_3
```

Definition at line 93 of file Zmotor3.h.

6.2.2.7 MOTOR3_P11_PWM

```
#define MOTOR3_P11_PWM PIN_MOTOR3_PWM_3
```

Definition at line 92 of file Zmotor3.h.

6.2.2.8 MOTOR3_P12_EN

```
#define MOTOR3_P12_EN PIN_MOTOR3_EN_1
```

Definition at line 85 of file Zmotor3.h.

6.2.2.9 MOTOR3_P12_IO

```
#define MOTOR3_P12_IO PIN_MOTOR3_IO_1
```

Definition at line 84 of file Zmotor3.h.

6.2.2.10 MOTOR3_P12_PWM

```
#define MOTOR3_P12_PWM PIN_MOTOR3_PWM_1
```

Definition at line 83 of file Zmotor3.h.

6.2.2.11 MOTOR3_P13_EN

```
#define MOTOR3_P13_EN PIN_MOTOR3_EN_7
```

Definition at line 110 of file Zmotor3.h.

6.2.2.12 MOTOR3_P13_IO

```
#define MOTOR3_P13_IO PIN_MOTOR3_IO_7
```

Definition at line 109 of file Zmotor3.h.

6.2.2.13 MOTOR3_P13_PWM

```
#define MOTOR3_P13_PWM PIN_MOTOR3_PWM_7
```

Definition at line 108 of file Zmotor3.h.

6.2.2.14 MOTOR3_P6_EN

```
#define MOTOR3_P6_EN PIN_MOTOR3_EN_4
```

Definition at line 98 of file Zmotor3.h.

6.2.2.15 MOTOR3_P6_IO

```
#define MOTOR3_P6_IO PIN_MOTOR3_IO_4
```

Definition at line 97 of file Zmotor3.h.

6.2.2.16 MOTOR3_P6_PWM

```
#define MOTOR3_P6_PWM PIN_MOTOR3_PWM_4
```

Definition at line 96 of file Zmotor3.h.

6.2.2.17 MOTOR3_P7_EN

```
#define MOTOR3_P7_EN PIN_MOTOR3_EN_2
```

Definition at line 90 of file Zmotor3.h.

6.2.2.18 MOTOR3_P7_IO

```
#define MOTOR3_P7_IO PIN_MOTOR3_IO_2
```

Definition at line 89 of file Zmotor3.h.

6.2.2.19 MOTOR3_P7_PWM

```
#define MOTOR3_P7_PWM PIN_MOTOR3_PWM_2
```

Definition at line 88 of file Zmotor3.h.

6.2.2.20 MOTOR3_P8_EN

```
#define MOTOR3_P8_EN PIN_MOTOR3_EN_0
```

Definition at line 81 of file Zmotor3.h.

6.2.2.21 MOTOR3_P8_IO

```
#define MOTOR3_P8_IO PIN_MOTOR3_IO_0
```

Definition at line 80 of file Zmotor3.h.

6.2.2.22 MOTOR3_P8_PWM

```
#define MOTOR3_P8_PWM PIN_MOTOR3_PWM_0
```

Definition at line 79 of file Zmotor3.h.

6.2.2.23 MOTOR3_P9_EN

```
#define MOTOR3_P9_EN PIN_MOTOR3_EN_6
```

Definition at line 106 of file Zmotor3.h.

6.2.2.24 MOTOR3_P9_IO

```
#define MOTOR3_P9_IO PIN_MOTOR3_IO_6
```

Definition at line 105 of file Zmotor3.h.

6.2.2.25 MOTOR3_P9_PWM

```
#define MOTOR3_P9_PWM PIN_MOTOR3_PWM_6
```

Definition at line 104 of file Zmotor3.h.

6.2.2.26 PCA9685_ADDR_BASE

```
#define PCA9685_ADDR_BASE 0x40
```

Definition at line 42 of file Zmotor3.h.

Referenced by Zmotor3::begin(), and Zmotor3::getPin().

6.2.2.27 PIN_MOTOR3_EN_0

```
#define PIN_MOTOR3_EN_0 (MCP23017_GPB0 | MCP23017_ADDR_BASE<<16)
```

Definition at line 57 of file Zmotor3.h.

6.2.2.28 PIN_MOTOR3_EN_1

```
#define PIN_MOTOR3_EN_1 (MCP23017_GPB2 | MCP23017_ADDR_BASE<<16)
```

Definition at line 58 of file Zmotor3.h.

6.2.2.29 PIN_MOTOR3_EN_2

```
#define PIN_MOTOR3_EN_2 (MCP23017_GPB4 | MCP23017_ADDR_BASE<<16)
```

Definition at line 59 of file Zmotor3.h.

6.2.2.30 PIN_MOTOR3_EN_3

```
#define PIN_MOTOR3_EN_3 (MCP23017_GPB6 | MCP23017_ADDR_BASE<<16)
```

Definition at line 60 of file Zmotor3.h.

6.2.2.31 PIN_MOTOR3_EN_4

```
#define PIN_MOTOR3_EN_4 (MCP23017_GPA0 | MCP23017_ADDR_BASE<<16)
```

Definition at line 61 of file Zmotor3.h.

6.2.2.32 PIN_MOTOR3_EN_5

```
#define PIN_MOTOR3_EN_5 (MCP23017_GPA2 | MCP23017_ADDR_BASE<<16)
```

Definition at line 62 of file Zmotor3.h.

6.2.2.33 PIN_MOTOR3_EN_6

```
#define PIN_MOTOR3_EN_6 (MCP23017_GPA4 | MCP23017_ADDR_BASE<<16)
```

Definition at line 63 of file Zmotor3.h.

6.2.2.34 PIN_MOTOR3_EN_7

```
#define PIN_MOTOR3_EN_7 (MCP23017_GPA6 | MCP23017_ADDR_BASE<<16)
```

Definition at line 64 of file Zmotor3.h.

6.2.2.35 PIN_MOTOR3_IO_0

```
#define PIN_MOTOR3_IO_0 (MCP23017_GPB1 | MCP23017_ADDR_BASE<<16)
```

Definition at line 48 of file Zmotor3.h.

6.2.2.36 PIN_MOTOR3_IO_1

```
#define PIN_MOTOR3_IO_1 (MCP23017_GPB3 | MCP23017_ADDR_BASE<<16)
```

Definition at line 49 of file Zmotor3.h.

6.2.2.37 PIN_MOTOR3_IO_2

```
#define PIN_MOTOR3_IO_2 (MCP23017_GPB5 | MCP23017_ADDR_BASE<<16)
```

Definition at line 50 of file Zmotor3.h.

6.2.2.38 PIN_MOTOR3_IO_3

```
#define PIN_MOTOR3_IO_3 (MCP23017_GPB7 | MCP23017_ADDR_BASE<<16)
```

Definition at line 51 of file Zmotor3.h.

6.2.2.39 PIN_MOTOR3_IO_4

```
#define PIN_MOTOR3_IO_4 (MCP23017_GPA1 | MCP23017_ADDR_BASE<<16)
```

Definition at line 52 of file Zmotor3.h.

6.2.2.40 PIN_MOTOR3_IO_5

```
#define PIN_MOTOR3_IO_5 (MCP23017_GPA3 | MCP23017_ADDR_BASE<<16)
```

Definition at line 53 of file Zmotor3.h.

6.2.2.41 PIN_MOTOR3_IO_6

```
#define PIN_MOTOR3_IO_6 (MCP23017_GPA5 | MCP23017_ADDR_BASE<<16)
```

Definition at line 54 of file Zmotor3.h.

6.2.2.42 PIN_MOTOR3_IO_7

```
#define PIN_MOTOR3_IO_7 (MCP23017_GPA7 | MCP23017_ADDR_BASE<<16)
```

Definition at line 55 of file Zmotor3.h.

6.2.2.43 PIN_MOTOR3_PWM_0

```
#define PIN_MOTOR3_PWM_0 (PCA9685_LED3 | PCA9685_ADDR_BASE<<16)
```

Definition at line 66 of file Zmotor3.h.

6.2.2.44 PIN_MOTOR3_PWM_1

```
#define PIN_MOTOR3_PWM_1 (PCA9685_LED2 | PCA9685_ADDR_BASE<<16)
```

Definition at line 67 of file Zmotor3.h.

6.2.2.45 PIN_MOTOR3_PWM_2

```
#define PIN_MOTOR3_PWM_2 (PCA9685_LED1 | PCA9685_ADDR_BASE<<16)
```

Definition at line 68 of file Zmotor3.h.

6.2.2.46 PIN_MOTOR3_PWM_3

```
#define PIN_MOTOR3_PWM_3 (PCA9685_LED0 | PCA9685_ADDR_BASE<<16)
```

Definition at line 69 of file Zmotor3.h.

6.2.2.47 PIN_MOTOR3_PWM_4

```
#define PIN_MOTOR3_PWM_4 (PCA9685_LED4 | PCA9685_ADDR_BASE<<16)
```

Definition at line 70 of file Zmotor3.h.

6.2.2.48 PIN_MOTOR3_PWM_5

```
#define PIN_MOTOR3_PWM_5 (PCA9685_LED5 | PCA9685\_ADDR\_BASE<<16)
```

Definition at line 71 of file Zmotor3.h.

6.2.2.49 PIN_MOTOR3_PWM_6

```
#define PIN_MOTOR3_PWM_6 (PCA9685_LED6 | PCA9685\_ADDR\_BASE<<16)
```

Definition at line 72 of file Zmotor3.h.

6.2.2.50 PIN_MOTOR3_PWM_7

```
#define PIN_MOTOR3_PWM_7 (PCA9685_LED7 | PCA9685\_ADDR\_BASE<<16)
```

Definition at line 73 of file Zmotor3.h.

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