# Erriez LCD Keypad Shield library for Arduino

1.1.0

Generated by Doxygen 1.8.13

# Contents

# Chapter 1

# Erriez LCD Keypad Shield library for Arduino

This is a LCD Keypad Shield library for Arduino which supports the following features:

- 2x16 LCD using `LiquidCrystal.h`.
- 5 pushbuttons connected to analog pin A0.
- Button debouncing.
- Backlight control (on/off).

### Hardware

Any Arduino board, tested on Arduino UNO.

#### Pins

| 2x16 LCD pins | UNO/Leonardo/Mega2560 |
|---|---|
| RS | 8 |
| EN | 9 |
| D0 | 4 |
| D1 | 5 |
| D2 | 6 |
| D3 | 7 |
| Backlight | 10 |

### Example

Arduion IDE | Examples | Erriez LCDKeypadShield:

- `LCDKeypadShield`

## Documentation

- Online HTML
- Download PDF

## Usage

### Initialization

```
{c++}
#include <ErriezLCDKeypadShield.h>

LCDKeypadShield shield;
```

#### Backlight control

### Backlight on

```
{c++}
shield.backlightOn();
```

### Backlight off

```
{c++}
shield.backlightOff();
```

#### Display control

All `LCDKeypadShield.h` functions can be used.

### Clear display

```
{c++}
shield.clear();
```

### Set cursor

```
{c++}
// First character first line
shield.setCursor(0, 0);

// First character second line
shield.setCursor(0, 1);

// Last character second line
shield.setCursor(15, 1);
```

### Print text

```
{c++}
shield.print(F("Push the buttons"));
```

Button control

### Get buttons

```
{c++}
LCDButtons button = shield.getButtons();
// Returned button enum:
//   ButtonNone
//   ButtonRight
//   ButtonUp
//   ButtonDown
//   ButtonLeft
//   ButtonSelect
```

### Improve response

The resistors may be different for each board to read the analog key value. To improve response, experiment by updating the analogKey values in: `src\ErriezLCDKeypadShield.cpp`:

```
{c++}
if (analogKey < 50) { /* <= Incread/decrease value 50 */
    key = ButtonRight;
} else if (analogKey < 200) { /* <= Incread/decrease value 200 */
    key = ButtonUp;
} else if (analogKey < 350) { /* <= Incread/decrease value 350 */
    key = ButtonDown;
} else if (analogKey < 500) { /* <= Incread/decrease value 500 */
    key = ButtonLeft;
} else if (analogKey < 750) { /* <= Incread/decrease value 750 */
    key = ButtonSelect;
} else {
    key = ButtonNone;
}
```

## Library dependencies

- Arduino's build-in `LiquidCrystal` library.

## Library installation

Please refer to the `Wiki` page.

## Other Arduino Libraries and Sketches from Erriez

- `Erriez Libraries and Sketches`

# Chapter 2

# Hierarchical Index

## 2.1 Class Hierarchy

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

# Chapter 3

# Class Index

## 3.1 Class List

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

# Chapter 4

# File Index

## 4.1 File List

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

# Chapter 5

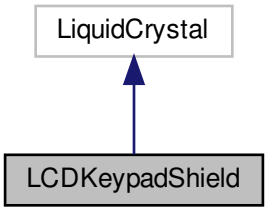
# Class Documentation

## 5.1 LCDKeypadShield Class Reference

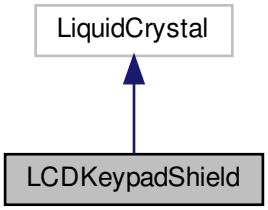
LCD Keypad Shield class.

`#include <ErriezLCDKeypadShield.h>`

Inheritance diagram for LCDKeypadShield:




Collaboration diagram for LCDKeypadShield:



### Public Member Functions

- LCDKeypadShield ()
  *Constructor LCDKeypadShield class.*
- LCDButton getButtons ()
  *Read buttons from one analog pin.*
- void backlightOn ()
  *Turn backlight LED on.*
- void backlightOff ()
  *Turn backlight LED off.*

## 5.1.1 Detailed Description

LCD Keypad Shield class.

Definition at line 71 of file ErriezLCDKeypadShield.h.

## 5.1.2 Constructor & Destructor Documentation

#### 5.1.2.1 LCDKeypadShield()

```
LCDKeypadShield::LCDKeypadShield ( )
```

Constructor LCDKeypadShield class.

This initializes the built-in LiquidCrystal library in 4-bit mode:

- RS, EN, D0, D1, D2 and D3 pins

Definition at line 47 of file ErriezLCDKeypadShield.cpp.

## 5.1.3 Member Function Documentation

#### 5.1.3.1 getButtons()

```
LCDButton LCDKeypadShield::getButtons ( )
```

Read buttons from one analog pin.

**Returns**

LCDButton enum

Definition at line 66 of file ErriezLCDKeypadShield.cpp.

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

- src/ErriezLCDKeypadShield.h
- src/ErriezLCDKeypadShield.cpp

# Chapter 6

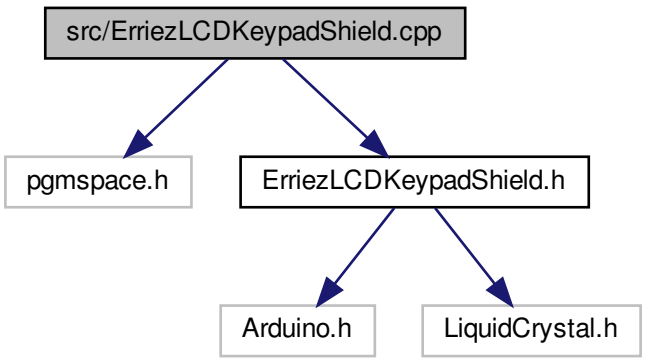
# File Documentation

## 6.1 src/ErriezLCDKeypadShield.cpp File Reference

LCD Keypad Shield library for Arduino.

```
#include <pgmspace.h>
#include "ErriezLCDKeypadShield.h"
```

Include dependency graph for ErriezLCDKeypadShield.cpp:




### 6.1.1 Detailed Description

LCD Keypad Shield library for Arduino.

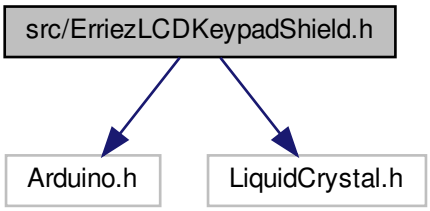
Source: https://github.com/Erriez/ErriezLCDKeypadShield Documentation: https://erriez.github.io/ErriezLCDKeypadShield

## 6.2 src/ErriezLCDKeypadShield.h File Reference

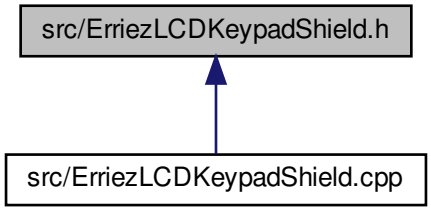
LCD Keypad Shield library for Arduino.

```
#include <Arduino.h>
#include <LiquidCrystal.h>
```

Include dependency graph for ErriezLCDKeypadShield.h:




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




### Classes

- class LCDKeypadShield

  *LCD Keypad Shield class.*

### Macros

- #define LCD_PIN_RS 8

  *LCD RS pin.*
- #define LCD_PIN_EN 9

  *LCD EN pin.*
- #define LCD_PIN_D0 4

  *LCD D0 pin.*

- #define LCD_PIN_D1 5

  *LCD D1 pin.*
- #define LCD_PIN_D2 6

  *LCD D2 pin.*
- #define LCD_PIN_D3 7

  *LCD D3 pin.*
- #define LCD_BACK_LIGHT_PIN 10

  *LCD backlight pin.*

### Enumerations

- enum LCDButton {
  **ButtonNone** = 0, **ButtonRight** = 1, **ButtonUp** = 2, **ButtonDown** = 3,
  **ButtonLeft** = 4, **ButtonSelect** = 5 }

  *LCD buttons.*

#### 6.2.1 Detailed Description

LCD Keypad Shield library for Arduino.

Source: https://github.com/Erriez/ErriezLCDKeypadShield Documentation: https://erriez.github.io/ErriezLCDKeypadShield

# Index