

ladder package

Aurélien CADIOU
contact@aueliencadiou.fr

May 17, 2017

Contents

1	Installation	1
2	Dependencies	1
3	Usage	2
3.1	Package	2
3.2	Net	2
3.3	Contacts	2
3.4	Coils	2
4	Simple example	2
4.1	Preview	2
4.2	Code	2
5	Parallel section	3
5.1	Preview	3
5.2	Code	3
6	Complete example	3
6.1	Preview	3
6.2	Code	3

Introduction

This package permit the creation of simple ladder diagram into TeX documents.
Github repository : [tex-ladder](#)

1 Installation

Install this package like any other L^AT_EX package.

2 Dependencies

This package depends on :

- tikz
- ifthen
- calc

3 Usage

3.1 Package

Add following packages on your document : `\usepackage{tikz}` `\usepackage{ladder}`.

3.2 Net

All contacts and relays are, by default, added in serie.

- `\ladderLine` begin a new ladder net
- `\startParallel` begin a parallel segment
- `\setParallel` begin the new parallel segment
- `\unsetParallel` end of the parallel segment

3.3 Contacts

type of contacts may be any letter. Conventionnaly, we use P for rising edge contact and N for falling edge contact.

- `\ladderNO[type]{name}{mnemonic}` Normally Opened contact
- `\ladderNC[type]{name}{mnemonic}` Normaly Closed contact

3.4 Coils

type of coils may be any letter. Conventionnaly, we use R for reset coil, S for set coil.

- `\ladderC[type]{name}{mnemonic}` a coil

4 Simple example

4.1 Preview

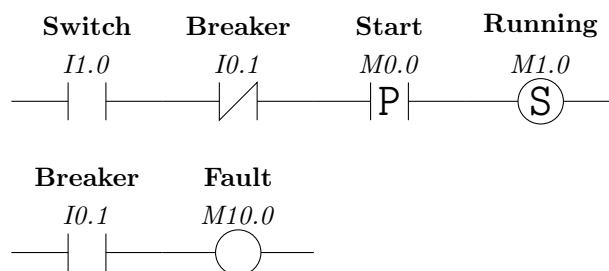


Figure 1: Example with contacts and coil

4.2 Code

Code of figure 1.

```
\begin{tikzpicture}
\ladderLine
\ladderNO{Switch}{I1.0}
\ladderNC{Breaker}{I0.1}
\ladderNO[P]{Start}{M0.0}
\ladderC[S]{Running}{M1.0}
```

```

\ladderLine
\ladderNO{Breaker}{I0.1}
\ladderC{Fault}{M10.0}
\end{tikzpicture}

```

5 Parallel section

5.1 Preview

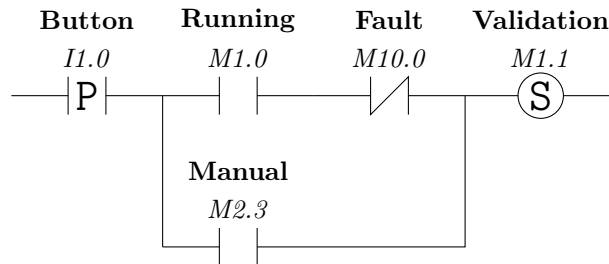


Figure 2: Example with parallel section

5.2 Code

Code of figure 2.

```

\begin{tikzpicture}
\ladderLine
\ladderNO[P]{Button}{I1.0}

\startParallel % Begin of section
\ladderNO{Running}{M1.0}
\ladderNC{Fault}{M10.0}

\setParallel
\ladderNO{Manual}{M2.3}
\unsetParallel

\ladderC[S]{Validation}{M1.1}
\end{tikzpicture}

```

6 Complete example

6.1 Preview

6.2 Code

Code of figure 3.

```

\begin{figure}
\begin{tikzpicture}
\ladderLine % Beginning new line
\ladderNO{bla}{I1.0}

% M0 will be in parallel with I1.0 and I1.1
\startParallel
\ladderNC{bli}{M0.0}

\setParallel
\ladderNO{blou}{I1.0}
\ladderNO{blo}{I1.1}
\unsetParallel

```

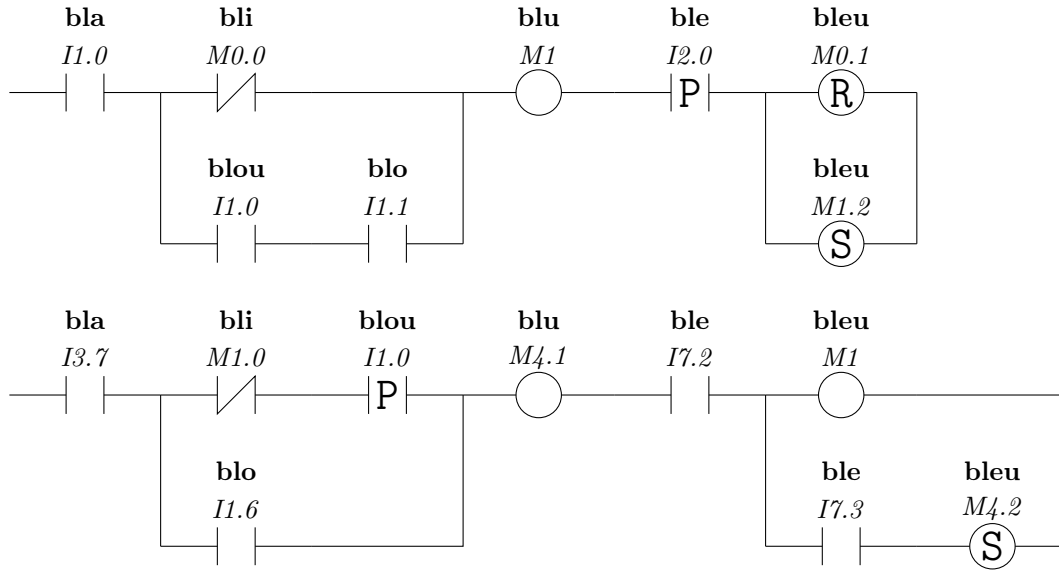


Figure 3: Example of ladder package usage

```

\ladderC{blu}{M1} % On met une "bobine"
\ladderNO[P]{ble}{I2.0}

\startParallel
\ladderC[R]{bleu}{M0.1}
\setParallel
  \ladderC[S]{bleu}{M1.2}
\unsetParallel

% New section
\ladderLine

\ladderNO{bla}{I3.7}

\startParallel
\ladderNC{bli}{M1.0}
\ladderNO[P]{blou}{I1.0}

\setParallel
  \ladderNO{blo}{I1.6}
\unsetParallel

\ladderC{blu}{M4.1}

\ladderNO{ble}{I7.2}

\startParallel
\ladderC{bleu}{M1}{R}

\setParallel
  \ladderNO{ble}{I7.3}
  \ladderC[S]{bleu}{M4.2}
\unsetParallel
\end{tikzpicture}
\caption{Example of ladder package usage}
\end{figure}

```