

ladder package

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May 17, 2017

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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

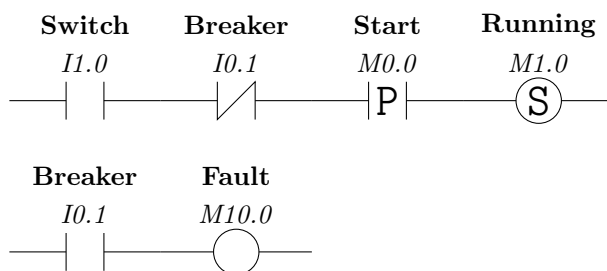


Figure 1: Example with contacts and coil

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

5.2 Code

Code of figure 2.

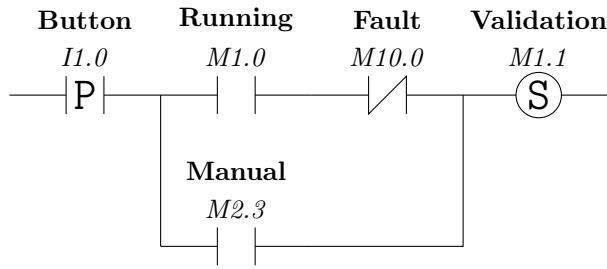


Figure 2: Example with parallel section

```

\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

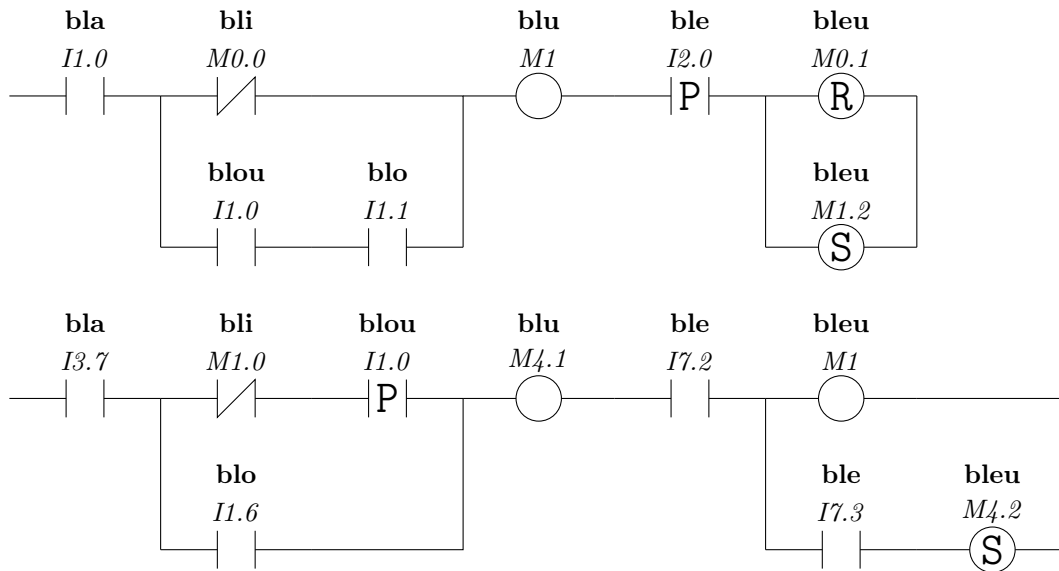


Figure 3: Example of ladder package usage

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

\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}

```