ladder package

Aurélien CADIOU
contact@aureliencadiou.fr

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Contents

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 LaTeX 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

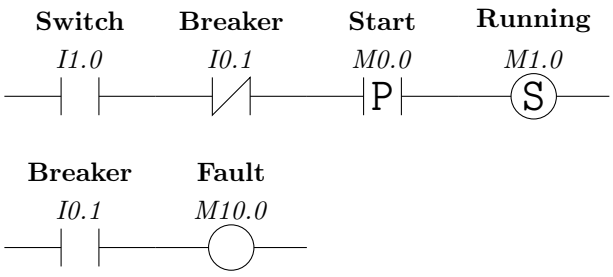

Figure 1: Example with contacts and coil

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

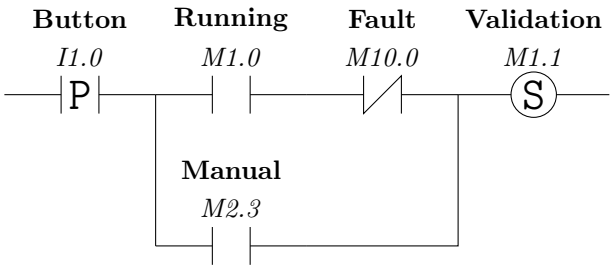

Figure 2: Example with parallel section

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 % Begenning 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
```

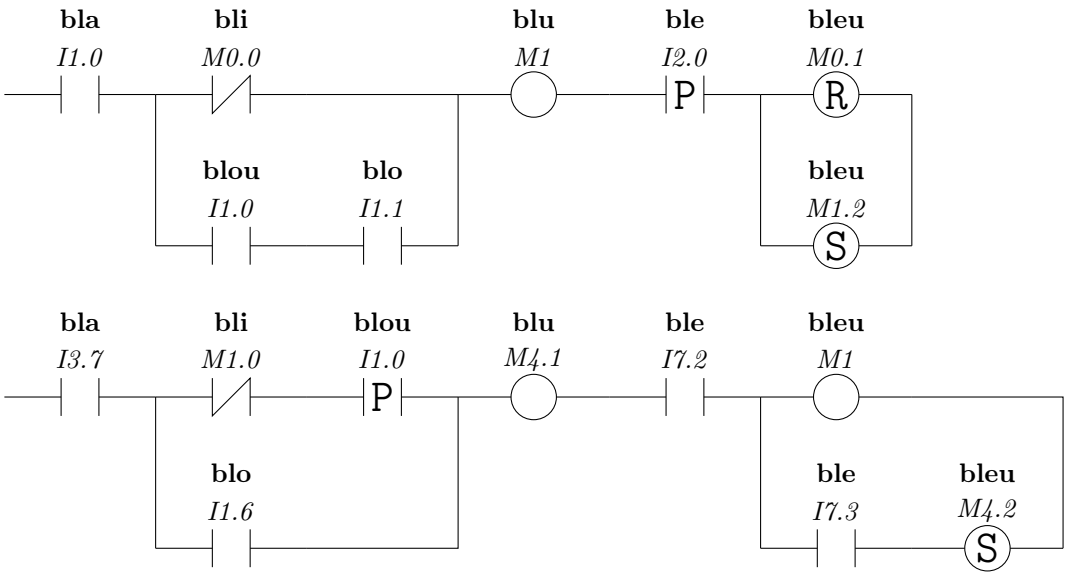

Figure 3: Example of ladder package usage

```
    \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}
```