

# {TikZ-trackschematic}

A TikZ library for track schematics

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## 1. Introduction

### 1.1. About tikz-trackschematic

The *TikZ-trackschematic* library is a toolbox of symbols geared primarily towards creating track schematic for either research or educational purposes. It provides a *TikZ* frontend to some of the symbols which maybe needed to describe situations and layouts in railway operation. The library is divided into four sublibraries: `topology`, `trafficcontrol`, `vehicles`, `constructions`, and `messures`.

### 1.2. Acknowledgement

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 826347.

### 1.3. Requirements

The library uses *TikZ* and it is based the following packages: `tikz`, `lmodern`, `xcolor`, and `etoolbox`. Further more it uses the following *TikZ* libraries: `calc`, `intersections`, `patterns`, and `arrows.meta`.

### 1.4. License

Copyright (c) 2018 - 2020, Martin Scheidt. Permission to use, copy, modify, and/or distribute this file for any purpose with or without fee is hereby granted, provided that the above copyright notice and this permission notice appear in all copies ([ISC license](#)).

### 1.5. Alternatives

Apart from this library, there is also a [Signalschablone](#) with german (Deutsche Bahn) symbols for MS Visio.

## 2. Usage

### 2.1. A complete minimal example

The command `\usetikzlibrary{trackschematic}` will load the library; place it somewhere in your preamble. Here is a complete working minimal example which will produce a single PDF file with the figure on the right:

```
\documentclass[tikz]{standalone}

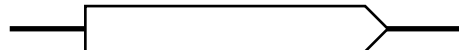
% loading the library
\usetikzlibrary{trackschematic}

\begin{document}
\begin{tikzpicture}

% draw a track
\maintrack (0,0) -- (6,0);

% place a train on the track
\train[forward] at (5,0) label ();

\end{tikzpicture}
\end{document}
```



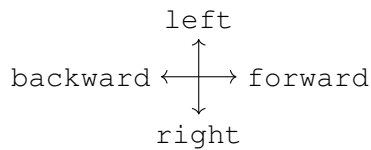
## 2.2. Placement

To place symbols in a track schematic, they need to be placed and oriented correctly. The placement is done through the given TikZ coordinate. There are a few assumptions made about the placement:

1. Parallel tracks are drawn at a distance of 1 cm (which is the base unit of TikZ).
2. Tracks are only drawn at an angle of  $n \cdot 45^\circ$ .

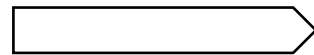
## 2.3. Orientation system

The orientation is controlled via given TikZ options or pgfkey. The orientation options/pgfkeys are named in relation to orientation-based coordinates, which inhibit their meaning from reading left to right being forward and relate left/right to that movement.

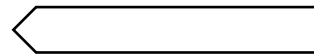


The main option/pgfkey is the `face` option to control in which direction an object will face. The key can take one of the following two values: `forward`, and `backward`.

```
\train[face=forward ] at (coordinate) label ();
```



```
\train[face=backward] at (coordinate) label ();
```



As a shortcut you may also just give the option `forward` or `backward` without the `face=` in front of it. If you have objects which branch either to the left or the right you have to give the `branch` option which takes one of the following two values: `left`, and `right`.

```
\turnout[forward ,branch=left ] at (coordinate) label ();
```



```
\turnout[forward ,branch=right] at (coordinate) label ();
```



```
\turnout[backward,branch=left ] at (coordinate) label ();
```



```
\turnout[backward,branch=right] at (coordinate) label ();
```



There is no shortcut and the key `branch=` must be given contrary to the key `face=`.

## 2.4. Left- and right-hand traffic

The traffic practice to divide bidirectional traffic has impact mostly on traffic control. The default traffic practice for this library is right-hand traffic. You can change it either globally or locally with

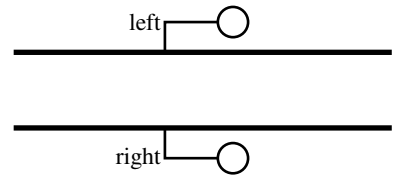
the key `traffic practice=left`. There is also the alias `position` for single local entries.

```
\documentclass [tikz] {standalone}

% load the library
\usetikzlibrary {trackschematic}

\begin {document}
\begin {tikzpicture}
% set the traffic practice
\tikzset {traffic practice=left}

\maintrack (0,1) -- (5,1);
\maintrack (0,0) -- (5,0);
\routesignal [forward] at (2,1) label (left);
\routesignal [forward,position=right] at (2,0) label (right);
\end {tikzpicture}
\end {document}
```



## 2.5. Colors: background and foreground

The two main colors `white` and `black` are set for the `background` and `foreground` keys by default. If you want to change them, provide a new value for the keys. For example like this:

```
\documentclass [tikz] {standalone}

% load the library
\usetikzlibrary {trackschematic}

\begin {document}
\begin {tikzpicture}
% set the colors
\tikzset {background=lightgray,foreground=violet}

\maintrack (0,0) -- (6,0);
\train [forward] at (5,0) label (grey train);
\end {tikzpicture}
\end {document}
```



## 3. Provided Symbols and their commands

Each sublibrary provides different symbols. The following section will go through each symbol their command and options.

### 3.1. Topology

#### 3.1.1. Tracks

Drawing a track follows the same principal as drawing a line in TikZ. There are two generell options of track with different commands: `main` tracks, and `secondary` tracks.

#### ► Main track



```
\maintrack (coord1) -- (coord2);
\maintrack (coord1) -- (coord2) -- (coord3) -- etc.;
```

No options available.

This command is equivalent to:

```
\path[draw=foreground,line width=2pt] (coord1) -- (coord2);
```

Beware of the placement assumption by the library (see Section 2.2).

### ► Secondary track

```
\secondarytrack (coord1) -- (coord2);
\secondarytrack (coord1) -- (coord2) -- (coord3) -- etc.;
```

For the secondary track you may also use the following alias:

```
\sidetrack (coord1) -- (coord2);
```

No options available.

The command is equivalent to:

```
\path[draw=foreground,line width=0.7pt] (coord1) -- (coord2);
```

Beware of the placement assumption by the library (see Section 2.2).

### ► Track number or track label

————— No. —————

```
\tracklabel at (coord) label (number);
```

No options available.

This command is equivalent to:

```
\node[fill=background,text=foreground] at (coord) {number};
```

### ► Buffer stops

————— ]                      ————— [•

```
\bufferstop[options] at (coord);
```

values for options (comma separated):

forward or backward (mandatory)

friction=*length unit* (optional)

foreground=*color* (optional, default: black)

► **Track closures**



```
\trackclosure at (coord);
```

No options available.

**3.1.2. Turnouts and similar**

► **Turnouts**



```
\turnout[options] at (coord) label (name);
```

values for options (comma seperated):

forward or backward (mandatory)

branch=left or branch=right (mandatory)

operation>manual (optional)

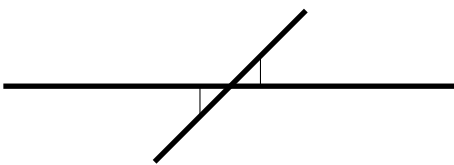
fouling point (optional)

points=left or points=right (optional)

shift label={ (label-coord) } (optional, default: (0,0))

foreground=color (optional, default: black)

► **Diamond crossings**



```
\crossing[options] at (coord) label (name);
```

values for options (comma seperated):

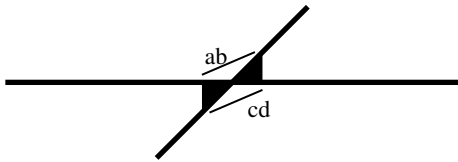
branch=left or branch=right (mandatory)

fouling point (optional)

shift label={ (label-coord) } (optional, default: (0,0))

foreground=color (optional, default: black)

► **Slip switches or slip turnouts**

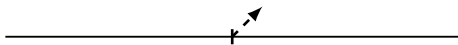


```
\slipturnout[options] at (coord) label (name1) (name2);
```

values for options (comma seperated):

- branch=left or branch=right (mandatory)
- slip=double (default), slip=none, slip=left or slip=right (mandatory)
- operation>manual (optional)
- fouling point (optional)
- forward points=left or forward points=right (optional)
- backward points=left or backward points=right (optional)
- shift label={ (label-coord) } (optional, default: (0,0))
- foreground=color (optional, default: black)

► **Derailers**



```
\derailer[options] at (coord) label (name);
```

values for options (comma seperated):

- forward or backward (mandatory)
- branch=left or branch=right (mandatory)
- shift label={ (label-coord) } (optional, default: (0,0))
- foreground=color (optional, default: black)

**3.2. Vehicles**

► **Parked vehicles**



```
\parkedvehicles[options] at (coord) label (name);
```

values for options (comma seperated):

- length=length unit (optional, default 4cm)

label at={ (*label-coord*) } (optional, default: *center*)

label align=left or label align=right (optional, default: center)

foreground=*color* (optional, default: black)

background=*color* (optional, default: white)

The value for (*label-coord*) is relative to (*coord*). An absolute (*label-coord*) can be specified with the TikZ \coordinate command.

### ► Shunting movements



```
\shunting[options] at (coord) label (name);
```

values for options (comma separated):

movement (optional)

forward or backward (mandatory)

length=*length unit* (optional, default 4cm)

operation=manual or operation=automatic (optional)

bend left at={ (*bend-coord*) } (optional, default: *none*)

bend right at={ (*bend-coord*) } (optional, default: *none*)

label at={ (*label-coord*) } (optional, default: *center*)

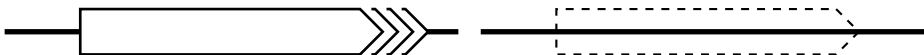
label align=left or label align=right (optional, default: center)

foreground=*color* (optional, default: black)

background=*color* (optional, default: white)

The value for (*label-coord*) and (*bend-coord*) is relative to (*coord*). An absolute (*label-coord*) or (*bend-coord*) can be specified with the TikZ \coordinate command.

### ► Train runs



```
\train[options] at (coord) label (name);
```

values for options (comma separated):

run=slow, run=normal or run=fast (optional)

forward or backward (mandatory)



length=*length unit* (optional, default 4cm)  
 operation=manual or operation=automatic (optional)  
 ghost (optional)  
 bend left at={ (*bend-coord*) } (optional, default: none)  
 bend right at={ (*bend-coord*) } (optional, default: none)  
 shift label={ (*label-coord*) } (optional, default: (0,0))  
 label align=left or label align=right (optional, default: center)  
 foreground=*color* (optional, default: black)  
 background=*color* (optional, default: white)

The value for (*label-coord*) and (*bend-coord*) is relative to (*coord*). An absolute (*label-coord*) or (*bend-coord*) can be specified with the TikZ `\coordinate` command.

### 3.3. Traffic control

#### 3.3.1. Stationary signals

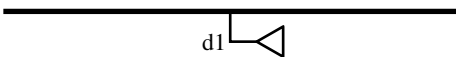
##### ► Generic signal command

```
\signal[options] at (coord) label (name);
```

values for options (comma seperated):

at least one of the following: distant, speed type, block, route, shunt limit, shunting and/or berth  
 forward or backward (mandatory)  
 speed=*value* (optional)  
 distant speed=*value* (optional)  
 locked=false (default) or locked=true (optional)  
 position=left or position=right (optional, default: *traffic practice*)  
 shift label={ (*label-coord*) } (optional, default: (0,0))  
 foreground=*color* (optional, default: black)

##### ► Distant signal



```
\distantsignal[options] at (coord) label (name);
```

values for options (comma seperated):

forward or backward (mandatory)

distant speed=*value* (optional)

position=left or position=right (optional, default: *traffic practice*)

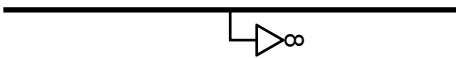
shift label={ (*label-coord*) } (optional, default: (0,0))

foreground=*color* (optional, default: black)

This command is equivalent to:

```
\signal[distant,options] at (coord) label (name);
```

### ► Speed signal/sign



```
\speedsignal[options] at (coord) label (name);
```

For the speed signal you may also use the following alias:

```
\speedsign[options] at (coord) label (name);
```

values for options (comma seperated):

forward or backward (mandatory)

speed=*value* (optional)

position=left or position=right (optional, default: *traffic practice*)

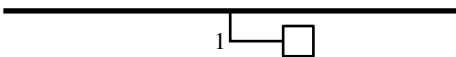
shift label={ (*label-coord*) } (optional, default: (0,0))

foreground=*color* (optional, default: black)

This command is equivalent to:

```
\signal[speed type,options] at (coord) label (name);
```

### ► Block signal



```
\blocksignal[options] at (coord) label (name);
```

values for options (comma seperated):

forward or backward (mandatory)

speed=*value* (optional)

position=left or position=right (optional, default: *traffic practice*)

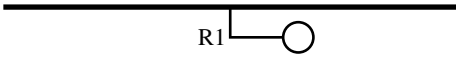
shift label={ (*label-coord*) } (optional, default: (0,0))

foreground=*color* (optional, default: black)

This command is equivalent to:

```
\signal[block,options] at (coord) label (name);
```

### ► Route signal



```
\routesignal[options] at (coord) label (name);
```

values for options (comma seperated):

forward or backward (mandatory)

speed=*value* (optional)

locked=false (default) or locked=true (optional)

position=left or position=right (optional, default: *traffic practice*)

shift label={ (*label-coord*) } (optional, default: (0,0))

foreground=*color* (optional, default: black)

This command is equivalent to:

```
\signal[route,options] at (coord) label (name);
```

### ► Shunting signal



```
\shuntsignal[options] at (coord) label (name);
```

values for options (comma seperated):

forward or backward (mandatory)

locked=false (default) or locked=true (optional)

position=left or position=right (optional, default: *traffic practice*)

shift label={ (*label-coord*) } (optional, default: (0,0))

foreground=*color* (optional, default: black)

This command is equivalent to:

```
\signal[shunting,options] at (coord) label (name);
```

► **Shunt limit**



```
\shuntlimit[options] at (coord) label (name);
```

values for options (comma seperated):

forward or backward (mandatory)

position=left or position=right (optional, default: *traffic practice*)

shift label={ (label-coord) } (optional, default: (0,0))

foreground=color (optional, default: black)

This command is equivalent to:

```
\signal[shunt limit,options] at (coord) label (name);
```

► **Berth signal/sign**



```
\berthsignal[options] at (coord) label (name);
```

For the speed signal you may also use the following alias:

```
\berthsign[options] at (coord) label (name);
```

values for options (comma seperated):

forward or backward (mandatory)

position=left or position=right (optional, default: *traffic practice*)

shift label={ (label-coord) } (optional, default: (0,0))

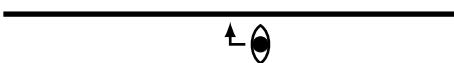
foreground=color (optional, default: black)

This command is equivalent to:

```
\signal[berth,options] at (coord) label (name);
```

**3.3.2. Non-stationary points**

► **View point**



```
\viewpoint[options] at (coord);
```

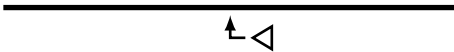
values for options (comma seperated):

forward or backward (mandatory)

position=left or position=right (optional, default: *traffic practice*)

foreground=*color* (optional, default: black)

► **Braking point**



```
\brakingpoint[options] at (coord) label (name);
```

values for options (comma seperated):

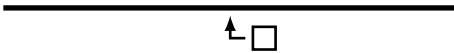
forward, backward or bidirectional (mandatory)

position=left or position=right (optional, default: *traffic practice*)

shift label={ (*label-coord*) } (optional, default: (0,0))

foreground=*color* (optional, default: black)

► **End of movement authority**



```
\movementauthority[options] at (coord) label (name);
```

values for options (comma seperated):

forward, backward or bidirectional (mandatory)

position=left or position=right (optional, default: *traffic practice*)

shift label={ (*label-coord*) } (optional, default: (0,0))

foreground=*color* (optional, default: black)

► **Danger point**



```
\dangerpoint[options] at (coord) label (name);
```

values for options (comma seperated):

forward, backward or bidirectional (mandatory)

position=left or position=right (optional, default: *traffic practice*)

shift label={ (*label-coord*) } (optional, default: (0,0))

foreground=*color* (optional, default: black)

### 3.3.3. Clearing points

#### ► Generic clearing point

```
\clearingpoint[options] at (coord) label (name);
```

values for options (comma seperated):

at least one of the following: standard, block and/or route

forward (default) or backward (optional)

position=left or position=right (optional, default: *traffic practice*)

shift label={ (*label-coord*) } (optional, default: (0,0))

foreground=*color* (optional, default: black)

#### ► Standard clearing point



```
\standardclearing[options] at (coord) label (name);
```

values for options (comma seperated):

forward (default) or backward (optional)

position=left or position=right (optional, default: *traffic practice*)

shift label={ (*label-coord*) } (optional, default: (0,0))

foreground=*color* (optional, default: black)

This command is equivalent to:

```
\clearingpoint[standard,options] at (coord) label (name);
```

#### ► Block clearing point



```
\blockclearing[options] at (coord) label (name);
```

values for options (comma seperated):

forward (default) or backward (optional)

position=left or position=right (optional, default: *traffic practice*)

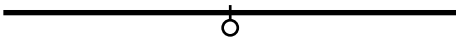
shift label={ (*label-coord*) } (optional, default: (0,0))

foreground=*color* (optional, default: black)

This command is equivalent to:

```
\clearingpoint[block,options] at (coord) label (name);
```

### ► Route clearing point



```
\routeclearing[options] at (coord) label (name);
```

values for options (comma seperated):

forward (default) or backward (optional)

position=left or position=right (optional, default: *traffic practice*)

shift label={ (*label-coord*) } (optional, default: (0,0))

foreground=*color* (optional, default: black)

This command is equivalent to:

```
\clearingpoint[route,options] at (coord) label (name);
```

### 3.3.4. Transmitters

#### ► Generic transmitter command

```
\transmitter[options] at (coord) label (name);
```

values for options (comma seperated):

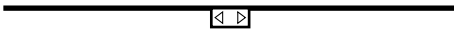
type=balise or type=loop (mandatory)

forward, backward or bidirectional (optional)

position=left or position=right (optional, default: *traffic practice*)

shift label={ (*label-coord*) } (optional, default: (0,0))

foreground=*color* (optional, default: black)

► **Balise**

```
\balise[options] at (coord) label (name);
```

values for options (comma seperated):

forward, backward or bidirectional (optional)

position=left or position=right (optional, default: *traffic practice*)

shift label={ (label-coord) } (optional, default: (0,0))

foreground=*color* (optional, default: black)

This command is equivalent to:

```
\transmitter[type=balise,options] at (coord) label (name);
```

► **Loop**

```
\trackloop[options] at (coord) label (name);
```

values for options (comma seperated):

position=left or position=right (optional, default: *traffic practice*)

shift label={ (label-coord) } (optional, default: (0,0))

foreground=*color* (optional, default: black)

This command is equivalent to:

```
\transmitter[type=loop,options] at (coord) label (name);
```

**3.3.5. Miscellaneous**► **Route**

```
\route[options] at (coord);
```

values for options (comma seperated):

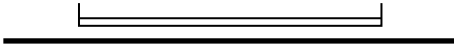
forward or backward (mandatory)

foreground=*color* (optional, default: black)



### 3.4. Constructions

#### ► Platform



```
\platform[options] at (coord);
```

values for options (comma seperated):

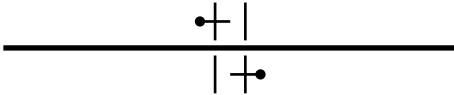
side=left, side=right or side=both (mandatory)

length=length unit (optional, default 4cm)

width=length unit (optional, default 0.5cm)

foreground=color (optional, default: black)

#### ► Level crossings



```
\levelcrossing[options] at (coord);
```

values for options (comma seperated):

barrier=none (default), barrier=semi or barrier=full (optional)

side=both (default), side=left or side=right (optional)

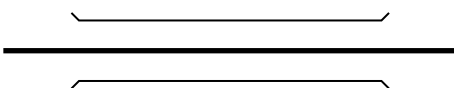
road width=length unit (optional, default 0.4cm)

width=length unit (optional, default 0.5cm)

no road (optional)

foreground=color (optional, default: black)

#### ► Bridge



```
\bridge[options] at (coord);
```

values for options (comma seperated):

length=length unit (optional, default 4cm)

width=length unit (optional, default 0.5cm)

shift left=length unit (optional, default 0cm)

`shift right=length unit` (optional, default 0cm)  
`side=both` (default), `side=left` or `side=right` (optional)  
`foreground=color` (optional, default: black)  
`background=color` (optional, default: white)  
`no background` (optional)

► **Interlocking**



```
\interlocking at (coord);
```

No options available.

► **Hump**

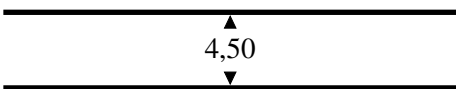


```
\hump at (coord);
```

No options available.

**3.5. Measures**

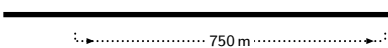
► **Track distance**



```
\trackdistance between (coord1) and (coord2) distance (value);
```

No options available.

► **Train berth**



```
\berth[options] at (coord) length (value);
```

values for options (comma seperated):

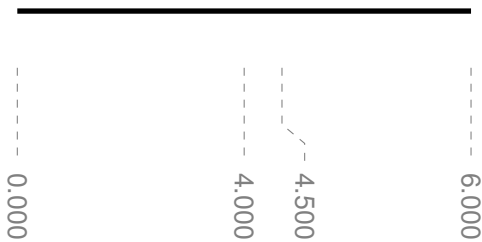
forward, backward or bidirectional (mandatory)

length=*length unit* (optional, default 4cm)

position=left or position=right (optional, default: *traffic practice*)

foreground=*color* (optional, default: black)

### ► Hectometer



```
\hectometer[options] at (coord) mileage (name);
```

values for options (comma seperated):

hectometer base={ (*base-coord*) } (mandatory)

orientation=left or orientation=right (mandatory)

shift label={ (*label-coord*) } (optional, default: (0,0))

hectometer color=*color* (optional, default: foreground!50!background)

The value for (*base-coord*) and (*label-coord*) is relative to (*coord*). An absolute (*base-coord*) or (*label-coord*) can be specified with the TikZ `\coordinate` command. Specify a common hectometer base and orientation if you have to place multiple hectometers, i.e. with: `\tikzset{hectometer base={ (base-coord) }, orientation=right};`

### ► Messure line

-----









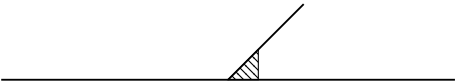
```
\messureline (coord1) -- (coord2);
\messureline (coord1) -- (coord2) -- (coord3) -- etc.;
```

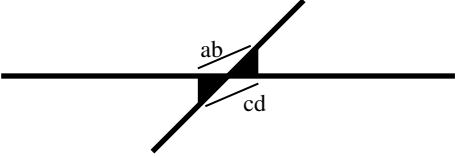
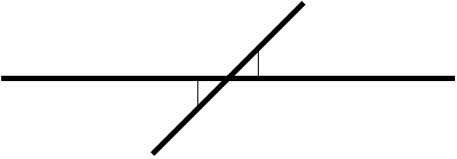
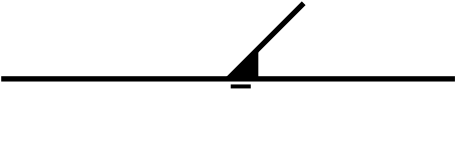
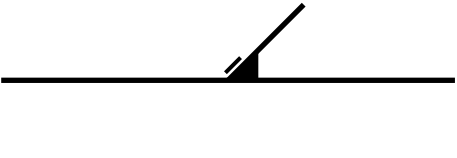
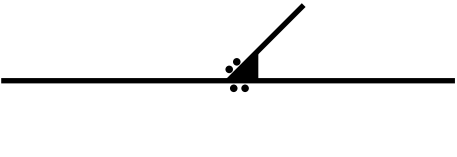
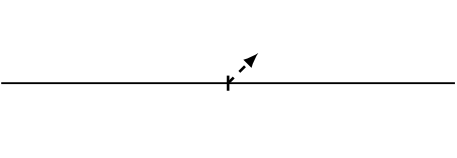
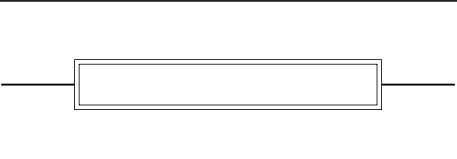
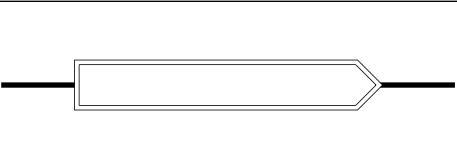
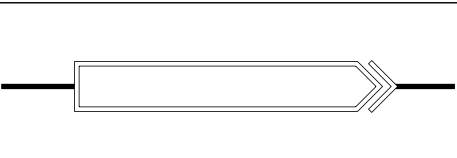
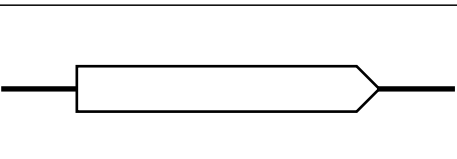
No options available.


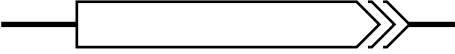
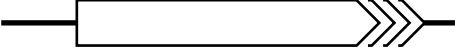
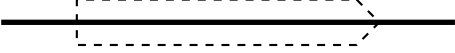

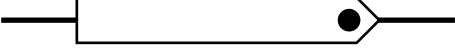
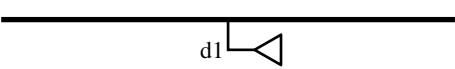
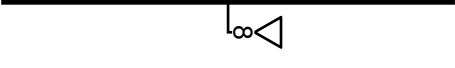
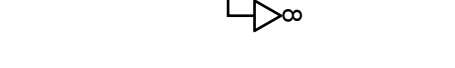
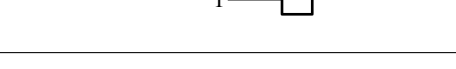
This command is equivalent to:

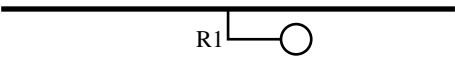
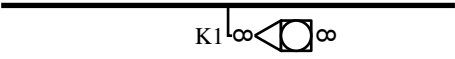








```
\path[draw=foreground!50!background,dashed,shorten <=0.75cm,shorten >=0.75cm] (coord1) -- (coord2);
```









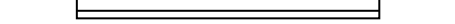
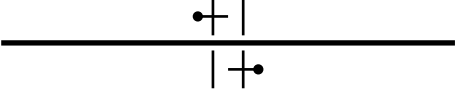
## A. Symbology

| No. | Name                                    | Symbol   | See section |
|-----|---|--|-------------|
| 1   | main track                              |    | 3.1.1       |
| 2   | secondary track                         |    | 3.1.1       |
| 3   | track number                            |    | 3.1.1       |
| 4   | bufferstop                              |     | 3.1.1       |
| 5   | friction bufferstop                     |   | 3.1.1       |
| 6   | track closure                           |   | 3.1.1       |
| 7   | turnout                                 |  | 3.1.2       |
| 8   | turnout<br>with fouling point indicator |  | 3.1.2       |
| 9   | turnout<br>operated manually            |  | 3.1.2       |

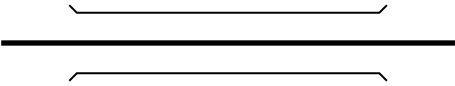


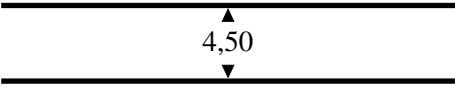
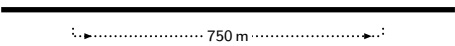


| No. | Name                                  | Symbol   | See section |
|-----|---------------------------------------|--|-------------|
| 10  | double-slip turnout                   |    | 3.1.2       |
| 11  | diamond crossing                      |    | 3.1.2       |
| 12  | turnout with points in right position |    | 3.1.2       |
| 13  | turnout with points in left position  |    | 3.1.2       |
| 14  | turnout with moving points            |   | 3.1.2       |
| 15  | derailer                              |  | 3.1.2       |
| 16  | parked vehicles                       |  | 3.2         |
| 17  | train in shunting mode                |  | 3.2         |
| 18  | train shunting                        |  | 3.2         |
| 19  | train                                 |  | 3.2         |

| No. | Name                                | Symbol   | See section |
|-----|-------------------------------------|--|-------------|
| 20  | train moving slow                   |    | 3.2         |
| 21  | train moving                        |    | 3.2         |
| 22  | train moving fast                   |    | 3.2         |
| 23  | train ghost                         |    | 3.2         |
| 24  | train operated automatic            |    | 3.2         |
| 25  | train operated by human             |  | 3.2         |
| 26  | distant signal                      |  | 3.3.1       |
| 27  | distant signal with speed indicator |  | 3.3.1       |
| 28  | speed signal                        |  | 3.3.1       |
| 29  | block signal                        |  | 3.3.1       |

| No. | Name   | Symbol   | See section |
|-----|--|--|-------------|
| 30  | route signal   |    | 3.3.1       |
| 31  | combined signal<br>(distant, block and route signal) |    | 3.3.1       |
| 32  | shunt signal   |    | 3.3.1       |
| 33  | shunt signal locked                                  |    | 3.3.1       |
| 34  | shunt limit  |    | 3.3.1       |
| 35  | train berth sign                                     |  | 3.3.1       |
| 36  | view point   |  | 3.3.2       |
| 37  | braking point  |  | 3.3.2       |
| 38  | end of movement authority                            |  | 3.3.2       |
| 39  | danger point   |  | 3.3.2       |

| No. | Name                          | Symbol   | See section |
|-----|-------------------------------|--|-------------|
| 40  | clearing point                |    | 3.3.3       |
| 41  | block clearing point          |    | 3.3.3       |
| 42  | route clearing point          |    | 3.3.3       |
| 43  | transmitter                   |    | 3.3.4       |
| 44  | transmitter effective forward |    | 3.3.4       |
| 45  | transmitter bidirectional     |  | 3.3.4       |
| 46  | loop transmitter              |  | 3.3.4       |
| 47  | route                         |  | 3.3.5       |
| 48  | platform                      |  | 3.4         |
| 49  | level crossing                |  | 3.4         |



| No. | Name                  | Symbol   | See section |
|-----|-----------------------|--|-------------|
| 50  | bridge                |    | 3.4         |
| 51  | hump                  |    | 3.4         |
| 52  | interlocking          |    | 3.4         |
| 53  | track distance (in m) |    | 3.5         |
| 54  | train berth shape     |    | 3.5         |
| 55  | hectometer            |  | 3.5         |
| 56  | Measure line          |  | 3.5         |

## B. Revision History

| Revision | Date       | Author(s) | Description   |
|----------|------------|-----------|---|
| 0.1      | 2018-09-14 | MS        | Basic concept of a library with railway topology symbols and some examples.               |
| 0.2      | 2018-12-19 | MS        | Added transmitters and minor improvements.  |
| 0.3      | 2019-04-04 | MS        | Moved snippet folder to root folder and defined and used color foreground and background. |
| 0.4      | 2019-07-21 | MS        | Reworked library for common tikz library layout.  |
| 0.5      | 2020-01-14 | MS        | Introducing new syntax and providing a documentation.                                     |

0.5.1      2020-02-10   MS

Modified symbol "end of movement authority"; added symbols "braking point" and "danger point".

Martin Scheidt (MS)