## Snippets

## Version 0.6.3 from 2022-02-15

| No. | Name                          | Clip        | Code  | Manual reference               |
|-----|-------------------------------|-------------|---|--------------------------------|
| 1   | main track                    |             | \coordinate (A) at (0,0);<br>\coordinate (B) at (6,0);<br>\maintrack (A) (B);   | topology<br>Section 3.2.1 p. 5 |
| 2   | main line (double track)      |             | \coordinate (A1) at (0,-0.5);<br>\coordinate (B1) at (6,-0.5);<br>\coordinate (A2) at (0, 0.5);<br>\coordinate (B2) at (6, 0.5);<br>\maintrack (A1) (B1);<br>\maintrack (A2) (B2);                      | topology<br>Section 3.2.1 p. 5 |
| 3   | secondary track               |             | \coordinate (A) at (0,0);<br>\coordinate (B) at (6,0);<br>\secondarytrack (A) (B);  | topology<br>Section 3.2.1 p. 6 |
| 4   | track number                  | No          | <pre>\coordinate (A) at (0,0);<br/>\coordinate (X) at (3,0);<br/>\coordinate (B) at (6,0);<br/>* order is important<br/>\maintrack (A) (B); * first<br/>\tracklabel at (X) label (No.); * secound</pre> | topology<br>Section 3.2.1 p. 6 |
| 5   | bufferstop (forward)          |             | \coordinate (A) at (0,0);<br>\coordinate (B) at (3,0);<br>\maintrack (A) (B);<br>\bufferstop[forward] at (B);   | topology<br>Section 3.2.1 p. 7 |
| 6   | bufferstop (backward)         | [           | <pre>\coordinate (A) at (3,0); \coordinate (B) at (6,0);  \maintrack (A) (B); \bufferstop[backward] at (A);</pre>   | topology<br>Section 3.2.1 p. 7 |
| 7   | friction bufferstop (forward) | <del></del> | \coordinate (A) at (0,0);<br>\coordinate (B) at (3,0);<br>\maintrack (A) (B);<br>\bufferstop[forward,friction=.5] at (B);   | topology<br>Section 3.2.1 p. 7 |

| No. | Name  | Clip | Code   | Manual reference               |
|-----|---|------|--|--------------------------------|
| 8   | friction bufferstop (backward)                          | • [  | <pre>\coordinate (A) at (3,0); \coordinate (B) at (6,0);  \maintrack (A) (B); \bufferstop[backward,friction=.5] at (A);</pre>  | topology<br>Section 3.2.1 p. 7 |
| 9   | track closure   |      | <pre>\coordinate (A) at (0,0); \coordinate (B) at (3,0); \maintrack (A) (B); \trackclosure at (B);</pre>   | topology<br>Section 3.2.1 p. 7 |
| 10  | turnout left (forward)                                  |      | <pre>\coordinate (A) at (0,0); \coordinate (Y) at (3,0); \coordinate (B) at (6,0);  \maintrack (A) (B); \maintrack (Y) ++(1,1); \turnout[forward,branch=left] at (Y) label ();</pre>                 | topology<br>Section 3.2.2 p. 7 |
| 11  | turnout left (backward)                                 |      | <pre>\coordinate (A) at (0,0); \coordinate (Y) at (3,0); \coordinate (B) at (6,0);  \maintrack (A) (B); \maintrack (Y) ++(-1,1); \turnout[backward,branch=left] at (Y) label ();</pre>               | topology<br>Section 3.2.2 p. 7 |
| 12  | turnout right (forward)                                 |      | <pre>\coordinate (A) at (0,0); \coordinate (Y) at (3,0); \coordinate (B) at (6,0);  \maintrack (A) (B); \maintrack (Y) ++(1,-1); \turnout[forward,branch=right] at (Y) label ();</pre>               | topology<br>Section 3.2.2 p. 7 |
| 13  | turnout right (backward)                                |      | <pre>\coordinate (A) at (0,0); \coordinate (Y) at (3,0); \coordinate (B) at (6,0);  \maintrack (A) (B); \maintrack (Y) ++(-1,-1); \turnout(backward,branch=right) at (Y) label ();</pre>             | topology<br>Section 3.2.2 p. 7 |
| 14  | turnout left (forward)<br>with fouling point indicator  |      | <pre>\coordinate (A) at (0,0); \coordinate (Y) at (3,0); \coordinate (B) at (6,0);  \maintrack (A) (B); \maintrack (Y) ++(1,1); \turnout[forward,branch=left,fouling point] at (Y) label ();</pre>   | topology<br>Section 3.2.2 p. 7 |
| 15  | turnout left (backward)<br>with fouling point indicator |      | <pre>\coordinate (A) at (0,0); \coordinate (Y) at (3,0); \coordinate (B) at (6,0);  \maintrack (A) (B); \maintrack (Y) ++(-1,1); \turnout[backward,branch=left,fouling point] at (Y) label ();</pre> | topology<br>Section 3.2.2 p. 7 |
| 16  | turnout right (forward)<br>with fouling point indicator |      | <pre>\coordinate (A) at (0,0); \coordinate (Y) at (3,0); \coordinate (B) at (6,0);  \maintrack (A) (B); \maintrack (Y) ++(1,-1); \turnout[forward,branch=right,fouling point] at (Y) label ();</pre> | topology<br>Section 3.2.2 p. 7 |

| No. | Name   | Clip | Code  | Manual reference               |
|-----|--|------|---|--------------------------------|
| 17  | turnout right (backward)<br>with fouling point indicator |      | <pre>\coordinate (A) at (0,0);<br/>\coordinate (Y) at (3,0);<br/>\coordinate (B) at (6,0);<br/>\maintrack (A) (B);<br/>\maintrack (Y) ++(-1,-1);<br/>\turnout[backward,branch=right,fouling point] at (Y) label ();</pre> | topology<br>Section 3.2.2 p. 7 |
| 18  | turnout left (forward) with points in right position     |      | <pre>\coordinate (A) at (0,0);<br/>\coordinate (Y) at (3,0);<br/>\coordinate (B) at (6,0);<br/>\maintrack (A) (B);<br/>\maintrack (Y) ++(1,1);<br/>\turnout[forward,branch=left,points=right] at (Y) label ();</pre>      | topology<br>Section 3.2.2 p. 7 |
| 19  | turnout left (forward) with points in left position      |      | <pre>\coordinate (A) at (0,0);<br/>\coordinate (Y) at (3,0);<br/>\coordinate (B) at (6,0);<br/>\maintrack (A) (B);<br/>\maintrack (Y) ++(1,1);<br/>\turnout[forward,branch=left,points=left] at (Y) label ();</pre>       | topology Section 3.2.2 p. 7    |
| 20  | turnout left (forward) with moving points                |      | <pre>\coordinate (A) at (0,0);<br/>\coordinate (Y) at (3,0);<br/>\coordinate (B) at (6,0);<br/>\maintrack (A) (B);<br/>\maintrack (Y) ++(1,1);<br/>\turnout[forward,branch=left,points=moving] at (Y) label ();</pre>     | topology<br>Section 3.2.2 p. 7 |
| 21  | turnout left (backward) with points in right position    |      | <pre>\coordinate (A) at (0,0); \coordinate (Y) at (3,0); \coordinate (B) at (6,0);  \maintrack (A) (B); \maintrack (Y) ++(-1,1); \turnout[backward,branch=left,points=right] at (Y) label ();</pre>                       | topology<br>Section 3.2.2 p. 7 |
| 22  | turnout left (backward) with points in left position     |      | <pre>\coordinate (A) at (0,0);<br/>\coordinate (Y) at (3,0);<br/>\coordinate (B) at (6,0);<br/>\maintrack (A) (B);<br/>\maintrack (Y) ++(-1,1);<br/>\turnout[backward,branch=left,points=left] at (Y) label ();</pre>     | topology<br>Section 3.2.2 p. 7 |
| 23  | turnout left (backward) with moving points               |      | <pre>\coordinate (A) at (0,0);<br/>\coordinate (Y) at (3,0);<br/>\coordinate (B) at (6,0);<br/>\maintrack (A) (B);<br/>\maintrack (Y) ++(-1,1);<br/>\turnout[backward,branch=left,points=moving] at (Y) label ();</pre>   | topology<br>Section 3.2.2 p. 7 |
| 24  | turnout right (forward)<br>with points in right position |      | <pre>\coordinate (A) at (0,0);<br/>\coordinate (Y) at (3,0);<br/>\coordinate (B) at (6,0);<br/>\maintrack (A) (B);<br/>\maintrack (Y) ++(1,-1);<br/>\turnout[forward,branch=right,points=right] at (Y) label ();</pre>    | topology<br>Section 3.2.2 p. 7 |
| 25  | turnout right (forward) with points in left position     |      | <pre>\coordinate (A) at (0,0);<br/>\coordinate (Y) at (3,0);<br/>\coordinate (B) at (6,0);<br/>\maintrack (A) (B);<br/>\maintrack (Y) ++(1,-1);<br/>\turnout[forward,branch=right,points=left] at (Y) label ();</pre>     | topology<br>Section 3.2.2 p. 7 |

| No. | Name  | Clip | Code   | Manual reference               |
|-----|---|------|--|--------------------------------|
| 26  | turnout right (forward) with moving points                |      | <pre>\coordinate (A) at (0,0);<br/>\coordinate (Y) at (3,0);<br/>\coordinate (B) at (6,0);<br/>\maintrack (A) (B);<br/>\maintrack (Y) ++(1,-1);<br/>\turnout[forward,branch=right,points=moving] at (Y) label ();</pre>                | topology<br>Section 3.2.2 p. 7 |
| 27  | turnout right (backward)<br>with points in right position |      | <pre>\coordinate (A) at (0,0);<br/>\coordinate (Y) at (3,0);<br/>\coordinate (B) at (6,0);<br/>\maintrack (A) (B);<br/>\maintrack (Y) ++(-1,-1);<br/>\turnout[backward,branch=right,points=right] at (Y) label ();</pre>               | topology<br>Section 3.2.2 p. 7 |
| 28  | turnout right (backward) with points in left position     |      | <pre>\coordinate (A) at (0,0);<br/>\coordinate (Y) at (3,0);<br/>\coordinate (B) at (6,0);<br/>\maintrack (A) (B);<br/>\maintrack (Y) ++(-1,-1);<br/>\turnout[backward,branch=right,points=left] at (Y) label ();</pre>                | topology<br>Section 3.2.2 p. 7 |
| 29  | turnout right (backward) with moving points               |      | <pre>\coordinate (A) at (0,0);<br/>\coordinate (Y) at (3,0);<br/>\coordinate (B) at (6,0);<br/>\maintrack (A) (B);<br/>\maintrack (Y) ++(-1,-1);<br/>\turnout[backward,branch=right,points=moving] at (Y) label ();</pre>              | topology<br>Section 3.2.2 p. 7 |
| 30  | turnout left (forward) operated manually                  |      | <pre>\coordinate (A) at (0,0);<br/>\coordinate (Y) at (3,0);<br/>\coordinate (B) at (6,0);<br/>\secondarytrack (A) (B);<br/>\secondarytrack (Y) ++(1,1);<br/>\turnout[forward,branch=left,operation=manual] at (Y) label ();</pre>     | topology<br>Section 3.2.2 p. 7 |
| 31  | turnout right (forward) operated manually                 |      | <pre>\coordinate (A) at (0,0);<br/>\coordinate (Y) at (3,0);<br/>\coordinate (B) at (6,0);<br/>\secondarytrack (A) (B);<br/>\secondarytrack (Y) ++(1,-1);<br/>\turnout[forward,branch=right,operation=manual] at (Y) label ();</pre>   | topology<br>Section 3.2.2 p. 7 |
| 32  | turnout left (backward) operated manually                 |      | <pre>\coordinate (A) at (0,0);<br/>\coordinate (Y) at (3,0);<br/>\coordinate (B) at (6,0);<br/>\secondarytrack (A) (B);<br/>\secondarytrack (Y) ++(-1,1);<br/>\turnout[backward,branch=left,operation=manual] at (Y) label ();</pre>   | topology<br>Section 3.2.2 p. 7 |
| 33  | turnout right (backward) operated manually                |      | <pre>\coordinate (A) at (0,0);<br/>\coordinate (Y) at (3,0);<br/>\coordinate (B) at (6,0);<br/>\secondarytrack (A) (B);<br/>\secondarytrack (Y) ++(-1,-1);<br/>\turnout[backward,branch=right,operation=manual] at (Y) label ();</pre> | topology<br>Section 3.2.2 p. 7 |
| 34  | double-slip turnout left                                  | ab   | \coordinate (A) at (0,0);<br>\coordinate (Y) at (3,0);<br>\coordinate (B) at (6,0);<br>\maintrack (A) (B);<br>\maintrack (Y) ++ (1, 1);<br>\maintrack (Y) ++ (-1,-1);<br>\slipturnout[branch=left] at (Y) label (ab) (cd);             | topology<br>Section 3.2.2 p. 8 |

| No. | Name                      | Clip     | Code   | Manual reference               |
|-----|---------------------------|----------|--|--------------------------------|
| 35  | double-slip turnout right | cd<br>ab | \coordinate (A) at (0,0);<br>\coordinate (Y) at (3,0);<br>\coordinate (B) at (6,0);<br>\maintrack (A) (B);<br>\maintrack (Y) ++(1,-1);<br>\maintrack (Y) ++(-1, 1);<br>\slipturnout[branch=right] at (Y) label (ab)(cd); | topology<br>Section 3.2.2 p. 8 |
| 36  | diamond crossing left     |          | \coordinate (A) at (0,0);<br>\coordinate (Y) at (3,0);<br>\coordinate (B) at (6,0);<br>\maintrack (A) (B);<br>\maintrack (Y) ++(1, 1);<br>\maintrack (Y) ++(-1,-1);<br>\crossing[branch=left] at (Y) label ();           | topology<br>Section 3.2.2 p. 8 |
| 37  | diamond crossing right    |          | \coordinate (A) at (0,0);<br>\coordinate (Y) at (3,0);<br>\coordinate (B) at (6,0);<br>\maintrack (A) (B);<br>\maintrack (Y) ++(1,-1);<br>\maintrack (Y) ++(-1, 1);<br>\crossing[branch=right] at (Y) label ();          | topology Section 3.2.2 p. 8    |
| 38  | derailer left (forward)   |          | <pre>\coordinate (A) at (0,0);<br/>\coordinate (Y) at (3,0);<br/>\coordinate (B) at (6,0);<br/>\secondarytrack (A) (B);<br/>\derailer[forward,branch=left] at (Y) label ();</pre>  | topology<br>Section 3.2.2 p. 9 |
| 39  | derailer left (backward)  |          | <pre>\coordinate (A) at (0,0);<br/>\coordinate (Y) at (3,0);<br/>\coordinate (B) at (6,0);<br/>\secondarytrack (A) (B);<br/>\derailer[backward,branch=left] at (Y) label ();</pre>                                       | topology Section 3.2.2 p. 9    |
| 40  | derailer right (forward)  |          | <pre>\coordinate (A) at (0,0);<br/>\coordinate (Y) at (3,0);<br/>\coordinate (B) at (6,0);<br/>\secondarytrack (A) (B);<br/>\derailer[forward,branch=right] at (Y) label ();</pre>                                       | topology Section 3.2.2 p. 9    |
| 41  | derailer right (backward) |          | <pre>\coordinate (A) at (0,0);<br/>\coordinate (Y) at (3,0);<br/>\coordinate (B) at (6,0);<br/>\secondarytrack (A) (B);<br/>\derailer[backward,branch=right] at (Y) label ();</pre>                                      | topology<br>Section 3.2.2 p. 9 |
| 42  | vehicles (parked)         |          | \coordinate (A) at (0,0);<br>\coordinate (B) at (6,0);<br>\coordinate (T) at (3,0);<br>\secondarytrack (A) (B);<br>\parkedvehicles[] at (T) label ();  | vehicles<br>Section 3.3 p. 9   |

| No. | Name   | Clip  | Code   | Manual reference              |
|-----|--|-------|--|-------------------------------|
| 43  | vehicles with label (parked)                   | label | <pre>\coordinate (A) at (0,0);<br/>\coordinate (B) at (6,0);<br/>\coordinate (T) at (3,0);<br/>\secondarytrack (A) (B);<br/>\parkedvehicles[] at (T) label (label);</pre>        | vehicles<br>Section 3.3 p. 9  |
| 44  | vehicle (parked)                               |       | <pre>\coordinate (A) at (0,0);<br/>\coordinate (B) at (6,0);<br/>\coordinate (T) at (3,0);<br/>\secondarytrack (A) (B);<br/>\parkedvehicles[length=0.5cm] at (T) label ();</pre> | vehicles<br>Section 3.3 p. 9  |
| 45  | train in shunting mode<br>(direction forward)  |       | \coordinate (A) at (0,0);<br>\coordinate (B) at (6,0);<br>\coordinate (T) at (5,0);<br>\maintrack (A) (B);<br>\shunting[forward] at (T) label ();                                | vehicles<br>Section 3.3 p. 10 |
| 46  | train in shunting mode<br>(direction backward) |       | <pre>\coordinate (A) at (0,0);<br/>\coordinate (B) at (6,0);<br/>\coordinate (T) at (1,0);<br/>\maintrack (A) (B);<br/>\shunting[backward] at (T) label ();</pre>                | vehicles<br>Section 3.3 p. 10 |
| 47  | train shunting (forward)                       |       | \coordinate (A) at (0,0);<br>\coordinate (B) at (6,0);<br>\coordinate (T) at (5,0);<br>\maintrack (A) (B);<br>\shunting[movement,forward] at (T) label ();                       | vehicles<br>Section 3.3 p. 10 |
| 48  | train shunting (backward)                      |       | \coordinate (A) at (0,0);<br>\coordinate (B) at (6,0);<br>\coordinate (T) at (1,0);<br>\maintrack (A) (B);<br>\shunting[movement,backward] at (T) label ();                      | vehicles<br>Section 3.3 p. 10 |
| 49  | train (direction forward)                      |       | \coordinate (A) at (0,0);<br>\coordinate (B) at (6,0);<br>\coordinate (T) at (5,0);<br>\maintrack (A) (B);<br>\train[forward] at (T) label ();                                   | vehicles<br>Section 3.3 p. 11 |
| 50  | train (direction backward)                     |       | <pre>\coordinate (A) at (0,0);<br/>\coordinate (B) at (6,0);<br/>\coordinate (T) at (1,0);<br/>\maintrack (A) (B);<br/>\train[backward] at (T) label ();</pre>                   | vehicles<br>Section 3.3 p. 11 |
| 51  | train moving (forward)                         |       | <pre>\coordinate (A) at (0,0);<br/>\coordinate (B) at (6,0);<br/>\coordinate (T) at (5,0);<br/>\maintrack (A) (B);<br/>\train[run=normal,forward] at (T) label ();</pre>         | vehicles<br>Section 3.3 p. 11 |

| No. | Name   | Clip                                   | Code  | Manual reference              |
|-----|--|--|---|-------------------------------|
| 52  | train moving (backward)                      |  | <pre>\coordinate (A) at (0,0);<br/>\coordinate (B) at (6,0);<br/>\coordinate (T) at (1,0);<br/>\maintrack (A) (B);<br/>\train[run=normal,backward] at (T) label ();</pre>         | vehicles<br>Section 3.3 p. 11 |
| 53  | train moving slow (forward)                  | —————————————————————————————————————— | \coordinate (A) at (0,0);<br>\coordinate (B) at (6,0);<br>\coordinate (T) at (5,0);<br>\maintrack (A) (B);<br>\train[run=slow,forward] at (T) label ();                           | vehicles<br>Section 3.3 p. 11 |
| 54  | train moving slow (backward)                 |  | <pre>\coordinate (A) at (0,0);<br/>\coordinate (B) at (6,0);<br/>\coordinate (T) at (1,0);<br/>\maintrack (A) (B);<br/>\train[run=slow,backward] at (T) label ();</pre>           | vehicles<br>Section 3.3 p. 11 |
| 55  | train moving fast (forward)                  |  | \coordinate (A) at (0,0);<br>\coordinate (B) at (6,0);<br>\coordinate (T) at (5,0);<br>\maintrack (A) (B);<br>\train[run=fast,forward] at (T) label ();                           | vehicles<br>Section 3.3 p. 11 |
| 56  | train moving fast (backward)                 |  | \coordinate (A) at (0,0);<br>\coordinate (B) at (6,0);<br>\coordinate (T) at (1,0);<br>\maintrack (A) (B);<br>\train[run=fast,backward] at (T) label ();                          | vehicles<br>Section 3.3 p. 11 |
| 57  | train ghost (direction forward)              |  | \coordinate (A) at (0,0);<br>\coordinate (B) at (6,0);<br>\coordinate (T) at (5,0);<br>\maintrack (A) (B);<br>\train[ghost,forward] at (T) label ();                              | vehicles<br>Section 3.3 p. 11 |
| 58  | train ghost (direction backward)             | · · · · · · · · · · · · · · · · · · ·  | \coordinate (A) at (0,0);<br>\coordinate (B) at (6,0);<br>\coordinate (T) at (1,0);<br>\maintrack (A) (B);<br>\train[ghost,backward] at (T) label ();                             | vehicles<br>Section 3.3 p. 11 |
| 59  | train operated automatic (direction forward) | <b>—</b>                               | <pre>\coordinate (A) at (0,0);<br/>\coordinate (B) at (6,0);<br/>\coordinate (T) at (5,0);<br/>\maintrack (A) (B);<br/>\train[operation=automatic,forward] at (T) label ();</pre> | vehicles<br>Section 3.3 p. 11 |
| 60  | train operated by human (direction forward)  | •                                      | <pre>\coordinate (A) at (0,0);<br/>\coordinate (B) at (6,0);<br/>\coordinate (T) at (5,0);<br/>\maintrack (A) (B);<br/>\train[operation=manual,forward] at (T) label ();</pre>    | vehicles<br>Section 3.3 p. 11 |

| No. | Name                                   | Clip  | Code   | Manual reference                      |
|-----|--|-------|--|---------------------------------------|
| 61  | train running over a junction          | TI    | \coordinate (A1) at (0,-0.5);<br>\coordinate (Y1) at (2.5,-0.5);<br>\coordinate (B1) at (6,-0.5);<br>\coordinate (A2) at (0, 0.5);<br>\coordinate (Y2) at (3.5, 0.5);<br>\coordinate (B2) at (6, 0.5);<br>\coordinate (T) at (5, 0.5);<br>\maintrack (A1) (B1);<br>\maintrack (A2) (B2);<br>\maintrack (Y1) (Y2);<br>\turnout[forward,branch=left] at (Y1) label (Y1); | vehicles<br>Section 3.3 p. 11         |
|     |  |       | <pre>\turnout[backward,branch=right] at (Y2) label (Y2); \train[   run=slow,forward,   bend left at={(Y1)},bend right at={(Y2)},   shift label={(-2,-0.5)} * relative coordinate ] at (T) label (T1);</pre>  |                                       |
| 62  | distant signal (forward)               | d1 d1 | <pre>\coordinate (A) at (0,0);<br/>\coordinate (B) at (6,0);<br/>\coordinate (S) at (3,0);<br/>\maintrack (A) (B);<br/>\distantsignal[forward] at (S) label (d1);</pre>  | trafficcontrol Section 3.4.1 p. 12    |
| 63  | distant signal<br>with speed indicator |       | <pre>\coordinate (A) at (0,0);<br/>\coordinate (B) at (6,0);<br/>\coordinate (S) at (3,0);<br/>\maintrack (A) (B);<br/>\distantsignal[forward,distant speed={8}] at (S) label ();<br/>\% replace the 8 with desired speed or remove tikz key</pre>   | trafficcontrol<br>Section 3.4.1 p. 12 |
| 64  | distant signal (backward)              | d2    | \coordinate (A) at (0,0);<br>\coordinate (B) at (6,0);<br>\coordinate (S) at (3,0);<br>\maintrack (A) (B);<br>\distantsignal[backward] at (S) label (d2);  | trafficcontrol<br>Section 3.4.1 p. 12 |
| 65  | distant signal<br>with speed indicator |       | \coordinate (A) at (0,0);<br>\coordinate (B) at (6,0);<br>\coordinate (S) at (3,0);<br>\maintrack (A) (B);<br>\distantsignal[backward, distant speed={8}] at (S) label ();<br>\% replace the 8 with desired speed or remove tikz key   | trafficcontrol<br>Section 3.4.1 p. 12 |
| 66  | speed signal (forward)                 |       | <pre>\coordinate (A) at (0,0);<br/>\coordinate (B) at (6,0);<br/>\coordinate (S) at (3,0);<br/>\maintrack (A) (B);<br/>\speedsignal[forward,speed={8}] at (S) label ();<br/>\frac{* replace the 8 with desired speed}</pre>  | trafficcontrol<br>Section 3.4.1 p. 12 |
| 67  | speed signal (backward)                | ∞√¬   | <pre>\coordinate (A) at (0,0); \coordinate (B) at (6,0); \coordinate (S) at (3,0);  \maintrack (A) (B); \speedsignal[backward, speed={8}] at (S) label ();  * replace the 8 with desired speed</pre>   | trafficcontrol Section 3.4.1 p. 12    |

| No. | Name  | Clip                 | Code   | Manual reference                      |
|-----|---|----------------------|--|---------------------------------------|
| 68  | block signal (forward)                                  | 1                    | <pre>\coordinate (A) at (0,0);<br/>\coordinate (B) at (6,0);<br/>\coordinate (S) at (3,0);<br/>\maintrack (A) (B);<br/>\blocksignal[forward] at (S) label (1);</pre>   | trafficcontrol<br>Section 3.4.1 p. 13 |
| 69  | block signal (backward)                                 | 2                    | \coordinate (A) at (0,0);<br>\coordinate (B) at (6,0);<br>\coordinate (S) at (3,0);<br>\maintrack (A) (B);<br>\blocksignal[backward] at (S) label (2);   | trafficcontrol<br>Section 3.4.1 p. 13 |
| 70  | route signal (forward)                                  | R1                   | <pre>\coordinate (A) at (0,0);<br/>\coordinate (B) at (6,0);<br/>\coordinate (S) at (3,0);<br/>\maintrack (A) (B);<br/>\routesignal[forward] at (S) label (R1);</pre>  | trafficcontrol<br>Section 3.4.1 p. 14 |
| 71  | route signal (backward)                                 | ∞ <b>○</b> —F        | <pre>\coordinate (A) at (0,0);<br/>\coordinate (B) at (6,0);<br/>\coordinate (S) at (3,0);<br/>\maintrack (A) (B);<br/>\routesignal[backward, speed={8}] at (S) label (F);<br/>% replace the 8 with desired speed or remove tikz key</pre>                                 | trafficcontrol<br>Section 3.4.1 p. 14 |
| 72  | combined signal<br>(distant, block and route<br>signal) | K1 <sup>1</sup> ∞√∑∞ | <pre>\coordinate (A) at (0,0);<br/>\coordinate (B) at (6,0);<br/>\coordinate (S) at (3,0);<br/>\maintrack (A) (B);<br/>\signal[distant,block,route,forward,distant speed=8,speed=8]<br/>at (S) label (K1);<br/>% replace the 8 with desired speed or remove tikz key</pre> | trafficcontrol<br>Section 3.4.1 p. 11 |
| 73  | shunt signal (forward)                                  | <u> </u>             | \coordinate (A) at (0,0);<br>\coordinate (B) at (6,0);<br>\coordinate (S) at (3,0);<br>\maintrack (A) (B);<br>\shuntsignal[forward] at (S) label ();   | trafficcontrol<br>Section 3.4.1 p. 14 |
| 74  | shunt signal (backward)                                 | <u> </u>             | \coordinate (A) at (0,0);<br>\coordinate (B) at (6,0);<br>\coordinate (S) at (3,0);<br>\maintrack (A) (B);<br>\shuntsignal[backward] at (S) label ();  | trafficcontrol<br>Section 3.4.1 p. 14 |
| 75  | shunt signal locked (forward)                           | <u> </u>             | <pre>\coordinate (A) at (0,0);<br/>\coordinate (B) at (6,0);<br/>\coordinate (S) at (3,0);<br/>\maintrack (A) (B);<br/>\shuntsignal[forward,locked] at (S) label ();</pre>   | trafficcontrol<br>Section 3.4.1 p. 14 |
| 76  | shunt signal locked (backward)                          | Φ                    | \coordinate (A) at (0,0);<br>\coordinate (B) at (6,0);<br>\coordinate (S) at (3,0);<br>\maintrack (A) (B);<br>\shuntsignal[backward,locked] at (S) label ();   | trafficcontrol<br>Section 3.4.1 p. 14 |

| No. | Name                              | Clip     | Code  | Manual reference                      |
|-----|-----------------------------------|----------|---|---------------------------------------|
| 77  | block and shunt signal (forward)  | sı       | \coordinate (A) at (0,0);<br>\coordinate (B) at (6,0);<br>\coordinate (S) at (3,0);<br>\maintrack (A) (B);<br>\signal[block,shunting,forward] at (S) label (S1);                | trafficcontrol<br>Section 3.4.1 p. 11 |
| 78  | block and shunt signal (backward) | sı       | \coordinate (A) at (0,0);<br>\coordinate (B) at (6,0);<br>\coordinate (S) at (3,0);<br>\maintrack (A) (B);<br>\signal[block,shunting,backward] at (S) label (S1);               | trafficcontrol<br>Section 3.4.1 p. 11 |
| 79  | route and shunt signal (forward)  | Sı       | <pre>\coordinate (A) at (0,0);<br/>\coordinate (B) at (6,0);<br/>\coordinate (S) at (3,0);<br/>\maintrack (A) (B);<br/>\signal[route,shunting,forward] at (S) label (S1);</pre> | trafficcontrol<br>Section 3.4.1 p. 11 |
| 80  | route and shunt signal (backward) | <u> </u> | \coordinate (A) at (0,0);<br>\coordinate (B) at (6,0);<br>\coordinate (S) at (3,0);<br>\maintrack (A) (B);<br>\signal[route, shunting, backward] at (S) label (S1);             | trafficcontrol<br>Section 3.4.1 p. 11 |
| 81  | shunt limit (forward)             |          | <pre>\coordinate (A) at (0,0);<br/>\coordinate (B) at (6,0);<br/>\coordinate (S) at (3,0);<br/>\maintrack (A) (B);<br/>\shuntlimit[forward] at (S) label ();</pre>              | trafficcontrol<br>Section 3.4.1 p. 15 |
| 82  | shunt limit (backward)            |          | <pre>\coordinate (A) at (0,0);<br/>\coordinate (B) at (6,0);<br/>\coordinate (S) at (3,0);<br/>\maintrack (A) (B);<br/>\shuntlimit[backward] at (S) label ();</pre>             | trafficcontrol<br>Section 3.4.1 p. 15 |
| 83  | train berth sign (forward)        |          | <pre>\coordinate (A) at (0,0);<br/>\coordinate (B) at (6,0);<br/>\coordinate (S) at (3,0);<br/>\maintrack (A) (B);<br/>\berthsignal[forward] at (S) label ();</pre>             | trafficcontrol<br>Section 3.4.1 p. 15 |
| 84  | train berth sign (backward)       | <u> </u> | \coordinate (A) at (0,0);<br>\coordinate (B) at (6,0);<br>\coordinate (S) at (3,0);<br>\maintrack (A) (B);<br>\berthsignal[backward] at (S) label ();                           | trafficcontrol<br>Section 3.4.1 p. 15 |

| No. | Name                                 | Clip       | Code   | Manual reference  |
|-----|--------------------------------------|------------|--|---|
| 85  | train berth                          |            | <pre>\coordinate (A) at (0,0); \coordinate (B) at (6,0); \coordinate (H) at (3,0); \coordinate (S1) at (1,0); \coordinate (S2) at (5,0);  \maintrack (A) (B);  \berth[forward] at (H) length (); \berthsignal[backward] at (S1) label (); \berthsignal[forward]] at (S2) label ();</pre> | trafficcontrol Section 3.4.1 p. 15 & measures Section 3.7 p. 28 |
| 86  | view point (forward)                 |            | \coordinate (A) at (0,0);<br>\coordinate (B) at (6,0);<br>\coordinate (S) at (3,0);<br>\maintrack (A) (B);<br>\viewpoint[forward] at (S);  | trafficcontrol<br>Section 3.4.2 p. 16                           |
| 87  | view point (backward)                | ₩,         | \coordinate (A) at (0,0);<br>\coordinate (B) at (6,0);<br>\coordinate (S) at (3,0);<br>\maintrack (A) (B);<br>\viewpoint[backward] at (S);   | trafficcontrol<br>Section 3.4.2 p. 16                           |
| 88  | braking point (forward)              | <u>+</u> 4 | \coordinate (A) at (0,0);<br>\coordinate (B) at (6,0);<br>\coordinate (S) at (3,0);<br>\maintrack (A) (B);<br>\brakingpoint[forward] at (S) label ();  | trafficcontrol<br>Section 3.4.2 p. 16                           |
| 89  | braking point (backward)             | <b>⊳</b> ¬ | <pre>\coordinate (A) at (0,0);<br/>\coordinate (B) at (6,0);<br/>\coordinate (S) at (3,0);<br/>\maintrack (A) (B);<br/>\brakingpoint[backward] at (S) label ();</pre>  | trafficcontrol Section 3.4.2 p. 16                              |
| 90  | end of movement authority (forward)  | <u> </u>   | <pre>\coordinate (A) at (0,0);<br/>\coordinate (B) at (6,0);<br/>\coordinate (S) at (3,0);<br/>\maintrack (A) (B);<br/>\movementauthority[forward] at (S) label ();</pre>  | trafficcontrol<br>Section 3.4.2 p. 17                           |
| 91  | end of movement authority (backward) |            | <pre>\coordinate (A) at (0,0);<br/>\coordinate (B) at (6,0);<br/>\coordinate (S) at (3,0);<br/>\maintrack (A) (B);<br/>\movementauthority[backward] at (S) label ();</pre>   | trafficcontrol<br>Section 3.4.2 p. 17                           |
| 92  | danger point (forward)               | *          | <pre>\coordinate (A) at (0,0);<br/>\coordinate (B) at (6,0);<br/>\coordinate (S) at (3,0);<br/>\maintrack (A) (B);<br/>\dangerpoint[forward] at (S) label ();</pre>  | trafficcontrol<br>Section 3.4.2 p. 17                           |

| No. | Name                            | Clip                                  | Code   | Manual reference                      |
|-----|---------------------------------|---------------------------------------|--|---------------------------------------|
| 93  | danger point (backward)         | <u></u>                               | <pre>\coordinate (A) at (0,0);<br/>\coordinate (B) at (6,0);<br/>\coordinate (S) at (3,0);<br/>\maintrack (A) (B);</pre>         | trafficcontrol<br>Section 3.4.2 p. 17 |
|     |                                 |                                       | \dangerpoint[backward] at (S) label ();  |                                       |
| 94  | clearing point                  | <del></del>                           | <pre>\coordinate (A) at (0,0);<br/>\coordinate (B) at (6,0);<br/>\coordinate (CP) at (3,0);<br/>\maintrack (A) (B);</pre>        | trafficcontrol<br>Section 3.4.3 p. 18 |
|     |                                 |                                       | \clearingpoint[backward] at (CP) label ();   |                                       |
| 95  | block clearing point (forward)  |                                       | \coordinate (A) at (0,0);<br>\coordinate (B) at (6,0);<br>\coordinate (CP) at (3,0);   | trafficcontrol                        |
|     |                                 | <b>*</b>                              | \maintrack (A) (B);  | Section 3.4.3 p. 18                   |
|     |                                 |                                       | \blockclearing[forward] at (CP) label ();  |                                       |
| 96  | block clearing point (backward) | <u> </u>                              | \coordinate (A) at (0,0);<br>\coordinate (B) at (6,0);<br>\coordinate (CP) at (3,0);   | trafficcontrol                        |
|     |                                 |                                       | \maintrack (A) (B);  | Section 3.4.3 p. 18                   |
|     |                                 |                                       | \blockclearing[backward] at (CP) label ();   |                                       |
| 97  | route clearing point (forward)  |                                       | \coordinate (A) at (0,0);<br>\coordinate (B) at (6,0);<br>\coordinate (CP) at (3,0);   | trafficcontrol                        |
|     | route elearing point (forward)  | 6                                     | \maintrack (A) (B);  | Section 3.4.3 p. 19                   |
|     |                                 |                                       | \routeclearing[forward] at (CP) label ();  |                                       |
| 98  | route clearing point (heakword) | Φ                                     | <pre>\coordinate (A) at (0,0);<br/>\coordinate (B) at (6,0);<br/>\coordinate (CP) at (3,0);</pre>                                | trafficcontrol                        |
| 98  | route clearing point (backward) |                                       | \maintrack (A) (B);  | Section 3.4.3 p. 19                   |
|     |                                 |                                       | \routeclearing[backward] at (CP) label ();   |                                       |
| 99  | route (forward & backward)      | <b>———</b>                            | <pre>\coordinate (A) at (0,0);<br/>\coordinate (B) at (6,0);<br/>\coordinate (R1) at (2,0);<br/>\coordinate (R2) at (4,0);</pre> | trafficcontrol<br>Section 3.4.4 p. 19 |
|     |                                 |                                       | <pre>\maintrack (A) (B); \route[backward] at (R1); \route[forward] at (R2);</pre>  | Section 5.4.4 p. 19                   |
| 100 | direction control               | <u> </u>                              | \coordinate (A) at (0,0);<br>\coordinate (DC) at (3,0);<br>\coordinate (B) at (6,0);   | trafficcontrol<br>Section 3.4.4 p. 20 |
|     |                                 | , , , , , , , , , , , , , , , , , , , | <pre>\maintrack (A) (B); \directioncontrol[bidirectional] at (DC);</pre>   | •                                     |
| 101 | direction control               | <u></u>                               | \coordinate (A) at (0,0);<br>\coordinate (DC) at (3,0);<br>\coordinate (B) at (6,0);   | trafficcontrol                        |
| 101 | granted forward                 | <b>→</b>                              | <pre>\maintrack (A) (B); \directioncontrol[forward] at (DC);</pre>   | Section 3.4.4 p. 20                   |
|     | 1                               |                                       | 1  | 1                                     |

| No. | Name   | Clip                         | Code   | Manual reference   |
|-----|--|------------------------------|--|--|
| 102 | direction control<br>granted backward            | <b>←</b>                     | \coordinate (A) at (0,0);<br>\coordinate (DC) at (3,0);<br>\coordinate (B) at (6,0);<br>\maintrack (A) (B);<br>\directioncontrol[backward] at (DC);  | trafficcontrol<br>Section 3.4.4 p. 20                    |
| 103 | balise (forward & backward)                      |                              | <pre>\coordinate (A) at (0,0);<br/>\coordinate (B) at (6,0);<br/>\coordinate (T1) at (2,0);<br/>\coordinate (T2) at (4,0);<br/>\maintrack (A) (B);<br/>\balise[forward] at (T1) label ();<br/>\balise[backward] at (T2) label ();</pre>  | trafficcontrol<br>Section 3.4.5 p. 20                    |
| 104 | balise (forward)<br>with signal                  |                              | <pre>\coordinate (A) at (0,0);<br/>\coordinate (B) at (6,0);<br/>\coordinate (S) at (3,0);<br/>\maintrack (A) (B);<br/>\routesignal[forward] at (S) label ();<br/>\balise[forward] at (S) label ();</pre>  | trafficcontrol Section 3.4.5 p. 20 & Section 3.4.1 p. 14 |
| 105 | balise (forward & backward)<br>switched          |                              | <pre>\coordinate (A) at (0,0); \coordinate (B) at (6,0); \coordinate (T1) at (2,0); \coordinate (T2) at (4,0);  \maintrack (A) (B);  \balise[forward,switched] at (T1) label (); \balise[backward,switched] at (T2) label ();</pre>  | trafficcontrol<br>Section 3.4.5 p. 20                    |
| 106 | individual balises<br>(forward & backward)       |                              | <pre>\coordinate (A) at (0,0);<br/>\coordinate (B) at (6,0);<br/>\coordinate (T1) at (2,0);<br/>\coordinate (T2) at (4,0);<br/>\maintrack (A) (B);<br/>\balise[forward,along={0,1,2,3}] at (T1) label (A);<br/>\balise[backward,along={0,1,2,3}] at (T2) label (B);</pre>  | trafficcontrol<br>Section 3.4.5 p. 20                    |
| 107 | individual balises<br>(forward & backward) mixed | ©<br>3 2 1 0<br>3 2 0 0<br>> | <pre>\coordinate (A) at (0,0);<br/>\coordinate (B) at (6,0);<br/>\coordinate (T1) at (2,0);<br/>\coordinate (T2) at (4,0);<br/>\maintrack (A) (B);<br/>\balise[<br/>forward,<br/>along={0,1,3},<br/>along switched={2},<br/>oppose={0,2},<br/>] at (T1) label (A);<br/>\balise[<br/>backward,<br/>along={0,1,3},<br/>along switched={2},<br/>oppose={0,2,3},<br/>oppose={0,2,3},<br/>oppose switched={1},<br/>index % show index number<br/>] at (T2) label (B);</pre> | trafficcontrol<br>Section 3.4.5 p. 20                    |

| No. | Name   | Clip              | Code   | Manual reference                      |
|-----|--|-------------------|--|---------------------------------------|
| 108 | track loop                                       |                   | \coordinate (A) at (0,0);<br>\coordinate (B) at (6,0);<br>\coordinate (T) at (3,0);<br>\maintrack (A) (B);<br>\trackloop[] at (T) label ();  | trafficcontrol<br>Section 3.4.5 p. 21 |
| 109 | platform (left)                                  |                   | <pre>\coordinate (A) at (0,0);<br/>\coordinate (B) at (6,0);<br/>\coordinate (P) at (3,0);<br/>\maintrack (A) (B);<br/>\platform[side=left] at (P);</pre>  | constructions<br>Section 3.5 p. 21    |
| 110 | platform (right)                                 |                   | <pre>\coordinate (A) at (0,0); \coordinate (B) at (6,0); \coordinate (P) at (3,0);  \maintrack (A) (B); \platform[side=right] at (P);</pre>  | constructions<br>Section 3.5 p. 21    |
| 111 | platform (middle)                                |                   | \coordinate (A1) at (0,-0.5);<br>\coordinate (B1) at (6,-0.5);<br>\coordinate (A2) at (0, 0.5);<br>\coordinate (B2) at (6, 0.5);<br>\coordinate (P1) at (3, 0.5);<br>\coordinate (P2) at (3,-0.5);<br>\maintrack (A1) (B1);<br>\maintrack (A2) (B2);<br>\platform[side=right] at (P1);<br>\platform[side=left] at (P2);          | constructions<br>Section 3.5 p. 21    |
| 112 | level crossing (single track)                    | <u>•+ </u><br> +• | <pre>\coordinate (A) at (0,0);<br/>\coordinate (B) at (6,0);<br/>\coordinate (X) at (3,0);<br/>\maintrack (A) (B);<br/>\levelcrossing[barrier=semi] at (X);</pre>  | constructions<br>Section 3.5 p. 22    |
| 113 | level crossing (secondary track) without barrier |                   | <pre>\coordinate (A) at (0,0);<br/>\coordinate (B) at (6,0);<br/>\coordinate (X) at (3,0);<br/>\secondarytrack (A) (B);<br/>\levelcrossing[] at (X);</pre>   | constructions<br>Section 3.5 p. 22    |
| 114 | level crossing (double track)                    | <u>+ </u>         | \coordinate (A1) at (0,-0.5); \coordinate (B1) at (6,-0.5); \coordinate (A2) at (0, 0.5); \coordinate (B2) at (6, 0.5); \coordinate (X1) at (3, 0.5); \coordinate (X2) at (3,-0.5); \maintrack (A1) (B1); \maintrack (A2) (B2); \levelcrossing[barrier=semi,side=left] at (X1); \levelcrossing[barrier=semi,side=right] at (X2); | constructions<br>Section 3.5 p. 22    |

| No. | Name  | Clip     | Code  | Manual reference                   |
|-----|---|----------|---|------------------------------------|
| 115 | level crossing (double track) with full closure | •++•<br> | \coordinate (A1) at (0,-0.5);<br>\coordinate (B1) at (6,-0.5);<br>\coordinate (A2) at (0, 0.5);<br>\coordinate (B2) at (6, 0.5);<br>\coordinate (X1) at (3, 0.5);<br>\coordinate (X2) at (3,-0.5);<br>\maintrack (A1) (B1);<br>\maintrack (A2) (B2);<br>\levelcrossing[barrier=full,side=left] at (X1);<br>\levelcrossing[barrier=full,side=right] at (X2); | constructions<br>Section 3.5 p. 22 |
| 116 | bridge  |          | <pre>\coordinate (A) at (0,0); \coordinate (B) at (6,0); \coordinate (X) at (3,0);  * order is important \bridge[] at (X); * first \maintrack (A) (B); * secound</pre>  | constructions<br>Section 3.5 p. 22 |
| 117 | bridge<br>with track beneath                    |          | <pre>\coordinate (A1) at (0, 0); \coordinate (B1) at (6, 0); \coordinate (A2) at (2,-1); \coordinate (B2) at (4, 1); \coordinate (X) at (3,0);  * order is important \maintrack (A2) (B2); * first \bridge[shift left=0.25cm, shift right=-0.25cm] at (X); * secound \maintrack (A1) (B1); * third</pre>  | constructions<br>Section 3.5 p. 22 |
| 118 | interlocking                                    |          | \coordinate (I) at (3,0); \interlocking at (I);   | constructions<br>Section 3.5 p. 23 |
| 119 | hump  |          | \coordinate (A) at (0,0);<br>\coordinate (B) at (6,0);<br>\coordinate (H) at (3,0);<br>\secondarytrack (A) (B);<br>\hump at (H);  | constructions<br>Section 3.5 p. 23 |
| 120 | pylons (right)                                  |          | <pre>\coordinate (A) at (0,0);<br/>\coordinate (B) at (6,0);<br/>\coordinate (P1) at (1,0);<br/>\coordinate (P2) at (3,0);<br/>\coordinate (P3) at (5,0);<br/>\maintrack (A) (B);<br/>\pylon[side=right] at (P1);<br/>\pylon[side=right] at (P2);<br/>\pylon[side=right] at (P3);</pre>   | constructions<br>Section 3.5 p. 24 |
| 121 | pylons (left)                                   |          | <pre>\coordinate (A) at (0,0);<br/>\coordinate (B) at (6,0);<br/>\coordinate (P1) at (1,0);<br/>\coordinate (P2) at (3,0);<br/>\coordinate (P3) at (5,0);<br/>\maintrack (A) (B);<br/>\pylon[side=left] at (P1);<br/>\pylon[side=left] at (P2);<br/>\pylon[side=left] at (P3);</pre>  | constructions<br>Section 3.5 p. 24 |

| No. | Name                         | Clip               | Code  | Manual reference                   |
|-----|------------------------------|--------------------|---|------------------------------------|
| 122 | pylons (both sides)          |                    | <pre>\coordinate (A) at (0,0);<br/>\coordinate (B) at (6,0);<br/>\coordinate (P1) at (1,0);<br/>\coordinate (P2) at (3,0);<br/>\coordinate (P3) at (5,0);<br/>\maintrack (A) (B);<br/>\pylon[side=both] at (P1);<br/>\pylon[side=both] at (P2);<br/>\pylon[side=both] at (P3);</pre>  | constructions<br>Section 3.5 p. 24 |
| 123 | pylons (middle)              |                    | \coordinate (A1) at (0,-0.5); \coordinate (B1) at (6,-0.5); \coordinate (A2) at (0, 0.5); \coordinate (B2) at (6, 0.5); \\$ \coordinate (P1) at (1,-0.5); \coordinate (P2) at (3,-0.5); \coordinate (P3) at (5,-0.5); \coordinate (P4) at (1, 0.5); \coordinate (P5) at (3, 0.5); \coordinate (P6) at (5, 0.5); \coordinate (P6) at (5, 0.5); \maintrack (A1) (B1); \maintrack (A2) (B2); \pylon[side=left] at (P1); \pylon[side=left] at (P2); \pylon[side=right] at (P4); \pylon[side=right] at (P5); \pylon[side=right] at (P6); | constructions<br>Section 3.5 p. 24 |
| 124 | distant power off (forward)  | dP 👴               | <pre>\coordinate (A) at (0,0);<br/>\coordinate (B) at (6,0);<br/>\coordinate (E) at (3,0);<br/>\maintrack (A) (B);<br/>\distantpoweroff[forward] at (E) label (dP);</pre>   | electrics<br>Section 3.6 p. 24     |
| 125 | distant power off (backward) | <u> </u> dP        | <pre>\coordinate (A) at (0,0);<br/>\coordinate (B) at (6,0);<br/>\coordinate (E) at (3,0);<br/>\maintrack (A) (B);<br/>\distantpoweroff[backward] at (E) label (dP);</pre>  | electrics<br>Section 3.6 p. 24     |
| 126 | power off (forward)          | off                | <pre>\coordinate (A) at (0,0);<br/>\coordinate (B) at (6,0);<br/>\coordinate (E) at (3,0);<br/>\maintrack (A) (B);<br/>\poweroff[forward] at (E) label (off);</pre>   | electrics<br>Section 3.6 p. 25     |
| 127 | power off (backward)         | <del>(</del> ) off | <pre>\coordinate (A) at (0,0);<br/>\coordinate (B) at (6,0);<br/>\coordinate (E) at (3,0);<br/>\maintrack (A) (B);<br/>\poweroff[backward] at (E) label (off);</pre>  | electrics<br>Section 3.6 p. 25     |
| 128 | power on (forward)           | on <b>t</b>        | \coordinate (A) at (0,0);<br>\coordinate (B) at (6,0);<br>\coordinate (E) at (3,0);<br>\maintrack (A) (B);<br>\poweron[forward] at (E) label (on);  | electrics<br>Section 3.6 p. 25     |

| No. | Name                               | Clip         | Code  | Manual reference               |
|-----|------------------------------------|--------------|---|--------------------------------|
| 129 | power on (backward)                | on           | <pre>\coordinate (A) at (0,0);<br/>\coordinate (B) at (6,0);<br/>\coordinate (E) at (3,0);<br/>\maintrack (A) (B);<br/>\poweron[backward] at (E) label (on);</pre>      | electrics<br>Section 3.6 p. 25 |
| 130 | distant pantograph down (forward)  | dP-4         | <pre>\coordinate (A) at (0,0); \coordinate (B) at (6,0); \coordinate (E) at (3,0); \maintrack (A) (B); \distantpantographdown[forward] at (E) label (dP);</pre>         | electrics<br>Section 3.6 p. 26 |
| 131 | distant pantograph down (backward) | <b>♣</b> ↑dP | \coordinate (A) at (0,0);<br>\coordinate (B) at (6,0);<br>\coordinate (E) at (3,0);<br>\maintrack (A) (B);<br>\distantpantographdown[backward] at (E) label (dP);       | electrics<br>Section 3.6 p. 26 |
| 132 | pantograph down (forward)          | down         | <pre>\coordinate (A) at (0,0); \coordinate (B) at (6,0); \coordinate (E) at (3,0); \maintrack (A) (B); \pantographdown[forward] at (E) label (down);</pre>              | electrics<br>Section 3.6 p. 26 |
| 133 | pantograph down (backward)         | down         | <pre>\coordinate (A) at (0,0); \coordinate (B) at (6,0); \coordinate (E) at (3,0);  \maintrack (A) (B);  \pantographdown[backward] at (E) label (down);</pre>           | electrics<br>Section 3.6 p. 26 |
| 134 | pantograph up (forward)            | up L         | <pre>\coordinate (A) at (0,0); \coordinate (B) at (6,0); \coordinate (E) at (3,0);  \maintrack (A) (B);  \pantographup[forward] at (E) label (up);</pre>                | electrics<br>Section 3.6 p. 27 |
| 135 | pantograph up (backward)           | фтир         | <pre>\coordinate (A) at (0,0);<br/>\coordinate (B) at (6,0);<br/>\coordinate (E) at (3,0);<br/>\maintrack (A) (B);<br/>\pantographup[backward] at (E) label (up);</pre> | electrics<br>Section 3.6 p. 27 |
| 136 | wire limit (forward)               | limit -      | <pre>\coordinate (A) at (0,0);<br/>\coordinate (B) at (6,0);<br/>\coordinate (E) at (3,0);<br/>\maintrack (A) (B);<br/>\wirelimit[forward] at (E) label (limit);</pre>  | electrics<br>Section 3.6 p. 27 |
| 137 | wire limit (backward)              | limit        | <pre>\coordinate (A) at (0,0); \coordinate (B) at (6,0); \coordinate (E) at (3,0); \maintrack (A) (B); \wirelimit[backward] at (E) label (limit);</pre>                 | electrics<br>Section 3.6 p. 27 |

| No. | Name                            | Clip  | Code  | Manual reference              |
|-----|---------------------------------|---|---|-------------------------------|
| 138 | track distance (in m)           | 4,50<br>V   | \coordinate (A1) at (0,-0.5);<br>\coordinate (X1) at (3,-0.5);<br>\coordinate (B1) at (6,-0.5);<br>\coordinate (A2) at (0, 0.5);<br>\coordinate (X2) at (3, 0.5);<br>\coordinate (B2) at (6, 0.5);<br>\maintrack (A1) (B1);<br>\maintrack (A2) (B2);<br>\trackdistance between (X2) and (X1) distance (4,50);   | measures<br>Section 3.7 p. 28 |
| 139 | train berth shape               | :. <b>▶</b>                                       | <pre>\coordinate (A) at (0,0);<br/>\coordinate (B) at (6,0);<br/>\coordinate (H) at (3,0);<br/>\maintrack (A) (B);<br/>\berth[forward] at (H) length (\SI{750}{\metre});</pre>  | measures<br>Section 3.7 p. 28 |
| 140 | train berth shape bidirectional | : - <b>↓</b> ···································· | <pre>\coordinate (A) at (0,0); \coordinate (B) at (6,0); \coordinate (H) at (3,0);  \maintrack (A) (B);  \berth[bidirectional] at (H) length (\SI{750}{\metre});</pre>  | measures<br>Section 3.7 p. 28 |
| 141 | train berth with special shape  |   | <pre>\coordinate (A) at (0,0);<br/>\coordinate (B) at (6,0);<br/>\coordinate (H1) at (3.25,0);<br/>\coordinate (H2) at (3,0);<br/>\maintrack (A) (B);<br/>\berth[forward ,length=3.0cm] at (H1) length (\SI{550}{\metre});<br/>\berth[backward,length=3.5cm] at (H2) length (\SI(650){\metre});</pre>   | measures<br>Section 3.7 p. 28 |
| 142 | measure line                    | •   | \coordinate (A) at (0,0);<br>\coordinate (B) at (6,0);<br>\measureline (A) (B);<br>\trackclosure at (A);<br>\trackclosure at (B);   | measures<br>Section 3.7 p. 29 |
| 143 | hectometer (in km)              | 4.500   | <pre>\coordinate (A) at (0,0); \coordinate (X1) at (3,0); \coordinate (X2) at (3.5,0); \coordinate (B) at (6,0);  \coordinate (hb) at (0,-2);  \maintrack (A) (B);  \tikzset{hectometer base={(hb)},orientation=right} \hectometer[] at (A) mileage (0.000); \hectometer[] at (X1) mileage (4.000); \hectometer[shift label=((0.3,0))] at (X2) mileage (4.500); \hectometer[] at (B) mileage (6.000);</pre> | measures<br>Section 3.7 p. 29 |

| No. | Name                                 | Clip           | Code   | Manual reference              |
|-----|--------------------------------------|----------------|--|-------------------------------|
|     | measure line with hectometer (in km) |                | \coordinate (A1) at (0,0);<br>\coordinate (X1) at (3,0);<br>\coordinate (B1) at (6,0);<br>\coordinate (A2) at (0,3);<br>\coordinate (X2) at (2,3);<br>\coordinate (X3) at (5,3);<br>\coordinate (B2) at (6,3); |                               |
| 144 |                                      |                | \coordinate (hb) at (0,-2);<br>\maintrack (A1) (B1);<br>\maintrack (A2) (B2);  | measures<br>Section 3.7 p. 29 |
|     |                                      |                | \measureline (A2) (A1);<br>\measureline (X2) ++(0,-1) ++(1,-1) (X1);<br>\measureline (X3) ++(0,-1) ++(1,-1) (B1);  |                               |
|     |                                      | 6.000<br>4.000 | <pre>\tikzset{hectometer base={(hb)},orientation=right} \hectometer[] at (A) mileage (0.000); \hectometer[] at (X1) mileage (4.000); \hectometer[] at (B) mileage (6.000);</pre>                               |                               |
| 145 | track marking                        |                | \coordinate (A) at (0,0);<br>\coordinate (X) at (3,0);<br>\coordinate (B) at (6,0);  | measures                      |
|     |                                      | . 1. 1         | \maintrack (A) (B);<br>\trackmarking[green] (A) (X);<br>\trackmarking[red] (X) (B);  | Section 3.7 p. 30             |
| 146 | track marking with turnout           |                | \coordinate (A) at (0,0);<br>\coordinate (Y) at (3,0);<br>\coordinate (B) at (6,0);  | measures                      |
|     |                                      |                | <pre>\maintrack (A) (B);<br/>\maintrack (Y) ++(1,1);<br/>\turnout[forward,branch=left] at (Y) label ();</pre>  | Section 3.7 p. 30             |
|     |                                      |                | \trackmarking[yellow] (A) (Y) ++(1,1);<br>\trackmarking[blue] (Y) (B);   |                               |

## 1 Revision History

Description

**Revision** Date

Author(s)

| 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".  |
| 0.6   | 2021-01-02 | MS     | Added symbols for "direction control", "track marking", "pylons" and electric wiring; changed symbol for "friction bufferstop"; created an encapsulating package for future flexibility - changed load command for library to \usepackage{tikz-trackschematic}. |
| 0.6.1 | 2021-09-30 | MS     | removed package requirement Imodern, minor correction in manual, added citation information   |
| 0.6.2 | 2021-10-15 | MS     | bug fixing  |
| 0.6.3 | 2022-02-15 | MS, GW | fixed spelling error and documented (slip-) turnout option: points=moving; updated link to signalschablone; automated testing and releasing   |