## Snippets

## Version 0.8.0 from 2023-05-05

No.	Name	Clip	Code	Manual reference
1	main track		<pre>\coordinate (A) at (0,0); \coordinate (B) at (6,0); \maintrack (A) (B);</pre>	topology Section 3.2.1 p. 6
2	main line (double track)		\coordinate (A1) at (0,-0.5); \coordinate (B1) at (6,-0.5); \coordinate (A2) at (0, 0.5); \coordinate (B2) at (6, 0.5); \maintrack (A1) (B1); \maintrack (A2) (B2);	topology Section 3.2.1 p. 6
3	secondary track		<pre>\coordinate (A) at (0,0); \coordinate (B) at (6,0); \secondarytrack (A) (B);</pre>	topology Section 3.2.1 p. 6
4	track number	No	<pre>\coordinate (A) at (0,0); \coordinate (X) at (3,0); \coordinate (B) at (6,0); * order is important \maintrack (A) (B); * first \tracklabel at (X) label (No.); * secound</pre>	topology Section 3.2.1 p. 7
5	bufferstop (forward)		<pre>\coordinate (A) at (0,0); \coordinate (B) at (3,0);  \maintrack (A) (B); \bufferstop[forward] at (B);</pre>	topology 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 Section 3.2.1 p. 7
7	friction bufferstop (forward)	<del></del>	<pre>\coordinate (A) at (0,0); \coordinate (B) at (3,0);  \maintrack (A) (B); \bufferstop[forward,friction=.5] at (B);</pre>	topology 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);   </pre>	topology 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 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 Section 3.2.2 p. 8
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 Section 3.2.2 p. 8
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 Section 3.2.2 p. 8
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 Section 3.2.2 p. 8
14	turnout left (forward) 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 Section 3.2.2 p. 8
15	turnout left (backward) 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 Section 3.2.2 p. 8
16	turnout right (forward) 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 Section 3.2.2 p. 8

No.	Name	Clip	Code	Manual reference
17	turnout right (backward) 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=right,fouling point] at (Y) label ();</pre>	topology Section 3.2.2 p. 8
18	turnout left (forward) 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[forward,branch=left,points=right] at (Y) label ();</pre>	topology Section 3.2.2 p. 8
19	turnout left (forward) with points in left 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[forward,branch=left,points=left] at (Y) label ();</pre>	topology Section 3.2.2 p. 8
20	turnout left (forward) with moving points		<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,points=moving] at (Y) label ();</pre>	topology Section 3.2.2 p. 8
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 Section 3.2.2 p. 8
22	turnout left (backward) with points in left 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=left] at (Y) label ();</pre>	topology Section 3.2.2 p. 8
23	turnout left (backward) with moving points		<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=moving] at (Y) label ();</pre>	topology Section 3.2.2 p. 8
24	turnout right (forward) 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[forward,branch=right,points=right] at (Y) label ();</pre>	topology Section 3.2.2 p. 8
25	turnout right (forward) with points in left 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[forward,branch=right,points=left] at (Y) label ();</pre>	topology Section 3.2.2 p. 8

No.	Name	Clip	Code	Manual reference
26	turnout right (forward) with moving points	*	<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,points=moving] at (Y) label ();</pre>	topology Section 3.2.2 p. 8
27	turnout right (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=right,points=right] at (Y) label ();</pre>	topology Section 3.2.2 p. 8
28	turnout right (backward) with points in left 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=right,points=left] at (Y) label ();</pre>	topology Section 3.2.2 p. 8
29	turnout right (backward) with moving points	<b>—</b>	<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,points=moving] at (Y) label ();</pre>	topology Section 3.2.2 p. 8
30	turnout left (forward) operated manually		<pre>\coordinate (A) at (0,0); \coordinate (Y) at (3,0); \coordinate (B) at (6,0);  \secondarytrack (A) (B); \secondarytrack (Y) ++(1,1); \turnout[forward,branch=left,operation=manual] at (Y) label ();</pre>	topology Section 3.2.2 p. 8
31	turnout right (forward) operated manually		<pre>\coordinate (A) at (0,0); \coordinate (Y) at (3,0); \coordinate (B) at (6,0); \secondarytrack (A) (B); \secondarytrack (Y) ++(1,-1); \turnout[forward,branch=right,operation=manual] at (Y) label ();</pre>	topology Section 3.2.2 p. 8
32	turnout left (backward) operated manually		<pre>\coordinate (A) at (0,0); \coordinate (Y) at (3,0); \coordinate (B) at (6,0); \secondarytrack (A) (B); \secondarytrack (Y) ++(-1,1); \turnout[backward,branch=left,operation=manual] at (Y) label ();</pre>	topology Section 3.2.2 p. 8
33	turnout right (backward) operated manually		<pre>\coordinate (A) at (0,0); \coordinate (Y) at (3,0); \coordinate (B) at (6,0); \secondarytrack (A) (B); \secondarytrack (Y) ++(-1,-1); \turnout[backward,branch=right,operation=manual] at (Y) label ();</pre>	topology Section 3.2.2 p. 8
34	double-slip turnout left	ab	\coordinate (A) at (0,0); \coordinate (Y) at (3,0); \coordinate (B) at (6,0); \maintrack (A) (B); \maintrack (Y) ++ (1, 1); \maintrack (Y) ++ (-1,-1); \slipturnout[branch=left] at (Y) label (ab) (cd);	topology Section 3.2.2 p. 9

No.	Name	Clip	Code	Manual reference
35	double-slip turnout right	cd ab	\coordinate (A) at (0,0); \coordinate (Y) at (3,0); \coordinate (B) at (6,0); \maintrack (A) (B); \maintrack (Y) ++(1,-1); \maintrack (Y) ++(-1, 1); \slipturnout[branch=right] at (Y) label (ab) (cd);	topology Section 3.2.2 p. 9
36	diamond crossing left		\coordinate (A) at (0,0); \coordinate (Y) at (3,0); \coordinate (B) at (6,0); \maintrack (A) (B); \maintrack (Y) ++(1, 1); \maintrack (Y) ++(-1,-1); \crossing[branch=left] at (Y) label ();	topology Section 3.2.2 p. 8
37	diamond crossing right		\coordinate (A) at (0,0); \coordinate (Y) at (3,0); \coordinate (B) at (6,0); \maintrack (A) (B); \maintrack (Y) ++(1,-1); \maintrack (Y) ++(-1, 1); \crossing[branch=right] at (Y) label ();	topology Section 3.2.2 p. 8
38	derailer left (forward)		<pre>\coordinate (A) at (0,0); \coordinate (Y) at (3,0); \coordinate (B) at (6,0); \secondarytrack (A) (B); \derailer[forward,branch=left] at (Y) label ();</pre>	topology Section 3.2.2 p. 9
39	derailer left (backward)		<pre>\coordinate (A) at (0,0); \coordinate (Y) at (3,0); \coordinate (B) at (6,0); \secondarytrack (A) (B); \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); \coordinate (Y) at (3,0); \coordinate (B) at (6,0); \secondarytrack (A) (B); \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); \coordinate (Y) at (3,0); \coordinate (B) at (6,0); \secondarytrack (A) (B); \derailer[backward,branch=right] at (Y) label ();</pre>	topology Section 3.2.2 p. 9
42	vehicles (parked)		<pre>\coordinate (A) at (0,0); \coordinate (B) at (6,0); \coordinate (T) at (3,0); \secondarytrack (A) (B); \parkedvehicles[] at (T) label ();</pre>	vehicles Section 3.3 p. 10

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

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

No.	Name	Clip	Code	Manual reference
61	train running over a junction	TI	\coordinate (A1) at (0,-0.5); \coordinate (Y1) at (2.5,-0.5); \coordinate (B1) at (6,-0.5); \coordinate (A2) at (0, 0.5); \coordinate (Y2) at (3.5, 0.5); \coordinate (B2) at (6, 0.5); \coordinate (T) at (5, 0.5); \maintrack (A1) (B1); \maintrack (A2) (B2); \maintrack (Y1) (Y2); \turnout[forward ,branch=left ] at (Y1) label (Y1);	vehicles 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)	dı	<pre>\coordinate (A) at (0,0); \coordinate (B) at (6,0); \coordinate (S) at (3,0); \maintrack (A) (B); \distantsignal[forward] at (S) label (d1);</pre>	trafficcontrol Section 3.4.1 p. 12
63	distant signal with speed indicator		<pre>\coordinate (A) at (0,0); \coordinate (B) at (6,0); \coordinate (S) at (3,0); \maintrack (A) (B); \distantsignal[forward,distant speed={8}] at (S) label (); \% replace the 8 with desired speed or remove tikz key</pre>	trafficcontrol Section 3.4.1 p. 12
64	distant signal (backward)	d2	\coordinate (A) at (0,0); \coordinate (B) at (6,0); \coordinate (S) at (3,0); \maintrack (A) (B); \distantsignal[backward] at (S) label (d2);	trafficcontrol Section 3.4.1 p. 12
65	distant signal with speed indicator		\coordinate (A) at (0,0); \coordinate (B) at (6,0); \coordinate (S) at (3,0); \maintrack (A) (B); \distantsignal[backward, distant speed={8}] at (S) label (); \% replace the 8 with desired speed or remove tikz key	trafficcontrol Section 3.4.1 p. 12
66	speed signal (forward)		<pre>\coordinate (A) at (0,0); \coordinate (B) at (6,0); \coordinate (S) at (3,0); \maintrack (A) (B); \speedsignal[forward,speed={8}] at (S) label (); \\$ replace the 8 with desired speed</pre>	trafficcontrol Section 3.4.1 p. 13
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. 13

No.	Name	Clip	Code	Manual reference
68	block signal (forward)		<pre>\coordinate (A) at (0,0); \coordinate (B) at (6,0); \coordinate (S) at (3,0); \maintrack (A) (B); \blocksignal[forward] at (S) label (1);</pre>	trafficcontrol Section 3.4.1 p. 13
69	block signal (backward)	2	\coordinate (A) at (0,0); \coordinate (B) at (6,0); \coordinate (S) at (3,0); \maintrack (A) (B); \blocksignal[backward] at (S) label (2);	trafficcontrol Section 3.4.1 p. 13
70	route signal (forward)	R1	<pre>\coordinate (A) at (0,0); \coordinate (B) at (6,0); \coordinate (S) at (3,0); \maintrack (A) (B); \routesignal[forward] at (S) label (R1);</pre>	trafficcontrol Section 3.4.1 p. 14
71	route signal (backward)	∞ <u></u> F	<pre>\coordinate (A) at (0,0); \coordinate (B) at (6,0); \coordinate (S) at (3,0); \maintrack (A) (B); \routesignal[backward, speed={8}] at (S) label (F); % replace the 8 with desired speed or remove tikz key</pre>	trafficcontrol Section 3.4.1 p. 14
72	combined signal (distant, block and route signal)	<sub>K1</sub> l∞∕∑∞	<pre>\coordinate (A) at (0,0); \coordinate (B) at (6,0); \coordinate (S) at (3,0); \maintrack (A) (B); \signal[distant,block,route,forward,distant speed=8,speed=8] at (S) label (K1); % replace the 8 with desired speed or remove tikz key</pre>	trafficcontrol Section 3.4.1 p. 12
73	shunt signal (forward)	<u> </u>	\coordinate (A) at (0,0); \coordinate (B) at (6,0); \coordinate (S) at (3,0); \maintrack (A) (B); \shuntsignal[forward] at (S) label ();	trafficcontrol Section 3.4.1 p. 14
74	shunt signal (backward)	<u> </u>	\coordinate (A) at (0,0); \coordinate (B) at (6,0); \coordinate (S) at (3,0); \maintrack (A) (B); \shuntsignal[backward] at (S) label ();	trafficcontrol Section 3.4.1 p. 14
75	shunt signal locked (forward)	<u> </u>	<pre>\coordinate (A) at (0,0); \coordinate (B) at (6,0); \coordinate (S) at (3,0); \maintrack (A) (B); \shuntsignal[forward,locked] at (S) label ();</pre>	trafficcontrol Section 3.4.1 p. 14
76	shunt signal locked (backward)	Φ	\coordinate (A) at (0,0); \coordinate (B) at (6,0); \coordinate (S) at (3,0); \maintrack (A) (B); \shuntsignal[backward,locked] at (S) label ();	trafficcontrol Section 3.4.1 p. 14

No.	Name	Clip	Code	Manual reference
77	block and shunt signal (forward)	sı	\coordinate (A) at (0,0); \coordinate (B) at (6,0); \coordinate (S) at (3,0); \maintrack (A) (B); \signal[block, shunting, forward] at (S) label (S1);	trafficcontrol Section 3.4.1 p. 12
78	block and shunt signal (backward)	sı	<pre>\coordinate (A) at (0,0); \coordinate (B) at (6,0); \coordinate (S) at (3,0); \maintrack (A) (B); \signal[block,shunting,backward] at (S) label (S1);</pre>	trafficcontrol Section 3.4.1 p. 12
79	route and shunt signal (forward)	SILOO	<pre>\coordinate (A) at (0,0); \coordinate (B) at (6,0); \coordinate (S) at (3,0); \maintrack (A) (B); \signal[route, shunting, forward] at (S) label (S1);</pre>	trafficcontrol Section 3.4.1 p. 12
80	route and shunt signal (backward)	<u> </u>	\coordinate (A) at (0,0); \coordinate (B) at (6,0); \coordinate (S) at (3,0); \maintrack (A) (B); \signal[route, shunting, backward] at (S) label (S1);	trafficcontrol Section 3.4.1 p. 12
81	shunt limit (forward)		<pre>\coordinate (A) at (0,0); \coordinate (B) at (6,0); \coordinate (S) at (3,0); \maintrack (A) (B); \shuntlimit[forward] at (S) label ();</pre>	trafficcontrol Section 3.4.1 p. 15
82	shunt limit (backward)		<pre>\coordinate (A) at (0,0); \coordinate (B) at (6,0); \coordinate (S) at (3,0); \maintrack (A) (B); \shuntlimit[backward] at (S) label ();</pre>	trafficcontrol Section 3.4.1 p. 15
83	train berth sign (forward)	<u> </u>	<pre>\coordinate (A) at (0,0); \coordinate (B) at (6,0); \coordinate (S) at (3,0); \maintrack (A) (B); \berthsignal[forward] at (S) label ();</pre>	trafficcontrol Section 3.4.1 p. 15
84	train berth sign (backward)	<u> </u>	<pre>\coordinate (A) at (0,0); \coordinate (B) at (6,0); \coordinate (S) at (3,0); \maintrack (A) (B); \berthsignal[backward] at (S) label ();</pre>	trafficcontrol 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 (); \berth[backward] at (H) length (); \berthsignal[backward] at (S1) label ();</pre>	trafficcontrol Section 3.4.1 p. 15 & measures Section 3.7 p. 29
86	trigger point (forward)	<u> </u>	<pre>\berthsignal[forward] at (S2) label ();  \coordinate (A) at (0,0); \coordinate (B) at (6,0); \coordinate (S) at (3,0);  \maintrack (A) (B);  \triggerpoint[forward] at (S);</pre>	trafficcontrol Section 3.4.2 p. 16
87	trigger point (backward)	<u></u>	\coordinate (A) at (0,0); \coordinate (B) at (6,0); \coordinate (S) at (3,0); \maintrack (A) (B); \triggerpoint[backward] at (S);	trafficcontrol Section 3.4.2 p. 16
88	view point (forward)	<u> </u>	\coordinate (A) at (0,0); \coordinate (B) at (6,0); \coordinate (S) at (3,0); \maintrack (A) (B); \viewpoint[forward] at (S);	trafficcontrol Section 3.4.2 p. 16
89	view point (backward)		\coordinate (A) at (0,0); \coordinate (B) at (6,0); \coordinate (S) at (3,0); \maintrack (A) (B); \viewpoint[backward] at (S);	trafficcontrol Section 3.4.2 p. 16
90	braking point (forward)	<u>+</u> 4	<pre>\coordinate (A) at (0,0); \coordinate (B) at (6,0); \coordinate (S) at (3,0); \maintrack (A) (B); \brakingpoint[forward] at (S) label ();</pre>	trafficcontrol Section 3.4.2 p. 17
91	braking point (backward)	<u> </u>	<pre>\coordinate (A) at (0,0); \coordinate (B) at (6,0); \coordinate (S) at (3,0); \maintrack (A) (B); \brakingpoint[backward] at (S) label ();</pre>	trafficcontrol Section 3.4.2 p. 17
92	end of movement authority (forward)	<u> </u>	<pre>\coordinate (A) at (0,0); \coordinate (B) at (6,0); \coordinate (S) at (3,0); \maintrack (A) (B); \movementauthority[forward] at (S) label ();</pre>	trafficcontrol Section 3.4.2 p. 17

No.	Name	Clip	Code	Manual reference
93	end of movement authority (backward)		<pre>\coordinate (A) at (0,0); \coordinate (B) at (6,0); \coordinate (S) at (3,0); \maintrack (A) (B); \movementauthority[backward] at (S) label ();</pre>	trafficcontrol Section 3.4.2 p. 17
94	danger point (forward)	*	<pre>\coordinate (A) at (0,0); \coordinate (B) at (6,0); \coordinate (S) at (3,0); \maintrack (A) (B); \dangerpoint[forward] at (S) label ();</pre>	trafficcontrol Section 3.4.2 p. 18
95	danger point (backward)	<b>♦</b>	\coordinate (A) at (0,0); \coordinate (B) at (6,0); \coordinate (S) at (3,0); \maintrack (A) (B); \dangerpoint[backward] at (S) label ();	trafficcontrol Section 3.4.2 p. 18
96	clearing point	т	<pre>\coordinate (A) at (0,0); \coordinate (B) at (6,0); \coordinate (CP) at (3,0); \maintrack (A) (B); \clearingpoint[backward] at (CP) label ();</pre>	trafficcontrol Section 3.4.3 p. 18
97	block clearing point (forward)	<del></del>	\coordinate (A) at (0,0); \coordinate (B) at (6,0); \coordinate (CP) at (3,0); \maintrack (A) (B); \blockclearing[forward] at (CP) label ();	trafficcontrol Section 3.4.3 p. 19
98	block clearing point (backward)	<u></u>	\coordinate (A) at (0,0); \coordinate (B) at (6,0); \coordinate (CP) at (3,0); \maintrack (A) (B); \blockclearing[backward] at (CP) label ();	trafficcontrol Section 3.4.3 p. 19
99	route clearing point (forward)		<pre>\coordinate (A) at (0,0); \coordinate (B) at (6,0); \coordinate (CP) at (3,0); \maintrack (A) (B); \routeclearing[forward] at (CP) label ();</pre>	trafficcontrol Section 3.4.3 p. 19
100	route clearing point (backward)	φ	<pre>\coordinate (A) at (0,0); \coordinate (B) at (6,0); \coordinate (CP) at (3,0); \maintrack (A) (B); \routeclearing[backward] at (CP) label ();</pre>	trafficcontrol Section 3.4.3 p. 19
101	route (forward & backward)	<b>—</b>	<pre>\coordinate (A) at (0,0); \coordinate (B) at (6,0); \coordinate (R1) at (2,0); \coordinate (R2) at (4,0); \maintrack (A) (B); \route[backward] at (R1); \route[forward] at (R2);</pre>	trafficcontrol Section 3.4.4 p. 20

No.	Name	Clip	Code	Manual reference
102	direction control	<del></del>	<pre>\coordinate (A) at (0,0); \coordinate (DC) at (3,0); \coordinate (B) at (6,0); \maintrack (A) (B); \directioncontrol[bidirectional] at (DC);</pre>	trafficcontrol Section 3.4.4 p. 20
103	direction control granted forward	<b>↓</b>	<pre>\coordinate (A) at (0,0); \coordinate (DC) at (3,0); \coordinate (B) at (6,0); \maintrack (A) (B); \directioncontrol[forward] at (DC);</pre>	trafficcontrol Section 3.4.4 p. 20
104	direction control granted backward	<b>+</b>	<pre>\coordinate (A) at (0,0); \coordinate (DC) at (3,0); \coordinate (B) at (6,0); \maintrack (A) (B); \directioncontrol[backward] at (DC);</pre>	trafficcontrol Section 3.4.4 p. 20
105	balise (forward & backward)		<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] at (T1) label (); \balise[backward] at (T2) label ();</pre>	trafficcontrol Section 3.4.5 p. 21
106	balise (forward) with signal		<pre>\coordinate (A) at (0,0); \coordinate (B) at (6,0); \coordinate (S) at (3,0); \maintrack (A) (B); \routesignal[forward] at (S) label (); \balise[forward] at (S) label ();</pre>	trafficcontrol Section 3.4.5 p. 21 & Section 3.4.1 p. 14
107	balise (forward & backward) 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 Section 3.4.5 p. 21
108	individual balises (forward & backward)		<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,along={0,1,2,3}] at (T1) label (A); \balise[backward,along={0,1,2,3}] at (T2) label (B);</pre>	trafficcontrol Section 3.4.5 p. 21

No.	Name	Clip	Code	Manual reference
109	individual balises (forward & backward) mixed	3 <b>0</b> 1 0 3 2 <b>1</b> 0 >	<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,    along={0,1,3},    along switched={2},    oppose={0,2},    ] at (T1) label (A); \balise[    backward,    along={0,1,3},    along switched={2},    oppose={0,2,3},    oppose switched={1},    index % show index number    ] at (T2) label (B);</pre>	trafficcontrol Section 3.4.5 p. 21
110	track loop		\coordinate (A) at (0,0); \coordinate (B) at (6,0); \coordinate (T) at (3,0); \maintrack (A) (B); \trackloop[] at (T) label ();	trafficcontrol Section 3.4.5 p. 22
111	platform (left)		<pre>\coordinate (A) at (0,0); \coordinate (B) at (6,0); \coordinate (P) at (3,0); \maintrack (A) (B); \platform[side=left] at (P);</pre>	constructions Section 3.5 p. 22
112	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 Section 3.5 p. 22
113	platform (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 (3, 0.5); \coordinate (P2) at (3,-0.5); \maintrack (A1) (B1); \maintrack (A2) (B2); \platform[side=right] at (P1); \platform[side=left] at (P2);	constructions Section 3.5 p. 22
114	level crossing (single track)	<u>+ </u>  +•	<pre>\coordinate (A) at (0,0); \coordinate (B) at (6,0); \coordinate (X) at (3,0); \maintrack (A) (B); \levelcrossing[barrier=semi] at (X);</pre>	constructions Section 3.5 p. 22
115	level crossing (secondary track) without barrier		<pre>\coordinate (A) at (0,0); \coordinate (B) at (6,0); \coordinate (X) at (3,0); \secondarytrack (A) (B); \levelcrossing[] at (X);</pre>	constructions Section 3.5 p. 22

No.	Name	Clip	Code	Manual reference
116	level crossing (double track)	•+         +•	\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 Section 3.5 p. 22
117	level crossing (double track) with full closure	•++•   	\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=full, side=left] at (X1); \levelcrossing[barrier=full, side=right] at (X2);	constructions Section 3.5 p. 22
118	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 Section 3.5 p. 23
119	bridge 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 Section 3.5 p. 23
120	interlocking		\coordinate (I) at (3,0); \interlocking at (I);	constructions Section 3.5 p. 24
121	hump	.alh. 'app	<pre>\coordinate (A) at (0,0); \coordinate (B) at (6,0); \coordinate (H) at (3,0); \secondarytrack (A) (B); \hump at (H);</pre>	constructions Section 3.5 p. 24
122	pylons (right)		<pre>\coordinate (A) at (0,0); \coordinate (B) at (6,0); \coordinate (P1) at (1,0); \coordinate (P2) at (3,0); \coordinate (P3) at (5,0);  \maintrack (A) (B); \pylon[side=right] at (P1); \pylon[side=right] at (P2); \pylon[side=right] at (P3);</pre>	constructions Section 3.5 p. 24

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

No.	Name	Clip	Code	Manual reference
130	power on (forward)	on Lo	<pre>\coordinate (A) at (0,0); \coordinate (B) at (6,0); \coordinate (E) at (3,0); \maintrack (A) (B); \poweron[forward] at (E) label (on);</pre>	electrics Section 3.6 p. 26
131	power on (backward)	on	\coordinate (A) at (0,0); \coordinate (B) at (6,0); \coordinate (E) at (3,0); \maintrack (A) (B); \poweron[backward] at (E) label (on);	electrics Section 3.6 p. 26
132	distant pantograph down (forward)	dP	<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 Section 3.6 p. 26
133	distant pantograph down (backward)	dP	<pre>\coordinate (A) at (0,0); \coordinate (B) at (6,0); \coordinate (E) at (3,0); \maintrack (A) (B); \distantpantographdown[backward] at (E) label (dP);</pre>	electrics Section 3.6 p. 26
134	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 Section 3.6 p. 27
135	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 Section 3.6 p. 27
136	pantograph up (forward)	ир	<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 Section 3.6 p. 27
137	pantograph up (backward)	<b>⇔</b> ¬up	<pre>\coordinate (A) at (0,0); \coordinate (B) at (6,0); \coordinate (E) at (3,0);  \maintrack (A) (B);  \pantographup[backward] at (E) label (up);</pre>	electrics Section 3.6 p. 27
138	wire limit (forward)	limit	<pre>\coordinate (A) at (0,0); \coordinate (B) at (6,0); \coordinate (E) at (3,0); \maintrack (A) (B); \wirelimit[forward] at (E) label (limit);</pre>	electrics Section 3.6 p. 28

No.	Name	Clip	Code	Manual reference
139	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 Section 3.6 p. 28
140	track distance (in m)	4,50 V	\coordinate (A1) at (0,-0.5); \coordinate (X1) at (3,-0.5); \coordinate (B1) at (6,-0.5); \coordinate (A2) at (0, 0.5); \coordinate (X2) at (3, 0.5); \coordinate (B2) at (6, 0.5); \maintrack (A1) (B1); \maintrack (A2) (B2); \trackdistance between (X2) and (X1) distance (4,50);	measures Section 3.7 p. 29
141	train berth shape	:. <b>▶</b>	<pre>\coordinate (A) at (0,0); \coordinate (B) at (6,0); \coordinate (H) at (3,0); \maintrack (A) (B); \berth[forward] at (H) length (\SI{750}{\metre});</pre>	measures Section 3.7 p. 29
142	train berth shape bidirectional		<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 Section 3.7 p. 29
143	train berth with special shape	; <b>-</b>	<pre>\coordinate (A) at (0,0); \coordinate (B) at (6,0); \coordinate (H1) at (3.25,0); \coordinate (H2) at (3,0);  \maintrack (A) (B);  \berth[forward ,length=3.0cm] at (H1) length (\SI{550}{\metre}); \berth[backward,length=3.5cm] at (H2) length (\SI{650}{\metre});</pre>	measures Section 3.7 p. 29
144	measure line	•	\coordinate (A) at (0,0); \coordinate (B) at (6,0); \measureline (A) (B); \trackclosure at (A); \trackclosure at (B);	measures Section 3.7 p. 29
145	hectometer (in km)	6.000 4.500 4.000	<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 Section 3.7 p. 30

No.	Name	Clip	Code	Manual reference
	measure line with hectometer (in km)		\coordinate (A1) at (0,0); \coordinate (X1) at (3,0); \coordinate (B1) at (6,0); \coordinate (A2) at (0,3); \coordinate (X2) at (2,3); \coordinate (X3) at (5,3); \coordinate (B2) at (6,3);	
146			\coordinate (hb) at (0,-2); \maintrack (A1) (B1); \maintrack (A2) (B2);	measures Section 3.7 p. 30
			\measureline (A2) (A1); \measureline (X2) ++(0,-1) ++(1,-1) (X1); \measureline (X3) ++(0,-1) ++(1,-1) (B1);	
		6.000 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>	
147	track marking		\coordinate (A) at (0,0); \coordinate (X) at (3,0); \coordinate (B) at (6,0);	measures Section 3.7 p. 30
			<pre>\maintrack (A) (B); \trackmarking[green] (A) (X); \trackmarking[red] (X) (B);</pre>	Section 3.7 p. 30
148	track marking with turnout		<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>	measures Section 3.7 p. 30
			\trackmarking[yellow] (A) (Y) ++(1,1); \trackmarking[blue] (Y) (B);	

## 1 Revision History

Date	Author(s)	Description
2018-09-14	MS	Basic concept of a library with railway topology symbols and some examples.
2018-12-19	MS	Added transmitters and minor improvements.
2019-04-04	MS	Moved snippet folder to root folder and defined and used color foreground and background.
2019-07-21	MS	Reworked library for common tikz library layout.
2020-01-14	MS	Introducing new syntax and providing a documentation.
2020-02-10	MS	Modified symbol "end of movement authority"; added symbols "braking point" and "danger point".
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}.
2021-09-30	MS	removed package requirement Imodern, minor correction in manual, added citation information
2021-10-15	MS	bug fixing
2022-02-15	MS, GW	fixed spelling error and documented (slip-) turnout option: points=moving; updated link to signalschablone; automated testing and releasing
2022-04-02	MS, GW	revised symbol and syntax for balises; replaced "\gettikzxy" with "\path let" syntax; fixed PackageWarning Error in development mode; fixed foreground of sidetrack (alias)
	2018-09-14 2018-12-19 2019-04-04 2019-07-21 2020-01-14 2020-02-10 2021-01-02 2021-09-30 2021-10-15 2022-02-15	2018-09-14 MS 2018-12-19 MS 2019-04-04 MS 2019-07-21 MS 2020-01-14 MS 2020-02-10 MS 2021-01-02 MS 2021-10-15 MS 2022-02-15 MS, GW

handeling color background and foreground with native xcolor alias "\colorlet" instead of pgf macro new symbol "trigger point"

0.7.1 0.8.0 2022-06-02 MS 2023-05-05 MS