

Line/Cable Database

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1 Description

The line database contains manufacturer data for overhead lines, such as phase/ground conductors, typical tower configurations, etcetera. The line database can be accessed from the Line/Cable Data device as shown in Figure 1.

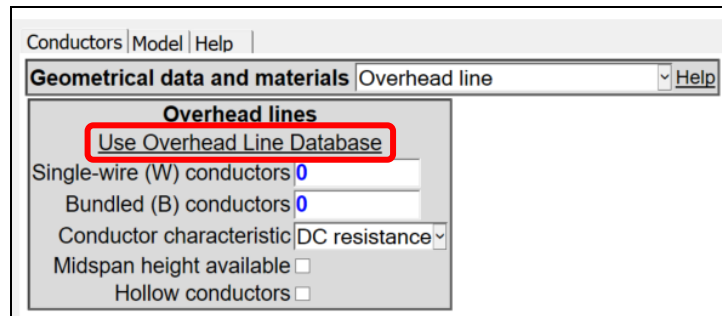


Figure 1. Link to the database from the Line/Cable Data device.

The default view of the mask of the line database is shown in Figure 2. The EMTP (default) database can be customized with user-defined data. Also, user-defined databases can be created.

A database can contain data for “Metric” and “English” units systems, the selection of units in the first tab, defines the data displayed in other tabs.

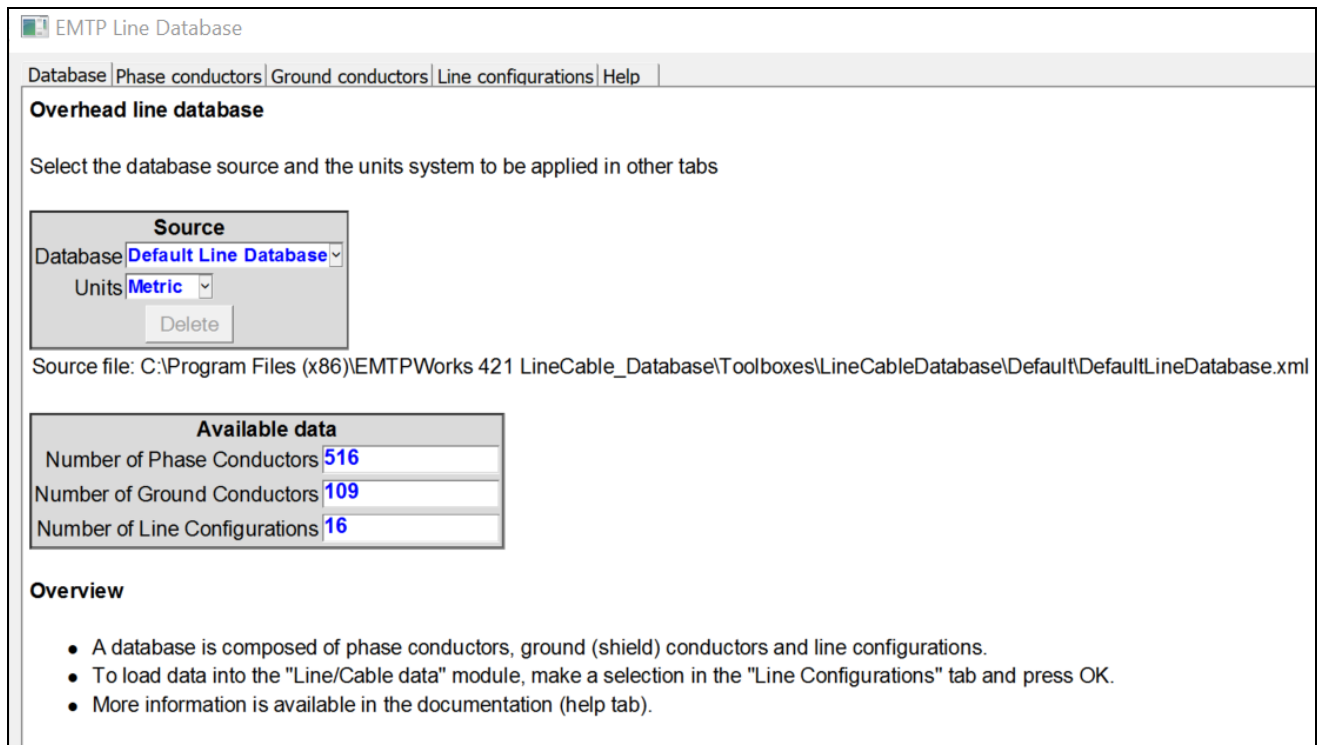


Figure 2. Database mask default view.

2 Phase conductors

The second tab in the line database as shown in Figure 3 contains data for phase conductors.

Additional data can be added by the user by pressing the "New" button and filling the new rows. Note that some data fields are optional. The "Delete" button allows to remove data and acts on the selected rows. The "Export" button can be used to send data from one database to another.

Search bars are available for typing and filtering data. Also, in some fields (columns) a selector is available to filter data.

EMTP Line Database

Database Phase conductors | Ground conductors | Line configurations | Help

Phase conductors

Phase conductors data available in the selected database

Phase conductor identifier	Data source*	Code name*	Type*	Area (mm²)	Outside diameter (mm)	Inside diameter (mm)	DC resistance at 20°C (Ohm/km)	Bundle of conductors?	Number of conductors	Spacing (cm)
Nexans Chlorine AAAC	Olex (Nexans)	Chlorine	AAAC	34.4	7.50	0.00	0.864	No	-	-
Nexans Chromium AAAC	Olex (Nexans)	Chromium	AAAC	42.4	8.25	0.00	0.713	No	-	-
Nexans Helium AAAC	Olex (Nexans)	Helium	AAAC	77.3	11.30	0.00	0.383	No	-	-
Nexans Hydrogen AAAC	Olex (Nexans)	Hydrogen	AAAC	111.0	13.50	0.00	0.266	No	-	-
Nexans Iodine AAAC	Olex (Nexans)	Iodine	AAAC	124.0	14.30	0.00	0.239	No	-	-
Nexans Lutetium AAAC	Olex (Nexans)	Lutetium	AAAC	183.0	17.50	0.00	0.163	No	-	-
Nexans Neon AAAC	Olex (Nexans)	Neon	AAAC	210.0	18.80	0.00	0.142	No	-	-
Nexans Nitrogen AAAC	Olex (Nexans)	Nitrogen	AAAC	262.0	21.00	0.00	0.114	No	-	-
Nexans Nobelium AAAC	Olex (Nexans)	Nobelium	AAAC	307.0	22.80	0.00	0.097	No	-	-
Nexans Oxygen AAAC	Olex (Nexans)	Oxygen	AAAC	337.0	23.80	0.00	0.088	No	-	-
Nexans Phosphorus AAAC	Olex (Nexans)	Phosphorus	AAAC	409.0	26.30	0.00	0.073	No	-	-
Nexans Selenium AAAC	Olex (Nexans)	Selenium	AAAC	506.0	29.30	0.00	0.059	No	-	-
Nexans Silicon AAAC	Olex (Nexans)	Silicon	AAAC	587.0	31.50	0.00	0.051	No	-	-
Nexans Sulfur AAAC	Olex (Nexans)	Sulfur	AAAC	673.0	33.80	0.00	0.044	No	-	-
Nexans Leo AAC	Olex (Nexans)	Leo	AAC	34.4	7.50	0.00	0.833	No	-	-
Nexans Leonids AAC	Olex (Nexans)	Leonids	AAC	41.6	8.25	0.00	0.689	No	-	-
Nexans Libra AAC	Olex (Nexans)	Libra	AAC	49.5	9.00	0.00	0.579	No	-	-
Nexans Mars AAC	Olex (Nexans)	Mars	AAC	77.3	11.30	0.00	0.370	No	-	-
Nexans Mercury AAC	Olex (Nexans)	Mercury	AAC	111.0	13.50	0.00	0.258	No	-	-
Nexans Moon AAC	Olex (Nexans)	Moon	AAC	124.0	14.30	0.00	0.232	No	-	-
Nexans Neptune AAC	Olex (Nexans)	Neptune	AAC	158.0	16.30	0.00	0.183	No	-	-
Nexans Orion AAC	Olex (Nexans)	Orion	AAC	183.0	17.50	0.00	0.157	No	-	-
Nexans Pluto AAC	Olex (Nexans)	Pluto	AAC	210.0	18.80	0.00	0.137	No	-	-
Nexans Saturn AAC	Olex (Nexans)	Saturn	AAC	262.0	21.00	0.00	0.110	No	-	-
Nexans Sirius AAC	Olex (Nexans)	Sirius	AAC	307.0	22.80	0.00	0.094	No	-	-
Nexans Taurus AAC	Olex (Nexans)	Taurus	AAC	337.0	23.80	0.00	0.086	No	-	-
Nexans Triton AAC	Olex (Nexans)	Triton	AAC	409.0	26.30	0.00	0.071	No	-	-
Nexans Uranus AAC	Olex (Nexans)	Uranus	AAC	506.0	29.30	0.00	0.057	No	-	-
Nexans Ursula AAC	Olex (Nexans)	Ursula	AAC	587.0	31.50	0.00	0.049	No	-	-
Nexans Venus AAC	Olex (Nexans)	Venus	AAC	673.0	33.80	0.00	0.043	No	-	-
Nexans ACUT35AA001 CU	Olex (Nexans)	ACUT35AA001	CU	5.5	3.00	0.00	3.250	No	-	-

*optional data.

New Delete Export

Figure 3. Phase conductors tab.

3 Ground conductors

The third tab in the line database as shown in Figure 4 contains data for ground (shield) conductors.

Data can be added/removed/exported as explained before for phase conductors.

Also, easy navigation through the available data is possible via search bars and selectors for data filtering.

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Ground conductors

Ground conductors data available in the selected database

Ground conductor identifier	Data source*	Code name*	Type*	Area (mm ²)	Outer diameter (mm)	Inner diameter (mm)	DC resistance at 20°C (Ohm/km)
37 No.6	AFL	37 No.6	ALUMOWELD	492.2	28.80	0.00	0.176
37 No.7	AFL	37 No.7	ALUMOWELD	390.3	25.70	0.00	0.222
37 No.8	AFL	37 No.8	ALUMOWELD	309.5	22.90	0.00	0.279
37 No.9	AFL	37 No.9	ALUMOWELD	245.5	20.30	0.00	0.352
37 No.10	AFL	37 No.10	ALUMOWELD	194.7	17.90	0.00	0.444
19 No.5	AFL	19 No.5	ALUMOWELD	318.7	23.10	0.00	0.270
19 No.6	AFL	19 No.6	ALUMOWELD	252.7	20.60	0.00	0.340
19 No.7	AFL	19 No.7	ALUMOWELD	200.4	18.30	0.00	0.429
19 No.8	AFL	19 No.8	ALUMOWELD	158.9	16.30	0.00	0.541
19 No.9	AFL	19 No.9	ALUMOWELD	126.1	14.50	0.00	0.682
19 No.10	AFL	19 No.10	ALUMOWELD	100.0	12.90	0.00	0.860
7 No.5	AFL	7 No.5	ALUMOWELD	117.4	13.90	0.00	0.743
7 No.6	AFL	7 No.6	ALUMOWELD	93.1	12.40	0.00	0.920
7 No.7	AFL	7 No.7	ALUMOWELD	73.9	11.00	0.00	1.160
7 No.8	AFL	7 No.8	ALUMOWELD	58.5	9.78	0.00	1.453
7 No.9	AFL	7 No.9	ALUMOWELD	46.4	8.71	0.00	1.844
7 No.10	AFL	7 No.10	ALUMOWELD	36.8	7.76	0.00	2.325
7 No.11	AFL	7 No.11	ALUMOWELD	29.2	6.91	0.00	2.932
7 No.12	AFL	7 No.12	ALUMOWELD	23.2	6.16	0.00	3.697
3 No.5	AFL	3 No.5	ALUMOWELD	50.3	9.96	0.00	1.699
3 No.6	AFL	3 No.6	ALUMOWELD	39.9	8.87	0.00	2.142
3 No.7	AFL	3 No.7	ALUMOWELD	31.7	7.90	0.00	2.701
3 No.8	AFL	3 No.8	ALUMOWELD	25.1	7.03	0.00	3.406
3 No.9	AFL	3 No.9	ALUMOWELD	19.9	6.26	0.00	4.294
3 No.10	AFL	3 No.10	ALUMOWELD	15.8	5.58	0.00	5.415
No.4	AFL	No.4	ALUMOWELD	21.2	5.19	0.00	4.009
No.5	AFL	No.5	ALUMOWELD	16.8	4.62	0.00	5.056
No.6	AFL	No.6	ALUMOWELD	13.3	4.11	0.00	6.375
No.7	AFL	No.7	ALUMOWELD	10.6	3.66	0.00	8.038
No.8	AFL	No.8	ALUMOWELD	8.4	3.26	0.00	10.130
No.11	AFL	No.11	ALUMOWELD	4.2	2.30	0.00	20.320
No.12	AFL	No.12	ALUMOWELD	3.3	2.10	0.00	25.630

*optional data.

New Delete Export

Figure 4. Ground conductors tab.

4 Line configurations

Typical line configurations are available in the fourth tab of the database as shown in Figure 5. New configurations can be created by the user from the available conductors (phase and ground) data and towers.

The data from the available line configurations can be loaded into the Line/Cable Data device by selecting the corresponding row and closing the mask with the OK button.

EMTP Line Database

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Line configurations

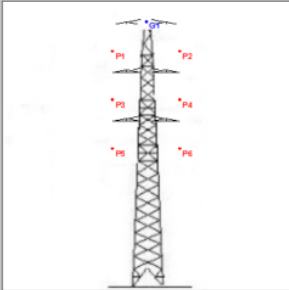
Line configurations data available in the selected database. To load a line configuration into the Line/Cable data device, make a selection and close with OK.

Line ID

- 132kV AC - L - ACSR - Single Circuit
- 132kV AC - L7 - ACSR - Double Circuit
- 220kV AC - L - ACSR - Double Circuit - A**
- 220kV AC - L - ACSR - Double Circuit - B
- 220kV AC - L - ACSR - Single Circuit
- 230kV AC - P - ACSR - Single Circuit
- 345kV AC - 3L13 - ACSR - Double Circuit
- 345kV AC - 3L14 - ACSR - Double Circuit
- 345kV AC - 3L15 - ACSR - Single Circuit

New Delete Export

Line configuration: 220kV AC - L - ACSR - Double Circuit - A



Conductor type	Label	Horizontal position (m)	H: Height of anchor point (m)	L: Length of insulator chain (m)
Phase	P1	-3.50	27.97	2.79
Phase	P2	3.50	27.97	2.79
Phase	P3	-3.50	22.87	2.79
Phase	P4	3.50	22.87	2.79
Phase	P5	-3.50	17.77	2.79
Phase	P6	3.50	17.77	2.79
Ground	G1	0.00	28.52	0.00

Number of phases: 6 phases (double-circuit) ▾

Number of ground wires: One ground wire ▾

Tower structure: Lattice Generic ▾

Conductor for 3-phase circuit 1 (P1, P2 and P3): MidalCable Zebra ACSR ▾

Conductor for 3-phase circuit 2 (P4, P5 and P6): MidalCable Zebra ACSR ▾

Conductor for 3-phase circuit 3 (P7, P8 and P9): Alcan Jorea ACSR ▾

Conductor for 3-phase circuit 4 (P10, P11 and P12): Alcan Jorea ACSR ▾

Conductor for ground wires: GSEB 7/3.15 SC/GZ ▾

200 ▾ Display Scale

OK Cancel

Figure 5. Line configurations tab.