

Technical data

7.1 LD general data

Thermal characteristic:

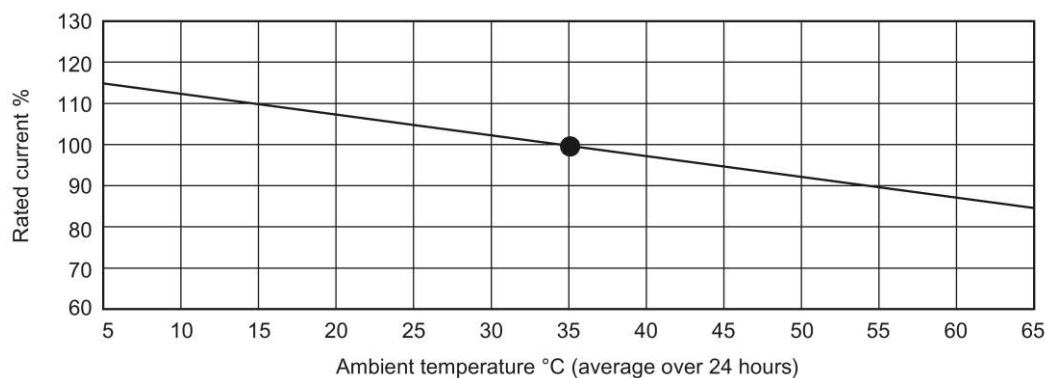


Figure 7-1 Dependence of the rated current on the ambient temperature

Standards and regulations	IEC 61439-1 and -6
Climatic resistance	
• Damp heat, steady state, to IEC 60068-2-78	40 °C/93 %/RH/56d
• Damp heat, cyclic, to IEC 60068-2-30	56 × (25 ... 40 °C/3 h; 40 °C/9 h; 40 ... 25 °C/3 ... 6 h; 25 °C/6 h)/95 % RH
• Cold in accordance with IEC 60068-2-1	-45 °C, 16 h
• Temperature change in accordance with IEC 60068-2-14	-45 °C ... 55 °C; 5 cycles (1 °C/min); holding time min. 30 min
• Salt spray test in accordance with IEC 60068-2-52	Severity grade 3
• Ice formation acc. to IEC 60068-2-61	Test based on a combination of damp heat, cyclic (56 × (25 ... 40 °C/3 h; 40 °C/9 h; 40 ... 25 °C/3 ... 6 h; 25 °C/6 h)/95 % RH) + low temperature (-45 °C, 16 h)
Ambient temperature min./max./24-h mean °C	-5/+40/+35

Standards and regulations		IEC 61439-1 and -6
Environmental classes		Climatic: <ul style="list-style-type: none"> • 1K5 (storage) = 3K7L (operation without exposure to the sun) • 2K2 (transport) Chemically active → salt spray, other contaminants optional <ul style="list-style-type: none"> • 1C2 (storage) = 3C2 (operation) = 2C2 (transport) Biological → covered by IP degrees of protection and type of packaging <ul style="list-style-type: none"> • 1B2 (storage) = 3B2 (operation) = 2B2 (transport) Mechanically active → covered by IP degrees of protection and type of packaging <ul style="list-style-type: none"> • 1S2 (storage) = 3S2 (operation) • 2S2 (transport)
Degree of protection		IP31 ventilated (for horizontal flat busbar position) IP34 ventilated (for horizontal edgewise busbar position) IP54 closed
Standard mounting position		Position of busbars edgewise in the trunking unit with for horizontal routing
Torque for single-bolt terminal	Nm	80
Surface treatment of the contact points of busbars		LDA: nickel-plated and tinned LDC: tinned
Material of trunking units, tap-off units		Sheet steel, powder-coated
Colour of trunking units, tap-off units		RAL 7035 (light grey)
Dimensions		See chapter "Dimension drawings (Page 285)"
Weight		See chapter "Weights (Page 282)"
Rated insulation voltage	V AC/V DC	1000
Overvoltage category III/3		
• for power transmission	V AC	1000
• for power distribution	V AC	400 (690) ¹⁾
Overvoltage category IV/3	V AC	
• for power transmission		690
Rated frequency	Hz	50/60 ²⁾

1) You can obtain tap-off units on request

2) A derating to 95% is to be considered for currents > 800 A at a frequency of 60 Hz.

7.4 Trunking units LDC.4 (4-pole, copper)

System-dependent data				LDC242	LDC342	LDC641	LDC642	
				PEN=L	PEN=L	PEN=½L	PEN=L	
Rated current $I_e^{(1)}$								
Horizontal edgewise ²⁾	IP34	I_e	A	2000	2600	3400	3400	
	IP54	I_e	A	1600	2000	2600	2600	
Vertical	IP34	I_e	A	1650	2100	2700	2700	
	IP54	I_e	A	1600	2000	2600	2600	
Horizontal flat	IP31/IP54	I_e	A	1200	1550	2000	2000	
Impedance per unit length								
Impedance per unit length of the busbars with 50 Hz and busbar temperature 20 °C	Resistance	R'_{20}	mΩ/m	0.027	0.019	0.013	0.013	
	Reactance	X'_{20}	mΩ/m	0.037	0.029	0.019	0.019	
	Impedance	Z'_{20}	mΩ/m	0.046	0.035	0.023	0.023	
Impedance per unit length of the busbars with 50 Hz and busbar temperature 140 °C	Resistance	R'_{140}	mΩ/m	0.040	0.028	0.020	0.020	
	Reactance	X'_{140}	mΩ/m	0.037	0.029	0.019	0.019	
	Impedance	Z'_{140}	mΩ/m	0.055	0.040	0.028	0.028	
Impedance of the fault loop phase - PE(N) at busbar temperature 20 °C	Resistance	R'_{b20p} hPE(N)	mΩ/m	0.058	0.044	0.039	0.031	
	Reactance	X'_{b-} phPE(N))	mΩ/m	0.078	0.061	0.040	0.041	
	Impedance	Z'_{b20p} hPE(N)	mΩ/m	0.097	0.075	0.056	0.052	
Zero-sequence impedance								
Zero-sequence impedance phases - PE(N) with 50 Hz and busbar temperature 20 °C	Resistance	$R'_{(0)b2}$ 0phPE(N)	mΩ/m	0.129	0.096	0.105	0.066	
	Reactance	$X'_{(0)bp}$ hPE(N)	mΩ/m	0.228	0.174	0.132	0.126	
	Impedance	$Z'_{(0)b2}$ 0phPE(N)	mΩ/m	0.262	0.199	0.169	0.142	
Short-circuit withstand strength								
Rated short-time withstand current	r.m.s. value t = 0.1 s	I_{cw}	kA	80	80	130	130	
	r.m.s. value t = 1 s	I_{cw}	kA	58	58	116	116	
Rated impulse withstand current	Peak value	I_{pk}	kA	176	176	286	286	
Conductor material				Copper				
No. of busbars				4	4	7	8	
Conductor cross-section		L1, L2, L3	A	mm ²	706	1022	1412	1412

System-dependent data				LDC242	LDC342	LDC641	LDC642
				PEN=L	PEN=L	PEN=½L	PEN=L
	PEN	A	mm ²	706	1022	706	1412
Fire load							
Trunking unit without tap-off point			kWh/m	7.09	7.09	10.87	11.99
per tap-off point			kWh	8.32	8.32	12.04	12.96
Max. fixing distances							
at normal mechanical load			m	5	4	4	4

1) Dependent on degree of protection and type of routing

2) Incl. height offsets ≤1.3 m

System-dependent data				LDC741	LDC742	LDC841	LDC842
				PEN=½L	PEN=L	PEN=½L	PEN=L
Rated current $I_e^{1)}$							
Horizontal edgewise ²⁾	IP34	I_e	A	4400	4400	5000	5000
	IP54	I_e	A	3200	3200	3600	3600
Vertical	IP34	I_e	A	3500	3500	4250	4250
	IP54	I_e	A	3200	3200	3600	3600
Horizontal flat	IP31/IP54	I_e	A	2600	2600	3000	3000
Impedance per unit length							
Impedance per unit length of the busbars with 50 Hz and busbar temperature 20 °C	Resistance	R'_{20}	mΩ/m	0.011	0.011	0.011	0.010
	Reactance	X'_{20}	mΩ/m	0.015	0.015	0.013	0.013
	Impedance	Z'_{20}	mΩ/m	0.019	0.018	0.017	0.017
Impedance per unit length of the busbars with 50 Hz and busbar temperature 140 °C	Resistance	R'_{140}	mΩ/m	0.017	0.016	0.017	0.015
	Reactance	X'_{140}	mΩ/m	0.015	0.015	0.013	0.013
	Impedance	Z'_{140}	mΩ/m	0.023	0.022	0.021	0.020
Impedance of the fault loop phase - PE(N) at busbar temperature 20 °C	Resistance	R'_{b20} _{phPE(N)}	mΩ/m	0.028	0.023	0.025	0.020
	Reactance	X'_{b-} phPE(N)	mΩ/m	0.031	0.032	0.027	0.028
	Impedance	Z'_{b20p} hPE(N)	mΩ/m	0.042	0.039	0.037	0.034
Zero-sequence impedance							
Zero-sequence impedance phases - PE(N)	Resistance	$R'_{(0)b}$ 20phPE(N)	mΩ/m	0.075	0.048	0.066	0.042

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7.4 Trunking units LDC.4 (4-pole, copper)

System-dependent data				LDC741	LDC742	LDC841	LDC842
				PEN=½L	PEN=L	PEN=½L	PEN=L
with 50 Hz and busbar temperature 20 °C	Reactance	$X'_{(0)b}$ phPE(N)	mΩ/m	0.096	0.096	0.087	0.084
	Impedance	$Z'_{(0)b}$ 20phPE(N)	mΩ/m	0.122	0.107	0.109	0.094
Short-circuit withstand strength							
Rated short-time withstand current	r.m.s. value t = 0.1 s	I_{cw}	kA	130	130	130	130
	r.m.s. value t = 1 s	I_{cw}	kA	116	116	116	116
Rated impulse withstand current	Peak value	I_{pk}	kA	286	286	286	286
Conductor material				Copper			
No. of busbars				7	8	7	8
Conductor cross-section	L1, L2, L3	A	mm ²	2044	2044	2464	2464
	PEN	A	mm ²	1022	2044	1232	2464
Fire load							
Trunking unit without tap-off point			kWh/m	10.87	11.99	10.87	11.99
per tap-off point			kWh	12.04	12.96	12.04	12.96
Max. fixing distances							
at normal mechanical load			m	3	3	2	2

1) Dependent on degree of protection and type of routing

2) Incl. height offsets ≤1.3 m

7.5 Trunking units LDC.6 (5-pole, copper)

System-dependent data				LDC262	LDC362	LDC661	LDC662
				N=L	N=L	N=½L	PEN=L
Rated current $I_e^{(1)}$							
Horizontal edgewise ²⁾	IP34	I_e	A	2000	2600	3400	3400
	IP54	I_e	A	1600	2000	2600	2600
Vertical	IP34	I_e	A	1650	2100	2700	2700
	IP54	I_e	A	1600	2000	2600	2600
Horizontal flat	IP31/IP54	I_e	A	1200	1550	2000	2000
Impedance per unit length							
Impedance per unit length of the busbars with 50 Hz and busbar temperature 20 °C	Resistance	R'_{20}	mΩ/m	0.034	0.028	0.020	0.020
	Reactance	X'_{20}	mΩ/m	0.037	0.028	0.019	0.019
	Impedance	Z'_{20}	mΩ/m	0.050	0.039	0.027	0.027
Impedance per unit length of the busbars with 50 Hz and busbar temperature 140 °C	Resistance	R'_{140}	mΩ/m	0.051	0.041	0.029	0.030
	Reactance	X'_{140}	mΩ/m	0.037	0.028	0.019	0.019
	Impedance	Z'_{140}	mΩ/m	0.063	0.050	0.035	0.035
Impedance of the fault loop phase - PE(N) at busbar temperature 20 °C	Resistance	R'_{b20p} hPE(N)	mΩ/m	0.064	0.049	0.046	0.046
	Reactance	X'_{b-} phPE(N))	mΩ/m	0.104	0.087	0.062	0.062
	Impedance	Z'_{b20p} hPE(N)	mΩ/m	0.122	0.100	0.077	0.077
Impedance of the fault loop phase - N at busbar temperature 20 °C	Resistance	R'_{b20p} hN	mΩ/m	0.068	0.049	0.046	0.033
	Reactance	X'_{bphN}	mΩ/m	0.082	0.063	0.048	0.048
	Impedance	Z'_{b20p} hN	mΩ/m	0.106	0.080	0.066	0.058
Zero-sequence impedance							
Zero-sequence impedance phases - PE(N) with 50 Hz and busbar temperature 20 °C	Resistance	$R'_{(0)b2}$ 0phPE(N)	mΩ/m	0.141	0.105	0.132	0.132
	Reactance	$X'_{(0)bp}$ hPE(N)	mΩ/m	0.375	0.303	0.222	0.228
	Impedance	$Z'_{(0)b2}$ 0phPE(N)	mΩ/m	0.401	0.321	0.258	0.263
Zero-sequence impedance phases - N with 50 Hz and	Resistance	$R'_{(0)b2}$ 0phN	mΩ/m	0.141	0.102	0.111	0.072
	Reactance	$X'_{(0)bp}$ hN	mΩ/m	0.177	0.147	0.105	0.102

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7.5 Trunking units LDC.6 (5-pole, copper)

System-dependent data				LDC262	LDC362	LDC661	LDC662
				N=L	N=L	N=½L	PEN=L
busbar temperature 20 °C	Impedance	$Z'_{(0)b2}$ 0phN	mΩ/m	0.226	0.179	0.153	0.125
Short-circuit withstand strength							
Rated short-time withstand current	r.m.s. value t = 0.1 s	I_{cw}	kA	80	80	130	130
	r.m.s. value t = 1 s	I_{cw}	kA	58	58	116	116
Rated impulse withstand current	Peak value	I_{pk}	kA	176	176	286	286
Rated short-time withstand current of the 5th conductor	r.m.s. value t = 0.1 s	I_{cw}	kA	48	48	78	78
	r.m.s. value t = 1 s	I_{cw}	kA	35	35	70	70
Conductor material				Copper			
No. of busbars				5	5	8	9
Conductor cross-section	L1, L2, L3	A	mm ²	706	1022	1412	1412
	N	A	mm ²	706	1022	706	1412
	PE	A	mm ²	706	1022	706	706
Fire load							
Trunking unit without tap-off point			kWh/m	7.29	7.29	10.87	11.99
per tap-off point			kWh	8.32	8.32	12.04	12.96
Max. fixing distances							
at normal mechanical load			m	5	4	4	4

1) Dependent on degree of protection and type of routing

2) Incl. height offsets ≤1.3 m

System-dependent data				LDC761	LDC762	LDC861	LDC862
				N=½L	N=L	N=½L	N=L
Rated current $I_e^{1)}$							
Horizontal edgewise ²⁾	IP34	I_e	A	4400	4400	5000	5000
	IP54	I_e	A	3200	3200	3600	3600
Vertical	IP34	I_e	A	3500	3500	4250	4250
	IP54	I_e	A	3200	3200	3600	3600
Horizontal flat	IP31/IP54	I_e	A	2600	2600	3000	3000
Impedance per unit length							
Impedance per unit length of the busbars with 50 Hz and busbar temperature 20 °C	Resistance	R'_{20}	mΩ/m	0.016	0.016	0.015	0.015
	Reactance	X'_{20}	mΩ/m	0.015	0.015	0.014	0.014
	Impedance	Z'_{20}	mΩ/m	0.022	0.022	0.021	0.021
Impedance per unit length of the busbars	Resistance	R'_{140}	mΩ/m	0.024	0.024	0.023	0.023
	Reactance	X'_{140}	mΩ/m	0.015	0.015	0.014	0.014

System-dependent data				LDC761	LDC762	LDC861	LDC862	
				N=½L	N=L	N=½L	N=L	
with 50 Hz and busbar temperature 140 °C	Impedance	Z'_{140}	mΩ/m	0.028	0.028	0.026	0.026	
	Impedance of the fault loop phase - PE(N) at busbar temperature 20 °C	Resistance	R'_{b20} $_{phPE(N)}$	mΩ/m	0.035	0.035	0.031	0.031
		Reactance	X'_{b-} $_{phPE(N)}$	mΩ/m	0.049	0.049	0.045	0.044
	Impedance	Z'_{b20p} $_{hPE(N)}$	mΩ/m	0.061	0.060	0.054	0.054	
Impedance of the fault loop phase - N at busbar temperature 20 °C	Resistance	R'_{b20} $_{phN}$	mΩ/m	0.032	0.024	0.028	0.021	
	Reactance	X'_{b-} $_{phN}$	mΩ/m	0.035	0.036	0.031	0.032	
	Impedance	Z'_{b20p} $_{hN}$	mΩ/m	0.048	0.043	0.042	0.039	
Zero-sequence impedance								
Zero-sequence impedance phases - PE(N) with 50 Hz and busbar temperature 20 °C	Resistance	$R'_{(0)b}$ $_{20phPE(N)}$	mΩ/m	0.099	0.099	0.087	0.087	
	Reactance	$X'_{(0)b}$ $_{phPE(N)}$	mΩ/m	0.171	0.171	0.153	0.156	
	Impedance	$Z'_{(0)b}$ $_{20phPE(N)}$	mΩ/m	0.198	0.198	0.176	0.179	
Zero-sequence impedance phases - N with 50 Hz and busbar temperature 20 °C	Resistance	$R'_{(0)b}$ $_{20phN}$	mΩ/m	0.075	0.051	0.066	0.045	
	Reactance	$X'_{(0)b}$ $_{phN}$	mΩ/m	0.075	0.078	0.066	0.069	
	Impedance	$Z'_{(0)b}$ $_{20phN}$	mΩ/m	0.106	0.093	0.093	0.082	
Short-circuit withstand strength								
Rated short-time withstand current	r.m.s. value t = 0.1 s	I_{cw}	kA	130	130	130	130	
	r.m.s. value t = 1 s	I_{cw}	kA	116	116	116	116	
Rated impulse withstand current	Peak value	I_{pk}	kA	286	286	286	286	
Rated short-time withstand current of the 5th conductor	r.m.s. value t = 0.1 s	I_{cw}	kA	78	78	78	78	
	r.m.s. value t = 1 s	I_{cw}	kA	70	70	70	70	
Conductor material				Copper				
No. of busbars				8	9	8	9	
Conductor cross-section	L1, L2, L3	A	mm ²	2044	2044	2464	2464	
	N	A	mm ²	1022	2044	1232	2464	

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7.5 Trunking units LDC.6 (5-pole, copper)

System-dependent data				LDC761	LDC762	LDC861	LDC862
				N=½L	N=L	N=½L	N=L
PE	A	mm ²	1022	1022	1232	1232	
Fire load							
Trunking unit without tap-off point		kWh/m	10.87	11.99	10.87	11.99	
per tap-off point		kWh	12.04	12.96	12.04	12.96	
Max. fixing distances							
at normal mechanical load		m	3	3	2	2	

1) Dependent on degree of protection and type of routing

2) Incl. height offsets ≤1.3 m