



SEW
EURODRIVE

Manual



MOVITRAC® LTE-B+/LTP-B

Accessories

Braking Resistors, Filters, Chokes, Shielding



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1 General information

1.1 About this documentation

This documentation is an integral part of the product. The documentation is intended for all employees who perform assembly, installation, startup, and service work on the product.

Make sure this documentation is accessible and legible. Ensure that persons responsible for the machinery and its operation as well as persons who work on the device independently have read through the documentation carefully and understood it. If you are unclear about any of the information in this documentation or require further information, contact SEW-EURODRIVE.

1.2 Rights to claim under limited warranty

Read the information in this documentation. This is essential for fault-free operation and fulfillment of any rights to claim under limited warranty. Read the documentation before you start working with the unit!

1.3 Other applicable documentation

This document supplements the operating instructions and limits the application notes according to the following information. Use this document only together with the operating instructions.

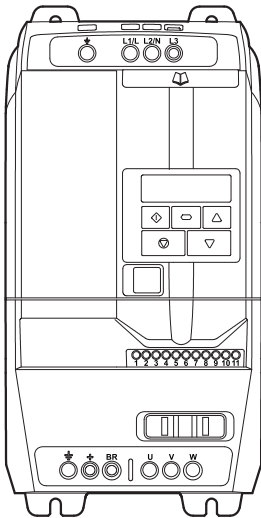
1.4 Copyright notice

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2 System overview

2.1 System overview of MOVITRAC® LTE-B+

Frequency inverter	
LTE-B+	- Performance classes: 0.37 – 37 kW - Voltage range: 1 × 115 V, 1 × 230 V, 3 × 230 V, 3 × 400 V, - Overload capacity: 150% for 60 s, 175% for 2 s For further information on this device, refer to the following documents: "MOVITRAC® LTE-B+ Frequency Inverter" operating instructions
	

Option cards	
OB LT 2ROUT B	Second relay output
OB LT HAVAC-B	Second signal relay
OB LT VCON A	110 V/24 V converter card
OB LT VCON B	234 V/24 V converter card
OB LT LOCMO	Control board

System components	
BW	Braking resistor
NF LT	Line filter
ND LT	Line choke
HD LT	Output choke

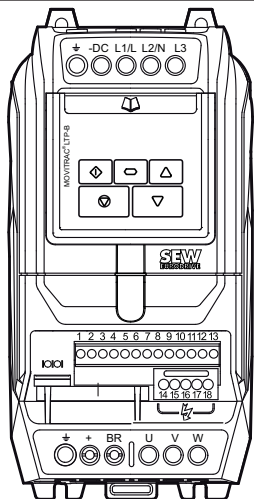
Remote keypads	
LT BG-C	7-segment display keypad
LT BG OLED A	Full-text OLED keypad

Accessories	
Cable set A	Basic package
Cable set B	Expansion package
Cable set C	PC engineering package
LTBP-C	Bluetooth® parameter module

Software	
MOVITOOLS® MotionStudio	Software for parameterization and data backup
LT Shell	Software for parameterization, data backup, firmware updates, and scope

2.2 System overview of MOVITRAC® LTP-B

Frequency inverters	
LTP-B	- Performance classes: 0.75 – 160 kW - Voltage range: 1 × 230 V, 3 × 230 V, 3 × 400 V, 3 × 575 V - Overload capacity: 150% for 60 s, 175% for 2 s For further information on this device, refer to the following documents: "MOVITRAC® LTP-B Frequency Inverter" operating instructions



Option cards	
LT OB 3ROUT A	Relay expansion card
LT OB IO A	Digital I/O expansion card
LT OB ENC A	Encoder card TTL
LT OB ENH A	Encoder card HTL
LT X-H1 A	Servo extension
LT FP 11A	PROFIBUS DP (M30)
LT FP 12A	PROFIBUS DP (M40)
LT FE 32A	PROFINET IO (M30)
LT FE 34A	PROFINET IO (M40)
LT FE 33A	EtherNet/IP™ (M30)
LT FE 35A	EtherNet/IP™ (M40)
LT FE 24A	EtherCAT® (M30)
LT FD 11A	DeviceNet™ (M30)
LT FE 31A	MODBUS/TCP (M30)
LT FE 25A	POWERLINK (M40)

System components	
BW	Braking resistor
NF LT	Line filter
ND LT	Line choke
HD LT	Output choke

Remote keypads	
LT BG-C	7-segment display keypad

Remote keypads	
LT BG OLED A	Full-text OLED keypad
Accessories	
Cable set A	Basic package
Cable set B	Expansion package
Cable set C	PC engineering package
LTBP-C	Bluetooth® parameter module
Software	
MOVITOOLS® MotionStudio	Software for parameterization and data backup
LT Shell	Software for parameterization, data backup, firmware updates, and scope

3 Flatpack resistors

A special resistor in flat design is available for MOVITRAC® LT.

Braking resistor type	Part number	LTE-B+	LTP-B
BW LT 100 002 ¹⁾	18208770	X	X
BW LT 050 002 55 ²⁾	18218342	X	–
BW LT 033 005 ²⁾³⁾	18201938	–	X

1) For sizes 2 and 3.

2) No UL approval.

3) For sizes 4 and 5.

X = available

– = not available

A braking resistor connected to the MOVITRAC® LT can be used to convert braking energy generated by the motor into thermal energy. This braking resistor is suitable for applications with a short deceleration ramp or a high mass moment of inertia.

Functionality

The resistor is installed in the frequency inverter.

- The MOVITRAC® LT firmware protects the braking resistors BW LT against overload, so no external overload relays are required.
- An internal fusible element ensures fault-free operation.
- The BW LT 100 002 can be compactly mounted in the heat sink of the MOVITRAC® LT in the IP20 design and in this way offers an integrated solution.

3.1 Technical data

Type		BW LT 100 002	BW LT 050 002 55	BW LT 033 005
Part number		18208770	18218342	18201938
100% cdf		200 W	200 W	500 W
Resistance value RBW		100 Ω ±10%	50 Ω ±10%	33 Ω ±10%
Max. ambient temperature		50 °C	50 °C	50 °C
Degree of protection		IP20	IP55	IP55
Dimensions L × W × H	mm	188 × 41 × 9	330 × 80 × 12	330 × 80 × 10
	inch	7.402 × 1.614 × 0.354	12.99 × 3.150 × 0.472	12.99 × 3.150 × 0.394

3.2 Installation IP20

Read the relevant operating instructions before starting work.



⚠ WARNING

Danger of electric shock. Dangerous voltage levels may still be present inside the device and at the terminals up to 10 minutes after disconnection from the power supply.

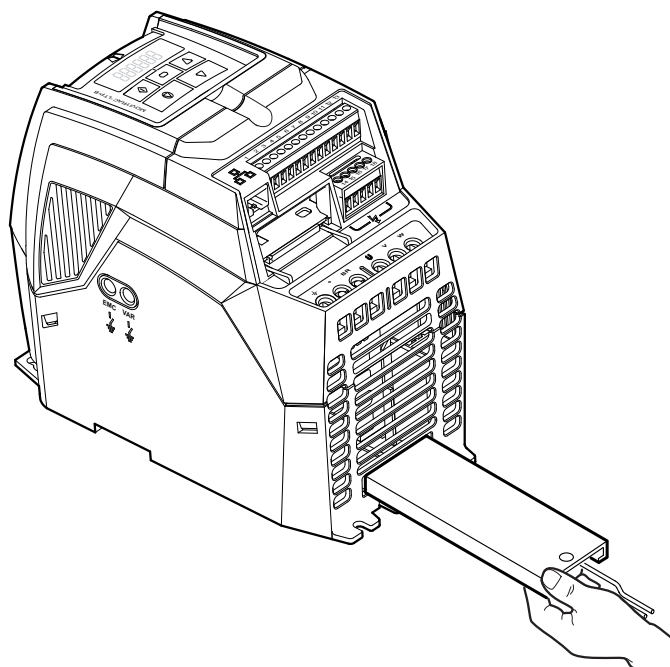
Severe or fatal injuries.

- Before removing the power supply cable, disconnect MOVITRAC® LT from the power supply and wait at least 10 minutes.

Installation:

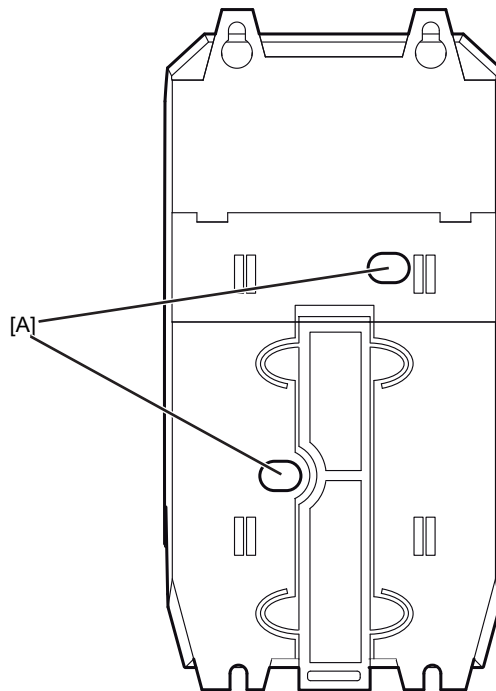
The installation procedures for LTE-B+ and LTP-B are identical. The installation is explained using the LTP-B as example.

1. Push the braking resistor into the slot at the bottom of the unit. The flat side of the resistor must point in the direction of the front of the unit.



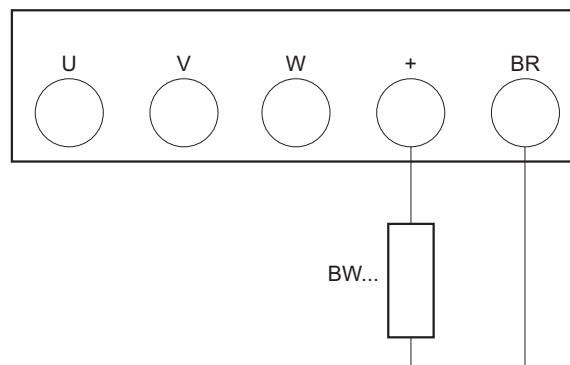
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2. Attach the resistor by screwing the 2 supplied screws into the tapped holes [A] on the rear of the unit.



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3. Make sure that the retaining screws and the spring washers are fastened securely before starting operation.
4. Break out the plastic covers over the terminals "+" and "BR".
5. Connect the braking resistor to the terminals "+" and "BR" of the frequency inverter.



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3.3 Installation IP55

Read the corresponding operating instructions before you start working.



⚠ WARNING

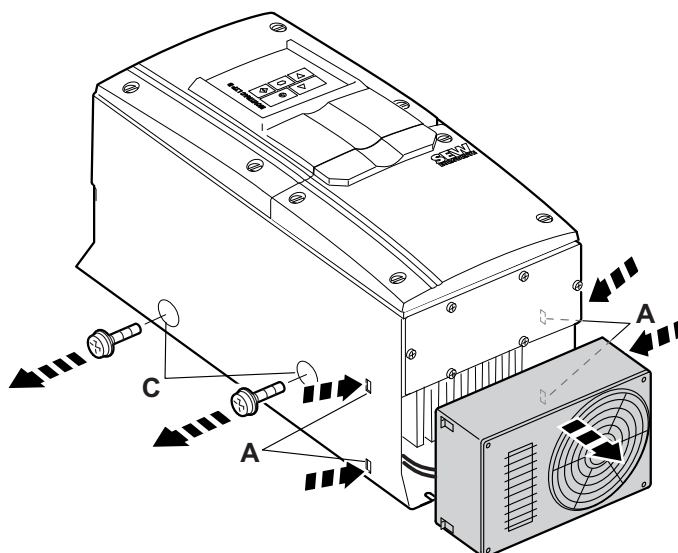
Danger of electric shock. Dangerous voltage levels may still be present inside the unit and at the terminals up to 10 minutes after disconnection from the power supply.

Severe or fatal injuries.

- Before removing the supply cable, disconnect MOVITRAC® LT from the power supply and wait at least 10 minutes.

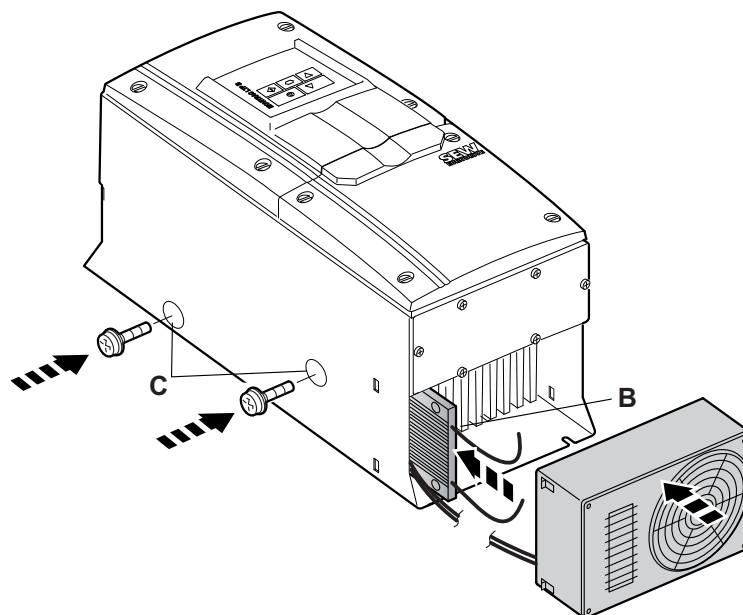
3.3.1 Installation size 4:

1. Remove the fan insert by pressing in the tabs [A]. There are 2 on each side of the housing.
2. Remove the screws [C] and keep them for later use.



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3. Push the braking resistor into the slot [B] on the heat sink. The serrated side of the braking resistor must point outward.

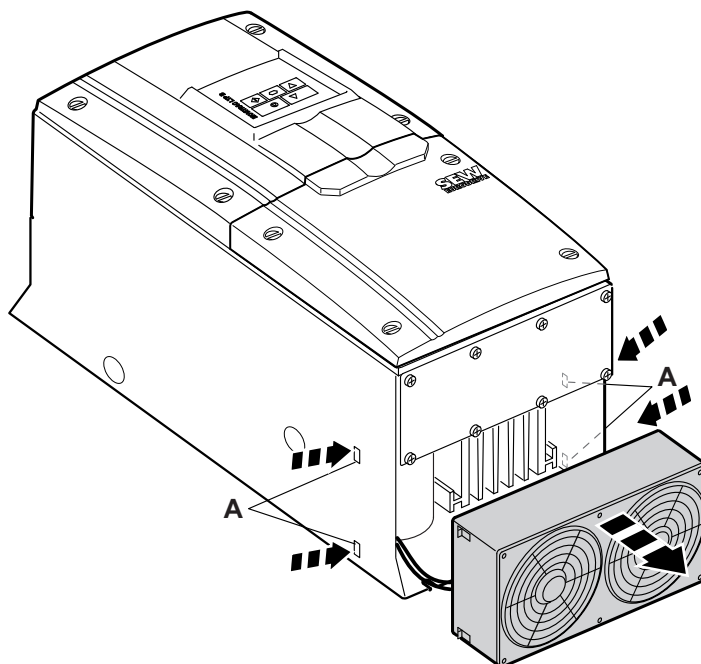


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4. Attach the braking resistor by screwing the supplied screws through the holes [C] into the tapped holes. Tighten the screws sufficiently.
5. Push the fan insert back into the housing and feed the connection cables through.
6. Route the connection cables through the duct board into the housing. If necessary, mount a packing gland or a suitable cable bushing into the plate.
7. Connect the braking resistor to the terminals "+" or "DC+" and "BR" of the frequency inverter. See the section "Installation of IP20" (→ 10).

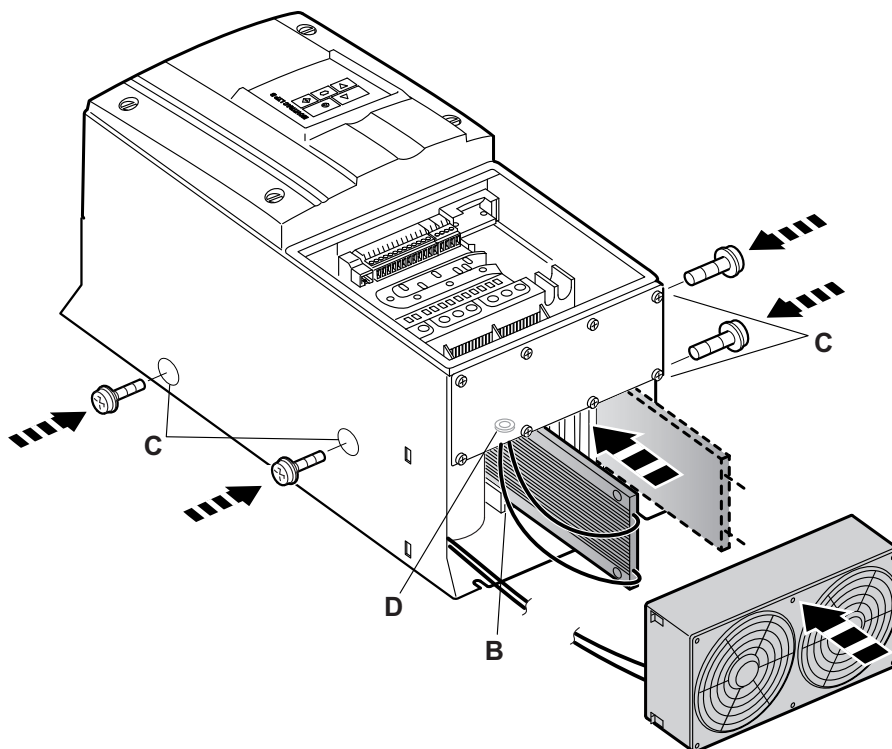
3.3.2 Installation size 5:

1. Remove the fan insert by pressing in the tabs [A]. There are 2 on each side of the housing.



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2. Push the braking resistor into one of the slots [B] on the heat sink. In the frequency inverter 2 braking resistors can be connected in parallel. The serrated side of the braking resistor must point outward.



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3. Route the connection cable through the sealing grommet [D] into the housing.

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4. Attach the braking resistor by inserting the supplied screws through the holes [C] into the tapped holes on the side of the frequency inverter.
5. Position the fan insert back on the housing.
6. Connect the braking resistor to the terminals "+" or "DC+" and "BR" of the frequency inverter. See the section "Installation of IP20" (→ 10).

3.4 Startup and operation

For MOVITRAC® LTE-B+:

- Set parameter *P-14* to "101" to gain access to the advanced menu.
- Set parameter *P-34* to "1" to release the brake chopper.

For MOVITRAC® LTP-B:

- Set parameter *P1-14* to "201" to gain access to the advanced menu.
- Set parameter *P6-19* braking resistance value.
- Set parameter *P6-20* braking resistor power.

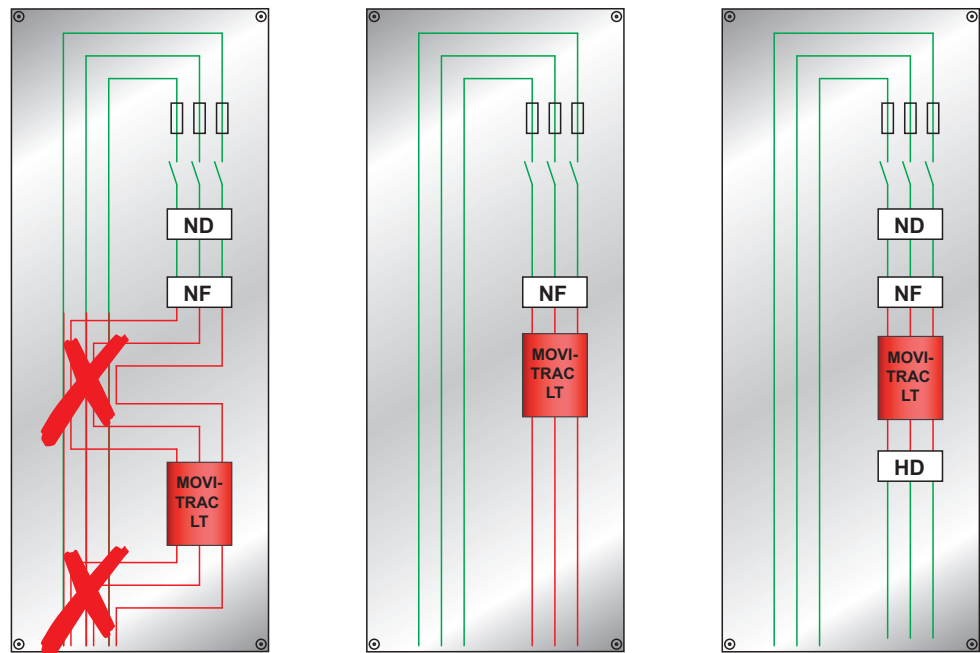
4 EMC components

You can install EMC components to improve interference immunity.

EMC components, such as line filters and output filters, require a large-area, metallic contact with the frequency inverter via a shared mounting plate.

They must be placed as close to the corresponding unit as possible in order to keep the lines short between the EMC component and the unit (max. 50 cm).

Stick to the following order of the components in the control cabinet:



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ND = Line choke
NF = Line filter
HD = Output chokes

Green cable = Cable without EMC
Red cable = Cable with EMC

Make sure that the supply cable (before the line filter) does not cross or run in parallel to the cable with EMC (between line filter and frequency inverter). Improper routing can lead to EMC interference in cables that were already filtered.

If these requirements cannot be met, it makes sense to use shielded cables. To eliminate inductive coupling, do not use single conductors for connection.

If you install EMC components on the base plate of the control cabinet due to their high weight (not ideal), you must connect the base plate to the mounting plate using an HD litz wire.

5 NF line filter

Type	LTE-B+	LTP-B
NF LT xxx xxx xx	X	X

X = available – = not available

A line filter reduces interference emission via the line cable, which is generated by the frequency inverter due to its operating principle. It mainly serves to meet interference voltage limit requirements in the frequency range from 150 kHz to 30 MHz at the power supply. In addition, a line filter dampens the interference from the supply system affecting the frequency inverter.

All MOVITRAC® LT inverters are developed to minimize interference emission and to ensure a high electromagnetic compatibility for the drives.

Additional EMC filters can be installed to:

- Further reduce grid disturbances.
- Minimize the risk of interference affecting other devices.

The line filter keeps back the interference voltages generated by the frequency inverter from the power supply system and feeds them back to the frequency inverter.

The use of line filters is recommended for the following requirements:

- Reduced interference emission via the line cable.
- Compliance with limit values.
- Reduced equipotential bonding currents.
- Reduced leakage currents in case of long motor cables.

5.1 Electromagnetic compatibility

With regard to interference emission, MOVITRAC® LT meets the limit values of the standards EN 61800-3 and EN 55014 and can therefore be used in the industry and for household applications (light industry).

5.1.1 Units with integrated filter

The tables below specify the conditions for using MOVITRAC® LT in inverter applications with internal filter:

Device type with filter	Cat. C1 (class B)	Cat. C2 (class A)	Cat. C3
	In accordance with EN 61800-3		
230 V, 1-phase LTE-B xxxx 2B1-x-xx LTP-B xxxx 2B1-x-xx	No additional filtering required. Use a shielded motor cable.		

Device type with filter	Cat. C1 (class B)	Cat. C2 (class A)	Cat. C3
	In accordance with EN 61800-3		
230 V, 3-phase LTE-B xxxx 2A3-x-xx LTP-B xxxx 2A3-x-xx 400 V, 3-phase LTE-B xxxx 5A3-x-xx LTP-B xxxx 5A3-x-xx	Use an external filter of the type NF LT xxx xxx. Use a shielded motor cable.	No additional filtering required. Use a shielded motor cable.	

5.1.2 Devices without filter

An external filter and a shielded motor cable must be used to meet the requirements for inverters without internal filter:

Device type without filter	Cat. C1 (class B)	Cat. C2 (class A)	Cat. C3
230 V, 1-phase LTE-B xxxx 201-x-xx	Use an external filter of the type: NF LT xxx xxx. Use a shielded motor cable.		
230 V, 3-phase LTE-B xxxx 203-x-xx 400 V, 3-phase LTE-B xxxx 503-x-xx			
575 V 3-phase LTP-B xxxx 603-x-xx	If necessary, you can use a line filter of the type NF LT xxx to minimize the electromagnetic interference emission further. However, compliance with the above-mentioned limit classes cannot be guaranteed. Use a shielded motor cable.		

5.2 Technical data

5.2.1 IP20/IP66, 1 x 200 – 250 V, 10 – 25 A

Type	Unit	NF LT 010 201-20	NF LT 025 201-20	NF LT 010 201-66	NF LT 025 201-66
Part number		18411029	18411037	18411134	18411142
Nominal voltage U_N (in accordance with EN 50160)	V	1 x AC 200 – 250, 48 – 62 Hz			
Rated current I_N	A	10	25	10	25
Leakage current I	mA	< 5			
Operating temperature	°C	-25 to +40			
Degree of protection		IP20		IP66	
Mass	kg	1.32	1.5	1.4	1.6
Assignment for: LTE-B: AC 230 V		0004	0008 – 0022	0004	0008 – 0022
LTP-B: AC 230 V		0008	0015/0022	0008	0015/0022
UL/cUL approval		No	No	No	No

5.2.2 IP20/IP66, 3 x 220 – 500 V, 6 – 300 A

Type	Unit	NF LT 006 503-20	NF LT 016 503-20	NF LT 025 503-20
Part number		18411045	18411053	18411061
Nominal voltage U_N (in accordance with EN 50160)	V	3 x AC 220 – 480, 48 – 62 Hz		
Rated current I_N	A	6	16	25
Leakage current I	mA	< 10	< 35	< 35
Operating temperature	°C	-25 to +40		
Degree of protection		IP20		
Mass	kg	1.58	2.5	2.7
Assignment for LTE-B: AC 230 V AC 400 V		0004/0008	0015 – 0022	0040
		0008/0015	0022 – 0055	0075
Assignment for LTP-B: AC 230 V AC 400 V		0008	0015 – 0030	0040/0055
		0008 – 0022	0040/0055	0075/0110
UL/cUL approval		No	No	No

Type	Unit	NF LT 006 503-66	NF LT 016 503-66	NF LT 025 503-66
Part number		18411150	18411169	18411177
Nominal voltage U_N (in accordance with EN 50160)	V	3 x AC 220 – 480, 48 – 62 Hz		
Rated current I_N	A	6	16	25
Leakage current I	mA	< 10	< 35	< 35
Operating temperature	°C	-25 to +40		
Degree of protection		IP66		
Mass	kg	1.6	2.5	2.7
Assignment for LTE-B: AC 230 V AC 400 V		0004/0008	0015 – 0022	0040
		0008/0015	0022 – 0055	0075
Assignment for LTP-B: AC 230 V AC 400 V		0008	0015 – 0030	0040/0055
		0008 – 0022	0040/0055	0075/0110
UL/cUL approval		No	No	No

Type	Unit	NF LT 050 503-20	NF LT 080 503-20	NF LT 180 503-20	NF LT 300 503-00
Part number		18411088	18411096	18411118	18411126
Nominal voltage U_N (in accordance with EN 50160)	V	3 x AC 220 – 480, 48 – 62 Hz	3 x AC 220 – 500, 48 – 62 Hz	3 x AC 220 – 440, 48 – 62 Hz	
Rated current I_N	A	50	80	180	300
Leakage current I	mA	< 100	< 100	< 180	< 180
Operating temperature	°C	-25 to +40			
Degree of protection		IP20			IP00
Mass	kg	2.63	7.35	9.98	17.5
Assignment for LTE-B: AC 400 V		0110	–	–	–
Assignment for LTP-B: AC 230 V AC 400 V		0075/0110	0150/0185	0220–0450	0550/0750
		0150 – 0220	0300/0370	0450 – 0750	0900 – 1600
UL/cUL approval		No	No	No	No

5.2.3 IP20, 3 × 600 V, 6 – 25 A

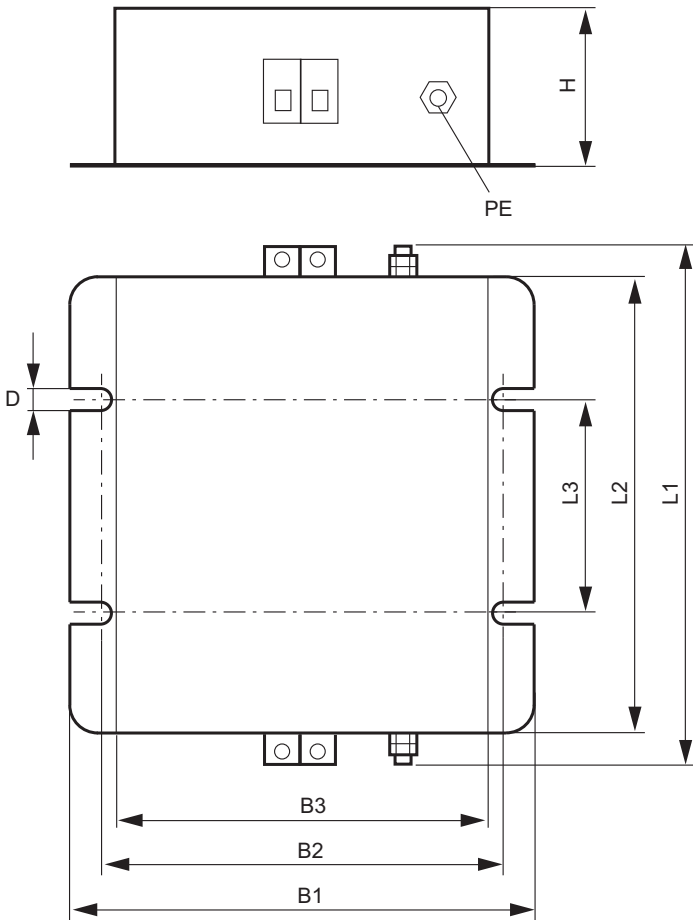
Type	Unit	NF LT 006 603-20	NF LT 016 603-20	NF LT 025 603-20
Part number		18411223	18411231	18411258
Nominal voltage U_N (in accordance with EN 50160)	V	3 x AC 600, 48 – 62 Hz		
Rated current I_N	A	6	16	25
Leakage current I	mA	< 10	< 35	< 35
Operating temperature	°C	-25 to +40		
Degree of protection		IP20		
Mass	kg	2.7		
Assignment for LTP-B: AC 600 V		0008 – 0022	0040 – 0075	0110
UL/cUL approval		No	No	No

5.2.4 IP20, 3 × 690 V, 50 – 180 A

Type	Unit	NF LT 050 603-20	NF LT 080 603-20	NF LT 180 603-20
Part number		18411266	18411274	18411282
Nominal voltage U_N (in accordance with EN 50160)	V	3 x AC 690, 48 – 62 Hz		
Rated current I_N	A	50	80	180
Leakage current I	mA	< 80	< 100	< 100
Operating temperature	°C	-25 to +40		
Degree of protection		IP20		
Mass	kg	3.38	5.67	6.99
Assignment for LTP-B: AC 690 V		0150 – 0300	0370/0450	0550 – 1100
UL/cUL approval		No	No	No

5.3 Dimensions

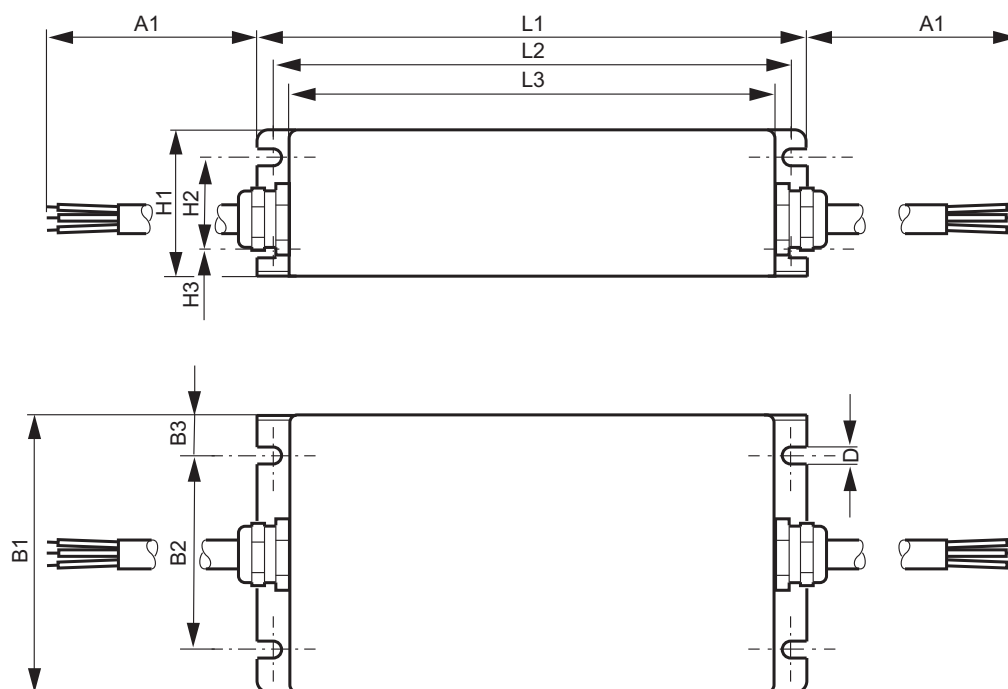
5.3.1 IP20, 1 x AC 200 – 250 V, 10 – 25 A



12694590091

Part number	PE connection	L1 mm	L2 mm	L3 mm	B1 mm	B2 mm	B3 mm	H mm	D mm
NF LT 010 201-20	2 x M6	180	160	150	70	45	12.5	65	6.2
NF LT 025 201-20	2 x M6	250	236	220	70	45	12.5	65	6.2

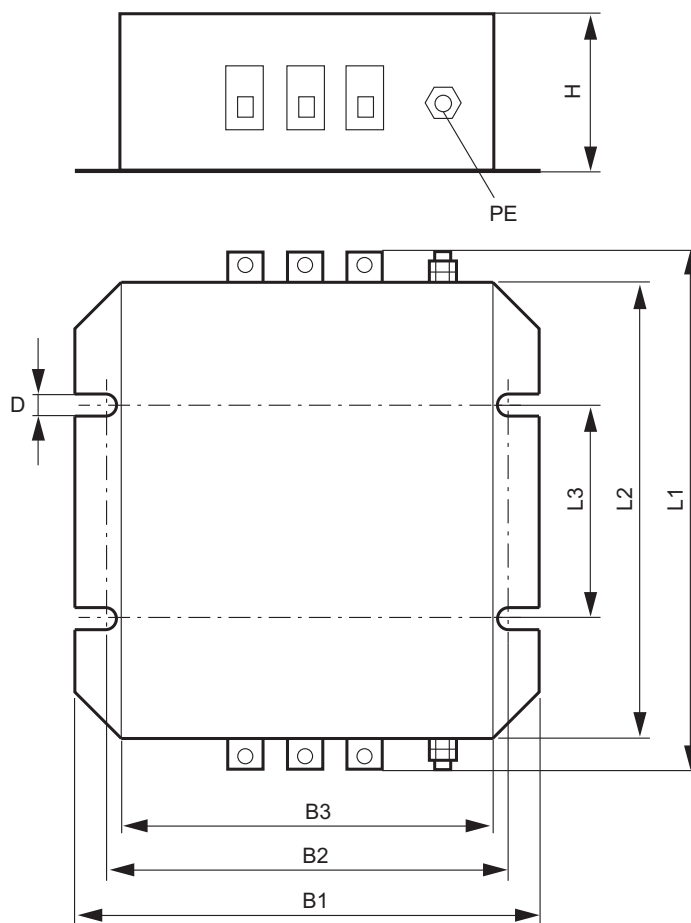
5.3.2 IP66, 1 x AC 200 – 250 V, 10 – 25 A



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Part number	PE connection	L1 mm	L2 mm	L3 mm	B1 mm	B2 mm	B3 mm	H1 mm	H2 mm	H3 mm	D mm	A1 mm
NF LT 010 201-66	3G2.5	180	166	150	70	45	12.5	65	40	12.5	6.2	500
NF LT 025 201-66	3G4.0	250	236	220	70	45	12.5	65	40	12.5	6.2	500

5.3.3 IP20, 3 x AC 220 – 480 V, 6 – 50 A

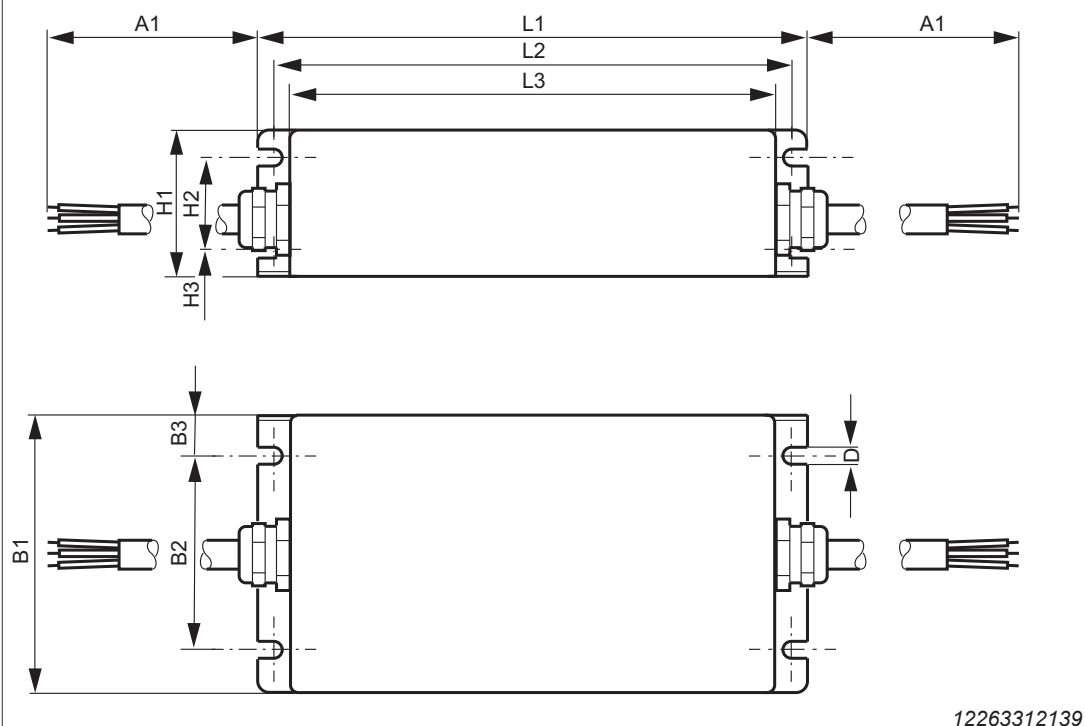


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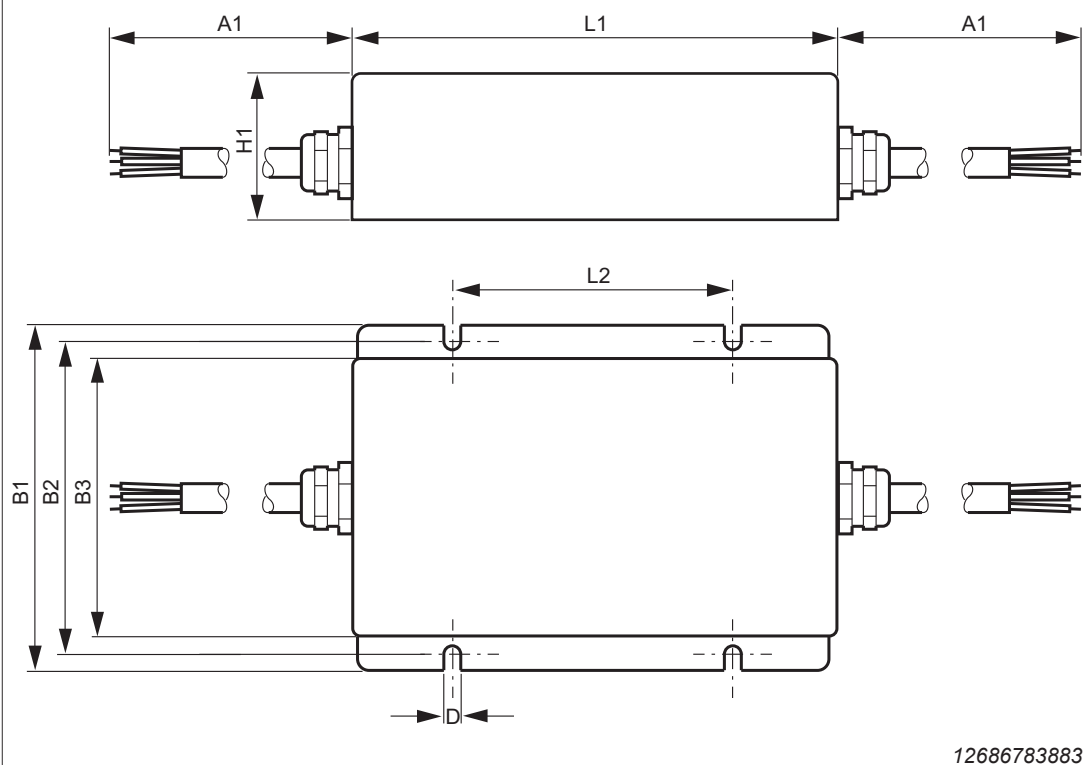
Part number	PE connection	L1 mm	L2 mm	L3 mm	B1 mm	B2 mm	B3 mm	H mm	D mm
NF LT 006 503-20	2 x M6	210	196	180	85	55	15	60	6.2
NF LT 016 503-20	2 x M6	230	216	200	120	80	20	65	6.2
NF LT 025 503-20	2 x M6	230	216	200	120	80	20	65	6.2
NF LT 050 503-20	2 x M6	247	200	115	150	136	120	65	6.2

5.3.4 IP66, 3 x AC 220 – 480 V, 6 – 25 A

NF LT 006 503-66, NF LT 016 503-66



NF LT 025 503-66



Part number	PE connection	L1 mm	L2 mm	L3 mm	B1 mm	B2 mm	B3 mm	H1 mm	H2 mm	H3 mm	D mm	A1 mm
NF LT 006 503-66	4G1.5	210	196	180	85	55	15	60	40	10	6.2	500
NF LT 016 503-66	4G2.5	230	216	200	120	80	20	65	40	12.5	6.2	500
NF LT 025 503-66	4G4.0	200	115	–	150	136	120	65	–	–	6.2	500

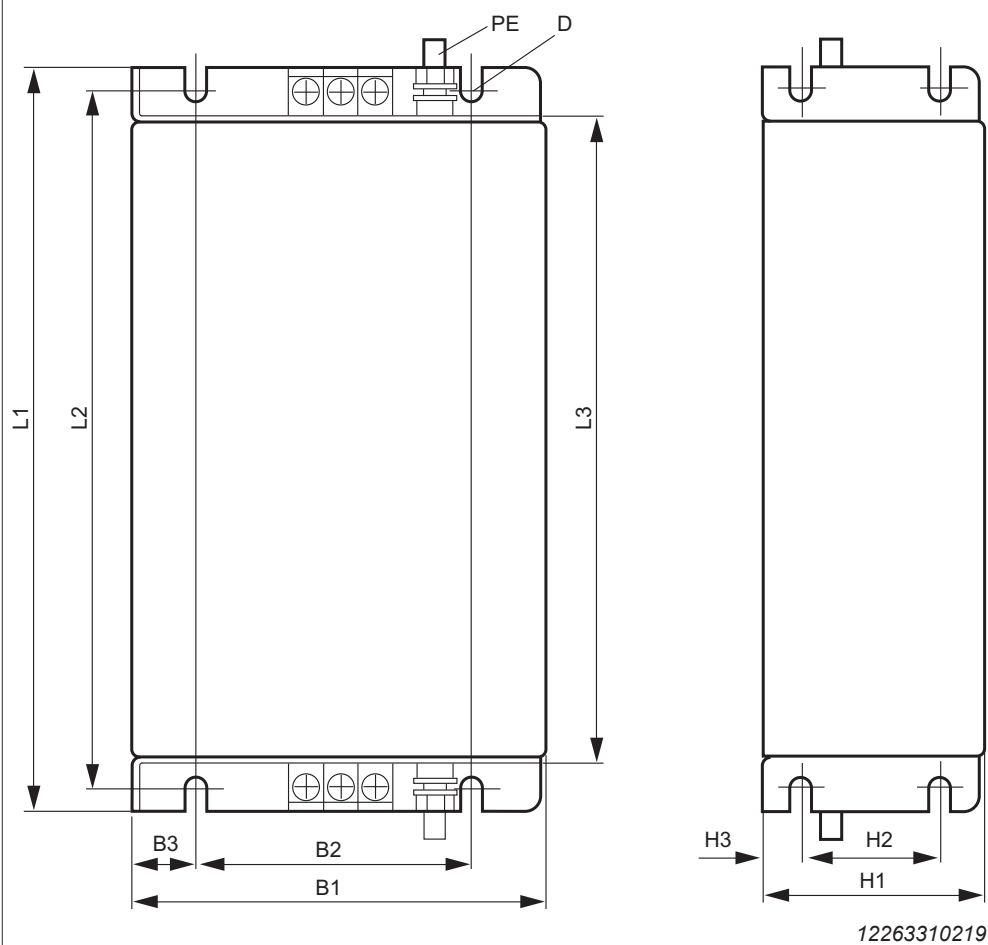
5.3.5 IP00/IP20, 3 x AC 220 – 400 V, 80 – 300 A

NF LT 080 503-20, NF LT 180 503-20	NF LT 300 503-00
12694584203	12694587147

Part number	PE connection	L1 mm	L2 mm	L3 mm	L4 mm	B1 mm	B2 mm	H mm	D mm
NF LT 080 503-20	2 x M10	400	373	350	–	170	130	90	8.5
NF LT 180 503-20	2 x M10	510	470	360	–	180	156	115	10
NF LT 300 503-00	2 x M10	730	700	660	530	260	220	130	12

5.3.6 IP20, 3 x AC 600 V/690 V, 6 – 25 A

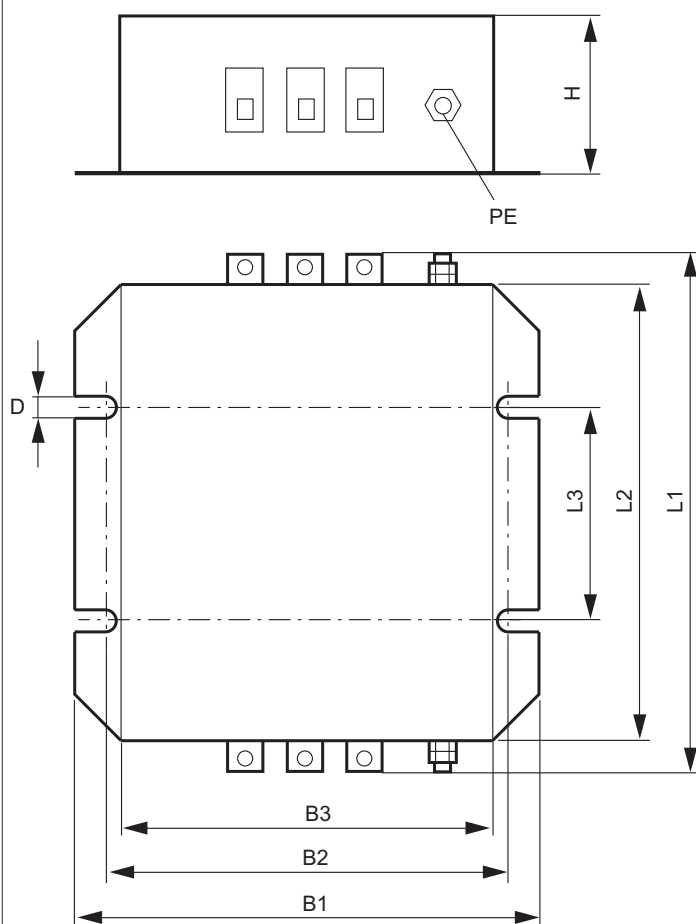
NF LT 006 603-20, NF LT 016 603-20, NF LT 025 603-20



Part number	PE connection	L1 mm	L2 mm	L3 mm	B1 mm	B2 mm	B3 mm	H1 mm	H2 mm	H3 mm	D mm
NF LT 006 603-20	2 x M6	210	196	180	85	55	15	60	40	10	6.2
NF LT 016 603-20	2 x M6	230	216	200	120	80	20	65	40	12.5	6.2
NF LT 025 603-20	2 x M6	230	216	200	120	80	20	65	40	12.5	6.2

5.3.7 IP20, 3 x AC 600 V/690 V, 50 A

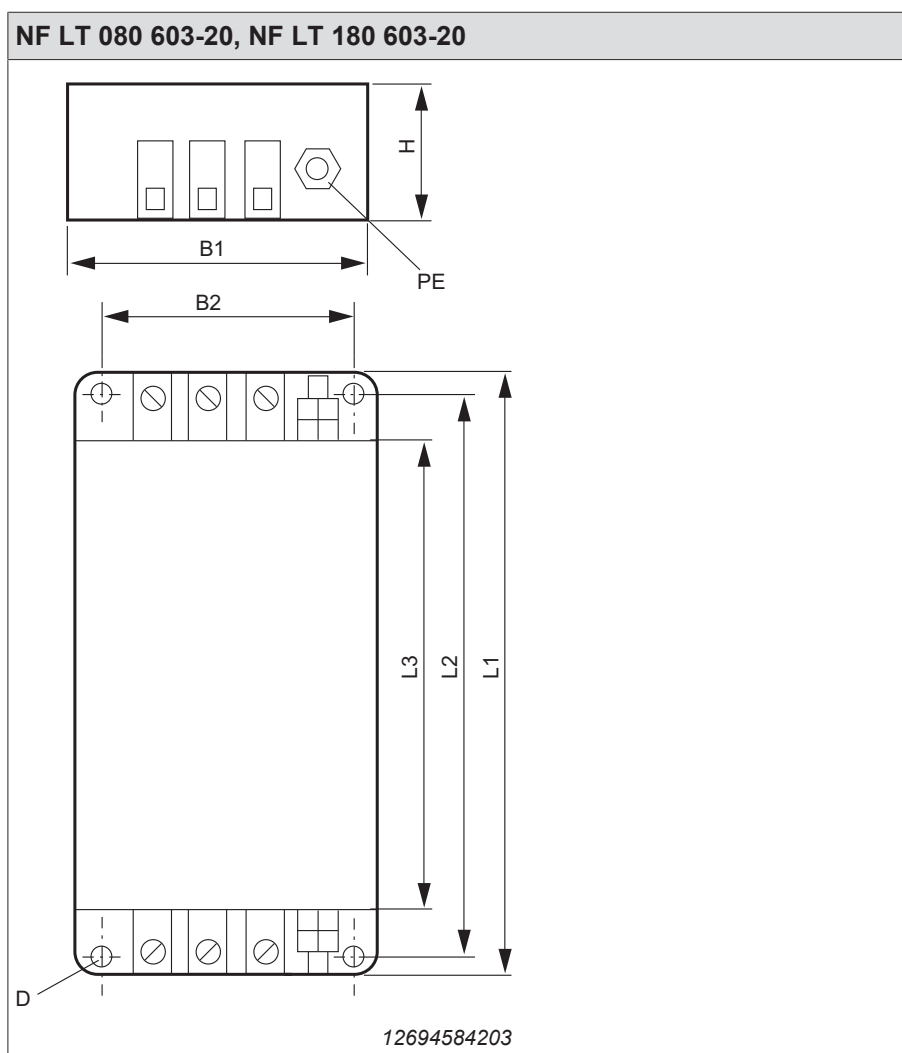
NF LT 050 603-20



12263306379

Part number	PE connection	L1 mm	L2 mm	L3 mm	B1 mm	B2 mm	B3 mm	H1 mm	H2 mm	H3 mm	D mm
NF LT 050 603-20	2 x M6	270	240	160	148	130	120	70	–	–	7

5.3.8 IP20, 3 x AC 600 V/690 V, 80 – 180 A



Part number	PE connection	L1 mm	L2 mm	L3 mm	B1 mm	B2 mm	B3 mm	H1 mm	H2 mm	H3 mm	D mm
NF LT 080 603-20	2 x M10	400	373	350	170	130	–	90	–	–	8.5
NF LT 180 603-20	2 x M10	510	470	360	180	156	–	115	–	–	10

5.4 Installation

Disconnect the MOVITRAC® LT from the supply system before starting to work. Observe the corresponding operating instructions.

⚠ WARNING

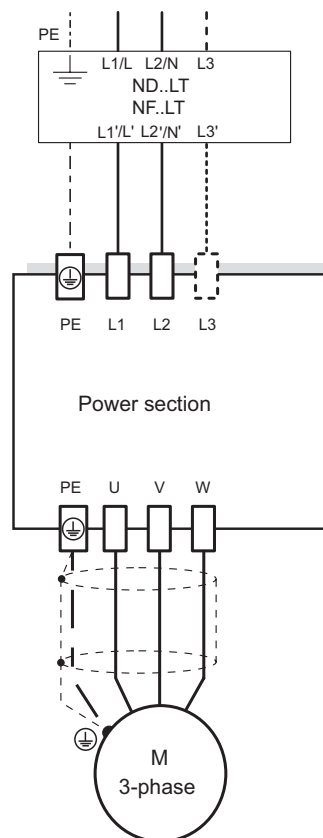


Danger of electric shock. Dangerous voltage levels may still be present inside the device and at the terminals up to 10 minutes after disconnection from the power supply.

Severe or fatal injuries.

- Before removing the power supply cable, disconnect MOVITRAC® LT from the power supply and wait at least 10 minutes.
- Install one line filter just before each frequency inverter.
- As an alternative, you can also use a shared line filter for the entire control cabinet. The common line filter is selected on the basis of the total current of all frequency inverters.
- Do not install any switching element (e.g. contactor) between the line filter and the frequency inverter.
- The voltage supply is connected to the filter. The ground conductor (PE) of the supply system must be connected to the filter, otherwise the filter will not work.
- Capacitors are installed between phase and ground in the filter, thus a leakage current is flowing during normal operation. A proper grounding must therefore be ensured. It needs to be connected before voltage is applied to the filter.

For more information about the EMC components, refer to the section "EMC components" (→ 16).



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23540052/EN – 06/2018

5.5 Startup and operation

No additional parameterization is required.

6 Line chokes

The following characteristics are based on the use of line chokes for the overall system:

- Reduction of harmonic distortions in the power supply
- To support overvoltage protection
- To smoothen the line current, to reduce harmonics
- Protection in the event of distorted line voltage
- To limit the charging current when several inverters are connected together in parallel on the input end with a shared line contactor (nominal current of line choke = total of inverter currents)

The following units are equipped with a DC choke and thus do not necessarily need an external choke:

- 240 V, BG 5 – 7
- 480 V, BG 5 – 7

INFORMATION

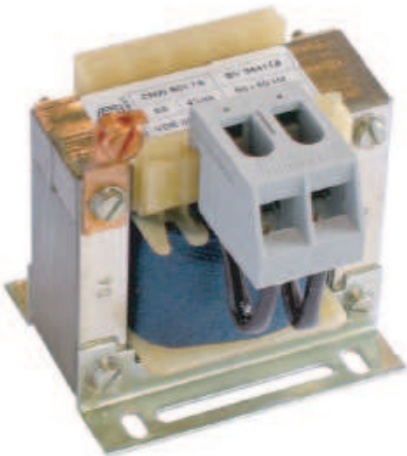


600 V units do not have a built-in choke

6.1 General

Braking resistor type	LTE-B+	LTP-B
ND LT xxx xxx xx xx	X	X

X = available – = not available



3186112011

23540052/EN – 06/2018

6.2 Technical data

6.2.1 IP20, 1 x 230 V, 3 x 230 V, 6 – 36 A

Type	Unit	ND LT 016 180 21-20	ND LT 025 110 21-20	ND LT 006 480 53-20	ND LT 010 290 53-20	ND LT 036 081 53-20
Part number		28233417	18201652	18201660	18201679	18201687
Nominal voltage U_N (in accordance with EN 50160)	V	1 x AC 230, 50/60 Hz		3 x AC 230 – 500, 50/60 Hz		
Rated current I_N	A	16	25	6	10	36
Inductance L_N	mH	1.8	1.1	4.8	2.9	0.81
Ambient temperature	°C	-25 to +45				
IP degree of protection		IP20 (EN 60529)				
Mass	kg	1.1	1.8	1.3	2.5	7.2
Assignment for LTE-B: AC 230 V		0004 – 0015	0022	0004/0008	0015	0022/0040
AC 400 V		–	–	0008/0015	0022	0040 – 0110
Assignment for LTP-B: AC 230 V		0008/0015	0022	0008	0015	0022 – 0055
AC 400 V		–	–	0008/0015	0022/0040	0055 – 0150
UL/cUL approval		No	No	No	No	No

6.2.2 IP00/IP20, 3 x 230 – 500 V, 50 – 300 A

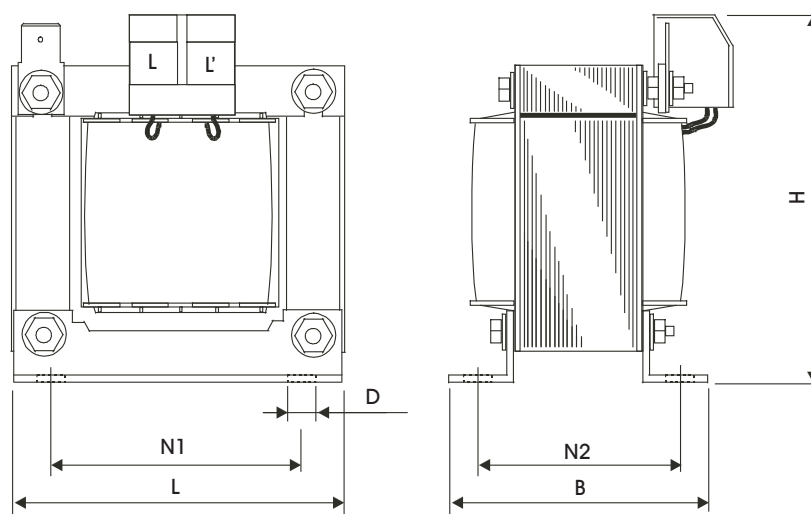
Type	Unit	ND LT 050 058 53-20	ND LT 090 032 53-20	ND LT 200 007 53-00	ND LT 300 005 53-00
Part number		18410936	18410944	28233433	28233441
Nominal voltage U_N (in accordance with EN 50160)	V	3 x AC 230 – 500, 50/60 Hz			
Rated current I_N	A	50	90	200	300
Inductance L_N	mH	0.58	0.32	0.0735	0.049
Ambient temperature	°C	-25 to +40			
IP degree of protection		IP20 (EN 60529)		IP00 (EN 60529)	
Mass	kg	8.7	16	35	48
Assignment for LTP-B: AC 230 V		0075 – 0110	0150 – 0185	0220 – 0450	0550/0750
AC 400 V		0185 – 0220	0300 – 0370	0450 – 0900	1100 – 1600
UL/cUL approval		No	No	No	No

6.2.3 IP66, 1 x 230 V, 3 x 230 – 600 V, 6 – 25 A

Type	Unit	ND LT 016 183 21-66	ND LT 025 117 21-66	ND LT 006 480 63-66	ND LT 010 386 63-66	ND LT 018 204 63-66
Part number		18217680	18217699	28233409	18217710	28233425
Nominal voltage U_N (in accordance with EN 50160)	V	1 x AC 230, 50/60 Hz		3 x AC 230 – 600, 50/60 Hz		
Rated current I_N	A	16	25	6	10	18
Inductance L_N	mH	1.83	1.17	4.8	3.86	2.04
Ambient temperature	°C	-25 to +40				
IP degree of protection		IP66 (EN 60529)				
Mass	kg	1	1.3	1.6	3.5	7
Assignment for LTE-B: AC 230 V		0004 – 0015	0022	0004/0008	0015	0022/0040
AC 400 V		–	–	0008/0015	0022	0040 – 0110
Assignment for LTP-B: AC 230 V		0008/0015	0022	0008	0015	0022/0030
AC 400 V		–	–	0008/0015	0022	0040/0055
AC 575 V		–	–	0008 – 0022	0040	0055/0075
UL/cUL approval		No	No	No	No	No

6.3 Dimensions

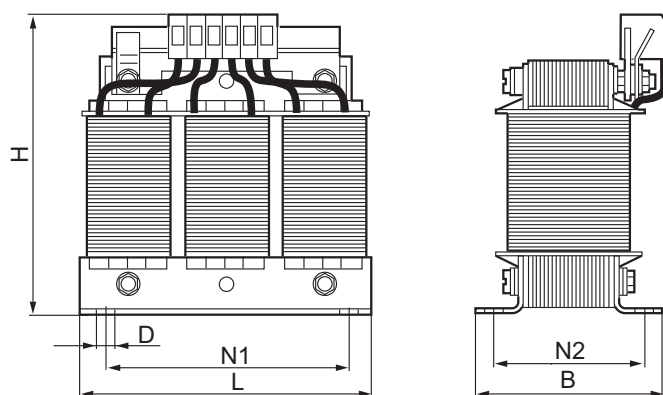
6.3.1 IP20, 1 × 230 V, 10/25 A



9007202440854667

Type	L	B	H	N1	N2	D
	mm	mm	mm	mm	mm	mm
ND LT 016 180 21-20	78	78	80	56	49	4.8
ND LT 025 110 21-20	85	76	158	100	55	5

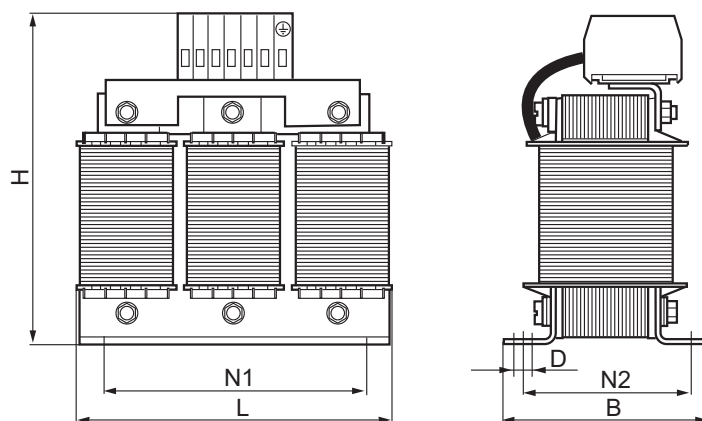
6.3.2 IP20, 3 × 230 – 500 V, 6/10 A



9453581067

Type	L	B	H	N1	N2	D
	mm	mm	mm	mm	mm	mm
ND LT 006 480 53-20	95	56	107	56	43	5 x 9
ND LT 010 290 53-20	125	71	127	100	55	5 x 8

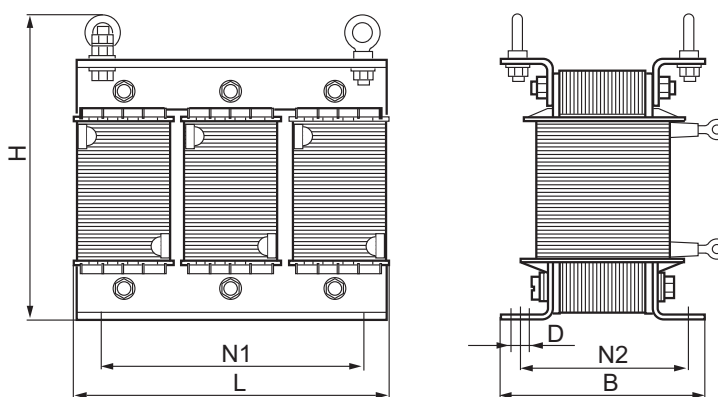
6.3.3 IP20, 3 × 230 – 500 V, 36 – 90 A



9453583371

Type	L	B	H	N1	N2	D
	mm	mm	mm	mm	mm	mm
ND LT 036 081 53-20	190	82	205	170	58	8 x 12
ND LT 050 058 53-20	190	102	220	170	78	8 x 12
ND LT 090 032 53-20	240	107	280	185	85	10 x 18

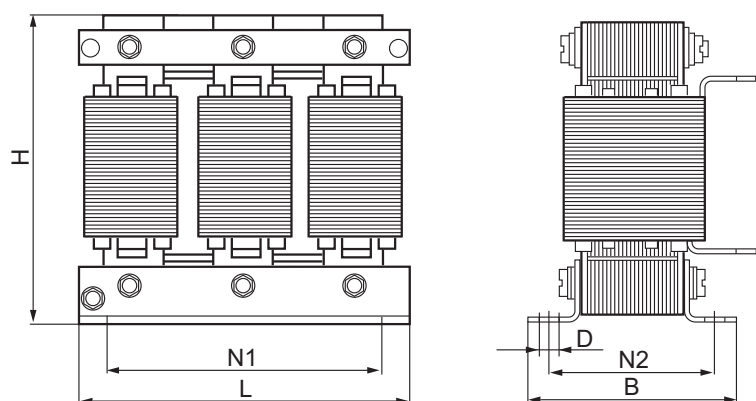
6.3.4 IP00, 3 × 230 – 500 V, 200 A



9453586059

Type	L	B	H	N1	N2	D
	mm	mm	mm	mm	mm	mm
ND LT 200 007 53-00	310	180	260	224	117	10 x 18

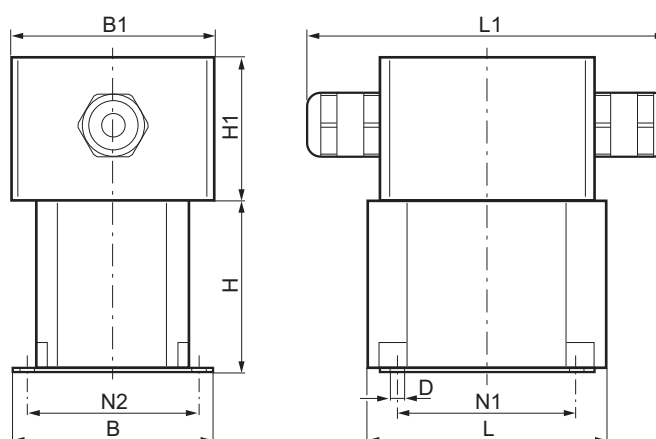
6.3.5 IP00, 3 × 230 – 500 V, 300 A



9453588107

Type	L	B	H	N1	N2	D
	mm	mm	mm	mm	mm	mm
ND LT 300 005 53-00	370	180	310	248	139	10 x 18

6.3.6 IP66, 1 x 230 V, 3 x 230 – 600 V, 6 – 25 A



9453666955

Type	L	B	H	N1	N2	D	L1	B1	H1
	mm	mm	mm	mm	mm	mm	mm	mm	mm
ND LT 016 183 21-66	82	70	70	70	58	6	151	85	60
ND LT 025 117 21-66	90	84	75	84	72	6	151	85	60
ND LT 006 480 63-66	115	74	88	80	60	5.5 x 7	151	85	60
ND LT 010 386 63-66	175	99	137	130	79	5.5 x 12	151	85	60
ND LT 018 204 63-66	175	114	137	130	94	5.5 x 12	151	85	60

6.4 Installation

Disconnect the MOVITRAC® LT from the supply system before starting to work. Observe the corresponding operating instructions.



⚠ WARNING

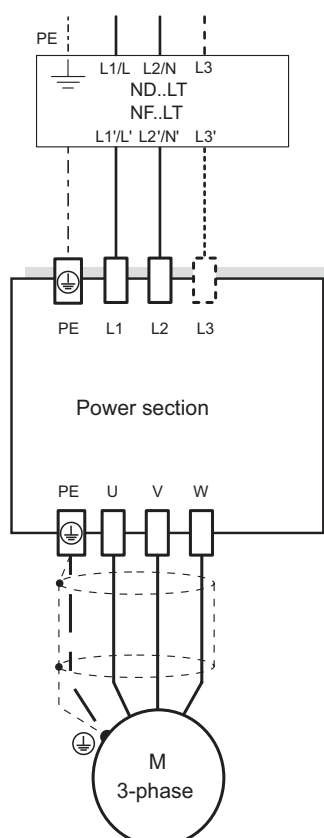
Danger of electric shock. Dangerous voltage levels may still be present inside the device and at the terminals up to 10 minutes after disconnection from the power supply.

Severe or fatal injuries.

- Before removing the power supply cable, disconnect MOVITRAC® LT from the power supply and wait at least 10 minutes.
- Install one line choke just before each frequency inverter.
- As an alternative, you can also use a shared line choke for the entire control cabinet. The common line choke is selected on the basis of the total current of all frequency inverters.

The voltage supply is connected to the choke. Connect the protective earth (PE) of the supply system to the choke.

For more information about the EMC components, refer to the section "EMC components" (→ 16).



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6.5 Startup and operation

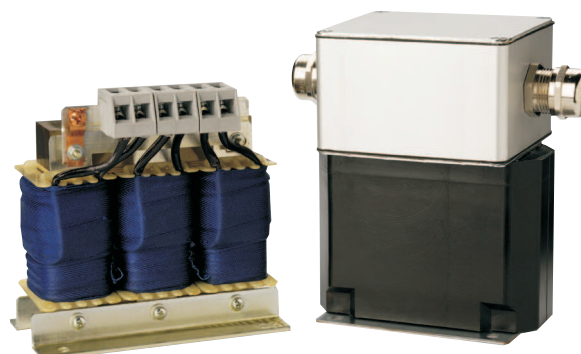
No additional parameterization is required.

7 Output chokes

Type	LTE-B+	LTP-B
HD LT xxx xxx xx	X	X

X = available

- = not available



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Output chokes improve the quality of the output wave shape. When an output choke is used, the maximum cable length can be doubled. For information on cable length, refer to the technical data in the operating instructions or in the catalog of the frequency inverter MOVITRAC® LT.

The frequency inverter has unfiltered outputs. In most applications, a satisfactory performance is achieved this way. However, for some applications, an output filter is highly recommended to improve the functionality, reliability and service life of the system. These include:

- Long motor cables up to 300 m (the nominal length can be doubled when using an output choke), requires PWM frequency ≤ 4 kHz.
- High capacity motor cable (e.g. "Pyro" wire for fire protection).
- Several motors connected in parallel.
- Motors without insulation suited for inverters (usually older motors).

A series of high-quality output chokes with the following main features are available for the frequency inverter:

- Limiting of output voltage drop, usually < 200 V/ μ s.
- Limiting of transient overvoltage at the motor terminals, usually < 1000 V.
- Suppressing line-related interference in low frequency ranges.
- Compensating capacitive load currents.
- Reducing HF interference emission of the motor cable.
- Reducing motor losses and audible noise caused by ripple.

7.1 Technical data

7.1.1 IP20, 3 × 200 – 500 V, 8 – 75 A

Type	Unit	HD LT 008 200 53-20	HD LT 012 130 53-20	HD LT 030 050 53-20	HD LT 075 022 53-20
Part number		18201695	18201709	18201717	18201725
Nominal voltage U_N (in accordance with EN 50160)	V	3 x AC 200 – 500			
Rated current I_N	A	8	12	30	75
Inductance L_N	mH	2	1.3	0.5	0.22
Degree of protection (EN 60529)		IP20			
Mass	kg	1.5	2.8	4.2	8.6
Assignment for LTE-B:		0004 – 0015	0022	0040	–
AC 230 V		0008 – 0022	0040	0055 – 0110	–
AC 400 V					
Assignment for LTP-B:		0008/0015	0022	0030 – 0075	0110 – 0185
AC 230 V		0008 – 0022	0040	0055 – 0150	0185 – 0370
AC 400 V					
UL/cUL approval		No	No	No	No

7.1.2 IP00, 3 × 200 – 600 V, 180 – 300 A

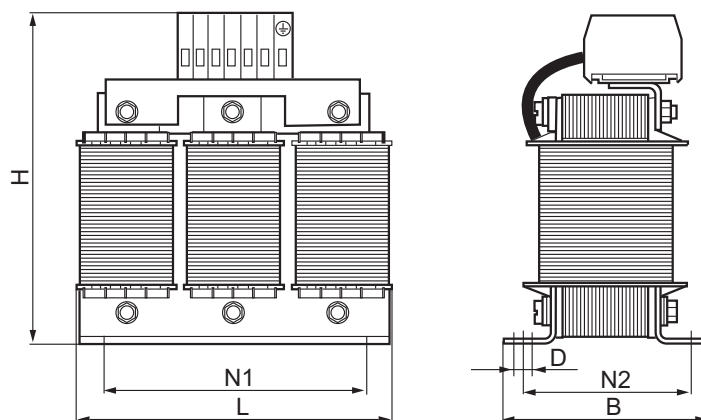
Type	Unit	HD LT 180 009 53-00	HD LT 250 007 53-00	HD LT 300 005 53-00
Part number		18201733	18201741	28233549
Nominal voltage U_N (in accordance with EN 50160)	V	3 x AC 200 – 400		
Rated current I_N	A	180	250	300
Inductance L_N	mH	0.09	0.065	0.053
Degree of protection (EN 60529)		IP00		
Mass	kg	32	35	48
Assignment for LTP-B:		0220 – 0450	0550/0750	–
AC 230 V		0450 – 0900	1100/1320	1600
AC 400 V				
UL/cUL approval		No	No	No

7.1.3 IP66, 3 × 200 – 600 V, 8 – 18 A

Type	Unit	HD LT 008 200 63-66	HD LT 012 120 63-66	HD LT 018 090 63-66
Part number		18216757	18216765	18216773
Nominal voltage U_N (in accordance with EN 50160)	V	3 x AC 200 – 600		
Rated current I_N	A	8	12	18
Inductance L_N	mH	2	1.2	0.9
Degree of protection (EN 60529)		IP66		
Mass	kg	1.7	3.2	3.2
Assignment for LTE-B:		0004 – 0015	0022	0040
AC 230 V		0008 – 0022	0040	0055/0075
AC 400 V				
Assignment for LTP-B:		0008/0015	0022	0030/0040
AC 230 V		0008 – 0022	0040	0055/0075
AC 400 V		0008 – 0040	0055/0075	0110
AC 575 V				
UL/cUL approval		No	No	No

7.2 Dimensions

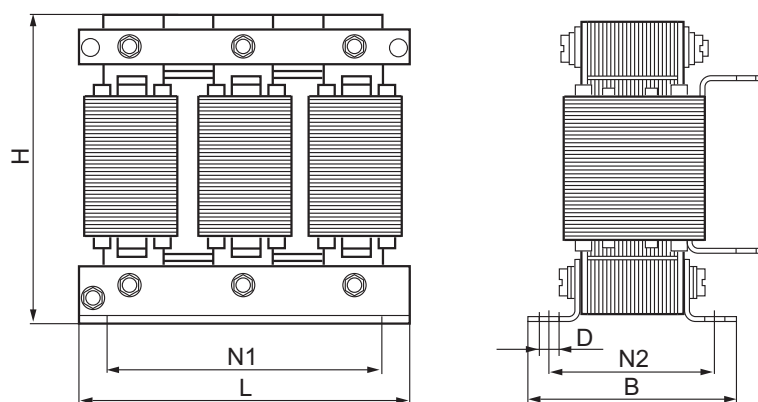
7.2.1 IP20, 3 × 200 – 500 V, 8 – 75 A



9453583371

Type	L	B	H	N1	N2	D
	mm	mm	mm	mm	mm	mm
HD LT 008 200 53-20	95	61	107	56	43	4
HD LT 012 130 53-20	125	76	158	100	55	5
HD LT 030 050 53-20	155	66	185	130	57	8
HD LT 075 022 53-20	190	92	223	170	68	8

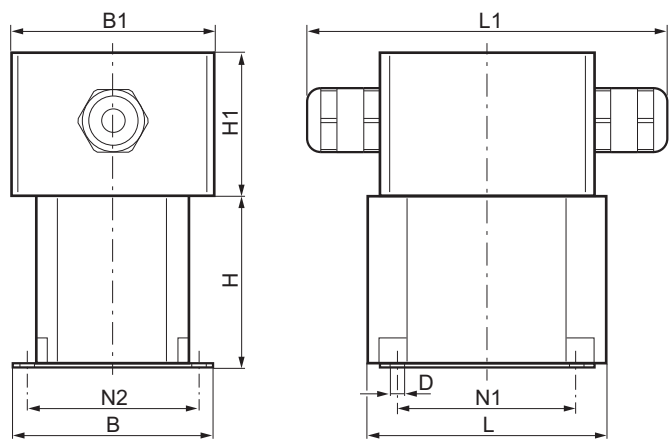
7.2.2 IP00, 3 × 200 – 400 V, 180 – 300 A



9453588107

Type	L	B	H	N1	N2	D
	mm	mm	mm	mm	mm	mm
HD LT 180 009 53-00	340	138	292	248	110	10 x 18
HD LT 250 007 53-00	310	180	260	224	117	10 x 18
HD LT 300 005 53-00	380	180	310	248	139	10 x 18

7.2.3 IP66, 3 × 200 – 600 V, 8 – 18 A



9453666955

Type	L	B	H	N1	N2	D	L1	B1	H1
	mm	mm	mm	mm	mm	mm	mm	mm	mm
HD LT 008 200 63-66	115	74	85	80	60	5.5 x 7	151	85	60
HD LT 012 120 63-66	140	87	110	100	70	5.5 x 12	151	85	60
HD LT 018 090 63-66	140	87	110	100	70	5.5 x 12	151	85	60

7.3 Installation

Disconnect the MOVITRAC® LT from the supply system before installation. Observe the corresponding operating instructions.

⚠ WARNING



Danger of electric shock. Dangerous voltage levels may still be present inside the unit and at the terminals up to 10 minutes after disconnection from the power supply.

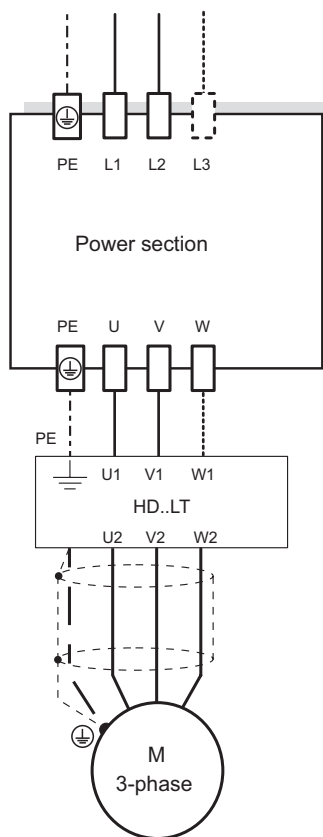
Severe or fatal injuries.

- Before removing the supply cable, disconnect MOVITRAC® LT from the power supply and wait at least 10 minutes.

- Install the output choke as close to the MOVITRAC® LT as possible. Maintain the minimum distance.

For information about the EMC components, refer to the section "EMC components" (→ 16).

Connect the protective earth (PE) of the supply system to the choke.



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7.4 Startup and operation

Do not set the PWM frequency of the drive higher than 4 kHz.

- Set parameter *P-17* for LTE-B+ and *P2-24* for LTP-B to 2 or 4 kHz.

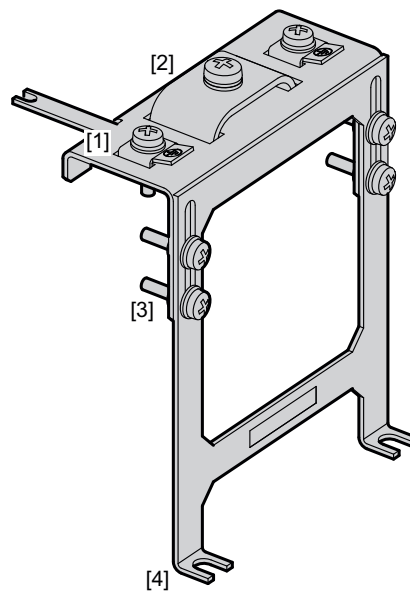
8 Shield plate IP20

Type	Part number	LTE-B+	LTP-B
LT SB 23 A	28214994	X ¹⁾	X ¹⁾

1) Only for sizes 2 and 3.

X = available

– = not available



13406635275

- [1] Earth connection
- [2] Terminal for motor cable
- [3] Adjustment screw for BG 2 and 3
- [4] Connection for back panel installation

8.1 Installation

Disconnect the MOVITRAC® LT from the supply system before starting to work. Observe the corresponding operating instructions.

⚠ WARNING



Danger of electric shock. Dangerous voltage levels may still be present inside the device and at the terminals up to 10 minutes after disconnection from the power supply.

Severe or fatal injuries.

- Before removing the power supply cable, disconnect MOVITRAC® LT from the power supply and wait at least 10 minutes.

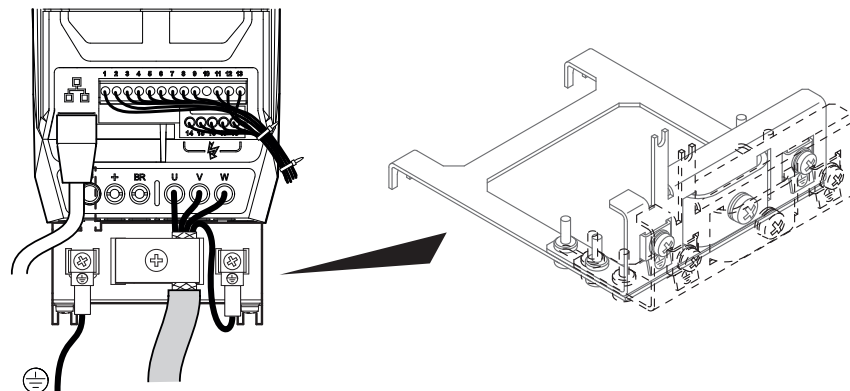
The shield plate can be used optionally for size 2 and 3 of the IP20 design. Proceed as follows to adjust:

1. Loosen the 4 screws on the slotted holes.
2. Move the plate up to the stop according to the required size.
3. Tighten the screws again.

Make sure that the shield plate is correctly attached to the PE connection.

Connect the shield plate to the frequency inverter as follows:

- Insert the shield plate into the PE terminal.



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- [1] Terminal for motor cable shield and encoder cable shield
- [2] PE terminal
- [3] Adjusting screws for BG 2 and 3

- Tighten the screw.
- Mount the shield plate to the back panel.
- Connect the motor cable via the shield plate.
- Connect the earth connection to the PE terminal.

8.2 Type designation and specification

To enhance the interference immunity use the optional shield connection for MOVITRAC® LT, IP20 in sizes 2 and 3. The use of shield connections is recommended for LTX applications.

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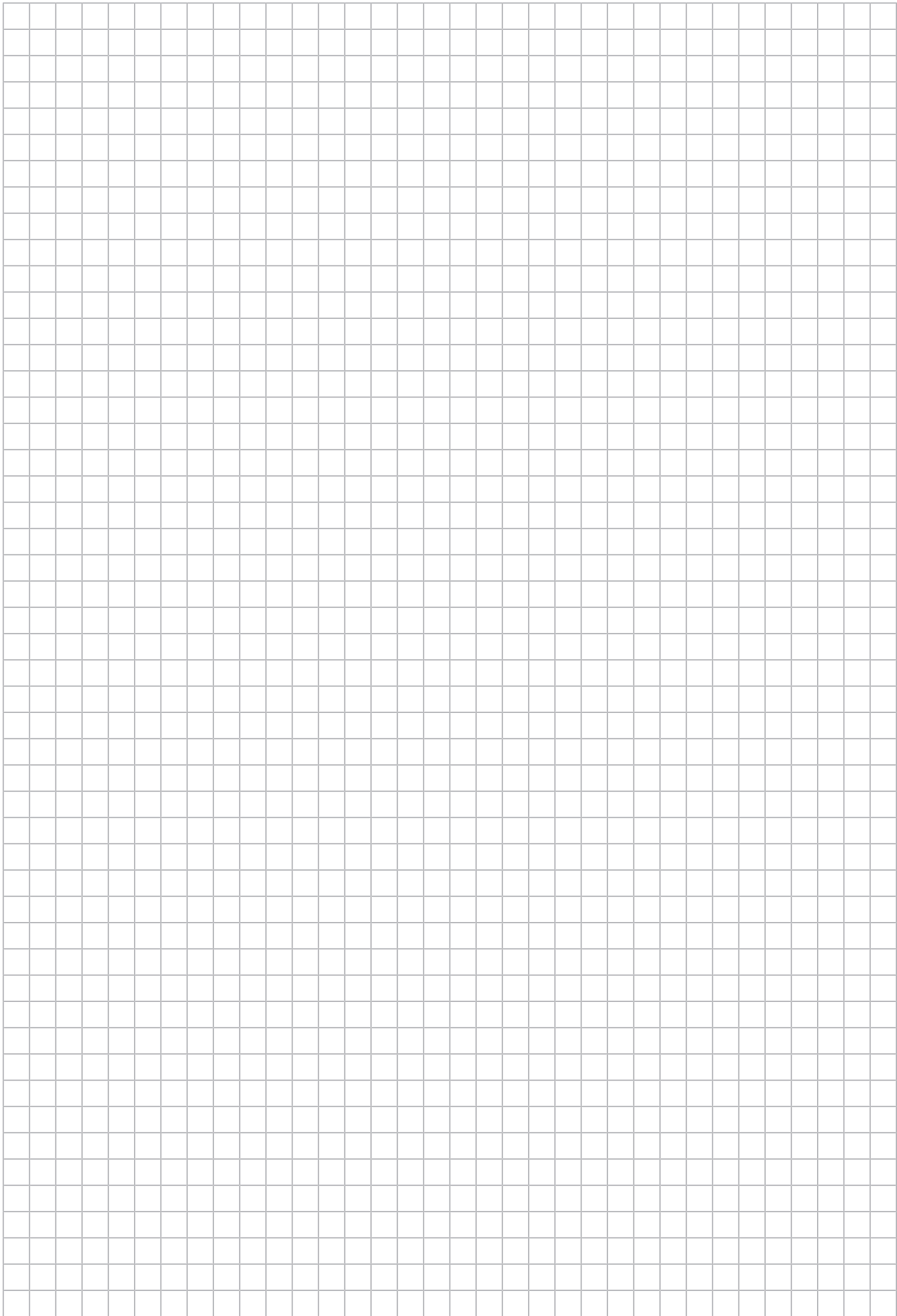
Startup

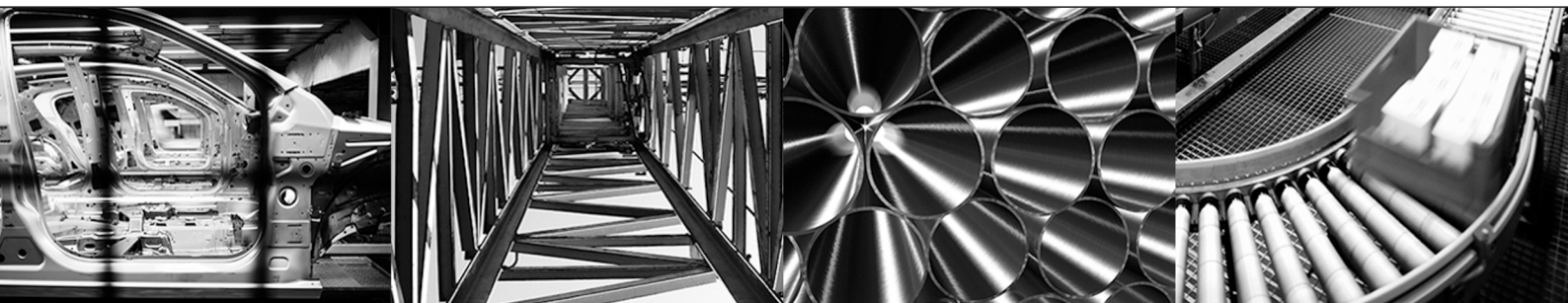
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