



Manual



MOVITRAC® LTE-B+/LTP-B

Accessories

Keypads, Parameter Module, Cable Sets



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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.

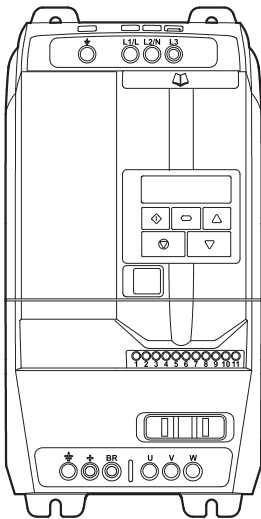
1.4 Copyright notice

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2 System overview

2.1 System overview of MOVITRAC® LTE-B+

Frequency inverter	
LTE-B+	<ul style="list-style-type: none"> 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 <p>For further information on this device, refer to the following documents:</p> <ul style="list-style-type: none"> "MOVITRAC® LTE-B+ Frequency Inverters" 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

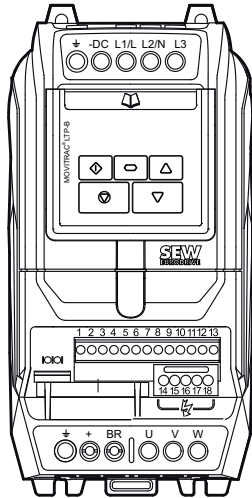
Remote keypads	
LT BG-C	7-segment display keypad
LT BG OLED A	Full-text OLED keypad

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	<ul style="list-style-type: none"> 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 <p>For further information on this device, refer to the following documents:</p> <ul style="list-style-type: none"> "MOVITRAC® LTP-B Frequency Inverters" 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

External keypads	
LT BG-C	7-segment display keypad

External keypads	
LT BG OLED A	Full-text OLED keypad
Accessories	
Cable set A	Basic package
Cable set B	Expansion module
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 Parameter module

3.1 Parameter module

The parameter module is designed exclusively for operation in the RJ45 port of the device.

Type	Part number	LTE-B+	LTP-B
LT BP C	18241549	X	X

X = available

– = not available



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- Functionality:
 - Saves data from the device to the parameter module.
 - Possible to simultaneously save the data from both devices LTE-B+ and LTP-B to a parameter module.
 - Integrated parameter lock. Prevents overwriting of saved parameters as soon as it is activated.
 - Loads data from the parameter module to the frequency inverter.
 - Bluetooth® interface for communication between engineering software LT Shell and MOVITRAC® LT or directly with the parameter module.

3.1.1 Technical data

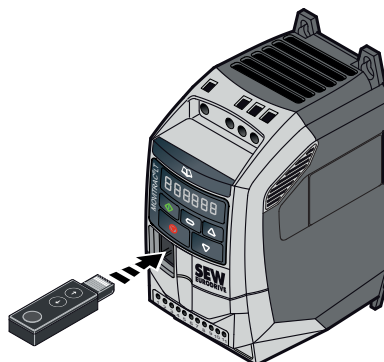
Degree of protection	IP20, NEMA 1
Ambient temperature during operation	-10 °C to +50 °C
Range of the Bluetooth® interface	< 10 m, depending on ambient conditions
Data transfer	Bluetooth®

3.2 Installation, startup, and operation

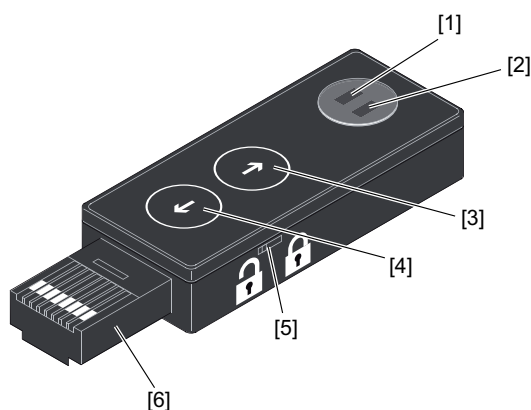
3.2.1 Directly at the frequency inverter

1. Check the frequency inverter connection. The inverter must be supplied from the grid.
2. Remove the protection cap from the parameter module and insert the parameter module into the frequency inverter slot RJ45.

Sample image with LTE-B+:



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Status LEDs:

[1]	Green	Steady light	Power okay, frequency inverter detected
		Flashing	Charging processes
[2]	Blue	Steady light	Bluetooth ready
		Flashing	Bluetooth communication active
[3]	[Download] button		Copies parameters from the frequency inverter to the parameter module.
[4]	[Upload] button		Copies parameters from the parameter module to the frequency inverter.
[5]	Locking switch/parameter lock		Locks the storage area of the parameter module. This means that the "Read parameters" function is not possible.
[6]	Parameter module interface		Connection via the RJ45 slot on the frequency inverter.

Transfer parameter set

Press the button [3] for downloading the data to the parameter module or [4] for up-loading data to the frequency inverter.

If the frequency inverter display shows **PASS-r**, the parameter set was successfully copied to the parameter module.

If the frequency inverter display shows **PASS-t**, the parameter set was successfully copied to the frequency inverter.

Locking or unlocking the parameter module

The parameter module is equipped with a locking switch [5] on the side with 2 positions.

1. Locked:

- Parameter set can be read in the LT Shell software.
- Parameter set cannot be changed.
- Download of the parameter set is not possible.
- Upload of the parameter set is possible.

2. Unlocked:

- Read and write possible (free memory access).

Frequency inverter display

The parameter module status is displayed on the frequency inverter display.

Display	Description
PASS-r	The parameter module successfully read/saved the parameters.
OS-Loc	The parameter module is locked.
FAiL-r	The parameter module could not read any parameters from the frequency inverter.
PASS-t	The parameter module successfully transferred the parameters to the frequency inverter.
FAiL-P	The power ratings of the parameter stored in the parameter module do not match the power ratings of the programmed frequency inverter.
FAiL-t	The parameter module could not transfer the parameter set to the frequency inverter.
no-dAt	No parameter data saved.
dr-Loc	The parameter lock in the inverter is active. It is not possible to transfer parameters.
dr-rUn	The inverter is enabled. It is not possible to transfer parameters.
tyPE-E	The parameters for the frequency inverter type saved in the parameter module do not match the frequency inverter type to be programmed (only writing).
tyPE-F	The parameter module does not support the programmed frequency inverter type.

3.2.2 With LT Shell software

Parameterization user interface

A Bluetooth® interface at the PC is required for communication with PC.



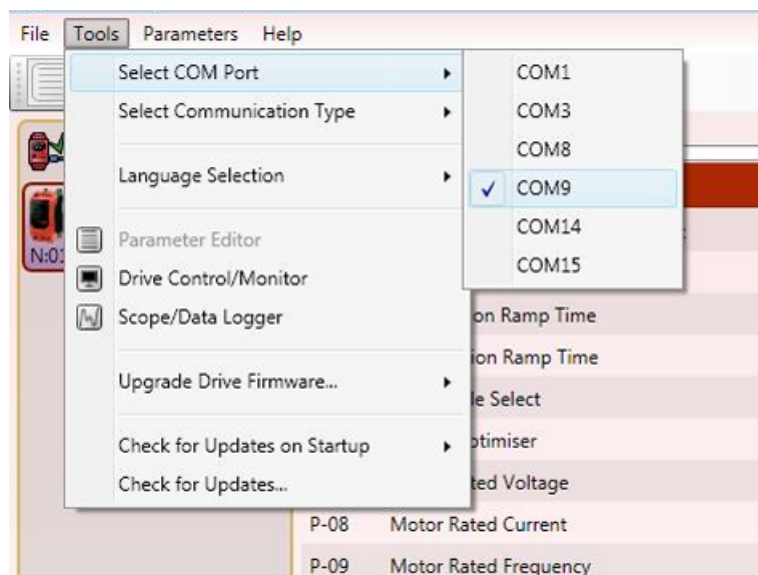
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- | | |
|--|--|
| <p>[1] Tool selection menu:</p> <ul style="list-style-type: none"> • Parameter editor • Drive monitor • Scope/ Data logger tool <p>[2] Shows the units in the network</p> <p>[3] Open, save parameter file</p> <p>[4] Set unit to factory setting</p> <p>[5] Transfer parameter set from selected drive (download)</p> <p>[6] Transfer parameter set to the selected drive (upload)</p> | <p>[7] Transfer parameter set from parameter module</p> <p>[8] Transfer parameter set to the parameter module</p> <p>[9] Parameter display</p> <p>[10] Offline mode</p> <p>[11] Network is scanned for drives.</p> <p>[12] Starts real time edit mode.</p> <p>[13] Defines the number of drives that are to be scanned during scan mode.</p> |
|--|--|

Proceed as follows to change the parameter values via the PC:

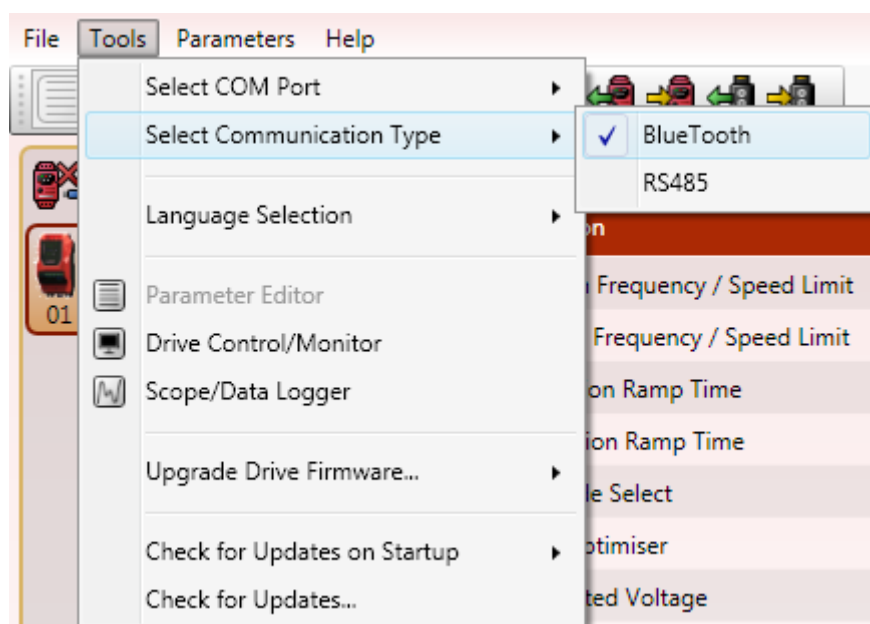
1. Download the software from the SEW-EURODRIVE website.
2. Check the frequency inverter connection.
3. Remove the protection caps from the parameter module. Insert the parameter module into the frequency inverter RJ45 slot.
4. Couple the parameter module with the PC via Bluetooth®. Enter the coupling code ("0000") of the parameter module.
5. Select an outgoing port for the parameter module using the PC. This connection is used by the PC software.

6. Start the software LT-Shell V4.0.exe.
7. The parameter editor is displayed.
8. Select the COM port of the PC/laptop to which the frequency inverter is connected via the parameter module.



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9. Choose the communication Bluetooth®.

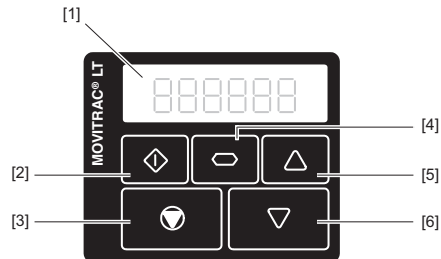


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10. Scan the network for existing drives [11].
11. Read the frequency inverter parameter set using the button [5]. Or read the parameter module parameter set using the button [7].
12. Transfer the parameter set from the software to the frequency inverter using the button [6] or to the parameter module using the button [8].
13. Double-click the parameter you want to change.
14. Enter the new parameter value into the edit box.

4 Keypad






Each MOVITRAC® LT inverter is equipped as standard with a keypad that allows for operating and setup of the frequency inverter without any further devices.



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- | | |
|-------------------------------|---------------------|
| [1] 6-digit 7-segment display | [4] Navigate button |
| [2] Start button | [5] Up button |
| [3] Stop/Reset button | [6] Down button |

The keypad has five keys with the following functions:

- | | | |
|---|--------------|---|
| Key  | Navigate [4] | <ul style="list-style-type: none"> • Switch menu • Save parameter values • Display real time information |
| Key  | Up [5] | <ul style="list-style-type: none"> • Increase the speed • Increase parameter values |
| Key  | Down [6] | <ul style="list-style-type: none"> • Decrease speed • Decrease parameter values |
| Key  | Stop [3] | <ul style="list-style-type: none"> • Stop drive • Error acknowledgment |
| Key  | Start [2] | <ul style="list-style-type: none"> • Enable drive • Change direction of rotation |

If the parameters are set to the factory settings, the <Start> and <Stop> keys of the keypad are disabled. To enable using the <Start>/<Stop> buttons on the keypad, set the parameter *P-12* for LTE-B+ or *P1-12* for LTP-B to "1" or "2".

The parameter edit menu can only be accessed by pressing the <Navigate> key [4].

- To switch between the menu for changing parameters and real-time display (operating speed/operating current): Keep the key pressed for longer than 1 second.
- To switch between operating speed and operating current of the running frequency inverter: Press the key briefly (< 1 second).

5 Remote keypads

The MOVITRAC® LT basic unit has an integrated keypad. Some applications require a remote keypad of the frequency inverter. The keypad option comes equipped with a self-adhesive gasket and a 3 m cable, which is plugged into the RJ45 socket of frequency inverter. This option is supplied with 24 V via the RJ45 cable of the frequency inverter.

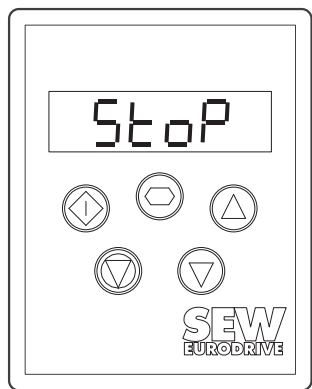
The maximum cable length between keypad and frequency inverter is 25 m with shielded cables. The length of all the cables in the network must not exceed 25 m for unshielded cables, and 100 m for shielded cables.

5.1 LT BG-C remote keypad

We offer a 7-segment display keypad as an additional option.

Type	Part number	LTE-B+	LTP-B
LT BG-C	18241522	X	X

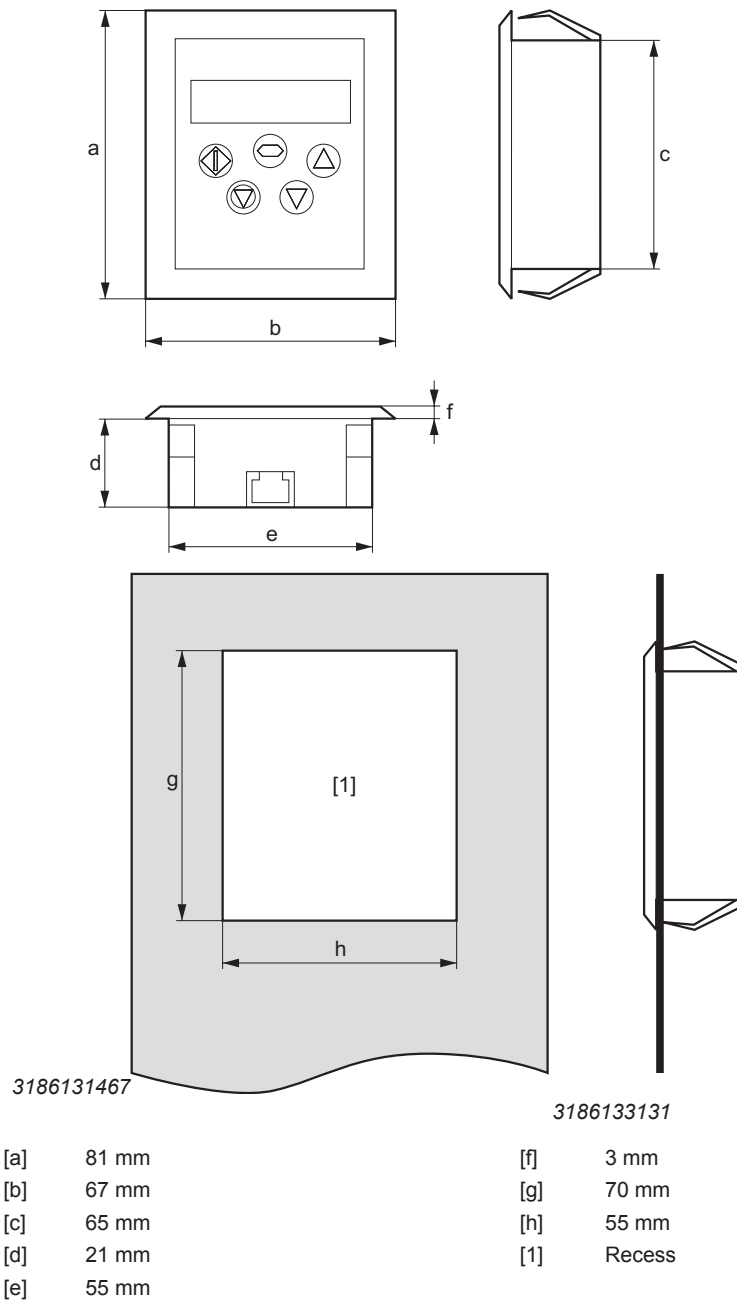
X = available – = not available



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5.1.1 Installation in the control cabinet or control panel

For installing an LT BG-C in the door of a control cabinet or in a control panel, the metal has to be cut as shown in the illustration below. The installed keypad meets standard IP54/NEMA 13 if the self-adhesive gasket enclosed in the delivery is used.



5.1.2 Technical data

Device connections	RJ45
Supply voltage	DC 24 V ± 10%
Supply current	30 mA
Degree of protection	IP20 (if not installed in the control cabinet) IP54 / NEMA 13 (if installed in the control cabinet door)
Ambient temperature during operation	-10 °C to +50 °C
Maximum relative humidity	95%, condensation not permitted

5.1.3 Display messages

The remote keypad displays information for the error code of the connected frequency inverter in case of a frequency inverter failure or switch-off responses. For a complete list with codes and information for diagnostics and troubleshooting, refer to the respective MOVITRAC® LT operating instructions.

The remote keypad uses different messages to display various operating states:

Display message	Meaning
SCAN..	The remote keypad scans the network for frequency inverters.
LOAD..	The remote keypad detected frequency inverters in the network. The frequency inverter loads relevant startup information.
Err-SC	The remote keypad lost the communication connection to the frequency inverter.
Adr-XX	Displays the address of the remote keypad, X = 1 to 63.

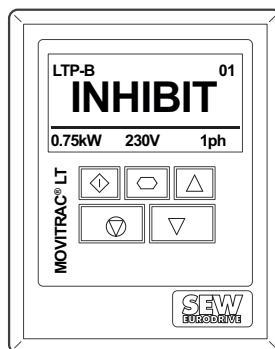
5.2 LT BG OLED A remote keypad

We offer a full-text OLED keypad as an additional option.

Type	Part number	LTE-B+	LTP-B
LT BG OLED A	28205731	X	X

X = available

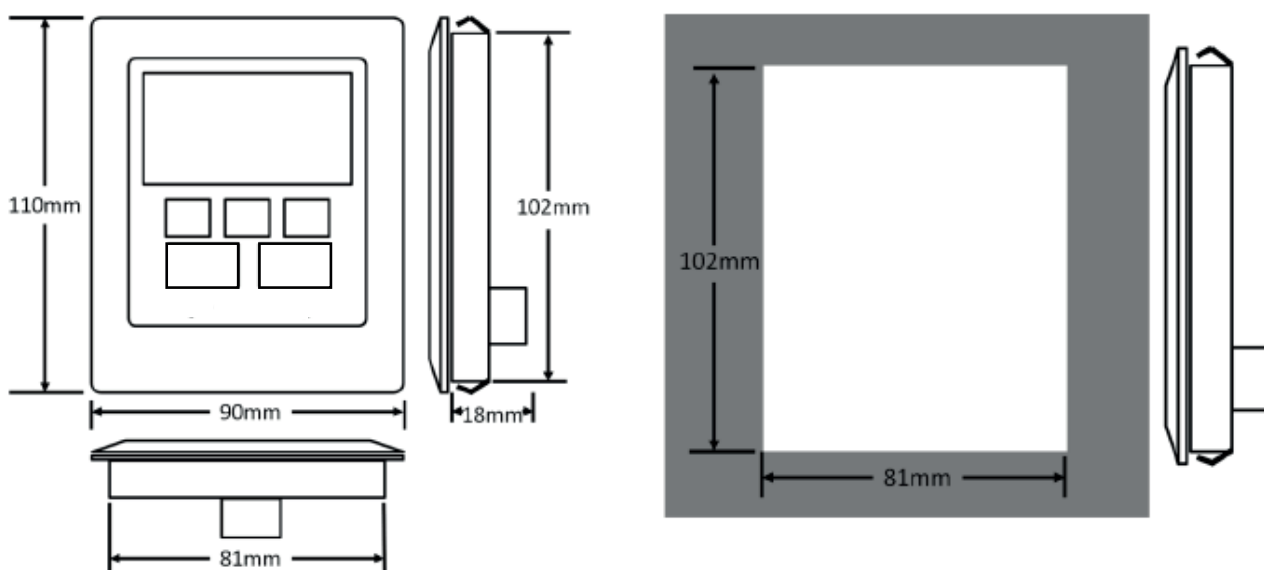
– = not available



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5.2.1 Installation in the control cabinet or control panel

For installing an LT BG OLED in the door of a control cabinet or in a control panel, the metal has to be cut as shown in the illustration below. The installed keypad meets standard IP54 / NEMA 13 if the self-adhesive gasket enclosed in the delivery is used.



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5.2.2 Technical data

Unit connections	RJ45
Supply voltage	DC 24 V ± 10%
Supply current	30 mA
Degree of protection	IP20 (if not installed in the control cabinet) IP54 / NEMA 13 (if installed in the control cabinet door)
Ambient temperature during operation	-10 °C – +50 °C
Maximum relative humidity	95%, condensation not permitted

5.2.3 Display messages

The remote keypad displays information for the error code of the connected frequency inverter in case of a frequency inverter failure or switch-off responses. For a complete list with codes and information for diagnostics and troubleshooting, refer to the respective MOVITRAC® LT operating instructions.

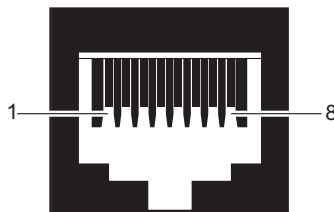
The remote keypad uses different messages to display various operating states:

Display message	Meaning
Scanning for drive XX	The remote keypad scans the network for frequency inverters.
LOAD..	The remote keypad detected frequency inverters in the network. The frequency inverter loads relevant startup information.
SC-OBS	The remote keypad lost the communication connection to the frequency inverter. Press the <Stop> key to reset. Check the frequency inverter address.
Select language	List to select one of the available languages. To select a language, use the <Navigate> key.
Select drive address XX	Display when selecting the address of the frequency inverter communicating with the remote keypad.
Select LT-Pad ID	Display when selecting the ID of the remote keypad (1 or 2). This way, 2 remote keypads can be connected to one frequency inverter or a network consisting of several frequency inverters.

5.3 Electrical installation

The remote keypad can be connected directly to the frequency inverter using a standard RJ45 cable. Voltage supply and data transmission is realized via the interface.

The socket at the keypad:



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- [1] Not connected
- [2] Not connected
- [3] 0 V
- [4] RS485- (engineering)
- [5] RS485+ (engineering)
- [6] +24 V (voltage supply)
- [7] Not connected
- [8] Not connected

5.4 System structure

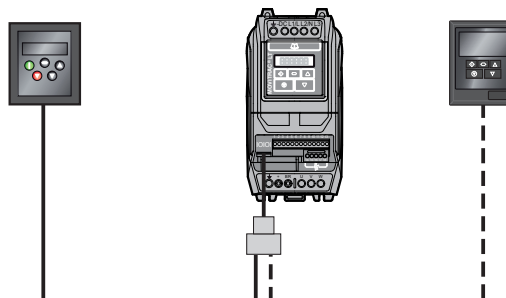
As soon as the physical connection is established, the keypad can be used. The keypad supports a network with different LT frequency inverter via the respective communication address. See ""Setting the communication address"" (→ 22).

A maximum of 2 keypads may be integrated into an existing network.

One keypad can be used for controlling up to 63 frequency inverters in one network. The keypad displays and controls one frequency inverter.

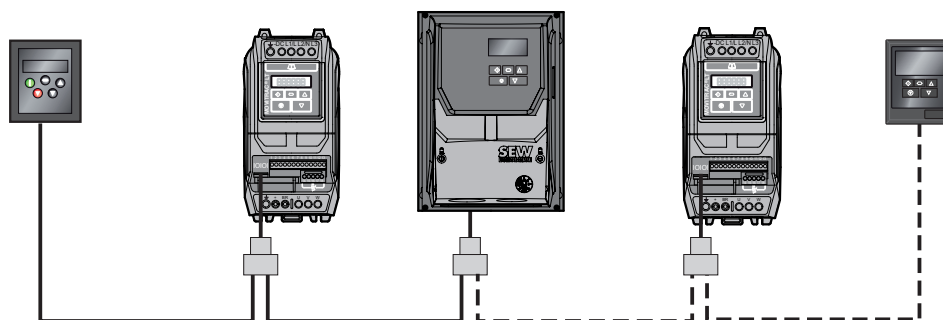
You can use the keypad as follows:

- One frequency inverter with one or a maximum of 2 remote keypads.



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- Several different frequency inverters (up to 63) with 1 or a maximum of 2 keypads.



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5.5 Startup

5.5.1 Setting the communication address

The remote keypad tries to reach the frequency inverter with address 1 during the first startup.

After startup, "SCAN.." is displayed. The remote keypad scans the network for frequency inverters with address 1. If this frequency inverter was found, the message "Load.." is displayed. The remote keypad reads the configuration information of the frequency inverter. The process takes approx. 1 – 2 seconds. After that, the remote keypad shows the real-time state of the frequency inverter. If the keypad cannot find a frequency inverter with address 1, meaning none of the frequency inverters in the network has address 1, the communication address display of the remote keypad shows "Adr-01". The user can change the address in the range from 1 to 63 with the <Up> and <Down> keys on the remote keypad. If the set address matches the address of a frequency inverter in the network, the configuration data of the frequency inverter can be loaded using the <Stop/Reset> key.

As soon as communication between the remote keypad and the frequency inverter is established, the user can change the address of the remote keypad at any time to establish communication with another frequency inverter in the same network.

Changing between inverters

If you press the <Stop/Reset> and <Down> keys at the same time, the current "Adr-XX" is displayed. Using the <Up>/<Down> keys, you can select the required frequency inverter address. Then, press the <Stop/Reset> key at the same time to establish communication between the remote keypad and the selected frequency inverter.

Settings for 2 remote keypads

To change the unit number, proceed as follows:

Press the <Navigate>, <Stop/Reset>, and <Down> keys at the same time. "Port-x" (x = 1 or 2) is displayed.

Switch to the respective keypad using the <Up> and <Down> keys.

Press the <Navigate>, <Stop/Reset>, and <Down> keys at the same time to switch to normal operation.

5.5.2 Changing/monitoring the parameters

For monitoring or changing a parameter value:

- If the frequency inverter displays "Stop" or "Inhibit", press the <Navigate> key for more than 1 s. The display changes to *P-01* with LTE-B+ and *P1-01* with LTP-B.
- Press the <Navigate> key to have the parameter value displayed.
- Use the <Up> and <Down> keys to enter the required value.
- Press the <Navigate> key again to save the changes.
- To return to the real-time mode, press the <Navigate> key for more than 1 s.

If the drive is at standstill, "Stop" is displayed. If the drive is running, the real-time information is displayed (e.g. speed, frequency, current, or power).

5.5.3 Preset setpoint speed for operation with remote keypad

- For unipolar or bipolar control of the drive with the remote keypad, set the parameter:

- *P-12* to 1 or 2 with LTE-B+
 - *P1-12* to 1 or 2 with LTP-B.
- To start the drive with the preset speed, set the parameter:
 - *P-31* to 1 or 3 with LTE-B+
 - *P2-37* to 1 or 3 with LTP-B.
- If the drive is at a standstill, press the <Stop> key. The value of the digital potentiometer (\triangle setpoint speed) is displayed. With LTP-B, the value is only displayed if *P2-37* = 1.
- You can set the required speed using the <Up>/<Down> keys.
- Press the <Stop> key to return to real-time mode. "Stop" is displayed.
- Press the <Start> key. The drive accelerates until it reaches the setpoint speed.

5.5.4 Speed change in real time mode with remote keypad

- For unipolar or bipolar control of the drive with the remote keypad, set the parameter:
 - *P-12* to 1 or 2 with LTE-B+
 - *P1-12* to 1 or 2 with LTP-B.
- To start the drive with the preset speed, set the parameter:
 - *P-31* to 1 or 3 with LTE-B+
 - *P2-37* to 1 or 3 with LTP-B.
- Press the <Start> key.
- To increase speed, use the <Up> key. The drive accelerates until you release the key or until the maximum speed is reached. The maximum speed is set with *P-01* with LTE-B and *P1-01* with LTP-B.
- To decrease speed, use the <Down> key. The drive decelerates until you release the key or until the minimum speed is reached. The minimum speed is set with *P-02* with LTE-B and *P1-02* with LTP-B.
- To stop the drive, press the <Stop> key. The speed is reduced with the selected deceleration ramp until the drive comes to a standstill.
- "Stop" is displayed. The drive is deactivated.

5.5.5 Direction of rotation reversal

- For unipolar or bipolar control of the drive with the remote keypad, set the parameter:
 - *P-12* to 1 or 2 with LTE-B+
 - *P1-12* to 1 or 2 with LTP-B.
- To start the drive with the preset speed, set the parameter:
 - *P-31* to 1 or 3 with LTE-B+
 - *P2-37* to 1 or 3 with LTP-B.
- Press the <Start> key. The drive accelerates until it reaches the preset speed (digital potentiometer).
- You can set the required speed using the <Up>/<Down> keys.
- Press the <Start> key again to change the direction of rotation.
- To stop the drive, press the <Stop> key. The speed is reduced with the selected deceleration ramp until the drive comes to a standstill.
- If no signal is present at the digital input for direction of rotation reversal, the drive starts every time with a positive speed.

5.5.6 Lock/enable parameter access

Set *P-38* = 1 with LTE-B+ or *P2-39* = 1 with LTP-B to prevent unauthorized access to the parameters. You can set or remove the parameter lock via the frequency inverter itself or the remote keypad.

The control and operation information of the drive can still be accessed.

To enable parameter access, set *P-38* = 0 with LTE-B+ and *P2-39* = 0 with LTP-B directly via the frequency inverter.

5.5.7 Changing the language on the keypad with full-text display LT BG OLED A

To switch the language in the full-text display, press the <Start> key and the <Upwards arrow> key simultaneously when the inverter is not enabled. You can then choose one of the listed languages.

6 Network packages

Network packages with the respective components are available for a network connection between MOVITRAC® LTE-B+ or LTP-B and a gateway in the UOx housing.

6.1 Basic package (cable set A)

The basic package (cable set A) contains all the components to connect the frequency inverter to a gateway, MOVI-PLC®, or a CCU.

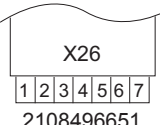
Cable set A also contains a heat shrink tubing for insulation of the cable splitter.

Type	Quantity	Description	Length	Part number	LTE-B+	LTP-B
LT OP 003 A2	1	RJ45 cable with open end	0.5 m	28202554	X	X
	1	Cable splitter	–			
	1	Terminating connector	–			

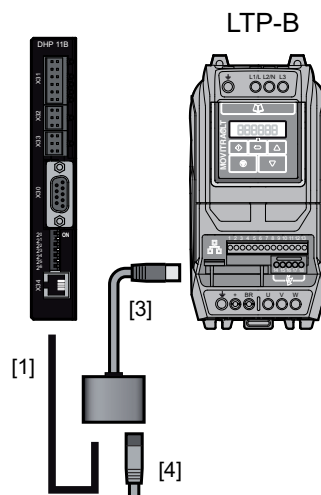
X = available

– = not available

Connect the RJ45 cable to the 7-pole connector of the MOVI-PLC® or the gateway.

Side view Single unit	Description	Terminal		Connection to the RJ45 connector
 <p>X26 1 2 3 4 5 6 7 2108496651</p>	Connector X26: CAN 1 and voltage supply (plug-in terminal)	X26:1	CAN 1H	SBus+ (orange)
		X26:2	CAN 1L	SBus- (white-orange)
		X26:3	DGND	0 V (white-green)
		X26:4	Reserved	–
		X26:5	Reserved	–
		X26:6	DGND	–
		X26:7	DC 24 V	–

The terminating connector must be plugged into the Y adapter of the last frequency inverter in the network.



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- [1] RJ45 cable with open end
- [3] Cable splitter
- [4] Terminating connector (120 Ω)

6.2 Extension package (cable set B)

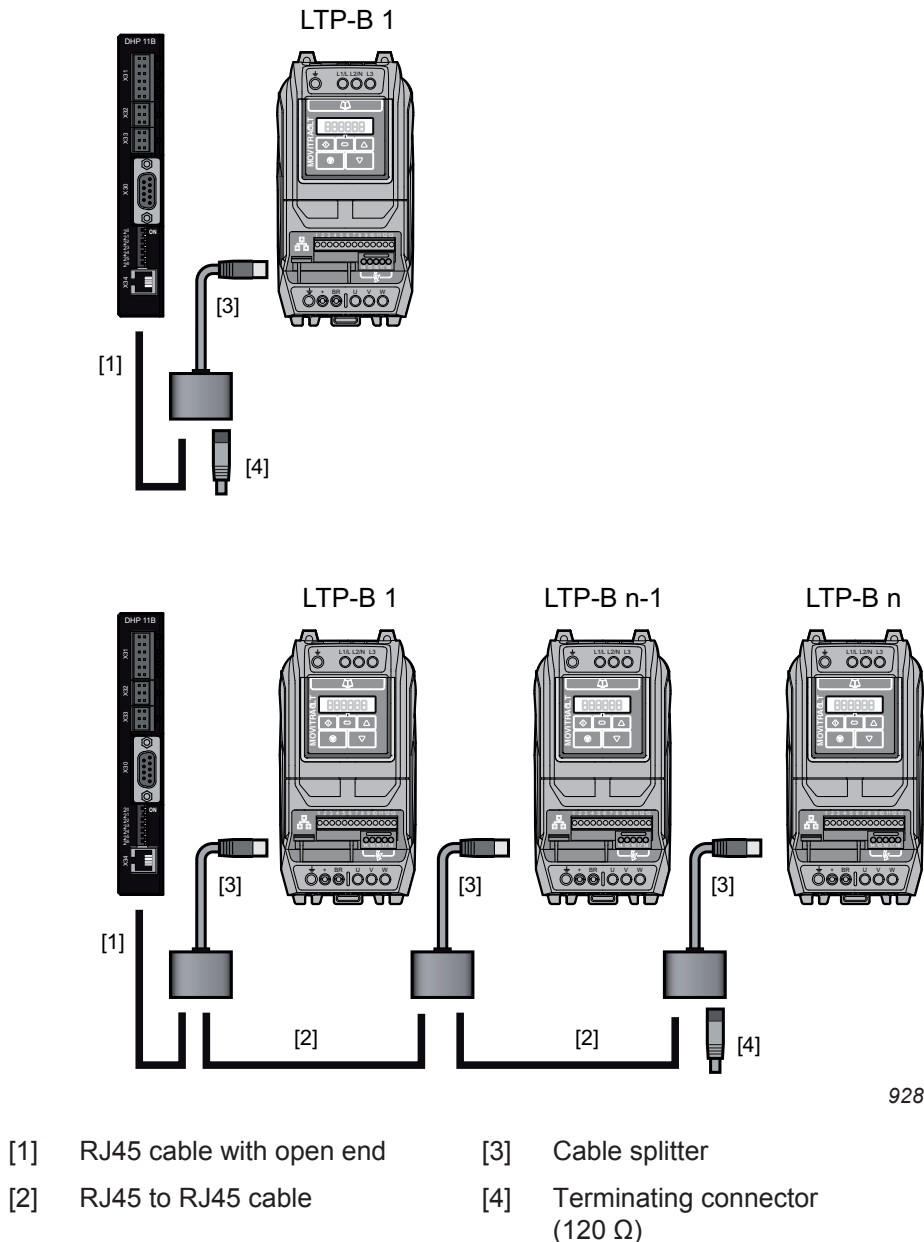
The extension package is used in addition to the basic package (cable set A) to connect more frequency inverters to the network. Cable set B also contains a heat shrink tubing for insulation of the cable splitter.

Type	Quantity	Description	Length	Part number	LTE-B+	LTP-B
LT OP 005 B2	1	RJ45 to RJ45 cable	0.5 m	28202546	X	X
	1	Cable splitter	–			
LT OP 010 B2	1	RJ45 to RJ45 cable	1 m	28202562	X	X
	1	Cable splitter	–			

X = available – = not available

6.2.1 Example

The following example shows the operation of three inverters at one gateway (controller). This requires cable set A and two times the extension package (cable set B).



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6.3 PC engineering package (cable set C)

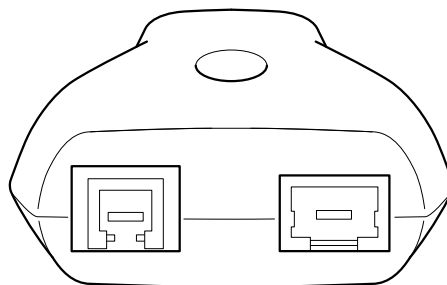
This cable set is used to connect the inverters to the engineering software LT Shell for software updates or for configuration purposes. In addition, an USB11A interface adapter is required.

The PC engineering package (C) contains all the components for the connection to a network with MOVITRAC® LTE-B+, LTP-B, LTP-A, or MOVIFIT® *basic* via RS485.

Type	Quantity	Description	Length	Part number	LTE-B+	LTP-B
LT OP 003 C	1	RJ adapter (RJ45, RJ45, RJ10)	–	18243681	X	X
	1	1 × RJ45 to RJ45 cable (blue) (LTE-B+, LTP-B)	0.5 m			
	1	1 × RJ45 to RJ11 cable (black) (LTP-A, MOVIFIT® <i>basic</i>)	0.5 m			

X = available

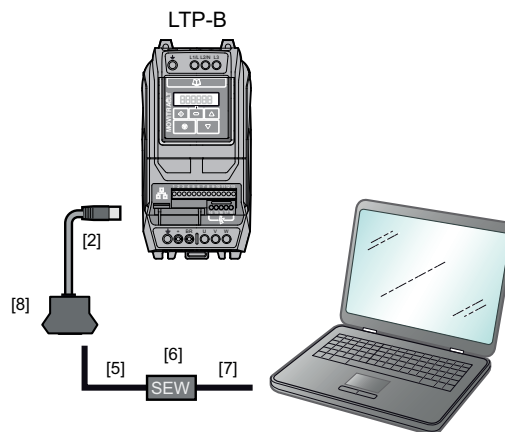
– = not available



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6.3.1 Example 1

The following example shows how to use the cable set C.

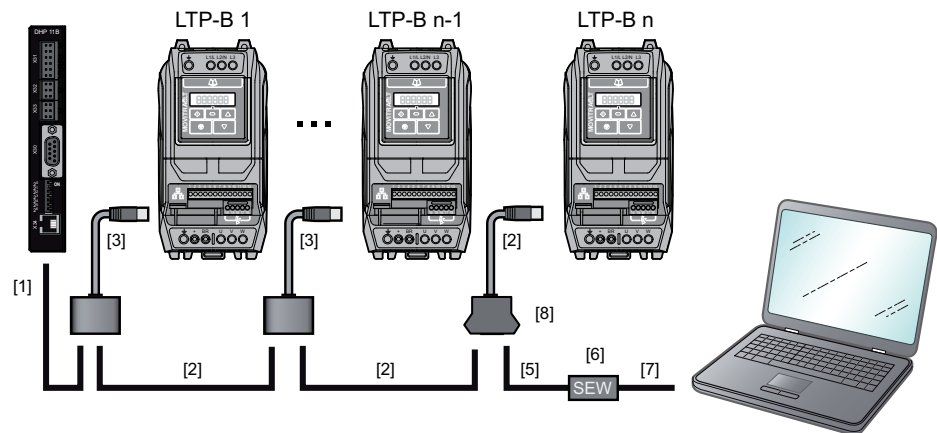


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- | | |
|------------------------|-------------------------------------|
| [2] RJ45 to RJ45 cable | [7] Cable USB A-B |
| [5] RJ10 to RJ10 cable | [8] RJ adapter (2 x RJ45, 1 x RJ10) |
| [6] USB11A | |

6.3.2 Example 2

The following example shows the use of cable set C within an existing fieldbus network.



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- | | |
|-----------------------------------|-------------------------------------|
| [1] RJ45 cable with open end | [5] RJ10 to RJ10 cable |
| [2] RJ45 to RJ45 cable | [6] USB11A |
| [3] Cable splitter | [7] Cable USB A-B |
| [4] Terminating connector (120 Ω) | [8] RJ adapter (2 x RJ45, 1 x RJ10) |

In an SBus network, the terminating connector or RJ adapter is equipped with a terminating resistor. If you use the PC engineering package (C) with the basic package (A), you have to replace the terminating connector with the RJ adapter.

Connect the RJ10 connector (4-pole) to USB11A.

INFORMATION



Only use the blue RJ45-RJ45 cable for MOVITRAC® LTP-B and MOVITRAC® LTE-B +.

Only use the black RJ45-RJ11 cable for MOVITRAC® LTP-A and MOVIFIT® *basic*.

If the wrong kind of connectors are used in the RJ sockets, the pins may be damaged.

6.4 Cable splitter 1 to 2

Type	Part number	LTE-B+	LTP-B
LT RJ CS 21 C	28201140	X	X

X = available

– = not available



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The RJ45 cable splitter is required to connect the RJ45 communication interface of the MOVITRAC® LT to another LT device or a keypad.

Typical applications are a required communication connection between one of the following sources and several devices in a network.

- Remote keypad
- Inverter network to MOVI-PLC® via SBus
- Fieldbus communication via UOH/DFx gateway

INFORMATION



The cable sets A and B contain all the components for unit connection. No additional splitter is required.

6.5 Terminating resistor

The terminating resistor of 120 Ohm is integrated in the RJ45 connector and is used as the bus termination for SBus, CANopen, and Modbus.

Type	Part number	LTE-B+	LTP-B
LT RJ CS TR C	28230299	X	X

X = available

– = not available

INFORMATION

Cable set A contains a terminating resistor; in cable set C, the terminating resistor is integrated in the RJ45-RJ45-RJ10 connector. When cable set C is used, no additional terminating resistors are required.

7 Prefabricated cables**7.1 Prefabricated cables with RJ45 connector on one end**

Each cable is equipped with an 8-pin RJ45 connector on one end. These cables are used for connecting the MOVITRAC® LT to the DFx gateway.

Type	Cable length	Part number	LTE-B+	LTP-B
LT K-RJ0E-005-B	0.5 m shielded	18218245	X	X

X = available - = not available

**INFORMATION**

The cable sets A and B contain all the components for unit connection. No additional cable termination is required.

7.2 Prefabricated cables with RJ45 connectors on both ends

The prefabricated cables are available in 3 lengths. Each cable is equipped with an 8-pin RJ45 connector at each end.

Type	Cable length	Part number	LTE-B+	LTP-B
LT K-RJ-005-B	0.5 m shielded	18218210	X	X
LT K-RJ-010-B	1.0 m shielded	18218229	X	X
LT K-RJ-030-B	3.0 m shielded	18218237	X	X

X = available - = not available

8 Control boards

8.1 LT OB LOCMO control board for LTE-B+

Type	Part number	LTE-B+	LTP-B
LT OB LOCMO	18205607	X	–

X = available

– = not available

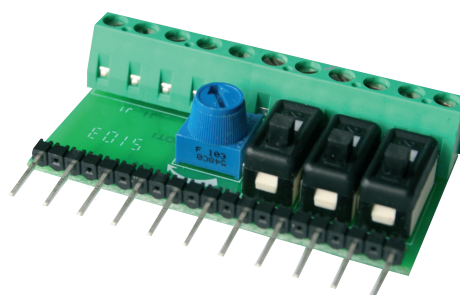
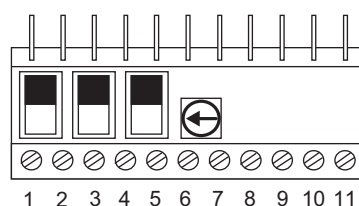
The local control panel is used to realize quick and easy manual operation. It is equipped with 3 DIP switches and a potentiometer.

Designation	Function
Switch 1	Control of digital input 1
Switch 2	Control of digital input 2
Switch 3	Control of digital input 3
Potentiometer 1	Setting the reference speed

INFORMATION



This option serves for test purposes only. The application in the field, a permanently-wired connection is required for controlling the drive.



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INFORMATION



The terminal connections on the control board correspond to those of the MOVITRAC® LTE-B.

8.1.1 Technical data

Degree of protection	IP00
Switch position	Up → open → 0 V → logical "0" Down → closed → 24 V → logical "1"
Potentiometer position	Left stop = 0 V Right stop = 10 V
Ambient temperature	-10 to +50 °C
Dimensions	mm 56 × 33 (without pins) × 16

8.1.2 Installation

**▲ WARNING**

Electric shock due to charged capacitors. 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.

- Wait 10 minutes after you have de-energized the inverter and have switched off the line voltage and the DC 24 V voltage. Do not start working on the device until you have made sure that it is de-energized.

1. Make sure that all switches are in the upper position (switch open).
2. Insert the control board into the terminal slot.
3. Connect terminals 1 to 11 using a screwdriver.

8.1.3 Startup and operation

Local control	Switch 1	Switch 2	Switch 3	Potentiometer
Frequency inverters	DI1	DI2	DI3/AI2	AI1/DI4

Switches 1 to 3 are fixed digital inputs; potentiometer 1 can be configured as an analog or digital input. The left stop of the potentiometer corresponds to a logical "0". Accordingly, the right stop corresponds to a logical "1".

The operation of the external control board depends on the settings of the parameters *P-12* and *P-15*. See "MOVITRAC® LTE-B+ Operating Instructions".

After resetting to factory setting:

- *P-12* = 0 terminal mode (signal source control)
- *P-15* = 0 (digital input function selection)

Depending on the configuration of the input terminals, diverse switches and the potentiometer can be used.

Factory setting functions:

P-15	Digital input 1	Digital input 2	Digital input 3/ analog input 2	Analog input 1/ digital input 4
0	0: Stop 1: Enable + start	0: CW rotation 1: CCW rotation	0: Analog speed setpoint 1: Fixed setpoint speed 1	Analog speed setpoint

8.2 LT OB LOCMO B control board for LTP-B

Type	Part number	LTE-B+	LTP-B
LT OB LOCMO B	28205758	–	X

X = available

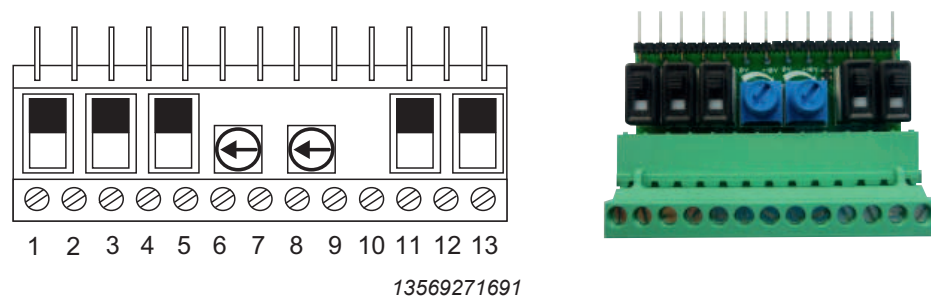
– = not available

The control board allows the user to operate the frequency inverter easily and quickly via the terminal control on site. The control board is connected to the 13-pole terminal and supplied with 24 V via terminal 1.

INFORMATION



This option serves for test purposes only. For application in the field, a permanently wired connection is required for controlling the drive.



8.2.1 Technical data

Degree of protection	IP00	
Switch position	Up → open → 0 V → logical "0" Down → closed → 24 V → logical "1"	
Potentiometer position	Left stop = 0 V Right stop = 10 V	
Ambient temperature	-10 °C – +50 °C	
Dimensions	mm	67 × 33 (without pins) × 14

8.2.2 Installation

**▲ WARNING**

Electric shock due to charged capacitors. Dangerous voltage levels may still be present inside the unit and at the terminals up to ten minutes after disconnection from the power supply.

Severe or fatal injuries.

- Wait ten minutes after disconnecting the frequency inverter from the power supply as well as disconnecting the line voltage and the DC 24 V voltage. Then, establish that the unit has been de-energized. Only then, start to work on the unit.

1. Make sure all switches are in the upper position (switch open).
2. Insert the control board into the terminal slot.
3. Connect terminals 1 to 13 using a screwdriver.

8.2.3 Startup and operation

Local control	Switch 1	Switch 2	Switch 3	Poten- tiometer 1	Poten- tiometer 2	Switch 4	Switch 5
Frequency inverters	DI1	DI2	DI3	AI1/DI4	AI2/DI5	STO+	STO-

Switches 1 to 3 are fixed digital inputs; potentiometers 1 and 2 can be configured as analog or digital inputs. The left stop of the potentiometer corresponds to a logical "0". Accordingly, the right stop corresponds to a logical "1".

The switches 4 and 5 separate the STO+ and STO- input. Both switches must be closed to change the frequency inverter state from "inhibit" to "stop".

The operation of the external control board depends on the settings of the parameters *P1-12* and *P1-15*. See "MOVITRAC® LTP-B Operating Instructions".

After resetting to factory setting:

- *P1-12* = 0 terminal mode (signal source control)
- *P1-15* = 1 (digital input function selection)

Depending on the configuration of the input terminals, diverse switches and potentiometers can be used.

Factory setting functions:

P1-15	Digital input 1	Digital input 2	Digital input 3	Analog input 1/ digital input 4	Analog input 2/ digital input 5
1	0: Stop 1: Enable + start	0: CW rotation 1: CCW rotation	Setpoint changeover 0: Selected speed setpoint (P1-12) 1: Fixed setpoint speed 1, 2	Speed setpoint analog 1	0: Fixed setpoint speed 1 1: Fixed setpoint speed 2

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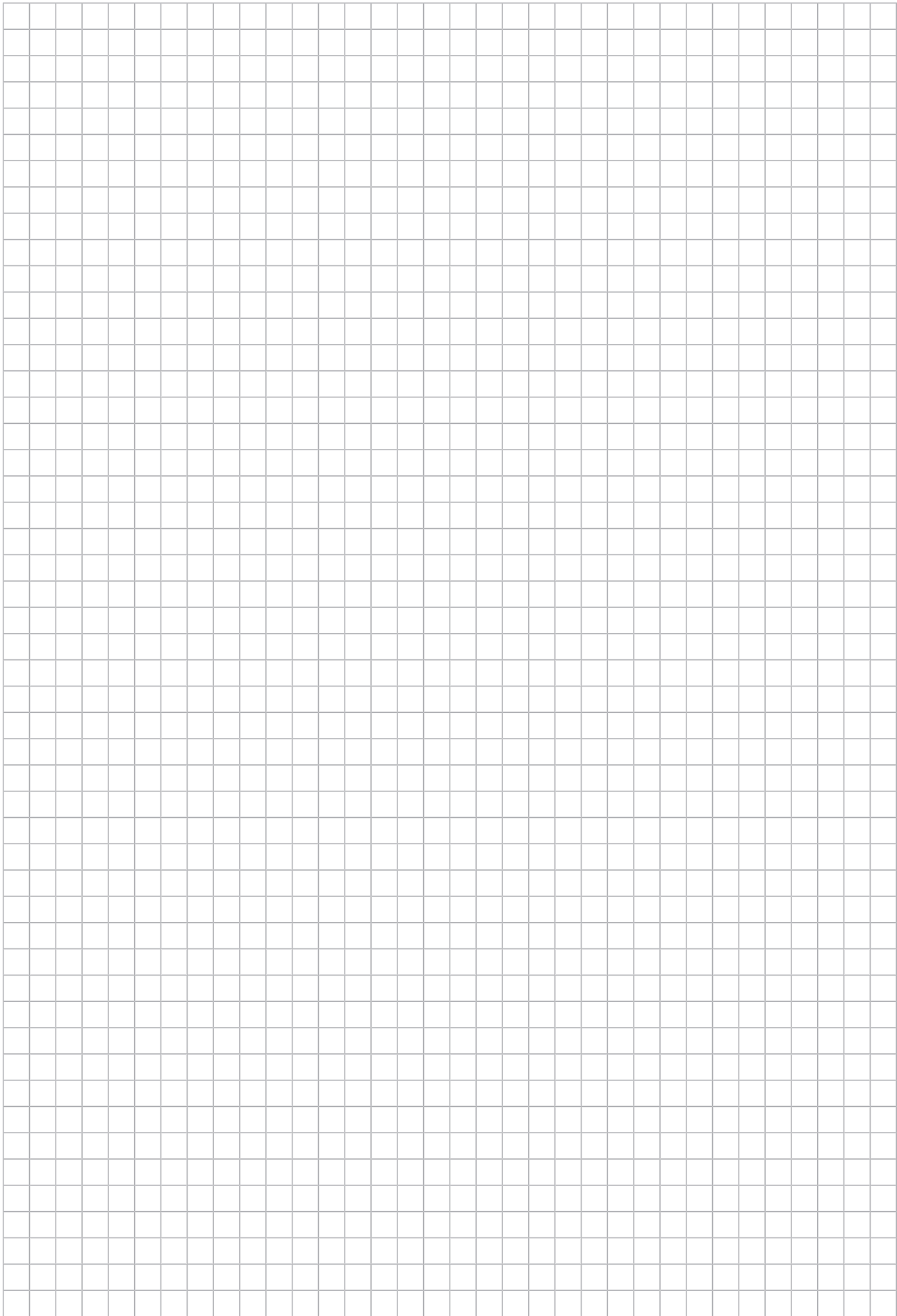
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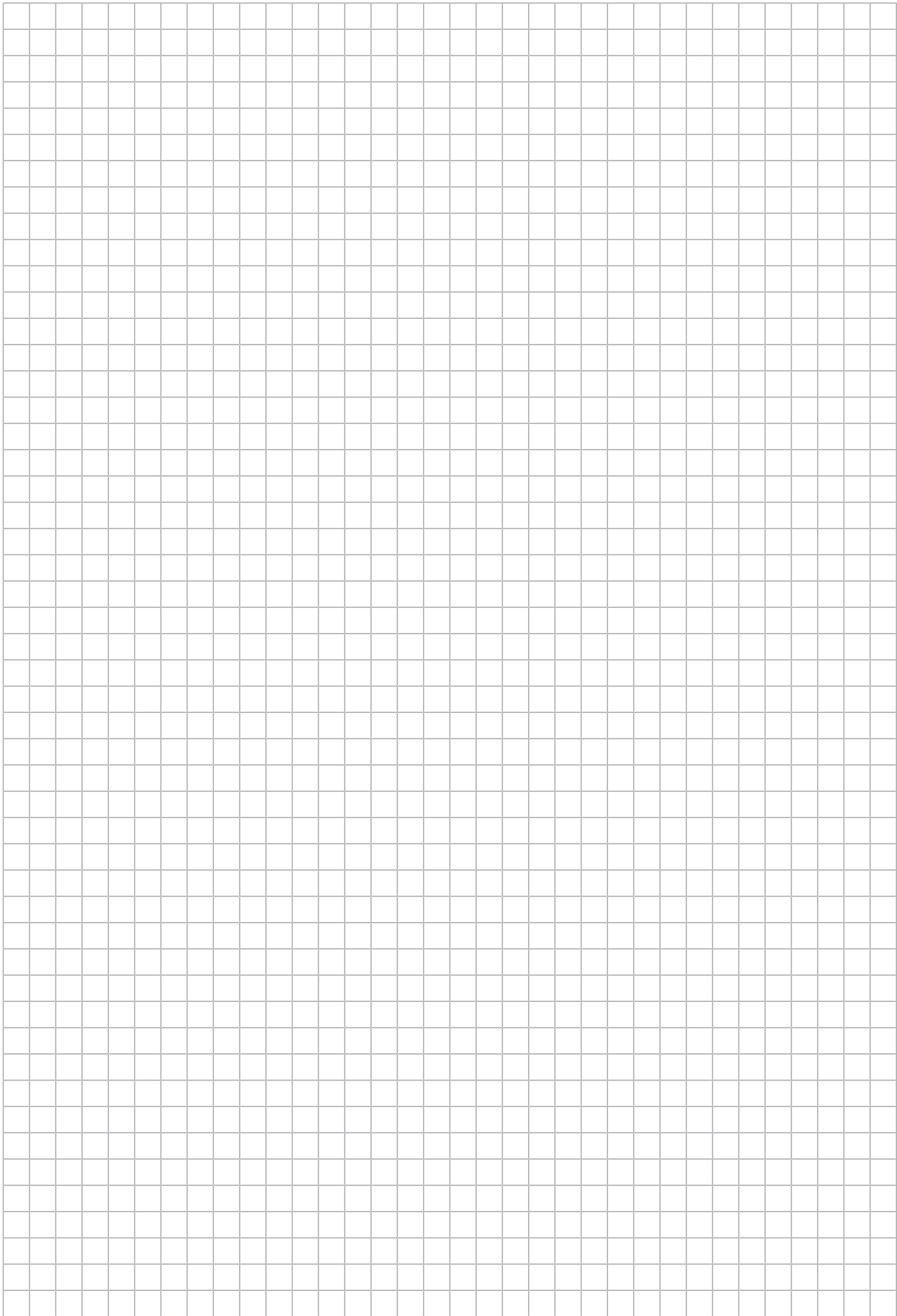
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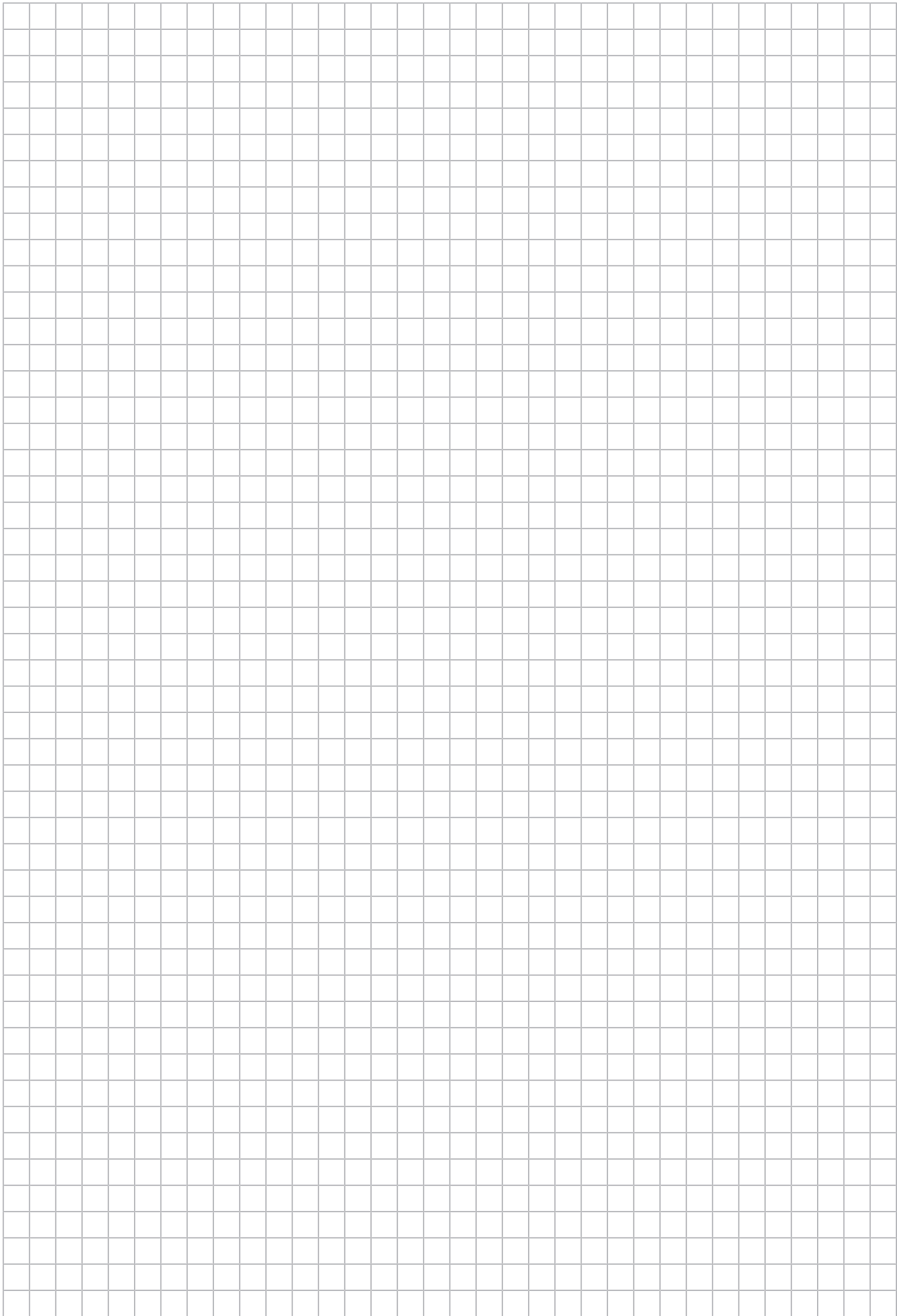
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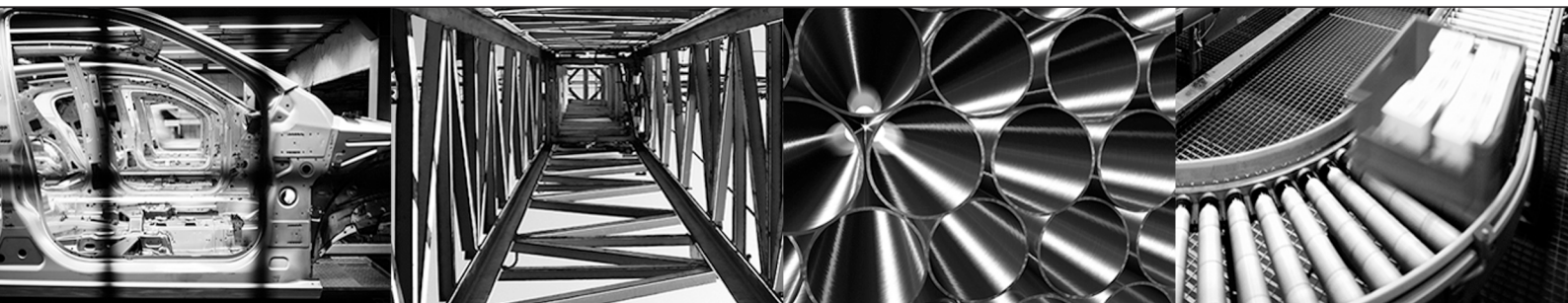
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SEW
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SEW-EURODRIVE GmbH & Co KG
Ernst-Blickle-Str. 42
76646 BRUCHSAL
GERMANY
Tel. +49 7251 75-0
Fax +49 7251 75-1970
sew@sew-eurodrive.com
→ www.sew-eurodrive.com