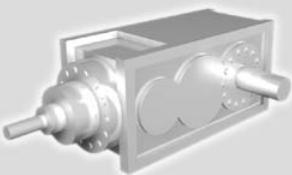
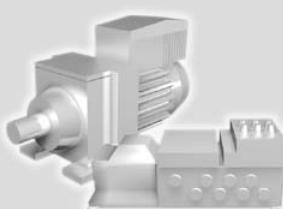
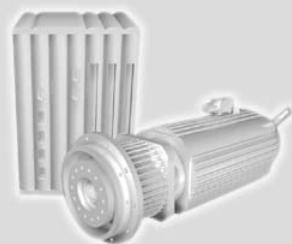
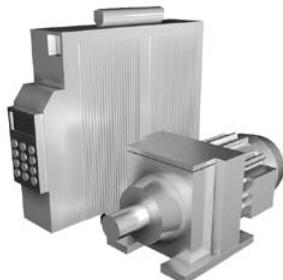




**SEW
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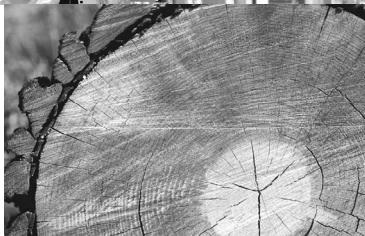
MOVITRAC® LT P

DA330000

Edition 09/2006

11533412 / EN

Catalog



SEW
EURODRIVE



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1 Important Notes

1.1 *Explanation of symbols*



Danger

Identifies information about practices or circumstances that will lead to personal injury or death, property damage, or economic loss.



Warning

Identifies information about practices or circumstances that may lead to personal injury or death, property damage, or economic loss.



Caution

Identifies information about practices or circumstances that may lead to property damage, or economic loss.



Note

Identifies information that is critical for successful application and understanding of the equipment.



Documentation reference

Operators are made aware of existing documentation, such as operating instructions, catalogs, data sheets.



Unless the information in the operating instructions is adhered to, it will be impossible to ensure:

- Trouble-free operation
- Fulfillment of any rights to claim under guarantee

Consequently, read the operating instructions before you start working with the unit!

The operating instructions contain important information about servicing. Therefore, keep the operating instructions close to the unit.



1.2 Application environment

The following applications are forbidden unless measures are expressly taken to make them possible:

- Use in explosion-proof areas
- Use in environments with harmful substances:
 - Oils
 - Acids
 - Gases
 - Vapors
 - Dust
 - Radiated interference
 - Other harmful environments
- Use subject to mechanical vibration and shock loads in excess of the requirements in EN 50178
- If the inverter performs safety functions which have to guarantee the protection of machinery and people

1.3 Waste disposal

Please follow the current instructions: dispose in accordance with the regulations in force:

- Electronics scrap (printed-circuit boards)
- Plastic (housing)
- Sheet metal
- Copper



2 Safety Notes

2.1 Installation and startup

- **Never install damaged products or take them into operation.** Please submit a complaint to the transport company immediately in the event of damage.
- **Installation, startup and service work** on the unit only by **trained personnel**. The personnel must be trained in the relevant aspects of accident prevention and must comply with the regulations in force (e.g. EN 60204, VBG 4, DIN-VDE 0100/0113/0160).
- Follow the **specific instructions** during **installation** and **startup** of the motor and the brake!
- Make sure that **preventive measures** and **protection devices** correspond to the **applicable regulations** (e.g. EN 60204 or EN 50178).
 - Grounding the unit is a necessary protective measure.
 - Overcurrent protection devices are a necessary protective measure.
- **The unit meets all requirements for reliable isolation** of power and electronics connections in accordance with UL508. **All connected circuits** must also **satisfy the requirements for reliable isolation** so as to guarantee reliable isolation.



2.2 Operation and servicing



- Disconnect the unit from the supply system prior to removing the protective cover. **Dangerous voltages** may still be present for up to **10 minutes after mains disconnection**.
- **Dangerous voltages** are present at the **output terminals** and the **cables and motor terminals connected to them when the unit is switched on**. Dangerous voltages may also be present when the unit is inhibited and the motor at a standstill.
- The unit is **not necessarily deenergized** when the **LEDs and the 7-segment display are off**.
- **Safety functions inside the unit or a mechanical blockage** may cause the **motor to stop**. The removal of the source of the malfunction or a **reset** can result in an **automatic restart of the drive**. If, for safety reasons, this is **not permissible** for the driven machine, **disconnect the unit from the supply system** before correcting the fault.



3 Communication Interfaces

3.1 *Input voltage ranges*

Depending upon model and power rating, the drives are designed for direct connection to the following supplies:

MOVITRAC® LT P 240 V units:

220 V ... 240 V $\pm 10\%$, 1 ph* / 3 ph, 50 ... 60 Hz $\pm 5\%$



*It is also possible to connect 1-phase MOVITRAC® LT P to 2-phases of a 220 ... 240 V 3-phase mains.

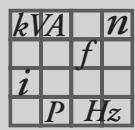
MOVITRAC® LT P 480 V units:

380 V ... 480 V $\pm 10\%$, 3 ph, 50 ... 60 Hz $\pm 5\%$

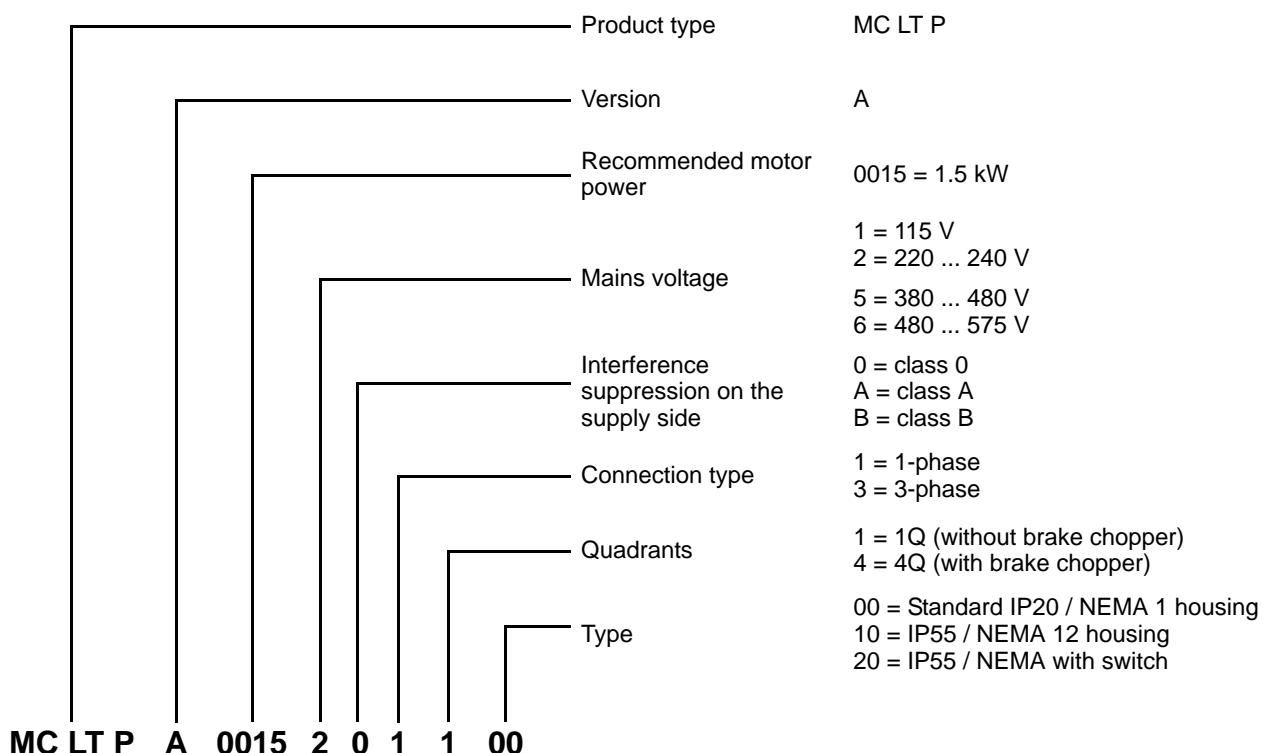
MOVITRAC® LT P 575 V units:

480 V ... 575 V $\pm 10\%$, 3 ph, 50 ... 60 Hz $\pm 5\%$

Products used with a 3-phase supply are designed for a maximum supply imbalance of 3 % between phases. For input supplies which have a supply imbalance greater than 3 % (typically the Indian subcontinent and parts of Asia Pacific including China) we recommend that input chokes are used.



3.2 Product designation



3.3 Output power and current ratings

3.3.1 Size 1 MOVITRAC® LT P, 220 ... 240 V

Standard MOVITRAC®	MC LT P A...	0004 2B1 1 -00	0008 2B1 1 -00
IP55/NEMA 12 housing MOVITRAC®	MC LT P A...	0004 2B1 1 -10	0008 2B1 1 -10
IP55/NEMA 12 with switch MOVITRAC®	MC LT P A...	0004 2B1 1 -20	0008 2B1 1 -20
Interference suppression according to EMC EN 61000-3		B	
INPUT			
Supply voltage	[V]	220 ... 240 V ± 10 %, 1 phase	
Supply frequency	[Hz]	50 / 60 Hz	
Input current	[A]	6	10
Supply fuse rating	[A]	6	10
Recommended motor power	[kW]	0.37	0.75
	[hp]	0.5	1.0
OUTPUT			
Output current (150 % overload capacity)	[A]	6.7	12.5
Motor cable size Cu 75C	[mm ²]	1.0	
	[AWG]	17	
Max motor cable length	Shielded	25	
	Unshielded	50	
Power Loss @ 16KHz	[kW]	0.0148	.03

3.3.2 Size 2 MOVITRAC® LT P, 220 ... 240 V

Standard MOVITRAC®	MC LT P A...	0015 2B1 1 -00	0022 2B1 1 -00
IP55/NEMA 12 housing MOVITRAC®	MC LT P A...	0015 2B1 1 -10	0022 2B1 1 -10
IP55/NEMA 12 with switch MOVITRAC®	MC LT P A...	0015 2B1 1 -20	0022 2B1 1 -20
Interference suppression according to EMC EN 61000-3		B	
INPUT			
Supply voltage	[V]	220 ... 240 V ± 10 %, 1 phase	
Supply frequency	[Hz]	50 / 60 Hz	
Input current	[A]	19.3	28.8
Supply fuse rating	[A]	20	30
Recommended motor power	[kW]	1.5	2.2
	[hp]	2.0	3.0
OUTPUT			
Output current (150 % overload capacity)	[A]	7	9
Motor cable size Cu 75C	[mm ²]	1.5	
	[AWG]	16	
Max motor cable length	Shielded	100	
	Unshielded	150	
Power Loss @ 16KHz	[kW]	0.06	0.088



Communication Interfaces

Output power and current ratings

3.3.3 Size 3 MOVITRAC® LT P, 220 ... 240 V

MOVITRAC® MC LT P A...		0030 2A3 4 -00	0040 2A3 4 -00	0055 2A3 4 -00		
Interference suppression according to EMC EN 61000-3		A				
INPUT						
Supply voltage	[V]	220 ... 240 V ± 10 %, 3 phase (1 phase with 50 % derating)				
Supply frequency	[Hz]	50 / 60 Hz				
Input current	[A]					
Supply fuse rating	[A]	32	32	50		
Recommended motor power	[kW]	3.0	4.0	5.5		
	[hp]	4.0	5.0	7.5		
OUTPUT						
Output current (150 % overload capacity)	[A]	14	18	24		
Motor cable size Cu 75C	[mm ²]	2.5				
	[AWG]	12				
Max motor cable length	Shielded	[m]	100			
	Unshielded		150			
GENERAL						
Minimum braking resistor	[Ω]	15				
Power Loss @ 4KHz	[kW]	0.13	0.16	0.22		

3.3.4 Size 4 MOVITRAC® LT P, 220 ... 240 V

MOVITRAC® MC LT P A...		0075 2A3 4 -00	0110 2A3 4 -00	0150 2A3 4 -00	0185 2A3 4 -00
Interference suppression according to EMC EN 61000-3		A			
INPUT					
Supply voltage	[V]	220 ... 240 V ± 10 %, 3 phase (1 phase with 50 % derating)			
Supply frequency	[Hz]	50 / 60 Hz			
Input current	[A]				
Supply fuse rating	[A]	80	80 ... 100	100	125
Recommended motor power	[kW]	7.5	11	15	18.5
	[hp]	10	15	20	25
OUTPUT					
Output current (150 % overload capacity)	[A]	39	46	61	72
Motor cable size Cu 75C	[mm ²]	10			16
	[AWG]	6			4
Max motor cable length	Shielded	[m]	100		
	Unshielded		150		
GENERAL					
Minimum braking resistor	[Ω]	6			
Power Loss @ 4KHz	[kW]	20	30	20	30

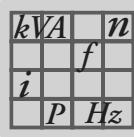
3.3.5 Sizes 5s and 5 MOVITRAC® LT P, 220 ... 240 V

MOVITRAC® MC LT P A...		0220 2A3 4 -00	0300 2A3 4 -00	0370 2A3 4 -00	0450 2A3 4 -00	
Interference suppression according to EMC EN 61000-3		A				
INPUT						
Supply voltage		[V]	220 ... 240 V ± 10 %, 3 phase (1 phase with 50 % derating)			
Supply frequency		[Hz]	50 / 60 Hz			
Input current		[A]	20	30	20	30
Supply fuse rating		[A]	160	200	250 ... 300	250 ... 300
Recommended motor power		[kW]	22	30	37	45
		[hp]	30	40	50	60
OUTPUT						
Output current (150 % overload capacity)		[A]	90	110	150	180
Motor cable size Cu 75C		[mm ²]	25	35	55	70
		[AWG]	4	3	2/0	3/0
Max motor cable length	Shielded	[m]	100			
	Unshielded		150			
GENERAL						
Minimum braking resistor		[Ω]	3			
Power Loss @ 4KHz		[kW]	20	30	20	30

3.3.6 Size 6 MOVITRAC® LT P, 220 ... 240 V

MOVITRAC® MC LT P A...		0550 2A3 4 -00	0750 2A3 4 -00	0900 2A3 4 -00	
Interference suppression according to EMC EN 61000-3		A			
INPUT					
Supply voltage		[V]	220 ... 240 V ± 10 %, 3 phase (1 phase with 50 % derating)		
Supply frequency		[Hz]	50 / 60 Hz		
Input current		[A]	20	30	20
Supply fuse rating		[A]	315 ... 350	400	450 ... 500
Recommended motor power		[kW]	55	75	90 ¹⁾
		[hp]	75	100	120 ¹⁾
OUTPUT					
Output current (150 % overload capacity)		[A]	202	240	300 ¹⁾
Motor cable size Cu 75C		[mm ²]	90	120	170
		[AWG]	3/0	4/0	4/0
Max motor cable length	Shielded	[m]	100		
	Unshielded		150		
GENERAL					
Minimum braking resistor		[Ω]	3		
Power Loss @ 4KHz		[kW]	20	30	20

1) Drive not yet UL approved



Communication Interfaces Output power and current ratings

3.3.7 Size 2 MOVITRAC® LT P, 380 ... 480 V

Standard MOVITRAC®	MC LT P A...	0008 5A3 4 -00	0015 5A3 4 -00	0022 5A3 4 -00	0040 5A3 4 -00
IP55/NEMA 12 housing MOVITRAC®	MC LT P A...	0008 5A3 4 -10	0015 5A3 4 -10	0022 5A3 4 -10	0040 5A3 4 -10
IP55/NEMA 12 with switch MOVITRAC®	MC LT P A...	0008 5A3 4 -20	0015 5A3 4 -20	0022 5A3 4 -20	0040 5A3 4 -20
Interference suppression according to EMC EN 61000-3	A				
INPUT					
Supply voltage	[V]	380 ... 480 V ± 10 %, 3 phase			
Supply frequency	[Hz]	50 / 60 Hz			
Input current	[A]	2.9	5.4	7.6	12.4
Supply fuse rating	[A]	6 ... 10	10	10	20
Recommended motor power	[kW]	0.75	1.5	2.2	4
	[hp]	1.0	2.0	3.0	5.0
OUTPUT					
Output current (150 % overload capacity)	[A]	2.2	4.1	5.8	9.5
Motor cable size Cu 75C	[mm ²]	1.0			1.5
	[AWG]	17			16
Max motor cable length	Shielded	[m]	50	100	
	Unshielded		75	150	
GENERAL					
Minimum braking resistor	[Ω]	47			33
Power Loss @ 8KHz	[kW]	0.03	0.06	0.088	0.16

3.3.8 Size 3 MOVITRAC® LT P, 380 ... 480 V

MOVITRAC® MC LT P A...		0055 5A3 4 -00	0075 5A3 4 -00	0110 5A3 4 -00	0150 5A3 4 -00			
Interference suppression according to EMC EN 61000-3	A							
INPUT								
Supply voltage	[V]	380 ... 480 V ± 10 %, 3 phase						
Supply frequency	[Hz]	50 / 60 Hz						
Input current	[A]	16.1	17.3	25.0	32.9			
Supply fuse rating	[A]	32	32	50	50			
Recommended motor power	[kW]	5.5	7.5	11	15 ¹⁾			
	[hp]	7.5	10	15	20 ¹⁾			
OUTPUT								
Output current (150 % overload capacity)	[A]	14	18	24	30 ¹⁾			
Motor cable size Cu 75C	[mm ²]	2.5			4.0			
	[AWG]	12			10			
Max motor cable length (unshielded)	Shielded	[m]	100					
	Unshielded		150					
GENERAL								
Minimum braking resistor	[Ω]	22						
Power Loss @ 4KHz	[kW]	0.22	0.3	0.44	0.6			

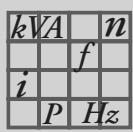
1) Drive not yet UL approved

3.3.9 Size 4 MOVITRAC® LT P, 380 ... 480 V

MOVITRAC® MC LT P A...		0185 5A3 4 - 00	0220 5A3 4 - 00	0300 5A3 4 - 00	0370 5A3 4 - 00			
Interference suppression according to EMC EN 61000-3		A						
INPUT								
Supply voltage		[V]	380 ... 480 V ± 10 %, 3 phase					
Supply frequency		[Hz]	50 / 60 Hz					
Input current		[A]	46.6	54.1	69.6	76.9		
Supply fuse rating		[A]	80	80 ... 100	100	125		
Recommended motor power		[kW]	18.5	22	30	37		
		[hp]	25	30	40	50		
OUTPUT								
Output current (150 % overload capacity)		[A]	39	46	61	72		
Motor cable size Cu 75C		[mm ²]	10		16			
		[AWG]	6		4			
Max motor cable length	Shielded	[m]	100					
	Unshielded		150					
GENERAL								
Minimum braking resistor		[Ω]	12					
Power Loss @ 4KHz		[kW]	0.555	0.66	0.9	1.11		

3.3.10 Sizes 5s and 5 MOVITRAC® LT P, 380 ... 480 V

MOVITRAC® MC LT P A...		0450 5A3 4 - 00	0550 5A3 4 - 00	0750 5A4 4 - 00	0900 5A3 4 - 00			
Interference suppression according to EMC EN 61000-3		A						
INPUT								
Supply voltage		[V]	380 ... 480 V ± 10 %, 3 phase					
Supply frequency		[Hz]	50 / 60 Hz					
Input current		[A]	92.3	116.9	150.2	176.5		
Supply fuse rating		[A]	160	200	250 ... 300	250 ... 300		
Recommended motor power		[kW]	45	55	75	90		
		[hp]	60	75	100	120		
OUTPUT								
Output current (150 % overload capacity)		[A]	90	110	150	180		
Motor cable size Cu 75C		[mm ²]	25	55		70		
		[AWG]	4	2/0		3/0		
Max motor cable length	Shielded	[m]	100					
	Unshielded		150					
GENERAL								
Minimum braking resistor		[Ω]	6					
Power Loss @ 4KHz		[kW]	1.35	1.65	2.25	2.7		



Communication Interfaces

Output power and current ratings

3.3.11 Size 6 MOVITRAC® LT P, 380 ... 480 V

MOVITRAC® MC LT P A...		1100 5A3 4 -00	1320 5A3 4 -00	1600 5A3 4 -00
Interference suppression according to EMC EN 61000-3		A		
INPUT				
Supply voltage		[V]	380 ... 480 V, 3 phase	
Supply frequency		[Hz]	50 / 60 Hz	
Input current		[A]	217.2	255.7
Supply fuse rating		[A]	315 ... 350	400
Recommended motor power		[kW]	110	132
		[hp]	150	175
OUTPUT				
Output current (150 % overload capacity)		[A]	202	240
Motor cable size Cu 75C		[mm ²]	90	120
		[AWG]	4/0	5/0
Max motor cable length	Shielded	[m]	100	
	Unshielded		150	
GENERAL				
Minimum braking resistor		[Ω]	6	
Power Loss @ 4KHz		[kW]	3.3	3.96
				4.8

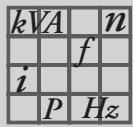
1) Drive not yet UL approved

3.3.12 Size 2 MOVITRAC® LT P, 575 V

Standard MOVITRAC®	MC LT P A...	0008 603 4 -00	0015 603 4 -00	0022 603 4 -00	0037 603 4 -00	0055 603 4 -00					
IP55/NEMA 12 housing MOVITRAC®	MC LT P A...	0008 603 4 -10	0015 603 4 -10	0022 603 4 -10	0037 603 4 -10	0055 603 4 -10					
IP55/NEMA 12 with switch MOVITRAC®	MC LT P A...	0008 603 4 -20	0015 603 4 -20	0022 603 4 -20	0037 603 4 -20	0055 603 4 -20					
Interference suppression according to EMC EN 61000-3											
INPUT											
Supply voltage	[V]	480 ... 575 V ± 10 %, 3 phase									
Supply frequency	[Hz]	50 / 60 Hz									
Input current	[A]	2.6	3.3	6.2	8.4	12.1					
Supply fuse rating	[A]	6	10	10	10	20					
Recommended motor power	[kW]	0.75	1.5	2.2	3.7	5.5					
	[hp]	1.0	2.0	3.0	5.0	7.5					
OUTPUT											
Output current (150 % overload capacity)	[A]	1.7	3.1	4.1	5.6	9					
Motor cable size Cu 75C	[mm ²]	1.0			1.5						
	[AWG]	17			16						
Max motor cable length	Shielded	[m]	100			9					
	Unshielded		150								
GENERAL											
Minimum braking resistor	[Ω]	47									
Power Loss @ 4KHz	[kW]	0.03	0.06	0.088	0.16	0.22					

3.3.13 Size 3 MOVITRAC® LT P, 575 V

MOVITRAC® MC LT P A...		0075 603 4 -00	0110 603 4 -00
Interference suppression according to EMC EN 61000-3	0		
INPUT			
Supply voltage	[V]	480 ... 575 V ± 10 %, 3 phase	
Supply frequency	[Hz]	50 / 60 Hz	
Input current	[A]	10.6	16.2
Supply fuse rating	[A]	32	32
Recommended motor power	[kW]	7.5	11
	[hp]	10	15
OUTPUT			
Output current (150 % overload capacity)	[A]	14	18
Motor cable size Cu 75C	[mm ²]	2.5	
	[AWG]	14	
Max motor cable length	Shielded	[m]	100
	Unshielded		150
GENERAL			
Minimum braking resistor	[Ω]	22	
Power Loss @ 4KHz	[kW]	0.3	0.44



3.4 Overload capability

All MOVITRAC® LT P have a possible overload of:

- 150 % for 60 seconds
- 175 % for 2 seconds

3.5 Protection features

- Output short-circuit, phase-to-phase, phase-to-ground
- Output over-current
 - Trip set at 175 % of rated drive current.
- Overload protection
 - Drive delivers 150 % of rated motor current for 60 seconds.
- Braking transistor protected against short-circuit.
- Braking resistor overload (when enabled)
- Over-voltage trip
 - Set at 123 % of drive maximum rated supply voltage.
- Under-voltage trip
- Over temperature trip
- Under temperature trip
 - Drive will trip if enabled below 0 °C
- Supply phase imbalance
 - A running drive will trip if there is a supply imbalance of >3 % persisting for more than 30 seconds.
- Supply phase loss
 - A running drive will trip if one phase of a 3-phase supply is lost for more than 15 seconds.

3.6 Conformance

All products conform to the following international standards:

- UL 508C Power conversion equipment
- EN 61000-6 / -2, -3, -4 Generic immunity / Emission standards (EMC)
- Enclosure protection level according to NEMA 250, EN 60529
- Flammability rating according to UL 94
- cUL Power conversion equipment, certified for Canada

3.7 Environmental

Operational temperature range	0 ... 50 °C
Storage temperature range	-40 ... 60 °C
Maximum altitude	2000 m

Derate above 1000 m	1 % / 100 m
Maximum humidity	95 %, non-condensing

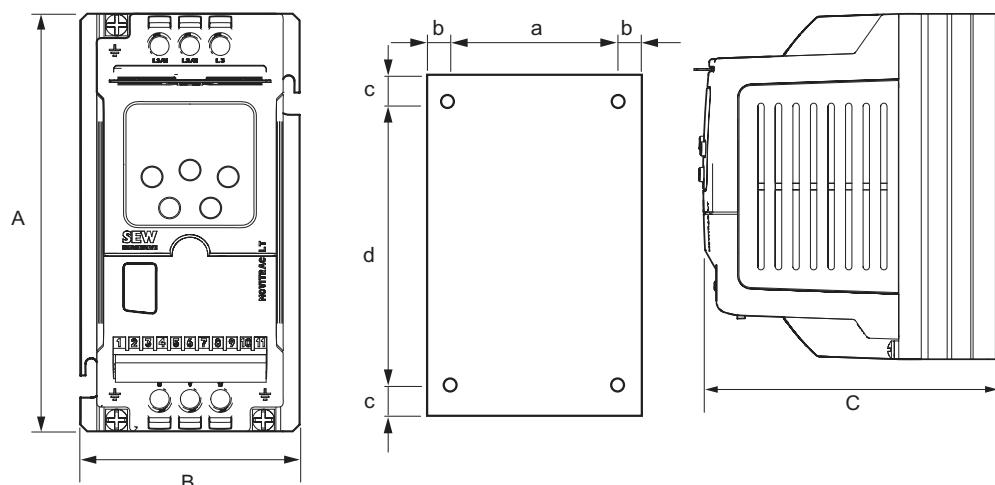
3.8 Dimensions

MOVITRAC® LT P is available in 2 housing versions:

- Standard IP20/NEMA 1 housing for use in switch cabinets
- IP55/NEMA 12 K version for size 1 and size 2 drives

The IP55/NEMA 12 K housing is protected against moisture and dust. Therefore, the drives can be operated indoors under harsh conditions. Electronically, the drives are identical and the only differences are the dimensions of the housing and the weight.

3.8.1 Dimensions of the IP20/NEMA 1 housing

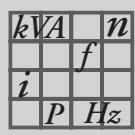


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Dimension	Size 1	Size 2	Size 3	Size 4	Size 5s	Size 5	Size 6 ¹⁾
Height (A)	[mm]	155	260	260	520	1045	1100
	[in]	6.10	10.20	10.20	20.47	41.14	43.31
Width (B)	[mm]	80	100	171	340	340	340
	[in]	3.15	3.94	6.73	13.39	13.39	13.39
Depth (C)	[mm]	130	175	175	220	220	330
	[in]	5.12	6.89	6.89	8.66	8.66	12.99
Weight	[kg]	1.1	2.6	5.3	28	68	Unit = 55 Choke = 27
	[lb]	2.43	5.73	11.68	61.73	149.91	
a	[mm]	72	92	163	332	332	332
	[in]	2.84	3.62	6.42	13.07	13.07	13.07
b	[mm]	4	4	4	9.5	9.5	9.5
	[in]	0.16	0.16	0.16	0.37	0.37	0.37
c	[mm]	25	25	25	50	50	50
	[in]	0.98	0.98	0.98	1.97	1.97	1.97
d	[mm]	105	210	210	420	945	945
	[in]	4.13	8.27	8.27	16.54	37.21	37.21



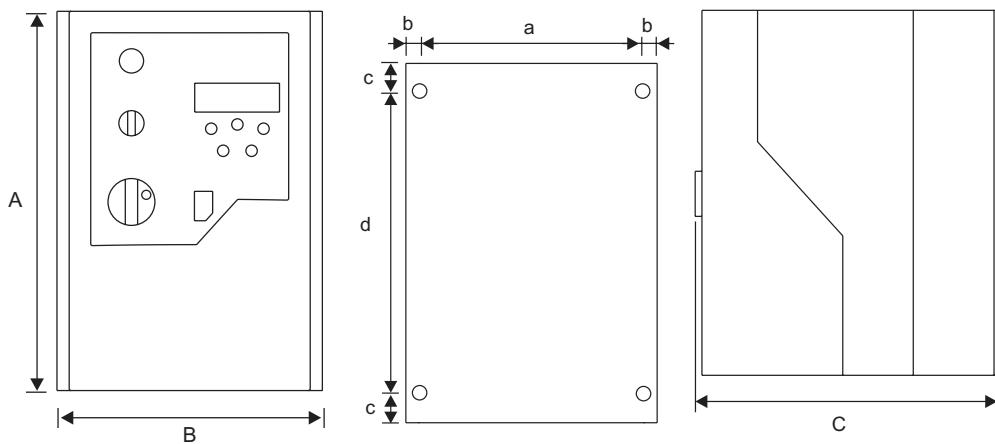
Communication Interfaces

Dimensions

Dimension	Size 1	Size 2	Size 3	Size 4	Size 5s	Size 5	Size 6 ¹⁾
Power terminal torque settings	[Nm]	1	1	1	4	8	8
	[lb.in]	8.85	8.85	8.85	35.4	70.8	70.8

1) Size 6 comes with an external line choke

3.8.2 Dimensions of the IP55/NEMA 12 housing (LT P xxx –10 and –20)



60198AXX

60199AXX

60200AXX

Dimension	Size 1	Size 2
Height (A)	[mm]	200
	[in]	7.9
Width (B)	[mm]	140
	[in]	5.5
Depth (C)	[mm]	162
	[in]	6.4
Weight	[kg]	2.3
	[lb]	5.1
a	[mm]	128
	[in]	5
b	[mm]	6
	[in]	0.23
c	[mm]	25
	[in]	0.98
d	[mm]	142
	[in]	5.6
Power terminal torque settings	[Nm]	1
	[lb.in]	8.85
Control terminal torque settings	[Nm]	0.5
	[lb.in]	4.43
Fixings	2 × M4	4 × M4

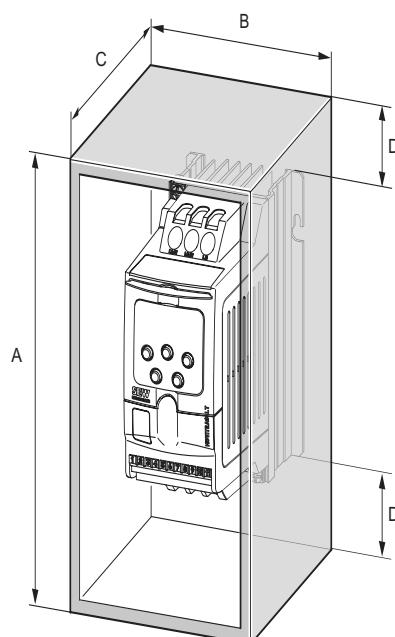
3.8.3 IP20 / NEMA 1 housing: mounting and dimensions

For applications that require a higher IP rating than the IP20 offered by the standard drive, the drive must be mounted in housing. The following guidelines should be observed for these applications:

- Housing should be made from a thermally conductive material, unless forced ventilation is used.
- When vented housing is used, there should be venting above and below the drive to ensure good air circulation. Air should be drawn in below the drive and expelled above the drive.
- If the external environment contains contamination particles (e.g. dust), a suitable particle filter should be fitted to the vents and forced ventilation implemented. The filter must be serviced and cleaned appropriately.
- High moisture, salt or chemical content environments should use a suitably sealed (non-vented) housing.

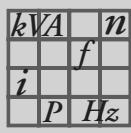
Dimensions of non-vented metal housing

Drive power rating		Sealed housing							
		A [mm]	A [in]	B [mm]	B [in]	C [mm]	C [in]	D [mm]	D [in]
Size 1	0.75 kW 230 V	300	11.81	250	9.84	200	7.87	50	1.97
Size 1	1.5 kW 230 V	400	15.75	300	11.81	250	9.84	75	2.95
Size 2	1.5 kW 230 V 0.75 kW, 1.5 kW, 2.2 kW 400 V 2.2 kW 400 V	400	15.75	300	11.81	300	11.81	60	2.36
Size 2	2.2 kW 230 V 4.0 kW 400 V 5.5 kW 575 V	600	23.62	450	17.72	300	11.81	100	3.94



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Figure 1: Housing



Communication Interfaces

Dimensions

Dimensions of vented housing

Drive power rating		Vented housing							
		A		B		C		D	
		[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]
Size 1	1.5 kW	400	15.75	300	11.81	150	5.91	75	2.95
Size 2	5.5 kW	600	23.62	400	15.75	250	9.84	100	3.94
Size 3	15 kW	800	31.50	600	23.62	300	11.81	150	5.91
Size 4	22 kW	1000	39.37	600	23.62	300	11.81	200	7.87
Size 4	37 kW	-	-	-	-	-	-	-	-
Size 5	90 kW	-	-	-	-	-	-	-	-
Size 6	160 kW	-	-	-	-	-	-	-	-

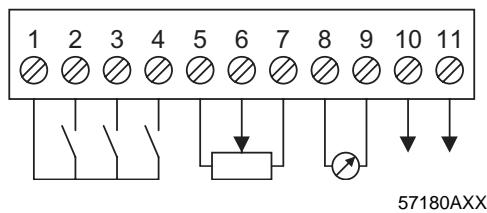
Dimensions of force vented housing

Drive power rating		Force vented housing (with fan)								
		A		B		C		D		
		[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	Air Flow
Size 1	1.5 kW	300	11.81	200	7.87	150	5.91	75	2.95	> 15 m ³ /h
Size 2	5.5 kW	400	15.75	300	11.81	250	9.84	100	3.94	> 45 m ³ /h
Size 3	15 kW	600	23.62	400	15.75	250	9.84	150	5.91	> 80 m ³ /h
Size 4	22 kW	800	31.50	600	23.62	300	11.81	200	7.87	> 300 m ³ /h
Size 4	37 kW	800	31.50	600	23.62	300	11.81	200	7.87	> 300 m ³ /h
Size 5	90 kW	1600	62.99	800	31.50	400	15.75	200	7.87	> 900 m ³ /h
Size 6	160 kW	2000	78.74	800	31.50	400	15.75	200	7.87	> 1000 m ³ /h

3.9 Signal terminal connections

The functionality of the inputs and outputs is user configurable. All operating modes are set up via the parameter set.

Up to 100 mA can be sourced from the User +24 V output and up to 20 mA from the analog output.



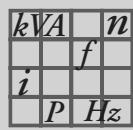
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The signal terminal block has the following signal connections:

Terminal no.	Description	Connection
1	+24 V, 100 mA output	Connected to terminal 5
2	Digital input 1, positive logic	Active when 8 V < Vin < 30 V
3	Digital input 2, positive logic	Active when 8 V < Vin < 30 V 2nd digital output: 0 / 24 V, 10 mA max.
4	Unipolar analog input, 10-bit (0.1 %) 0 ... 10 V, 0 ... 20 mA, 4 ... 20 mA Digital input 3, positive logic	Active when 8 V < Vin < 30 V
5	+24 V, 100 mA output	Connected to terminal 1
6	Bipolar analog input, ± 12-bit (0.025 %)	0 ... 24 V, 0 ... 10 V, -10 ... 10 V
7	0 V (user GND)	Connected to terminal 9
8	Analog output, 8-bit (0.25 %) 0 ... 10 V, 4 ... 20 mA	Digital output, 0 / 24 V, 20 mA max.
9	0 V (user GND)	Connected to terminal 7
10	User relay output	Potential free contacts • DC 30 V, 5 A • AC 250 V, 6 A
11	User relay output	Potential free contacts • DC 30 V, 5 A • AC 250 V, 6 A

3.9.1 Key information on the control terminal

- Maximum input voltage on any terminal is DC 30 V
- All outputs short circuit proof
- Recommended potentiometer resistance: 10 k Ohm
- Digital input response time < 8 ms
- Bipolar analog input response time < 16 ms. Resolution ±12-bit (0.025 %)
- Second analog input response time < 16 ms. Resolution +11-bit (0.05 %)
- Analog / digital output response time < 16 ms. Resolution 8-bit (0.25 %)

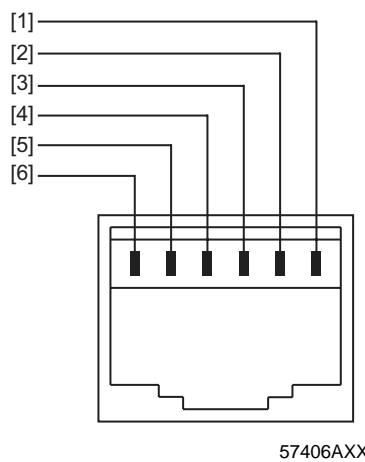


3.10 Communication Interfaces

3.10.1 RJ11 Communication socket

The RJ11 communication socket can be used to set up a RS-485 communication to the PC via UWS11A. This is necessary to set up and monitor the drive via LTP-Shell.

With MOVITRAC® LT P units with MODBUS option (...-0M) it is possible to use this RJ11 connector to set up a MODBUS communication network. In this case the internal bus drive-to-drive network can also be set up, which enables master-slave applications to be controlled via an external PLC.



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- [1] RS-485- / MODBUS¹⁾
- [2] RS-485+ / internal bus¹⁾
- [3] RS-485- / internal bus¹⁾
- [4] +24 V
- [5] 0 V
- [6] RS-485+ / MODBUS¹⁾

1) The MODBUS option (...-0M) is required to use the MODBUS communication function and internal bus drive-to-drive network.

3.10.2 Infra Red/IrDA interface

The optical interface which is located next to the RJ11 connector is mainly used for commissioning and monitoring the drive with a pocket PC. When LTP shell CE is installed the pocket PC can be used to commission the drive and monitor the current status of the drive.

Additionally the Infra red interface can be used to set up a master slave network. However the maximum number of slaves is limited to 2.

3.11 User interface

3.11.1 Keypad

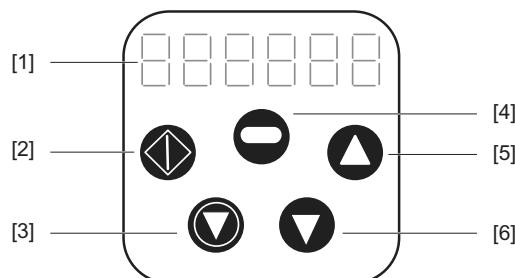
Each MOVITRAC® LT P has an integrated keypad as standard, allowing drive operation and set up without any additional equipment.

The keypad consists of 5 keys with the following functions:

Start / Run	Enable running of motor
Stop / Reset	Stop motor / Reset trip
Navigate	Press and release to display A / Hz / rpm Press and hold to enter / exit parameter edit mode
Up	Increase Parameter / Value
Down	Decrease Parameter / Value

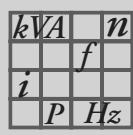
The Start / Stop buttons on the keypad are disabled when the parameters have their factory default settings. To enable the operation of the <start> / <stop> buttons on the keypad, set P-12 to 1 or 2 (see chapter 3.12, "Standard parameters").

The Navigate key alone is used to gain access to the parameter edit menu. Pressing and holding this key (> 1 second) allows the user to toggle between the parameter edit menu and the real time display (where the drive operating status / running speed is displayed). By pressing this key (< 1 second) the user is able to toggle between the operating speed and operating current during drive operation.



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- [1] Display
- [2] Start
- [3] Stop / Reset
- [4] Navigate
- [5] Up
- [6] Down



3.12 Standard parameters

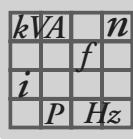
Par.	Title	Range	Default	Description
P1-01 ¹⁾	Max speed limit (Hz or rpm)	P1-02 ... P1-09 x 5 (up to 2000 Hz max)	50 Hz (60 Hz) ²⁾	Sets the maximum speed limit. Display of Hz or rpm dependent on P1-10. Maximum speed limit dependent on switching frequency: Max Limit = P2-24 / 16.
P1-02 ¹⁾	Min speed limit (Hz or rpm)	0 ... P-01	0 Hz	Minimum speed limit. Hz or rpm display depending on P1-10.
P1-03	Acceleration ramp time (s)	0.0 s ... 3000 s	5.0 s	Time to ramp from 0 to rated frequency (P1-09)
P1-04	Deceleration ramp time (s)	0.0 s ... 3000 s	5.0 s	Time to ramp from rated frequency (P1-09) to 0.
P1-05	Stop mode select	0: Ramp to stop 1: Coast to stop 2: Ramp to stop	0: Ramp to stop	If the supply is lost and P1-05 = 0 then the drive will try to continue running by reducing the speed of the load using the load as a generator. If P1-05 = 2, the drive ramps on 2nd deceleration ramp P2-25 to stop.
P1-06	Energy optimization	0: Disable 1: Enable	0	When enabled, automatically reduces applied motor voltage on light load. Can only be used in control mode V/F (siehe P4-01).
P1-07	Motor rated voltage	20 V ... 250 V 20 V ... 500 V 20 V ... 600 V	230 V 400 V (460 V) ²⁾ 575 V	Set to motor rated voltage from nameplate. Range limited to 250 V for 230 V drives.
P1-08	Motor rated current limit	20 % to 100 % of drive related current	Drive rating	Set to motor rated current from nameplate (Amps).
P1-09	Motor rated frequency	25 ... 2000 Hz	50 Hz (60 Hz) ²⁾	Set to motor rated frequency from nameplate (Hz). Maximum limit dependent on switching frequency: Max Limit = P2-24 / 16.
P1-10	Motor rated speed	0 ... 60000 rpm	0	When 0, drive operates in Hz. Upper limit set to 60 x P1-09 (motor synchronous speed).
P1-11	Preset speed 1	-P1-01 ... P1-01	50 Hz (60 Hz) ²⁾	Sets jog / preset speed at which drive runs when preset speed 1 selected via digital inputs (see also P2-01).
P1-12	Terminal / Keypad control of drive	0: Terminal control 1: Keypad control (fwd only) 2: Keypad control (fwd and rev) 3: Enable user PID	0: Terminal control	Set to 0 for terminal control. Set to 1 for uni-direction keypad control. Set to 2 for bi-directional keypad control. Keypad <start> key toggles between forward and reverse. User PID (feedback control) set in parameter group 3.
P1-13	Trip log	Last 4 trips stored	-	Latest 4 trips stored. Most recent displayed first.
P1-14	Extended menu access code	0 ... 30000	0	Permits access to extended menu when P1-14 = P2-37. Default access value = 101.

1) If the motor rated speed in rpm has been entered into P-10, parameters P-01, P-02, P20 ... P23, P-27 and P-28 are in rpm.

2) If the default value is 60 Hz (460 V), this is shown on the name plate as 60 Hz .

3.13 Extended parameters

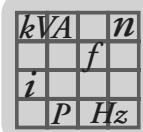
Par.	Description	Range	Default	Explanation
P2-01	Digital input function select	0 ... 20	0	Defines the function of the digital inputs.
P2-02	Preset speed 2	-P1-01 ... +P1-01	0 Hz	Sets jog / preset speed 2
P2-03	Preset speed 3	-P1-01 ... +P1-01	0 Hz	Sets jog / preset speed 3
P2-04	Preset speed 4	-P1-01 ... +P1-01	0 Hz	Sets jog / preset speed 4
P2-05	Preset speed 5	-P1-01 ... +P1-01	0 Hz	Sets jog / preset speed 5
P2-06	Preset speed 6	-P1-01 ... +P1-01	0 Hz	Sets jog / preset speed 6
P2-07	Preset speed 7	-P1-01 ... +P1-01	0 Hz	Sets jog / preset speed 7
P2-08	Preset speed 8	-P1-01 ... +P1-01	0 Hz	Sets jog / preset speed 8
P2-09	Skip frequency	P1-02 ... P1-01	0	Centre point of skip frequency band set up in conjunction with P2-10.
P2-10	Skip frequency band	0 ... P1-01	0 (disable)	Width of skip frequency band centred on frequency set in P2-09.
P2-11	Analog output function select	(Digital output mode) 0: Drive enabled 1: Drive healthy 2: Motor at target speed 3: Motor speed > 0 4: Motor speed > limit 5: Motor torque > limit 6: PID feedback > limit (Analog output mode) 7: Motor speed 8: Motor torque 9: Motor power (kW) 10: Motor current	7	For values 0 to 6, analog output functions as a digital output. (0 V or 24 V output) The control limit used for settings 4, 5 and 6 is defined in P2-12(h) and P2-12(L). For values between 7 and 9, the output is analog signal, operating between 0 ... 10V or 4 ... 20mA. (as set in P2-36) Full scale analog output results at: <ul style="list-style-type: none">• max speed• 2x rated motor torque (motor rated output torque)• rated power of the drive• 2 x rated motor current
P2-12(h)	Digital output control high limit	Speed : 0 ... 100 % (100 % = max speed) Torque : 0 ... 200 % (100 % = rated torque) PID feedback : 0 ... 100 % (100 % = max 2nd analog input)	100 %	Digital output state set to logic 1 when selected value in P2-11 larger than this limit. Limit in P2-12 relates to speed if P2-11 = 4, to motor torque if P2-11 = 5 or to the PID feedback value (2nd analog input) if P2-11 = 6.
P2-12(L)	Digital output control low limit	0 ... P2-12(h)	100 %	Digital output state back to logic 0 when selected value in P2-11 less than or equal to this limit. (P2-11 = 4,5 or 6)
P2-13	User relay output function select	0: Drive Enabled 1: Drive healthy 2: Motor at target speed 3: Motor speed > 0 4: Motor speed > limit 5: Motor torque > limit 6: PID Analog in > limit	1	If P2-15 = 0 (Normally Open), the relay contacts are closed when the selected condition is fulfilled. If P2-15 = 1 (Normally Closed), the relay contacts are open when the selected condition is fulfilled.
P2-14(h)	User relay output control high limit	Speed : 0 ... 100 % (100 % = max speed) Torque : 0 ... 200 % (100 % = rated torque) PID feedback : 0 ... 100 % (100 % = max 2nd analog input)	100 %	User relay output closes (P2-15=0) when selected value in P2-13 larger than this limit. Limit in P2-14 relates to speed if P2-13 = 4, to motor torque if P2-13 = 5 or to the PID feedback value (2nd analog input) if P2-13 = 6.
P2-14(L)	User relay output control low limit	0 ... P2-14(h)	100 %	Digital output state back to logic 0 when selected value in P2-13 less than or equal to this limit. (P2-13 = 4,5 or 6)



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Extended parameters

Par.	Description	Range		Default	Explanation
P2-15	Relay output mode	0:	Normally Open (NO)	0 (NO)	The drive must be powered up for the relay contacts to be closed.
		1:	Normally Closed (NC)		
P2-16	Zero Speed holding time	0 ... 60 s			0.0
P2-17	Start mode select	Edgr-r	Close digital input 1 after power up to start drive	Auto-0	When set to Edge-r, if drive is powered up with digital Input 1 closed (enabled), drive will not run. The switch (digital input 1) must be opened and closed after power up or after a clearing a trip for the drive to run. When set to Auto-0, drive will run whenever digital input 1 is closed Auto-1...5 makes 1...5 attempts to automatically restart after a trip (20 s between attempts in default). Drive must be powered down to reset the counter.
		Auto-0	Drive runs whenever digital input 1 is closed		
		Auto-1...5	As Auto-0, except 1..5 attempts to restart after a trip		
P2-18	Spin Start Enable (V/F mode only)	0:	Disable	0	When enabled, drive detects motor speed and starts driving the motor from this speed (the motor speed can be in both directions: forward or reverse). A short delay of approx 1 s will result after enabling the drive before speed is detected. This function only works when parameter P4-01=2.
		1:	Enable		
P2-19	Keypad restart mode	0:	Minimum speed	1	If set to 0 or 2, drive will always start from minimum speed. If set to 1 or 3, drive ramps up to the operating speed prior to the last STOP command. If set to 2 and 3, the status of digital input 1 controls drive to start or stop. The start and stop button will not work in this case.
		1:	Previous speed		
		2:	Min-speed (Auto-r)		
		3:	Previous speed (Auto-r)		
P2-20	Standby mode	0: Disable 1 ... 60 s		0	If P2-20 > 0, drive enters standby mode (disables output) if zero speed is maintained for the time specified in P2-20. If P2-16 > 0, this function is disabled.
P2-21	Display scaling factor	0.000 ... 30.000		0.000	Disabled if set to zero. The variable selected in P2-22 is multiplied by this factor and displayed as a real-time value on the drive, in addition to speed, current and power.
P2-22	Display scaling source	0:	2nd analog input	0	Selects the variable to be scaled by the factor set in P2-21.
		1:	Speed		
		2:	Motor output torque		
P2-23	Brake circuit enable	0:	Disable	0	Enables the internal brake chopper. Overload protection in software when set to 1 or 2. See rating tables for resistor sizing guidelines.
		1:	Enable + lo power		
		2:	Enable + hi power		
		3:	Enable, no protection		
P2-24	Effective switching frequency	S1, S2	230 V, 4 ... 32 kHz	16 kHz	Effective power stage switching frequency. Improved acoustic noise and output current waveform occurs with increasing switching frequency at the expense of increased losses within the drive.
		S2	400 V, 4 ... 32 kHz	8 kHz	
		S3	400 V, 4 ... 24 kHz	4 kHz	
		S4 ... S6	400 V, 4 ... 16 kHz	4 kHz	
P2-25	Second deceleration ramp time	0 s ... 3000 s		30 s	Selected automatically on mains loss if P1-05 = 0 or 2. Can also be selected via digital inputs during operation.
P2-26	Modbus RTU baudrate option	9.6 kbps to 115.2 kbps		9.6 Kbps	Modbus RTU communication network baudrate. Only available if optional Modbus plug-in installed



Par.	Description	Range		Default	Explanation
P2-27	Drive communication address	0:	Disable	1	Distinct drive address used for all drive serial communications.
		1 ... 63:	Communication address		
P2-28	Master / Slave mode select	0:	Slave mode	0	When in Master mode, the drive transmits its operational status via the serial data link. Used to control slave drives via the serial link. P2-27 must be 1 for Master mode.
		1:	Master mode		
P2-29	Digital speed reference preset scaling factor	0 ... 500 %, steps of 0.1 %		100 %	The digital speed reference input to the drive is scaled by this factor when P2-35 = 1. Operates on references originating from the serial data link. Can be used as an electronic gearbox for Master / Slave applications.
P2-30	Bipolar analog input format	0 ... 24 V, 0 ... 10 V, -10 ... 10 V		0 ... 24 V	Configures the analog input format to match that of the reference signal connected to terminal 6.
P2-31	Bipolar analog input scaling	0 ... 500 %		100 %	Scales the analog input by this factor. Set to 200 % to give full speed range control with 0 ... 5 V input (when P2-30 = 0 ... 10 V).
P2-32	Bipolar analog input offset	0 ... 100.0 %		0 %	Sets the offset from zero at which speed starts to ramp up. Value is "% of the full scale input voltage.
P2-33	2nd analog input format	0 / 24 V (digital input) 0 ... 10 V, 4..20 mA, 0 ... 20 mA		0 / 24 V	Determines the format of the 2nd analog input. Selecting 0 / 24 V sets up the input as a digital input.
P2-34	2nd analog input scaling	0...500 %		100 %	Scales the 2nd analog input by the factor set in this parameter.
P2-35	Digital speed reference scaling control	0:	Disabled (no scaling)	0	Only active in keypad control mode and usually used in a Master/Slave network application. When set to 1, the drive speed reference will be scaled by the preset value set in P2-29. When set to 2, the bipolar analog input value is added as a trim to the speed reference. Maximum analog input represents P1-01. When set to 3, the analog input value will scale the speed reference from 0 % to 200 %.
		1:	Scaling set by preset value in P2-29		
		2:	Slave speed + bipolar analog input		
		3:	Slave speed scaled by bipolar analog input		
P2-36	Analog output format	0 ... 10 V, 4 ... 20 mA, 10 .. 0 V, 20 ... 4 mA		0 ... 10 V	Determines the analog output format. Min load impedance in voltage mode: 1 k Ohm Max load impedance in current mode: 1 k Ohm
P2-37	Extended menu access code define	0...9999		101	Defines the extended menu access code used in P1-14.
P2-38	Parameter Lock	0:	Unlocked	0	When locked, all parameter changes are prevented.
		1:	Locked		
P2-39	Hours run clock	0 to 99999 hours		Read only	Indicates the number of hours the drive has been running since new.
P2-40	Drive type / rating	–		Read only	Indicates drive power rating, type code and voltage rating.



Communication Interfaces

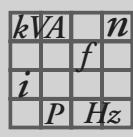
User feedback control (PID control)

3.14 User feedback control (PID control)

Par.	Description	Range	Default	Explanation
P3-01	User PID Proportional Gain	0.1 ... 30.0	2	Higher value used for high inertia. Too high a value causes instability.
P3-02	User PID Integral time constant	0.1 s ... 30.0 s	1 s	Higher value gives slower, more damped response.
P3-03	User PID Differential time constant	0.00 s ... 1.00 s	0,00	Set to zero (disabled) for most applications.
P3-04	User PID operating mode	0: Direct 1: Inverse	0	Most applications use 'Direct' mode. If an increasing feedback signal should increase the speed of the motor, set to 'Inverse' mode.
P3-05	User PID reference select	0: Digital 1: Analog	0	Sets the source for the PID control reference signal. When set to 1, the bipolar analog input is used.
P3-06	User PID digital reference	0 ... 100 %	0.0 %	Sets the preset reference used when P3-05 = 0.
P3-07	User PID controller output high limit	P3-08 to 100 % of control range	100 %	Preset PID controller output upper (speed) limit. 100 % = P1-01.
P3-08	User PID controller output low limit	0 to P3-07	0	Preset PID controller output lower (speed) limit. 100 % = P1-01.
P3-09	User PID output limit control	0: Digital output limits 1: Analog upper limit 2: Analog lower limit 3: PID output + analog input	0	When set to 1 or 2, the bipolar analog input is used to vary the PID output limit between P1-02 and P1-01. When set to 3, the bipolar analog input value will be added to the PID output.
P3-10	User PID feedback select	0: 2nd Analog input 1: DC bus voltage	0	When set to 1, the DC bus voltage is used for PID feedback. This value is measured internally.

3.15 High performance motor control

Par.	Description	Range	Default	Explanation
P4-01	Control mode	0: Speed control (vector) 1:Torque control (vector) 2: Speed control (V/F)	2	Whenever changing control mode, ensure that an Auto-tune (P4-02) is always carried out for best motor performance. Set to 0 for speed control with variable torque limits
P4-02	Motor parameter auto-tune	0: Disable 1: Enable	0	When set to 1, drive immediately carries out a static (non-rotating) motor parameter measurement operation to configure the motor parameters. P1-07, P1-08 and P1-09 must be set correctly according to the motor nameplate before enabling this function. Auto-tune runs automatically on first enable after parameter default operation and P1-08 was changed. No hardware enable is required.
P4-03	Speed controller Proportional Gain	0 ... 4096 (internal value)	Drive rating	Higher value used for high inertia. Too high a value gives instability.
P4-04	Speed controller Integral time constant	0.000 ... 1.000 s	0.05 s	Higher value gives slower, more damped response.
P4-05	Speed controller filter time constant	0.001 ... 0.100 s	0.005 s	Higher value gives slower response to load changes. Too small a value gives instability.
P4-06	Torque reference select	0: Preset value 1: Bipolar analog input 2: 2nd analog input 3: MODBUS ref (optional)	0	Used when in vector control mode to set a maximum torque limit.
P4-07	Torque reference preset value	0 ... 200 %	200 %	Preset value used when P4-06=0. 100 % is rated motor torque.
P4-08	Minimum torque reference limit	0 ...150 %	0	Defines the minimum limit for output motor torque
P4-09	V/F characteristic adjustment frequency	0 ... P1-09	0.0 Hz	Sets the frequency at which the adjustment voltage (P4-10) is applied.
P4-10	V/F characteristic adjustment voltage	0 ... P1-07	0	Adjusts the motor voltage by this value at frequency set in P4-09.



3.16 Selection of Parameter P2-01, Digital Input Function

The functionality of the digital inputs within the MOVITRAC® LT P is user programmable, allowing the user to select the functions required for the application.

The following tables define the functions of the digital inputs depending on the value of parameter P1-12 (Terminal / keypad control) and P2-01 (Selection of digital input function).

3.16.1 Selection table if P1-12 = 0 (Terminal mode)

P2-01	Digi input 1 function	Digi input 2 function	Digi input 3 function	Analog input function
0	O: Stop (Disable) C: Run (Enable)	O: Bipolar analog input C: Speed Preset 1, 2	O: Speed Preset 1 C: Speed Preset 2	Bipolar analog input
1	O: Stop (Disable) C: Run (Enable)	O: Speed Preset 1 C: Speed Preset 2	O: Speed Preset 1, 2 C: Speed Preset 3	O: Speed Preset 1,2,3 C: Speed Preset 4
2	O: Stop (Disable) C: Run (Enable)	Digi input 2	Digi input 3	Analog input
		Open	Open	Preset value
		Closed	Open	Preset speed 1
		Open	Closed	Preset speed 2
		Closed	Open	Preset speed 3
		Open	Closed	Preset speed 4
		Closed	Open	Preset speed 5
		Open	Closed	Preset speed 6
3	O: Stop (Disable) C: Run (Enable)	O: Forward C: Reverse	O: Bipolar analog input C: Speed Preset 1	Bipolar analog input
4	O: Stop (Disable) C: Run (Enable)	O: Forward C: Reverse	2nd Analog Input (e.g. varies torque limit)	Bipolar analog input
5	O: Stop (Disable) C: Run (Enable)	O: Forward C: Reverse	Digi input 3	Analog input
			Open	Preset value
			Closed	Preset speed 1
			Open	Preset speed 2
			Closed	Preset speed 3
6	O: Stop (Disable) C: Run (Enable)	O: Forward C: Reverse	External trip input: O: Trip C: OK	Bipolar analog input
7	O: Stop (Disable) C: Run Forward	O: Stop (Disable) C: Run Reverse	O: Bipolar analog input C: Speed Preset 1	Bipolar analog input
8	O: Stop (Disable) C: Run Forward	O: Stop (Disable) C: Run Reverse	O: Speed Preset 1 C: Bipolar analog input	Bipolar analog input
9	O: Stop (Disable) C: Run Forward	O: Stop (Disable) C: Run Reverse	Digi input 3	Analog input
			Open	Preset value
			Closed	Preset speed 1
			Open	Preset speed 2
			Closed	Preset speed 3
10	O: Stop (Disable) C: Run Forward	O: Stop (Disable) C: Run Reverse	External trip input: O: Trip C: OK	Bipolar analog input
11	O: Stop (Disable) C: Run (Enable)	O: Bipolar analog input C: Speed Preset 1	External trip input: O: Trip C: OK	Bipolar analog input
12	O: Stop (Disable) C: Run (Enable)	O: Speed Preset 1 C: Bipolar analog input	External trip input: O: Trip C: OK	Bipolar analog input
13	Normally Open (NO) Momentarily Close to Run	Normally Closed (NC) Momentarily Open to Stop	O: Bipolar analog input C: Speed Preset 1	Bipolar analog input

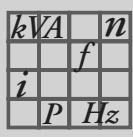
Communication Interfaces
Selection of Parameter P2-01, Digital Input Function



P2-01	Digi input 1 function	Digi input 2 function	Digi input 3 function	Analog input function
14	Normally Open (NO) Momentarily Close to Run Forward	Normally Closed (NC) Momentarily Open to Stop	Normally Open (NO) Momentarily Close to Run Reverse	Bipolar analog input
15	O: Stop (Disable) C: Run (Enable)	O: Forward C: Reverse	O: Decel ramp 1 C: Decel ramp 2	Bipolar analog input
16	O: Stop (Disable) C: Run (Enable)	O: Forward C: Reverse	O: Decel ramp 1 C: Decel ramp 2	O: Speed Preset 1 C: Speed Preset 2
17	O: Stop (Disable) C: Run (Enable)	O: Forward C: Reverse	O: Terminal mode C: Keypad mode	Bipolar analog input (when terminal mode)
18	O: Stop (Disable) C: Run (Enable)	Digi input 2	Digi input 3	Preset value
		Open	Open	Preset speed 1
		Closed	Open	Preset speed 2
		Open	Closed	Preset speed 3
		Closed	Closed	Preset speed 4
19	O: Stop (Disable) C: Run (Enable)	O: Bipolar Analog input C: 2nd Analog input	2nd Analog input	Bipolar analog input
20	O: Stop (Disable) C: Run (Enable)	2nd digital output : Drive healthy = +24 V	O: Bipolar analog input C: Speed Preset 1	Bipolar analog input
21	O: Stop (Disable) C: Run (Enable)	2nd digital output : Drive healthy = +24 V	O: Forward C: Reverse	Bipolar analog input
22	O: Stop (Disable) C: Run (Enable)	2nd digital output : Drive healthy = +24 V	External trip input: O: Trip C: OK	Bipolar analog input



When P2-01 = 20, the 2nd digital input is configured as an output, which outputs +24 V when the drive is healthy. If the drive is not healthy, the output will be 0 V.



Communication Interfaces

Selection of Parameter P2-01, Digital Input Function

3.16.2 Selection table if P1-12 = 1 or 2 (Keypad mode)

P2-01	Digi input 1 function	Digi input 2 function	Digi input 3 function	Additional information
0 ¹⁾	O: Stop (Disable) C: Run (Enable)	Closed: Remote pushbutton UP	Closed: Remote pushbutton DOWN	When drive is stopped, closing digital inputs 2 & 3 together starts drive. Bipolar analog input has no effect.
1 ¹⁾	O: Stop (Disable) C: Run (Enable)	Closed: Remote pushbutton UP	External trip input: O: Trip C: OK	Closed: Remote pushbutton DOWN
2..10, 13, 14, 16 ¹⁾	O: Stop (Disable) C: Run (Enable)	Closed: Remote pushbutton UP	Closed: Remote pushbutton DOWN	When drive is stopped, closing digital inputs 2 & 3 together starts drive. Bipolar analog input >5 V reverses rotation.
11	O: Stop (Disable) C: Run (Enable)	O: Digital speed ref C: Speed Preset 1	External trip input : O: Trip C: OK	Allows connection of motor thermistor. Bipolar analog input >5 V reverses rotation.
12	O: Stop (Disable) C: Run (Enable)	O: Speed Preset 1 C: Digital speed ref	External trip input : O: Trip C: OK	Allows connection of motor thermistor. Bipolar analog input >5 V reverses rotation.
15	O: Stop (Disable) C: Run (Enable)	O: Digital speed ref C: Speed Preset 1	O: Decel ramp 1 C: Decel ramp 2	Bipolar analog input >5 V reverses rotation
17,18	O: Stop (Disable) C: Run (Enable)	No effect	No effect	No effect
19	O: Stop (Disable) C: Run (Enable)	O: Digital speed ref C: Analog input 1	No effect	No effect
20, 21	O: Stop (Disable) C: Run (Enable)	2nd digital output:Drive healthy = +24 V	O: Digital speed ref C: Speed Preset 1	Bipolar analog input >5 V reverses rotation
22	O: Stop (Disable) C: Run (Enable)	2nd digital output:Drive healthy = +24 V	External trip input: O: Trip C: OK	Bipolar analog input >5 V reverses rotation

- 1) In addition to the speed being set using the pushbuttons on the front of the drive, these settings allow the speed to be controlled remotely using remote pushbuttons connected to digital inputs 1, 2 and 3.

When P2-01 = 17 or 18, keypad mode is selected from within terminal mode (see chapter 8.3.1). For this reason, the remaining digital inputs have no effect.

When P2-19 = 2 or 3 in keypad mode, the drive start and stop is controlled from the hardware enable input (terminal 2). In this case, the <start> / <stop> buttons are not required and therefore have no effect.

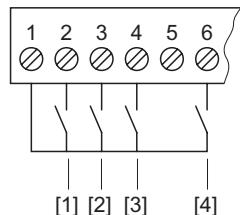
Reverse rotation control by analog input only works when P1-12 = 2.

<i>kVA</i>	<i>n</i>
<i>i</i>	<i>f</i>
<i>P</i>	<i>Hz</i>

Motor potentiometer function - crane applications

To run the motor potentiometer function, the following parameters must be set:

- P1-02 = Minimum speed (ex. 100 rpm)
- P1-03 = Acceleration time (ex. 10 s)
- P1-04 = Deceleration time (ex. 10 s)
- P1-11 = Safety end limit speed set point (ex. 300 rpm)
- P1-12 = 1 (keypad mode)
- P2-01 = 2 (digital input function)
- P2-19 = 2 (auto restart, minimum speed)



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- [1] Enable / Ramp down
- [2] Ramp up
- [3] Preset speed 1
- [4] Change direction (forward / reverse)

3.16.3 Selection table if P1-12 = 3 (User PID mode)

The following table defines the function of the digital inputs when the drive is in User PID control mode (set using P1-12).

P2-01	Digi input 1 function	Digi input 2 function	Digi input 3 function	Additional information
0 ... 10, 13 ... 18	O: Stop (Disable) C: Run (Enable)	No effect	No effect	Digital input 1 must be closed to enable the drive
11	O: Stop (Disable) C: Run (Enable)	O: PID control C: Speed Preset 1	No effect	
12	O: Stop (Disable) C: Run (Enable)	O: Speed Preset 1 C: PID control	No effect	
19	O: Stop (Disable) C: Run (Enable)	O: PID control C: Bipolar analog input	No effect	
20 ... 22	O: Stop (Disable) C: Run (Enable)	2nd digital output: Drive healthy = +24 V	No effect	



3.16.4 Real-time monitoring parameters

Parameter group zero provides access to internal drive parameters for monitoring purposes. These parameters cannot be adjusted.

Par.	Description	Display range	Explanation
P0-01	Bipolar analog input value	-100 % ... 100 %	100 % = max input voltage
P0-02	2nd analog input value	0 ... 100 %	100 % = max input voltage
P0-03	Speed controller reference	-500 % ... 500 %	100 % = Base frequency (P1-09)
P0-04	Digital speed ref (digi pot)	- P1-01 ... P1-01	Speed displayed in Hz / rpm
P0-05	Torque controller reference	0 ... 200 %	100 % = motor rated torque
P0-06	User PID ref input	0 ... 100 %	PID controller reference value
P0-07	User PID feedback	0 ... 100 %	PID controller feedback value
P0-08	User PID error input	0 ... 100 %	Reference – Feedback
P0-09	User PID P-term	0 ... 100 %	Proportional component
P0-10	User PID I-term	0 ... 100 %	Integral component
P0-11	User PID D-term	0 ... 100 %	Differential component
P0-12	User PID output	0 ... 100 %	Combined output
P0-13	Output Torque	0 ... 200 %	100 % = motor rated torque
P0-14	Magnetizing current	A rms	Magnetizing current in A rms
P0-15	Rotor current	A rms	Rotor current in A rms
P0-16	Field strength	0 ... 100 %	Magnetic field strength
P0-17	Stator resistance	Ohm	Phase - Phase stator resistance
P0-18	Stator inductance	H	Stator inductance in Henry
P0-19	Rotor resistance	Ohm	Calculated rotor resistance
P0-20	DC bus voltage	V DC	Internal DC bus voltage
P0-21	Drive temperature	°C	Internal drive temperature
P0-22	Supply voltage L1 – L2	V rms, ph-ph	Phase – phase supply voltage
P0-23	Supply voltage L2 – L3	V rms, ph-ph	Phase – phase supply voltage
P0-24	Supply voltage L3 – L1	V rms, ph-ph	Phase – phase supply voltage
P0-25	Estimated Rotor speed	Hz or rpm	Applies to vector modes only
P0-26	kWh meter	0.0 ... 999.9 kWh	Cumulative energy consumption
P0-27	MWh meter	0.0 ... 60000 MWh	Cumulative energy consumption
P0-28	Software ID, IO processor	e.g. "1.00", "493F"	Version number and check sum
P0-29	Software ID, Motor control	e.g. "1.00", "7A5C"	Version number and check sum
P0-30	Drive serial number	000000 ... 999999 00-000 ... 99-999	Unique drive serial number e.g. 540102 / 24 / 003



4 Accessories

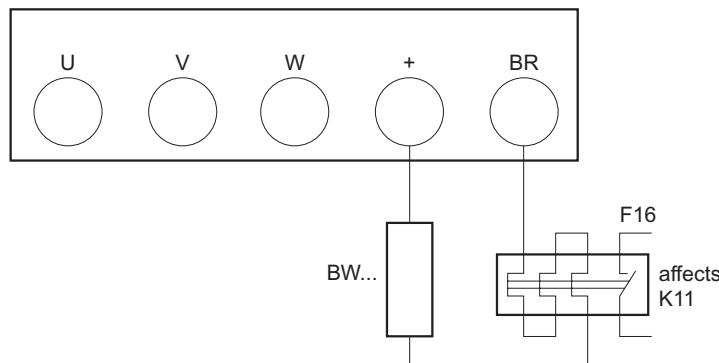
4.1 Braking resistors

4.1.1 Braking resistor circuit

MOVITRAC® LT P units have a built in braking transistor which can be used with an external braking resistor to convert re-generated energy from the motor into thermal energy. This braking circuit is generally needed for applications with a fast deceleration ramp or with a high inertia load.

Set parameter P2-23 to 1 if the heat sink mounted resistors, BW LT 050 002 or BW LT 033 005, are used. Set parameter P2-23 to 3 with any other braking resistors.

SEW also recommends protecting the wire and grid resistors against overload using a bimetallic relay as shown below. The relay output must open up the supply voltage to the MOVITRAC LT P unit. It **must not** open up the connection from the braking resistor to the MOVITRAC LT P unit. With the braking resistors BW LT 050 002 and BW LT 033 005, SEW-EURODRIVE flat-type braking resistors and any other overload protected braking resistors, the bimetallic relay is not required.



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Figure 2: Wiring diagram for braking resistor connection

4.1.2 MOVITRAC® LT P braking resistors

- 2 sizes of special flat pack resistors for MOVITRAC® LT P are available
- These resistors can be mounted easily onto the side of the heatsink
- No additional space is required

Braking resistor type	BW LT 050 002	BW LT 033 005
Part number	1 820 191 1	1 820 193 8
Load capacity at:		
• continuous duty	200 W	500 W
• 0.125 s	12 kW	21 kW
Resistance value	50	33
for MOVITRAC® LT	Sizes 2 and 3	Sizes 4, 5 & 6



Please refer to the System Manual "MOVITRAC® LT P" for the full range of braking resistors.



4.1.3 Flat-type braking resistors

- Shockproof (IP54)
- Internal thermal overload protection (fuse which cannot be replaced)
- Touch guard and mounting rail mounting available from SEW-EURODRIVE as accessories



Please refer to the System Manual "MOVITRAC® LT P" for further information.

4.1.4 Wire and grid resistors

- Perforated sheet cover (IP20) open towards the mounting surface
- The short-time load capacity of the wire and grid resistors is greater than in the flat-type braking resistors

SEW-EURODRIVE recommends also protecting the wire and grid resistors against overload using a bimetallic relay. Set the trip current to the value I_F in the table. Do not use any electronic or electromagnetic fuses since even the brief excess currents which are still permitted may cause them to trip.

The surfaces of the resistors get very hot if loaded with P_N . Bear this aspect in mind when selecting the installation location. Braking resistors are therefore mounted on the control cabinet roof.



4.1.5 Braking resistor tables

Braking resistors for all MOVITRAC® LT P units with low inertia applications

230 V / 480 V / 575 V	Sizes 2 and 3 BW 047-005	Sizes 4, 5 & 6 BW 018-035
-----------------------	-----------------------------	------------------------------

Braking resistors for MOVITRAC® LT P, AC 220 ... 240 V (50 / 60 Hz)

MOVITRAC® MC LT P A...	Braking Resistor Details
0015 2B1 4 -00	BW039-003
Part number	821 687 8
Resistance / Power (100 % cdf)	39 Ω / 300 W
0022 2B1 4 -00	BW27-005
Part number	826 950 5
Resistance / Power (100 % cdf)	27 Ω / 450 W
0030 2A3 4 -00	BW27-005
Part number	826 950 5
Resistance / Power (100 % cdf)	27 Ω / 450 W
0040 2A3 4 -00	BW039-012
Part number	821 689 4
Resistance / Power (100 % cdf)	39 Ω / 1.2 kW
0055 2A3 4 -00	BW018-015
Part number	821 684 3
Resistance / Power (100 % cdf)	18 Ω / 1.5 kW
0075 2A3 4 -00	BW018-015
Part number	821 684 3
Resistance / Power (100 % cdf)	18 Ω / 1.5 kW
0110 2A3 4 -00	BW012-025
Part number	821 680 0
Resistance / Power (100 % cdf)	12 Ω / 2.5 kW
0150 2A3 4 -00	BW012-025
Part number	821 680 0
Resistance / Power (100 % cdf)	12 Ω / 2.5 kW
0185 2A3 4 -00	BW012-025
Part number	821 680 0
Resistance / Power (100 % cdf)	12 Ω / 2.5 kW


Braking resistors for MOVITRAC® LT P, AC 380 ... 480 V (50 / 60 Hz)

MOVITRAC® MC LT P A...	Braking Resistor Details
0008 5A3 4 -00	BW 047-003
Part number	826 265 9
Resistance / Power (100 % cdf)	47 Ω / 250 W
0015 5A3 4 -00	BW 047-003
Part number	826 265 9
Resistance / Power (100 % cdf)	47 Ω / 250 W
0022 5A3 4 -00	BW047-005
Part number	826 268 3
Resistance / Power (100 % cdf)	47 Ω / 450 W
0040 5A3 4 -00	BW047-005
Part number	826 268 3
Resistance / Power (100 % cdf)	47 Ω / 450 W
0055 5A3 4 -00	BW039-012
Part number	821 689 4
Resistance / Power (100 % cdf)	39 Ω / 1.2 kW
0075 5A3 4 -00	BW039-012
Part number	821 689 4
Resistance / Power (100 % cdf)	39 Ω / 1.2 kW
0110 5A3 4 -00	BW039-026
Part number	821 690 8
Resistance / Power (100 % cdf)	39 Ω / 2.6 kW
0150 5A3 4 -00	BW039-026
Part number	821 690 8
Resistance / Power (100 % cdf)	39 Ω / 2.6 kW
0185 5A3 4 -00	BW018-035
Part number	821 685 1
Resistance / Power (100 % cdf)	18 Ω / 3.5 kW
0220 5A3 4 -00	BW018-035
Part number	821 685 1
Resistance / Power (100 % cdf)	18 Ω / 3.5 kW
0300 5A3 4 -00	BW012-050
Part number	821 681 9
Resistance / Power (100 % cdf)	12 Ω / 5 kW
0370 5A3 4 -00	BW012-050
Part number	821 681 9
Resistance / Power (100 % cdf)	12 Ω / 5 kW

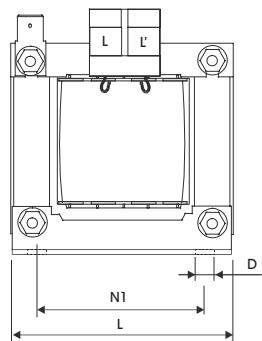
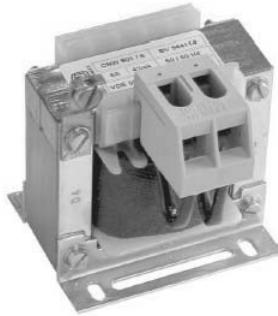
**Braking resistors for MOVITRAC® LT P, AC 380 ... 480 V (50 / 60 Hz)**

MOVITRAC® MC LT P A...	Braking Resistor Details
0450 5A3 4 -00	BW012-050
Part number	821 681 9
Resistance / Power (100 % cdf)	12 Ω / 5 kW
0550 5A3 4 -00	BW012-100
Part number	821 682 7
Resistance / Power (100 % cdf)	12 Ω / 10 kW
0750 5A3 4 -00	BW012-100
Part number	821 682 7
Resistance / Power (100 % cdf)	12 Ω / 10 kW
0900 5A3 4 -00	BW012-100
Part number	821 682 7
Resistance / Power (100 % cdf)	12 Ω / 10 kW
1100 5A3 4 -00	BW106
Part number	821 050 0
Resistance / Power (100 % cdf)	6Ω / 13 kW
01320 5A3 4 -00	BW106
Part number	821 050 0
Resistance / Power (100 % cdf)	6Ω / 13 kW
1600 5A3 4 -00	BW106
Part number	821 050 0
Resistance / Power (100 % cdf)	6Ω / 13 kW

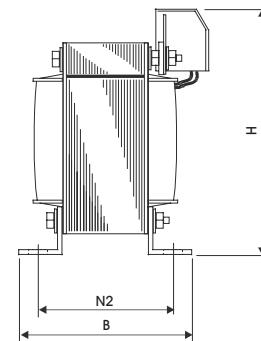


4.2 Line chokes

Line chokes reduce supply harmonic distortion and protect MOVITRAC® LT P units against harmful supply disturbances. They are also used to reduce the effects of the MOVITRAC® LT P upon supply harmonic distortion.



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Line chokes are also used to protect the power input circuits of the MOVITRAC® LT P against voltage spikes which might originate from lightening strikes or other equipment on the same supply.

Type	Part number	MOVITRAC® LT P Size	Rated voltage [V]	Phase	Rated current [A]	Inductance / limb [mH]
ND LT 010 290 21	18201644	1	<230	1	10	2.9
ND LT 025 110 21	18201652	2	<230	1	25	1.1
ND LT 006 480 53	18201660	1	<600	3	6	4.8
ND LT 010 290 53	18201679	2	<600	3	10	2.9
ND LT 036 081 53	18201687	3	<600	3	36	0.81

The following units have built-in DC chokes and therefore do not require an external choke:

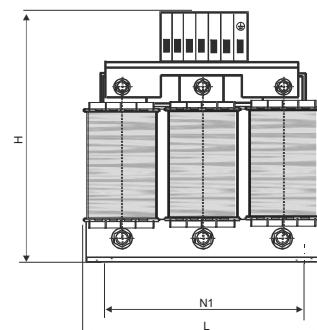
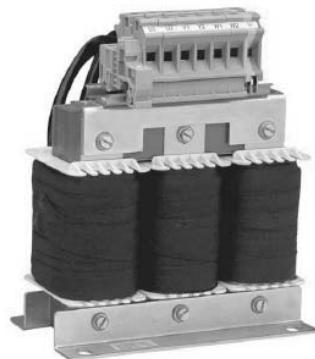
- 240 V, sizes 4 ... 6
- 480 V, sizes 4 ... 6
- 575 V, size 3

Type	L [mm]	B [mm]	H [mm]	N1 [mm]	N2 [mm]	D [mm]	Mass [kg]
ND LT 010 290 21	66	2.60	80	3.15	70	2.76	0.2 × 0.32
ND LT 025 110 21	85	3.35	95	3.74	95	3.74	0.2 × 0.32
ND LT 006 480 53	95	3.74	56	2.20	107	4.21	0.2 × 0.35
ND LT 010 290 53	125	4.92	71	2.80	127	5.00	0.2 × 0.32
ND LT 036 081 53	155	6.10	77	3.03	185	7.28	0.3 × 0.47

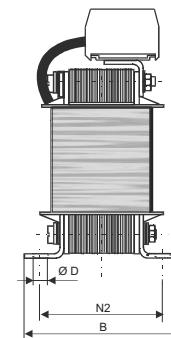


4.3 Output chokes

Output chokes improve the quality of the output waveform.



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MOVITRAC® LT P, like the majority of other inverter drives, have unfiltered outputs. In the majority of applications this will give satisfactory performance, however, in a small number of applications output filtering is strongly recommended to improve system functionality, reliability and lifetime.

These applications include:

- High capacitance motor cables
- Long motor cables, up to 300 m
- Multiple motors connected in parallel
- Motors without inverter grade insulation

A range of high quality output chokes are available for MOVITRAC® LT P with the following key features:

- Limits output voltage gradient
- Limits transient over voltages at motor terminals, typically <1000 V
- Suppression of mains conducted interference in lower frequency ranges
- Compensation of capacitive load currents
- Reduction of RFI emissions of the motor cable
- Reduction of motor losses and audible noise caused by ripple

Type	Part number	MOVITRAC® LT P Size	Rated voltage [V]	Rated current [A]	Inductance / limb [mH]
HD LT 008 200 53	18201695	1	600 V	8	2
HD LT 012 130 53	18201709	2		12	1.3
HD LT 030 050 53	18201717	3		30	0.5
HD LT 075 022 53	18201725	4		75	0.22
HD LT 180 009 53	18201733	5		180	0.09
HD LT 250 007 53	18201741	6		250	0.065



4.3.1 Dimensions of output chokes

Type	L		B		H		N1		N2		D		Mass	
	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	[kg]	[lb]
HD LT 008 200 53	100	3.94	90	3.54	75	2.95	60	2.37	48	1.89	4	0.16	1.5	3.31
HD LT 012 130 53	125	4.92	115	4.52	85	3.35	100	3.94	55	2.17	5	0.2	3.0	6.61
HD LT 030 050 53	155	6.10	160	6.29	105	4.13	130	5.11	57	2.24	8	0.31	4.5	9.92
HD LT 075 022 53	190	7.48	255	10.03	125	4.92	170	6.69	68	2.67	8	0.31	10	22.04
HD LT 180 009 53	240	9.44	310	12.20	155	6.10	190	7.48	106	4.17	11	0.43	22	48.50
HD LT 250 007 53	300	11.81	390	15.35	210	8.26	240	9.44	121	4.76	11	0.43	40	88.18

4.4 DIN rail mounting kit

A mounting kit is available to fit the MOVITRAC® LT P onto a DIN rail.

Type	Part number	MOVITRAC® LT P Size
FH LT DINHS 01	18201776	1
FH LT DINHS 02	18201784	2



54888AXX



4.5 Remote keypad option LT BG-00

Part number: 1820 8649

The basic version of the MOVITRAC® LTP has an integrated keypad for some applications, however it is necessary to have an additional keypad in a remote area. The keypad option comes with a self-adhesive seal and a 3 m long cable to be plugged into the RJ11 connector on the MOVITRAC® LT P unit. The maximum cable length between the keypad and the drive is 25 m for unshielded cable and 100 m for shielded cable.

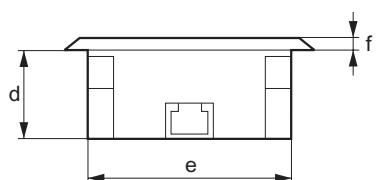
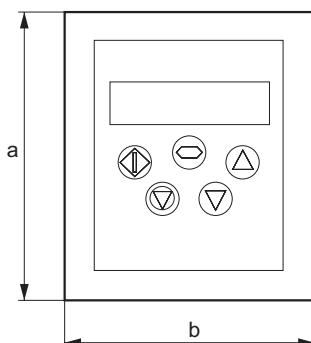


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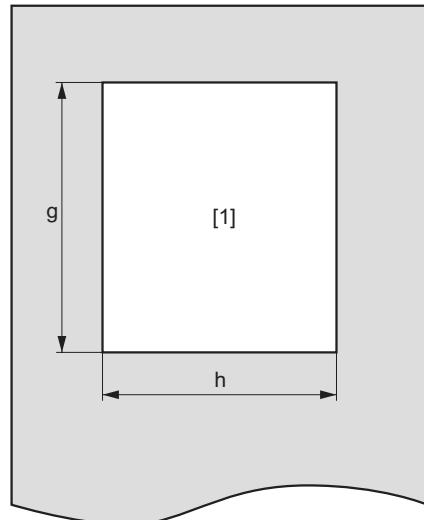
4.5.1 Installation in switch cabinet door or control panel

To install LT BG-00 in the door of a switch cabinet or in a control panel the metal work has to be cut according to the drawing below. By using the included self-adhesive seal the installed keypad meets the IP54/NEMA 13 standard.



Dimension Drawing

60245AXX

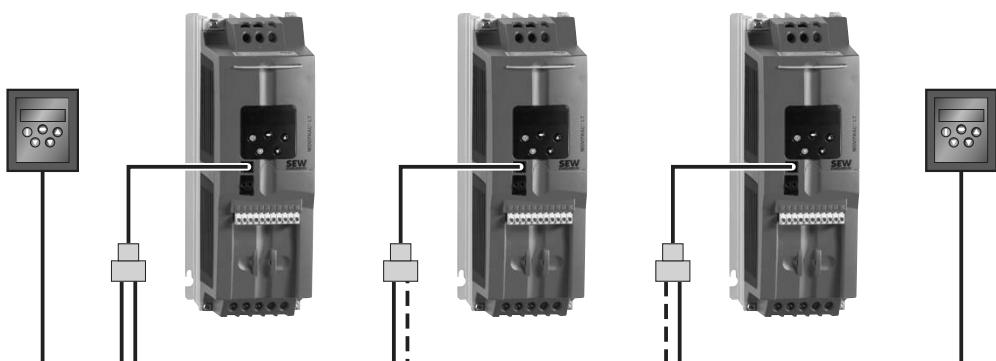


Switch cabinet mounting cut out

60246AXX

- [a] 81 mm
- [b] 55 mm
- [c] 65 mm
- [d] 21 mm
- [e] 55 mm

- [f] 3 mm
- [g] 70 mm
- [h] 55 mm
- [1] Cut out



60247AXX

Up to 2 keypads can be installed in a drive network. In this case each drive must have a different address. The 2 keypads can then monitor and control parameters on the same drive or on different drives. The overall cable length in the network must not exceed 25 m for unshielded cable or 100 m for shielded cable.



4.6 **Cable splitter 1 in and 2 out**

Part number: 18208681

The cable splitter LT-RJ-CS-21 is required if the keypad is used in a drive network.



60202AXX

4.7 **Prefabricated cables with RJ11 connector**

The prefabricated cables are available in 3 different lengths. Each cable is equipped with a 6-pin RJ11 connector on each end.

Cable length	Type	Part number
0.3 m unshielded	LT K-RJ-003	1820 8657
1.0 m unshielded	LT K-RJ-010	1820 8665
3.0 m unshielded	LT K-RJ-030	1820 8673

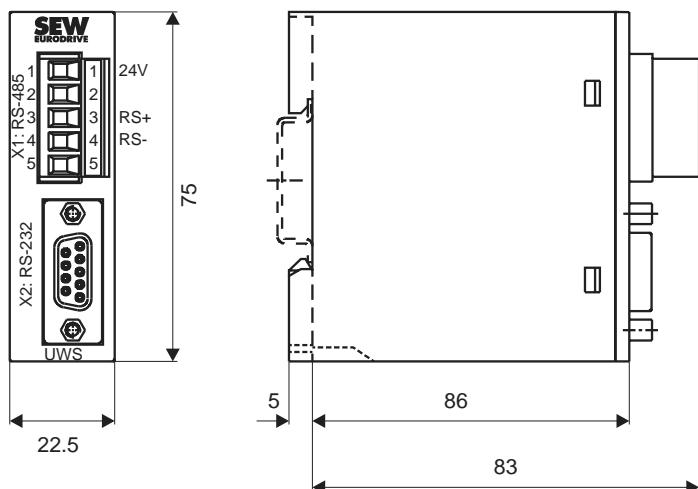


4.8 Interface adapter option UWS11A

Part number: 822689X

The UWS11A converts RS-232 signals, for example from the PC, into RS-485 signals. These signals can then be routed to the RJ11 connector on the MOVITRAC® LT P unit. The USW11A requires a DC 24 V voltage supply ($I_{max} = 100$ mA). There is no prefabricated cable available for the RS-485 interface.

RS-232 interface	The connection between the USW11A and PC is made using a commercially available serial interface shielded cable.
RS-485 interface	<p>A maximum of 64 MOVITRAC® LTP units can be networked for communication via the RS-485 interface of the USW11A. The maximum length of the shielded cable is 100 m.</p> <p>Dynamic terminating resistors are permanently installed, so do not connect any external terminating resistors.</p> <p>Permitted line cross section:</p> <ul style="list-style-type: none"> • 1 core per terminal 0.20 ... 2.5 mm² (AWG 24 ... 12). • 2 cores per terminal 0.20 ... 1 mm² (AWG 24 ... 17).



01219CXX

Figure 3: UWS11A dimension drawing (mm)

The UWS11A is mounted on a support rail (EN 50022-35 x 7.5) in the control cabinet.



4.9 Interface adapter option LT-W-USB-RJ11

Part number: 18208703

The LT-W-USB-RJ11 option converts USB signals, for example from the PC into RS-485 signals. These RS-485 signals can then be routed to the RJ11 connector on the MOVITRAC® LT P unit.



60203AXX

The LT-W-USB-RJ11 option comes with cables, LT P shell CD and software CD for the interface.

RS-485 interface	A maximum of 63 MOVITRAC® LT P units can be networked for communication via the RS-485 interface of the LT-W-USB-RJ11. The maximum length of the shielded cable is 100 m.
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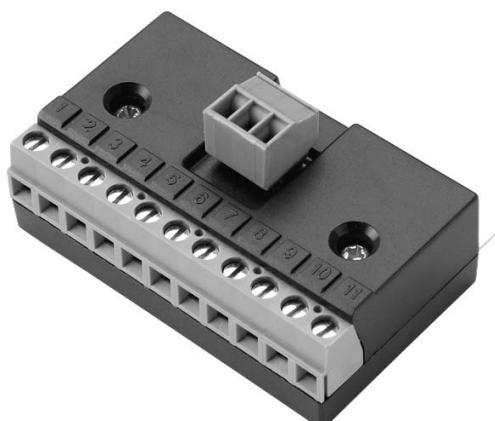


Accessories

Three relay output option board LT-3RO-00A

Part number: 18208762

This plug-in option board provides 2 additional programmable relay outputs.



60281AXX

4.10.1 Technical data for LT-3RO-00A

Maximum relay switching voltage	AC 250 V / DC 220 V
Maximum relay switching current	1 Ampere AC / 1 Ampere DC
Maximum voltage on control terminals	AC 250 V / DC 220 V
Conformity	IP00, UL94V-0
Dimensions (excluding connector pins)	53 x 33 x 18 mm (2.1 x 1.3 x 0.5 in)



4.11 MC LTP CE, Pocket PC BG LT OWDCE

Part number:18201792

The BG LT OWDCE Pocket PC and the LTP Shell CE software provide a fast and efficient means of commissioning of the MOVITRAC® LTP, with the ability to upload and download parameters, save drive parameters to a file, export drive parameters to Microsoft Word, control of the drive and monitor status of motor and inputs/outputs.

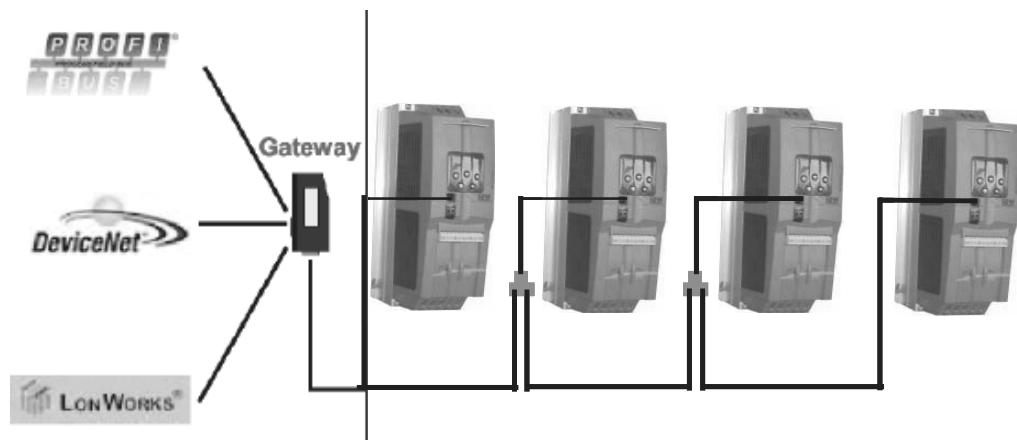


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4.12 Fieldbus Communication

Fieldbus communication can be realized through a high speed communication network via a gateway.



60393AXX

4.12.1 Fieldbus gateway for DeviceNet communication, LT-FD-00A

Part Number; 18208711

DeviceNet gateway can connect with up to 4 MOVITRAC® LTP.

4.12.2 Fieldbus gateway for PROFIBUS communication, LT-FD-00A

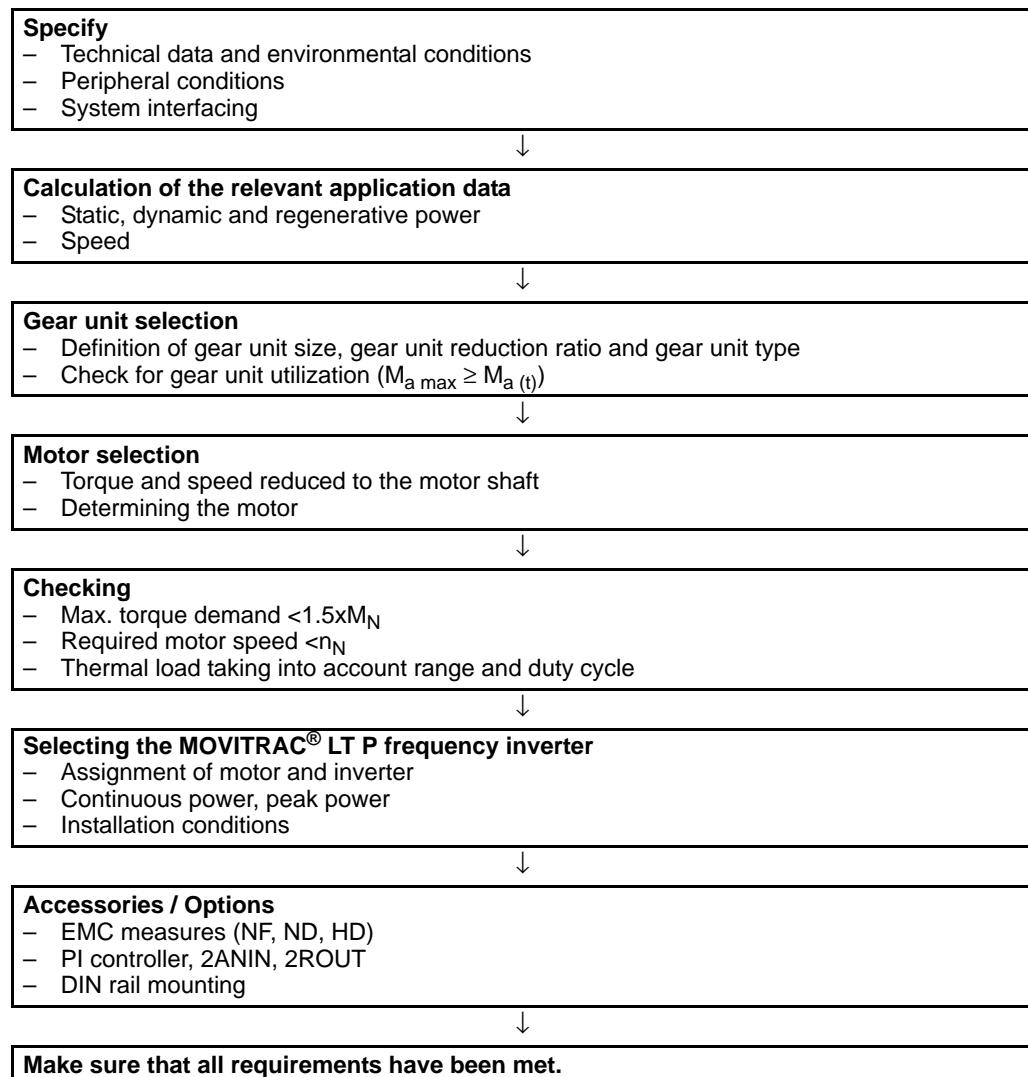
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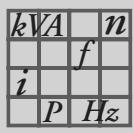
PROFIBUS gateway can connect with up to 8 MOVITRAC® LTP.

<i>kVA</i>	<i>n</i>
<i>i</i>	<i>f</i>
<i>P</i>	<i>Hz</i>

5 Select a motor

5.1 Project planning flowchart





Select a motor

Inverter → motor combinations

5.2 Inverter → motor combinations

Motors for 220 V ... 240 V, 50 / 60 Hz connection

SEW-EURODRIVE Motor type	Motor power		Motor rated speed	Inverter type MC LT P A -2B1 1-00
	[kW]	[hp]		
DT71D4	0.37	0.5	1380	0004
DT71D4 NEMA	0.37	0.5	1700	0004
DT80N4	0.75	1	1380	0008
DT80N4 NEMA	0.75	1	1700	0008
DT90L4	1.5	2	1410	0015
DT90L4 NEMA	1.5	2	1720	0015

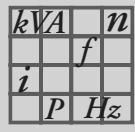
SEW-EURODRIVE Motor type	Motor power		Motor rated speed	Inverter type MC LT P A -2B1 4-00
	[kW]	[hp]		
DT90L4	1.5	2	1410	0015
DT90L4 NEMA	1.5	2	1720	0015
DV100M4	2.2	3	1410	0022
DV100LS4 NEMA	2.2	3	1720	0022

SEW-EURODRIVE Motor type	Motor power		Motor rated speed	Inverter type MC LT P A -2A3 4-00
	[kW]	[hp]		
DV100L4	3	4	1400	0030
DT100LS4 NEMA	2.2	3	1720	0030
DV112M4	4	5.4	1420	0040
DT100L4 NEMA	3.7	5	1680	0040
DV132S4	5.5	7.5	1430	0055
DV132S4 NEMA	5.5	7.5	1720	0055
DV132M4	7.5	10	1430	0075
DV132M4 NEMA	7.5	10	1740	0075
DV160M4	11	15	1440	0110
DV160M4 NEMA	11	15	1740	0110
DV160L4	15	20	1460	0150
DV160L4 NEMA	15	20	1760	0150
DV180M4	18.5	25	1465	0185
DV180M4 NEMA	18.5	25	1760	0185
DV180L4	22	30	1465	0220
DV180L4 NEMA	22	30	1760	0220
DV200L4	30	40	1470	0300
DV200L4 NEMA	30	40	1760	0300
DV225S4	37	50	1470	0370
DV225S4 NEMA	37	50	1760	0370
DV225M4	45	60	1470	0450

SEW-EURODRIVE Motor type	Motor power		Motor rated speed	Inverter type MC LT P A -2A3 4-00
	[kW]	[hp]		
DV225M4 NEMA	45	60	1760	0450
DV250M4	55	75	1475	0550
DV250M4 NEMA	55	75	1775	0550
DV280S4	75	100	1480	0750
DV280S4 NEMA	75	100	1780	0750

Motors for 380 V ... 480 V, 50 / 60 Hz connection

SEW-EURODRIVE Motor type	Motor power		Motor rated speed	Inverter type MC LT P A -5A3 4-00
	[kW]	[hp]		
DT80N4	0.75	1	1380	0008
DT80N4 NEMA	0.75	1	1700	0008
DT90L4	1.5	2	1410	0015
DT90L4 NEMA	1.5	2	1720	0015
DV100M4	2.2	3	1410	0022
DT100LS4 NEMA	2.2	3	1720	0022
DV112M4	4	5.4	1420	0040
DT100L4 NEMA	3.7	5	1680	0040
DV132S4	5.5	7.5	1430	0055
DV132S4 NEMA	5.5	7.5	1720	0055
DV132M4	7.5	10	1430	0075
DV132M4 NEMA	7.5	10	1740	0075
DV160M4	11	15	1440	0110
DV16M4 NEMA	11	15	1740	0110
DV160L4	15	20	1460	0150
DV160L4 NEMA	15	20	1760	0150
DV180M4	18.5	25	1465	0185
DV180M4 NEMA	18.5	25	1760	0185
DV180L4	22	30	1465	0220
DV180L4 NEMA	22	30	1760	0220
DV200L4	30	40	1470	0300
DV200L4 NEMA	30	40	1760	0300
DV225S4	37	50	1470	0370
DV225S4 NEMA	37	50	1760	0370
DV225M4	45	60	1470	0450
DV225M4 NEMA	45	60	1760	0450
DV250M4	55	75	1475	0550
DV250M4 NEMA	55	75	1775	0550
DV280S4	75	100	1480	0750
DV280S4 NEMA	75	100	1780	0750



Select a motor

Inverter → motor combinations

Motors for 480 V ... 575 V, 50 / 60 Hz connection

SEW-EURODRIVE Motor type	Motor power		Motor rated speed	Inverter type MC LT P A -603 4-00
	[kW]	[hp]		
DT80N4 NEMA	0.75	1	1700	0008
DT90L4 NEMA	1.5	2	1720	0015
DT100LS4 NEMA	2.2	3	1720	0022
DT100L4 NEMA	3.7	5	1680	0037
DV132S4 NEMA	5.5	7.5	1720	0055
DV132M4 NEMA	7.5	10	1740	0075
DV160M4 NEMA	11	15	1740	0110



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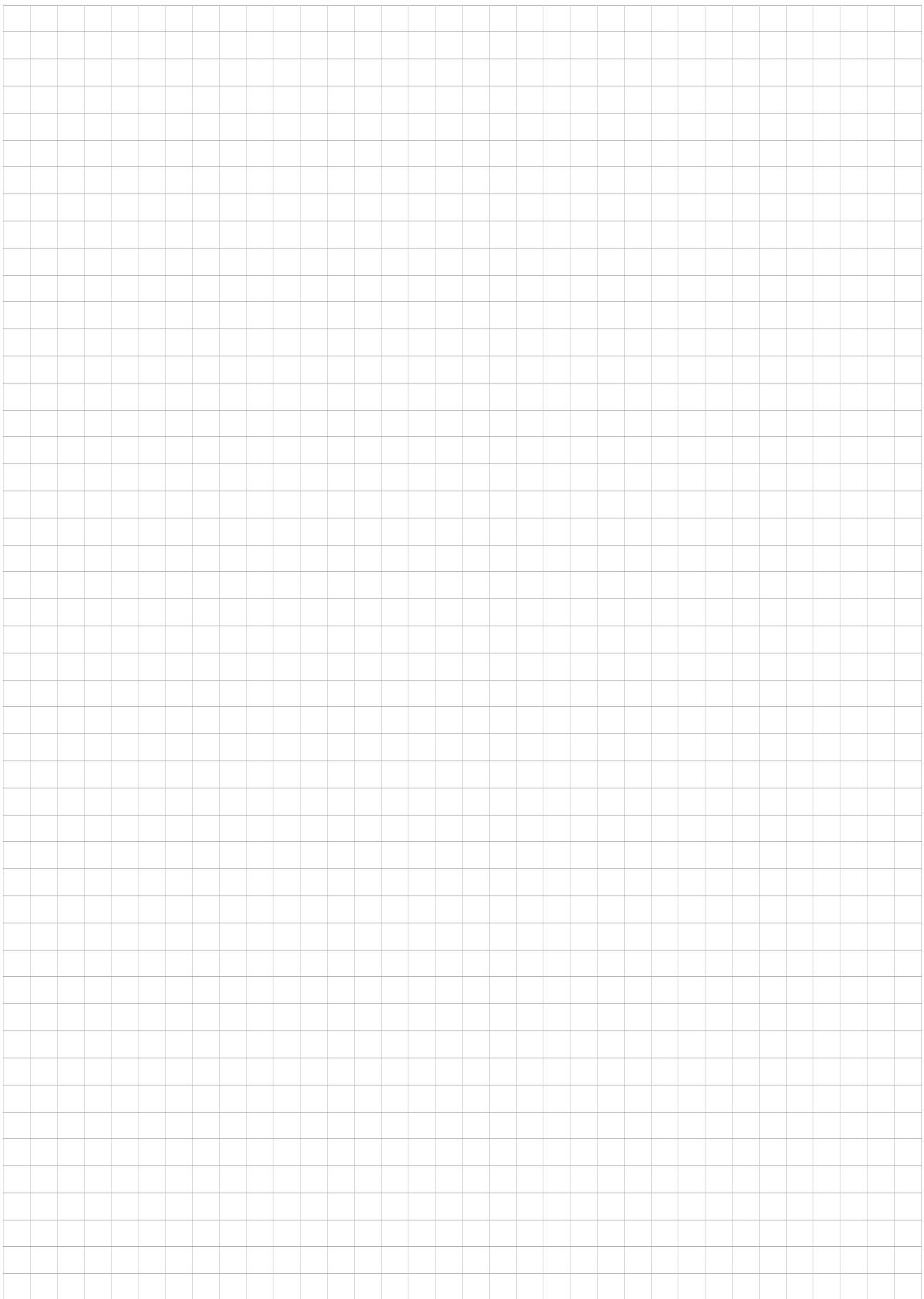
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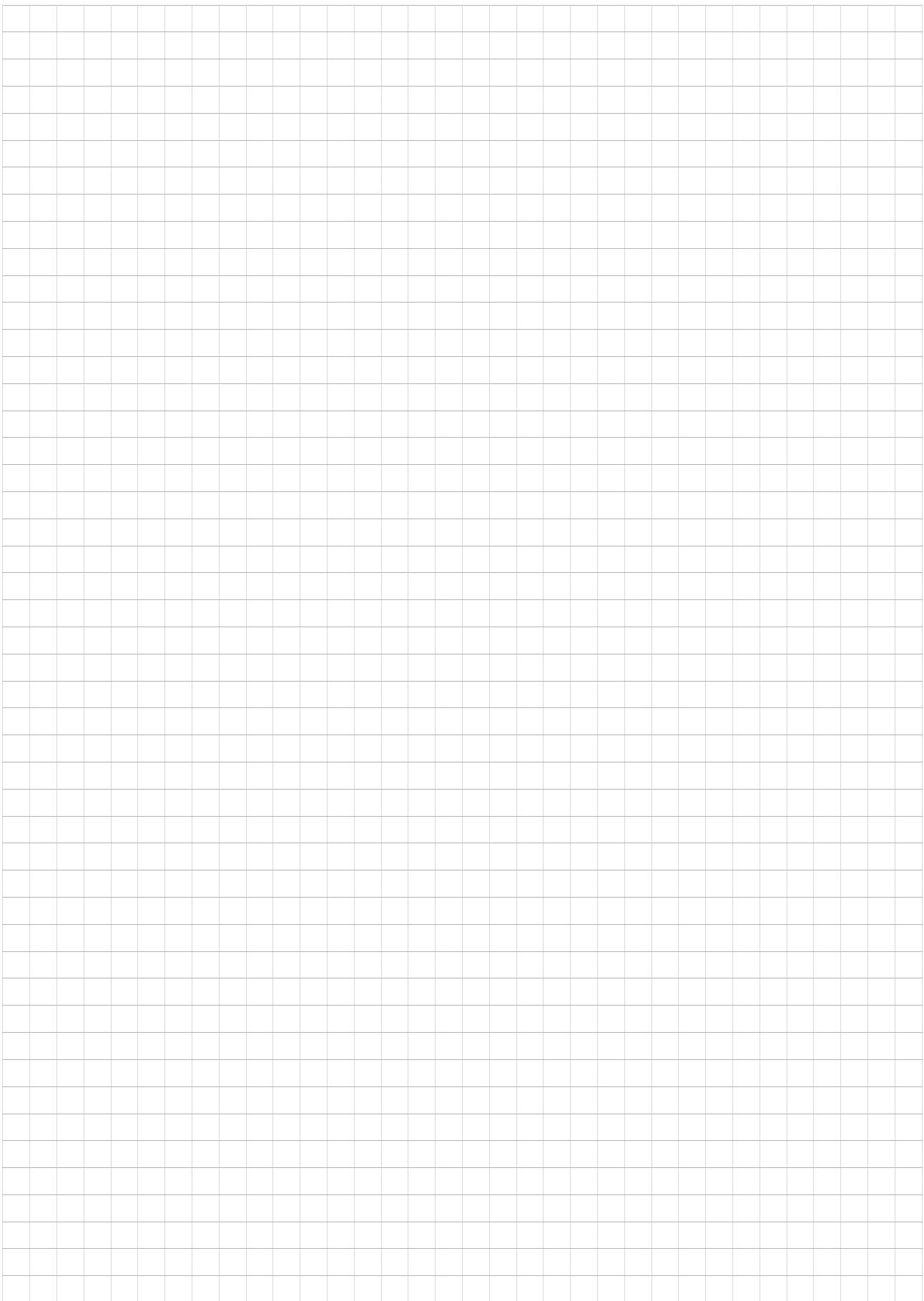
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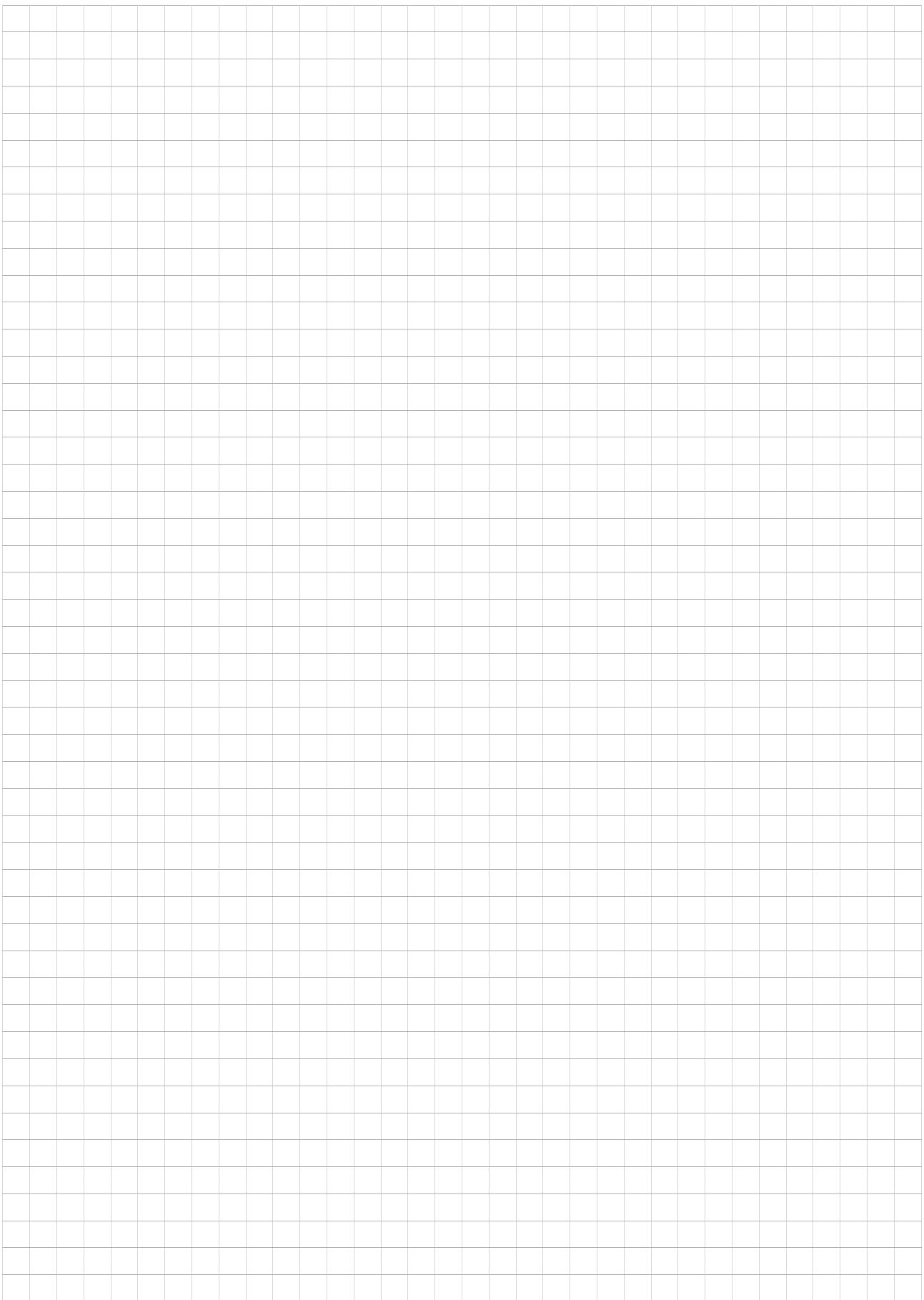
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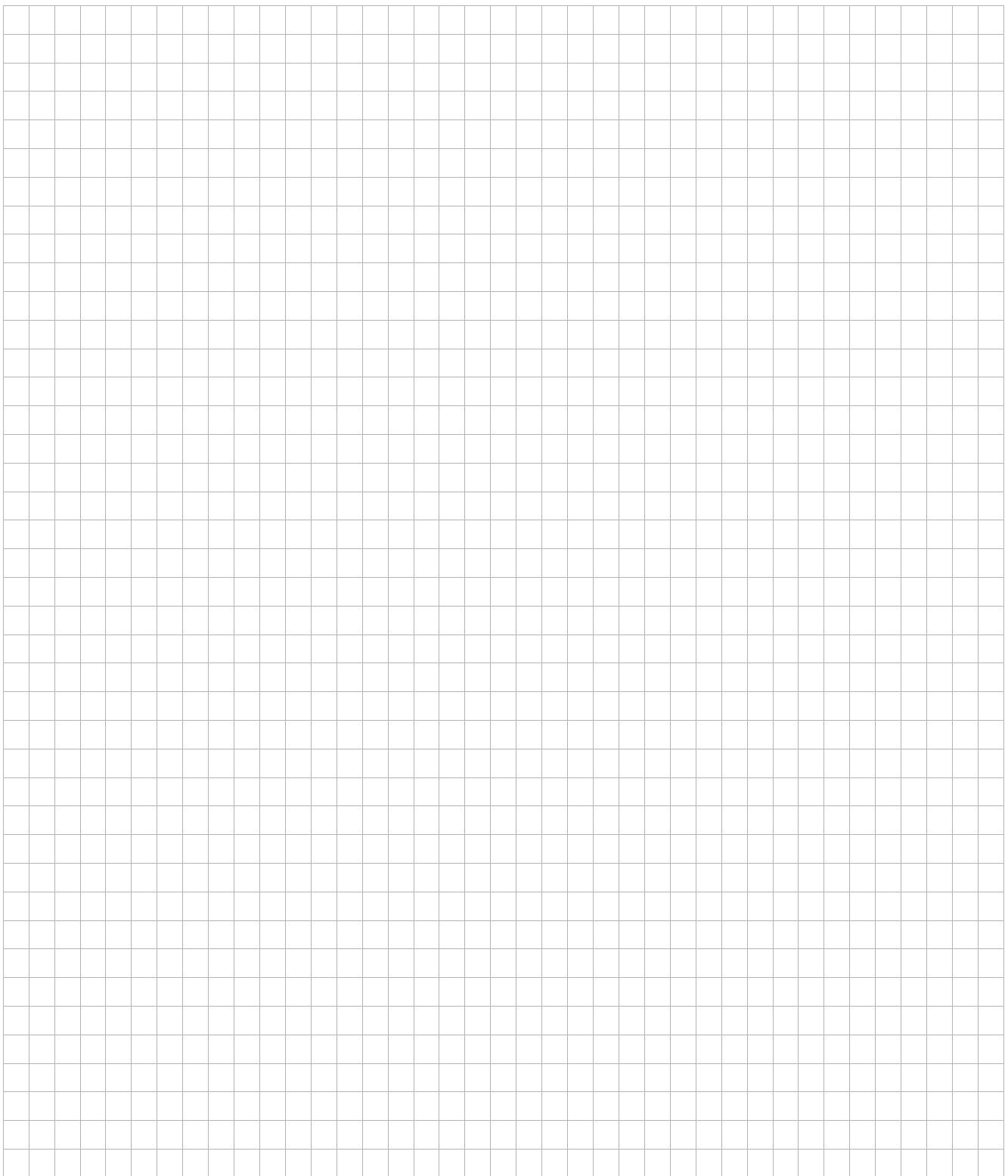
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