2 Technical Data and Dimension Drawings

2.1 CE marking, UL approval and unit designation

CE marking

- Low voltage directive

  MOVIDRIVE® *compact* drive inverters comply with the regulations of the Low Voltage Directive 73/23/EEC.

- Electromagnetic compatibility (EMC)

  MOVIDRIVE® *compact* drive inverters are designed for use as components for installation in machines and systems. They comply with the EMC product standard EN 61800-3 "Variable-speed electrical drives." Provided the installation instructions are complied with, they satisfy the appropriate requirements for CE marking of the entire machine/system in which they are installed, on the basis of the EMC Directive 89/336/EEC.

  MOVIDRIVE® *compact* drive inverters size 1 and 2 are equipped with a line filter as standard. These units comply with class A limit to EN 55011 and EN 55014 on the line side without further measures.

CE

The CE mark on the nameplate indicates conformity with the Low Voltage Directive 73/23/EEC and the EMC Directive 89/336/EEC. We can provide a copy of the declaration of conformity on request.

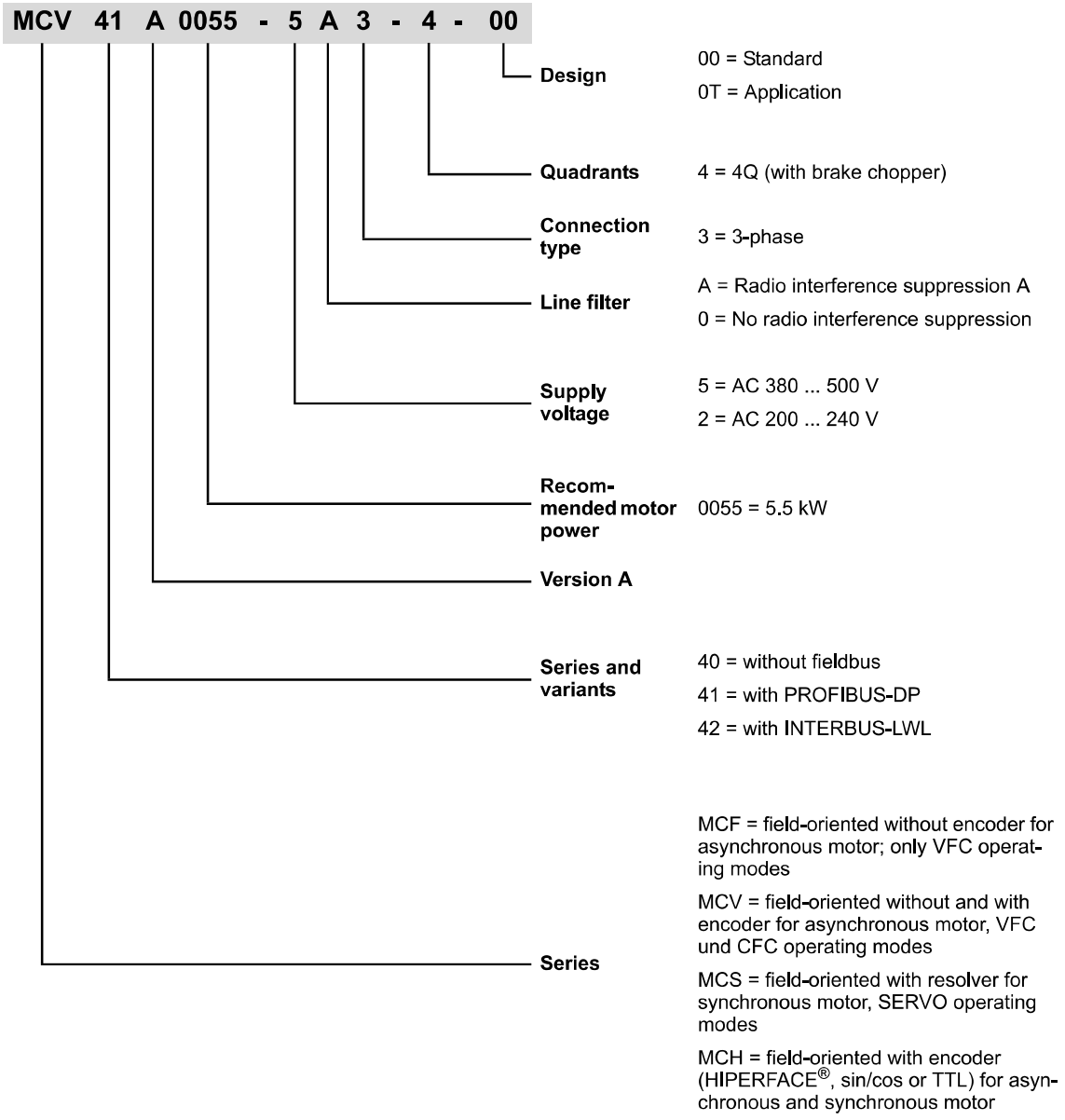
UL / cUL / GOST-R

UL, cUL approval (USA) and the GOST-R certificate (Russia) have been approved for the MOVIDRIVE® *compact* unit series. cUL is equivalent to CSA approval.

C-Tick

C-Tick approval has been granted for the entire MOVIDRIVE® *compact* unit series. C-Tick certifies conformity with ACA (Australian Communications Authority) standards.

Sample unit designation



2.2 General technical data

The following table lists the technical data applicable to all MOVIDRIVE® *compact* drive inverters, regardless of their type, version, size and power rating.

MOVIDRIVE® *compact*	All sizes
Interference immunity	Complies with EN 61800-3
Interference emission with EMC-compliant installation	Sizes 1 to 5: • Comply with EN 61800-3 • According to class B limit to EN 55011 and EN 55014 Sizes 1 and 2: • Comply with class A limit to EN 55011 and EN 55014 on the line side without further measures
Ambient temperature ϑ_U **Derating ambient temperature** **Climate class**	0 °C...+50 °C when I_D = 100 % I_N and f_{PWM} = 4 kHz 0 °C...+40 °C when I_D = 125 % I_N and f_{PWM} = 4 kHz 0 °C...+40 °C when I_D = 100 % I_N and f_{PWM} = 8 kHz Derating: • 2.5 % I_N per K between 40 °C - 50 °C • 3.5 % I_N per K between 50 °C - 60 °C EN 60721-3-3, class 3K3
Storage temperature[1] ϑ_L	–25 °C...+70 °C (EN 60721-3-3, class 3K3) DBG keypad: –20 °C...+60 °C
Cooling type (DIN 51751)	Forced cooling Temperature-controlled fan, response threshold at ϑ = 45°C
Enclosure EN 60529 (NEMA 1) **Sizes 1 to 3** **Sizes 4 and 5**	IP20 IP00 (power connections); IP10 with mounted plexiglas cover supplied as standard
Operating mode	Continuous operation with 50 % overload capacity
Overvoltage category	III according to IEC 60664-1 (VDE 0110-1)
Pollution class	2 according to IEC 60664-1 (VDE 0110-1)
Installation altitude	Up to h ≤ 1,000 m there are no restrictions. At h ≥ 1,000 m and above the following restrictions apply: • From 1,000 m to max. 4,000 m: – I_N reduction by 1% per 100 m (330 ft) • From 2,000 m to max. 4,000 m: – AC 230 V units: V_N reduction by AC 3 V per 100 m – AC 500 V units: V_N reduction by AC 6 V per 100 m Over 2,000 m only overvoltage class 2; external measures required for overvoltage class 3. Overvoltage classes according to DIN VDE 0110-1.

1) In case of long-term storage, the unit must be connected to the mains voltage for at least 5 minutes every two years, otherwise the unit's service life may be reduced.

2.3 MOVIDRIVE® compact MC_4_A...-5_3 (AC 400/500 V units)

Size 1



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MOVIDRIVE® *compact*		0015-5A3-4-0_	0022-5A3-4-0_	0030-5A3-4-0_	0040-5A3-4-0_
INPUT					
Supply voltage	V_{mains}	3 × AC 380 V –10 % ... 3 × AC 500 V +10 %			
Supply frequency	f_{mains}	50 Hz ... 60 Hz ±5 %			
Rated mains current[1] I_{mains} (when V_{mains} = 3 × AC 400 V)	**100 %** **125%**	AC 3.6 A AC 4.5 A	AC 5.0 A AC 6.2 A	AC 6.3 A AC 7.9 A	AC 8.6 A AC 10.7 A
OUTPUT					
Apparent output power[2] (when V_{mains} = 3 × AC 400...500 V)	S_N	2.8 kVA	3.8 kVA	4.9 kVA	6.6 kVA
Rated output current[1] (when V_{mains} = 3 × AC 400 V)	I_N	AC 4 A	AC 5.5 A	AC 7 A	AC 9.5 A
Current limitation	I_{max}	Motor and regenerative 150 % I_N, duration depending on the capacity utilization			
Internal current limitation		I_{max} = 0...150 % can be set in menu (P303 / P313)			
Minimum permitted braking resistance value (4Q operation)	R_{BRmin}	68 Ω			
Output voltage	V_A	Max. V_{mains}			
PWM frequency	f_{PWM}	Following values can be set: 4/8/12/16 kHz			
Speed range / resolution	n_A / Δn_A	–5500 ... 0 ... +5500 min^{-1} / 0.2 min^{-1} across the entire range			
GENERAL INFORMATION					
Power loss at P_N	P_{Vmax}	85 W	105 W	130 W	180 W
Cooling air consumption		40 m^3/h			
Weight		2.8 kg			
Dimensions	**W × H × D**	MCF/MCV/MCS: 105 × 315 × 155 mm MCH: 105 × 315 × 161 mm			

1) When V_{mains} = 3 × AC 500 V, the mains currents and output currents must be reduced by 20 % compared to the rated data.

2) The power data applies to f_{PWM} = 4 kHz (factory setting for VFC operating modes).

MCF4_A standard version (VFC)	0015-5A3-4-00	0022-5A3-4-00	0030-5A3-4-00	0040-5A3-4-00
Part number MCF40A (without fieldbus)	826 738 3	826 739 1	826 740 5	826 741 3
Part number MCF41A (with PROFIBUS-DP)	826 835 5	826 836 3	826 837 1	826 838 X
MCF4_A application version (VFC)	**0015-5A3-4-0T**	**0022-5A3-4-0T**	**0030-5A3-4-0T**	**0040-5A3-4-0T**
Part number MCF40A (without fieldbus)	827 426 6	827 427 4	827 428 2	827 429 0
Part number MCF41A (with PROFIBUS-DP)	827 449 5	827 450 9	827 451 7	827 452 5
 Constant load Recommended motor power P_{Mot}	1.5 kW	2.2 kW	3.0 kW	4.0 kW
Variable torque load or constant load without overload  Recommended motor power P_{Mot}	2.2 kW	3.0 kW	4.0 kW	5.5 kW
Continuous output current = 125% I_N I_D (when V_{mains} = 3 × AC 400 V and f_{PWM} = 4 kHz)	AC 5 A	AC 6.9 A	AC 8.8 A	AC 11.9 A

MCV4_A standard version (VFC/CFC)	0015-5A3-4-00	0022-5A3-4-00	0030-5A3-4-00	0040-5A3-4-00
Part number MCV40A (without fieldbus)	826 908 4	826 909 2	826 910 6	826 911 4
Part number MCV41A (with PROFIBUS-DP)	826 928 9	826 929 7	826 930 0	826 931 9
MCV4_A application version (VFC/CFC)	**0015-5A3-4-0T**	**0022-5A3-4-0T**	**0030-5A3-4-0T**	**0040-5A3-4-0T**
Part number MCV40A (without fieldbus)	827 472 X	827 473 8	827 474 6	827 475 4
Part number MCV41A (with PROFIBUS-DP)	827 495 9	827 496 7	827 497 5	827 498 3
VFC operating mode	Recommended motor power → MCF4_A			
CFC operating mode (f_{PWM} = 8 kHz) Continuous output current = 100% I_N I_D	AC 4 A	AC 5.5 A	AC 7 A	AC 9.5 A
Recommended motor power	→ section CFC motor selection			

MCS4_A standard version (SERVO)	0015-5A3-4-00	0022-5A3-4-00	0030-5A3-4-00	0040-5A3-4-00
Part number MCS40A (without fieldbus)	827 060 0	827 061 9	827 062 7	827 063 5
Part number MCS41A (with PROFIBUS-DP)	827 077 5	827 078 3	827 079 1	827 080 5
MCS4_A application version (SERVO)	**0015-5A3-4-0T**	**0022-5A3-4-0T**	**0030-5A3-4-0T**	**0040-5A3-4-0T**
Part number MCS40A (without fieldbus)	827 518 1	827 519 X	827 520 3	827 521 1
Part number MCS41A (with PROFIBUS-DP)	827 541 6	827 542 4	827 543 2	827 544 0
SERVO operating mode (f_{PWM} = 8 kHz) Continuous output current = 100% I_N I_D	AC 4 A	AC 5.5 A	AC 7 A	AC 9.5 A
Recommended motor power	→ section SERVO motor selection			

MCH4_A standard version (VFC/CFC/SERVO)	0015-5A3-4-00	0022-5A3-4-00	0030-5A3-4-00	0040-5A3-4-00
Part number MCH40A (without fieldbus)	827 603 X	827 604 8	827 605 6	827 606 4
Part number MCH41A (with PROFIBUS-DP)	827 649 8	827 650 1	827 651 X	827 652 8
Part number MCH42A (with INTERBUS-LWL)	827 565 3	827 566 1	827 567 X	827 568 8
MCH4_A application version (VFC/CFC/SERVO)	**0015-5A3-4-0T**	**0022-5A3-4-0T**	**0030-5A3-4-0T**	**0040-5A3-4-0T**
Part number MCH40A (without fieldbus)	827 626 9	827 627 7	827 628 5	827 629 3
Part number MCH41A (with PROFIBUS-DP)	827 672 2	827 673 0	827 674 9	827 675 7
Part number MCH42A (with INTERBUS-LWL)	827 158 5	827 159 3	827 160 7	827 161 5
VFC operating mode	Recommended motor power → MCF4_A			
CFC/SERVO operating mode (f_{PWM} = 8 kHz) Continuous output current = 100% I_N I_D	AC 4 A	AC 5.5 A	AC 7 A	AC 9.5 A
Recommended motor power	→ section CFC/SERVO motor selection			

Size 2



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MOVIDRIVE® *compact*		0055-5A3-4-0_	0075-5A3-4-0_	0110-5A3-4-0_
INPUT				
Supply voltage	V_{mains}	3 × AC 380 V –10 % ... 3 × AC 500 V +10 %		
Supply frequency	f_{mains}	50 Hz ... 60 Hz ±5 %		
Rated mains current[1] I_{mains} (when V_{mains} = 3 × AC 400 V)	**100 %** **125%**	AC 11.3 A AC 14.1 A	AC 14.4 A AC 18.0 A	AC 21.6 A AC 27.0 A
OUTPUT				
Apparent output power[2] (when V_{mains} = 3 × AC 400...500 V)	S_N	8.7 kVA	11.2 kVA	16.8 kVA
Rated output current[1] (when V_{mains} = 3 × AC 400 V)	I_N	AC 12.5 A	AC 16 A	AC 24 A
Current limitation	I_{max}	Motor and regenerative 150 % I_N, duration depending on the capacity utilization		
Internal current limitation		I_{max} = 0...150 % can be set in menu (P303 / P313)		
Minimum permitted braking resistance value (4Q operation)	R_{BRmin}	47 Ω		22 Ω
Output voltage	V_A	Max. V_{mains}		
PWM frequency	f_{PWM}	Following values can be set: 4/8/12/16 kHz		
Speed range / resolution	n_A / Δn_A	–5500 ... 0 ... +5500 min^{-1} / 0.2 min^{-1} across the entire range		
GENERAL INFORMATION				
Power loss at P_N	P_{Vmax}	220 W	290 W	400 W
Cooling air consumption		80 m^3/h		
Weight		5.9 kg		
Dimensions	**W × H × D**	MCF/MCV/MCS: 130 × 335 × 207 mm MCH: 130 × 335 × 213 mm		

1) When V_{mains} = 3 × AC 500 V, the mains currents and output currents must be reduced by 20 % compared to the rated data.

2) The power data applies to f_{PWM} = 4 kHz (factory setting for VFC operating modes).

MCF4_A standard version (VFC)	0055-5A3-4-00	0075-5A3-4-00	0110-5A3-4-00
Part number MCF40A (without fieldbus)	826 742 1	826 743 X	826 744 8
Part number MCF41A (with PROFIBUS-DP)	826 839 8	826 840 1	826 841 X
MCF4_A application version (VFC)	**0055-5A3-4-0T**	**0075-5A3-4-0T**	**0110-5A3-4-0T**
Part number MCF40A (without fieldbus)	827 430 4	827 431 2	827 432 0
Part number MCF41A (with PROFIBUS-DP)	827 453 3	827 454 1	827 455 X
 Constant load Recommended motor power P_{Mot}	5.5 kW	7.5 kW	11 kW
Variable torque load or constant load without overload  Recommended motor power P_{Mot}	7.5 kW	11 kW	15 kW
Continuous output current = 125% I_N I_D (when V_{mains} = 3 × AC 400 V and f_{PWM} = 4 kHz)	AC 15.6 A	AC 20.0 A	AC 30.0 A

MCV4_A standard version (VFC/CFC)	0055-5A3-4-00	0075-5A3-4-00	0110-5A3-4-00
Part number MCV40A (without fieldbus)	826 912 2	826 913 0	826 914 9
Part number MCV41A (with PROFIBUS-DP)	826 932 7	826 933 5	826 934 3
MCV4_A application version (VFC/CFC)	**0055-5A3-4-0T**	**0075-5A3-4-0T**	**0110-5A3-4-0T**
Part number MCV40A (without fieldbus)	827 476 2	827 477 0	827 478 9
Part number MCV41A (with PROFIBUS-DP)	827 499 1	827 500 9	827 501 7
VFC operating mode	Recommended motor power → MCF4_A		
CFC operating mode (f_{PWM} = 8 kHz) Continuous output current = 100% I_N I_D	AC 12.5 A	AC 16 A	AC 24 A
Recommended motor power	→ section CFC motor selection		

MCS4_A standard version (SERVO)	0055-5A3-4-00	0075-5A3-4-00	0110-5A3-4-00
Part number MCS40A (without fieldbus)	827 064 3	827 065 1	827 066 X
Part number MCS41A (with PROFIBUS-DP)	827 081 3	827 082 1	827 083 X
MCS4_A application version (SERVO)	**0055-5A3-4-0T**	**0075-5A3-4-0T**	**0110-5A3-4-0T**
Part number MCS40A (without fieldbus)	827 522 X	827 523 8	827 524 6
Part number MCS41A (with PROFIBUS-DP)	827 545 9	827 546 7	827 547 5
SERVO operating mode (f_{PWM} = 8 kHz) Continuous output current = 100% I_N I_D	AC 12.5 A	AC 16 A	AC 24 A
Recommended motor power	→ section SERVO motor selection		

MCH4_A standard version (VFC/CFC/SERVO)	0055-5A3-4-00	0075-5A3-4-00	0110-5A3-4-00
Part number MCH40A (without fieldbus)	827 607 2	827 608 0	827 609 9
Part number MCH41A (with PROFIBUS-DP)	827 653 6	827 654 4	827 655 2
Part number MCH42A (with INTERBUS-LWL)	827 569 6	827 570 X	827 571 8
MCH4_A application version (VFC/CFC/SERVO)	**0055-5A3-4-0T**	**0075-5A3-4-0T**	**0110-5A3-4-0T**
Part number (withot fieldbus)	827 630 7	827 631 5	827 632 3
Part number (with PROFIBUS-DP)	827 676 5	827 677 3	827 678 1
Part number (with INTERBUS-LWL)	827 162 3	827 163 1	827 164 X
VFC operating mode	Recommended motor power → MCF4_A		
CFC/SERVO operating mode (f_{PWM} = 8 kHz) Continuous output current = 100% I_N I_D	AC 12.5 A	AC 16 A	AC 24 A
Recommended motor power	→ section CFC/SERVO motor selection		

Size 3



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MOVIDRIVE® *compact*		0150-503-4-0_	0220-503-4-0_	0300-503-4-0_
INPUT				
Supply voltage	V_{mains}	3 × AC 380 V –10 % ... 3 × AC 500 V +10 %		
Supply frequency	f_{mains}	50 Hz ... 60 Hz ±5 %		
Rated mains current[1] **I_{mains}** **100 %** **(when V_{mains} = 3 × AC 400 V)** **125%**		AC 28.8 A AC 36 A	AC 41.4 A AC 51.7 A	AC 54 A AC 67.5 A
OUTPUT				
Apparent output power[2] **S_N** **(when V_{mains} = 3 × AC 400...500 V)**		22.2 kVA	31.9 kVA	41.6 kVA
Rated output current[1] **(when V_{mains} = 3 × AC 400 V)**	I_N	AC 32 A	AC 46 A	AC 60 A
Current limitation	I_{max}	Motor and regenerative 150 % I_N, duration depending on the capacity utilization		
Internal current limitation		I_{max} = 0...150 % can be set in menu (P303 / P313)		
Minimum permitted braking resistance value (4Q operation)	R_{BRmin}	15 Ω	12 Ω	
Output voltage	V_A	Max. V_{mains}		
PWM frequency	f_{PWM}	Following values can be set: 4/8/12/16 kHz		
Speed range / resolution	n_A / Δn_A	–5500 ... 0 ... +5500 min^{-1} / 0.2 min^{-1} across the entire range		
GENERAL INFORMATION				
Power loss at P_N	P_{Vmax}	550 W	750 W	950 W
Cooling air consumption		180 m^3/h		
Weight		14.3 kg		
Dimensions	**W × H × D**	MCF/MCV/MCS: 200 × 465 × 227 mm MCH: 200 × 465 × 233 mm		

1) When V_{mains} = 3 × AC 500 V, the mains currents and output currents must be reduced by 20 % compared to the rated data.

2) The power data applies to f_{PWM} = 4 kHz (factory setting for VFC operating modes).

MCF4_A standard version (VFC)	0150-503-4-00	0220-503-4-00	0300-503-4-00
Part number MCF40A (without fieldbus)	826 745 6	826 746 4	826 747 2
Part number MCF41A (with PROFIBUS-DP)	826 842 8	826 843 6	826 844 4
MCF4_A application version (VFC)	**0150-503-4-0T**	**0220-503-4-0T**	**0300-503-4-0T**
Part number MCF40A (without fieldbus)	827 433 9	827 434 7	827 435 5
Part number MCF41A (with PROFIBUS-DP)	827 456 8	827 457 6	827 458 4
 Constant load Recommended motor power P_{Mot}	15 kW	22 kW	30 kW
Variable torque load or constant load without overload Recommended motor power P_{Mot} 	22 kW	30 kW	37 kW
Continuous output current = 125% I_N I_D (when V_{mains} = 3 × AC 400 V and f_{PWM} = 4 kHz)	AC 40.0 A	AC 57.5 A	AC 75.0 A

MCV4_A standard version (VFC/CFC)	0150-503-4-00	0220-503-4-00	0300-503-4-00
Part number MCV40A (without fieldbus)	826 915 7	826 916 5	826 917 3
Part number MCV41A (with PROFIBUS-DP)	826 935 1	826 936 X	826 937 8
MCV4_A application version (VFC/CFC)	**0150-503-4-0T**	**0220-503-4-0T**	**0300-503-4-0T**
Part number MCV40A (without fieldbus)	827 479 7	827 480 0	827 481 9
Part number MCV41A (with PROFIBUS-DP)	827 502 5	827 503 3	827 504 1
VFC operating mode	Recommended motor power → MCF4_A		
CFC operating mode (f_{PWM} = 8 kHz) Continuous output current = 100% I_N I_D	AC 32 A	AC 46 A	AC 60 A
Recommended motor power	→ section CFC motor selection		

MCS4_A standard version (SERVO)	0150-503-4-00	0220-503-4-00	0300-503-4-00
Part number MCS40A (without fieldbus)	827 067 8	827 068 6	827 069 4
Part number MCS41A (with PROFIBUS-DP)	827 084 8	827 085 6	827 086 4
MCS4_A application version (SERVO)	**0150-503-4-0T**	**0220-503-4-0T**	**0300-503-4-0T**
Part number MCS40A (without fieldbus)	827 525 4	827 526 2	827 527 0
Part number MCS41A (with PROFIBUS-DP)	827 548 3	827 549 1	827 550 5
SERVO operating mode (f_{PWM} = 8 kHz) Continuous output current = 100% I_N I_D	AC 32 A	AC 46 A	AC 60 A
Recommended motor power	→ section SERVO motor selection		

MCH4_A standard version (VFC/CFC/SERVO)	0150-503-4-00	0220-503-4-00	0300-503-4-00
Part number MCH40A (without fieldbus)	827 610 2	827 611 0	827 612 9
Part number MCH41A (with PROFIBUS-DP)	827 656 0	827 657 9	827 658 7
Part number MCH42A (with INTERBUS-LWL)	827 572 6	827 573 4	827 574 2
MCH4_A application version (VFC/CFC/SERVO)	**0150-503-4-0T**	**0220-503-4-0T**	**0300-503-4-0T**
Part number MCH40A (without fieldbus)	827 633 1	827 634 X	827 635 8
Part number MCH41A (with PROFIBUS-DP)	827 679 X	827 680 3	827 681 1
Part number MCH42A (with INTERBUS-LWL)	827 165 8	827 166 6	827 167 4
VFC operating mode	Recommended motor power → MCF4_A		
CFC/SERVO operating mode (f_{PWM} = 8 kHz) Continuous output current = 100% I_N I_D	AC 32 A	AC 46 A	AC 60 A
Recommended motor power	→ section CFC/SERVO motor selection		

Size 4



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MOVIDRIVE® *compact*		0370-503-4-0_	0450-503-4-0_
INPUT			
Supply voltage	V_{mains}	3 × AC 380 V –10 % ... 3 × AC 500 V +10 %	
Supply frequency	f_{mains}	50 Hz ... 60 Hz ±5 %	
Rated mains current[1] I_{mains} (when V_{mains} = 3 × AC 400 V)	**100 %** **125%**	AC 65.7 A AC 81.9 A	AC 80.1 A AC 100.1 A
OUTPUT			
Apparent output power[2] (when V_{mains} = 3 × AC 400...500 V)	S_N	51.1 kVA	62.3 kVA
Rated output current[1] (when V_{mains} = 3 × AC 400 V)	I_N	AC 73 A	AC 89 A
Current limitation	I_{max}	Motor and regenerative 150 % I_N, duration depending on the capacity utilization	
Internal current limitation		I_{max} = 0...150 % can be set in menu (P303 / P313)	
Minimum permitted braking resistance value (4Q operation)	R_{BRmin}	6 Ω	
Output voltage	V_A	Max. V_{mains}	
PWM frequency	f_{PWM}	Following values can be set: 4/8/12/16 kHz	
Speed range / resolution	n_A / Δn_A	–5500 ... 0 ... +5500 min^{-1} / 0.2 min^{-1} across the entire range	
GENERAL INFORMATION			
Power loss at P_N	P_{Vmax}	1200 W	1450 W
Cooling air consumption		180 m^3/h	
Weight		26.3 kg	
Dimensions	**W × H × D**	MCF/MCV/MCS: 280 × 522 × 227 mm MCH: 280 × 522 × 233 mm	

1) When V_{mains} = 3 × AC 500 V, the mains currents and output currents must be reduced by 20 % compared to the rated data.

2) The power data applies to f_{PWM} = 4 kHz (factory setting for VFC operating modes).

MCF4_A standard version (VFC)	0370-503-4-00	0450-503-4-00
Part number MCF40A (without fieldbus)	826 748 0	826 749 9
Part number MCF41A (with PROFIBUS-DP)	826 845 2	826 846 0
MCF4_A application version (VFC)	**0370-503-4-0T**	**0450-503-4-0T**
Part number MCF40A (without fieldbus)	827 436 3	827 437 1
Part number MCF41A (with PROFIBUS-DP)	827 459 2	827 460 6
 Constant load Recommended motor power P_{Mot}	37 kW	45 kW
 Variable torque load or constant load without overload Recommended motor power P_{Mot}	45 kW	55 kW
Continuous output current = 125% I_N I_D (when V_{mains} = 3 × AC 400 V and f_{PWM} = 4 kHz)	AC 91 A	AC 111 A

MCV4_A standard version (VFC/CFC)	0370-503-4-00	0450-503-4-00
Part number MCV40A (without fieldbus)	826 918 1	826 919 X
Part number MCV41A (with PROFIBUS-DP)	826 938 6	826 939 4
MCV4_A application version (VFC/CFC)	**0370-503-4-0T**	**0450-503-4-0T**
Part number MCV40A (without fieldbus)	827 482 7	827 483 5
Part number MCV41A (with PROFIBUS-DP)	827 505 X	827 506 8
VFC operating mode	Recommended motor power → MCF4_A	
CFC operating mode (f_{PWM} = 8 kHz) Continuous output current = 100% I_N I_D	AC 73 A	AC 89 A
Recommended motor power	→ section CFC motor selection	

MCS4_A standard version (SERVO)	0370-503-4-00	0450-503-4-00
Part number MCS40A (without fieldbus)	827 070 8	
Part number MCS41A (with PROFIBUS-DP)	827 087 2	
MCS4_A application version (SERVO)	**0370-503-4-0T**	**0450-503-4-0T**
Part number MCS40A (without fieldbus)	827 528 9	827 529 7
Part number MCS41A (with PROFIBUS-DP)	827 551 3	827 552 1
SERVO operating mode (f_{PWM} = 8 kHz) Continuous output current = 100% I_N I_D	AC 73 A	AC 89 A
Recommended motor power	→ section SERVO motor selection	

MCH4_A standard version (VFC/CFC/SERVO)	0370-503-4-00	0450-503-4-00
Part number MCH40A (without fieldbus)	827 613 7	827 614 5
Part number MCH41A (with PROFIBUS-DP)	827 659 5	827 660 9
Part number MCH42A (with INTERBUS-LWL)	827 575 0	827 576 9
MCH4_A application version (VFC/CFC/SERVO)	**0370-503-4-0T**	**0450-503-4-0T**
Part number MCH40A (without fieldbus)	827 636 6	827 637 4
Part number MCH41A (with PROFIBUS-DP)	827 682 X	827 683 8
Part number MCH42A (with INTERBUS-LWL)	827 168 2	827 169 0
VFC operating mode	Recommended motor power → MCF4_A	
CFC/SERVO operating mode (f_{PWM} = 8 kHz) Continuous output current = 100% I_N I_D	AC 73 A	AC 89 A
Recommended motor power	→ section CFC/SERVO motor selection	

Size 5



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MOVIDRIVE® *compact*		0550-503-4-0_	0750-503-4-0_
INPUT			
Supply voltage	V_{mains}	3 × AC 380 V –10 % ... 3 × AC 500 V +10 %	
Supply frequency	f_{mains}	50 Hz ... 60 Hz ±5 %	
Rated mains current[1] **I_{mains} (when V_{mains} = 3 × AC 400 V)**	**100 %** **125%**	AC 94.5 A AC 118.1 A	AC 117.0 A AC 146.3 A
OUTPUT			
Apparent output power[2] **(when V_{mains} = 3 × AC 400...500 V)**	S_N	73.5 kVA	91.0 kVA
Rated output current[1] **(when V_{mains} = 3 × AC 400 V)**	I_N	AC 105 A	AC 130 A
Current limitation	I_{max}	Motor and regenerative 150% I_N, duration depending on capacity utilization	
Internal current limitation		I_{max} = 0...150 % can be set in menu (P303 / P313)	
Minimum permitted braking resistance value (4Q operation)	R_{BRmin}	6 Ω	4 Ω
Output voltage	V_A	Max. V_{mains}	
PWM frequency	f_{PWM}	Following values can be set: 4/8/12/16 kHz	
Speed range / resolution	n_A / Δn_A	–5500 ... 0 ... +5500 min^{-1} / 0.2 min^{-1} across the entire range	
GENERAL INFORMATION			
Power loss at P_N	P_{Vmax}	1700 W	2000 W
Cooling air consumption		360 m^3/h	
Weight		34.3 kg	
Dimensions	**W × H × D**	280 × 610 × 330 mm	

1) When V_{mains} = 3 × AC 500 V, the mains currents and output currents must be reduced by 20 % compared to the rated data.

2) The power data applies to f_{PWM} = 4 kHz (factory setting for VFC operating modes).

MCF4_A standard version (VFC)	0550-503-4-00	0750-503-4-00
Part number MCF40A (without fieldbus)	826 750 2	826 751 0
Part number MCF41A (with PROFIBUS-DP)	826 847 9	826 848 7
MCF4_A application version (VFC)	**0550-503-4-0T**	**0750-503-4-0T**
Part number MCF40A (without fieldbus)	827 438 X	827 439 8
Part number MCF41A (with PROFIBUS-DP)	827 461 4	827 462 2
 Constant load Recommended motor power P_{Mot}	55 kW	75 kW
 Variable torque load or constant load without overload Recommended motor power P_{Mot}	75 kW	90 kW
Continuous output current = 125% I_N I_D (when V_{ains} = 3 × AC 400 V and f_{PWM} = 4 kHz)	AC 131 A	AC 162 A

MCV4_A standard version (VFC/CFC)	0550-503-4-00	0750-503-4-00
Part number MCV40A (without fieldbus)	826 920 3	826 921 1
Part number MCV41A (with PROFIBUS-DP)	826 940 8	826 941 6
MCV4_A application version (VFC/CFC)	**0550-503-4-0T**	**0750-503-4-0T**
Part number MCV40A (without fieldbus)	827 484 3	827 485 1
Part number MCV41A (with PROFIBUS-DP)	827 507 6	827 508 4
VFC operating mode	Recommended motor power → MCF4_A	
CFC operating mode (f_{PWM} = 8 kHz) Continuous output current = 100% I_N I_D	AC 105 A	AC 130 A
Recommended motor power	→ section CFC motor selection	

MCS4_A standard version (SERVO)	0550-503-4-00	0750-503-4-00
Part number MCS40A (without fieldbus)		
Part number MCS41A (with PROFIBUS-DP)		
MCS4_A application version (SERVO)	**0550-503-4-0T**	**0750-503-4-0T**
Part number MCS40A (without fieldbus)	827 530 0	827 531 9
Part number MCS41A (with PROFIBUS-DP)	827 553 X	827 554 8
SERVO operating mode (f_{PWM} = 8 kHz) Continuous output current = 100% I_N I_D	AC 105 A	AC 130 A
Recommended motor power	→ section SERVO motor selection	

MCH4_A standard version (VFC/CFC/SERVO)	0550-503-4-00	0750-503-4-00
Part number MCH40A (without fieldbus)	827 615 3	827 616 1
Part number MCH41A (with PROFIBUS-DP)	827 661 7	827 662 5
Part number MCH42A (with INTERBUS-LWL)	827 577 7	827 578 5
MCH4_A application version (VFC/CFC/SERVO)	**0550-503-4-0T**	**0750-503-4-0T**
Part number MCH40A (without fieldbus)	827 638 2	827 639 0
Part number MCH41A (with PROFIBUS-DP)	827 684 6	827 685 4
Part number MCH42A (with INTERBUS-LWL)	827 170 4	827 171 2
VFC operating mode	Recommended motor power → MCF4_A	
CFC/SERVO operating mode (f_{PWM} = 8 kHz) Continuous output current = 100% I_N I_D	AC 105 A	AC 130 A
Recommended motor power	→ section CFC/SERVO motor selection	

2.4 MOVIDRIVE® compact MC_4_A...-2_3 (AC 230 V units)

Size 1



02570AXX

MOVIDRIVE® *compact*		0015-2A3-4-0_	0022-2A3-4-0_	0037-2A3-4-0_
INPUT				
Supply voltage	V_{mains}	3 × AC 200 V –10 % ... 3 × AC 240 V +10 %		
Supply frequency	f_{mains}	50 Hz ... 60 Hz ±5 %		
Rated mains current I_{mains} **(when** V_{mains} **= 3 × AC 230 V)**	**100 %** **125%**	AC 6.7 A AC 8.4 A	AC 7.8 A AC 9.8 A	AC 12.9 A AC 16.1 A
OUTPUT				
Apparent output power[1] **(when** V_{mains} **= 3 × AC 230..240 V)**	S_N	2.7 kVA	3.4 kVA	5.8 kVA
Rated output current (when V_{mains} **= 3 × AC 230 V)**	I_N	AC 7.3 A	AC 8.6 A	AC 14.5 A
Current limitation	I_{max}	Motor and regenerative 150 % I_N, duration depending on the capacity utilization		
Internal current limitation		I_{max} = 0...150 % can be set in menu (P303 / P313)		
Minimum permitted braking resistance value (4Q operation)	R_{BRmin}	27 Ω		
Output voltage	V_A	Max. V_{mains}		
PWM frequency	f_{PWM}	Following values can be set: 4/8/12/16 kHz		
Speed range / resolution	n_A / Δn_A	–5500 ... 0 ... +5500 min^{-1} / 0.2 min^{-1} across the entire range		
GENERAL INFORMATION				
Power loss at P_N	P_{Vmax}	110 W	126 W	210 W
Cooling air consumption		40 m^3/h		
Weight		2.8 kg		
Dimensions	**W × H × D**	MCF/MCV/MCS:105 × 315 × 155 mm MCH:105 × 315 × 161 mm		

1) The power data applies to f_{PWM} = 4 kHz (factory setting for VFC operating modes).

MCF4_A standard version (VFC)	0015-2A3-4-00	0022-2A3-4-00	0037-2A3-4-00
Part number MCF40A (without fieldbus)	826 752 9	826 753 7	826 754 5
Part number MCF41A (with PROFIBUS-DP)	826 853 3	826 854 1	826 855 X
MCF4_A application version (VFC)	**0015-2A3-4-0T**	**0022-2A3-4-0T**	**0037-2A3-4-0T**
Part number MCF40A (without fieldbus)	827 440 1	827 441 X	827 442 8
Part number MCF41A (with PROFIBUS-DP)	827 463 0	827 464 9	827 465 7
Constant load Recommended motor power P_{Mot}	1.5 kW	2.2 kW	3.7 kW
Variable torque load or constant load without overload Recommended motor power P_{Mot}	2.2 kW	3.7 kW	5.0 kW
Continuous output current = 125% I_N I_D (when U_{mains} = 3 × AC 230 V and f_{PWM} = 4 kHz)	AC 9.1 A	AC 10.8 A	AC 18.1 A

MCV4_A standard version (VFC/CFC)	0015-2A3-4-00	0022-2A3-4-00	0037-2A3-4-00
Part number MCV40A (without fieldbus)	826 922 X	826 923 8	826 924 6
Part number MCV41A (with PROFIBUS-DP)	826 942 4	826 943 2	826 944 0
MCV4_A application version (VFC/CFC)	**0015-2A3-4-0T**	**0022-2A3-4-0T**	**0037-2A3-4-0T**
Part number MCV40A (without fieldbus)	827 486 X	827 487 8	827 488 6
Part number MCV41A (with PROFIBUS-DP)	827 509 2	827 510 6	827 511 4
VFC operating mode	Recommended motor power → MCF4_A		
CFC operating mode (f_{PWM} = 8 kHz) Continuous output current = 100% I_N I_D	AC 7.3 A	AC 8.6 A	AC 14.5 A
Recommended motor power	→ section CFC motor selection		

MCS4_A standard version (SERVO)	0015-2A3-4-00	0022-2A3-4-00	0037-2A3-4-00
Part number MCS40A (without fieldbus)	827 071 6	827 0724	827 073 2
Part number MCS41A (with PROFIBUS-DP)	827 088 0	827 089 9	827 090 2
MCS4_A application version (SERVO)	**0015-2A3-4-0T**	**0022-2A3-4-0T**	**0037-2A3-4-0T**
Part number MCS40A (without fieldbus)	827 532 7	827 533 5	827 534 3
Part number MCS41A (with PROFIBUS-DP)	827 555 6	827 556 4	827 557 2
SERVO operating mode	Recommended motor power → MCS4_A		
SERVO operating mode (f_{PWM} = 8 kHz) Continuous output current = 100% I_N I_D	AC 7.3 A	AC 8.6 A	AC 14.5 A
Recommended motor power	→ section SERVO motor selection		

MCH4_A standard version (VFC/CFC)	0015-2A3-4-00	0022-2A3-4-00	0037-2A3-4-00
Part number MCH40A (without fieldbus)	827 617 X	827 618 8	827 619 6
Part number MCH41A (with PROFIBUS-DP)	827 663 3	827 664 1	827 665 X
Part number MCH42A (with INTERBUS-LWL)	827 588 2	827 589 0	827 590 4
MCH4_A application version (VFC/CFC)	**0015-2A3-4-0T**	**0022-2A3-4-0T**	**0037-2A3-4-0T**
Part number MCH40A (without fieldbus)	827 640 4	827 641 2	827 642 0
Part number MCH41A (with PROFIBUS-DP)	827 686 2	827 687 0	827 688 9
Part number MCH42A (with INTERBUS-LWL)	827 579 3	827 580 7	827 581 5
VFC operating mode	Recommended motor power → MCF4_A		
CFC/SERVO operating mode (f_{PWM} = 8 kHz) Continuous output current = 100% I_N I_D	AC 7.3 A	AC 8.6 A	AC 14.5 A
Recommended motor power	→ section CFC/SERVO motor selection		

Size 2



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MOVIDRIVE® *compact*		0055-2A3-4-0_	0075-2A3-4-0_
INPUT			
Supply voltage	V_{mains}	3 × AC 200 V –10 % ... 3 × AC 240 V +10 %	
Supply frequency	f_{mains}	50 Hz ... 60 Hz ±5 %	
Rated mains current I_{mains} (when V_{mains} = 3 × AC 230 V)	**100 %** **125%**	AC 19.5 A AC 24.4 A	AC 27.4 A AC 34.3 A
OUTPUT			
Apparent output power[1] (when V_{mains} = 3 × AC 230..240 V)	S_N	8.8 kVA	11.6 kVA
Rated output current (when V_{mains} = 3 × AC 230 V)	I_N	AC 22 A	AC 29 A
Current limitation	I_{max}	Motor and regenerative 150 % I_N, duration depending on the capacity utilization	
Internal current limitation		I_{max} = 0...150 % can be set in menu (P303 / P313)	
Minimum permitted braking resistance value (4Q operation)	R_{BRmin}	12 Ω	
Output voltage	V_A	Max. V_{mains}	
PWM frequency	f_{PWM}	Following values can be set: 4/8/12/16 kHz	
Speed range / resolution	n_A / Δn_A	–5500 ... 0 ... +5500 min^{-1} / 0.2 min^{-1} across the entire range	
GENERAL INFORMATION			
Power loss at P_N	P_{Vmax}	300 W	380 W
Cooling air consumption		80 m^3/h	
Weight		5.9 kg	
Dimensions	**W × H × D**	MCF/MCV/MCS:130 × 335 × 207 mm MCH:130 × 335 × 213 mm	

1) The power data applies to f_{PWM} = 4 kHz (factory setting for VFC operating modes).

MCF4_A standard version (VFC)	0055-2A3-4-00	0075-2A3-4-00
Part number MCF40A (without fieldbus)	826 755 3	826 756 1
Part number MCF41A (with PROFIBUS-DP)	826 856 8	826 857 6
MCF4_A application version (VFC)	**0055-2A3-4-0T**	**0075-2A3-4-0T**
Part number MCF40A (without fieldbus)	827 443 6	827 444 4
Part number MCF41A (with PROFIBUS-DP)	827 466 5	827 467 3
Constant load Recommended motor power P_{Mot}	5.5 kW	7.5 kW
Variable torque load or constant load without overload Recommended motor power P_{Mot}	7.5 kW	11 kW
Continuous output current = 125% I_N I_D (when V_{mains} = 3 × AC 230 V and f_{PWM} = 4 kHz)	AC 27.5 A	AC 36.3 A

MCV4_A standard version (VFC/CFC)	0055-2A3-4-00	0075-2A3-4-00
Part number MCV40A (without fieldbus)	826 925 4	826 926 2
Part number MCV41A (with PROFIBUS-DP)	826 945 9	826 946 7
MCV4_A application version (VFC/CFC)	**0055-2A3-4-0T**	**0075-2A3-4-0T**
Part number MCV40A (without fieldbus)	827 489 4	827 490 8
Part number MCV41A (with PROFIBUS-DP)	827 512 2	827 513 0
VFC operating mode	Recommended motor power → MCF4_A	
CFC operating mode (f_{PWM} = 8 kHz) Continuous output current = 100% I_N I_D	AC 22 A	AC 29 A
Recommended motor power	→ section CFC motor selection	

MCS4_A standard version (SERVO)	0055-2A3-4-00	0075-2A3-4-00
Part number MCS40A (without fieldbus)	827 074 0	827 075 9
Part number MCS41A (with PROFIBUS-DP)	827 091 0	827 092 9
MCS4_A application version (SERVO)	**0055-2A3-4-0T**	**0075-2A3-4-0T**
Part number MCS40A (without fieldbus)	827 535 1	827 536 X
Part number MCS41A (with PROFIBUS-DP)	827 558 0	827 559 9
SERVO operating mode	Recommended motor power → MCS4_A	
SERVO operating mode (f_{PWM} = 8 kHz) Continuous output current = 100% I_N I_D	AC 22 A	AC 29 A
Recommended motor power	→ section SERVO motor selection	

MCH4_A standard version (VFC/CFC)	0055-2A3-4-00	0075-2A3-4-00
Part number MCH40A (without fieldbus)	827 620 X	827 621 8
Part number MCH41A (with PROFIBUS-DP)	827 666 8	827 667 6
Part number MCH42A (with INTERBUS-LWL)	827 591 2	827 592 0
MCH4_A application version (VFC/CFC)	**0055-2A3-4-0T**	**0075-2A3-4-0T**
Part number MCH40A (without fieldbus)	827 643 9	827 644 7
Part number MCH41A (with PROFIBUS-DP)	827 689 7	827 690 0
Part number MCH42A (with INTERBUS-LWL)	827 582 3	827 583 1
VFC operating mode	Recommended motor power → MCF4_A	
CFC/SERVO operating mode (f_{PWM} = 8 kHz) Continuous output current = 100% I_N I_D	AC 22 A	AC 29 A
Recommended motor power	→ section CFC/SERVO motor selection	

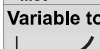
Size 3



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MOVIDRIVE® *compact*		0110-203-4-0_	0150-203-4-0_
INPUT			
Supply voltage	V_{mains}	3 × AC 200 V –10 % ... 3 × AC 240 V +10 %	
Supply frequency	f_{mains}	50 Hz ... 60 Hz ±5 %	
Rated mains current I_{mains} **(when** V_{mains} **= 3 × AC 230 V)**	**100 %** **125%**	AC 40 A AC 50 A	AC 49 A AC 61 A
OUTPUT			
Apparent output power[1] **(when** V_{mains} **= 3 × AC 230...240 V)**	S_N	17.1 kVA	21.5 kVA
Rated output current (when V_{mains} **= 3 × AC 230 V)**	I_N	AC 42 A	AC 54 A
Current limitation	I_{max}	Motor and regenerative 150 % I_N, duration depending on the capacity utilization	
Internal current limitation		I_{max} = 0...150 % can be set in menu (P303 / P313)	
Minimum permitted braking resistance value (4Q operation)	R_{BRmin}	7.5 Ω	5.6 Ω
Output voltage	V_A	Max. V_{mains}	
PWM frequency	f_{PWM}	Following values can be set: 4/8/12/16 kHz	
Speed range / resolution	n_A / Δn_A	–5500 ... 0 ... +5500 min^{-1} / 0.2 min^{-1} across the entire range	
GENERAL INFORMATION			
Power loss at P_N	P_{Vmax}	580 W	720 W
Cooling air consumption		180 m^3/h	
Weight		14.3 kg	
Dimensions	**W × H × D**	MCF/MCV/MCS: 200 × 465 × 227 mm MCH: 200 × 465 × 233 mm	

1) The power data applies to f_{PWM} = 4 kHz (factory setting for VFC operating modes).

MCF4_A standard version (VFC)	0110-203-4-00	0150-203-4-00
Part number MCF40A (without fieldbus)	826 757 X	827 263 8
Part number MCF41A (with PROFIBUS-DP)	826 858 4	827 266 2
MCF4_A application version (VFC)	**0110-203-4-0T**	**0150-203-4-0T**
Part number MCF40A (without fieldbus)	827 445 2	827 446 0
Part number MCF41A (with PROFIBUS-DP)	827 468 1	827 469 X
 Constant load Recommended motor power P_{Mot}	11 kW	15 kW
 Variable torque load or constant load without overload Recommended motor power P_{Mot}	15 kW	22 kW
Continuous output current = 125% I_N I_D (when U_{mains} = 3 × AC 230 V and f_{PWM} = 4 kHz)	AC 52.5 A	AC 67.5 A

MCV4_A standard version (VFC/CFC)	0110-203-4-00	0150-203-4-00
Part number MCV40A (without fieldbus)	826 927 0	827 269 7
Part number MCV41A (with PROFIBUS-DP)	826 947 5	827 272 7
MCV4_A application version (VFC/CFC)	**0110-203-4-0T**	**0150-203-4-0T**
Part number MCV40A (without fieldbus)	827 491 6	827 492 4
Part number MCV41A (with PROFIBUS-DP)	827 514 9	827 515 7
VFC operating mode	Recommended motor power → MCF4_A	
CFC operating mode (f_{PWM} = 8 kHz) Continuous output current = 100% I_N I_D	AC 42 A	AC 54 A
Recommended motor power	→ section CFC motor selection	

MCS4_A standard version (SERVO)	0110-203-4-00	0150-203-4-00
Part number MCS40A (without fieldbus)	827 076 7	827 305 7
Part number MCS41A (with PROFIBUS-DP)	827 093 7	827 308 1
MCS4_A application version (SERVO)	**0110-203-4-0T**	**0150-203-4-0T**
Part number MCS40A (without fieldbus)	827 537 8	827 538 6
Part number MCS41A (with PROFIBUS-DP)	827 560 2	827 561 0
SERVO operating mode	Recommended motor power → MCS4_A	
SERVO operating mode (f_{PWM} = 8 kHz) Continuous output current = 100% I_N I_D	AC 42 A	AC 54 A
Recommended motor power	→ section SERVO motor selection	

MCH4_A standard version (VFC/CFC)	0110-203-4-00	0150-203-4-00
Part number MCH40A (without fieldbus)	827 622 6	827 623 4
Part number MCH41A (with PROFIBUS-DP)	827 668 4	827 669 2
Part number MCH42A (with INTERBUS-LWL)	827 593 9	827 594 7
MCH4_A application version (VFC/CFC)	**0110-203-4-0T**	**0150-203-4-0T**
Part number MCH40A (without fieldbus)	827 645 5	827 646 3
Part number MCH41A (with PROFIBUS-DP)	827 691 9	827 692 7
Part number MCH42A (with INTERBUS-LWL)	827 584 X	827 585 8
VFC operating mode	Recommended motor power → MCF4_A	
CFC/SERVO operating mode (f_{PWM} = 8 kHz) Continuous output current = 100% I_N I_D	AC 42 A	AC 54 A
Recommended motor power	→ section CFC/SERVO motor selection	

Size 4



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MOVIDRIVE® *compact*		0220-203-4-0_	0300-203-4-0_
INPUT			
Supply voltage	V_{mains}	3 × AC 200 V –10 % ... 3 × AC 240 V +10 %	
Supply frequency	f_{mains}	50 Hz ... 60 Hz ±5 %	
Rated mains current I_{mains} (when V_{mains} = 3 × AC 230 V)	**100 %** **125%**	AC 72 A AC 90 A	AC 86 A AC 107 A
OUTPUT			
Apparent output power[1] (when V_{mains} = 3 × AC 230...240 V)	S_N	31.8 kVA	37.8 kVA
Rated output current (when V_{mains} = 3 × AC 230 V)	I_N	AC 80 A	AC 95 A
Current limitation	I_{max}	Motor and regenerative 150 % I_N, duration depending on the capacity utilization	
Internal current limitation		I_{max} = 0...150 % can be set in menu (P303 / P313)	
Minimum permitted braking resistance value (4Q operation)	R_{BRmin}	3 Ω	
Output voltage	V_A	Max. V_{mains}	
PWM frequency	f_{PWM}	Following values can be set: 4/8/12/16 kHz	
Speed range / resolution	n_A / Δn_A	–5500 ... 0 ... +5500 min^{-1} / 0.2 min^{-1} across the entire range	
GENERAL INFORMATION			
Power loss at P_N	P_{Vmax}	1100 W	1300 W
Cooling air consumption		180 m^3/h	
Weight		26.3 kg	
Dimensions	**W × H × D**	MCF/MCV/MCS:280 × 522 × 227 mm MCH: 280 × 522 × 233 mm	

1) The power data applies to f_{PWM} = 4 kHz (factory setting for VFC operating modes).

MCF4_A standard version (VFC)	0220-203-4-00	0300-203-4-00
Part number MCF40A (without fieldbus)	827 264 6	827 265 4
Part number MCF41A (with PROFIBUS-DP)	827 267 0	827 268 9
MCF4_A application version (VFC)	**0220-203-4-0T**	**0300-203-4-0T**
Part number MCF40A (without fieldbus)	827 447 9	827 448 7
Part number MCF41A (with PROFIBUS-DP)	827 470 3	827 471 1
 Constant load Recommended motor power P_{Mot}	22 kW	30 kW
 Variable torque load or constant load without overload Recommended motor power P_{Mot}	30 kW	37 kW
Continuous output current = 125% I_N I_D (when V_{mains} = 3 × AC 230 V and f_{PWM} = 4 kHz)	AC 100 A	AC 118 A

MCV4_A standard version (VFC/CFC)	0220-203-4-00	0300-203-4-00
Part number MCV40A (without fieldbus)	827 270 0	827 271 9
Part number MCV41A (with PROFIBUS-DP)	827 273 5	827 274 3
MCV4_A application version (VFC/CFC)	**0220-203-4-0T**	**0300-203-4-0T**
Part number MCV40A (without fieldbus)	827 493 2	827 494 0
Part number MCV41A (with PROFIBUS-DP)	827 516 5	827 517 3
VFC operating mode	Recommended motor power → MCF4_A	
CFC operating mode (f_{PWM} = 8 kHz) Continuous output current = 100% I_N I_D	AC 80 A	AC 95 A
Recommended motor power	→ section CFC motor selection	

MCS4_A standard version (SERVO)	0220-203-4-00	0300-203-4-00
Part number MCS40A (without fieldbus)	827 306 5	827 307 3
Part number MCS41A (with PROFIBUS-DP)	827 309 X	827 310 3
MCS4_A application version (SERVO)	**0220-203-4-0T**	**0300-203-4-0T**
Part number MCS40A (without fieldbus)	827 539 4	827 540 8
Part number MCS41A (with PROFIBUS-DP)	827 562 9	827 563 7
SERVO operating mode	Recommended motor power → MCS4_A	
SERVO operating mode (f_{PWM} = 8 kHz) Continuous output current = 100% I_N I_D	AC 80 A	AC 95 A
Recommended motor power	→ section SERVO motor selection	

MCH4_A standard version (VFC/CFC)	0220-203-4-00	0300-203-4-00
Part number MCH40A (without fieldbus)	827 624 2	827 625 0
Part number MCH41A (with PROFIBUS-DP)	827 670 6	827 671 4
Part number MCH42A (with INTERBUS-LWL)	827 595 5	827 596 3
MCH4_A application version (VFC/CFC)	**0220-203-4-0T**	**0300-203-4-0T**
Part number MCH40A (without fieldbus)	827 647 1	827 648 X
Part number MCH41A (with PROFIBUS-DP)	827 693 5	827 694 3
Part number MCH42A (with INTERBUS-LWL)	827 586 6	827 587 4
VFC operating mode	Recommended motor power → MCF4_A	
CFC/SERVO operating mode (f_{PWM} = 8 kHz) Continuous output current = 100% I_N I_D	AC 80 A	AC 95 A
Recommended motor power	→ section CFC/SERVO motor selection	

2.5 MOVIDRIVE® compact MCF/MCV/MCS eletronics data

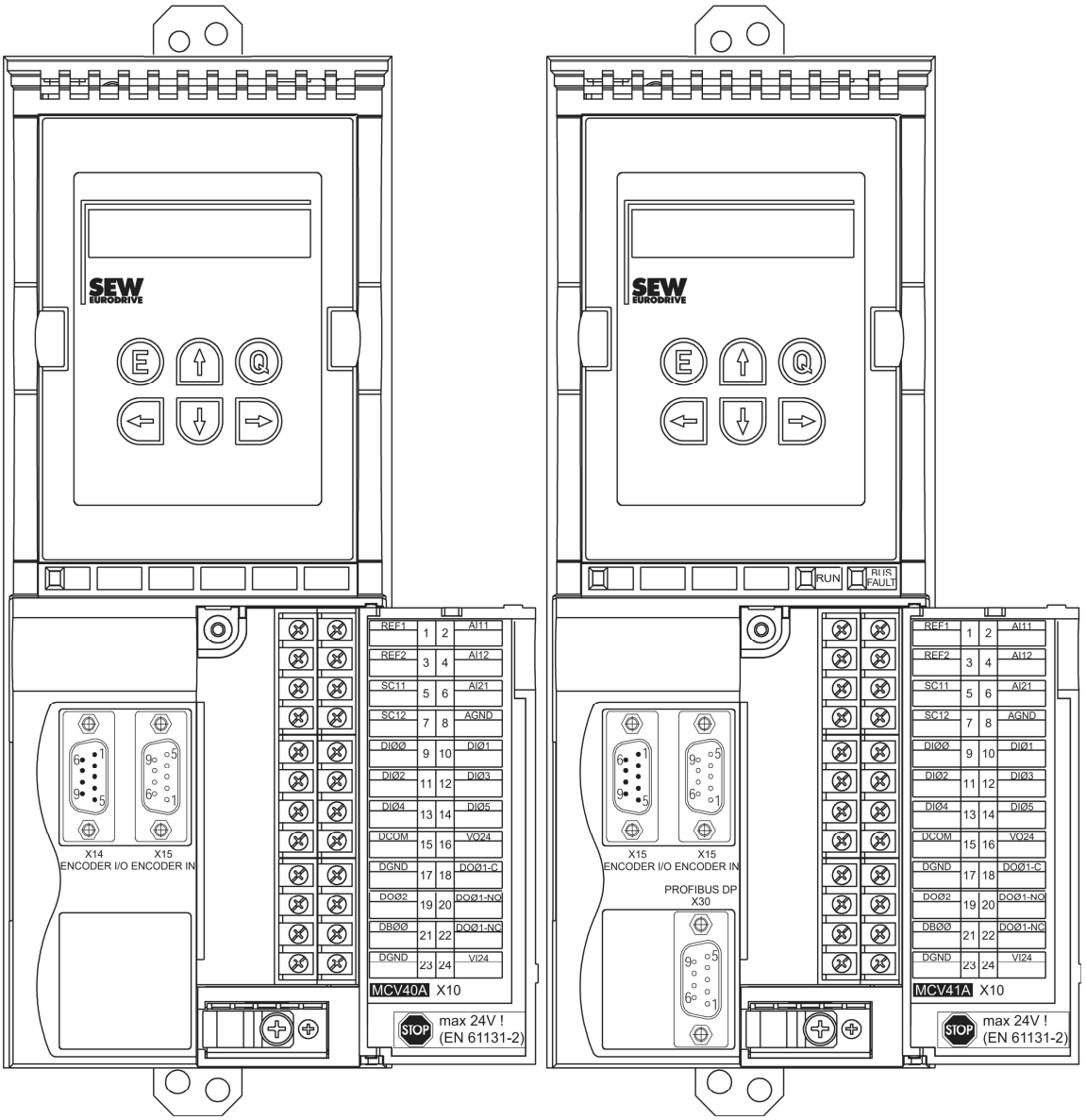
MOVIDRIVE® *compact*		Setpoint processing and speed ramps	
MCF/MCV/MCS40A and MCV/MCS41A		**Version with analog setpoint input**	
Voltage supply for setpoint input	X10:1 X10:3	REF1: DC+10 V +5 % / –0 %, I_{max} = DC 3 mA REF2: DC–10 V +0 % / –5 %, I_{max} = DC 3 mA	Reference voltages for setpoint potentiometer
Setpoint input n1	X10:2/X10:4	AI11/AI12: Voltage or current input, can be set with S11 and P11_, sampling interval 1 ms	
(Differential input) Operating mode AI11/AI12 Resolution Internal resistance		Voltage input: n1 = DC (0...+10 V) or DC (–10 V...0...+10 V) 12 bit R_i = 40 kΩ (external voltage supply) R_i = 20 kΩ (supply from REF1/REF2)	Current input: n1 = DC (0...20 mA) or DC (4...20 mA) 11 bit R_i = 250 Ω
MCF/MCV/MCS41A (X10:2 and X10:4 inactive for MCF41A)		**Version with PROFIBUS-DP interface. No analog setpoint input n1 (AI11/AI12) available for MCF41A; setpoint selection only via PROFIBUS-DP interface.**	
Protocol variant Baud rate Connection technology Bus terminator Station address Name of the GSD file DP ident. number		PROFIBUS DP to IEC 61158 Automatic baud rate detection from 9.6 kbaud to 12 Mbaud 9-pole sub D connector, pin assignment to IEC 61158 Can be activated for cable type A to IEC 61158 0 ... 125, adjustable via DIP switches SEW_6002.GSD 6002_{hex} (24578_{dec})	
Valid for all versions			
Setpoint input n2 TF/TH input Resolution	X10:6	Analog input DC (0 ... 10 V) or optionally (→ P120) TF/TH input with response threshold at $R_{TF} \geq 2.9$ kΩ ± 10 % 10 bit	
Internal setpoints		Parameter set 1: n11/n12/n13 = –5000...0...+5000 min^{-1} Parameter set 2: n21/n22/n23 = –5000...0...+5000 min^{-1}	
Time ranges of the speed ramps at Δn = 3000 min^{-1}		1st ramp t11/t21 Up: 0.0...2000 s Down: 0.0...2000 s 2nd ramp t12/t22 Up = down: 0.0...2000 s Stop ramp t13/t23 Down: 0...20 s Emergency ramp t14/t24 Down: 0...20 s Motor potentiometer t3 Up: 0.2...50 s Down: 0.2...50 s	

MOVIDRIVE® *compact*		Additional electronics data	
Auxiliary voltage output[1]	X10:16	VO24: V_{OUT} = DC 24 V, maximum current carrying capacity I_{max} = DC 200 mA	
Ext. voltage supply[1]	X10:24	VI24: V_{IN} = DC 24 V –15 % / +20 % according to EN 61131-2	
Binary inputs Internal resistance	X10:9...X10:14	DIØØ...DIØ5: Isolated (optocoupler), PLC-compatible (EN 61131), sampling interval 5 ms $R_i \approx 3\ k\Omega$, $I_E \approx 10$ mA	
Signal level		DC (+13 V...+30 V) = "1" = Contact closed DC (–3 V...+5 V) = "0" = Contact open	Complies with EN 61131
Function	X10:9 X10:10...X10:14	DIØØ: fixed assignment with "/Controller inhibit" DIØ1...DIØ5: Selection option → Parameter menu P60_	
Binary outputs[1]	X10:21/X10:19	DBØØ/DOØ2: PLC-compatible (EN 61131-2), response time 5 ms	
Signal level		"0" = 0 V "1" = +24 V **Important:** Do not apply external voltage!	
Function	X10:21 X10:19	DBØØ: With fixed assignment "/Brake", I_{max} = DC 150 mA (short-circuit proof, protected against external voltage up to DC 30 V) DOØ2: Selection option → Parameter menu P62_, I_{max} = 50 mA (short-circuit proof and protected against external voltage up to DC 30 V)	
Only for MCF/MCV/MCS40A Analog output	X10:19	AOØ1: → Menu P64_, resolution 8 bit, I_{max} = DC 20 mA (short-circuit proof)	
Relay output	X10:18/20/22	DOØ1: Load capacity of the relay contacts V_{max} = DC 30 V, I_{max} = DC 800 mA	
Function	X10:18 X10:20 X10:22	DOØ1-C: Shared relay contact DOØ1-NO: Normally open contact DOØ1-NC: Normally closed contact	Selection option → parameter menu P62_
Systembus (SBus)	X10:5 X10:7	SC11: SBus high SC12: SBus low	CAN bus to CAN specification 2.0, parts A and B, transmission technology to ISO 11898, max. 64 stations, terminating resistor (120Ω) can be activated using DIP switch.
Input motor encoder [1] Not for MCF4_A	X15:	Incremental encoder for MCV4_A Permitted encoder types: • sin/cos encoder AC 1 V_{SS} • DC 5 V TTL sensor • DC 24 V HTL sensor Encoder power supply: DC+24 V, I_{max} = DC 180 mA	Resolver for MCS4_A 2-pole, AC 7 V_{eff}, 7 kHz
Output for incremental encoder simulation or external encoder input[1] Not for MCF4_A	X14:	Output for incremental encoder simulation: Signal level to RS422 Number of pulses as for X15: (MCV4_A) or fixed 1024 pulses/revolution (MCS4_A)	External encoder input (max. 200 kHz): Only connect encoders with signal level to RS422. Encoder power supply: DC+24 V, I_{max} = DC180 mA
Reference terminals	X10:8 X10:17/X10:23 X10:15	AGND: Reference potential for analog signals n1 and n2 and terminals X10:1 and X10:3. DGND: Reference potential for binary signals, system bus (SBus), encoder and resolver. DCOM: Reference potential for binary inputs X10:9...X10:14 (DIØØ...DIØ5).	
Permitted cable cross section		One core per terminal: 0.20...2.5 mm^2 (AWG 24...12) Two cores per terminal: 0.20...1 mm^2 (AWG 24...17)	

1) **MCF/MCV/MCS40A (without fieldbus):** The unit provides a current of I_{max} = DC 400 mA for the DC+24 V outputs (VO24, DBØØ, DOØ2, encoder supply). If this value is insufficient, a DC 24 V voltage supply must be connected to X10:24 (VI24). This external DC 24 V voltage supply must be able to provide 50 W continuous power and 100 W peak power (1 s).

MCF/MCV/MCS41A (with PROFIBUS-DP): SEW-EURODRIVE recommends that you always supply these units with DC 24 V at terminal X10:24 (VI24). This external DC 24 V voltage supply must be able to provide 50 W continuous power and 100 W peak power (1 s).
The DC 24 V outputs X10:16 (VO24), X10:21 (DBØØ) and X10:19 (DOØ2) may be supplied with a total maximum current of I_{max} = DC 400 mA.

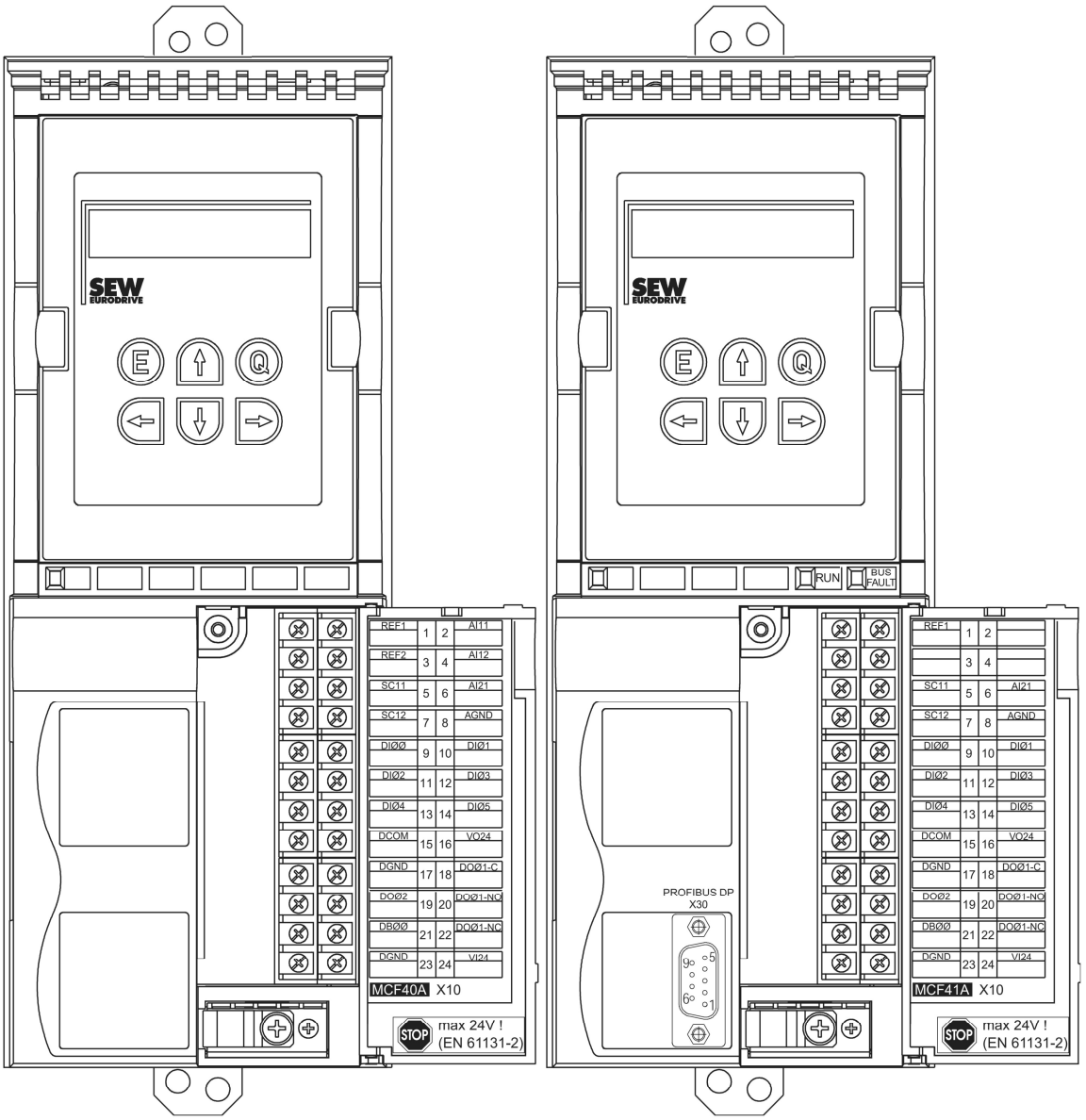
Front view of the MCF40A, MCF41A control unit



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Figure 8: Front view of the MCF40A, MCF41A control unit

Front view of the MCV/MCS40A, MCV/MCS41A control unit



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Figure 9: Front view of the MCV/MCS40A, MCV/MCS41A control unit

2.6 MOVIDRIVE® compact MCH electronics data

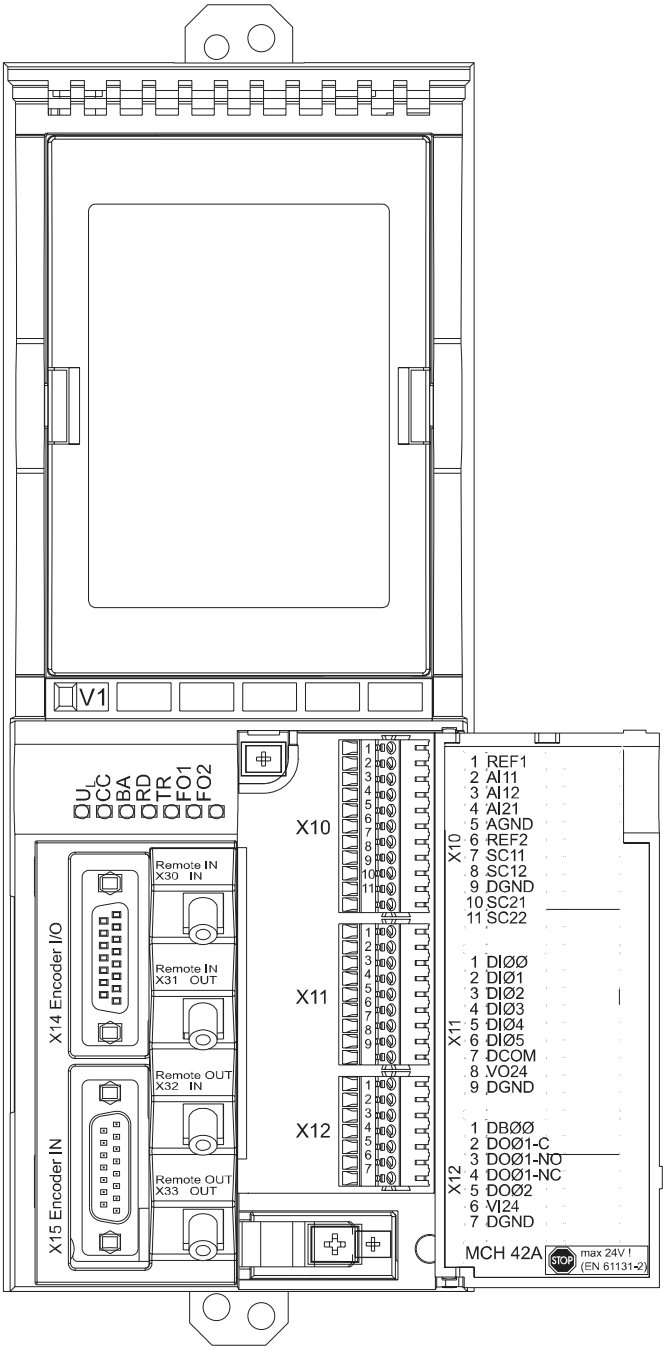
MOVIDRIVE® *compact*		Setpoint processing and speed ramps			
MCH40A		**Version without fieldbus interface.**			
MCH41A		**Version with PROFIBUS-DP interface.**			
Protocol variant Baud rate Connection technology Bus terminator Station address Name of the GSD file DP ident. number		PROFIBUS DP to IEC 61158 Automatic baud rate detection from 9.6 kbaud to 12 Mbaud 9-pole sub D connector, pin assignment to IEC 61158 Not integrated; connect using suitable PROFIBUS connector with terminating resistors that can be activated 0 ... 125, adjustable via DIP switches SEW_6003.GSD 6003_{hex} (24579_{dec})			
MCH42A		**Version with INTERBUS fiber optic cable (LWL) interface.**			
Protocol variant Baud rate Connection technology		INTERBUS to EN 61158-2 with optically controlled LWL interface 500 kBaud and 2 MBaud, can be selected via DIP switch 4 F-SMA connectors (2 × remote bus input and 2 × remote bus output)			
Valid for all versions					
Voltage supply for setpoint input	X10:1 X10:6	REF1: DC+10 V +5 % / –0 %, I_{max} = DC 3 mA REF2: DC–10 V +0 % / –5 %, I_{max} = DC 3 mA			Reference voltages for setpoint potentiometer
Setpoint input n1	X10:2/X10:3	AI11/AI12: Voltage or current input, can be set with S11 and P11_, sampling interval 1 ms			
(Differential input) Operating mode AI11/AI12 Resolution Internal resistance		Voltage input: n1 = DC (0...+10 V) or DC (–10 V...0...+10 V) 12 bit R_i = 40 kΩ (external voltage supply) R_i = 20 kΩ (supply from REF1/REF2)			Current input: n1 = DC (0...20 mA or 4...20 mA) 11 bit R_i = 250 Ω
Setpoint input n2 TF/TH input Resolution	X10:4	Analog input DC (0 ... 10 V) or optionally (→ P120) TF/TH input with response threshold at $R_{TF} \geq 2.9$ kΩ ± 10 % 10 bit			
Internal setpoints		Parameter set 1: n11/n12/n13 = –5000...0...+5000 min^{-1} Parameter set 2: n21/n22/n23 = –5000...0...+5000 min^{-1}			
Time ranges of the speed ramps at Δn = 3000 min^{-1}		1st ramp 2nd ramp Stop ramp Emergency ramp Motor potentiometer	t11/t21 t12/t22 t13/t23 t14/t24 t3	Up: 0.0...2000 s Up = down: 0.0...2000 s Down: 0...20 s Down: 0...20 s Up: 0.2...50 s	Down: 0.0...2000 s Down: 0.2...50 s

MOVIDRIVE® *compact*		Additional electronics data	
Auxiliary voltage output[1]	X11:8	VO24: V_{OUT} = DC 24 V, maximum current carrying capacity I_{max} = DC 200 mA	
Ext. voltage supply[1] X12:6		VI24: V_{IN} = DC 24 V –15 % / +20 % to EN 61131-2	
Binary inputs	X11:1...X11:6	DIØØ...DIØ5: Isolated (optocoupler), PLC-compatible (EN 61131), sampling interval 5 ms	
Internal resistance		$R_i \approx 3\ k\Omega$, $I_E \approx 10$ mA	
Signal level		DC (+13 V...+30 V) = "1" = Contact closed DC (–3 V...+5 V) = "0" = Contact open	Complies with EN 61131
Function	X11:1	DIØØ: fixed assignment with "/Controller inhibit"	
	X11:2...X11:6	DIØ1...DIØ5: Selection option → parameter menu P60_	
Binary outputs[1]	X12:1/X12:5	DBØØ/DOØ2: PLC-compatible (EN 61131-2), response time 5 ms	
Signal level		"0" = 0 V "1" = +24 V **Important:** Do not apply external voltage!	
Function	X12:1	DBØØ: With fixed assignment "/Brake", I_{max} = DC 150 mA (short-circuit proof, protected against external voltage up to DC 30 V)	
	X12:5	DOØ2: Selection option → parameter menu P62_, I_{max} = DC 50 mA (short-circuit proof and protected against external voltage up to DC 30 V)	
Analog output	X12:5	AOØ1: → Menu P64_, resolution 8 bit, I_{max} = DC 20 mA (short-circuit proof)	
Relay output	X12:2/3/4	DOØ1: Load capacity of the relay contacts V_{max} = DC 30 V, I_{max} =DC 800 mA	
Function	X12:2	DOØ1-C: Shared relay contact	Selection option → parameter menu P62_
	X12:3	DOØ1-NO: Normally open contact	
	X12:4	DOØ1-NC: Normally closed contact	
System bus (SBus)	X10:7/10 X10:8/11	SC11/21: SBus high SC12/22: SBus low	CAN bus to CAN specification 2.0, parts A and B, transmission technology to ISO 11898, max. 64 stations, terminating resistor (120Ω) can be activated using DIP switch.
Input motor encoder [1]	X15:	Permitted encoder types: • Hiperface encoder • sin/cos encoder AC 1 V_{SS} • TTL sensor Encoder power supply: DC + 12 V, I_{max} = DC 180 mA	
Output for incremental encoder simulation or external encoder input[1]	X14:	Output for incremental encoder simulation: Signal level to RS422 The number of pulses is: • 1024 pulses/revolution (Hiperface® encoder on X15) • as at X15: Motor encoder input (sin/cos encoder or TTL sensor on X15)	External encoder input (max. 200 kHz): Permitted encoder types: • Hiperface encoder • sin/cos encoder AC 1 V_{SS} • TTL sensor Encoder power supply: DC+12 V, I_{max} = DC 180 mA
Reference terminals	X10:5	AGND: Reference potential for analog signals n1 and n2 and terminals X10:1 and X10:6.	
	X10:9/X11:9/X12:7	DGND: Reference potential for binary signals, system bus (SBus), encoder and resolver.	
	X11:7	DCOM: Reference potential for binary inputs X10:9...X10:14 (DIØØ...DIØ5).	
Permitted line cross section		Only one core per terminal: 0.20...1.5 mm^2 (AWG 24...16) Use right-angled crimping pliers with 1.5 mm^2 (AWG 16)	

1) **MCH40A (without fieldbus):** The unit provides a current of I_{max} = DC 400 mA for the DC+24 V outputs (VO24, DBØØ, DOØ2, encoder supply). If this value is insufficient, a DC 24 V voltage supply must be connected to X10:24 (VI24). This external DC 24 V voltage supply must be able to provide 50 W continuous power and 100 W peak power (1 s).

MCH41A (with PROFIBUS-DP) or MCH42A (with INTERBUS-LWL): SEW-EURODRIVE recommends that you always supply these units with DC 24 V at terminal X10:24 (VI24). This external DC 24 V voltage supply must be able to provide 50 W continuous power and 100 W peak power (1 s).
The DC 24 V outputs X10:16 (VO24), X10:21 (DBØØ) and X10:19 (DOØ2) may be supplied with a total maximum current of I_{max} = DC 400 mA.

Front view of MCH42A control unit

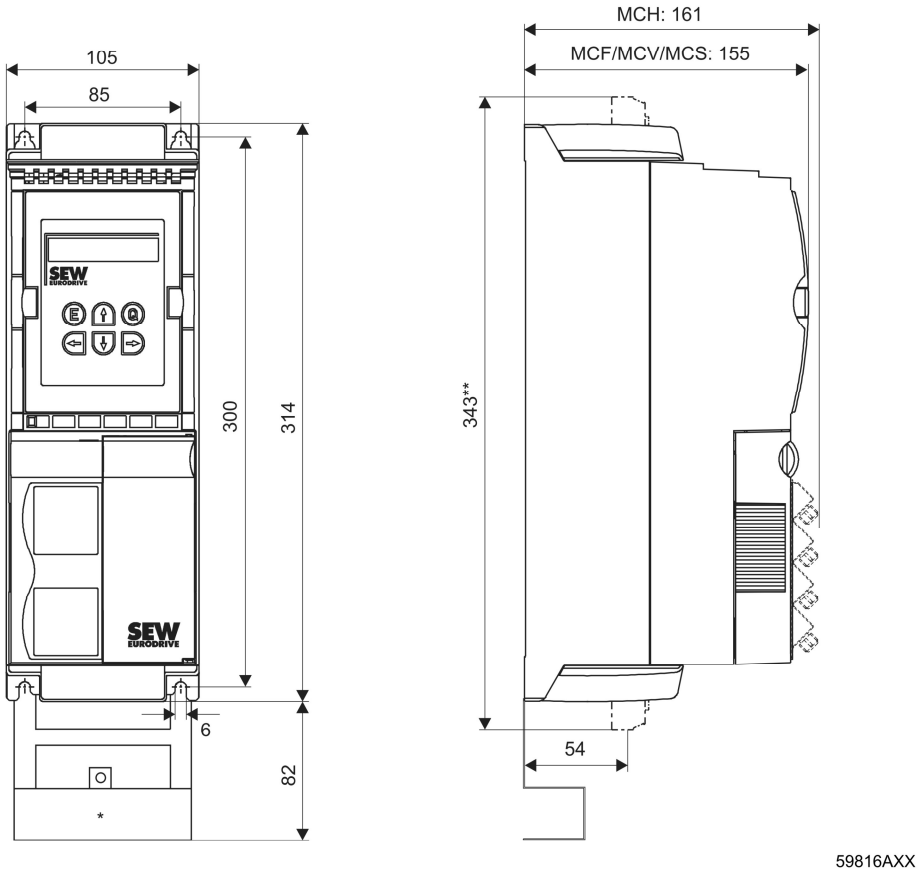


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Figure 10: Front view of MCH42A control unit

2.7 MOVIDRIVE®compact dimension drawings

Dimension drawing for size 1 (0015 ... 0040-5A3 and 0015 ... 0037-2A3)



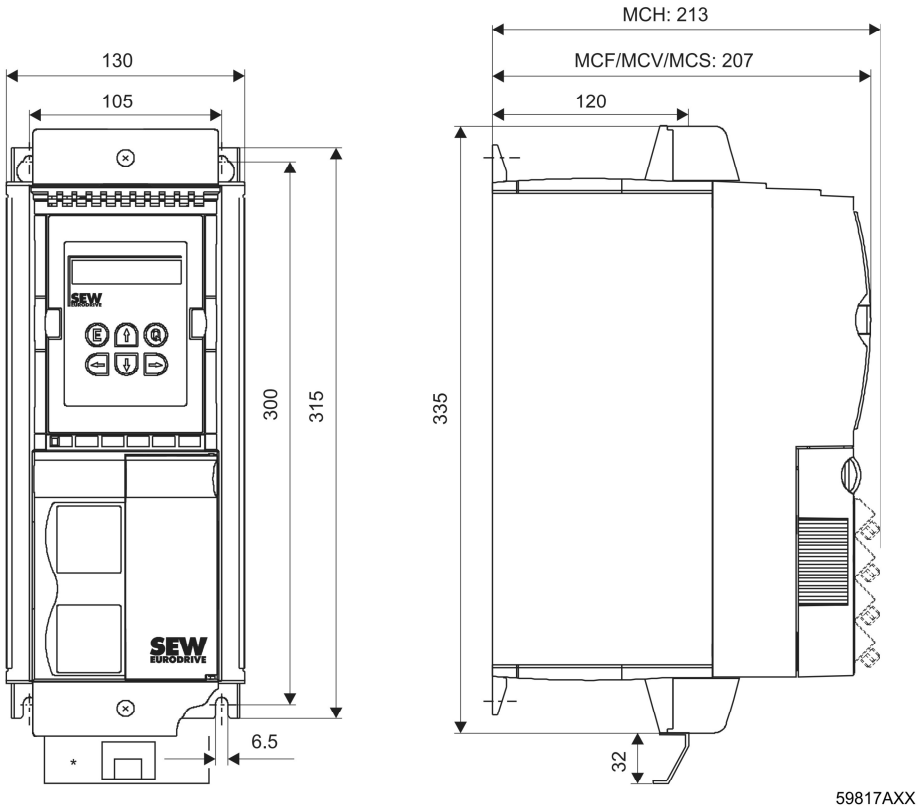
All dimensions in mm

* Power shield clamp

** Unit dimensions including connected power terminals

	NOTE
	Leave at least 100 mm clearance above and below the unit to ensure optimum cooling. There is no need for clearance at the sides. You can line up the units directly next to one another.

Dimension drawing for size 2 (0055 ... 0110-5A3 and 0055 / 0075-2A3)

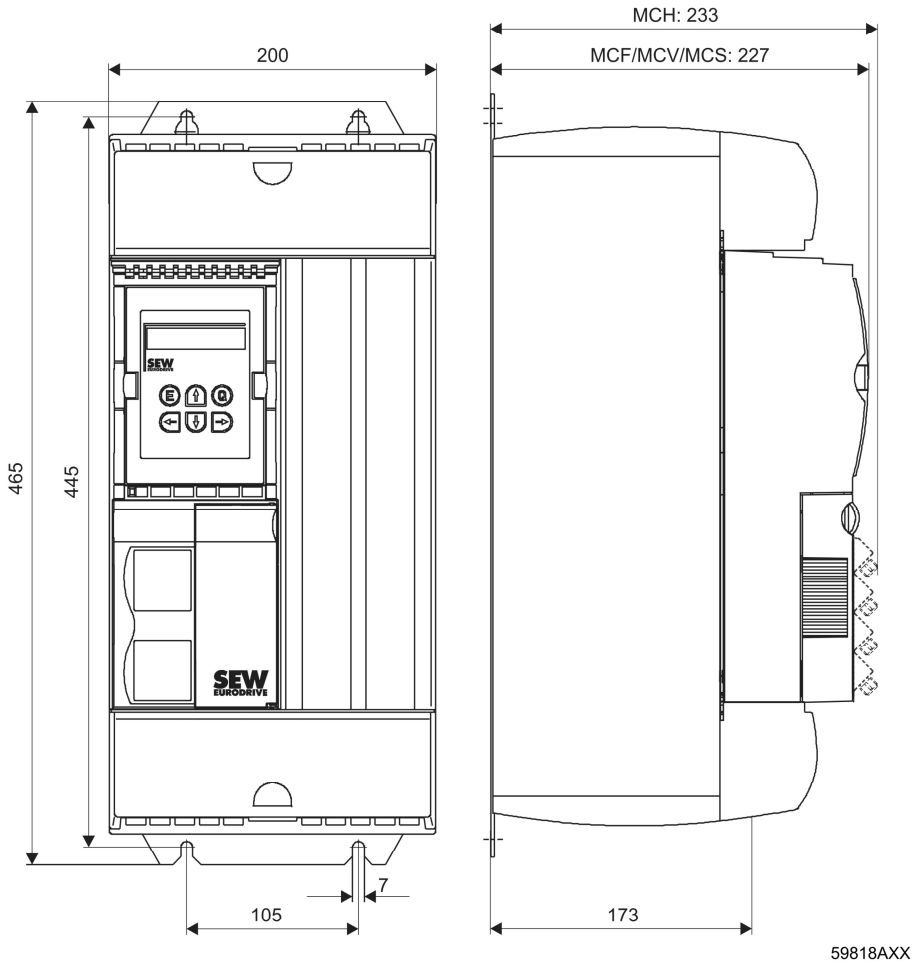


All dimensions in mm

* Power shield clamp

	NOTE
	Leave at least 100 mm clearance above and below the unit to ensure optimum cooling. There is no need for clearance at the sides. You can line up the units directly next to one another.

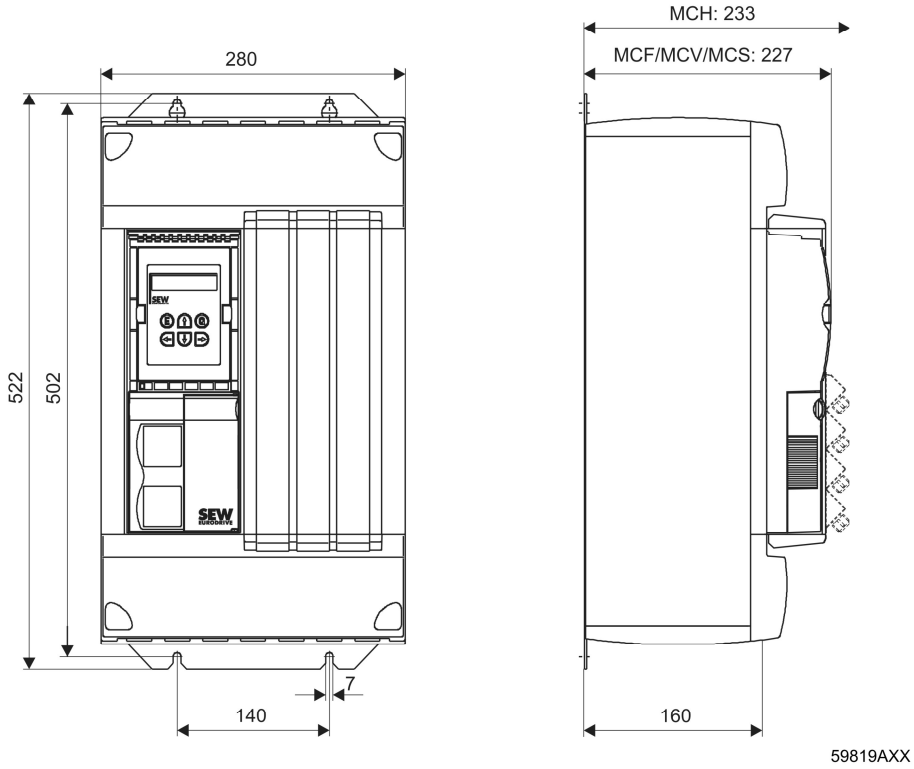
Dimension drawing for size 3 (0150 ... 0300-503 and 0110 / 0150-203)



All dimensions in mm

	NOTE
	Leave at least 100 mm clearance above and below the unit to ensure optimum cooling. There is no need for clearance at the sides. You can line up the units directly next to one another.

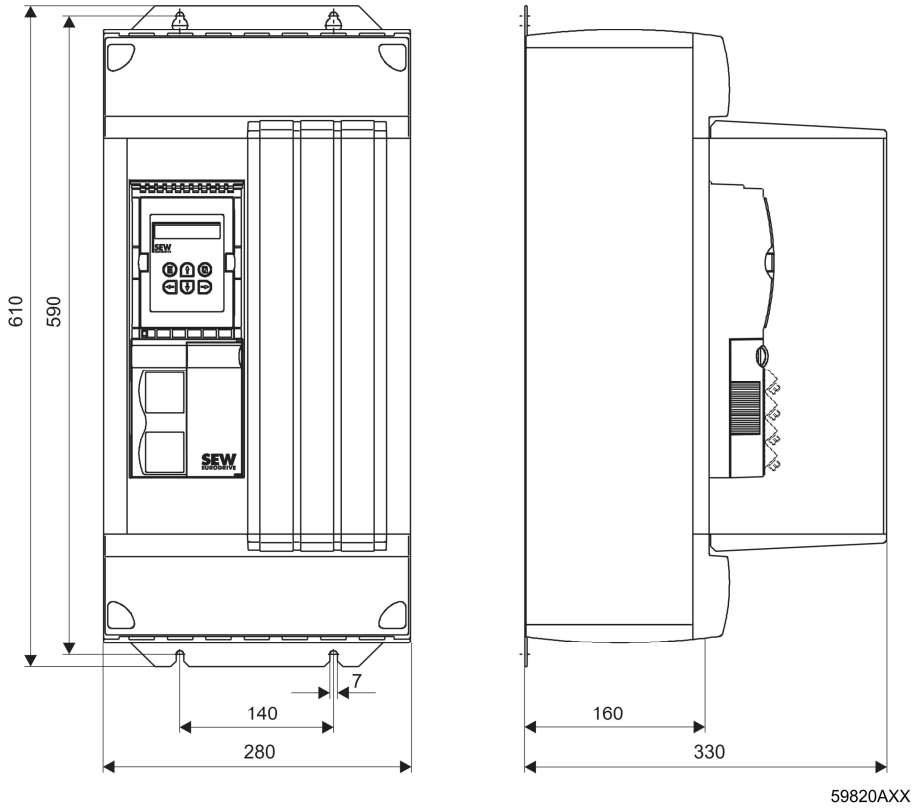
Dimension drawing for size 4 (0370 / 0450-503 and 0220 / 0300-203)



All dimensions in mm

	NOTE
	Leave at least 100 mm clearance above and below the unit to ensure optimum cooling. There is no need for clearance at the sides. You can line up the units directly next to one another.

Dimension drawing for size 5 (0550 / 0750-503)



All dimensions in mm

	NOTE
	Provide at least 100 mm clearance above and below the unit. There is no need for clearance at the sides. You can line up the units directly next to one another. Do not install any components that are sensitive to high temperatures within 300 mm of the top of the unit, for example contactors or fuses.

2.8 MOVIDRIVE® MDR60A regenerative power supply unit

In MOVIDRIVE® drive inverters operating in regenerative mode (4Q operation), the MOVIDRIVE® MDR60A regenerative power supply unit can be used as an alternative to braking resistors. The prerequisite is a powerful supply system. For more detailed information, refer to the "MOVIDRIVE® MDR60A Regenerative Power Supply Unit" system manual. This system manual can be ordered from SEW-EURODRIVE.

MOVIDRIVE® MDR60A supplies the DC link circuit of the connected MOVIDRIVE® drive inverter with electrical power from the supply system in motor operation and returns regenerative power to the supply system in regenerative operation.

UL approval

UL and cUL approval has been granted for the entire MOVIDRIVE® MDR60A0370-503-00 and MDR60A0750-503-00 range of units. cUL is equivalent to CSA approval. The MOVIDRIVE® MDR60A1320-503-00 unit does not have UL or cUL approval.

Protection and monitoring functions

- Monitoring and protection against thermal overload.
- Detection of power failure within one supply system half-wave.
- Overvoltage protection.



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Figure 11: MOVIDRIVE® MDR60A regenerative power supply units

Features of the regenerative power supply unit compared to an inverter with braking resistors

- Energy balance: Regenerative power is fed back into the supply system instead of being converted into waste heat.
- Less installation work with several inverters (network and braking resistor connections). However, a braking resistor is required to bring the drive to a controlled stop even when there is a disruption in the supply system.
- Reduction in use of control cabinet space and fan power if the braking resistor was previously installed in the control cabinet.

General technical data

MOVIDRIVE® MDR60A	0370-503-00 (size 3) 0750-503-00 (size 4)	1320-503-00 (size 6)
Interference immunity	Complies with EN 61800-3	Meets EN 61000-6-1 and EN 61000-6-2
Interference emission with EMC-compliant installation	Complies with EN 61800-3 • With NF085-503 line filter (size 3) • With NF150-503 line filter (size 4)	Meets EN 61000-6-4 with line filter NF300-503
Ambient temperature ϑ_U **Derating ambient temperature**	0 °C...+40 °C I_N reduction: 3 % I_N per K to max. 60 °C	0 °C...+40 °C I_N reduction: 3 % I_N per K to max. 55 °C
Climate class	EN 60721-3-3, class 3K3	
Storage temperature[1] ϑ_L	–25 °C...+70 °C (EN 60721-3-3, class 3K3)	–25 °C...+55 °C (EN 60721-3-3, class 3K3)
Cooling type (DIN 51751)	Forced cooling (temperature-controlled fan, response threshold 50 °C)	Forced cooling (temperature-controlled fan, response threshold 45 °C)
Enclosure Size 3 **EN 60529** Size 4 **(NEMA 1)**	IP20 IP00 (power connections) IP10 (power connections) • With fitted plexiglass cover supplied as standard • With shrink tubing (not included in scope of delivery)	IP20
Operating mode	Continuous operation with 50 % overload capacity	
Overvoltage category	III according to IEC 60664-1 (VDE 0110-1)	
Pollution class	2 according to IEC 60664-1 (VDE 0110-1)	
Installation altitude	There are no restrictions for heights ≤ 1,000 m. The following restrictions apply at heights ≥ 1,000 m: • From 1,000 m to max. 4,000 m: – I_N reduction by 1% per 100 m (330 ft) • From 2,000 m to max. 4,000 m: – V_N reduction by AC 6 V per 100 m Over 2,000 m only overvoltage class 2; external measures are required for overvoltage class 3. Overvoltage classes according to DIN VDE 0110-1.	h ≤ 1,000 m: No limitation From 1,000 m to max. 4,000 m: I_N reduction: 0.5 % per 100 m

1) In case of long-term storage, the unit must be connected to the mains voltage for at least 5 minutes every two years, otherwise the unit's service life may be reduced.

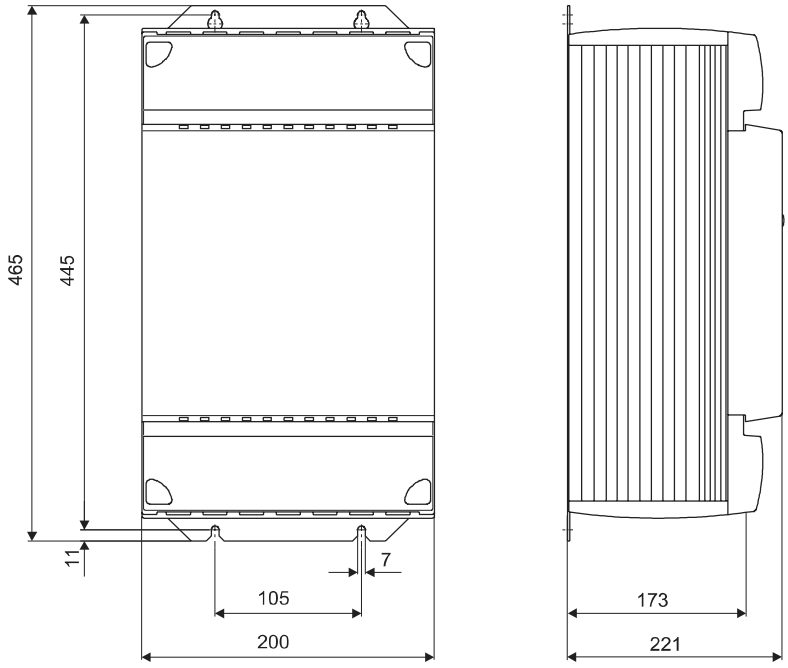
Technical data of the MOVIDRIVE® MDR60A regenerative power supply unit

MOVIDRIVE® MDR60A		0370-503-00 (size 3)	0750-503-00 (size 4)	1320-503-00 (size 6)
Part number		826 658 1	826 556 9	827 952 7
INPUT				
Supply voltage	V_{mains}	3 × AC 380 V –10 % ... 3 × AC 500 V +10 %		
Supply frequency	f_{mains}	50 Hz ... 60 Hz ±5 %		40 Hz ... 60 Hz ±10 %
Rated connected load	P_N	37 kW	AC 66 A	AC 260A
Rated supply current (at V_{mains} = 3 × AC 400 V)	I_{mains}	AC 66 A	AC 117 A	AC 260 A
DC LINK				
Apparent output power (at V_{mains} = 3 × AC 380...500 V)	S_A	50 kVA	90 kVA	173 kVA
DC link voltage	V_{DClink}	DC 560 V ... 780 V		
Rated DC link current	I_{DClink}	DC 70 A	DC 141 A	DC 340 A
Max. DC link current	I_{DC_max}	DC 105 A	DC 212 A	DC 410 A
GENERAL INFORMATION				
Power loss at P_N	P_{Vmax}	950 W	1,700 W	2,650 W
Cooling air consumption		180 m^3/h	360 m^3/h	700 m^3/h
Connection for power terminals X1, X2 (L1, L2, L3 for size 6) **Permitted tightening torque** **Permitted cable cross section**		M6 screw with washer 3.5 Nm 25 mm^2 (AWG4)	M10 terminal studs 14 Nm 70 mm^2 (AWG2/0)	M10 terminal studs 3.5 Nm 25 mm^2 (AWG4)
Connection for DC link connection ±UG **Permitted cable cross section** **Permitted tightening torque**		- 	- 	150 mm^2 (power supply connection) / 30 Nm[1)] 185 mm^2 (DC link connection) / 32 Nm[1)]
Connection for electronics terminalsX3 (X2 for size 6)		Permitted cable cross section: • One core per terminal: 0.20...2.5 mm^2 (AWG24...13) • Two cores per terminal:0.25...1 mm^2 (AWG23...17)		Permitted cable cross section: • 0.8...4 mm^2 (AWG18...12)
Weight		16 kg	24 kg	90 kg
Dimensions	W × H × D	200 × 465 × 221 mm	280 × 522 × 205 mm	380 × 937× 395 mm
Line choke (always required)		ND085-013 L_N = 0.1 mH Part number 826 014 1	ND200-0033 L_N = 0.03 mH Part number 826 579 8	Already installed
Line filter (optional)		NF085-503, part number 827 415 0	NF150-503, part number 827 417 7	NF300-503, part number 827 419 3
For MOVIDRIVE® *compact* ...-5_3		0015 ... 0370	0015 ... 0750	0015 ... 0750

1) Important: Do not apply tightening torque directly at terminals L1, L2, L3 and ±UG; use a second wrench.

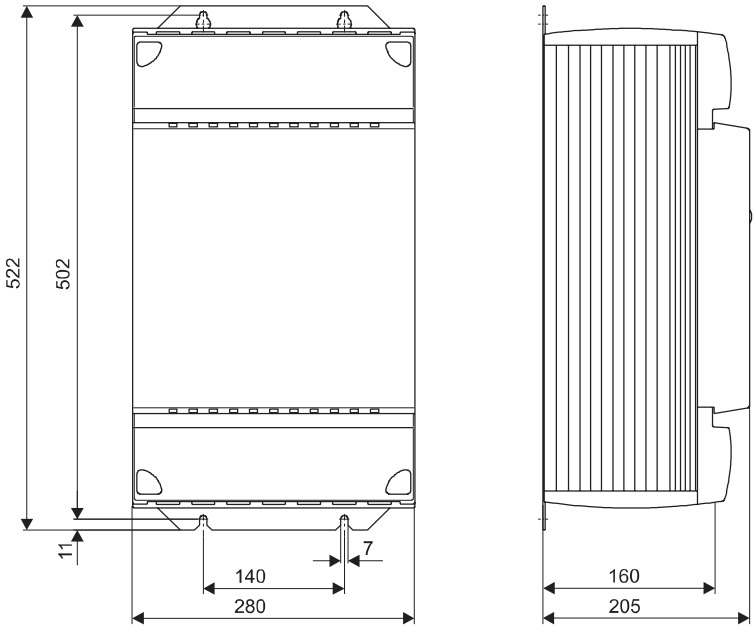
MDR60A dimension drawings

Provide at least 100 mm clearance above and below the unit. There is no need for clearance at the sides. You can line up the units directly next to one another. With sizes 4 and 6, do not install any components that are sensitive to high temperatures within 300 mm of the top of the unit, for example contactors or fuses.



54260BXX

Figure 12: Dimension drawing for MDR60A size 3, dimensions in mm



54261BXX

Figure 13: Dimension drawing for MDR60A size 4, dimensions in mm

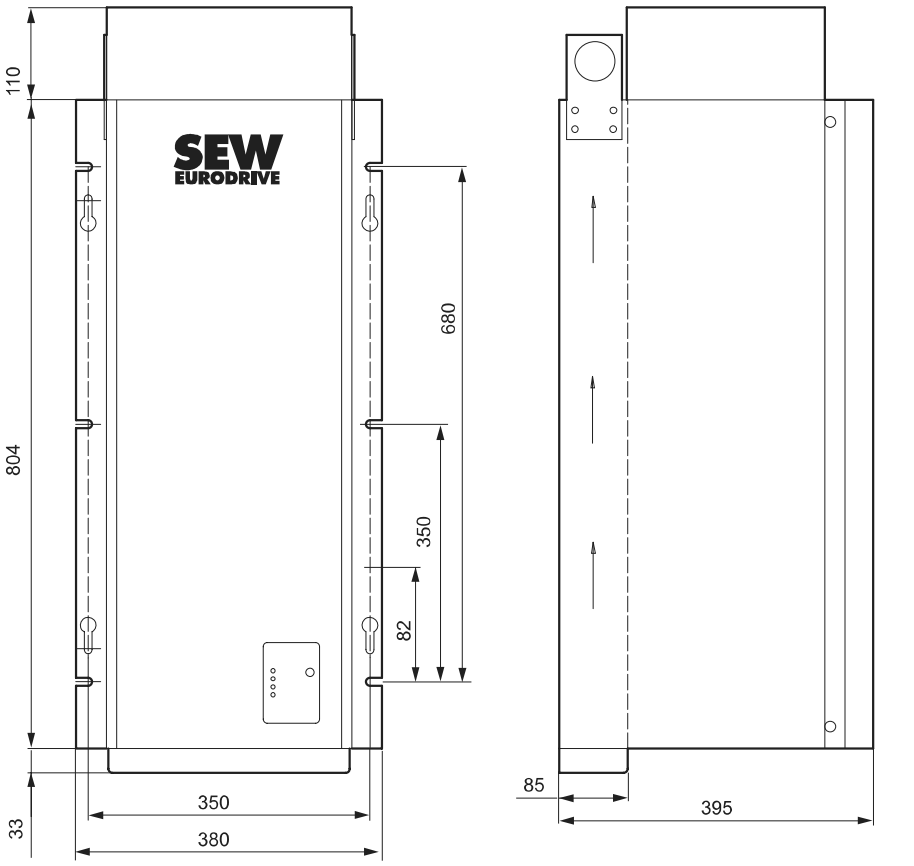


Figure 14: Dimension drawing for MDR60A size 6, dimensions in mm

DC link connection

SEW-EURODRIVE recommends using the following cable sets for the DC link connection. These cable sets offer the appropriate dielectric strength and are also color-coded. Color coding is necessary because cross-polarity and ground faults could cause irreparable damage to the connected equipment.

The length of the cables restricts the DC link connection to the permitted length of 5 m. They can also be cut to length by the customer for connecting several units. The lugs for connection to the regenerative power supply unit and an inverter are supplied with the cable set. Use commercially available lugs for connecting additional inverters. The inverters must then be connected to the regenerative power supply unit in star configuration.

Cable set type	DCP12A	DCP13A	DCP15A
Part number	814 567 9	814 250 5	814 251 3
For connecting MOVIDRIVE®	0015 ... 0110	0150 ... 0370	0450 ... 0750

NOTE

Refer to the "MOVIDRIVE® MDR60A Regenerative Power Supply Unit" system manual for information on the DC link connection. This system manual can be ordered from SEW-EURODRIVE.

2.9 IPOS$^{plus®}$

Description

IPOS$^{plus®}$ positioning and sequence control is integrated into every MOVIDRIVE® inverter as standard. IPOS$^{plus®}$ can be used to execute control functions and positioning tasks either simultaneously or independently of one another.

IPOS$^{plus®}$ sequence control makes it possible to run a user program, regardless of the encoder feedback or the selected control mode (VFC, CFC, SERVO). In conjunction with encoder feedback (MCV, MCS, MCH), IPOS$^{plus®}$ positioning provides high-performance point-to-point positioning. The IPOS$^{plus®}$ program is written using the MOVITOOLS® software. The operating software or DBG11B keypad (startup in VFC mode only) can be used to start up the inverter, access parameters and change variables.

Features

- Program execution independent of encoder feedback and operating mode.
- The user program is continued even if a unit malfunction occurs (troubleshooting is possible in the user program).
- Two user programs can be run in parallel and independently of one another (task 1, interrupt-capable, and task 2).
- The user programs programmed in the assembler can contain up to 800 program lines.
- User-friendly and comprehensive control options for the inverter.
- Extensive options for communication via system bus (SBus), RS-485, RS-232 and fieldbus (direct communication with MOVIMOT® is possible).
- Processing of digital and analog input/output signals.

Only with MCV/MCS/MCH

- Positioning with adjustable travel speed and positioning ramps.
- Feedforward for position, speed and torque control loops with minimized lag error.
- Two touch probe inputs.
- Ramp types LINEAR, SINE and SQUARE.
- Status and monitoring functions: Lag error monitoring, position signal, software and hardware limit switches.
- Eight reference travel types.
- Possibility of changing the target position, travel speed, positioning ramp and torque when movement is in progress.
- Possibility of "endless positioning."
- Override function.

Technical data

Max. program length of tasks 1 and 2	**In total about 800 program lines (programmed in assembler)**
Command processing time per program line	Task 1: 1.0 ms; Task 2: 0.5 ms
Variables	512, of which 128 (0 ... 127) can be stored to non-volatile memory; range of values: $-2^{31}...+(2^{31}-1)$
Touch probe inputs	2 inputs, processing time < 100 µs
Sampling interval of digital and analog inputs	1...5 ms
Digital inputs/outputs	6 inputs / 3 outputs
Analog inputs/outputs	1 input (0...10 V, ±10 V, 0...20 mA, 4...20 mA)[1)] 1 input (0...10 V) 1 output (0...20 mA, 4...20 mA)

1) Not for MCF41A

2.10 Optional DBG11B keypad

Description

The keypad is needed for startup and service. The basic version of MOVIDRIVE® does not have a keypad and can be upgraded to include the keypad as an option.

Keypad	Language	Part number
DBG11B-08	DE/EN/FR/ES/PT (German/English/French/Spanish/Portuguese)	824 154 6
DBG11B-09	EN/IT/SV/DA/FI (English/Italian/Swedish/Danish/Finnish)	824 155 4
DBG11B-11	ES/DE/EN/FR/PT (Spanish/German/English/French/Portuguese)	824 156 2
DBG11B-12	SV/EN/IT/DA/FI (Swedish/English/Italian/Danish/Finnish)	824 157 0
DBG11B-13	EN/ES/DE/FR/PT (English/Spanish/German/French/Portuguese)	824 158 9
DBG11B-14	FR/IT/ES/PT/EN (French/Italian/Spansih/Portuguese/English)	824 248 8
DBG11B-15	DE/EN/IT/ES/PT (German/English/Italian/Spanish/Portuguese)	824 423 5

Features

- Illuminated plain text display, five languages can be set.
- Membrane keypad with 6 keys.
- Choice of quick menu, detailed parameter menu and startup menu in VFC mode (CFC and SERVO startup is not possible with the DBG11B).
- Can be plugged onto the inverter (TERMINAL slot).
- Connection via extension cable FKG11A (part number 822 101 4) possible.
- Enclosure IP40 (EN 60529)

Note

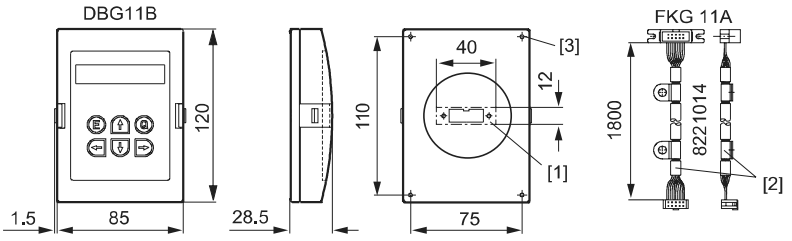
The DBG11B keypad option and the USS21A/USB11A serial interface options are plugged into the same inverter slot (TERMINAL) and therefore cannot be used at the same time.

Functions

- Display process values and status.
- Status of binary inputs and outputs.
- Query error memory and error reset.
- Option to display and set the operating parameters and service parameters.
- Data backup and transfer of parameter sets to other MOVIDRIVE® units.
- User-friendly startup menu for VFC mode.
- Option to save a curve with electronic cam.

Dimension drawing for DBG11B and FKG11A

All dimensions in mm.



59821AXX

[1] Cut-out for connector in mounting panel

[2] Communication cable for DBG11B - MOVIDRIVE®

[3] Holes for tapping screws 3.5 × 9.5 mm

2.11 Serial interface option type USS21A (RS232 and RS485)

Part number

822 914 7

Description

MOVIDRIVE® can be equipped with isolated interfaces RS232 and RS485. The RS232 interface is designed as a 9-pole sub-D socket (EIA standard) and the RS485 interface as a terminal connection. The interfaces are accommodated in a housing to be plugged into the inverter (TERMINAL option slot). The option can be plugged in during operation. The transmission rate of both interfaces is 9,600 Baud.

Startup, operation and service can be performed from the PC via the serial interface. Use the SEW software MOVITOOLS® for this purpose. Set parameters can also be transferred to several MOVIDRIVE® drive inverters via the PC.

Note

The DBG11B, USS21A and USB11A options are plugged into the same inverter slot (TERMINAL) and therefore cannot be used at the same time.

RS232 interface

To connect a PC to the MOVIDRIVE® option USS21A, use a commercially available, serial, shielded interface cable with a 1:1 connection assignment.

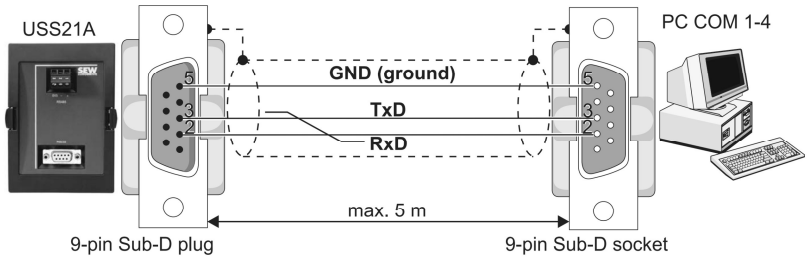


Figure 15: USS21A - PC connection cable (1:1 connection assignment)

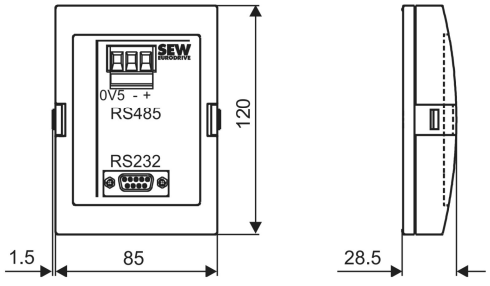
RS485 interface

A maximum of 16 MOVIDRIVE® units can be connected for communication (max. cable length 200 m) via the RS485 interface of the USS21A. Do not connect external terminating resistors as dynamic terminating resistors are already installed!

The unit addresses 0...99 are permitted for multipoint connections. In this case, do not select the point-to-point connection option in MOVITOOLS®. The communication address in MOVITOOLS® must match the RS485 address of MOVIDRIVE® (P810).

Dimension drawing for USS21A

All dimensions in mm.



2.12 Interface adapter type USB11A / option DKG11A

Part number

- 824 831 1 Interface adapter USB11A
- 819 558 7 Serial interface cable DKG11A

Description

Option USB11A enables a PC or laptop with a USB interface to be connected to the TERMINAL slot of MOVIDRIVE® *compact*. The USB11A interface adapter supports USB1.1 and USB2.0.

Scope of delivery

- The scope of delivery for the USB11A includes:
  - USB11A interface adapter
  - USB connection cable PC - USB11A (type USB A-B)
  - CD-ROM with drivers and MOVITOOLS®
- The USB11A interface adapter supports USB 1.1 and USB 2.0.
- The scope of delivery for the USB11A **does not** include:
  - DKG11A connection cable (length 3 m, part number 819 558 7) for connecting MOVIDRIVE® *compact* - USB11A.

Connecting MOVIDRIVE® - USB11A - PC

- MOVIDRIVE® *compact* is connected to USB11A (cable RJ10-TERMINAL) using the serial interface cable type DKG11A (length 3 m, part number 819 558 7).
- USB11A is connected to the PC using a commercially available, shielded USB connection cable type USB A-B.

Dimension drawing

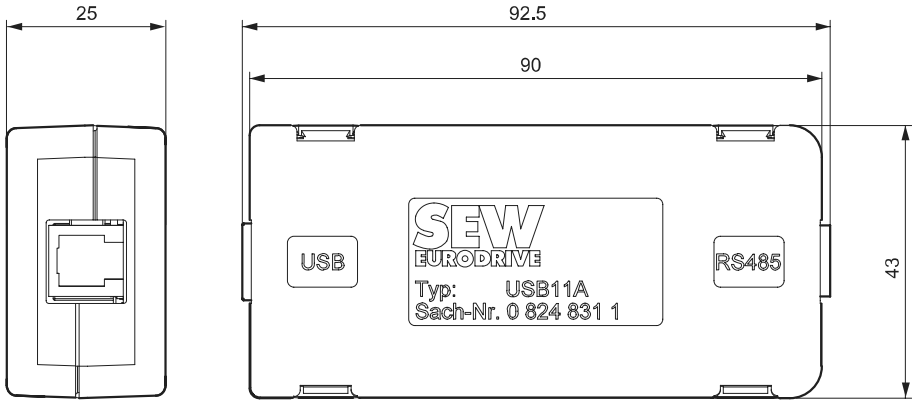


Figure 16: USB11A dimension drawing, dimensions in mm

Technical data

USB11A	
Part number	824 831 1
Ambient temperature	0 °C... 40 °C
Storage temperature	–25 °C ... +70 °C (according to EN 60721-3-3, class 3K3)
Enclosure	IP20
Weight	300 g
Dimensions	92.5 x 43 x 25 mm

2.13 DC 5 V encoder supply type DWI11A

Part number 822 759 4

Description If you are using an incremental encoder with a DC 5 V encoder power supply, install the DC 5 V encoder power supply option type DWI11A between the inverter and the incremental encoder. This option provides a regulated DC 5 V power supply for the encoder. For this purpose, the DC 12 V power supply for the encoder inputs is converted to DC 5 V by means of a voltage controller. A sensor line is used to measure the supply voltage at the encoder and compensate the voltage drop along the encoder cable.

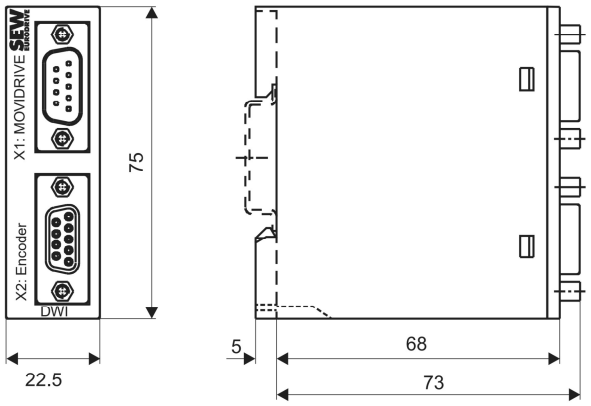
Incremental encoders with DC 5 V encoder power supply may not be connected directly to the encoder inputs X14: and X15:. This would cause irreparable damage to the encoder.

NOTE

If a short circuit occurs in the sensor cable, the connected encoder may be exposed to a voltage higher than permitted.

Recommendation Use prefabricated cables from SEW for the encoder connection.

Dimension drawing



01315CXX

Figure 17: DWI11A dimension drawing, dimensions in mm

The DWI11A option is mounted on a support rail (EN 50022-35 × 7.5) in the control cabinet.

Technical data

DC 5 V encoder power supply option type DWI11A	
Part number	822 759 4
Voltage input	DC 10...30 V, I_{max} = DC 120 mA
Encoder power supply	DC +5 V (up to $V_{max} \approx$ +10 V), I_{max} = DC 300 mA
Max. line length that can be connected	100 m total Use a shielded twisted-pair cable (A and $\overline{A}$, B and $\overline{B}$, C and $\overline{C}$) for connecting the encoder to the DWI11A and the DWI11A to MOVIDRIVE®.

2.14 Braking resistors type BW... / BW...-T / BW...-P

General information

- Braking resistors BW... / BW...-T and BW...-P are adapted to the technical characteristics of MOVIDRIVE® drive inverters.
- Plan for a reduction of power of 4 % per 10 K below an ambient temperature of 45 °C. Do not exceed a maximum ambient temperature of 80 °C.

Flat-type braking resistors

- Protection against contact (IP54)
- Internal thermal overload protection (non-replaceable fuse)
- Touch guard and mounting rail attachment available from SEW as accessories

Wire and grid resistors

- Perforated sheet cover (IP20) open to mounting surface
- The short-term load capacity of the wire and grid resistors is higher than in the flat-type braking resistors (→ MOVIDRIVE® *compact* system manual, section "Selecting the braking resistor")
- A temperature switch is integrated in the BW...-T braking resistor
- A thermal overcurrent relay is integrated in the BW...-P braking resistor

SEW-EURODRIVE recommends implementing additional protection against overload for the wire and grid resistors by using a bimetallic relay with trip characteristics of trip class 10 or 10A (in accordance with EN 60947-4-1). Set the trip current to the value I_F (→ following tables). Do not use electronic or electromagnetic fuses because these can be triggered even in case of short-term excess currents that are still within the tolerance range.

For braking resistors in the BW..-T / BW...-P series, you can connect the integrated temperature sensor using a 2-core, shielded cable as an alternative to a bimetallic relay. The BW...-T and BW...-P braking resistors can be connected from the front or the back (→ dimension drawing for BW... / BW...-T / BW...-P braking resistors). Use filler plugs for tapped holes that are not connected.

The resistor surfaces will get very hot under a load of P_N. Make sure that you select an installation site that will accommodate these high temperatures. Braking resistors are usually mounted on the control cabinet roof.

The performance data listed in the tables below shows the load capacity of the braking resistors according to their cyclic duration factor (cyclic duration factor = cdf of the braking resistor in % in relation to a cycle duration ≤ 120 s).

UL and cUL approval

Type BW... braking resistors are UL and cUL approved in conjunction with MOVIDRIVE® *compact* drive inverters. SEW-EURODRIVE can provide proof of approval on request. The BW...-T and BW...-P braking resistors have cRUus approval independent of the MOVIDRIVE® inverters.

Parallel connection

Two braking resistors with the same value must be connected in parallel for some inverter/resistor combinations. In this case, the trip current must be set on the bimetallic relay to twice the value of I_F entered in the table. For the BW...-T / BW...-P braking resistors, the temperature switch / overcurrent relay must be connected in series.

Assignment to AC 400/500 V units (...-5_3)

Braking resistor type BW...		**BW100-005**	**BW100-006**	**BW168**	**BW268**
Part number		826 269 1	821 701 7	820 604 X	820 715 1
Braking resistor type BW...-T			**BW100-006-T**	**BW168-T**	**BW268-T**
Part number			1 820 419 8	1 820 133 4	1 820 417 1
Cont. braking power (= 100 % cdf)		0.45 kW	0.6 kW	0.8 kW	1.2 kW
Load capacity	**50 % cdf**[1]	0.60 kW	1.1 kW	1.4 kW	2.2 kW
at	**25 % cdf**	0.83 kW	1.9 kW	2.6 kW	3.8 kW
	12 % cdf	1.11 kW	3.6 kW	4.8 kW	7.2 kW
	6 % cdf	2.00 kW	5.7 kW	7.6 kW	11 kW
		Observe the **regenerative power limit** of the inverter! (= 150 % of the recommended motor power → Technical Data)			
Resistance value	R_{BW}	100 Ω ±10 %		68 Ω ±10 %	
Trip current (of F16)	I_F	0.8 A_{RMS}	2.4 A_{RMS}	3.4 A_{RMS}	4.2 A_{RMS}
Design		Flat design	Wire resistor on ceramic core	Wire resistor on ceramic core	
Connections/ tightening torque		Cable	Ceramic terminals 2.5 mm^2 (AWG13) 0.5 Nm	Ceramic terminals 2.5 mm^2 (AWG13) 0.5 Nm	
Enclosure		IP54	IP20 (when installed)	IP20 (when installed)	
Ambient temperature	ϑ_U	–20 °C ... +40 °C			
Type of cooling		KS = self-cooling			
For MOVIDRIVE®		0015 ... 0022	0015 ... 0040	0015 ... 0040	0015 ... 0040

1) cdf = cyclic duration factor of the braking resistor based on a cycle duration $T_D \leq 120$ s.

Braking resistor type BW...		BW147	BW247	BW347	BW039-012		
Part number		820 713 5	820 714 3	820 798 4	821 689 4		
Braking resistor type BW...-T		**BW147-T**	**BW247-T**	**BW347-T**	**BW039-012-T**	**BW039-026-T**	**BW039-050-T**
Part number		1 820 134 2	1 820 084 2	1 820 135 0	1 820 136 9	1 820 415 5	1 820 137 7
Cont. braking power (= 100 % cdf) Load capacity at	50 % cdf[1] 25 % cdf 12 % cdf 6 % cdf	1.2 kW 2.2 kW 3.8 kW 7.2 kW 11 kW	2.0 kW 3.6 kW 6.4 kW 12 kW 19 kW	4.0 kW 7.2 kW 12.8 kW 20 kW[2] 20 kW[2]	1.2 kW 2.1 kW 3.8 kW 7.2 kW 11.4 kW	2.6 kW 4.7 kW 8.3 kW 15.6 kW 24.0 kW[2]	5.0 kW 8.5 kW 15.0 kW 24.0 kW[2] 24.0 kW[2]
		Observe the **regenerative power limit** of the inverter! (= 150 % of the recommended motor power → Technical Data)					
Resistance value	R_{BW}	47 Ω ±10 %			39 Ω ±10 %		
Trip current (of F16)	I_F	5 A_{RMS}	6.5 A_{RMS}	9.2 A_{RMS}	5.5 A_{RMS}	8.1 A_{RMS}	11.3 A_{RMS}
Design		Wire resistor on ceramic core					Grid resistor
Connections/ tightening torque		Ceramic terminals 2.5 mm^2 (AWG13) / 0.5 Nm BW347-T: Ceramic terminals 10 mm^2 (AWG8) / 1.6 Nm					M8 stud / 6 Nm
Enclosure		IP20 (when installed)					
Ambient temperature	ϑ_U	–20 °C ... +40 °C					
Type of cooling		KS = self-cooling					
For MOVIDRIVE®		0055/0075			0110		

1) cdf = cyclic duration factor of the braking resistor based on a cycle duration $T_D \leq 120$ s.

2) Physical power limit due to DC link voltage and resistance value.

Braking resistor type BW...		BW018-015			
Part number		821 684 3			
Braking resistor type BW..-T/-P		**BW018-015-P**	**BW018-035-T**	**BW018-075-T**	**BW915-T**
Part number		1 820 416 3	1 820 138 5	1 820 139 3	1 820 413 9
Cont. braking power (= 100 % cdf) Load capacity at	50 % cdf[1] 25 % cdf 12 % cdf 6 % cdf	1.5 kW 2.5 kW 4.5 kW 6.7 kW 11.4 kW	3.5 kW 5.9 kW 10.5 kW 15.7 kW 26.6 kW	7.5 kW 12.7 kW 22.5 kW 33.7 kW 52.2 kW[2]	16 kW 27.2 kW 48 kW 62.7 kW[2] 62.7 kW[2]
		Observe the **regenerative power limit** of the inverter! (= 150 % of the recommended motor power → Technical Data)			
Resistance value	R_{BW}	18 Ω ±10 %			15 Ω ±10 %
Trip current (of F16)	I_F	9.1 A_{RMS}	13.9 A_{RMS}	20.4 A_{RMS}	32.6 A_{RMS}
Design		Wire resistor on ceramic core	Steel-grid resistor		
Connections/ tightening torque		BW018-015: Ceramic terminals 2.5 mm^2 (AWG13) / 0.5 Nm BW018-015-P: Terminal 2.5 mm^2 (AWG13) / 1 Nm	M8 bolt / 6 Nm		
Enclosure		IP20 (when installed)			
Ambient temperature	ϑ_U	–20 °C ... +40 °C			
Type of cooling		KS = self-cooling			
For MOVIDRIVE®		0150/0220 and 2 × parallel for 0370/0450[3]			0220

1) cdf = cyclic duration factor of the braking resistor based on a cycle duration $T_D \leq 120$ s.

2) Physical power limit due to DC link voltage and resistance value.

3) When connected in parallel, the load capacity and trip current are doubled.

Braking resistor type BW...-		BW012-025				
Part number		821 680 0				
Braking resistor type BW..-T/-P		**BW012-025-P**	**BW012-050T**	**BW012-100-T**	**BW106-T**	**BW206-T**
Part number		1 820 414 7	1 820 140 7	1 820 141 5	1 820 083 4	1 820 412 0
Cont. braking power (= 100 % cdf) Load capacity 50 % cdf[1] at 25 % cdf 12 % cdf 6 % cdf		2.5 kW 4.2 kW 7.5 kW 11.2 kW 19.0 kW	5.0 kW 8.5 kW 15.0 kW 22.5 kW 38.0 kW	10 kW 17 kW 30 kW 45 kW 76 kW	13.5 kW 23 kW 40 kW 61 kW 102 kW	18 kW 30.6 kW 54 kW 81 kW 136.8 kW
		Observe the **regenerative power limit** of the inverter! (= 150 % of the recommended motor power → Technical Data)				
Resistance value	R_{BW}	12 Ω ±10 %			6 Ω ±10 %	
Trip current (of F16)	I_F	14.4 A_{RMS}	20.4 A_{RMS}	28.8 A_{RMS}	47.4 A_{RMS}	54.7 A_{RMS}
Design		Steel-grid resistor				
Connections/ tightening torque		Ceramic terminals 2.5 mm^2 (AWG13) / 0.5 Nm BW012-025-P: Terminals 4 mm^2 (AWG12) / 1 Nm			M8 bolt / 6 Nm	
Enclosure		IP20 (when installed)				
Ambient temperature	ϑ_U	–20 °C ... +40 °C				
Type of cooling		KS = self-cooling				
For MOVIDRIVE®		0300			0370...0750	

1) cdf = cyclic duration factor of the braking resistor based on a cycle duration $T_D \leq 120$ s.

Assignment to AC 230 V units (...-2_3)

Braking resistor type BW...		BW039-003	BW039-006	BW039-012		BW027-006	BW027-012		
Part number		821 687 8	821 688 6	821 689 4		822 422 6	822 423 4		
Braking resistor type BW...T/...P				BW039-012-T	BW039-026-T			BW018-015-P	BW018-035-T
Part number				1 820 136 9	1 820 415 5			1 820 416 3	1 820 138 5
Cont. braking power (= 100 % cdf)		0.3 kW	0.6 kW	1.2 kW	2.6 kW	0.6 kW	1.2 kW	1.5 kW	3.5 kW
Load capacity	50 % cdf[1]	0.5 kW	1.1 kW	2.1 kW	4.6 kW	1.1 kW	2.1 kW	2.5 kW	5.9 kW
at	25 % cdf	1.0 kW	1.9 kW	3.8 kW	6.0 kW[2]	1.9 kW	3.8 kW	4.5 kW	10.5 kW
	12 % cdf	1.8 kW	3.6 kW	6.0 kW[2]	6.0 kW[2]	3.6 kW	7.2 kW	6.7 kW	13.0 kW[2]
	6 % cdf	2.8 kW	5.7 kW	6.0 kW[2]	6.0 kW[2]	5.7 kW	8.7 kW[2]	11.4 kW	13.0 kW[2]
		Observe the **regenerative power limit** of the inverter! (= 150 % of the recommended motor power → Technical Data)							
Resistance value	R_{BW}	39 Ω ±10 %				27 Ω ±10 %		18 Ω ±10 %	
Trip current (of F16)	I_F	2.7 A_{RMS}	3.9 A_{RMS}	5.5 A_{RMS}	8.1 A_{RMS}	4.7 A_{RMS}	6.6 A_{RMS}	9.1 A_{RMS}	13.9 A_{RMS}
Design		Wire resistor						Steel-grid resistor	
Connections/ tightening torque		Ceramic terminals 2.5 mm² (AWG12) / 0.5 Nm							M8 stud / 6 Nm
Enclosure		IP20 (when installed)							
Ambient temperature	ϑ_U	–20 °C ... +40 °C							
Type of cooling		KS = self-cooling							
For MOVIDRIVE®		0015/0022				0015...0037		2 × parallel with 0110[3]	

1) cdf = cyclic duration factor of the braking resistor based on a cycle duration $T_D \leq 120$ s.

2) Physical power limit due to DC link voltage and resistance value.

3) When connected in parallel, the load capacity and trip current are doubled.

Braking resistor type BW...T		BW018-075-T	BW915-T	BW012-025-T	BW012-050-T	BW012-100-T	BW106-T	BW206-T
Part number		1 820 139 3	1 820 413 9	1 820 414 7	1 820 140 7	1 820141 5	1 820 083 4	1 820 4120
Cont. braking power (= 100 % cdf)		7.5 kW	15.6 kW[2]	2.5 kW	5.0 kW	10 kW	13.5 kW	18 kW
Load capacity	50 % cdf[1]	12.7 kW	15.6 kW[2]	4.2 kW	8.5 kW	17 kW	23 kW	30.6 kW
at	25 % cdf	13.0 kW[2]	15.6 kW[2]	7.5 kW	15.0 kW	19.6 kW[2]	39.2 kW[2]	39.2 kW[2]
	12 % cdf	13.0 kW[2]	15.6 kW[2]	11.2 kW	19.6 kW[2]	19.6 kW[2]	39.2 kW[2]	39.2 kW[2]
	6 % cdf	13.0 kW[2]	15.6 kW[2]	19.0 kW	19.6 kW[2]	19.6 kW[2]	39.2 kW[2]	39.2 kW[2]
		Observe the **regenerative power limit** of the inverter! (= 150 % of the recommended motor power → Technical Data)						
Resistance value	R_{BW}	18 Ω ±10 %	15 Ω ±10 %	12 Ω ±10 %			6 Ω ±10 %	
Trip current (of F16)	I_F	20.4 A_{RMS}	32.6 A_{RMS}	14.4 A_{RMS}	20.4 A_{RMS}	28.8 A_{RMS}	47.4 A_{RMS}	54.7 A_{RMS}
Design		Steel-grid resistor						
Connections/ tightening torque		M8 stud / 6 Nm						
Enclosure		IP20 (when installed)						
Ambient temperature	ϑ_U	–20 °C ... +40 °C						
Type of cooling		KS = self-cooling						
For MOVIDRIVE®		2 × parallel with 0110[3]		0055/0075			0150 and 2 × parallel with 0220/0300[3]	

1) cdf = cyclic duration factor of the braking resistor based on a cycle duration $T_D \leq 120$ s.

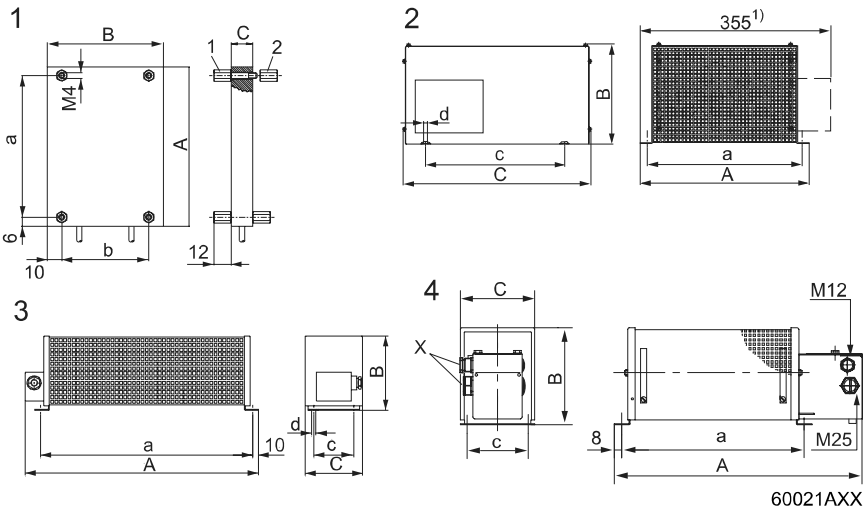
2) Physical power limit due to DC link voltage and resistance value.

3) When connected in parallel, the load capacity and trip current are doubled.

Technical data for braking resistors BW...-T / BW...-P

BW...-T / BW...-P	
Connection cross section for signal contact	1 x 2.5 mm²
Switching capability of the thermostat's signal contact	• DC 2 A / DC 24 V (DC11) • AC 2 A / AC 230V (AC11)
Switch contact (NC)	according to EN 61800-5-1

Dimension drawings for braking resistors BW... / BW...-T / BW...-P



BW... :
- 1 = Flat design
  The connecting lead is 500 mm long. The scope of delivery includes four M4 stud bolts each of type 1 and 2.
- 2 = Grid resistor
- 3 = Wire resistor
- 4 = Wire resistor with temperature switch (-T/-P)
  Cable entry (X) is possible from both sides.

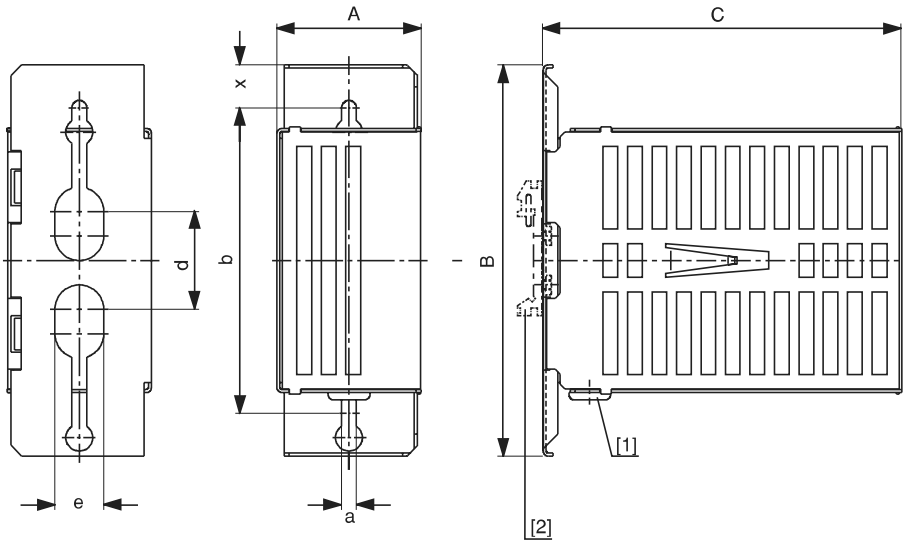
Type BW...	Mounting position	Main dimensions [mm]			Fastening parts [mm]			Cable gland	Weight [kg]
BW..-T/ BW...-P		A	B	C	a	b/c	d		
BW106-T	2	795	270	490	770	380	10.5	-	32
BW206-T	2	995	270	490	970	380	10.5	-	40
BW012-025	2	295	260	490	270	380	10.5	-	8.0
BW012-025-P[1)]	2	295	260	490	270	380	10.5	M12 + M25	8.0
BW012-050-T	2	395	260	490	370	380	10.5	-	12
BW012-100-T	2	595	270	490	570	380	10.5	-	21
BW915-T	2	795	270	490	770	380	10.5	-	30
BW018-015	3	620	120	92	544	64	6.5	PG11	4.0
BW018-015-P	4	649	120	185	530	150	6.5	M12 + M25	5.8
BW018-035-T	2	295	270	490	270	380	10.5	-	9.0
BW018-075-T	2	595	270	490	570	380	10.5	-	18.5
BW027-006	3	486	120	92	430	64	6.5	PG11	2.2
BW027-012	3	486	120	185	426	150	6.5	PG11	4.3
BW039-003	3	286	120	92	230	64	6.5	PG11	1.5
BW039-006	3	486	120	92	430	64	6.5	PG11	2.2
BW039-012	3	486	120	185	426	150	6.5	PG11	4.3
BW039-012-T	4	549	120	185	426	150	6.5	M12 + M25	4.9
BW039-026-T	4	649	120	275	530	240	6.5	M12 + M25	7.5
BW039-050-T	2	395	260	490	370	380	10.5	-	12
BW147	3	465	120	185	426	150	6.5	PG13.5	4.3
BW147-T	4	549	120	185	426	150	6.5	M12 + M25	4.9
BW247	3	665	120	185	626	150	6.5	PG13.5	6.1
BW247-T	4	749	120	185	626	150	6.5	M12 + M25	9.2
BW347	3	670	145	340	630	300	6.5	PG13.5	13.2
BW347-T	4	749	210	185	630	150	6.5	M12 + M25	12.4
BW168	3	365	120	185	326	150	6.5	PG13.5	3.5
BW168-T	4	449	120	185	326	150	6.5	M12 + M25	3.6
BW268	3	465	120	185	426	150	6.5	PG13.5	4.3
BW268-T	4	549	120	185	426	150	6.5	M12 + M25	4.9
BW100-005	1	216	80	15	204	60	–	-	0.6
BW100-006	4	486	120	92	430	64	6.5	PG11	2.2
BW100-006-T	4	549	120	92	430	80	6.5	M12 + M25	3.0

BS... touch guard

Touch guards are available for braking resistors in flat design.

Touch guard	BS003	BS005
Part number	813 151 1	813 152 X
for braking resistor	BW027-003 BW072-003	BW027-005 BW072-005 BW100-005

Dimension drawing for touch guard BS...



05247AXX

Figure 18: Dimension drawing for BS touch guard with grommet [1] and mounting rail attachment [2]

Type	Main dimensions [mm]			Mounting dimensions [mm]					Mass [kg]
	A	B	C	b	d	e	a	x	
BS-003	60	160	146	125	40	20	6	17.5	0.35
BS-005	60	160	252	125	40	20	6	17.5	0.5

Mounting rail installation

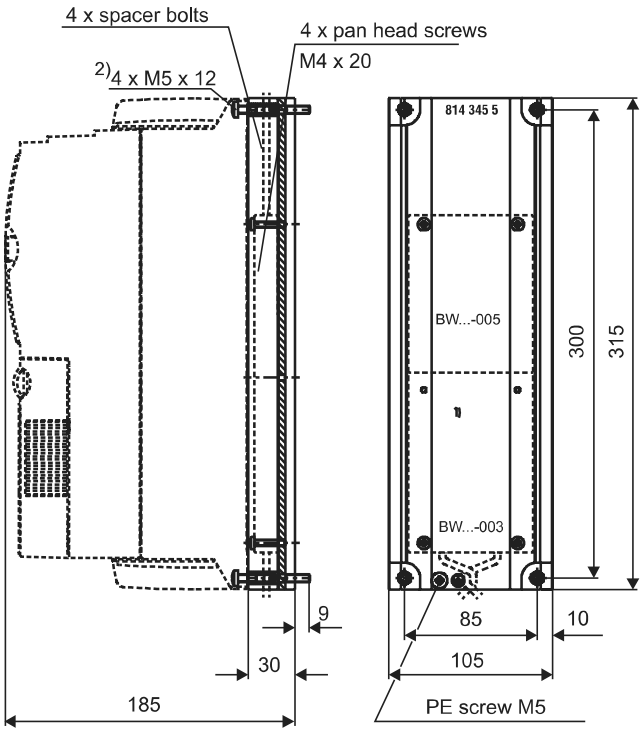
A mounting rail attachment HS001, part number 822 194 4, is available from SEW-EURODRIVE as an accessory for mounting the touch guard on a mounting rail.

DKB11A heat sink for brake resistors in flatpack design

Part number 814 345 5

Description The DKB11A heat sink provides a space-saving means of mounting braking resistors in flatpack design (BW072-005, BW100-005) under MOVIDRIVE® size 1 (400/500 V units: 0015...0040; 230 V units: 0015...0037). The resistor is inserted into the heat sink and attached using the screws supplied (M4 × 20).

Dimension drawing



60063AEN

Figure 19: Dimension drawing for DKB11A heat sink, all dimensions in mm

1) Mounting surface for the braking resistor
2) Retaining screws are not included in the delivery scope

2.15 Line choke type ND..

- To increase overvoltage protection.
- To limit the charging current when several inverters are connected together in parallel on the input end with shared mains contactors (rated current of line choke = total of inverter currents).
- ND.. line filters have cRUus approval independent of the MOVIDRIVE® drive inverters.

Line choke type		ND020-013	ND030-023[1]	ND045-013	ND085-013	ND150-013	ND200-0033
Part number		826 012 5	827 151 8	826 013 3	826 014 1	825 548 2	826 579 8
Rated voltage	V_N	3 × AC 380 V -10 % ... 3 × AC 500 V +10 %, 50/60 Hz					
Rated current[2]	I_N	AC 20 A	AC 30 A	AC 45 A	AC 85 A	AC 150 A	AC 200 A
Power loss at I_N	P_V	10 W	30 W	15 W	25 W	65 W	100 W
Inductance	L_N	0.1 mH	0.2 mH	0.1 mH	0.1 mH	0.1 mH	0.03 mH
Ambient temperature ϑ_U		–25 °C ... +45 °C					
Enclosure		IP 00 (EN 60529)					
Connections		Terminal strips 4 mm² (AWG12)	Terminal strips 2.5 mm²... 10 mm² (AWG13 ... AWG8)	Terminal blocks 10 mm² (AWG8)	Terminal blocks 35 mm² (AWG2)	M10 stud PI: M8 stud	
Tightening torque		0.6 ... 0.8 Nm	max. 2.5 Nm		3.2 ... 3.7 Nm	M10 stud: 10 Nm PI: 6 Nm	
Assignment to AC 400/500 V units (...-5_3)							
Rated operation (100 %)		0015...0075	0110...0220		0300...0450 and MDR60A0370	0550/0750	MDR60A0750
Increased power (125 %)		0015...0075	0110/0150		0220...0370	0450...0750	
Assignment to AC 230 V units (...-2_3)							
Rated operation (100 %)		0015...0055	-	0075/0110	0150/0220	0300	-
Increased power (125 %)		0015...0037	-	0055/0075	0110/0150	0220/0300	-

1) You can implement ND030-023 for DC link connection without a regenerative power supply unit using connection type A or B (→ 'MOVIDRIVE® MDR60A Regenerative Power Supply Unit' system manual)

2) If more than one MOVIDRIVE® unit is connected to a line choke, the **total value of the rated currents** of the connected units **must not exceed the rated current of the line choke**.

Dimension drawings for ND...

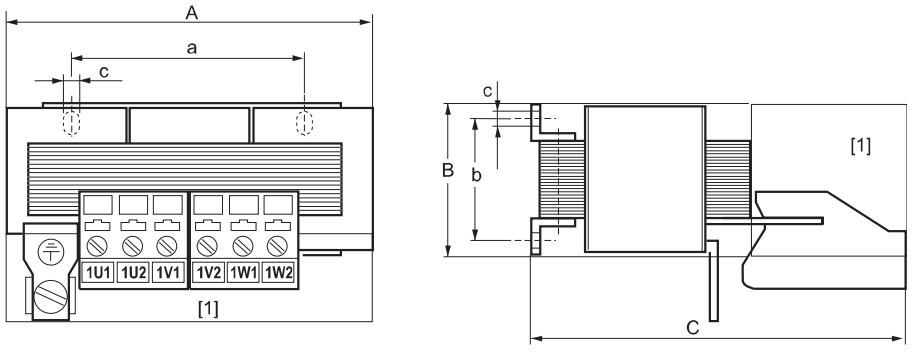


Figure 20: Dimension drawing for line chokes ND020.. / ND030.. / ND045.. / ND085..

(1) Space for installation terminals

Input: 1U1, 1V1, 1W1

Output: 1U2, 1V2, 1W2

Any mounting position

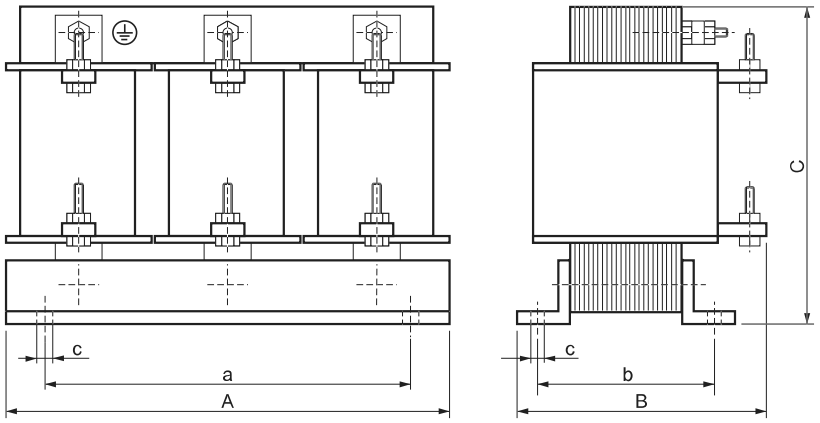


Figure 21: Dimension drawing for line chokes ND150.. / ND200..

All dimensions in mm:

Line choke type	Main dimensions			Mounting dimensions		Hole dimension	Weight
	A	B	C	a	b	c	kg
ND020-013	85	60	120	50	31-42	5-10	0.5
ND030-023 **ND045-013**	125	95	170	84	55-75	6	2.5
ND085-013	185	115	235	136	56-88	7	8
ND150-013	255	140	230	170	77	8	17
ND200-0033	250	160	230	180	98	8	15

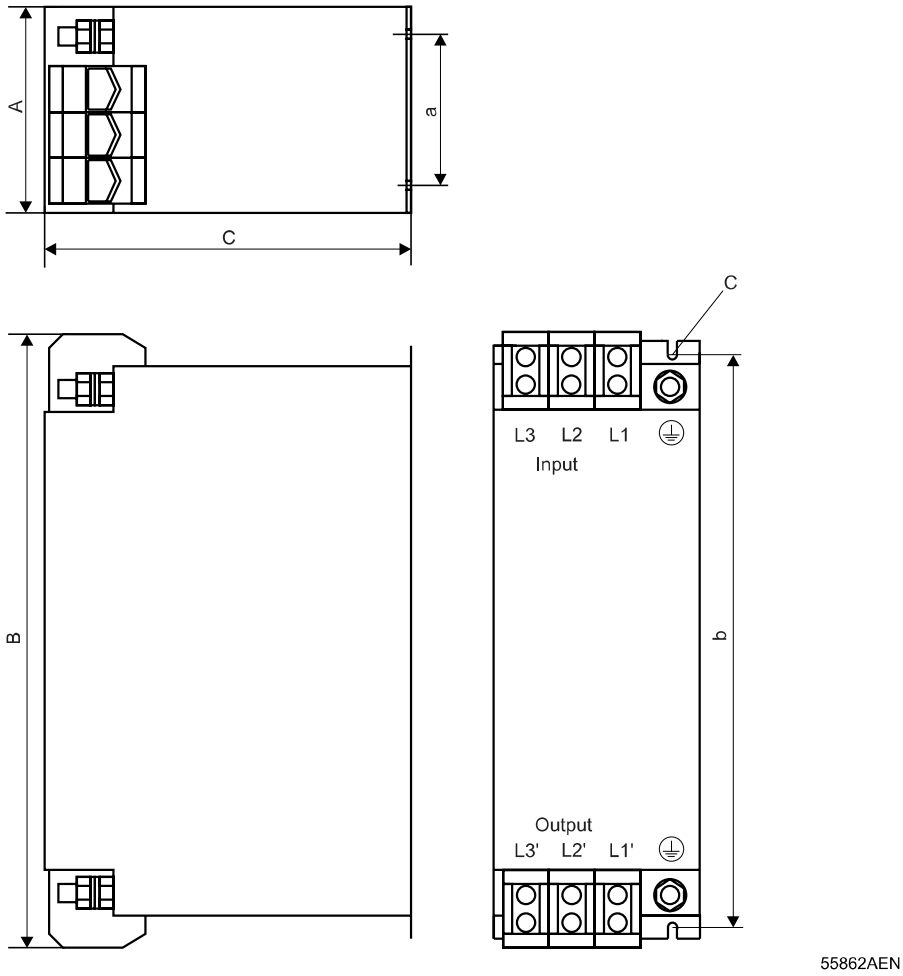
2.16 Line filter NF...-...

- To suppress interference emission on the line side of inverters.
- Do not switch between the NF... line filter and MOVIDRIVE®.
- NF.. line filters have cRUus approval independent of the MOVIDRIVE® drive inverters.

Line filter type		NF009-503	NF014-503	NF018-503	NF035-503	NF048-503
Part number		827 412 6	827,116 X	827 413 4	827 128 3	827 117 8
Rated voltage	V_N	3 × AC 380 V –10 % ... AC 500 V +10 %, 50/60 Hz				
Rated current	I_N	AC 9 A	AC 14 A	AC 18 A	AC 35 A	AC 48 A
Power loss at I_N	P_V	6 W	9 W	12 W	15 W	22 W
Earth-leakage current at V_N		< 25 mA	< 25 mA	< 25 mA	< 25 mA	< 40 mA
Ambient temperature	ϑ_U	–25 °C ... +40 °C				
Degree of protection		IP20 (EN 60529)				
Connections L1-L3/L1'-L3' PE Tightening torque		4 mm² (AWG 10) M5 stud 0.8 Nm			10 mm² (AWG 8) M5/M6 stud 1.8 Nm	
Assignment to AC 400/500 V units (...-5_3)						
Rated operation (100 %)		0015...0040	0055/0075	-	0110/0150	0220
Increased power (125 %)		0015...0030	0040/0055	0075	0110	0150
Assignment to AC 230 V units (...-2_3)						
Rated operation (100 %)		0015/0022	0037	-	0055/0075	0110
Increased power (125 %)		0015	0022	0037	0055/0075	-

Line filter type		NF063-503	NF085-503	NF115-503	NF150-503
Part number		827 414 2	827 415 0	827 416 9	827 417 7
Rated voltage	V_N	3 × AC 380 V –10 % ... AC 500 V +10 %, 50/60 Hz			
Rated current	I_N	AC 63 A	AC 85 A	AC 115 A	AC 150 A
Power loss at I_N	P_V	30 W	35 W	60 W	90 W
Earth-leakage current at V_N		< 30 mA	< 30 mA	< 30 mA	< 30 mA
Ambient temperature	ϑ_U	–25 °C ... +40 °C			
Degree of protection		IP20 (EN 60529)			
Connections L1-L3/L1'-L3' PE Tightening torque		16 mm² (AWG 6) M6 3 Nm	35 mm² (AWG 2) M8 3.7 Nm	50 mm² (AWG1/0) M10 3.7 Nm	95 mm² (AWG4/0) M10 3.7 Nm
Assignment to AC 400/500 V units (...-5_3)					
Rated operation (100 %)		0300	0370/0450	0550	0750
Increased power (125 %)		0220	0300/0370	0450	0550/0750
Assignment to AC 230 V units (...-2_3)					
Rated operation (100 %)		0150	0220	0300	-
Increased power (125 %)		0110/0150	-	0220/0300	-

Dimension drawing for NF...



Any mounting position

All dimensions in mm:

Line filter type	Main dimensions			Mounting dimensions		Hole dimension	PE connection	Weight
	A	B	C	a	b	c		kg
NF009-503	55	195	80	20	180	5.5	M5	0.8
NF014-503		225			210			0.9
NF018-503	50	255			240			1.1
NF035-503	60	275	100	30	255			1.7
NF048-503		315			295		M6	2.1
NF063-503	90	260		60	235	6.5		2.4
NF085-503		320	140		255		M8	3.5
NF115-503	100	330	155	65			M10	4.8
NF150-503								5.6

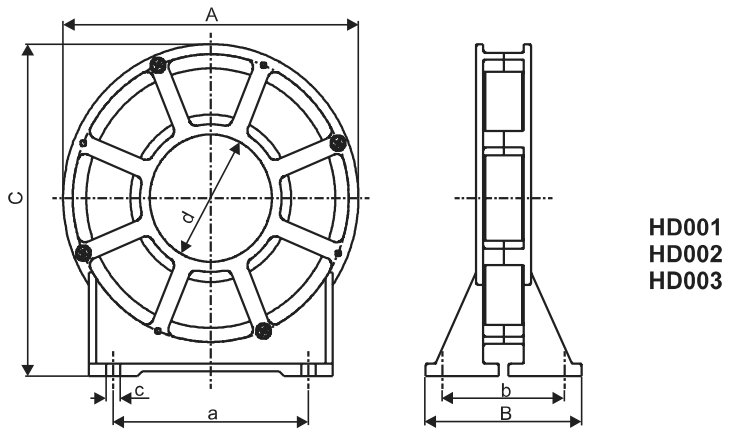
2.17 Output choke HD...

- For suppression of interference from the unshielded motor cable. We recommend routing the motor cable through the output choke with 5 loops. You can use less than 5 loops if the cable has a large diameter. Instead, connect 2 or 3 output chokes in series. If you use 4 loops, connect two output chokes in series, and if you use 3 loops, connect three output chokes.
- The output chokes are assigned to the motor cables using the cable cross sections. Consequently, there is no separate assignment table for AC 230 V units.

Output choke type	HD001[1)]	HD002[1)]	HD003[1)]
Part number	813 325 5	813 557 6	813 558 4
Max. power loss P_{Vmax}	15 W	8 W	30 W
For cable cross sections/connections/ tightening torque	1.5...16 mm^2 (AWG 16...6)	≤ 1.5 mm^2 (AWG 16)	≥ 16 mm^2 (AWG 6)

1) The HD... output choke is not a UL/cUL-relevant component.

Dimension drawing for HD...



HD001
HD002
HD003

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All dimensions in mm:

Output choke type	Main dimensions			Mounting dimensions		Inside ∅	Hole dimension	Weight
	A	B	C	a	b	d	c	kg
HD001	121	64	131	80	50	50	5.8	0.5
HD002	66	49	73	44	38	23		0.2
HD003	170	64	185	120	50	88	7.0	1.1

2.18 Output filter HF...

HF... output filters are sine filters used to smooth output voltage from inverters. HF... output filters (with the exception of HF450-503) are approved to UL/cUL in combination with MOVIDRIVE® drive inverters. HF... output filters are used in the following cases:

- In group drives (several motor cables in parallel); the discharge currents in the motor cables are suppressed.
- To protect the motor winding insulation of non-SEW motors which are not suitable for inverters
- For protection against overvoltage peaks in long motor cables (> 100 m).

NOTES

- Output filters can only be operated in V/f and VFC operating modes. Do not use output filters in CFC / SERVO operating modes.
- Do not use output filters in hoist applications.
- During project planning of the drive, take the voltage drop in the output filter into account and the reduced motor torque that results. This applies particularly to AC 230 V units with output filters.

Output filter type		HF015-503[1]	HF022-503[1]	HF030-503[1]	HF040-503[1]	HF055-503[1]
Part number		826 030 3	826 031 1	826 032 X	826 311 6	826 312 4
Rated voltage	V_N	3 × AC 380 V –10 % ... 3 × AC 500 V +10 %, 50/60 Hz[2]				
Earth-leakage current at V_N	ΔI	0 mA				
Power loss at I_N	P_V	35 W	55 W	65 W	90 W	115 W
Interference emission via unshielded motor cable		According to class B limit to EN 55011 and EN 55014 complies with EN 50081, parts 1 and 2				
Ambient temperature	ϑ_U	0 °C ... +45 °C (reduction: 3 % I_N per K to max. 60 °C)				
Enclosure (EN 60529)		IP20				
Connections/ tightening torque		M4 terminal studs 1.6 Nm ± 20 %				
Weight		4.4 kg			10.8 kg	
Assignment to AC 400/500 V units (...-5_3)						
Voltage drop at I_N	ΔV	< 6.5 % (7.5 %) at AC 400 V / < 4 % (5 %) at AC 500 V and f_{Amax} = 50 Hz (60 Hz)				
Rated through current[3] $I_{N\ 400\ V}$ (V_{mains} = 3 × AC 400 V)		AC 4 A	AC 6 A	AC 8 A	AC 10 A	AC 12 A
Rated through current[3] $I_{N\ 500\ V}$ (V_{mains} = 3 × AC 500 V)		AC 3 A	AC 5 A	AC 6 A	AC 8 A	AC 10 A
Rated operation (100 %)[3]		0015	0022	0030	0040	0055
Increased power (125 %)[3]		-	0015	0022	0030	0040
Assignment to AC 230 V units (...-2_3)						
Voltage drop at I_N	ΔV	< 18.5 % (19 %) at AC 230 V with f_{Amax} = 50 Hz (60 Hz)				
Rated through current[3] $I_{N\ 230\ V}$ (V_{mains} = 3 × AC 230 V)		AC 6.5 A	AC 10.8 A	AC 13 A	AC 17.3 A	AC 22 A
Rated operation (100 %)[3]		-	0015/0022	-	0037	0055
Increased power (125 %)[3]		-	0015/0022	-	-	0037

1) UL/cUL approval in combination with MOVIDRIVE® drive inverters. SEW-EURODRIVE will provide certification on request.

2) A reduction of 6 % I_N per 10 Hz applies above f_{AN} = 60 Hz for the rated through current I_N.

3) Only applies for operation without $V_{DC\ link}$ connection. For operation with $V_{DC\ link}$ connection, observe the project planning instructions in the MOVIDRIVE® *compact* system manual, section "Project Planning/Connecting the optional power components."

Output filter type		HF075-503[1]	HF023-403[1]	HF033-403[1]	HF047-403[1]	HF450-503
Part number		826 313 2	825 784 1	825 785 X	825 786 8	826 948 3
Rated voltage	V_N	3 × AC 380 V –10 % ... 3 × AC 500 V +10 %, 50/60 Hz[2]				
Earth-leakage current at V_N	ΔI	0 mA				
Power loss at I_N	P_V	135 W	90 W	120 W	200 W	400 W
Interference emission via unshielded motor cable		According to class B limit to EN 55011 and EN 55014 complies with EN 50081, parts 1 and 2				
Ambient temperature	ϑ_U	0 °C ... +45 °C (reduction: 3 % I_N per K to max. 60 °C)				
Enclosure (EN 60529)		IP 20	IP20			IP 10
Connections/ tightening torque		M4 terminal studs 1.6 Nm ± 20 %	35 mm² (AWG 2) 3.2 Nm			
Weight		10.8 kg	15.9 kg	16.5 kg	23 kg	32 kg
Assignment to AC 400/500 V units (...-5_3)						
Voltage drop at I_N	ΔV	< 6.5 % (7.5 %) at AC 400 V / < 4 % (5 %) at AC 500 V and f_{Amax} = 50 Hz (60 Hz)				
Rated through current[3] (at V_{mains} = 3 × AC 400 V)	$I_{N\ 400\ V}$	AC 16 A	AC 23 A	AC 33 A	AC 47 A	AC 90 A
Rated through current[3] (at V_{mains} = 3 × AC 500 V)	$I_{N\ 500\ V}$	AC 13 A	AC 19 A	AC 26 A	AC 38 A	AC 72 A
Rated operation (100 %) [3]		0075	0110	0150/0300[4]	0220	0370/0450/ 0550[4]/0750[4]
Increased power (125 %) [3]		0055	0075	0110/0220[4]	0150	0300/0370/0450/ 0550[4]/0750[4]
Assignment to AC 230 V units (...-2_3)						
Voltage drop at I_N	ΔV	< 18.5 % (19 %) at AC 230 V with f_{Amax} = 50 Hz (60 Hz)				
Rated through current[3] (at V_{mains} = 3 × AC 230 V)	$I_{N\ 230\ V}$	AC 29 A	AC 42 A	AC 56.5 A	AC 82.6 A	AC 156 A
Rated operation (100 %) [3]		0075	0110	0150/0300[4]	0220	0300
Increased power (125 %) [3]		0055	0075	0110/0220[4]	0150	0220/0300

1) UL/cUL approval in combination with MOVIDRIVE® drive inverters. SEW-EURODRIVE will provide certification on request.

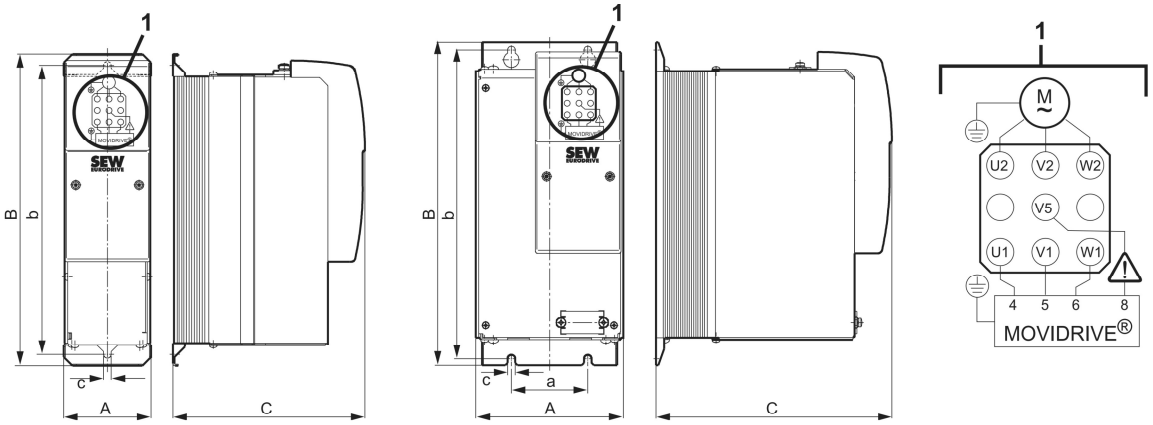
2) A reduction of 6 % I_N per 10 Hz applies above f_{AN} = 60 Hz for the rated through current I_N.

3) Only applies for operation without $V_{DC\ link}$ connection. For operation with $V_{DC\ link}$ connection, observe the project planning instructions in the MOVIDRIVE® *compact* system manual, section "Project Planning/Connecting the optional power components."

4) Connect **two HF...-... output filters in parallel** for operation with these MOVIDRIVE® units.

Dimension drawings for output filter HF...-503, all dimensions in mm

HF008/015/022/030-503 HF040/055/075-503



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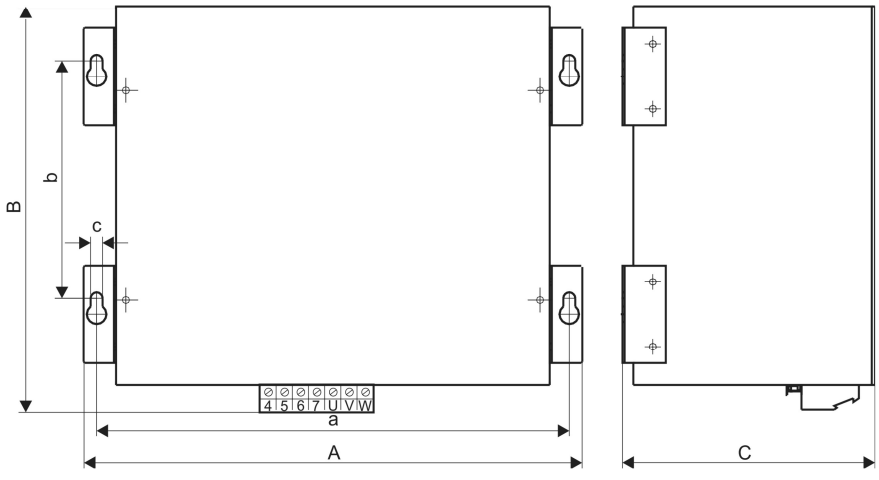
Figure 22: Dimension drawings for output filters HF008...075-503

Only the mounting position shown in the dimension drawing is permitted.

Output filter type	Main dimensions			Mounting dimensions		Hole dimension	Ventilation clearances[1]	
	A	B	C	a	b	c	Above	Below
HF008/015/022/030-503	80	286	176	-	265	7	100	100
HF040/055/075-503	135	296	216	70	283			

1) There is no need for clearance at the sides. You can line up the units next to one another.

HF450-503



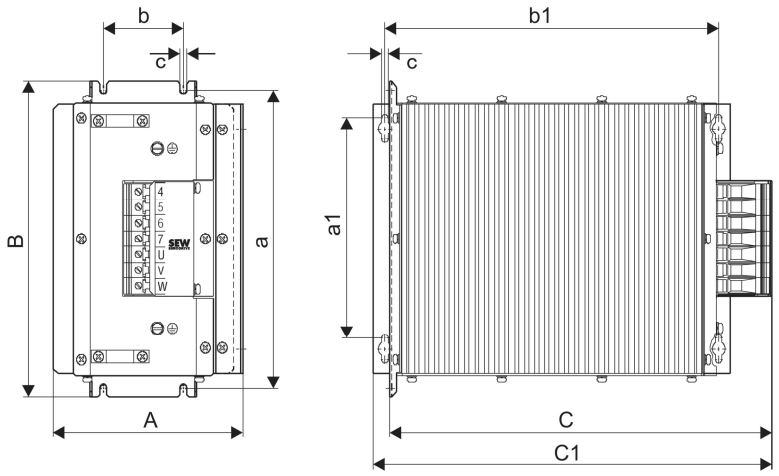
58417AXX

Figure 23: Dimension drawing for output filter HF450-503

Only the mounting position shown in the dimension diagram is permitted

Output filter type	Main dimensions			Mounting dimensions		Hole dimension	Ventilation clearances	
	A	B	C	a	b	c	Above	Below
HF450-503	465	385	240	436	220	8.5	100	100

Dimension drawing for HF...-403 output filter, dimensions in mm



58996AXX

Figure 24: Dimension drawing for HF...-403 output filter

Type	Main dimensions			Mounting dimensions				Hole dimension	Ventilation clearances		
				Standard mounting position		Horizontal mounting position					
	A	B	C/C1	a	b	a1	a2	c	Side	Above	Below
HF023-403	145	284	365/390	268	60	210	334	6.5	30 each	150	150
HF033-403											
HF047-403	190	300	385/400	284	80						

2.19 Prefabricated cables

Overview

SEW-EURODRIVE offers cable sets and prefabricated cables for straightforward and fault-free connection of various system components to MOVIDRIVE®. The cables are prefabricated in 1 m steps to the required length. It is necessary to differentiate between whether the cables are intended for fixed routing or for cable carrier applications.

1. Cable sets for DC link connection MDR → MCF/MCV/MCS/MCH
2. Motor cables and extension cables for connecting CM motors to MCS and MCH
3. Motor cables for connecting DS motors to MCS
4. VR forced cooling fan cable and extension cable
5. Connection to X14/X15 of the MCV / MCS / MCH basic unit: Encoder cables and extension cables (Hiperface, incremental encoder), resolver cables and extension cables in connector and terminal box design for motors for connecting the motor encoder to encoder input X15 of the MCV basic unit or to "X2: Encoder" of the 5 V encoder supply type DWI11A.

1. Cable sets for DC link connection MDR → MCF/MCV/MCS/MCH

Description

SEW-EURODRIVE strongly recommends using the cable sets listed in the table below. These cable sets offer the appropriate dielectric strength and are also color-coded. Color coding is necessary because cross-polarity and ground faults could cause irreparable damage to the connected equipment.

The length of the cables restricts the DC link connection to the permitted length of 5 m. They can also be cut to length by the customer for connecting several units. The lugs for connection to the regenerative power supply unit and an inverter are supplied with the cable set. Use commercially available cable lugs to connect other inverters. In this case, connect inverters in star configuration to the regenerative power supply unit. Use a busbar subdistributor if the DC link terminals of the regenerative power supply unit are not sufficient.

Installation type

Only fixed routing is possible.

Cable set type	DCP12A	DCP13A	DCP15A
Part number	814 567 9	814 250 5	814 251 3
For connecting MOVIDRIVE®	0015...0110	0150...0370	0450...0750

2. Motor cables for connecting CM motors to MCS and MCH and extension cables

Motor cables The cables are equipped with a connector for motor connection and conductor end sleeves for inverter connection.

Number of cores and line cross section	Part number	Installation type	For motor
4×1.5 mm²	199 179 5	Fixed installation	CM..SM51
4×1.5 mm² + 3×1.0 mm²	199 189 2		CM..BR SB51
4×2.5 mm²	199 181 7		CM..SM52
4×2.5 mm² + 3×1.0 mm²	199 191 4		CM..BR SB52
4×4 mm²	199 183 3		CM..SM54
4×4 mm² + 3×1.0 mm²	199 193 0		CM..BR SB54
4×6 mm²	199 185 X		CM..SM56
4×6 mm² + 3×1.5 mm²	199 195 7		CM..BR SB56
4×10 mm²	199 187 6		CM..SM59
4×10 mm² + 3×1.5 mm²	199 197 3		CM..BR SB59

Number of cores and line cross section	Part number	Installation type	For motor
4×1.5 mm²	1 333 114 0	Cable carrier installation	CM..SM51
4×1.5 mm² + 3×1.0 mm²	1 333 116 7		CM..BR SB51
4×2.5 mm²	1 333 115 9		CM..SM52
4×2.5 mm² + 3×1.0 mm²	1 333 117 5		CM..BR SB52
4×4 mm²	199 184 1		CM..SM54
4×4 mm² + 3×1.0 mm²	199 194 9		CM..BR SB54
4×6 mm²	199 186 8		CM..SM56
4×6 mm² + 3×1.5 mm²	199 196 5		CM..BR SB56
4×10 mm²	199 188 4		CM..SM59
4×10 mm² + 3×1.5 mm²	199 198 1		CM..BR SB59

Extension cables The cables are equipped with a connector and adapter for extending the CM motor cable.

Number of cores and line cross section	Part number	Installation type	For motor
4×1.5 mm²	199 549 9	Fixed installation	CM..SM51
4×1.5 mm² + 3×1.0 mm²	199 199 X		CM..BR SB51
4×2.5 mm²	199 551 0		CM..SM52
4×2.5 mm² + 3×1.0 mm²	199 201 5		CM..BR SB52
4×4 mm²	199 553 7		CM..SM54
4×4 mm² + 3×1.0 mm²	199 203 1		CM..BR SB54
4×6 mm²	199 555 3		CM..SM56
4×6 mm² + 3×1.5 mm²	199 205 8		CM..BR SB56
4×10 mm²	199 557 X		CM..SM59
4×10 mm² + 3×1.5 mm²	199 207 4		CM..BR SB59

Number of cores and line cross section	Part number	Installation type	For motor
4×1.5 mm²	1 333 118 3	Cable carrier installation	CM..SM51
4×1.5 mm² + 3×1.0 mm²	1 333 120 5		CM..BR SB51
4×2.5 mm²	1 333 119 1		CM..SM52
4×2.5 mm² + 3×1.0 mm²	1 333 121 3		CM..BR SB52
4×4 mm²	199 554 5		CM..SM54
4×4 mm² + 3×1.0 mm²	199 204 X		CM..BR SB54
4×6 mm²	199 556 1		CM..SM56
4×6 mm² + 3×1.5 mm²	199 206 6		CM..BR SB56
4×10 mm²	199 558 8		CM..SM59
4×10 mm² + 3×1.5 mm²	199 208 2		CM..BR SB59

3. Motor cables for connecting DS motors to MCS

Description The cables are equipped with a connector for motor connection and conductor end sleeves for inverter connection.

Number of cores and line cross section	Part number	Installation type	For motor
4×1.5 mm²	590 454 4	Fixed installation	DS56 / SM11
4×1.5 mm² + 2×1 mm²	1 332 485 3		DS56..B / SB11
4×2.5 mm²	590 455 2		DS56 / SM12
4×2.5 mm² + 2×1 mm²	1 333 213 9		DS56..B / SB12
4×4 mm²	590 456 0		DS56 / SM14
4×4 mm² + 2×1 mm²	1 333 214 7		DS56..B / SB14

Number of cores and line cross section	Part number	Installation type	For motor
4×1.5 mm²	590 624 5	Cable carrier installation	DS56 / SM11
4×1.5 mm² + 2×1 mm²	1 333 122 1		DS56..B / SB11
4×2.5 mm²	590 625 3		DS56 / SM12
4×2.5 mm² + 2×1 mm²	1 333 215 5		DS56..B / SB12
4×4 mm²	590 480 3		DS56 / SM14
4×4 mm² + 2×1 mm²	1 333 216 3		DS56..B / SB14

4. VR forced cooling fan cables and extension cables

VR forced cooling fan cables:

Number of cores and line cross section	Part number	Installation type
3×1 mm²	198 634 1	Fixed installation
3×1 mm²	199 560 X	Cable carrier installation

Extension cables for the VR forced cooling fan cable:

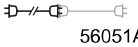
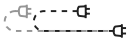
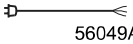
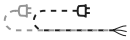
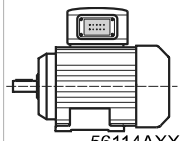
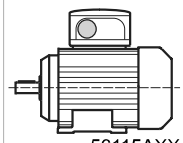
Number of cores and line cross section	Part number	Installation type
3×1 mm²	199 561 8	Fixed installation
3×1 mm²	199 562 6	Cable carrier installation

5. Prefabricated cables for connection to X14/X15 on MCV / MCS / MCH basic units

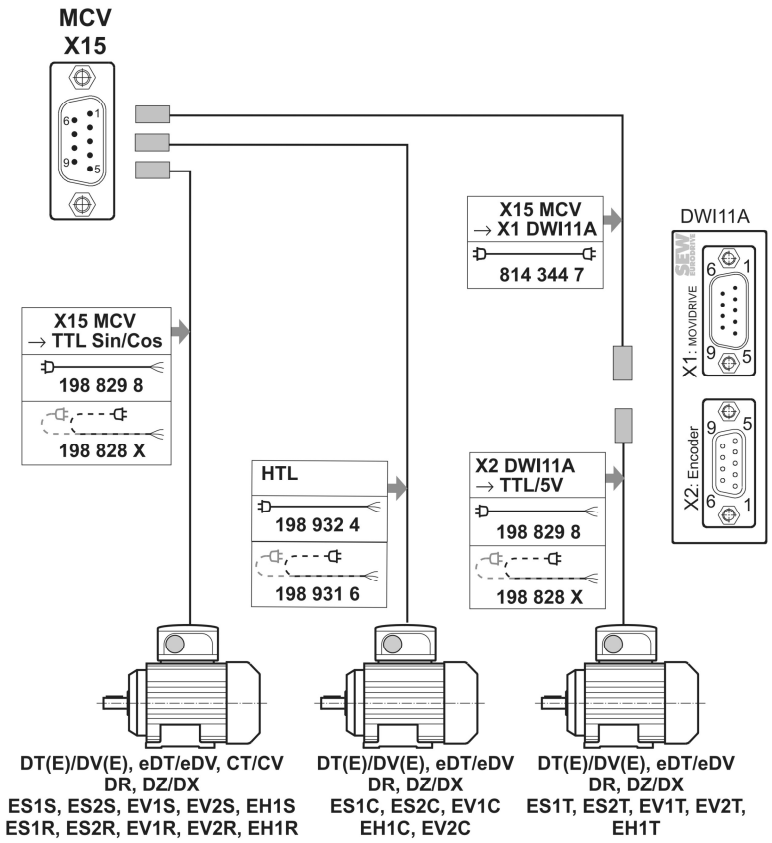
The overviews on the following pages show all the connection options for X14/X15 on MCV / MCS / MCH basic units.

Meaning of the symbols

The connection cables are assigned a part number and a symbol. The symbols have the following meaning:

Symbol	Meaning
 56047AXX	Connection cable connector → connector for fixed installation
 56051AXX	Extension connection cable connector → connector for fixed installation
 56048AXX	Connection cable connector → connector for cable carrier installation
 56052AXX	Extension connection cable connector → connector for cable carrier installation
 56049AXX	Connection cable connector → terminal box for fixed installation
 56050AXX	Connection cable connector → terminal box for cable carrier installation
 56112AXX	Encoder connection via plug connector
 56113AXX	Encoder connection via encoder terminal strip
 56114AXX	Connection via plug connector on the motor side
 56115AXX	Connection via terminal box on the motor side

Connection options for X15 on the MCV basic unit

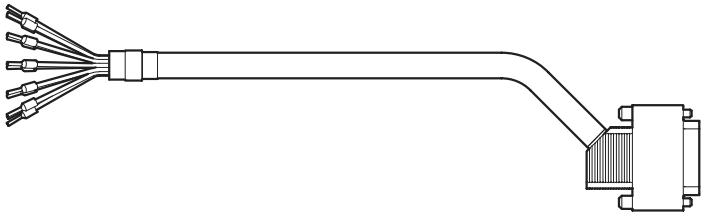


60069AXX

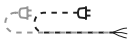
NOTE

For individual wiring diagrams, refer to the section "Installation" in the MOVIDRIVE® *compact* operating instructions.

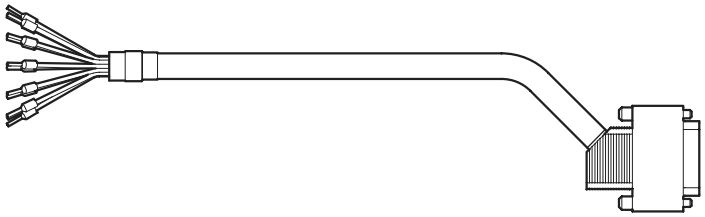
- Cable to connect sin/cos encoders ES1S, ES2S, EV1S, EV2S, EH1S, ES1R, ES2R, EV1R, EV2R, EH1R with terminal box connection on the motor side to CT, CV, DT(E), DV(E), eDT, eDV, DR, DZ and DX motors.



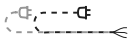
56132AXX

Type	Installation	Part number
MCV X15 → DT(E)/DV(E)/eDT/eDV/CT/CV/DR/DZ/DX motors with sin/cos encoders ES1S, ES2S, EV1S, EV2S, EH1S, ES1R, ES2R, EV1R, EV2R, EH1R	 56049AXX	198 829 8
	 56050AXX	198 828 X

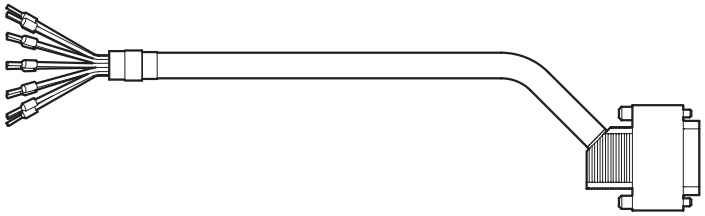
- Cable to connect single-ended HTL encoders ES1C, ES2C, EV1C, EV2C, EH1C with terminal box connection on the motor side to DT(E), DV(E), eDT, eDV, DR, DZ and DX motors.



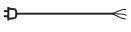
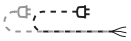
56132AXX

Type	Installation	Part number
HTL encoders ES1C, ES2C, EV1C, EV2C, EH1C → DT(E)/DV(E)/eDT/eDV/DR/DZ/DX motors	56049AXX	198 932 4
	 56050AXX	198 931 6

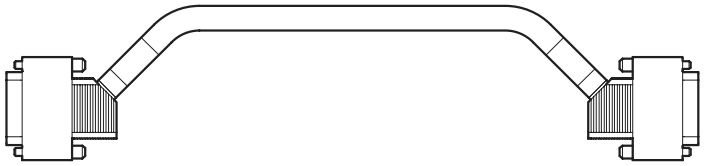
- Cable to connect DC 5 V TTL sensors ES1T, ES2T, EV1T, EV2T, EH1T with terminal box connection on the motor side (DT(E), DV(E), eDT, eDV, DR, DZ or DX motors) to DC 5 V encoder power supply type DWI11A.



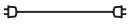
56132AXX

Type	Installation	Part number
DC 5 V TTL sensors ES1T, ES2T, EV1T, EV2T, EH1T→ DWI11A X2	 56049AXX	198 829 8
	 56050AXX	198 828 X

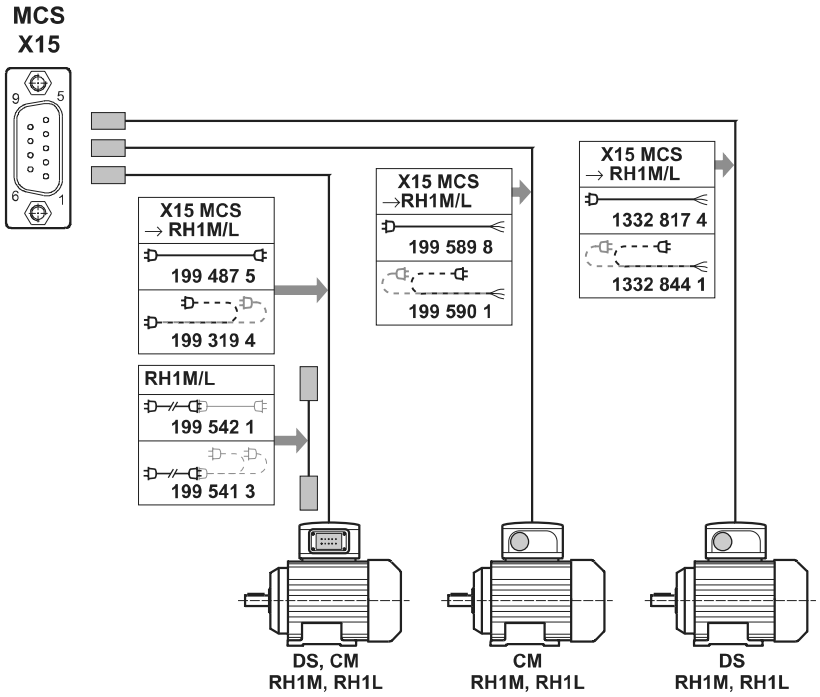
- Cable to connect the DC 5 V encoder power supply type DWI11A via plug connector.



56109AXX

Type	Installation	Part number
MCV X15 → DWI11A X1	 56047AXX	814 344 7

Connection options for X15 on the MCS basic unit

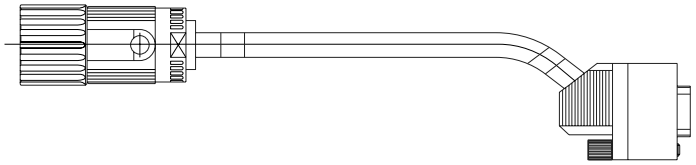


60072AXX

NOTE

For individual wiring diagrams, refer to the section "Installation" in the MOVIDRIVE® *compact* operating instructions.

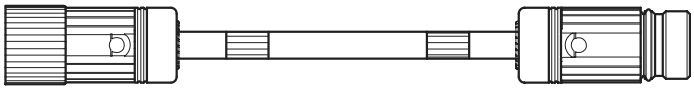
- Cable to connect resolvers RH1M / RH1L with plug connector connection on the motor side to DS, CM, CMD or CMP motors.



56138AXX

Type	Installation	Part number
MCS X15 → DS/CM motors with RH1M/RH1L	56047AXX	199 487 5
	56048AXX	199 319 4

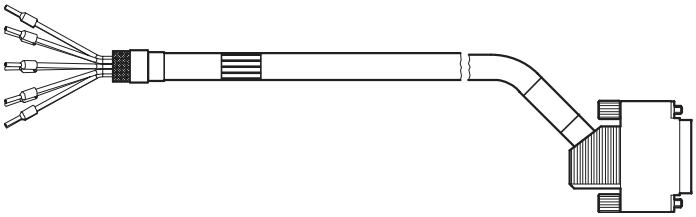
- Extension cable to connect RH1M / RH1L resolvers with plug connector connection on the motor side to DS or CM motors.



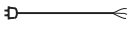
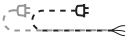
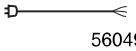
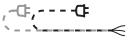
56139AXX

Type	Installation	Part number
MCS X15 → DS/CM motors with RH1M/RH1L	 56051AXX	199 542 1
	 56052AXX	199 541 3

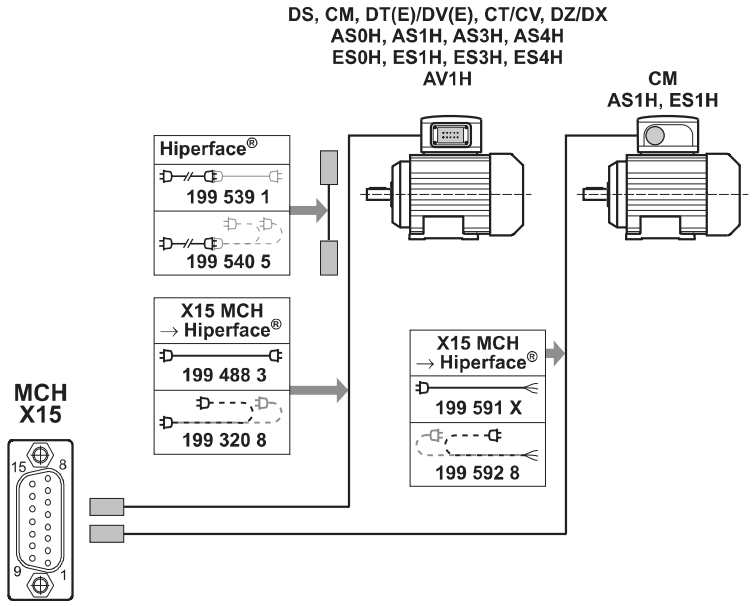
- Cable to connect resolvers RH1M / RH1L with terminal box connection on the motor side to CM and DS motors.



56142AXX

Type	Installation	Part number
MCS X15 → CM motors with RH1M/RH1L	 56049AXX	199 589 8
	 56050AXX	199 590 1
MCS X15 → DS motors with RH1M/RH1L	 56049AXX	1332 817 4
	 56050AXX	1332 844 1

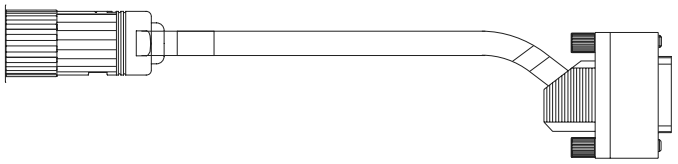
Connection options for X15 on the MCH basic unit



60070AXX

	NOTE For individual wiring diagrams, refer to the section "Installation" in the MOVIDRIVE® *compact* operating instructions.

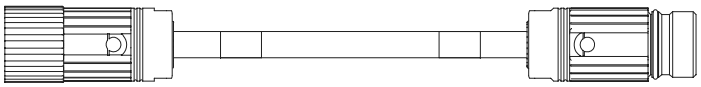
- Cable to connect HIPERFACE® encoders AK0H, AS1H, AS3H, AS4H, EK0H, ES1H, ES3H, ES4H, EV1H, AV1H with plug connector connection on the motor side to DS, CM, DT, DV, DT(E), DV(E), CT, CV, DZ or DX motors.



56135AXX

Type	Installation	Part number
MCH X15 → DS/CM/DT/DV/DT(E)/DV(E)/CT/CV/DZ/DX motors with AK0H, AS1H, AS3H, AS4H, EK0H, ES1H, ES3H, ES4H, EV1H, AV1H	56047AXX	199 488 3
	56048AXX	199 320 8

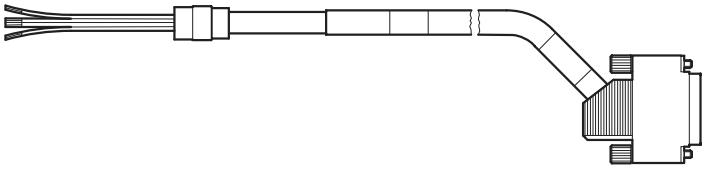
- Extension cable to connect HIPERFACE® encoders AK0H, AS1H, AS3H, AS4H, EK0H, ES1H, ES3H, ES4H, EV1H, AV1H with plug connector connection on the motor side to DS, CM, DT, DV, DT(E), DV(E), CT, CV, DZ or DX motors.



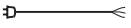
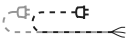
56136AXX

Type	Installation	Part number
MCH X15 → DS/CM/DT/DV/DT(E)/DV(E)/CT/CV/DZ/DX motors with AK0H, AS1H, AS3H, AS4H, EK0H, ES1H, ES3H, ES4H, EV1H, AV1H	 56051AXX	199 539 1
	 56052AXX	199 540 5

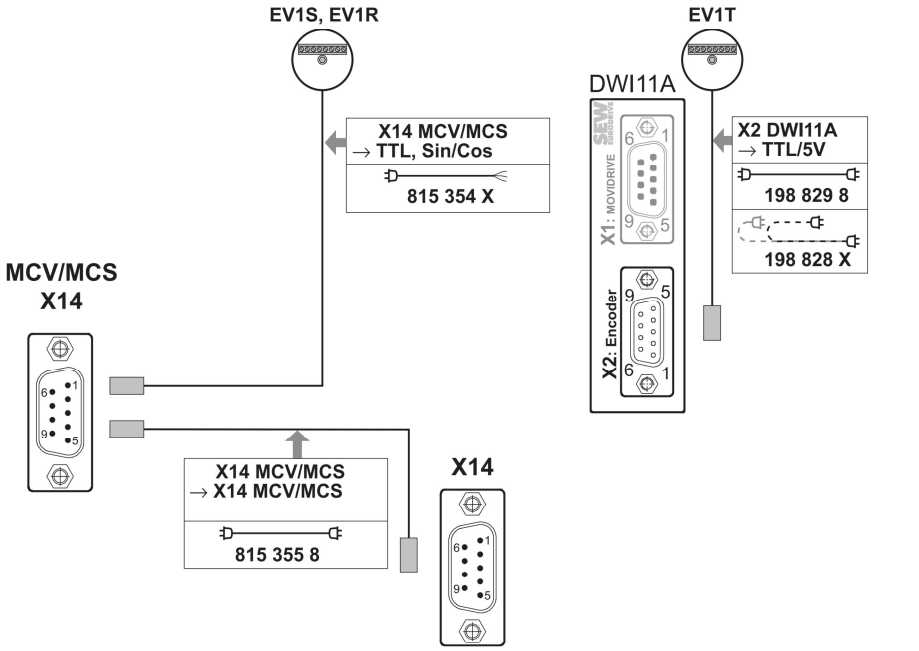
- Cable to connect HIPERFACE® encoders AS1H, ES1H with terminal box connection on the motor side to CM motors.



56137AXX

Type	Installation	Part number
MCH X15 → CM motors with AS1H, ES1H	 56049AXX	199 591 X
	 56050AXX	199 592 8

Connection options for X14 on MCV/MCS basc unit

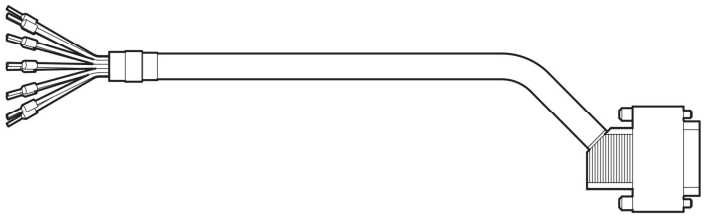


60071AXX

NOTE

For individual wiring diagrams, refer to the section "Installation" in the MOVIDRIVE® *compact* operating instructions.

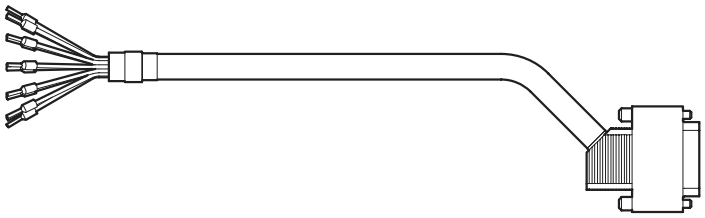
- Cable to connect external sin/cos encoders via encoder terminal strip.



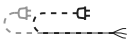
56132AXX

Type	Installation	Part number
MCV / MCS X14 → TTL-, sin/cos encoder	56049AXX	815 354 X

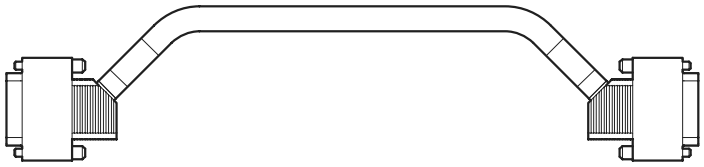
- Cable to connect an external DC 5 V TTL sensor to the DC 5 V encoder power supply type DWI11A via encoder terminal strip.



56132AXX

Type	Installation	Part number
DC 5 V TTL sensor → DWI11A X2	 56049AXX	198 829 8
	 56050AXX	198 828 X

- Cable to connect a master/slave connection.



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Type	Installation	Part number
MCV/MCS X14 → MCV/MCS X14	56047AXX	815 355 8