

ENGINEERING
TOMORROW



Installation Guide

Sine-wave Filter OF7S1

2.4–170 A



1 Instructions

1.1 Safety and Installation Awareness

Before starting installation, review all safety guidelines and precautions in this guide. Additional resources – including the drive installation guide and the application guide – can be downloaded at www.danfoss.com/service-and-support.

1.2 Qualified Personnel

The products must only be assembled, installed, programmed, commissioned, maintained, and decommissioned by persons with proven skills. Persons with proven skills:

- Are qualified electrical engineers, or persons who have received training from qualified electrical engineers and are suitably experienced to operate devices, systems, plant, and machinery in accordance with the general standards and guidelines for safety technology.
- Are familiar with the basic regulations concerning health and safety/accident prevention.
- Have read and understood the safety guidelines given in this manual and also the instructions given in the operating guide of the drive.
- Have good knowledge of the generic and specialist standards applicable to the specific application.

1.3 Safety Symbols

The following symbols are used in this guide:

⚠ D A N G E R ⚠

Indicates a hazardous situation which, if not avoided, will result in death or serious injury.

⚠ W A R N I N G ⚠

Indicates a hazardous situation which, if not avoided, could result in death or serious injury.

⚠ C A U T I O N ⚠

Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

N O T I C E

Indicates information considered important, but not hazard-related (for example, messages relating to property damage).

1.4 Safety Precautions

N O T I C E

The Sine-wave Filter OF7S1 is designed and qualified for use only with iC7 frequency converters.

- A specific sine-wave filter must be matched to a specific iC7 frequency converter. For more details, refer to the *iC7-Automation Frequency Converters, 1.3–1260 A Design Guide*.
- Danfoss takes no responsibility for the use of third-party output filters installed with Danfoss frequency converters.

⚠ W A R N I N G ⚠**LIFTING HEAVY LOAD**

The filter is heavy. Failure to follow local safety regulations for lifting heavy weights may cause death, personal injury, or property damage.

- Follow local regulations for lifting.
- Check the weight of the filter. The weight is provided on the outside of the shipping box and the exterior of the filter.
- If needed, ensure that the lifting equipment is in proper working condition and can safely lift the weight of the filter.
- Use the integrated lifting eyes to lift the filter.
- Test lift the unit to verify the proper center of gravity lift point. Reposition if not level.

⚠ W A R N I N G ⚠**HAZARDOUS VOLTAGE**

Sine-wave filters contain hazardous voltage when connected to an iC7 drive. Failure to perform installation, start-up, and maintenance by qualified personnel can result in death or serious injury.

- Only qualified personnel must perform installation, start-up, and maintenance.
- Never work on a filter in operation.

⚠ W A R N I N G ⚠**DISCHARGE TIME**

The drive and filter contain capacitors that can remain charged even when the drive is powered off. High voltage can be present in filter terminals even when the drive's warning indicator lights are off. Failure to wait the specified time after power has been removed before performing service or repair work can result in death or serious injury.

- Stop the motor.
- Disconnect all power sources, including permanent magnet type motors.
- Wait for the drive capacitors to discharge fully. The discharge time is shown on the exterior of the drive.
- Verify full discharge by measuring the voltage level between the motor phases on the filter's output terminals (U2, V2, W2).

⚠ W A R N I N G ⚠**INDUCED VOLTAGE**

Induced voltage from output motor cables that run together can charge equipment capacitors, even with the equipment turned off and locked out. Failure to run output motor cables separately or to use shielded cables could result in death or serious injury.

- Run output motor cables separately or use shielded cables.
- Simultaneously lock out all the drives.

⚠ WARNING ⚠**ELECTRICAL SHOCK HAZARD**

Due to the stray capacitance of the shielded motor cable, the leakage currents exceed 3.5 mA. Failure to connect the drive or filter properly to protective earth may result in death or serious injury.

- Ensure minimum size of the ground conductor complies with the local safety regulations for high touch current equipment.
- Ensure reinforced protective earthing (PE) conductor according to IEC 60364-5-54 cl. 543.7 or local safety regulations for equipment with leakage current >3.5 mA.
- The reinforced protective earthing can be done with:
 - PE conductor with a cross-section of at least 10 mm² (8 AWG) Cu or 16 mm² (6 AWG) Al, or an additional PE conductor of the same cross-sectional area as the original PE conductor as specified by IEC 60364-5-54, with a minimum cross-sectional area of 2.5 mm² (14 AWG) mechanically protected or 4 mm² (12 AWG) not mechanically protected.
 - PE conductor completely enclosed within an enclosure or otherwise protected throughout its length against mechanical damage.
 - PE conductor that is part of a multi-conductor power cable with a minimum PE conductor cross-section of 2.5 mm² (14 AWG) that is permanently connected or plugged in by an industrial connector. The multi-conductor power cable must be installed with an appropriate strain relief.

⚠ CAUTION ⚠**INTERNAL FAILURE HAZARD**

An internal failure in the filter can result in serious injury when the filter cover is not properly secured.

- Ensure that all safety covers are in place and securely fastened before applying power.

⚠ CAUTION ⚠**BURN HAZARD**

The IP00/Open Type filter model (S1C02–S1C08) does not have protective covers over all components that may still be hot even after the unit has been powered off. Failure to avoid touching these components can result in serious burns.

- Install the IP00/Open Type filter in an enclosed cabinet.
- Do not touch exterior areas that are marked by the high temperature symbol (yellow triangle). These areas are hot while the drive and filter are in use and immediately after being powered off.

⚠ WARNING ⚠**ELECTRIC SHOCK**

The IP00/Open Type filter model (S1C02–S1C08) does not have protective covers over all high-voltage components. Failure to avoid touching these components can result in death or serious injury.

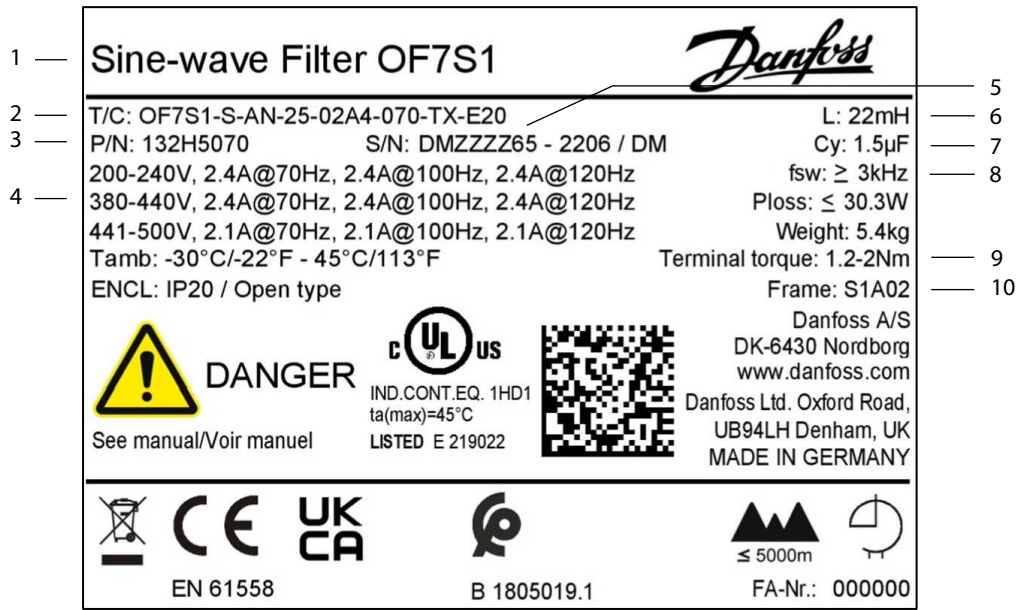
- Install the IP00/Open Type filter inside a supplementary enclosure or in a restricted-access area that provides protection against electric shock.

1.5 Required Tools

- Lifting aid
- Tape measurer
- Wrench with extension and various sockets (see the wiring illustrations for the specific size)
- Torx, slotted, and Pozidrive screwdrivers (T20, T30, T50, SL1.2, SL2, PZ3)
- Wire crimper

1.6 Verifying the Shipment and the Contents

Make sure that the items supplied and the information on the product label correspond to the order confirmation. The product label is found on the front of the filter.



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Illustration 1: Example of a Product Label

1	Product type	6	Inductance value
2	Type code	7	Capacitance value
3	Part number	8	Minimum switching frequency
4	Voltage range, motor frequency, and current	9	Terminal torque for motor cables
5	Serial number	10	Frame

1.7 EMC-compliant Installation

Follow the same guidelines for filter installation as for drive installation. For EMC-compliant installation guidelines, refer to the drive design or installation guide, and follow the electrical installation instructions.

- Shielded cables or unshielded cables within metal conduit are required between the filter and the drive, and between the filter and the motor.
- Connect the shield to the filter at both ends.
- Provide a minimum 200 mm (7.9 in) separation, if possible, between mains input, motor cables, and control cables.
- Convey the currents back to the unit using the included EMC plate. Ensure good electrical contact from the EMC plate through the mounting screws to the filter chassis. The EMC plate must be mounted during filter installation.

1.8 Installing the Filter

Installation location is important. Full nominal current is available when the following installation conditions are met:

- Maximum surrounding air temperature is 45 °C (113 °F)
- Minimum surrounding air temperature is -30 °C (-22 °F).
- Altitude is less than 1000 m (3280 ft) above sea level.
- There is enough free space above and below the filter.
- Vibration levels according to IEC 60721-3-3:2019 have been considered.

For temperatures and altitudes outside this range, as well as derating values, see [1.11 Specifications](#).

1. Identify the sine-wave filter frame. See [Illustration 1](#).

If the reference in an illustration, text, or table applies to all variants, the second character is replaced with an x, for example S1x02, indicating both S1A02 and S1C02.

2. Make sure that the operating environment and electrical installation meet the environmental conditions according to IEC 61800-2:2021. Unless stated otherwise, the same standards apply for the filters as for the drives.
 - a. Indoor unconditioned/pollution degree 2.
 - b. Overvoltage category 3.
3. Provide required clearance above and below the filter. See step 2 in the Illustrations section.
4. Mount the filter on or against a solid, non-combustible mounting surface such as concrete or metal.
 - For S1x02–S1x04, use 4 screws for vibration levels specified in IEC 60721-3-3:2019 3M11 and IEC 60721-3.3:2019 3M12.
 - For S1x05–S1x08, use 4 screws for vibration levels specified in IEC 60721-3-3:2019 3M11.
 - For S1x05–S1x08, use 8 screws for vibration levels specified in IEC 60721-3-3:2019 3M12.
5. Install the filter following steps 1–3 in the Illustrations section. Certain illustrations or steps apply to specific filter frames and are marked as such.
6. Configure the specific drive parameters (P3.5.1, P3.5.2, and P3.5.3) for sine-wave filter operation. Setting too low a switching frequency can damage the filter. For information on configuring parameters, see the *iC7 application guide*.

1.9 Fuses and Cable Sizes

NOTICE

WIRING GUIDELINES

All wiring must comply with local and national regulations regarding cross-section and ambient temperature requirements. Loose connections can cause equipment faults or reduced performance. Tighten the terminals according to the proper torque value shown in the illustrations.

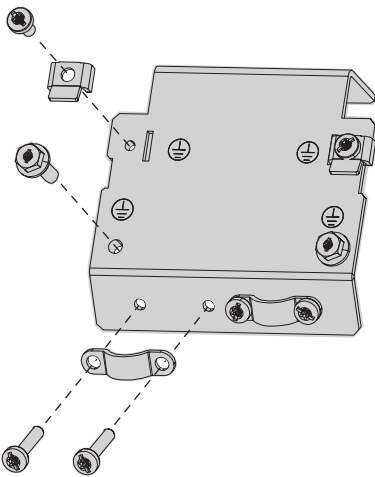
- Minimize interference by keeping control wires as short as possible and separate from high-power cables.
- Tighten the terminals according to the proper torque value shown in the illustrations.
- Follow the same guidelines for filter cables as for drive cables. For more information, refer to the *iC7-Automation Frequency Converters, 1.3–1260 A Design Guide*.

1.10 Illustrations

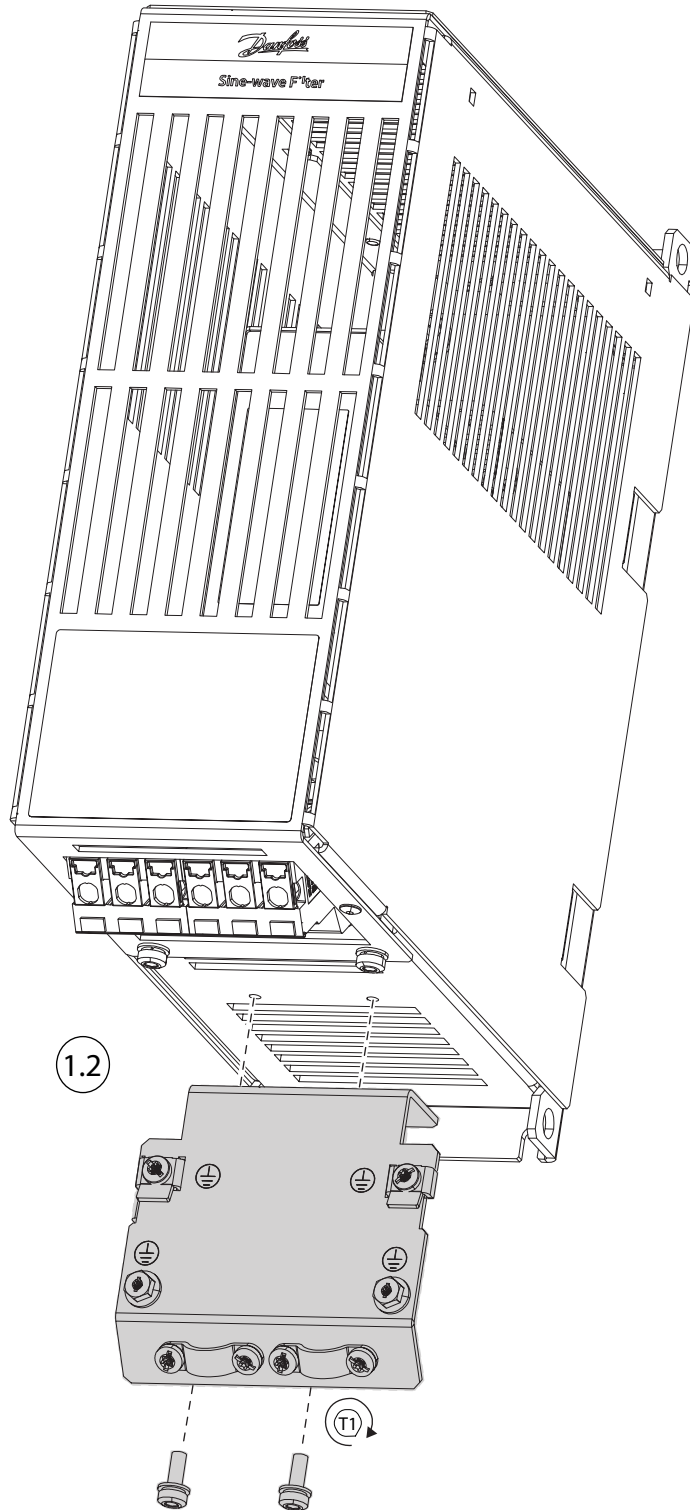
1 S1x02-S1x03

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1.1



1.2

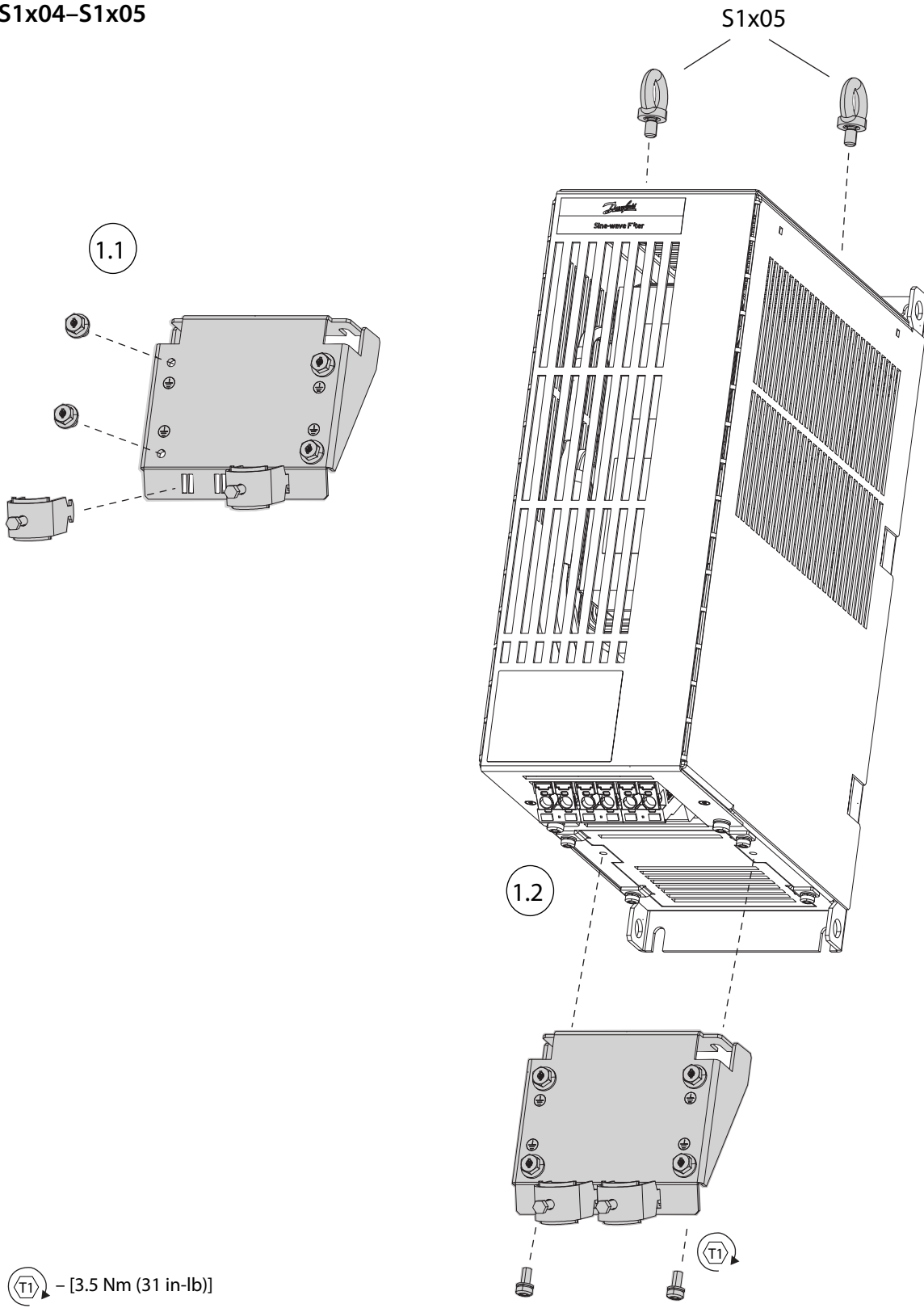


- [1.8 Nm (16 in-lb)]

Illustration 2:

S1x04–S1x05

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- [3.5 Nm (31 in-lb)]

Illustration 3:

S1x06-S1x08

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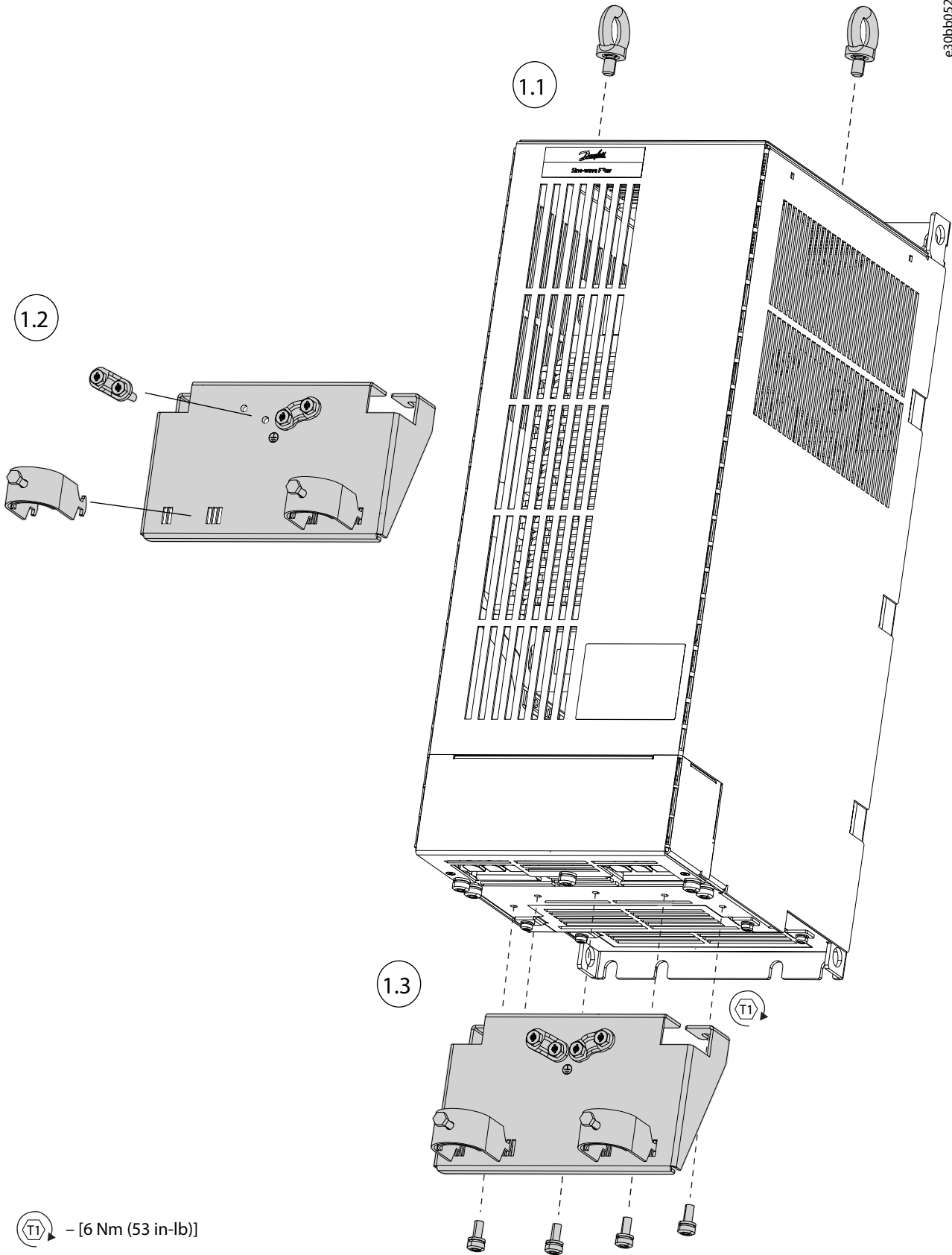



Illustration 4:

2 S1x02–S1x04

mm (in)	S1x02	S1x03	S1x04
A	257 (10.1)	257 (10.1)	380 (15.0)
B	70 (2.8)	94 (3.7)	105 (4.1)
C1	107 (4.2)	107 (4.2)	107 (4.2)
C2	107 (4.2)	107 (4.2)	161 (6.3)
	4 x M5	4 x M5	4 x M6

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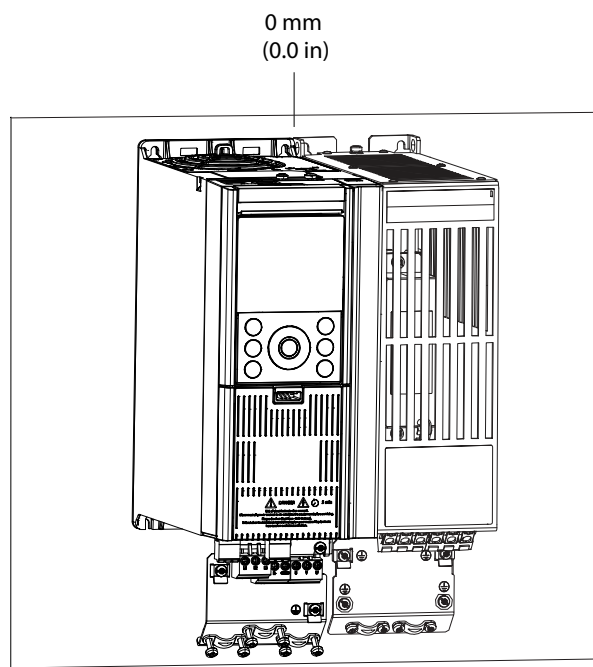
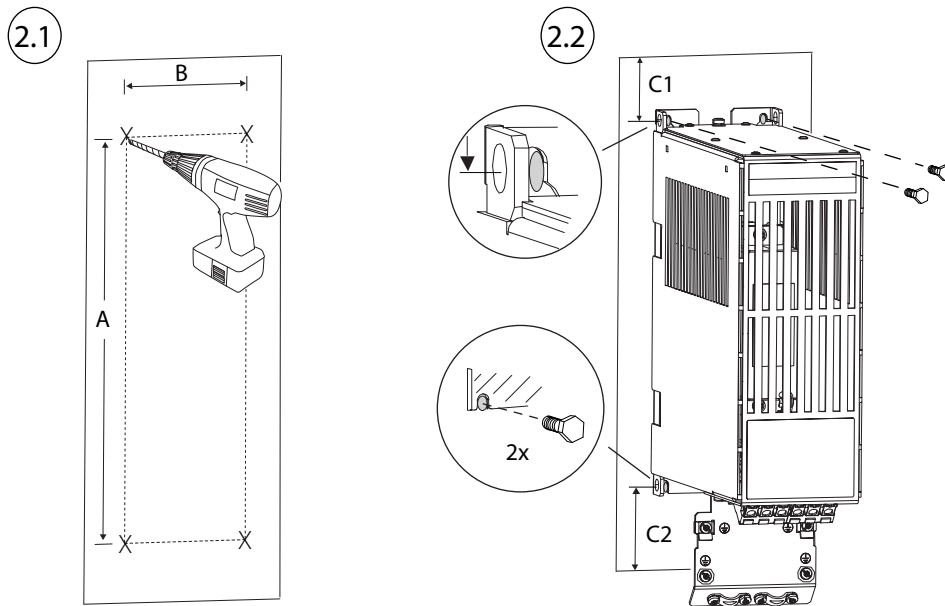



Illustration 5:

S1x05–S1x08

mm (in)	A	B	B/2	C1	C2	
S1x05	380 (15.0)	140 (5.5)	40 (1.6)	107 (3.9)	160 (6.2)	4–8 x M6
S1x06	535 (21.1)	170 (6.7)	40 (1.6)	112 (4.4)	160 (6.2)	4–8 x M8
S1x07	580 (22.8)	200 (7.9)	45 (1.8)	112 (4.4)	208 (8.2)	4–8 x M8
S1x08	721 (28.4)	200(7.9)	45 (1.8)	112 (4.4)	260 (10.2)	4–8 x M8

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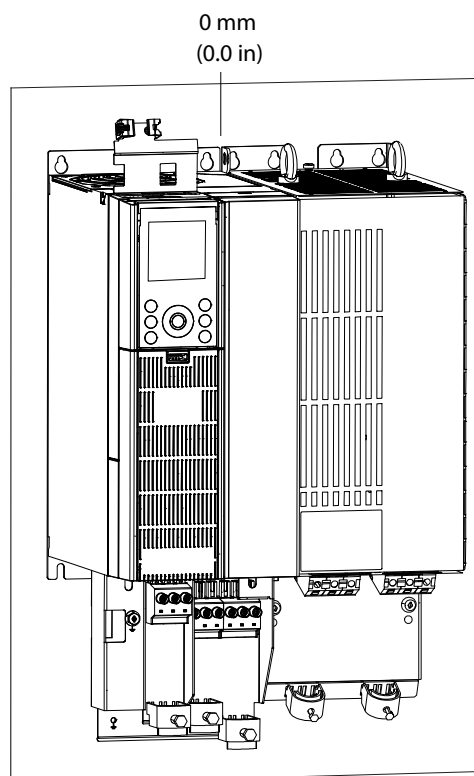
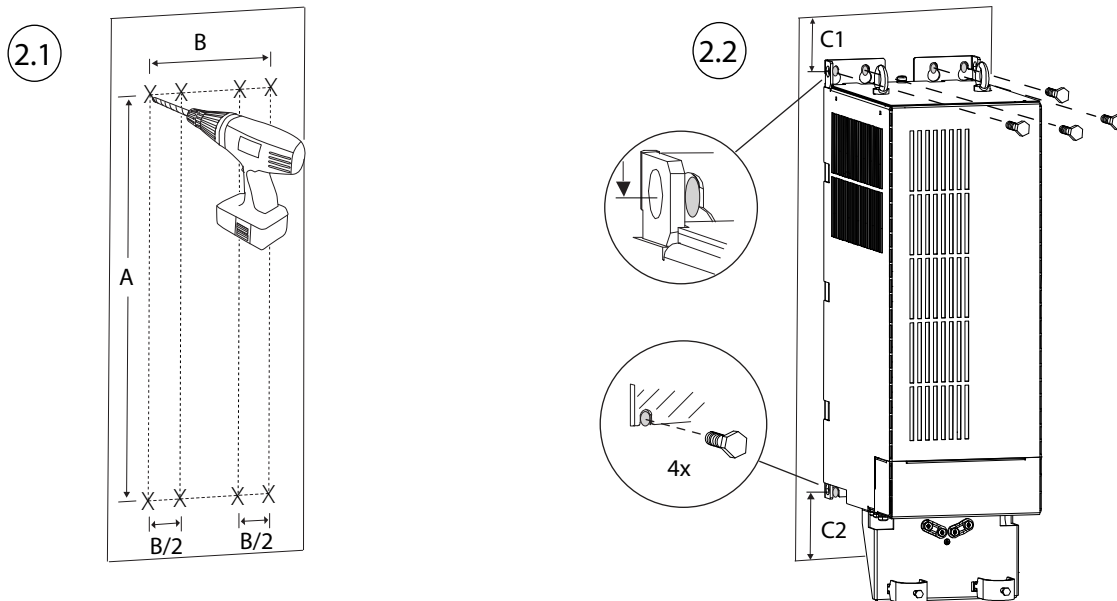


Illustration 6:

3 S1x02-S1x03

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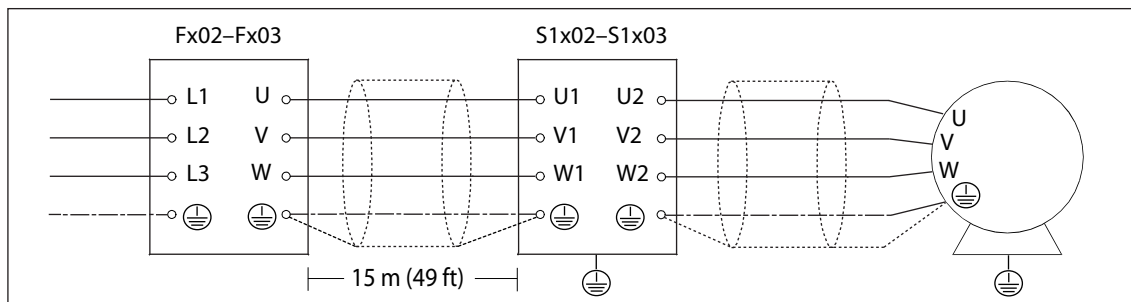
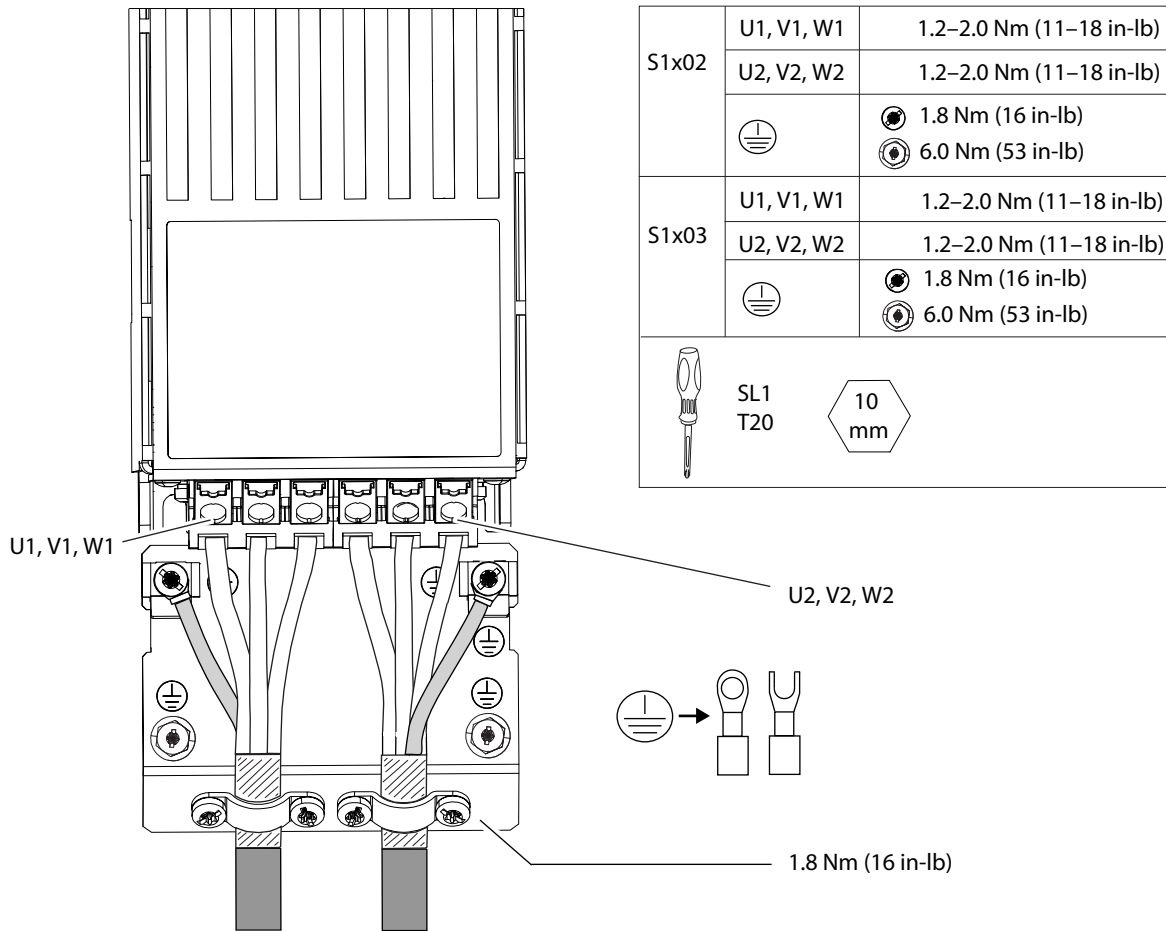


Illustration 7:

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S1x04–S1x05

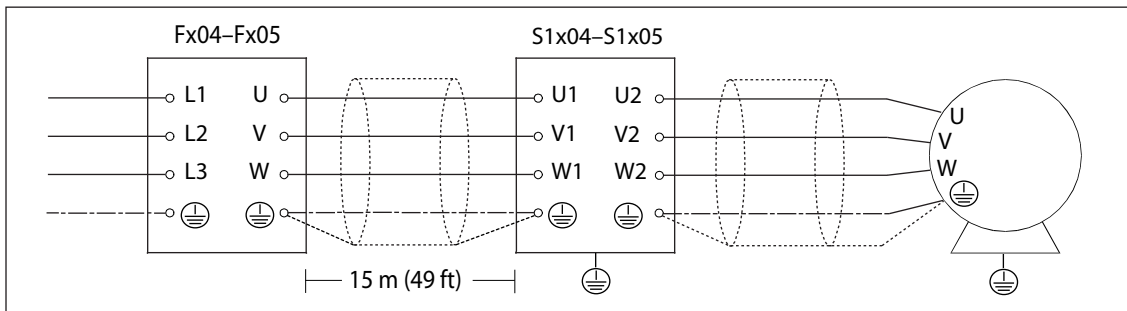
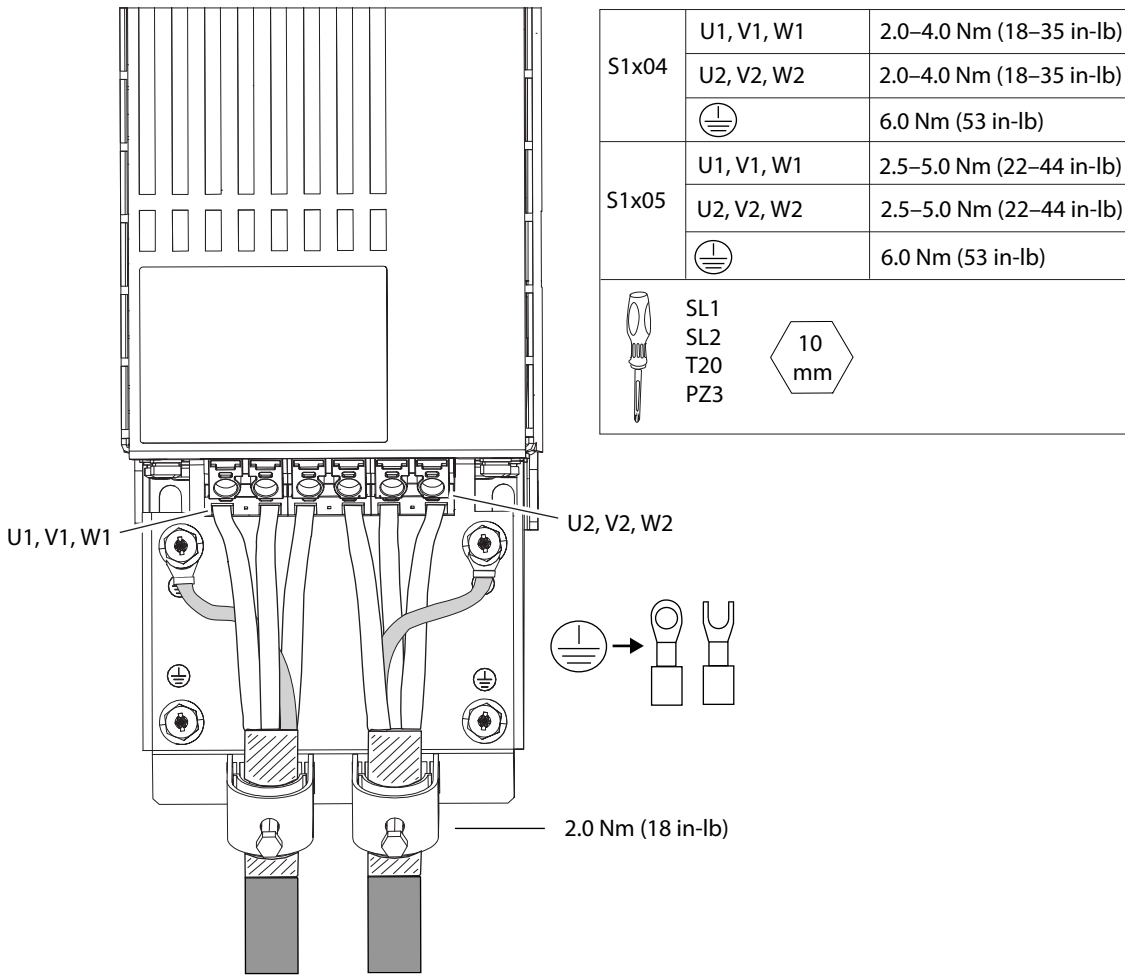
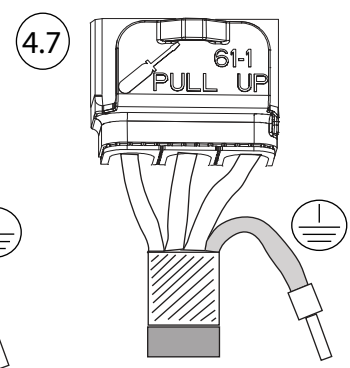
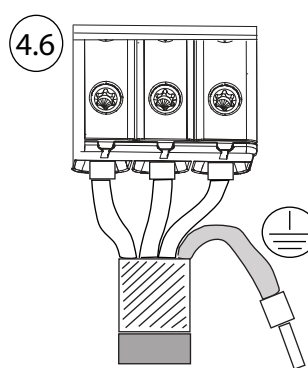
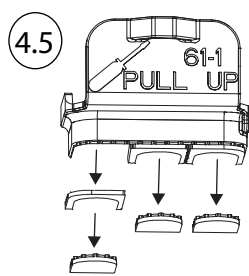
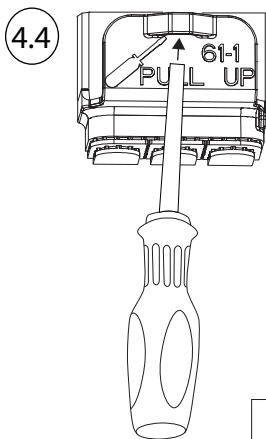
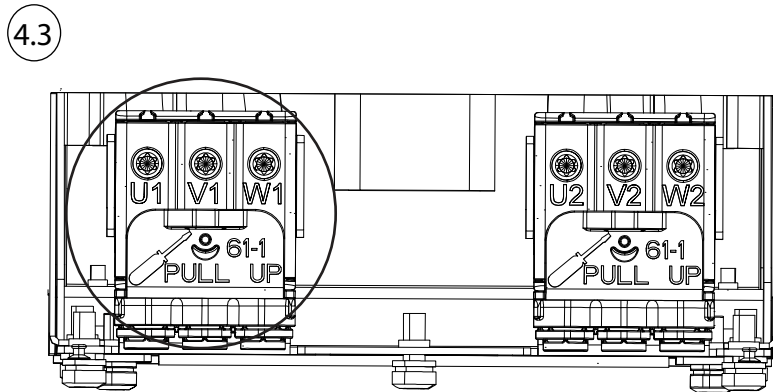
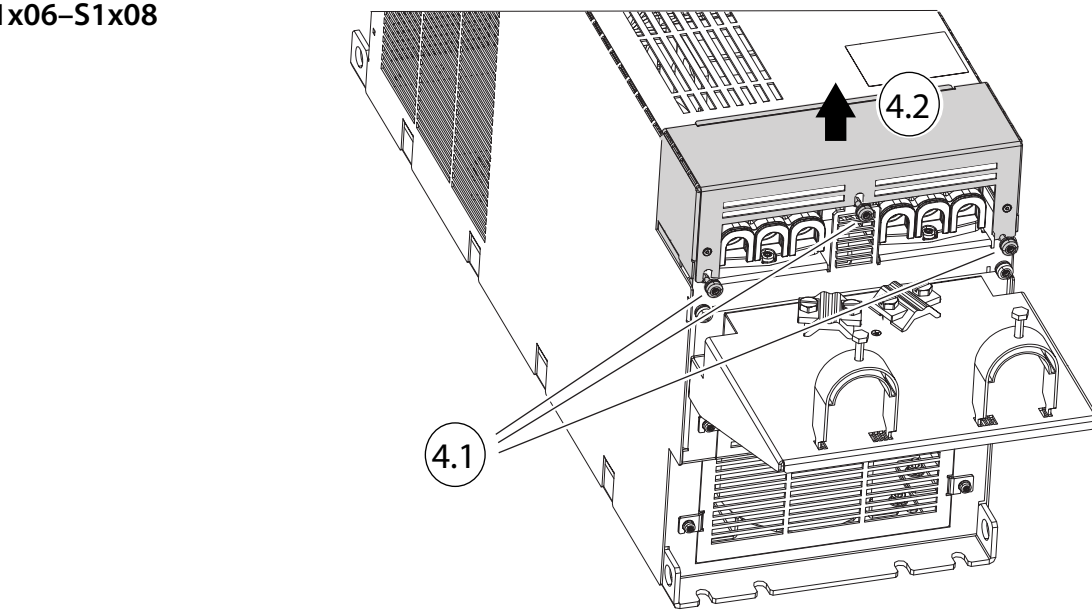


Illustration 8:

S1x06–S1x08

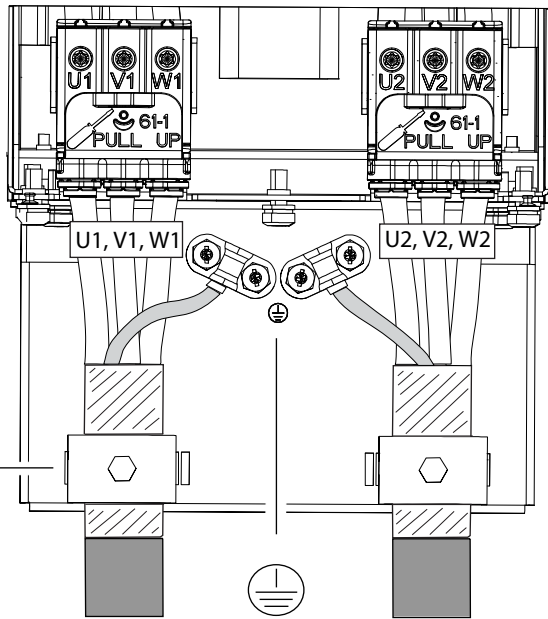
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S1x06	50 mm ² (1 AWG)	16 mm ² (6 AWG)
S1x07	95 mm ² (3/0 AWG)	35 mm ² (2 AWG)
S1x08	150 mm ² (300 mcm)	50 mm ² (1 AWG)

Illustration 9:

4.8

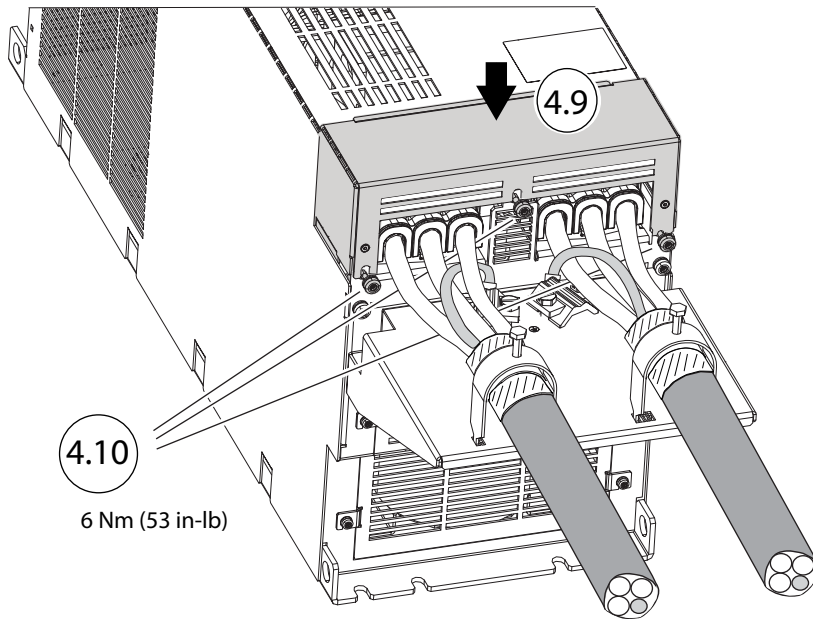


S1x06
2 Nm (18 in-lb)
S1x07-S1x08
4 Nm (35 in-lb)

S1x06	U1, V1, W1	14 Nm (124 in-lb)
	U2, V2, W2	14 Nm (124 in-lb)
		6 Nm (53 in-lb)
S1x07	U1, V1, W1	14 Nm (124 in-lb)
	U2, V2, W2	14 Nm (124 in-lb)
		6 Nm (53 in-lb)
S1x08	U1, V1, W1	20 Nm (177 in-lb)
	U2, V2, W2	20 Nm (177 in-lb)
		14.5 Nm (128 in-lb)

	S1x06-S1x07 SL1, SL2, PZ3, T30		
	S1x08 SL2, PZ3, T30, T50		

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4.10

6 Nm (53 in-lb)

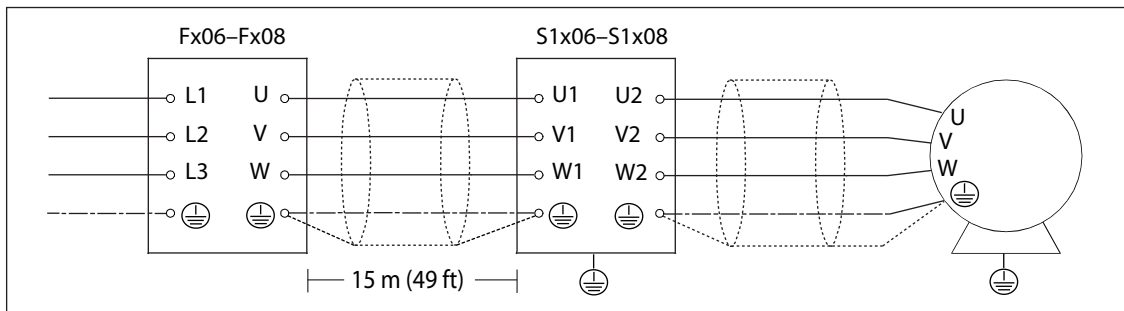




Illustration 10:

1.11 Specifications

1.11.1 Product Approvals and Certifications

Sine-wave Filter OF7S1 complies with the required standards and directives. For a list of product approvals and certifications, see the product label. Certificates and Declarations of Conformity are available on request or at www.danfoss.com.

Table 1: Approvals and Certifications Applicable to the Sine-wave Filter

Approval	Description
	The sine-wave filter complies with relevant directives and their related standards for the extended Single Market in the European Economic Area. The filter complies with EN/IEC 61558-2-20:2011.
	The Underwriters Laboratory (UL) mark indicates the safety of products and their environmental claims based on standardized testing. The sine-wave filters are UL-certified up to 500 V. The filter complies with UL 508. For the UL file number, see the product label.

1.11.2 Operating Environment

Table 2: Operating Environment Specifications for the Sine-wave Filter

Function	Data
Ambient temperature during transport	-30 °C...+70 °C (-22 °F...+158 °F)
Ambient temperature during storage	-30 °C...+70 °C (-22 °F...+158 °F)
Ambient temperature during operation	Minimum (without derating): -30 °C (-22 °F)
	Maximum (without derating): 45 °C (113 °F)
	Maximum (with derating) ⁽¹⁾ : 60 °C (140 °F)
Altitude	Maximum (without derating): 1000 m (3250 ft)
	Maximum (with derating) ⁽²⁾ : 5000 m (16400 ft)
Humidity (non-condensing)	95 (%)
Chemically active substances	C3
Pollution degree	3
Vibration	IEC 60721-3-3:2019 3M11: Standard classification requires 4 screws to install frames S1x02–S1x08.
	IEC 60721-3-3:2019 3M12: Medium classification requires 4 screws to install frames S1x02–S1x04.
	IEC 60721-3-3:2019 3M12: Medium classification requires 8 screws to install frames S1x05–S1x08.

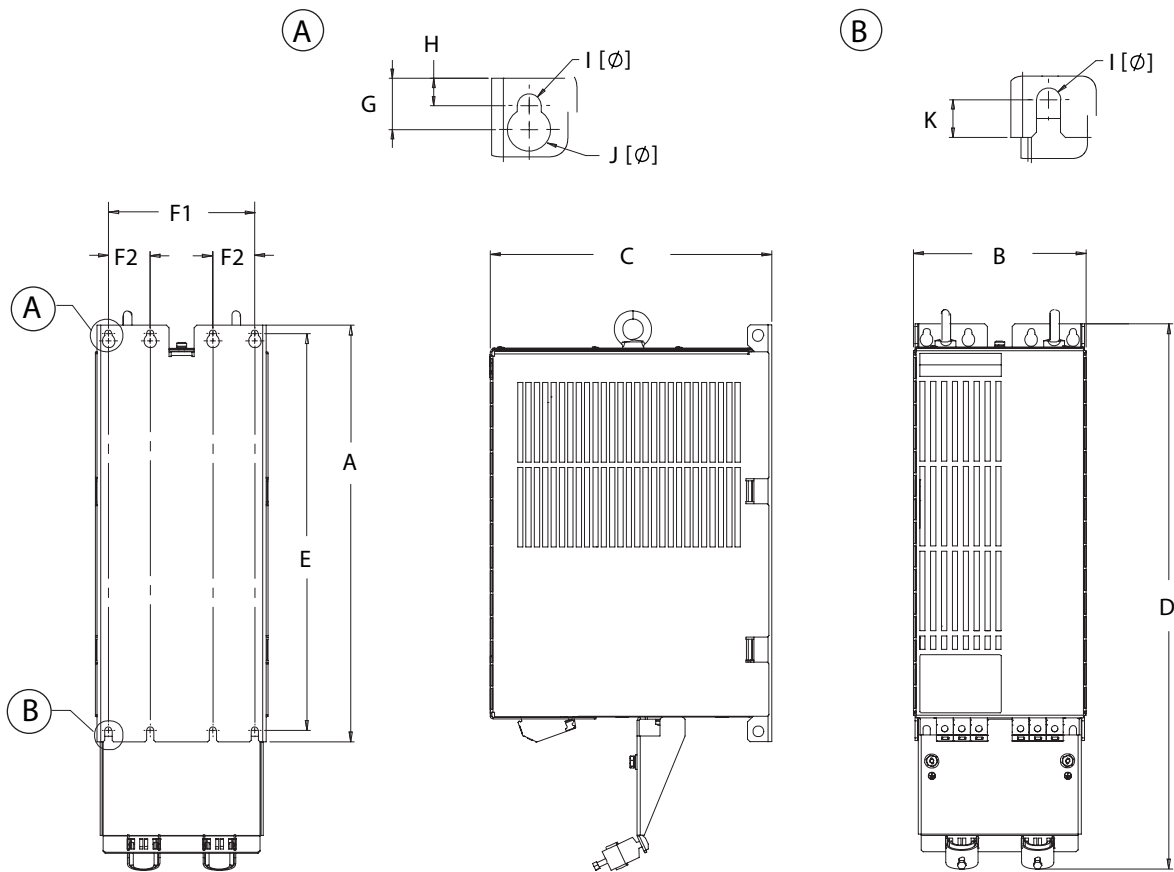
¹ Derating: 1%/K from 45 °C (113 °F)

² Derating: 5% of nominal filter current per every 1000 m (3250 ft)

1.11.3 Mechanical Specifications

Table 3: Weight and Terminal Cable Size for the Sine-wave Filter

P/N	Weight [kg (lb)]	Terminal cable size [mm ² (AWG)]	
		Minimum	Maximum
132H4239	3.9 (9)	0.2 (22)	10 (10)
132H5061	4.5 (10)	0.2 (22)	10 (10)
132H5062	7.1 (16)	0.2 (22)	10 (10)
132H5063	8.9 (20)	0.2 (22)	10 (10)
132H5064	12.4 (27)	0.2 (22)	10 (10)
132H5065	22.7 (50)	1.0 (18)	16 (4)
132H5066	30.9 (68)	2.5 (12)	35 (2)
132H5067	55.6 (123)	2.5 (6)	50 (1/0)
132H5068	81.8 (180)	16 (4)	95 (4/0)
132H5069	104.8 (231)	35 (2)	150 (300)
132H5070	5.4 (12)	0.2 (22)	10 (10)
132H5071	6.0 (13)	0.2 (22)	10 (10)
132H5072	8.6 (19)	0.2 (22)	10 (10)
132H5073	10.4 (23)	0.2 (22)	10 (10)
132H5074	14.0 (31)	0.2 (22)	10 (10)
132H5075	25.2 (56)	1.0 (18)	16 (6)
132H5077	33.6 (74)	2.5 (12)	35 (2)
132H5078	60.3 (133)	2.5 (6)	50 (1/0)
132H5080	87.0 (192)	16 (4)	95 (4/0)
132H5081	112.5 (248)	35 (2)	150 (300)



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Illustration 11: Example of a Sine-wave Filter Cabinet

Table 4: Exterior Dimensions for the Sine-wave Filter, [mm (in)]

P/N	A	B	C	D	E	F1 ⁽¹⁾	F2 ⁽¹⁾	G	H	I	J	K
132H4239	270 (10.6)	87 (3.4)	202 (7.9) 218 (8.5)	340 (13.3)	257 (10.1)	70 (2.7)	-	14.5 (0.5)	6.5 (0.2)	5.5 (0.2)	11 (0.4)	6.5 (0.2)
132H5061	270 (10.6)	87 (3.4)	202 (7.9) 218 (8.5)	340 (13.3)	257 (10.1)	70 (2.7)	-	14.5 (0.5)	6.5 (0.2)	5.5 (0.2)	11 (0.4)	6.5 (0.2)
132H5062	270 (10.6)	87 (3.4)	202 (7.9) 218 (8.5)	340 (13.3)	257 (10.1)	70 (2.7)	-	14.5 (0.5)	6.5 (0.2)	5.5 (0.2)	11 (0.4)	6.5 (0.2)
132H5063	270 (10.6)	87 (3.4)	202 (7.9) 218 (8.5)	340 (13.3)	257 (10.1)	70 (2.7)	-	14.5 (0.5)	6.5 (0.2)	5.5 (0.2)	11 (0.4)	6.5 (0.2)
132H5064	270 (10.6)	111 (4.3)	211 (8.3)	340 (13.3)	257 (10.1)	94 (3.7)	-	14.5 (0.5)	6.5 (0.2)	5.5 (0.2)	11 (0.4)	6.5 (0.2)
132H5065	399 (15.7)	127 (5.0)	237 (9.3)	503 (19.8)	380 (14.9)	105 (4.1)	-	15 (0.5)	8 (0.3)	7 (0.2)	12.5 (0.4)	11 (0.4)
132H5066	399 (15.7)	162 (6.3)	256 (10.0)	522 (20.5)	380 (14.9)	140 (5.5)	40 (1.5)	15 (0.5)	8 (0.3)	7 (0.2)	12.5 (0.4)	11 (0.4)
132H5067	555 (21.8)	197 (7.7)	276 (10.8)	668 (26.2)	535 (21.0)	170 (6.6)	40 (1.5)	23 (0.9)	12 (0.4)	10 (0.3)	16 (0.6)	8 (0.3)
132H5068	600 (23.6)	227 (8.9)	292 (11.4)	760 (29.9)	580 (22.8)	200 (7.8)	45 (1.7)	23 (0.9)	12 (0.4)	10 (0.3)	16 (0.6)	8 (0.3)

P/N	A	B	C	D	E	F1 ⁽¹⁾	F2 ⁽¹⁾	G	H	I	J	K
132H5069	743 (29.2)	255 (10.0)	367 (14.4)	943 (37.1)	721 (28.3)	200 (7.8)	45 (1.7)	23 (0.9)	12 (0.4)	10 (0.3)	16 (0.6)	10 (0.3)
132H5070	270 (10.6)	90 (3.5)	221 (8.7)	340 (13.3)	257 (10.1)	70 (2.7)	–	14.5 (0.5)	6.5 (0.2)	5.5 (0.2)	11 (0.4)	6.5 (0.2)
132H5071	270 (10.6)	90 (3.5)	221 (8.7)	340 (13.3)	257 (10.1)	70 (2.7)	–	14.5 (0.5)	6.5 (0.2)	5.5 (0.2)	11 (0.4)	6.5 (0.2)
132H5072	270 (10.6)	90 (3.5)	221 (8.7)	340 (13.3)	257 (10.1)	70 (2.7)	–	14.5 (0.5)	6.5 (0.2)	5.5 (0.2)	11 (0.4)	6.5 (0.2)
132H5073	270 (10.6)	90 (3.5)	221 (8.7)	340 (13.3)	257 (10.1)	70 (2.7)	–	14.5 (0.5)	6.5 (0.2)	5.5 (0.2)	11 (0.4)	6.5 (0.2)
132H5074	270 (10.6)	114 (4.4)	221 (8.7)	340 (13.3)	257 (10.1)	94 (3.7)	–	14.5 (0.5)	6.5 (0.2)	5.5 (0.2)	11 (0.4)	6.5 (0.2)
132H5075	399 (15.7)	130 (5.1)	262 (10.3)	503 (19.8)	380 (14.9)	105 (4.1)	–	15 (0.5)	8 (0.3)	7 (0.2)	12.5 (0.4)	11 (0.4)
132H5077	399 (15.7)	165 (6.4)	269 (10.5)	522 (20.5)	380 (14.9)	140 (5.5)	40 (1.5)	15 (0.5)	8 (0.3)	7 (0.2)	12.5 (0.4)	11 (0.4)
132H5078	555 (21.8)	200 (7.8)	294 (11.5)	668 (26.2)	535 (21.0)	170 (6.6)	40 (1.5)	23 (0.9)	12 (0.4)	10 (0.3)	16 (0.6)	8 (0.3)
132H5080	600 (23.6)	230 (9.0)	308 (12.1)	760 (29.9)	580 (22.8)	200 (7.8)	45 (1.7)	23 (0.9)	12 (0.4)	10 (0.3)	16 (0.6)	8 (0.3)
132H5081	743 (29.2)	255 (10.0)	354 (13.9)	943 (37.1)	721 (28.3)	200 (7.8)	45 (1.7)	23 (0.9)	12 (0.4)	10 (0.3)	16 (0.6)	10 (0.3)

¹ For S1x02–S1x04, use 4 screws (F1) for vibration levels according to IEC 60721-3-3:2019 3M11 + IEC 60721-3-3:2019 3M12. For S1x05–S1x08, use 4 screws (F1) for vibration levels according to IEC 60721-3-3:2019 3M11. For S1x05–S1x08, use 8 screws (F1+F2) for vibration levels according to IEC 60721-3-3:2019 3M12.

1.11.4 Electrical Specifications

Table 5: Electrical Specifications for the Sine-wave Filter

Function	Data
Cooling	AN, natural convection
Overload rating	160% for 1 min every 10 min / 200% for 3 s every 1 min
Maximum motor cable length	150 m (492 ft) shielded cable without derating
	300 m (984 ft) shielded cable with derating 3.3% per every 50 m (164 ft) from 150 m (492 ft)
	300 m (984 ft) unshielded cable without derating
Switching frequency ⁽¹⁾	S1x02–S1x05: 3–16 KHz
	S1x06–S1x08: 2–12 KHz
Discharge time	<5 s from motor standstill to voltage is below 60 V DC phase-phase
Filter impedance	Average 7% at 400 V, nominal current and 50 Hz motor frequency

Function	Data
Acoustical switching noise	<70 dB (A) at 50 Hz motor frequency and nominal current
Lifetime	60000 operating hours following the load profile ⁽²⁾
	10 years with 2/3 operation per day with the load profile ⁽²⁾

¹ The maximum switching frequency is the maximum setting of the iC7 drive.

² Load profile: 40 °C (104 °F) ambient temperature, 40 Hz motor speed, 80% of nominal current, nominal switching frequency, line voltage 400 V

1.1.1.5 Ratings

Table 6: Ratings for the Sine-wave Filter

P/N	Frame ⁽¹⁾	Nominal current and motor frequency						P _{max}		L		Cy
		380–440 V [A]			441–500 V [A]							
		70 Hz	100 Hz	120 Hz	70 Hz	100 Hz	120 Hz	400 V [W]	500 V [W]	[mΩ]	[mH]	[μF]
132H4239	S1C02	2.4	2.4	2.4	2.1	2.1	2.1	30	30.3	1004	22	1.5
132H5070	S1A02	2.4	2.4	2.4	2.1	2.1	2.1	30	30.3	1004	22	1.5
132H5061	S1C02	4.0	4.0	4.0	3.4	3.4	3.4	40.7	42.3	440	12.25	3.3
132H5071	S1A02	4.0	4.0	4.0	3.4	3.4	3.4	40.7	42.3	440	12.25	3.3
132H5062	S1C02	7.2	7.2	7.2	6.3	6.3	6.3	56.3	63	169.4	6.89	4.95
132H5072	S1A02	7.2	7.2	7.2	6.3	6.3	6.3	56.3	63	169.4	6.89	4.95
132H5063	S1C02	12.5	12.5	12.5	11	11	11	79	94	88	4.4	10.2
132H5073	S1A02	12.5	12.5	12.5	11	11	11	79	94	88	4.4	10.2
132H5064	S1C03	16	16	16	14.5	14.5	14.5	104.2	115.5	61.8	3.24	12.3
132H5074	S1A03	16	16	16	14.5	14.5	14.5	104.2	115.5	61.8	3.24	12.3
132H5065	S1C04	31	31	31	27	27	27	152	179	23.5	1.76	18
132H5075	S1A04	31	31	31	27	27	27	152	179	23.5	1.76	18
132H5066	S1C05	43	43	43	40	40	40	205	253	12.3	1.15	27
132H5077	S1A05	43	43	43	40	40	40	205	253	12.3	1.15	27
132H5067	S1C06	73	62.1	62.1	66	56	56	373	398	6.41	0.74	90
132H5078	S1A06	73	62.1	62.1	66	56	56	373	398	6.41	0.74	90
132H5068	S1C07	106	95.4	95.4	96	86	86	350	426.2	3.39	0.48	135
132H5080	S1A07	106	95.4	95.4	96	86	86	350	426.2	3.39	0.48	135
132H5069	S1C08	170	153	153	156	140	140	488	540	2.3	0.32	210
132H5081	S1A08	170	153	153	156	140	140	488	540	2.3	0.32	210

¹ The 3rd character in the frame designation indicates the protection rating: A= IP20/UL Open Type and C= IP00/UL Open Type.

1.11.6 Ordering a Sine-wave Filter

Table 7: Terminology Used in the Sine-wave Filter Selection Table

Term	Description
Product code	The drive's product code consisting of the mains voltage code, current rating code, and model code.
Overload setting	The overload setting of the drive.
Rated output current	The rated output current of the drive in the given voltage supply range and selected overload capability.
Rated current	The rated current of the filter in the given voltage supply range.
Code no.	Code number of the sine-wave filter's matching iC7 drive operating conditions. Protection ratings are IP00 or IP20 and UL Open Type. An IP21/UL Type 1 upgrade kit is available for added protection.
Frame	The frame designation of the filter, which is also used as the reference in mechanical drawings.

Table 8: Selection Table for a Sine-wave Filter

iC7 drive				Sine-wave filter					
Product code	Overload rating	Rated output current		Rated current		IP00/Open Type		IP20/Open Type ⁽¹⁾	
		380–440 V [A]	441–500 V [A]	380–440 V [A]	441–500 V [A]	Code no.	Frame	Code no.	Frame
05-01A3	LO	1.3	1.2	2.4	2.1	132H4239	S1C02	132H5070	S1A02
	HO1	1.3	1.2	2.4	2.1	132H4239	S1C02	132H5070	S1A02
	HO2	0.9	0.8	2.4	2.1	132H4239	S1C02	132H5070	S1A02
05-01A8	LO	1.8	1.6	2.4	2.1	132H4239	S1C02	132H5070	S1A02
	HO1	1.8	1.6	2.4	2.1	132H4239	S1C02	132H5070	S1A02
	HO2	1.3	1.1	2.4	2.1	132H4239	S1C02	132H5070	S1A02
05-02A4	LO	2.4	2.1	2.4	2.1	132H4239	S1C02	132H5070	S1A02
	HO1	2.4	2.1	2.4	2.1	132H4239	S1C02	132H5070	S1A02
	HO2	1.8	1.6	2.4	2.1	132H4239	S1C02	132H5070	S1A02
05-003A	LO	3.0	2.1	4.0	3.4	132H5061	S1C02	132H5061	S1A02
	HO1	3.0	2.7	4.0	3.4	132H5061	S1C02	132H5061	S1A02
	HO2	2.4	2.1	4.0	3.4	132H5061	S1C02	132H5061	S1A02
05-004A	LO	4.0	3.4	4.0	3.4	132H5061	S1C02	132H5061	S1A02
	HO1	4.0	3.4	4.0	3.4	132H5061	S1C02	132H5061	S1A02
	HO2	3.4	3.0	4.0	3.4	132H5061	S1C02	132H5061	S1A02
05-05A6	LO	5.6	4.8	7.2	6.3	132H5062	S1C02	132H5072	S1A02
	HO1	5.6	4.8	7.2	6.3	132H5062	S1C02	132H5072	S1A02
	HO2	4.3	3.4	7.2	6.3	132H5062	S1C02	132H5072	S1A02
05-07A2	LO	7.2	6.3	7.2	6.3	132H5062	S1C02	132H5072	S1A02

iC7 drive				Sine-wave filter					
Product code	Overload rating	Rated output current		Rated current		IP00/Open Type		IP20/Open Type ⁽¹⁾	
		380–440 V [A]	441–500 V [A]	380–440 V [A]	441–500 V [A]	Code no.	Frame	Code no.	Frame
	HO1	7.2	6.3	7.2	6.3	132H5062	S1C02	132H5072	S1A02
	HO2	5.6	4.8	7.2	6.3	132H5062	S1C02	132H5072	S1A02
05-09A2	LO	9.2	8.2	12.5	11	132H5063	S1C02	132H5073	S1A02
	HO1	9.2	8.2	12.5	11	132H5063	S1C02	132H5073	S1A02
	HO2	8	6.3	12.5	11	132H5063	S1C02	132H5073	S1A02
05-12A5	LO	12.5	11	12.5	11	132H5063	S1C02	132H5073	S1A02
	HO1	12.5	11	12.5	11	132H5063	S1C02	132H5073	S1A02
	HO2	10	7.6	12.5	11	132H5063	S1C02	132H5073	S1A02
05-16A0	LO	16	14.5	16	14.5	132H5064	S1C03	132H5074	S1A03
	HO1	16	14.5	16	14.5	132H5064	S1C03	132H5074	S1A03
	HO2	13	11	16	14.5	132H5064	S1C03	132H5074	S1A03
05-24A0	LO	24	21	31	27	132H5065	S1C04	132H5075	S1A04
	HO1	24	21	31	27	132H5065	S1C04	132H5075	S1A04
	HO2	17	14.5	31	27	132H5065	S1C04	132H5075	S1A04
05-31A0	LO	31	27	31	27	132H5065	S1C04	132H5075	S1A04
	HO1	31	27	31	27	132H5065	S1C04	132H5075	S1A04
	HO2	25	21	31	27	132H5065	S1C04	132H5075	S1A04
05-38A0	LO	38	34	43	40	132H5066	S1C05	132H5077	S1A05
	HO1	38	34	43	40	132H5066	S1C05	132H5077	S1A05
	HO2	32	27	43	40	132H5066	S1C05	132H5077	S1A05
05-43A0	LO	43	40	43	40	132H5066	S1C05	132H5077	S1A05
	HO1	43	40	43	40	132H5066	S1C05	132H5077	S1A05
	HO2	38	34	43	40	132H5066	S1C05	132H5077	S1A05
05-61A0	LO	61	55	73	66	132H5067	S1C05	132H5078	S1A06
	HO1	61	55	73	66	132H5067	S1C05	132H5078	S1A06
	HO2	46	40	73	66	132H5067	S1C05	132H5078	S1A06
05-73A0	LO	73	66	73	66	132H5067	S1C05	132H5078	S1A06
	HO1	73	66	73	66	132H5067	S1C05	132H5078	S1A06
	HO2	61	55	73	66	132H5067	S1C05	132H5078	S1A06
05-90A0	LO	90	81	106	96	132H5068	S1C07	132H5080	S1A07

iC7 drive				Sine-wave filter					
Product code	Overload rating	Rated output current		Rated current		IP00/Open Type		IP20/Open Type ⁽¹⁾	
		380–440 V [A]	441–500 V [A]	380–440 V [A]	441–500 V [A]	Code no.	Frame	Code no.	Frame
	HO1	90	81	106	96	132H5068	S1C07	132H5080	S1A07
	HO2	73	66	106	96	132H5068	S1C07	132H5080	S1A07
05-106A	LO	106	96	106	96	132H5068	S1C07	132H5080	S1A07
	HO1	106	96	106	96	132H5068	S1C07	132H5080	S1A07
	HO2	90	81	106	96	132H5068	S1C07	132H5080	S1A07
05-147A	LO	147	133	170	156	132H5069	S1C08	132H5081	S1A08
	HO1	147	133	170	156	132H5069	S1C08	132H5081	S1A08
	HO2	106	96	170	156	132H5069	S1C08	132H5081	S1A08
05-170A	LO	170	156	170	156	132H5069	S1C08	132H5081	S1A08
	HO1	170	156	170	156	132H5069	S1C08	132H5081	S1A08
	HO2	147	133	170	156	132H5069	S1C08	132H5081	S1A08

¹ Optional IP21/UL Type 1 kit available.

1.11.7 Ordering IP21/UL Type 1 Upgrade Kits for S1A02–S1A08 Sine-wave Filters

Table 9: Selection Table for IP21/UL Type 1 Upgrade Kits

Sine-wave filter (IP20/Open type)		IP21/UL Type 1 accessory kits		
Code no.	Frame	Code no.	Description	Frame
132H5070	S1A02	136B2782	IP21/UL Type 1 kit - S1K02b	S1K02b
132H5061	S1A02	136B2782	IP21/UL Type 1 kit - S1K02b	S1K02b
132H5072	S1A02	136B2782	IP21/UL Type 1 kit - S1K02b	S1K02b
132H5073	S1A02	136B2782	IP21/UL Type 1 kit - S1K02b	S1K02b
132H5074	S1A03	136B2783	IP21/UL Type 1 kit - S1K03b	S1K03b
132H5075	S1A04	136B2784	IP21/UL Type 1 kit - S1K04b	S1K04b
132H5077	S1A05	136B2785	IP21/UL Type 1 kit - S1K05b	S1K05b
132H5078	S1A06	136B2786	IP21/UL Type 1 kit - S1K06b	S1K06b
132H5080	S1A07	136B2787	IP21/UL Type 1 kit - S1K07b	S1K07b
132H5081	S1A08	136B2788	IP21/UL Type 1 kit - S1K08b	S1K08b

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