ABB INDUSTRIAL DRIVES

ACS880...+P940 and +P944 drive modules
Supplement

ACS880...+P940 and +P944 drive modules

Supplement

3AUA0000145446 Rev F
EN
Original instructions
EFFECTIVE: 2023-06-15

Table of contents

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Introduction to the supplement

Contents of this chapter

This chapter describes the supplement.

Applicability

This supplement is applicable to these drive modules:

- ACS880-01 frames R1 to R9 with options +P940 and +P944
- ACS880-11 frames R3, R6 and R8 with option +P940
- ACS880-31 frames R3, R6 and R8 with option +P940.

It is a supplement to these manuals:

- ACS880-01 hardware manual (3AUA0000078093 [English])
- ACS880-11 hardware manual (3AXD50000045932 [English])
- ACS880-31 hardware manual (3AXD50000045933 [English]).

Safety instructions

See the hardware manual.

Target audience

This manual is intended for people who plan the installation, install, commission and do maintenance work on the drive, or create instructions for the end user of the drive concerning the installation and maintenance of the drive.

Read the manual before you work on the drive. You are expected to know the fundamentals of electricity, wiring, electrical components and electrical schematic symbols.

Purpose of this supplement

The supplement gives you instructions on how to install the drive module into a user-defined cabinet.

Related documents

You can find manuals on the Internet. See below for the relevant code/link. For more documentation, go to www.abb.com/drives/documents.

ACS880-01 manuals	ACS880-11 manuals	ACS880-31 manuals

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Hardware description

Contents of this chapter

This chapter briefly describes the construction of the drive module options +P940 and +P944.

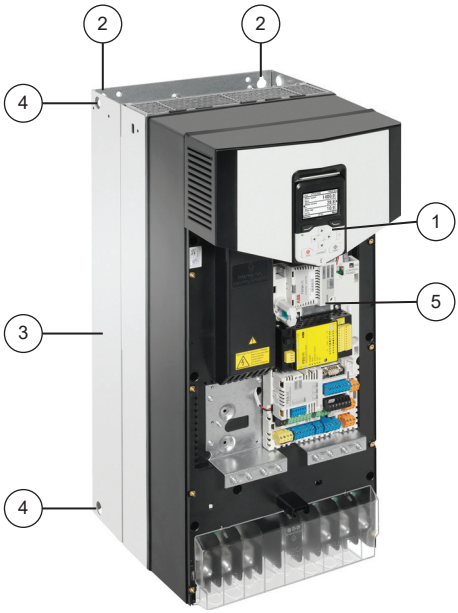
Product overview

Drives with option +P940 and +P944 are modules to be installed into a user-defined cabinet.

Drive type	Option code	Degree of protection	Description
ACS880-01	+P940	IP20 (UL Open Type)	Drive module without front covers and cable box
	+P944	IP20 (UL Open Type)	Drive module with front covers but without cable box
ACS880-11, ACS880-31	+P940	IP20 (UL Open Type)	Drive module without front covers

Layout of option +P940 (IP20, UL Open Type)

This figure shows the layout of an example drive module, ACS880-01 frame R8.



1	Control panel
2	Four fastening points at the back of the drive
3	Heatsink
4	Lifting eyes
5	Control unit

Layout of option +P944 (IP20, UL Open Type)

This figure shows the layout of an example drive module, ACS880-01 frame R5.

1	Control panel
2	Front cover
3	Four fastening points at the back of the drive
4	Heatsink
5	Lifting eyes

3

Guidelines for planning the cabinet installation

Contents of this chapter

This chapter gives ACS880-01, ACS880-11 and ACS880-31 specific guidelines for planning drive cabinets and installing the drive modules into a user-defined cabinet. The guidelines are essential for the safe and trouble-free use of the drive system.

Limitation of liability

The installation must always be designed and made according to applicable local laws and regulations. ABB does not assume any liability whatsoever for any installation which breaches the local laws and/or other regulations. Furthermore, if the recommendations given by ABB are not followed, the drive may experience problems that the warranty does not cover.

North America

Installations must be compliant with NFPA 70 (NEC)[1)] and/or Canadian Electrical Code (CE) along with state and local codes for your location and application.

[1)] National Fire Protection Association 70 (National Electric Code).

Generic cabinet planning instructions

Refer to Drive modules cabinet design and construction instructions (3AUA0000107668 [English]) for

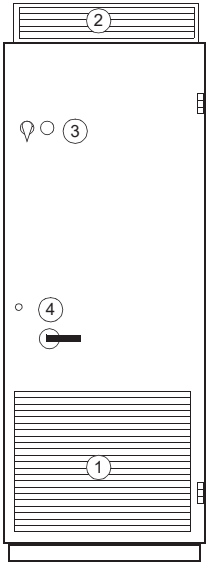
- cabinet construction: disposition of the devices, grounding of mounting structures, busbar material and joints, shrouds and tightening torques
- cooling and degrees of protection
- EMC requirements, 360° high-frequency grounding of the cable shields at the cable entries
- fastening the cabinet
- cabinet placement on a cable channel
- planning the use of cubicle heaters
- control panel mounting platforms.

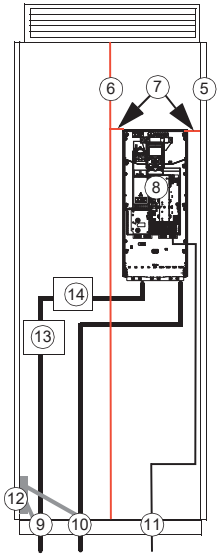
Vibration dampers

Vibration dampers are not needed in cabinet installations of ACS880-01, ACS880-11 and ACS880-31 drive modules.

Layout example

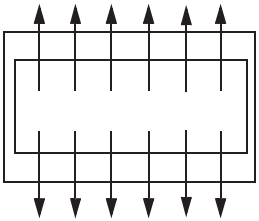
An example cabinet layout is shown below.





1	Air inlet	8	Drive module with control unit and control panel
2	Air outlet	9	Input power cable including the protective ground conductor (PE) of the drive
3	Contactor control switch and emergency stop switch (connected to the contactor control circuit inside the cabinet)	10	Motor cable including the protective ground conductor
4	Operating handle of the disconnector	11	External control cables
5	Supporting frame of the cabinet	12	Cabinet grounding busbar (PE)
6	Vertical air baffle that separates the cool and hot areas (leak-proof entries)	13	Disconnector and fuses
7	Horizontal air baffles	14	Contactor

Roof air flow viewed from top:



Minimum air inlet and outlet grating sizes

Make sure that the air inlet and outlets are large enough to allow sufficient air flow in and out of the cabinet. This is critical for the correct cooling of the drive module. See the minimum grating sizes below.

Frame size	Minimum effective area of cabinet air inlet (cm^2)		Minimum effective area of cabinet air outlet (cm^2)	
	IP22	IP54	IP22	IP54
R1	175	250	350	550
R2	225	350	450	700
R3	275	450	550	900
R4	350	550	700	1100
R5	400	650	800	1250
R6	475	750	950	1500
R7	650	1100	1300	2000
R8	1000	1600	2000	3200
R9	1500	2400	3000	4800

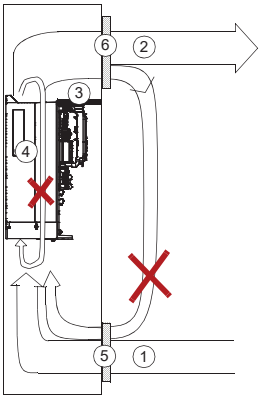
Frame size	Minimum effective area of cabinet air inlet (in^2)		Minimum effective area of cabinet air outlet (in^2)	
	UL Type 1	UL Type 12	UL Type 1	UL Type 12
R1	27.13	38.75	54.25	85.25
R2	34.88	54.25	69.75	108.50
R3	42.63	69.75	85.25	139.50
R4	54.25	85.25	108.50	170.50
R5	62.00	100.75	124.00	193.75
R6	73.63	116.25	147.25	232.50
R7	100.75	170.50	201.50	310.00
R8	155.00	248.00	310.00	496.00
R9	232.50	372.00	465.00	744.00

Preventing the recirculation of hot air

Prevent hot air circulation outside the cabinet by leading the outgoing hot air away from the area where the inlet air to the cabinet is taken. Possible solutions are listed below:

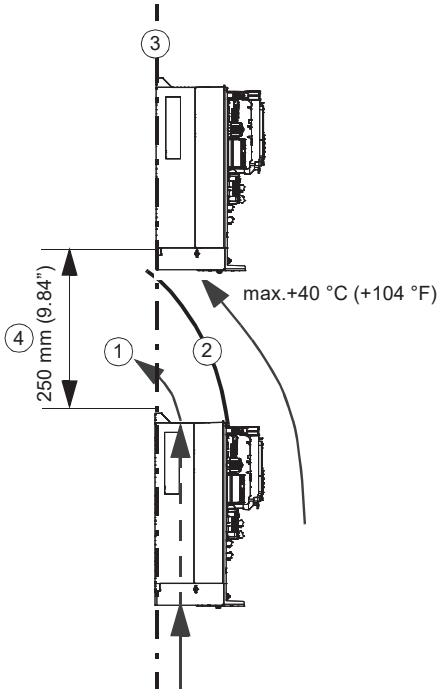
- gratings that guide air flow at the air inlet and outlet
- air inlet and outlet at different sides of the cabinet
- cool air inlet in the lower part of the front door, and an extra exhaust fan on the roof of the cabinet.

Prevent hot air circulation inside the cabinet with, for example, leak-proof air baffles. Usually, no gaskets are required.



1	Main air flow in	4	Drive
2	Main air flow out	5	Air inlet filter
3	Air baffle plate	6	Air outlet filter

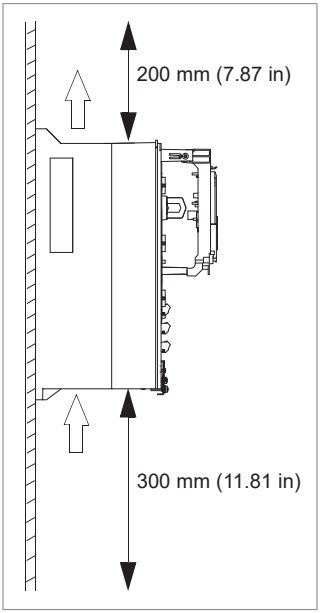
Installing drives above one another



1	Air flow through the drive	3	Mounting plate that allows air flow
2	Air baffle	4	Minimum spacing between the drives

Free space requirements

The required free space at the top and bottom of the drive module is shown below. The free space is needed to make sure that the module cools correctly.



Planning the cabling outside cabinet

Refer to the cable routing instructions in the hardware manual.

Installing ABB common mode filters (option +E208)

Common mode filter kits are available as options from ABB. For drive modules without the cable entry box, hang the common mode filter ring on the cabinet structure.

For the dimensions of the ring and installing the motor cable through the ring, refer to

ACS880-01…+E208 frame R6 common mode filter installation instructions	3AXD50000015178
ACS880-01…+E208 frame R8 common mode filter installation instructions	3AXD50000015180
ACS880-01…+E208 frame R9 common mode filter installation instructions	3AXD50000015201

ACS880-01…+E208 frame R7, ACH580-31… and ACQ580-31…+E208 frame R8 kit installation instructions	3AXD50000015179

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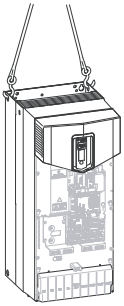
Mechanical installation

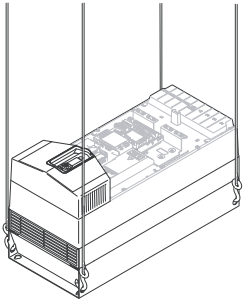
Contents of this chapter

This chapter gives guidelines for the mechanical installation of the drive module into a cabinet.

Safety

WARNING!
For frame sizes R4 to R9: Use the lifting eyes of the drive when you lift the drive. Do not tilt the drive. The drive is heavy and its center of gravity is high. An overturning drive can cause physical injury.





Examining the installation site

See the drive hardware manual for

- allowed ambient conditions in chapter Technical data
- allowed installation positions.

Examine the installation site. Make sure that:

- The installation site is sufficiently ventilated or cooled to remove heat from the drive. See the technical data.
- The ambient conditions of the drive meet the specifications. See the technical data.
- The material behind, above and below the drive is non-flammable.
- The installation surface is as close to vertical as possible and strong enough to support the drive.
- There is sufficient free space around the drive for cooling, maintenance, and operation. See the free space specifications for the drive.
- Make sure that there are no sources of strong magnetic fields such as high-current single-core conductors or contactor coils near the drive. A strong magnetic field can cause interference or inaccuracy in the operation of the drive.

Necessary tools

To move a heavy drive, you need a crane, fork-lift or pallet truck (check load capacity!).

To lift a heavy drive, you need a hoist.

To install the drive mechanically, you need the following tools:

- drill with suitable bits
- screwdriver set (Torx, flat and/or Phillips, as appropriate)
- torque wrench
- socket set, Hex key set (metric)
- tape measure, if you will not be using the provided mounting template.

Moving the drive module

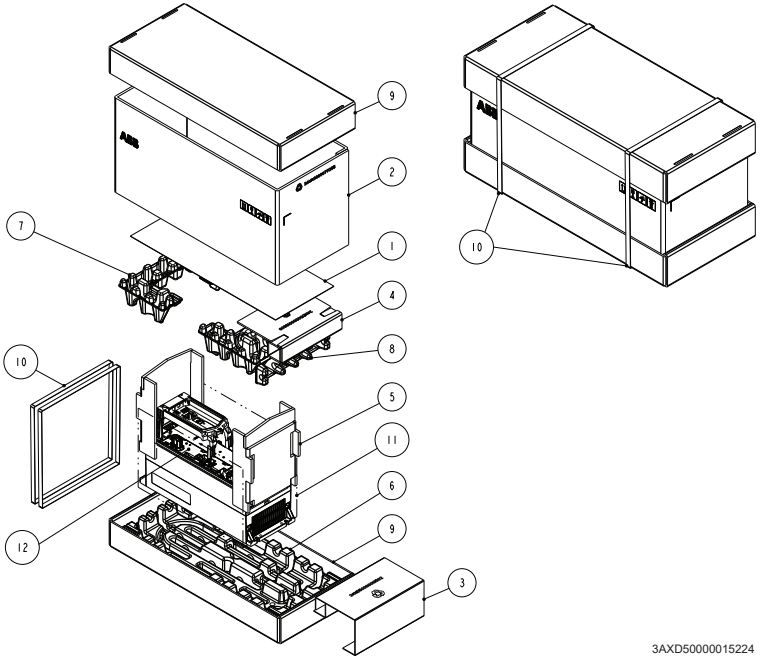
Move the transport package by pallet truck to the installation site.

Unpacking and examining the delivery

Examine that all items are present and there are no signs of damage. Read the data on the type designation label of the drive to make sure that the drive is of the correct type.

ACS880-01 frames R1 and R2

This figure shows the drive package with its contents.



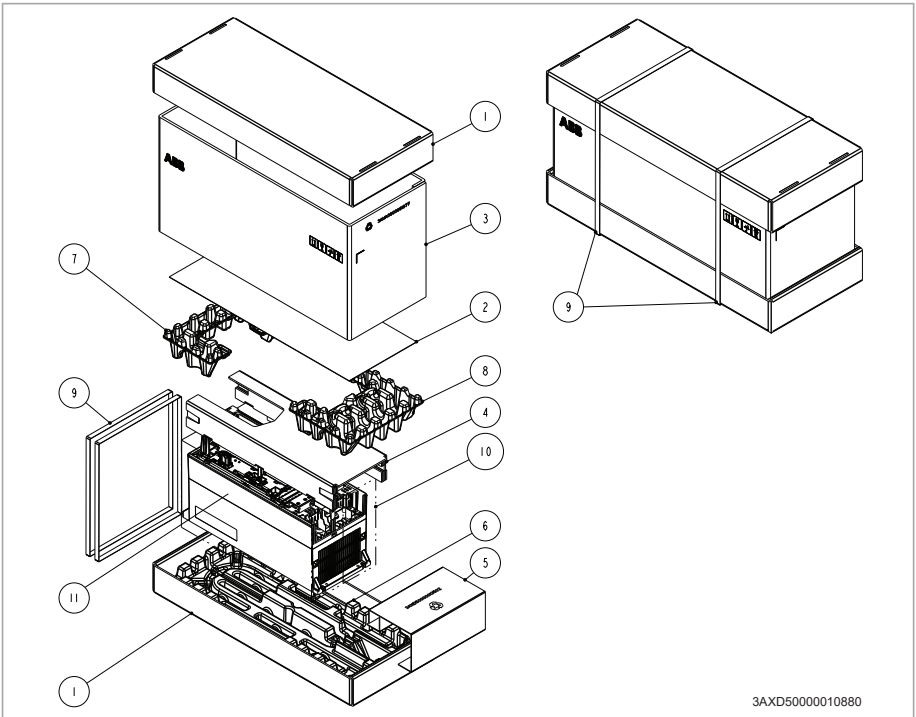
1	Mounting template	9	Cardboard trays
2	Cardboard sleeve	10	Straps
3.5	Cardboard supports	11	Plastic bag
6.8	Cushions	12	Drive with factory installed options

To unpack:

- Cut the straps (10)
- Remove the top cardboard tray (9), mounting template (1), cardboard support (4) and cushions (7 and 8)
- Lift the sleeve (2)
- Remove the cardboard supports (5)
- Lift the drive module.

ACS880-01 frame R3

The figure below shows the drive package with its contents.



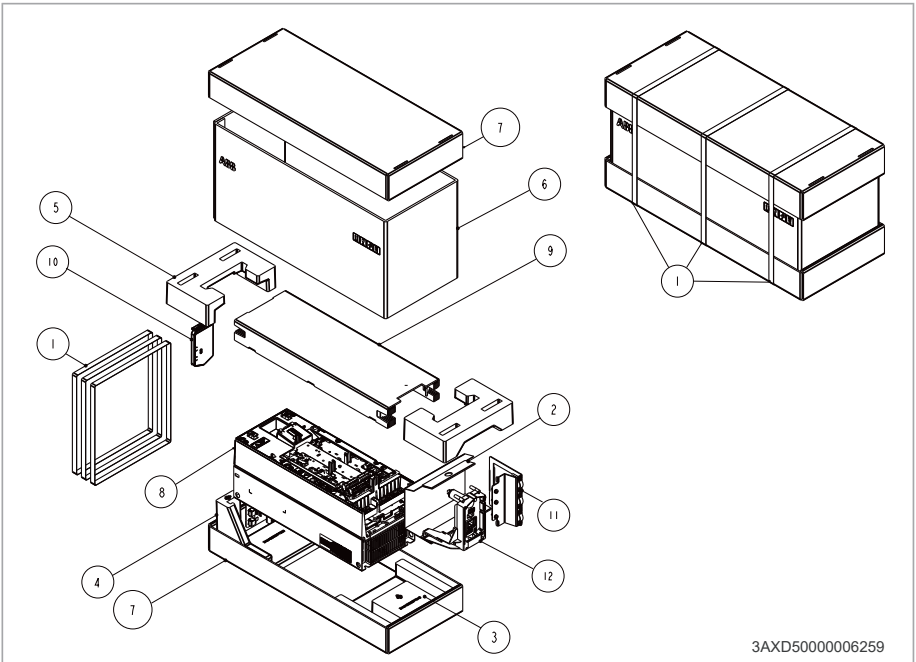
1	Cardboard trays	6, 8	Cushions
2	Mounting template	9	Straps
3	Cardboard sleeve	10	Plastic bag
4	Cardboard spacer	11	Drive with factory installed options
5	Cardboard support		

To unpack:

- Cut the straps (9)
- Remove the top cardboard tray (1), mounting template (2) and cushions (7 and 8)
- Lift the sleeve (3)
- Remove the cardboard spacer (4)
- Lift the drive module.

ACS880-01 frame R4

This figure shows the drive package with its contents.



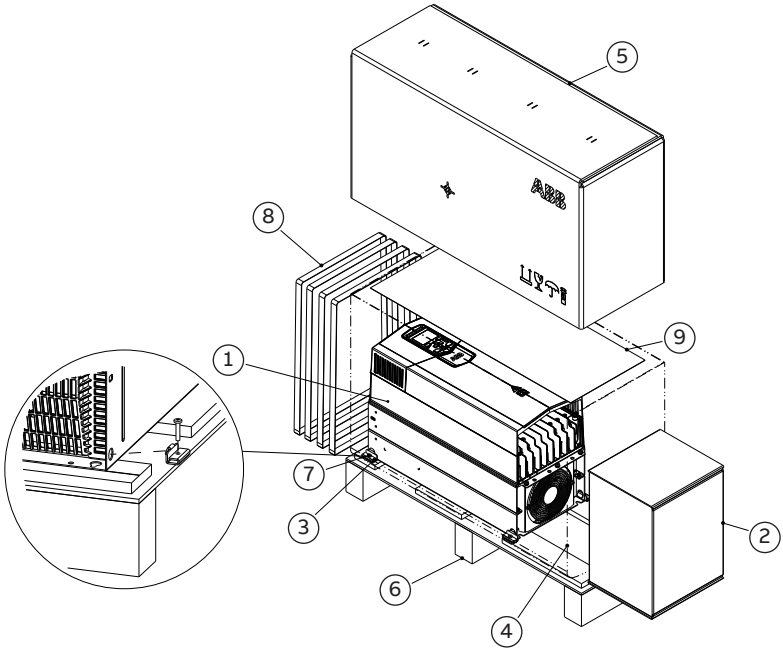
1	Straps	8	Drive with factory installed options
2	Cardboard support	9	Cardboard spacer
3.5	Cushions	10	CDPI-01 assembly kit
6	Sleeve	11	Main cable clamp kit
7	Trays	12	Panel holder

To unpack:

- Cut the straps (1)
- Remove the top tray (7)
- Remove the cardboard spacer (9), cushions (5), cardboard support (2), panel holder (12) and main cable clamp kit (11)
- Remove the sleeve
- Attach lifting hooks to the lifting eyes of the drive module. Lift the drive module with a hoist.

ACS880-01 frames R5 and R6

This figure shows the drive package with its contents.

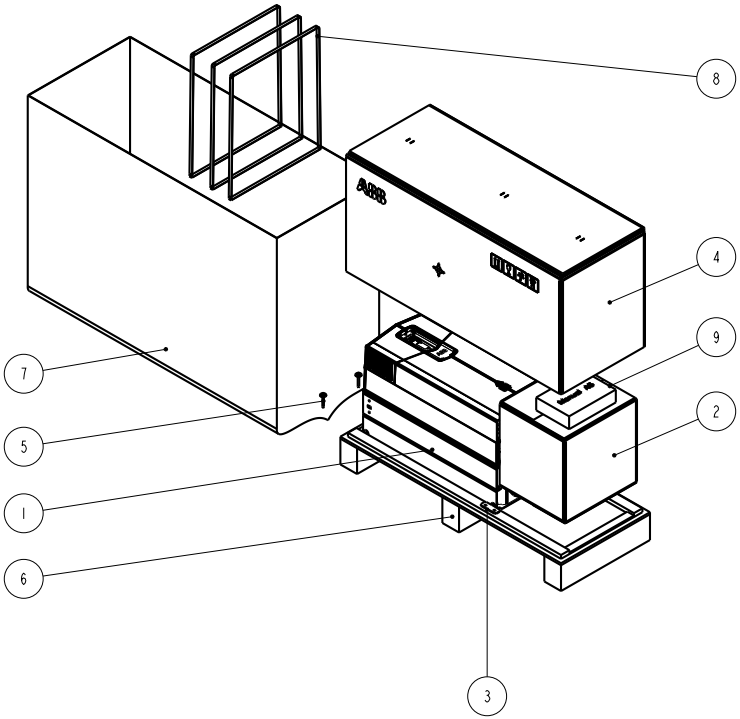


1	Drive with factory installed options	6	Pallet tray
2	Cable box (not included with options +P944 and +P940)	7	Screw (4 pcs)
3	Packing bracket (4 pcs)	8	Straps
4	VCI bag	9	Mounting template
5	Cardboard cover	-	-

To unpack:

- Cut the straps (8).
- Remove the top cardboard cover (5) and VCI bag (4).
- Remove the screws (7) and packing brackets (3).
- Attach lifting hooks to the lifting eyes of the drive. Lift the drive with a hoist.

ACS880-01, frame R7



1	Drive with factory installed options, mounting template	6	VCI bag
2	Cable box (not included with options +P940 and +P944)	7	Straps
3	Cardboard cover	8	Printed quick installation and start-up guide and manuals, multilingual residual voltage warning sticker
4	Packing bracket	9	Screws
5	Pallet tray	10	Vibration damper package (option +C131)

To unpack:

Cut the straps (7).

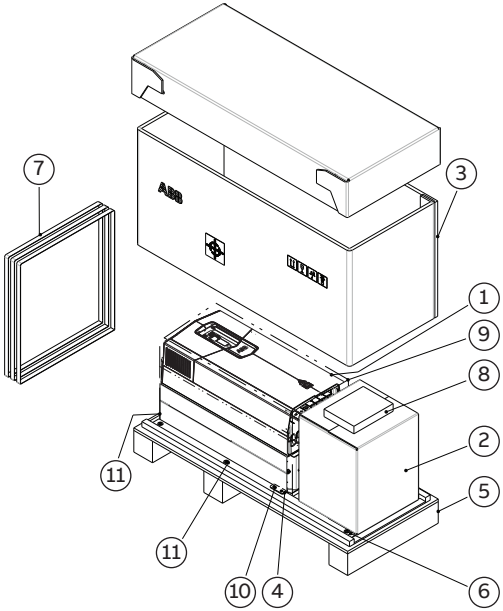
Remove the top cardboard cover (3) and VCI bag (6).

Remove the screws (9) and packing brackets (4).

Attach lifting hooks to the lifting eyes of the drive. Lift the drive with a hoist.

ACS880-01 frames R8 and R9

This figure shows the drive package with its contents.



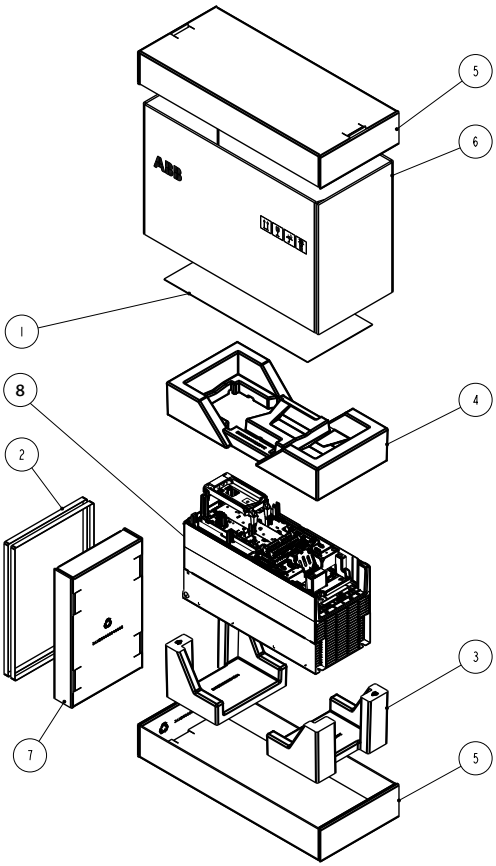
1	Drive with factory installed options, mounting template	6	Plywood support (only in frame R8)
2	Cable box (not included with options +P940 and +P944)	7	Straps
3	Cardboard cover	8	Printed quick installation and start-up guide and manuals, multilingual residual voltage warning sticker
4	Packing bracket	9	VCI bag
5	Pallet tray	10, 11	Screws

To unpack:

- Cut the straps (7).
- Remove the top cardboard cover (3) and VCI bag (9).
- Remove the screws (10, 11) and packing brackets (4).
- Attach lifting hooks to the lifting eyes of the drive. Lift the drive with a hoist.

ACS880-11 and ACS880-31 frame R3

The figure below shows the drive package with its contents.



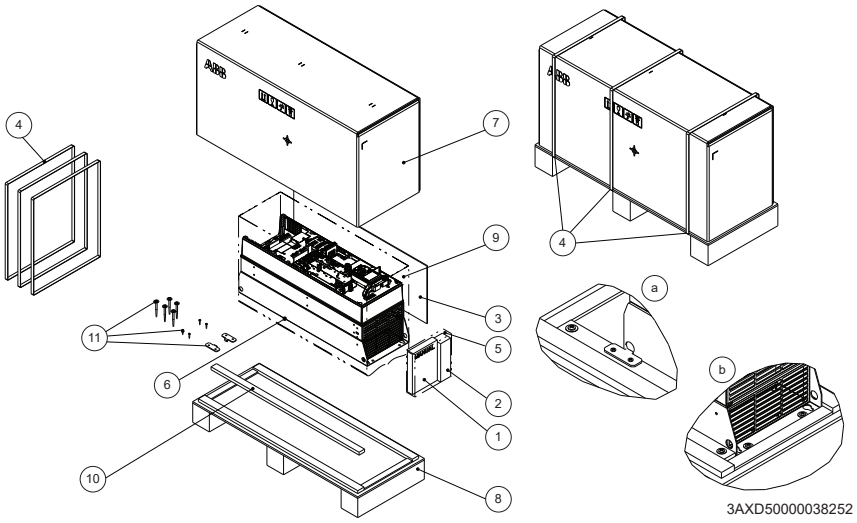
1	Mounting template	6	Sleeve
2	Straps	7	Option box
3, 4	Package cushions		
5	Cardboard tray	8	Drive with factory installed options

To unpack:

- Cut the straps (2)
- Remove the top tray (5), sleeve (6), mounting template (1) and cushion (4)
- Lift the drive.

ACS880-11 and ACS880-31 frame R6

The figure below shows the drive package with its contents.



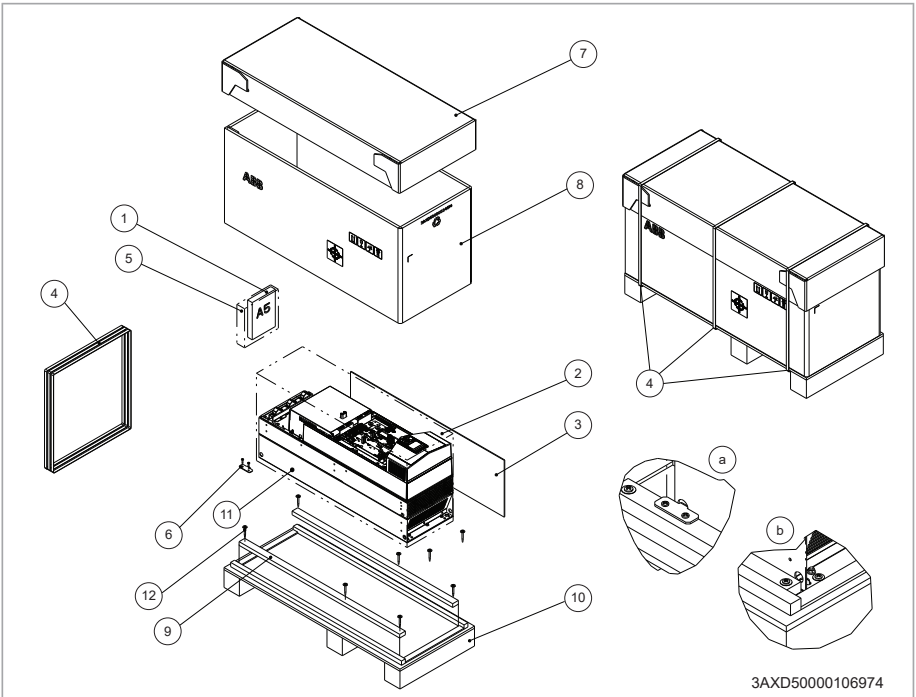
1	Printed quick guides and manuals, multilingual residual voltage warning sticker	7	Cardboard cover
2	Accessories	8	Pallet
3	Mounting template	9	VCI bag
4	Straps	10	Plywood support
5	Plastic bag	11	Packing brackets and screws
6	Drive with factory installed options		

To unpack:

- Cut the straps (4)
- Remove the cardboard cover (7)
- Undo the attaching screws (b) and packing brackets (a)
- Attach lifting hooks to the lifting eyes of the drive module. Lift the drive module with a hoist.

ACS880-11 and ACS880-31 frame R8

The figure below shows the drive package with its contents.



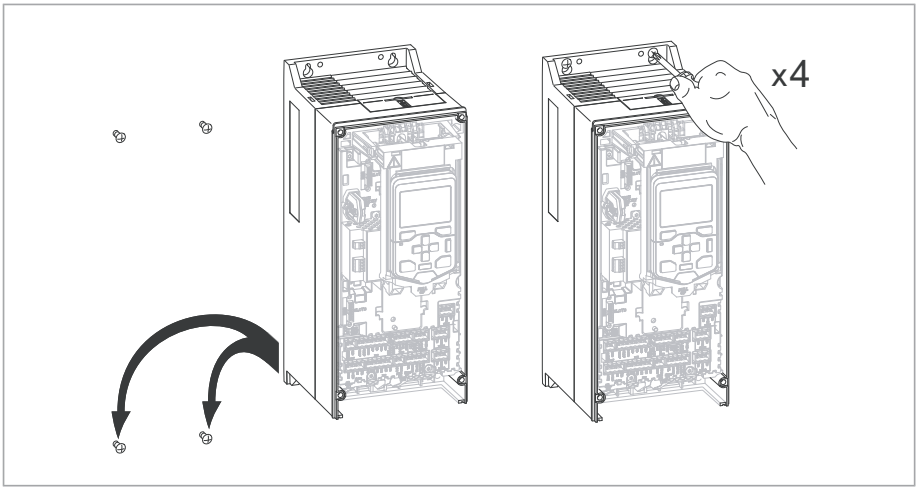
1	Printed quick guides and manuals, multilingual residual voltage warning sticker	7	Tray
2	VCI bag	8	Sleeve
3	Mounting template	9	Plywood supports
4	Straps	10	Pallet
5	Plastic bag	11	Drive with factory installed options
6	Packing brackets	12	Screws

To unpack:

- Cut the straps (4)
- Remove the top tray (7), sleeve (8) and mounting template (3)
- Undo the packing brackets (a) and attaching screws (b)
- Attach lifting hooks to the lifting eyes of the drive module. Lift the drive module with a hoist.

Installing the drive

1. See the dimension drawings. Mark the locations for the four mounting holes.
2. Start the screws or bolts into the mounting holes.
3. Position the drive onto the screws.
4. Tighten the screws in the wall securely.



5

Electrical installation

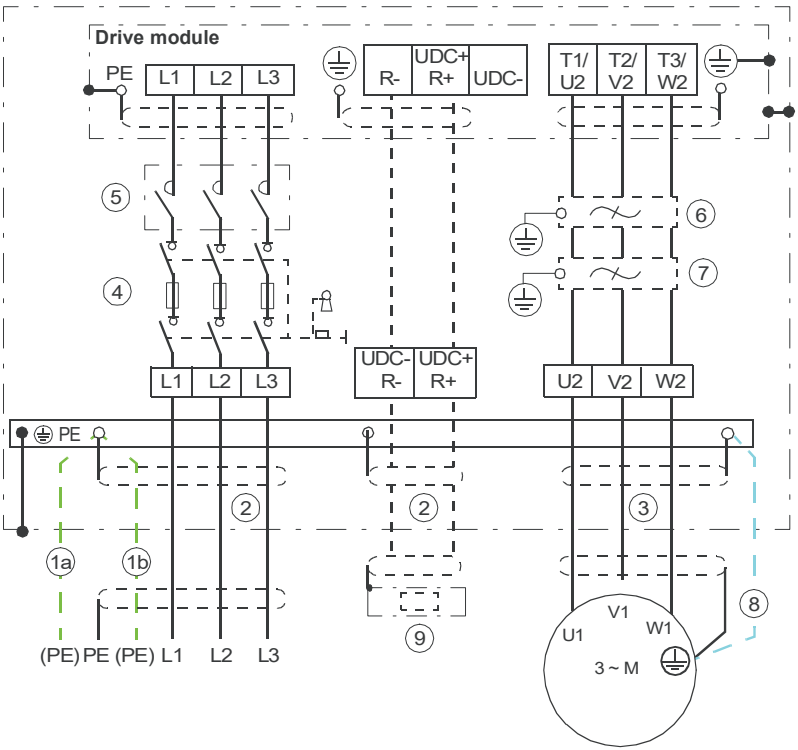
Contents of this chapter

This chapter tells you how to install the power and control cables to the drive module. For other electrical installation instructions that concern the drive, see the hardware manual.

Warnings

WARNING!
Obey the safety instructions of the drive. If you ignore them, injury or death, or damage to the equipment can occur. If you are not a qualified electrical professional, do not do installation, commissioning or maintenance work.

Power cable connection diagram



1	Use a separate grounding PE cable (1a) or a cable with a separate PE conductor (1b) if the conductivity of the shield does not meet the requirements for the PE conductor.
2	ABB recommends 360° grounding if shielded cable is used. Ground the other end of the input cable shield or PE conductor at the distribution board.
3	360° grounding is required.
4	Switch-disconnector and fuses. See the instructions on selecting the supply disconnecting device in the hardware manual.
5	Line contactor (optional)
6	Common mode filter (option +E208)
7	d*u*/d*t* filter or sine filter (optional)

8	Use a separate grounding cable if the shield does not meet the requirements of IEC 61439-1 and there is no symmetrically constructed grounding conductor in the cable. See the hardware manual.
9	External brake resistor

Note: If there is a symmetrically constructed grounding conductor on the motor cable in addition to the conductive shield, connect the grounding conductor to the grounding terminal at the drive and motor ends.

Do not use an asymmetrically constructed motor cable for motors above 30 kW. Connecting its fourth conductor at the motor end increases bearing currents and causes extra wear.

Cable connection procedure – ACS880-11... and ACS880-31... +P940 drive modules

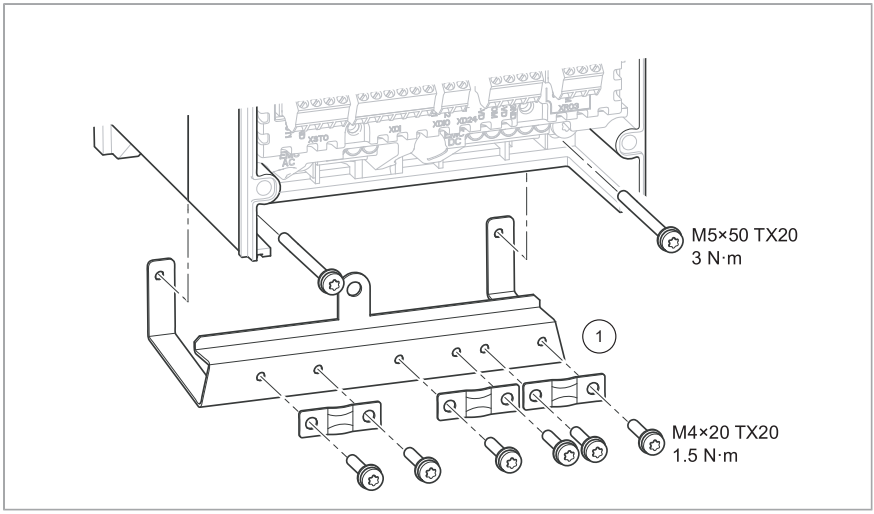
Connect the power cables as described in the hardware manual. Secure the cables mechanically.

Cable connection procedure (IEC) – ACS880-01... +P940 and +P944 drive modules

This section gives instructions on how to connect the power cables.

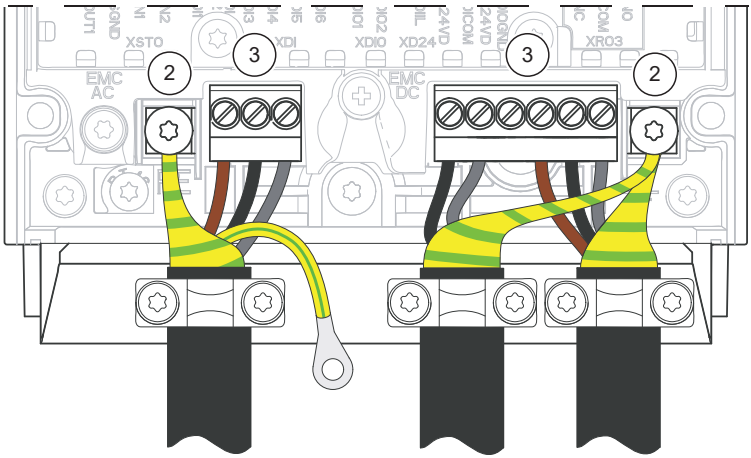
ACS880-01 frames R1 and R2

1. Attach the mechanical support shelf for the power cables to the drive module.



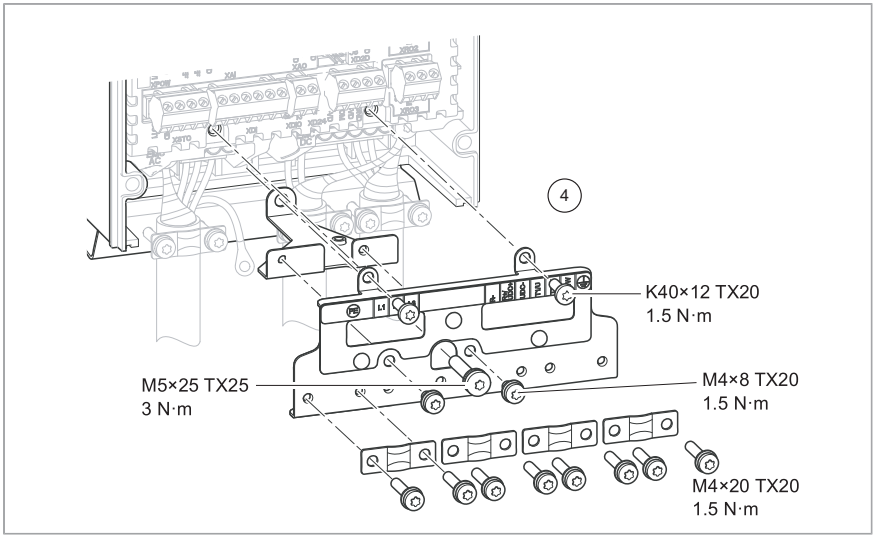
2. Connect the twisted shields of the power cables to the grounding terminals.

3. Connect the phase conductors of the input cable to the L1, L2 and L3 terminals and the phase conductors of the motor cable to the T1/U, T2/V and T3/W terminals. Connect the brake resistor conductors (if present) to the R+ and R- terminals. Tighten the screws to the torque given in the figure below.

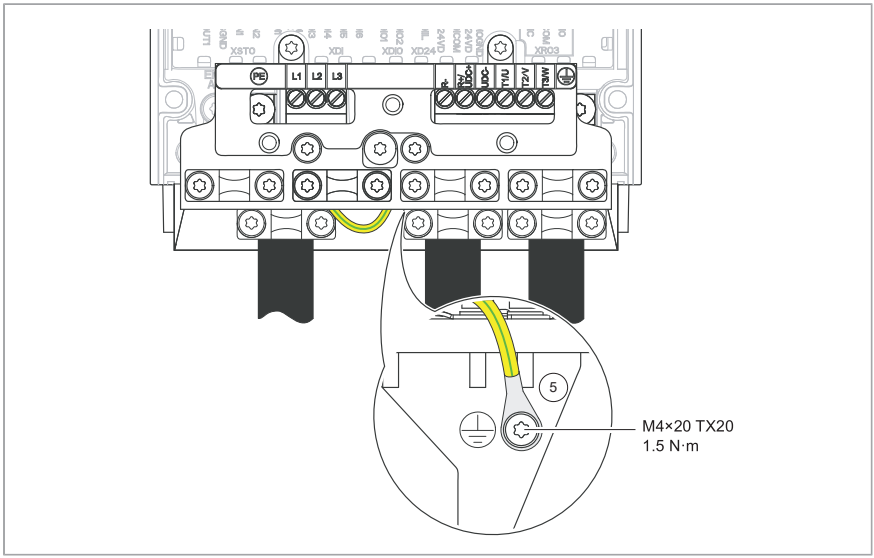


L1, L2, L3, T1/U, T2/V, T3/W, R-, R+/UDC+, UDC	Grounding
0.6 N·m	1.8 N·m

4. Install the shelves for grounding the additional PE conductor of the input cable and the pair-cable shields and grounding wires of the control cables.



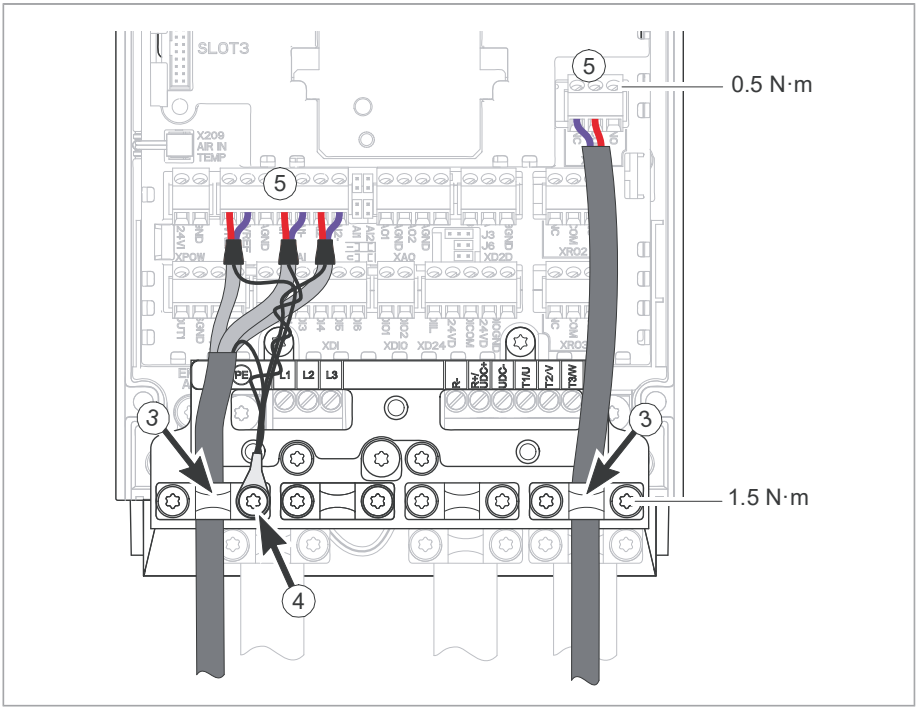
5. Connect the additional PE conductor of the input cable to the grounding shelf.



6. Go to section Connecting the control cables – ACS880-01 frames R1 and R2 (page 44).

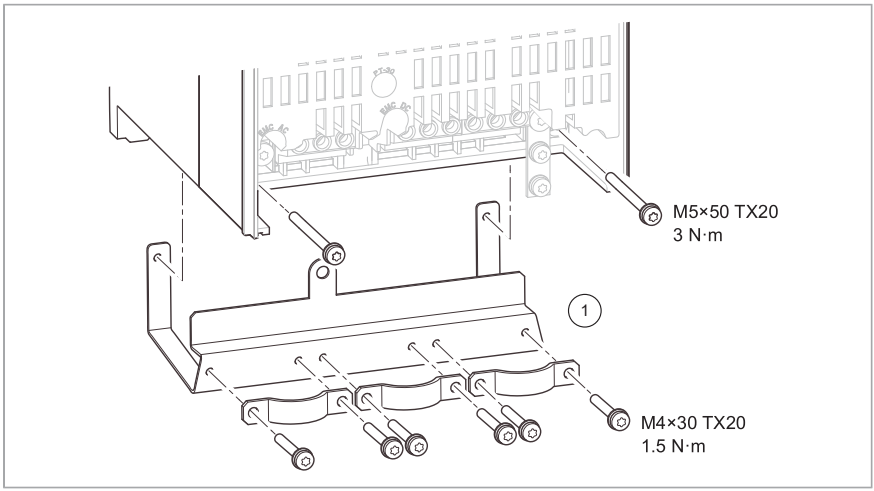
Connecting the control cables – ACS880-01 frames R1 and R2

1. Strip the cable ends and cut to suitable length (note the extra length of the grounding conductors).
2. Ground the outer shields of all control cables 360 degrees at the cabinet entry.
3. Secure the cables mechanically at the clamps.
4. Ground the pair-cable shields to the clamps. Leave the other end of the shields unconnected or ground them indirectly via a high-frequency capacitor with a few nanofarads, eg, 3.3 nF / 630 V.
5. Connect the conductors to the appropriate terminals of the control unit (see the default I/O connections in the hardware manual).
6. Wire the optional modules if included in the delivery.

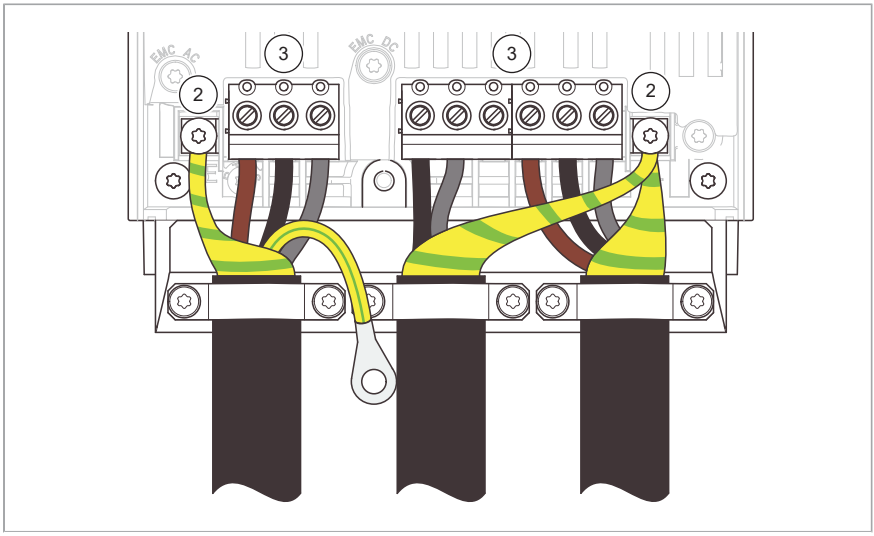


ACS880-01 frame R3

1. Attach the mechanical support shelf for the power cables to the drive module.

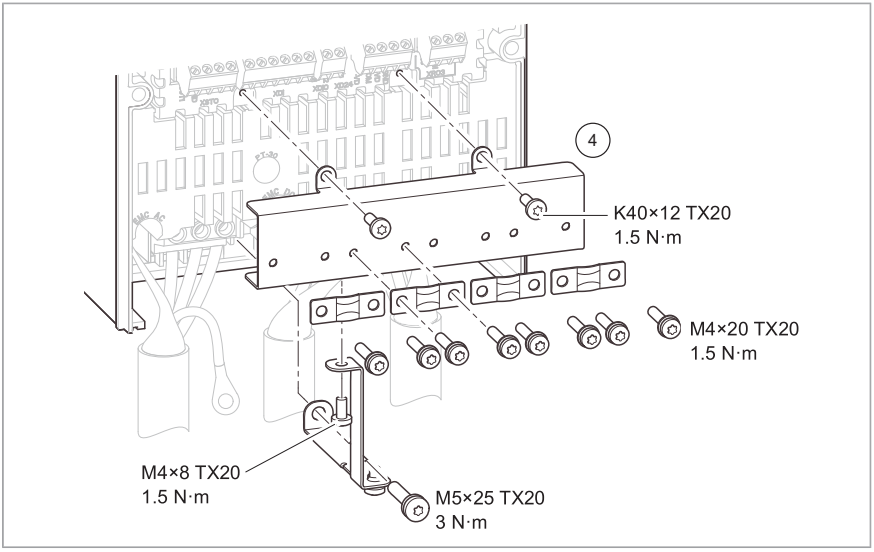


2. Connect the twisted shields of the power cables to the grounding terminals.
3. Connect the phase conductors of the input cable to the L1, L2 and L3 terminals and the phase conductors of the motor cable to the T1/U, T2/V and T3/W terminals. Connect the brake resistor conductors (if present) to the R+ and R- terminals. Tighten the screws to the torque given in the figure below.

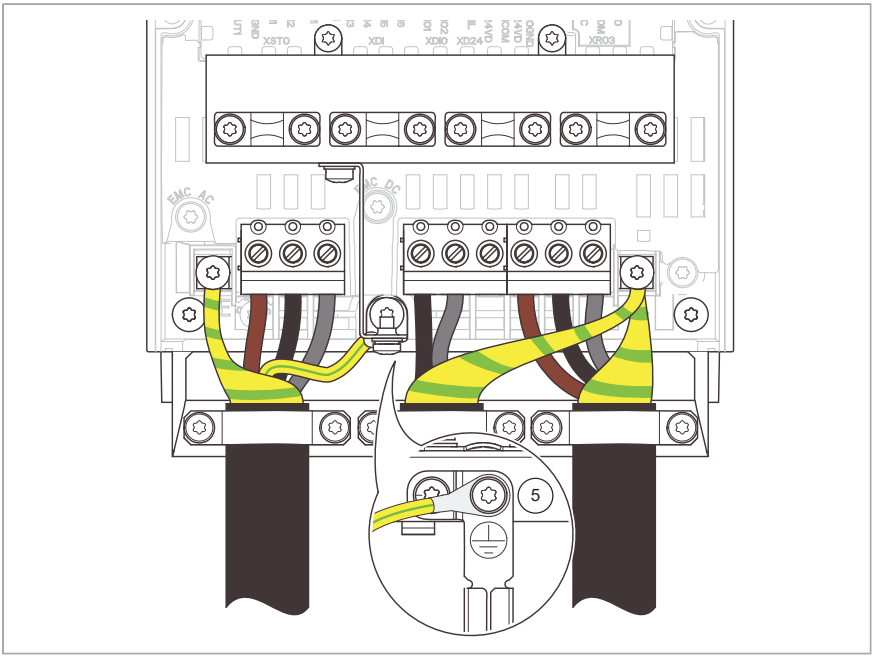


L1, L2, L3, T1/U, T2/V, T3/W, R-, R+/UDC+, UDC	Grounding
0.6 N·m	1.8 N·m

4. Install the shelves for grounding the additional PE conductor of the input cable and the pair-cable shields and grounding wires of the control cables.



5. Connect the additional PE conductor of the input cable to the grounding shelf.

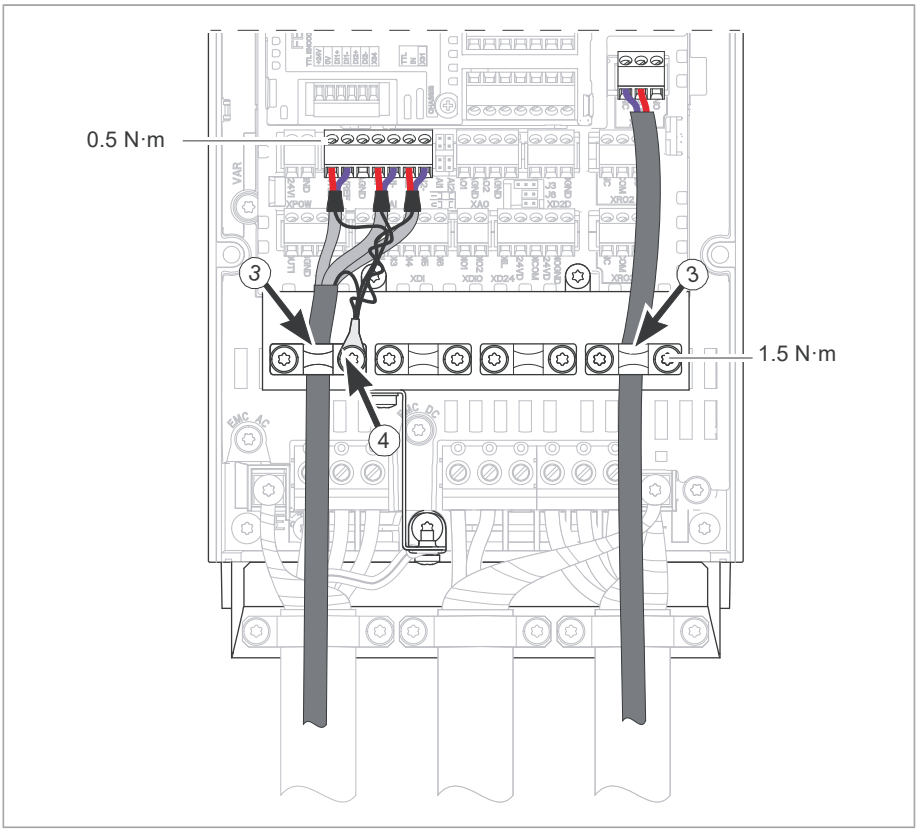


6. Go to section Connecting the control cables – ACS880-01 frame R3 (page 47).

Connecting the control cables – ACS880-01 frame R3

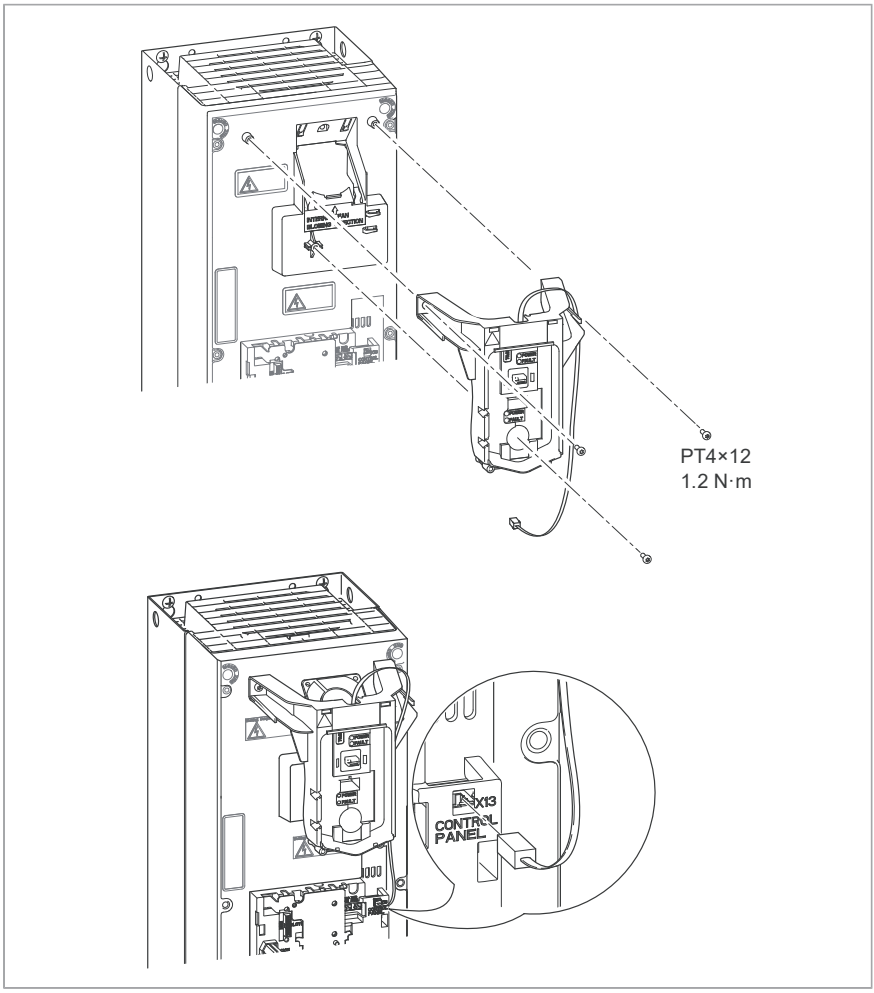
1. Strip the cable ends and cut to suitable length (note the extra length of the grounding conductors).
2. Ground the outer shields of all control cables 360 degrees at the cabinet entry.
3. Secure the cables mechanically at the clamps.
4. Ground the pair-cable shields to the clamps. Leave the other end of the shields unconnected or ground them indirectly via a high-frequency capacitor with a few nanofarads, eg, 3.3 nF / 630 V.
5. Connect the conductors to the appropriate terminals of the control unit (see the default I/O connections in the hardware manual).

6. Wire the optional modules if included in the delivery.

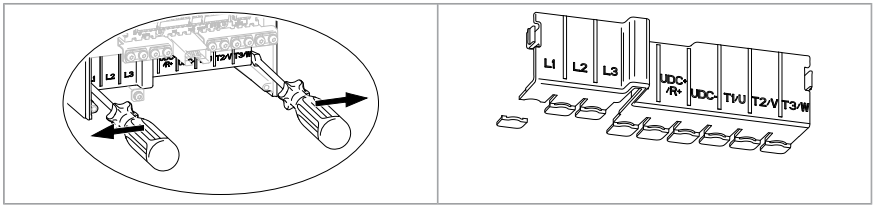


ACS880-01 frames R4 and R5

1. Install the control panel holder. Connect the wire.

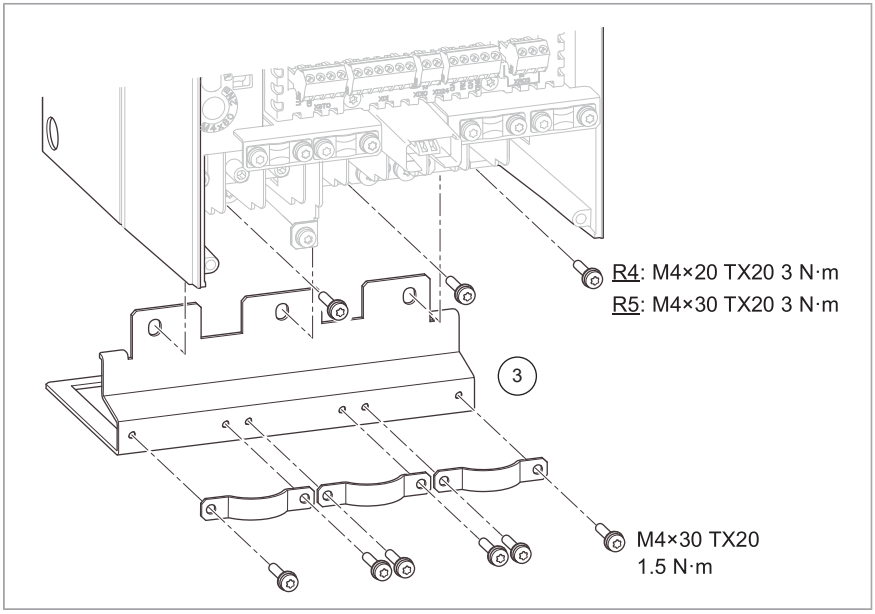


2. Remove the shroud on the power cable terminals by releasing the clips and lifting the shroud up from the sides with a screwdriver. Knock out holes in the shroud for the cables to be installed.



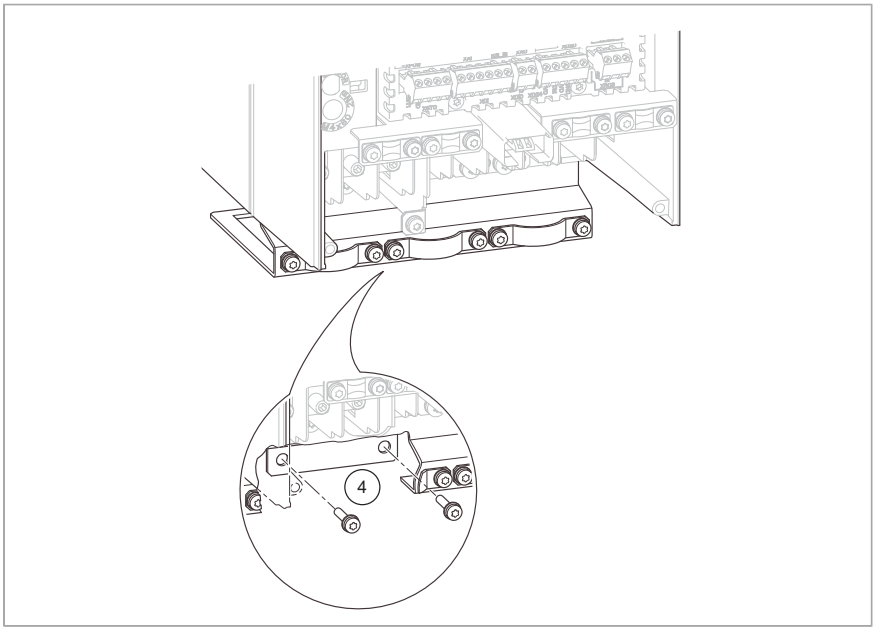
3. Attach the mechanical support shelf for the power cables to the drive module.

   Note: This shelf is not included with option +C135.



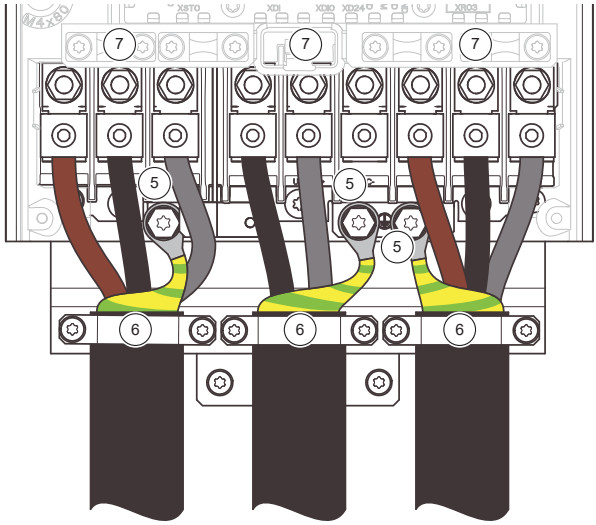
4. Attach the mechanical support shelf for the power cables to the mounting plate.

   Note: This shelf is not included with option +C135.



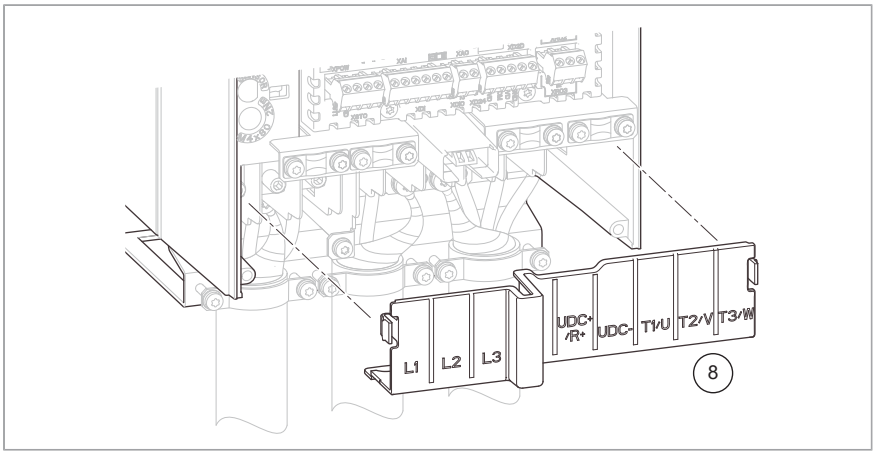
5. Connect the twisted shields of the power cables to the grounding terminals.
6. Attach the power cables with the clamps to the power cable support shelf or, with option +C135, to the flange bottom bracket.

7. Connect the phase conductors of the input cable to the L1, L2 and L3 terminals and the phase conductors of the motor cable to the T1/U, T2/V and T3/W terminals. Connect the brake resistor conductors (if present) to the R+ and R- terminals. Tighten the screws to the torque given in the figure below.



	L1, L2, L3, T1/U, T2/V, T3/W, R-, R+/UDC+, UDC	Grounding
R4	3.3 N·m	2.9 N·m
R5	5.6 N·m	2.9 N·m

8. Reinstall the shroud on the power terminals.

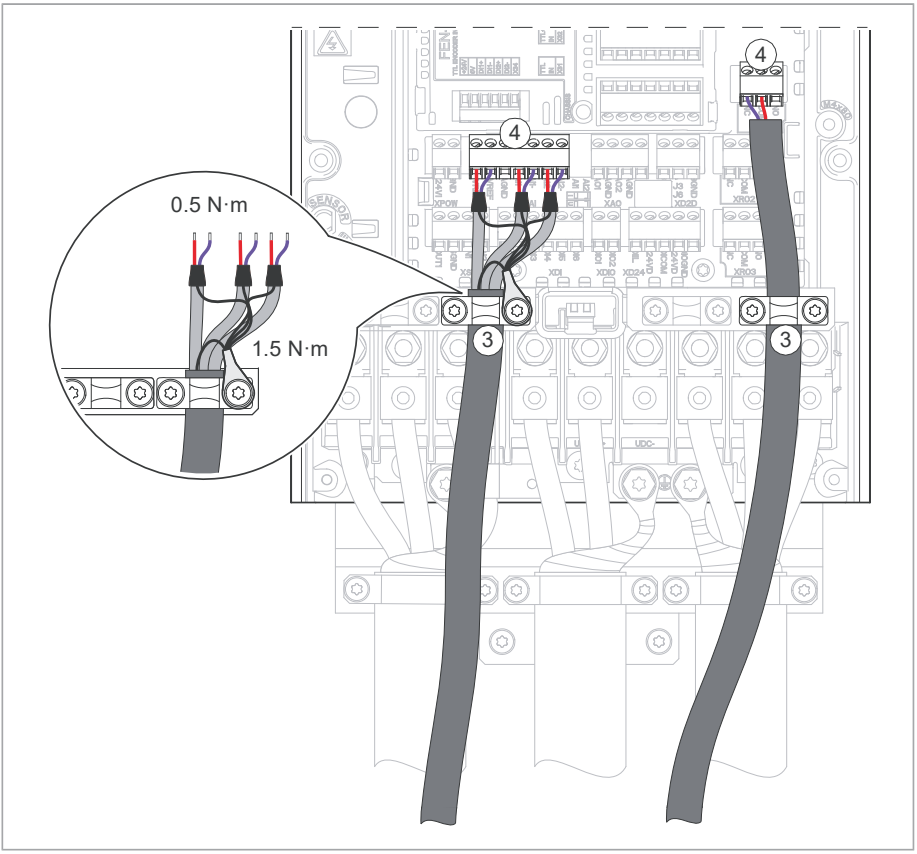


9. Go to section Connecting the control cables – ACS880-01 frames R4 and R5 (page 53).

Connecting the control cables – ACS880-01 frames R4 and R5

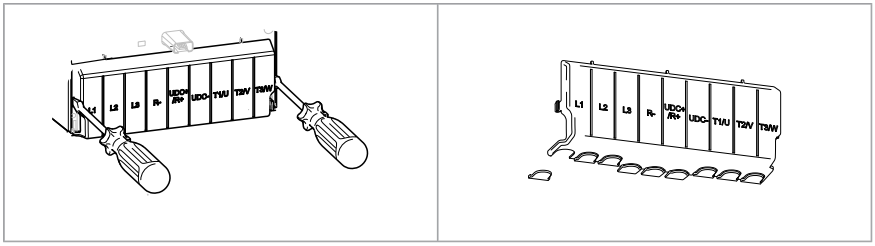
1. Strip the cable ends and cut to suitable length (note the extra length of the grounding conductors).
2. Ground the outer shields of all control cables 360 degrees at the cabinet entry.
3. Secure the cables mechanically at the clamps.
4. Ground the pair-cable shields to the clamps. Leave the other end of the shields unconnected or ground them indirectly via a high-frequency capacitor with a few nanofarads, eg, 3.3 nF / 630 V.
5. Connect the conductors to the appropriate terminals of the control unit (see the default I/O connections in the hardware manual).

6. Wire the optional modules if included in the delivery.



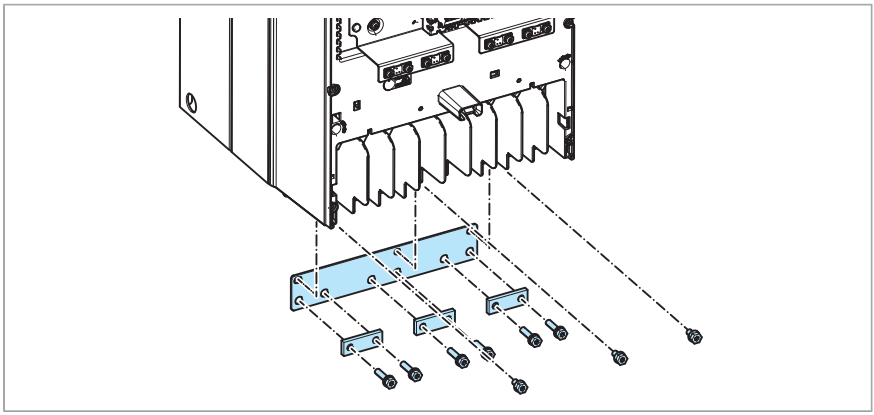
ACS880-01 frames R6 to R9

1. Remove the shroud on the power cable terminals by releasing the clips and lifting the shroud up from the sides with a screwdriver. Knock out holes in the shroud for the cables to be installed.



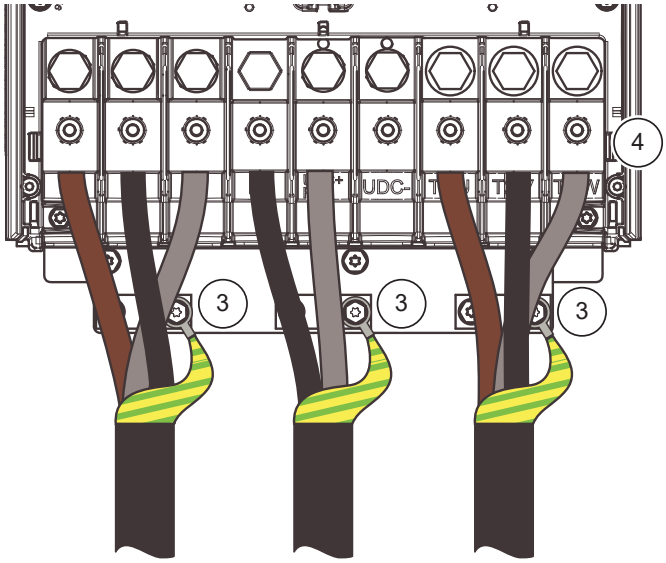
2. Attach the power cable shield grounding shelf to the drive module.

   Note: This shelf is not included with option +C135



3. Connect the twisted shields of the power cables under the grounding clamps or with cable lugs under the clamp screws.

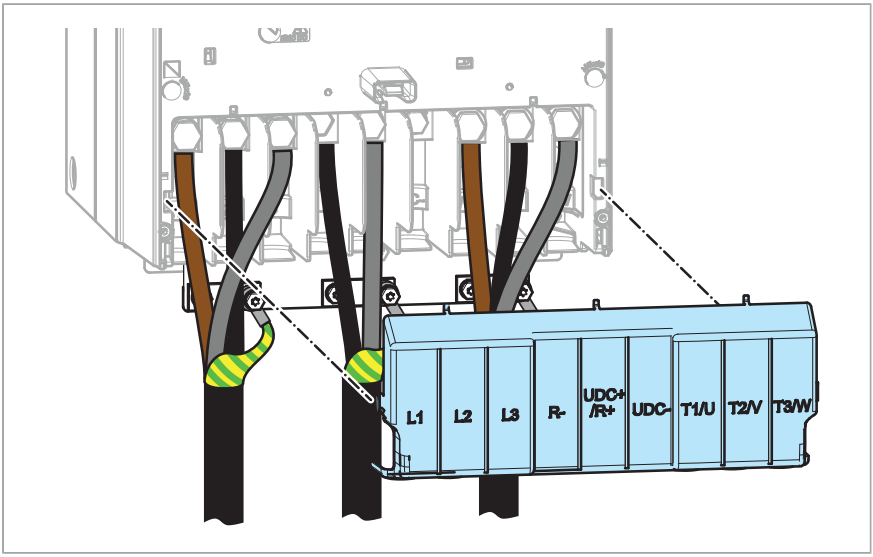
4. Connect the phase conductors of the input cable to the L1, L2 and L3 terminals and the phase conductors of the motor cable to the T1/U, T2/V and T3/W terminals. Connect the brake resistor conductors (if present) to the R+ and R- terminals. Tighten the screws to the torque given in the figure below.



	L1, L2, L3, T1/U, T2/V, T3/W	R-, R+/UDC+, UDC-	Grounding
R6	30 N·m	20 N·m	9.8 N·m
R7	40 N·m (30 N·m*)	30 N·m	9.8 N·m
R8	40 N·m	40 N·m	9.8 N·m
R9	70 N·m	70 N·m	9.8 N·m

*525…690 V

5. Reinstall the shroud on the power cable terminals



6. Go to section Connecting the control cables – ACS880-01 frames R6 to R9 (page 57).

Connecting the control cables – ACS880-01 frames R6 to R9

1. Strip the cable ends and cut to suitable length (note the extra length of the grounding conductors).
2. Ground the outer shields of all control cables 360 degrees at the cabinet entry.
3. Secure the cables mechanically at the clamps.
4. Ground the pair-cable shields to the clamps. Leave the other end of the shields unconnected or ground them indirectly via a high-frequency capacitor with a few nanofarads, eg, 3.3 nF / 630 V.
5. Connect the conductors to the appropriate terminals of the control unit (see the default I/O connections in the hardware manual).
6. Wire the optional modules if included in the delivery.

6

Installation checklist

Contents of this chapter

This chapter contains a checklist for the mechanical and electrical installation of the drive.

WARNING!
Obey the safety instructions of the drive. If you ignore them, injury or death, or damage to the equipment can occur. If you are not a qualified electrical professional, do not do installation, commissioning or maintenance work.

WARNING! Stop the drive and do the steps in section Electrical safety precautions in the hardware manual before you start the work.

Make sure that ...	☑
The ambient operating conditions meet the drive ambient conditions specification and enclosure rating (IP code).	☐
The supply voltage matches the nominal input voltage of the drive. See the type designation label.	☐
The insulation resistance of the input power cable, motor cable and motor is measured according to local regulations and the manuals of the drive.	☐
The drive is attached securely on an even, vertical and non-flammable wall.	☐

Make sure that ...	☑
The drive cabinet is attached to the floor, and if necessary due to vibration etc, also by its top to the wall or roof.	☐
The drive module is fastened properly to the enclosure.	☐
The cooling air can flow freely in and out of the drive. Air recirculation inside the cabinet is not possible (air baffle plates are installed, or there is another air guiding solution).	☐
If the drive is connected to a network other than a symmetrically grounded TN-S system: You have done all the required modifications (for example, you may need to disconnect the EMC filter or ground-to-phase varistor). See the electrical installation instructions.	☐
The enclosures of the equipment in the cabinet have proper galvanic connection to the cabinet protective earth (ground) busbar; The connection surfaces at the fastening points are bare (unpainted) and the connections are tight, or separate grounding conductors have been installed.	☐
The main circuit connections inside the drive cabinet correspond to the circuit diagrams.	☐
The control unit has been connected. See the circuit diagrams.	☐
Appropriate AC fuses and main disconnecting device are installed.	☐
There is an adequately sized protective earth (ground) conductor(s) between the drive and the switchboard, the conductor is connected to correct terminal, and the terminal is tightened to the correct torque. Grounding has also been measured according to the regulations.	☐
The input power cable is connected to the correct terminals, the phase order is correct, and the terminals are tightened to the correct torque.	☐
There is an adequately sized protective earth (ground) conductor between the motor and the drive. The conductor is connected to the correct terminal, and the terminal is tightened to the correct torque. Grounding has also been measured according to the regulations.	☐
The motor cable is connected to the correct terminals, the phase order is correct, and the terminals are tightened to the correct torque.	☐
The motor cable is routed away from other cables.	☐
No power factor compensation capacitors are connected to the motor cable.	☐
The control cables are connected to the correct terminals, and the terminals are tightened to the correct torque.	☐

Make sure that ...	☑
If a drive bypass connection will be used: The direct-on-line contactor of the motor and the drive output contactor are either mechanically and/or electrically interlocked, that is, they cannot be closed at the same time. A thermal overload device must be used for protection when bypassing the drive. Refer to local codes and regulations.	☐
There are no tools, foreign objects or dust from drilling inside the drive.	☐
The area in front of the drive is clean: the drive cooling fan cannot draw any dust or dirt inside.	☐
The terminal box cover of the motor is in place. Cabinet shrouds are in place and doors are closed. Drive covers and the terminal box cover of the motor are in place.	☐
The motor and the driven equipment are ready for power-up.	☐

7

Technical data

Contents of this chapter

This chapter contains some technical data of the drive module. For other data, see the hardware manual.

Dimensions, weights and free space requirements

ACS880-01... +P940								
Frame	IP 20				UL Open Type			
	Height mm	Width mm	Depth mm	Weight kg	Height in.	Width in.	Depth in.	Weight lb
R1	376	155	226	5.7	14.80	6.10	8.88	12
R2	376	155	249	7.2	14.80	6.10	9.78	16
R3	436	173	256	9.4	17.17	6.81	10.09	21
R4	563	203	333	16.1	22.17	7.99	13.12	36
R5	653	203	333	19.3	25.70	7.99	13.12	43
R6	593	252	357	38.8	22.35	9.92	14.07	85
R7	645	284	365	47.6	25.39	11.18	14.35	105
R8	724	300	386	58.6	28.0	11.81	15.21	129

ACS880-01... +P940								
Frame	IP 20				UL Open Type			
	Height mm	Width mm	Depth mm	Weight kg	Height in.	Width in.	Depth in.	Weight lb
R9	723	380	413	85.2	28.46	14.96	16.27	188

ACS880-01... +P944								
Frame	IP 20				UL Open Type			
	Height mm	Width mm	Depth mm	Weight kg	Height in.	Width in.	Depth in.	Weight lb
R1	376	155	226	6.1	14.80	6.10	8.91	13
R2	376	155	249	7.6	14.80	6.10	9.82	17
R3	436	173	261	9.9	17.17	6.81	10.29	22
R4	563	203	274	16.8	22.17	7.99	10.80	37
R5	653	203	274	20.2	25.70	7.99	10.77	45
R6	593	252	357	39.8	22.35	9.92	14.07	88
R7	645	284	365	48.6	25.39	11.18	14.35	107
R8	724	300	386	59.8	28.0	11.81	15.21	132
R9	723	380	413	86.6	28.46	14.96	16.27	191

ACS880-11... and ACS880-31... +P940								
Frame	IP 20				UL Open Type			
	Height mm	Width mm	Depth mm	Weight kg	Height in.	Width in.	Depth in.	Weight lb
R3	490	203	349	18.3	19.29	7.99	13.78	40
R6	771	252	358	59	30.35	9.92	14.09	103
R8	964	300	430	109	37.95	11.81	16.94	240

For more information on dimensions, see the dimension drawings.

200 mm (7.87 in.) free space is required at top of the drive module.

300 mm (11.81 in.) free space is required at bottom of the drive module.

Degree of protection

IP20 (UL Open Type).

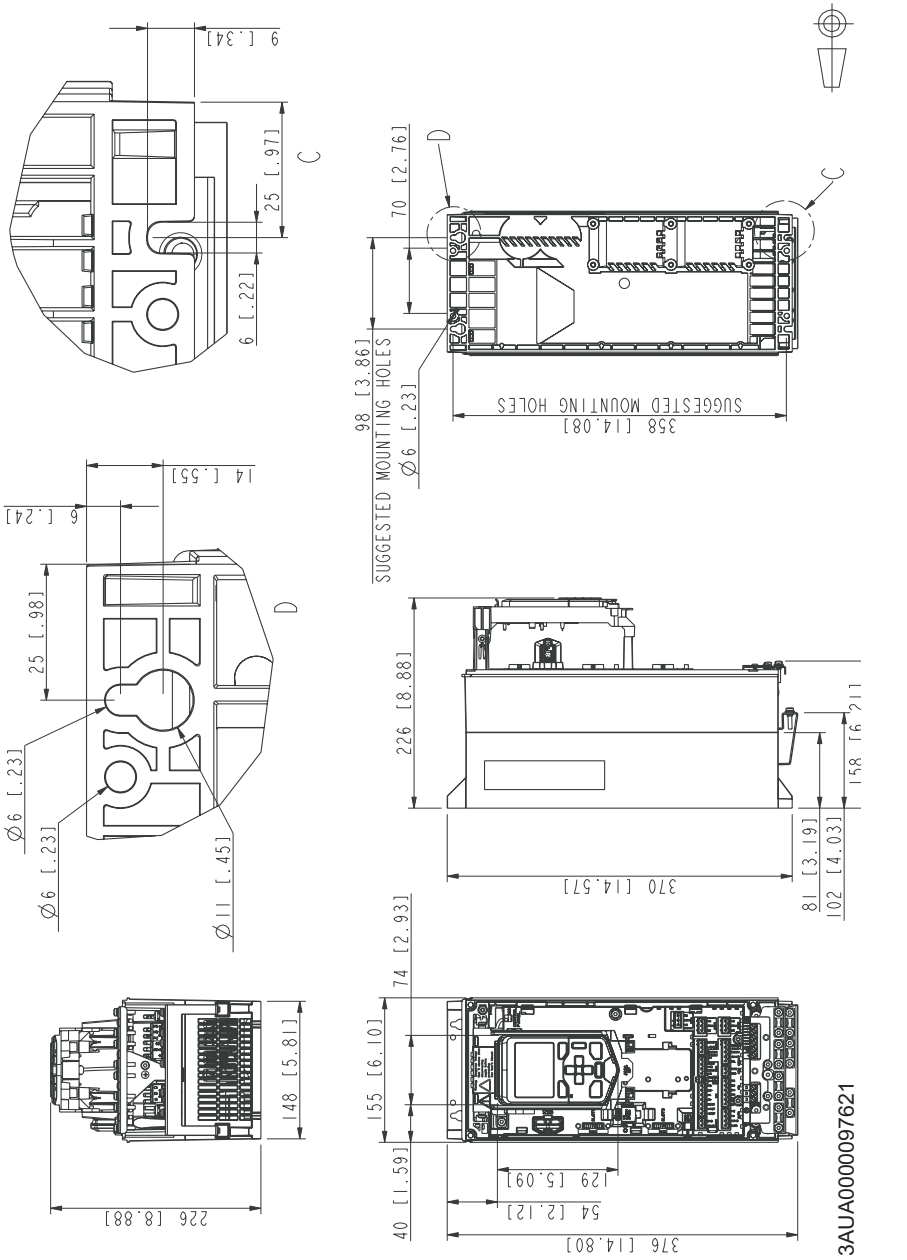
8

Dimension drawings – ACS880-01

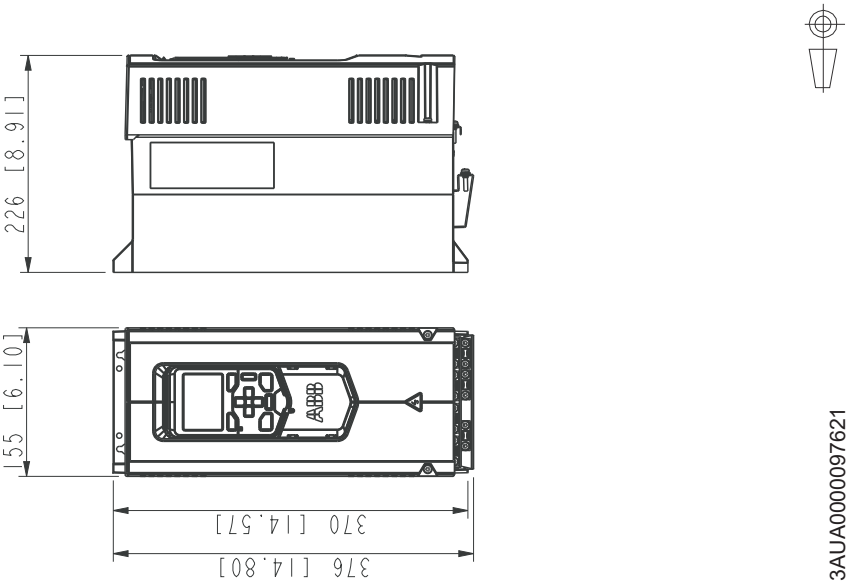
Contents of this chapter

This chapter contains dimension drawings of the ACS880-01 drive module.

R1 – Option +P940 (IP20, UL Open Type)

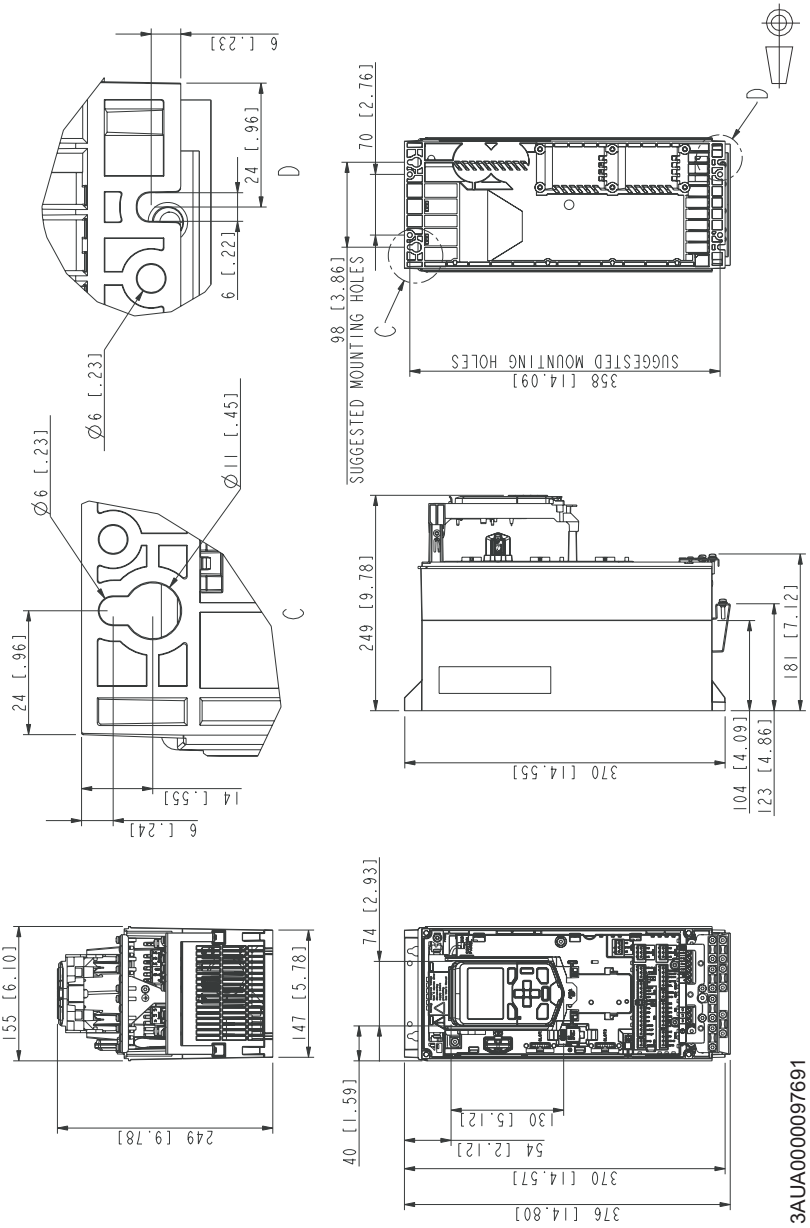


R1 – Option +P944 (IP20, UL Open Type)

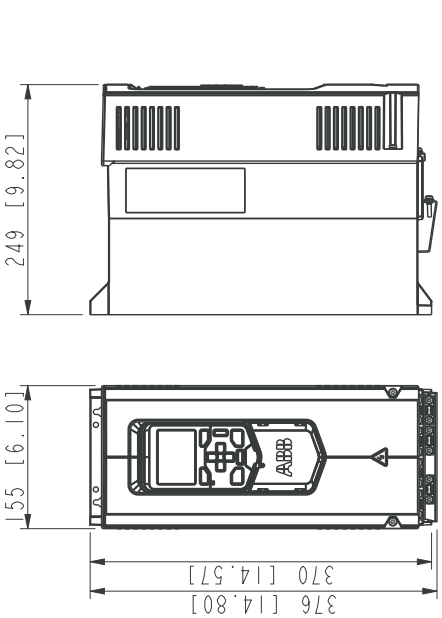


3AUA0000097621

R2 – Option +P940 (IP20, UL Open Type)

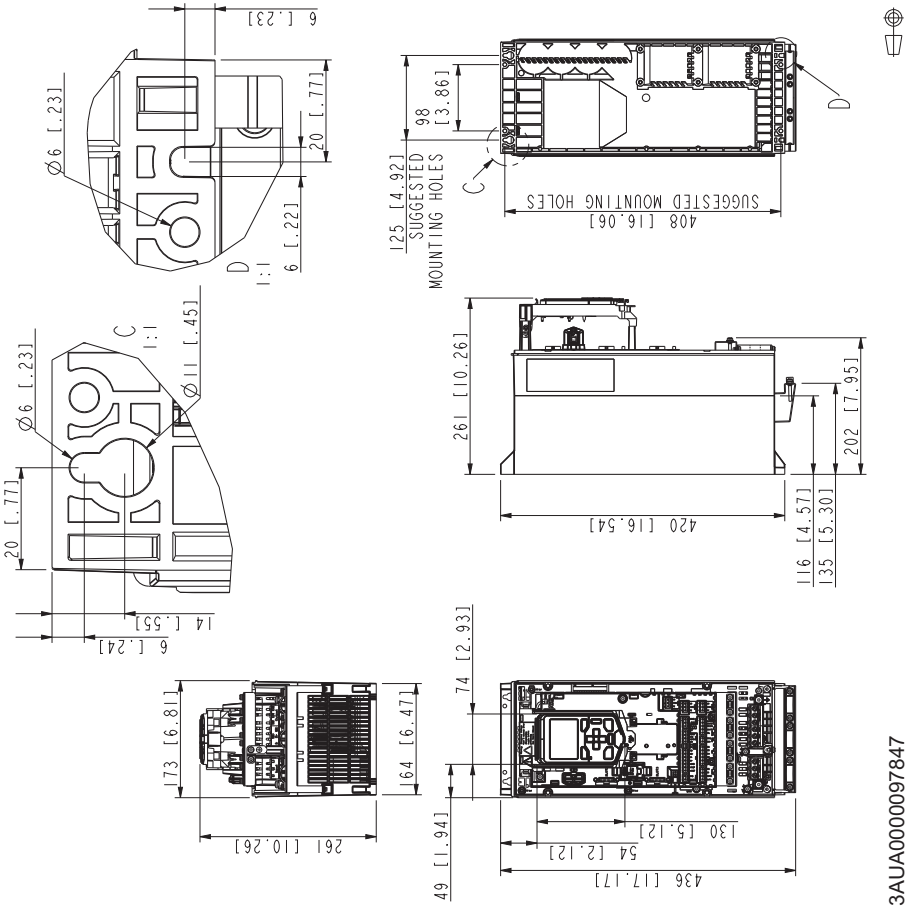


R2 – Option +P944 (IP20, UL Open Type)

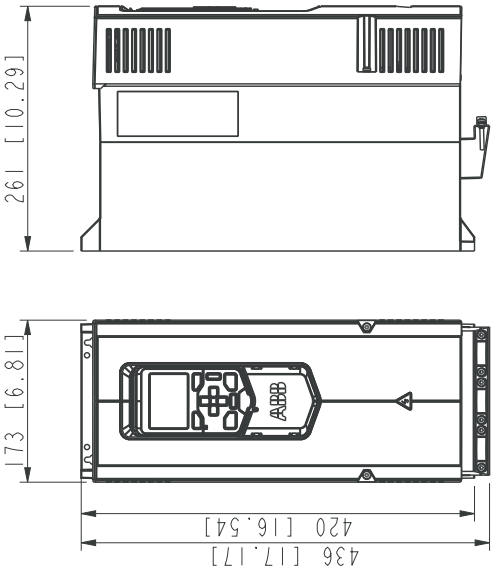


3AUA0000097691

R3 – Option +P940 (IP20, UL Open Type)

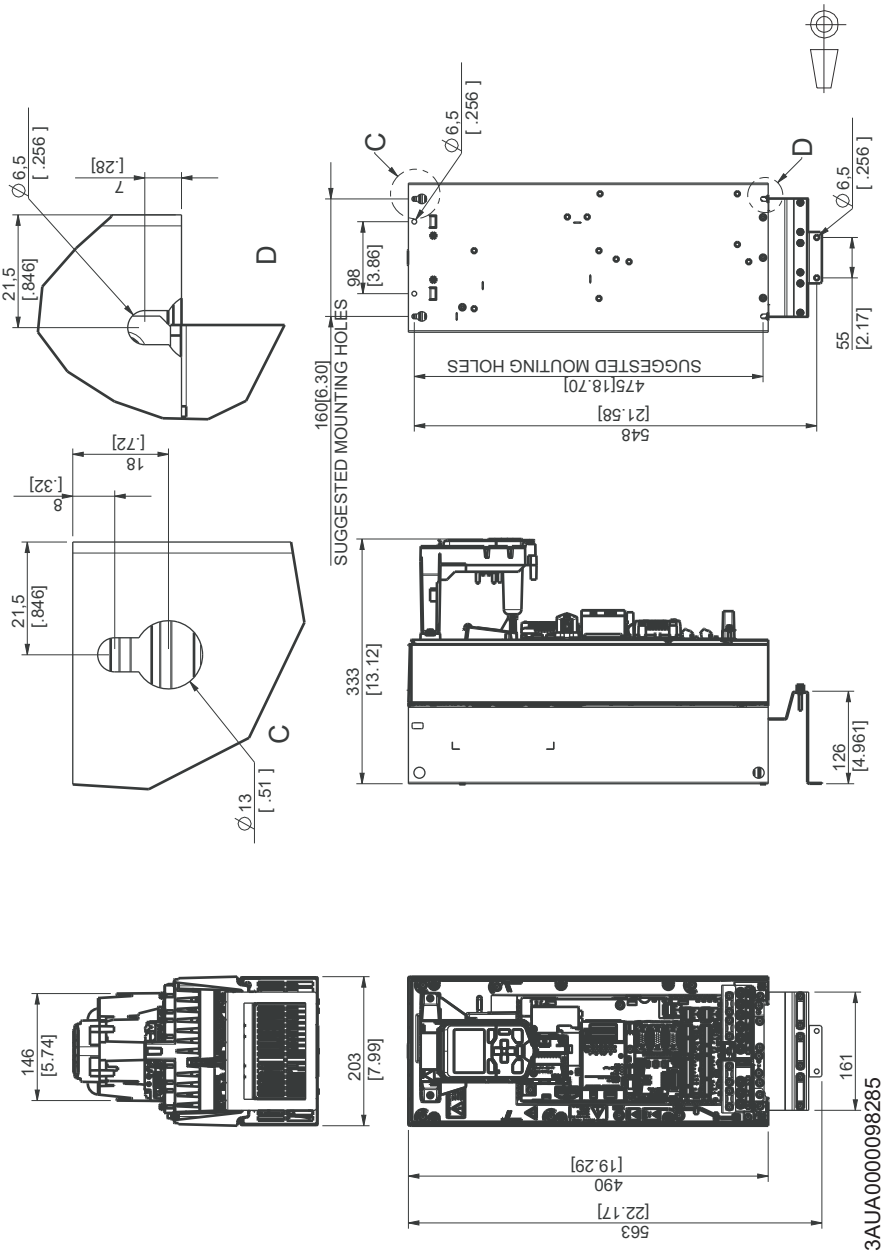


R3 – Option +P944 (IP20, UL Open Type)

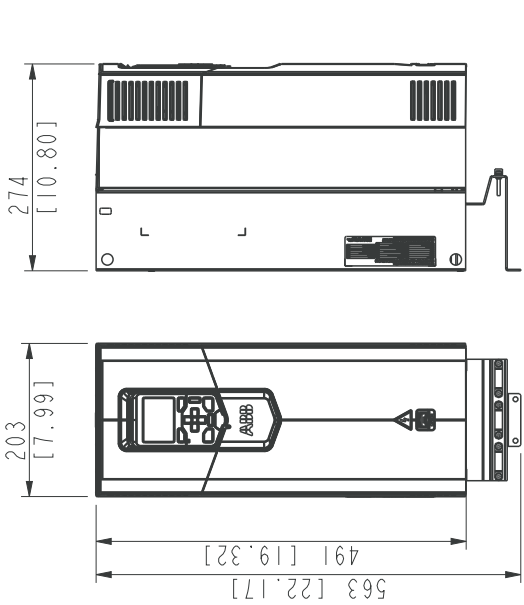


3AUA0000097847

R4 – Option +P940 (IP20, UL Open Type)

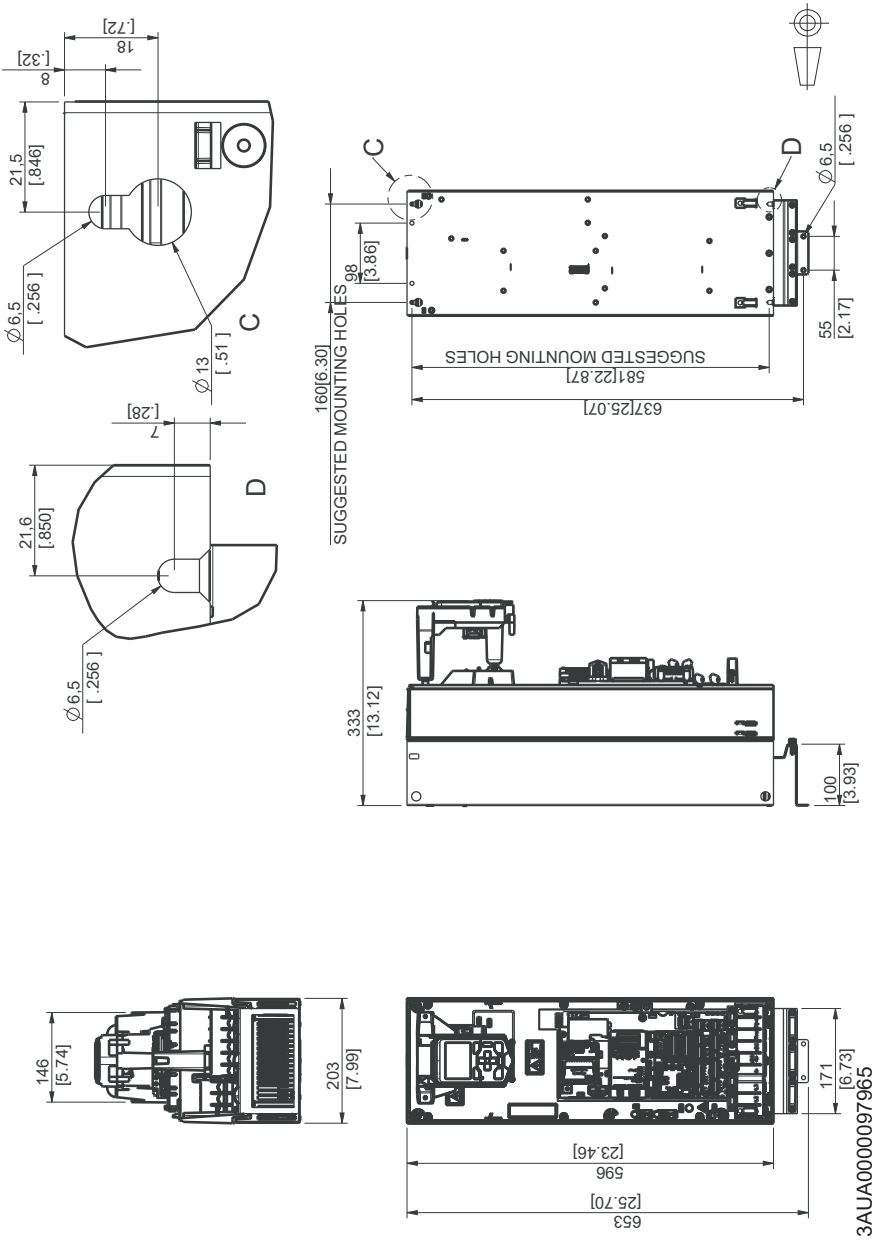


R4 – Option +P944 (IP20, UL Open Type)

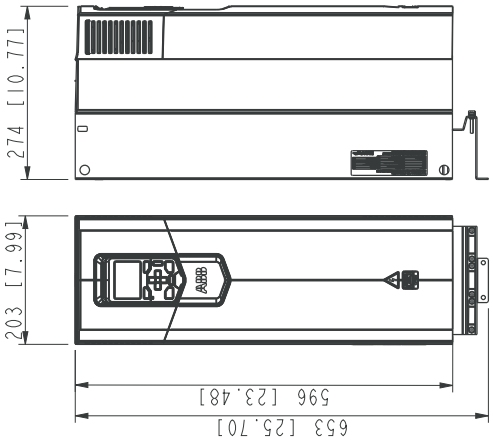


3AUA0000098285

R5 – Option +P940 (IP20, UL Open Type)

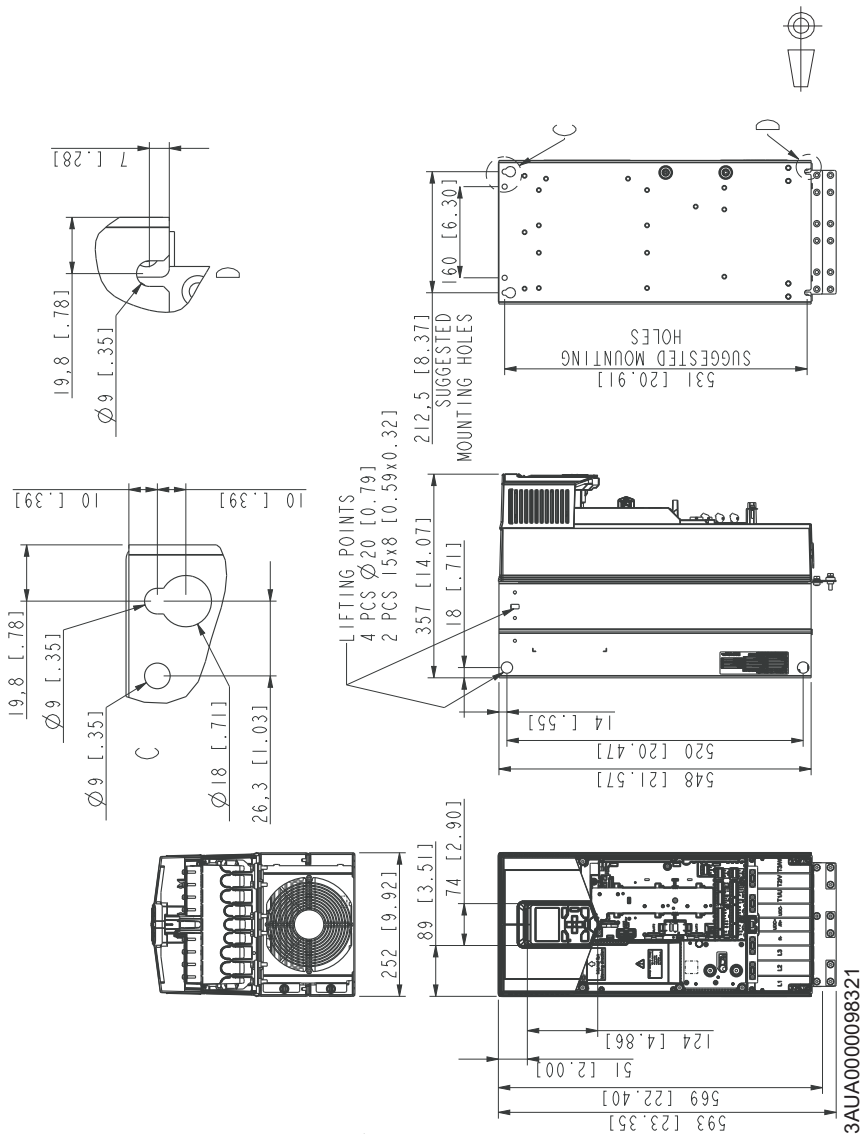


R5 – Option +P944 (IP20, UL Open Type)

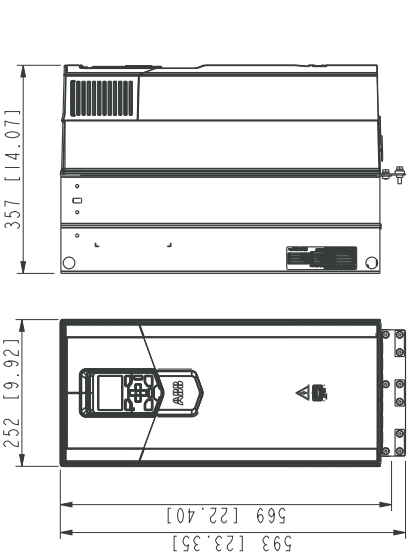


3AUA0000097965

R6 – Option +P940 (IP20, UL Open Type)

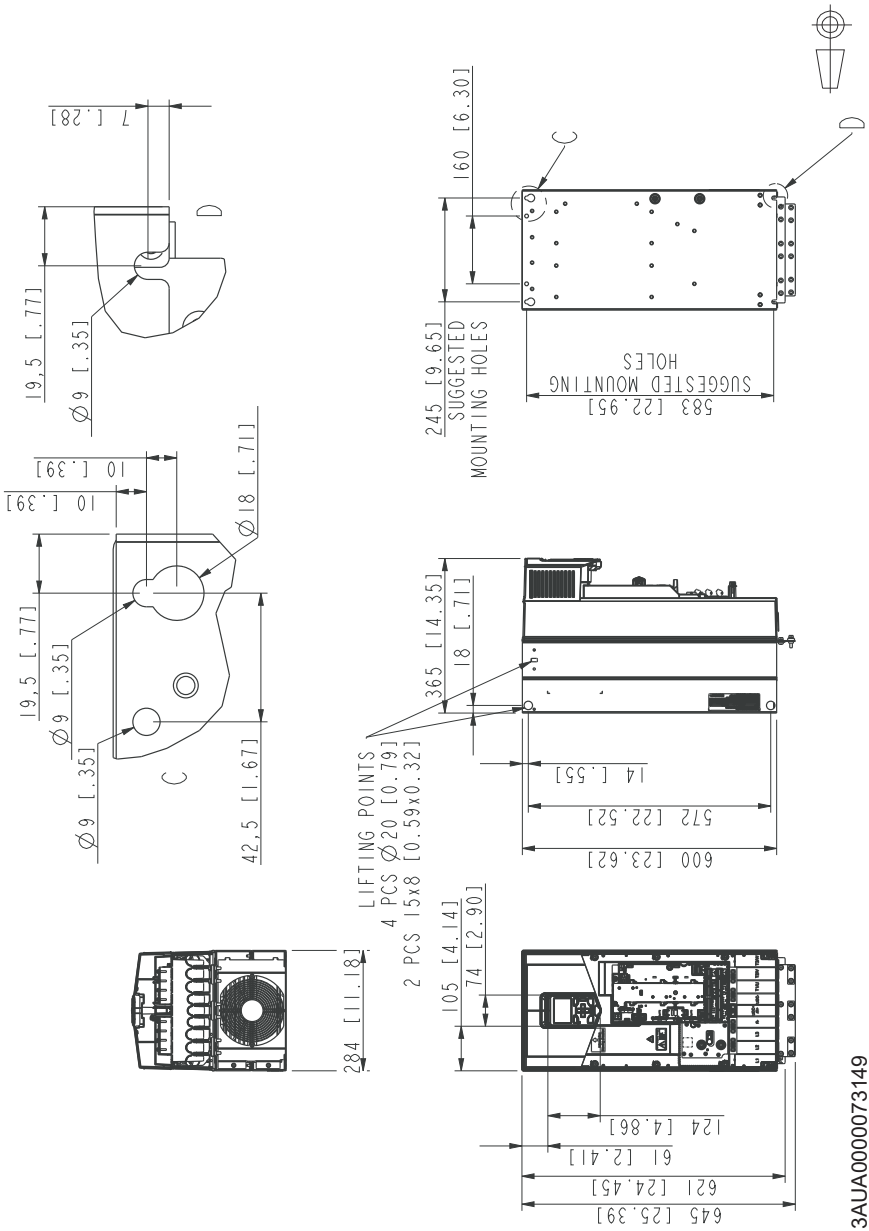


R6 – Option +P944 (IP20, UL Open Type)

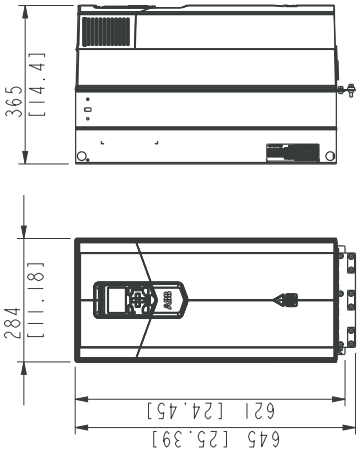


3AUA0000098321

R7 – Option +P940 (IP20, UL Open Type)

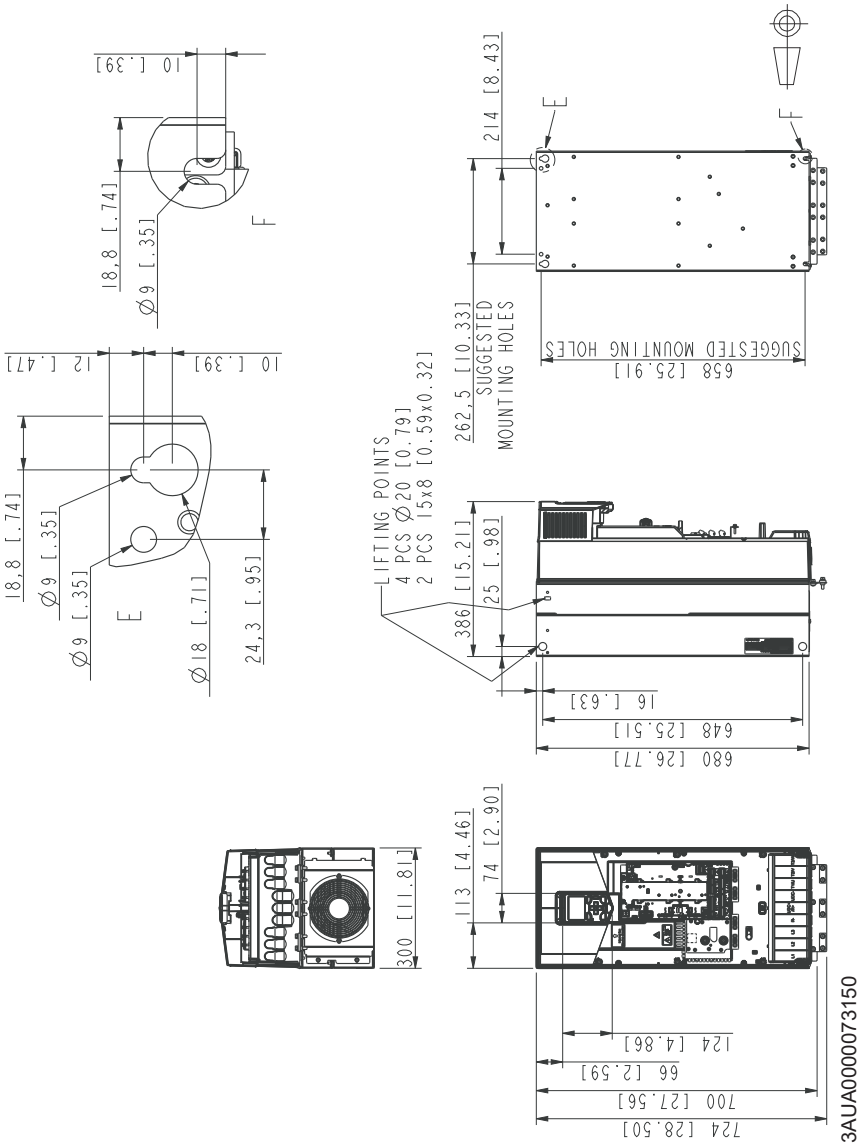


R7 – Option +P944 (IP20, UL Open Type)

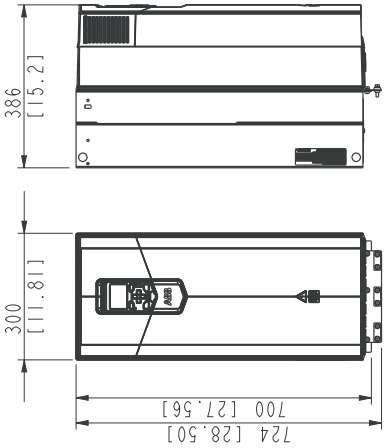


3AUA0000073149

R8 – Option +P940 (IP20, UL Open Type)

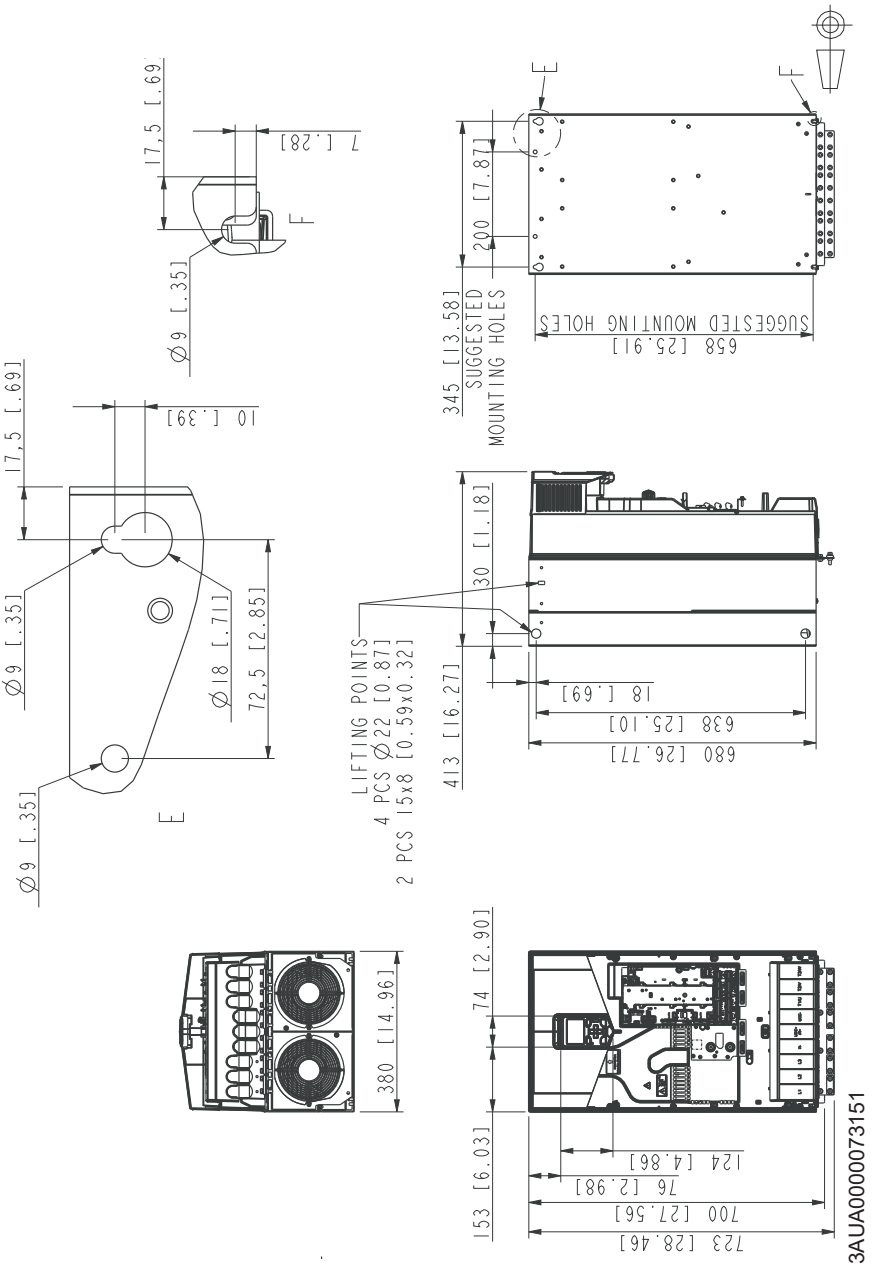


R8 – Option +P944 (IP20, UL Open Type)

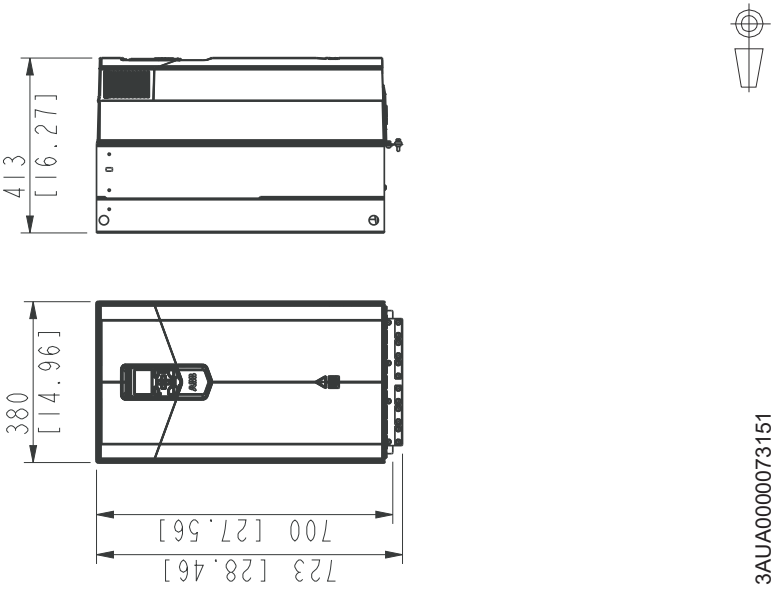


3AUA0000073150

R9 – Option +P940 (IP20, UL Open Type)



R9 – Option +P944 (IP20, UL Open Type)



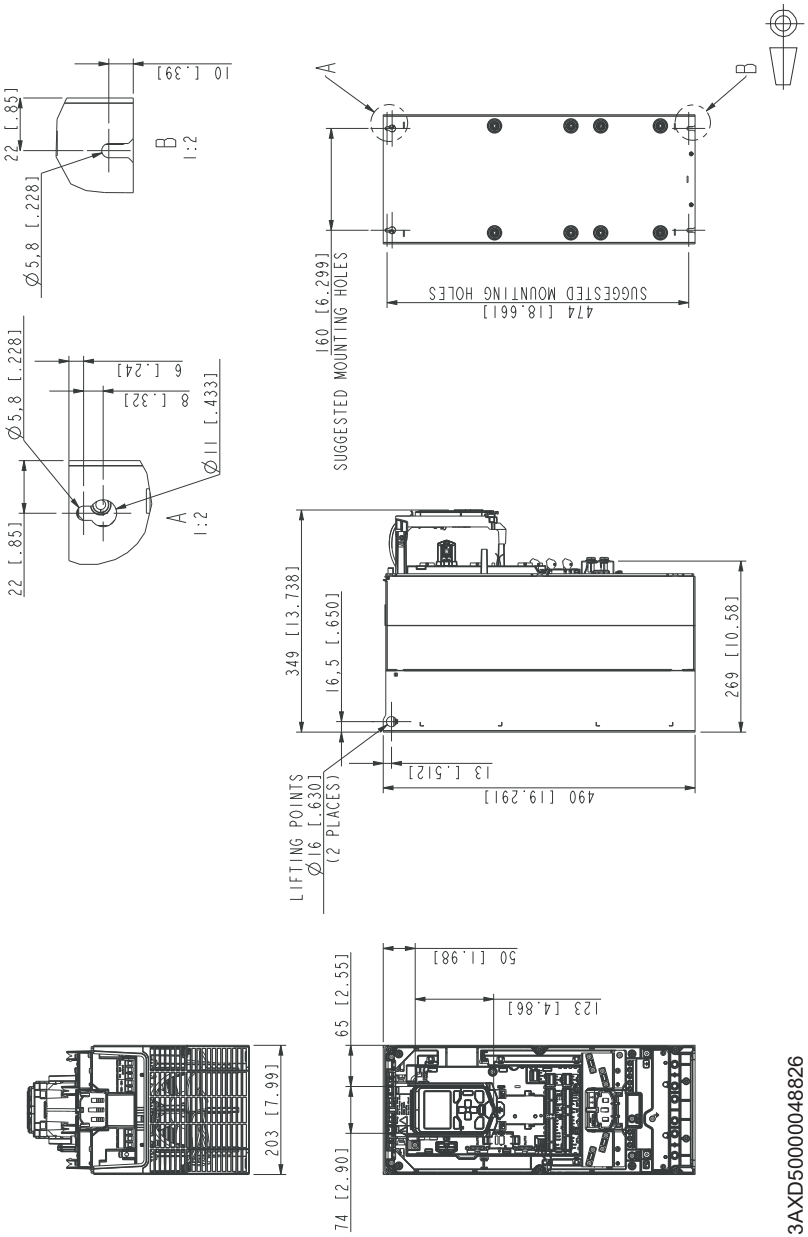
9

Dimension drawings – ACS880-11 and ACS880-31

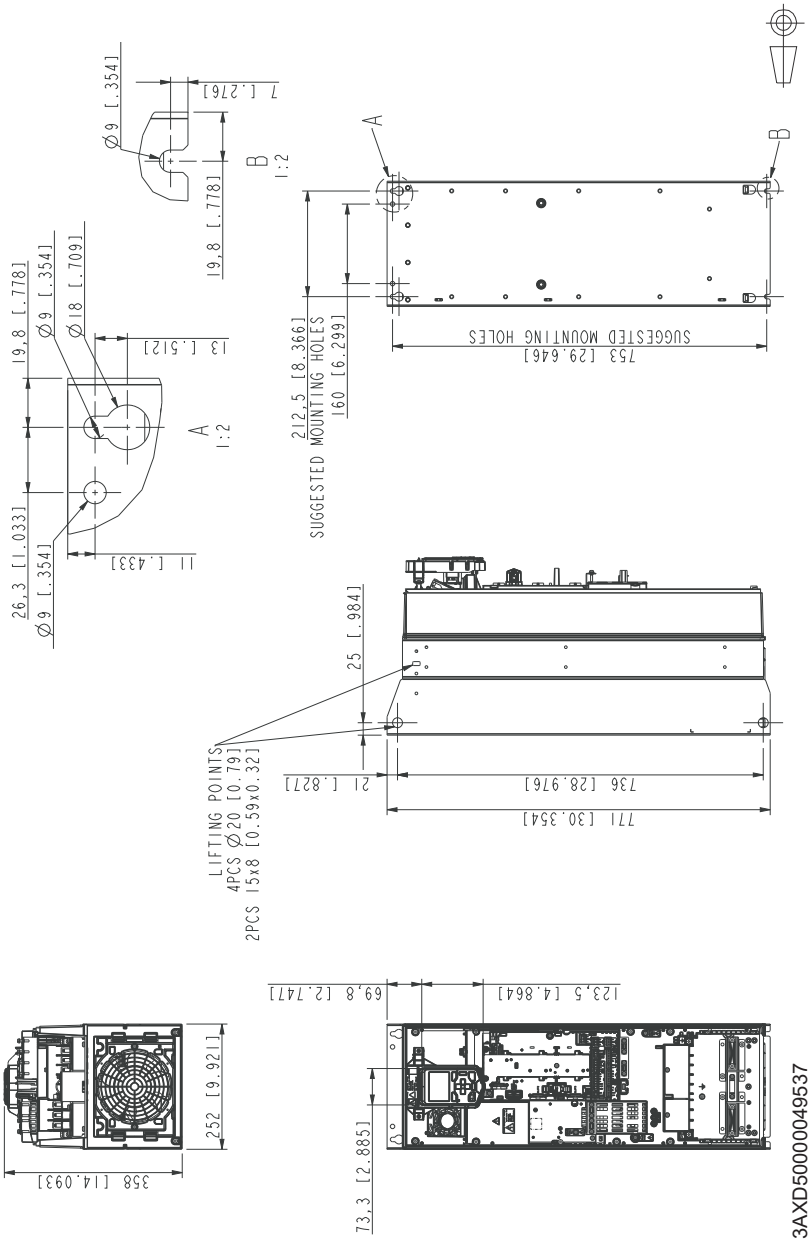
Contents of this chapter

This chapter contains dimension drawings of ACS880-11 and ACS880-31 drive modules.

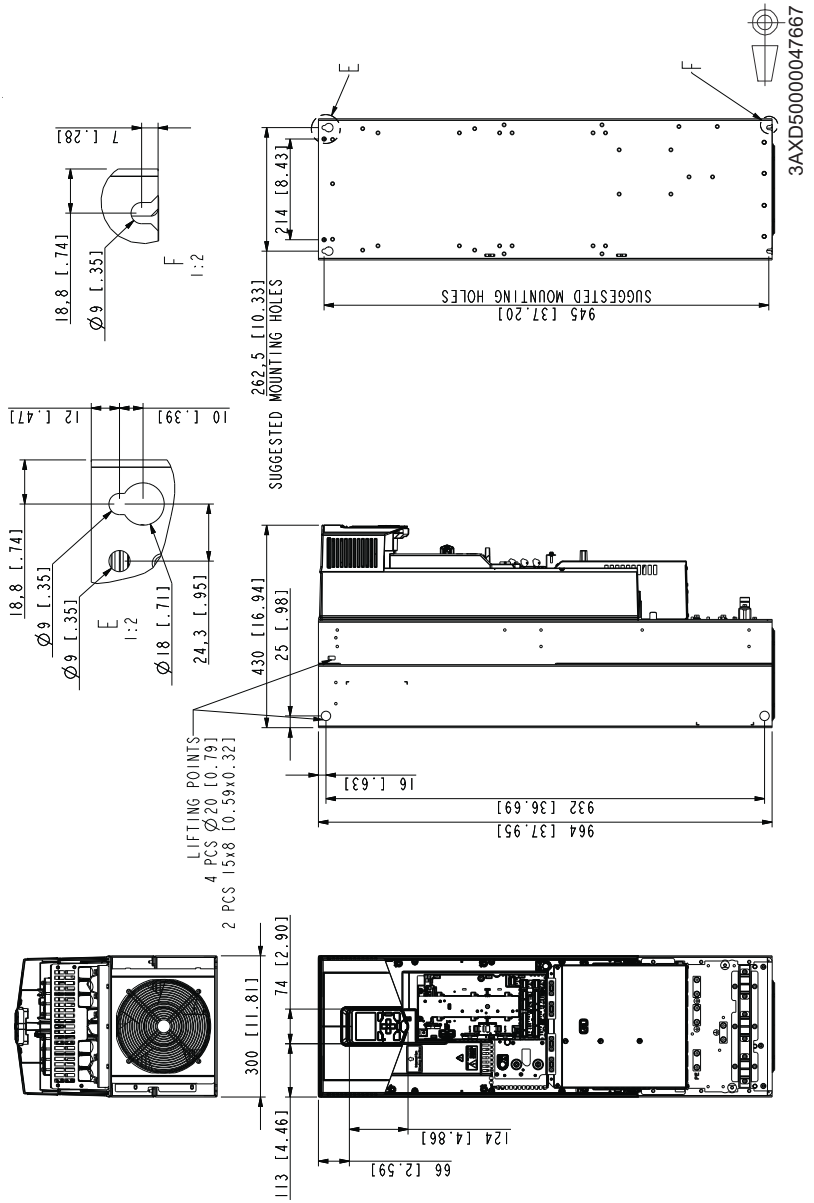
R3 – Option +P940 (IP20, UL Open Type)



R6 – Option +P940 (IP20, UL Open Type)



R8 – Option +P940 (IP20, UL Open Type)



Further information

Product and service inquiries

Address any inquiries about the product to your local ABB representative, quoting the type designation and serial number of the unit in question. A listing of ABB sales, support and service contacts can be found by navigating to www.abb.com/searchchannels.

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