

ABB 工业传动

ACS880-04 传动模块 (200 至 710 kW, 300 至 700 hp)

快速安装和启动指南

English 3

EN

中文 21

ZH



EN – Quick installation instructions

Contents of this guide

This guide tells you briefly how to install the drive module into a 600 mm wide Rittal VX25 enclosure. For installation examples in different cabinets and more detailed instructions, engineering guide lines, technical data and complete safety instructions, see the hardware manual ([3AUA0000128301 \[English\]](#)).

Obey the safety instructions

EN

■ General safety

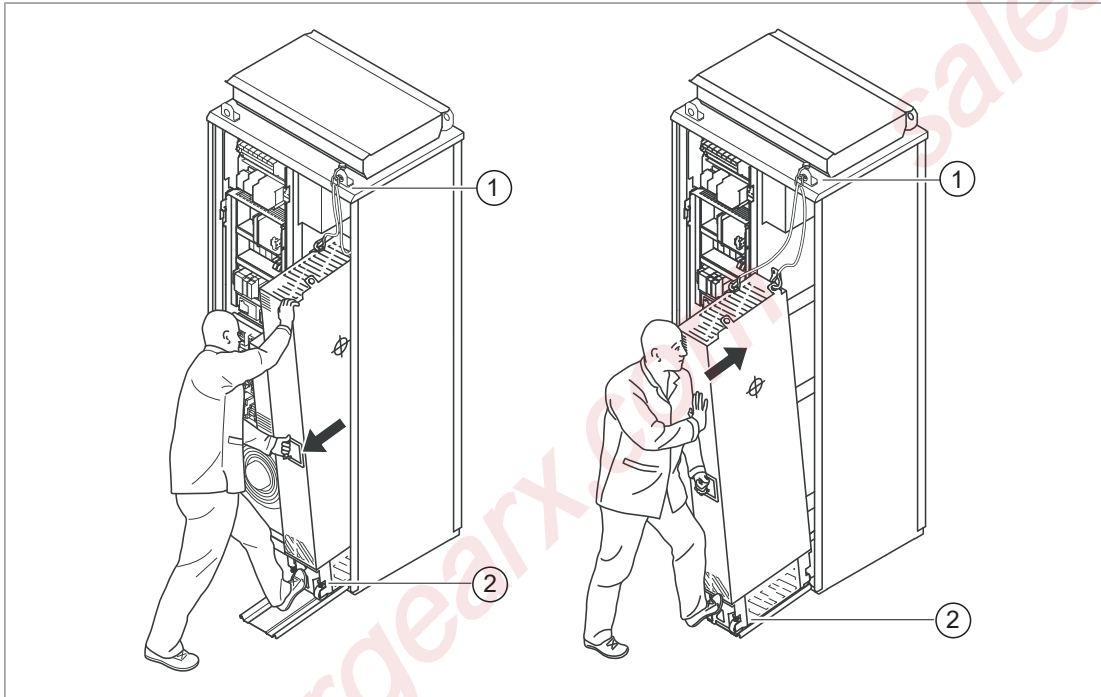
These instructions are for all personnel who do work on the drive.



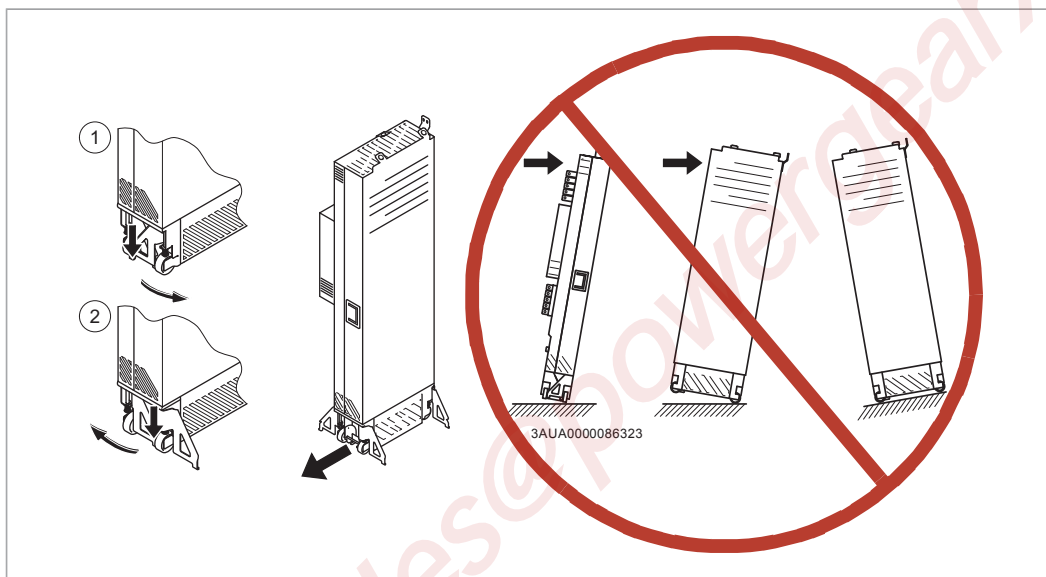
Obey the safety instructions of the drive. If you ignore them, injury or death, or damage to the equipment can occur.

- Keep the drive in its package until you install it. After unpacking, protect the drive from dust, debris and moisture.
 - Use the required personal protective equipment: safety shoes with metal toe cap, safety glasses, protective gloves and long sleeves, etc. Some parts have sharp edges.
 - When the drive or connected equipment is energized, do not do work on the drive, motor cable, motor, control cables or control circuits.
 - Do not do work on the drive when a rotating permanent magnet motor is connected to it. A rotating permanent magnet motor energizes the drive, including its input and output power terminals.
 - Do not use the module extraction/installation ramp with plinth heights that are more than the ramp maximum allowed height.
 - Attach the module extraction/installation ramp carefully.
 - To prevent the drive module from falling over, attach its top lifting lugs with chains to the cabinet (1) before you move the drive module into or out of the drive cabinet. Use two persons to move the drive module. Be careful. Keep a constant pressure with one foot on the base of the module (2) to prevent the module from falling on its back.
-

4 EN – Quick installation instructions



- Make sure that the module does not fall over when you move it on the floor.
 - Use the support legs when applicable. To open the support legs, push each leg down and turn it out (1, 2).
 - Use chains to support the module whenever possible.
 - Do not tilt the module. It is heavy and its center of gravity is high.
 - Do not leave unattended on a sloping floor.
 - Do not move the module on its wheels for long distances. It can cause damage to the wheels. Also, there is a risk of the module falling over.



■ Electrical safety precautions

These electrical safety precautions are for all persons who do work on the drive, motor cable or motor.



Obey these instructions. 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 or maintenance work.

Do these steps before you begin any installation or maintenance work.

1. Prepare for the work.
 - Make sure that you have a work order.
 - Do an on-site risk assessment or job hazard analysis.
 - Make sure that you have the correct tools available.
 - Make sure that the workers are qualified.
 - Select the correct personal protective equipment (PPE).
 - Stop the drive and motor(s).
2. Clearly identify the work location and equipment.
3. Disconnect all possible voltage sources. Make sure that connection is not possible. Lock out and tag out.
 - Open the main disconnecting device of the drive.
 - Open the charging switch if it is present.
 - Open the disconnecter of the supply transformer. (The main disconnecting device in the drive cabinet does not disconnect the voltage from the AC input power busbars of the drive cabinet.)
 - Open the auxiliary voltage switch-disconnector (if it is present), and all other possible disconnecting devices that isolate the drive from dangerous voltage sources.
 - If a permanent magnet motor connects to the drive, disconnect the motor from the drive with a safety switch or by other means.
 - Open the main isolating device of the drive.
 - Disconnect all dangerous external voltages from the control circuits.
 - After you disconnect power from the drive, wait 5 minutes to let the intermediate circuit capacitors discharge before you continue.
4. Protect other energized parts in the work location against contact and take special precautions when close to bare conductors.
5. Measure that the installation is de-energized. Use a quality voltage tester. If the measurement requires removal or disassembly of shrouding or other cabinet structures, obey the local laws and regulations applicable to live electrical work. This includes, but is not limited to, electric shock and arc protection.
 - Before and after you measure the installation, verify the operation of the voltage tester on a known voltage source.
 - Make sure that the voltage between the drive input power terminals (L1, L2, L3) and the grounding (PE) busbar is zero.
 - Make sure that the voltage between the drive output terminals (U, V, W) and the grounding (PE) busbar is zero.

Important! Repeat the measurement with the DC voltage setting of the voltage tester. Measure between each phase and ground. There is a risk of dangerous DC voltage charging due to leakage capacitances of the motor circuit. This voltage can remain charged for a long time after the drive power-off. The measurement discharges the voltage.

 - Make sure that the voltage between the drive DC terminals (UDC+ and UDC-) and the grounding (PE) terminal is zero.

6. Install temporary grounding as required by the local regulations.
7. Ask for a permit to work from the person that is responsible for the electrical installation work.

Select the cables and fuses

Select the power cables. Obey local regulations.

- **Input power cable:** Use symmetrical shielded cable (VFD cable) for the best EMC performance. NEC installations: Conduit with continuous conductivity is also allowed and must be grounded on both ends.
- **Motor cable:** ABB recommends symmetrically shielded VFD motor cable to reduce bearing current and wear and stress on motor insulation and to provide the best EMC performance. Although not recommended, conductors inside continuously conductive conduit is allowed in NEC installations. Ground conduit on both ends. Use separate insulated ground from motor to drive inside the conduit.
- **Current rating:** Max. load current.
- **Voltage rating (minimum):** IEC installations: 600 V AC cable is accepted for up to 500 V AC, 750 VAC cable is accepted for up to 600 V AC, 1000 V AC cable is accepted for up to 690 V AC. NEC installations: 600 V AC cable for 230 V AC motors and 1000 V AC cable for 480 V AC and 600 V AC motors. 600 V AC cable for 230 V AC and 480 V AC power lines; 1000 V AC cable for 600 V AC power line.
- **Temperature rating:** IEC installations: Select a cable rated for at least 70 °C maximum permissible temperature of conductor in continuous use. NEC installations: Use 75 °C conductors minimum. Insulation temperature can be higher as long as the ampacity is based on 75 °C conductors.

Select the control cables.

- Use double-shielded twisted-pair cable for analog signals. Use double-shielded or single-shielded cable for the digital, relay and I/O signals. Do not run 24 V and 115/230 V signals in the same cable.

Protect the drive and input power cable with the correct fuses.

For typical power cable sizes, see [典型电源电缆 \(page 42\)](#).

For the correct fuses, see [熔断器 \(page 39\)](#).

Examine the installation site

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.
- 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.

Reform the capacitors

If the drive has not been powered up for a year or more, you must reform the DC link capacitors. Refer to [相关手册](#) or contact ABB technical support.

Make sure that the drive is compatible with the grounding system

The standard drive with no EMC filter and the ground-to-phase varistor connected can be installed to a symmetrically grounded TN-S system. If you install the drive to another system, you may need to disconnect the EMC filter and ground-to-phase varistor. Refer to [ACS880 frames R1 to R11 EMC filter and ground-to-phase varistor disconnecting instructions \(3AUA0000125152 \[English\]\)](#)



Do not install the drive with EMC filter option +E200 to a system that the filter is not suitable for. This can cause danger, or damage the drive.



Do not install the drive with the ground-to-phase varistor connected to a system that the varistor is not suitable for. It can cause damage to the varistor circuit.

■ Corner-grounded and midpoint-grounded 525...690 V delta systems



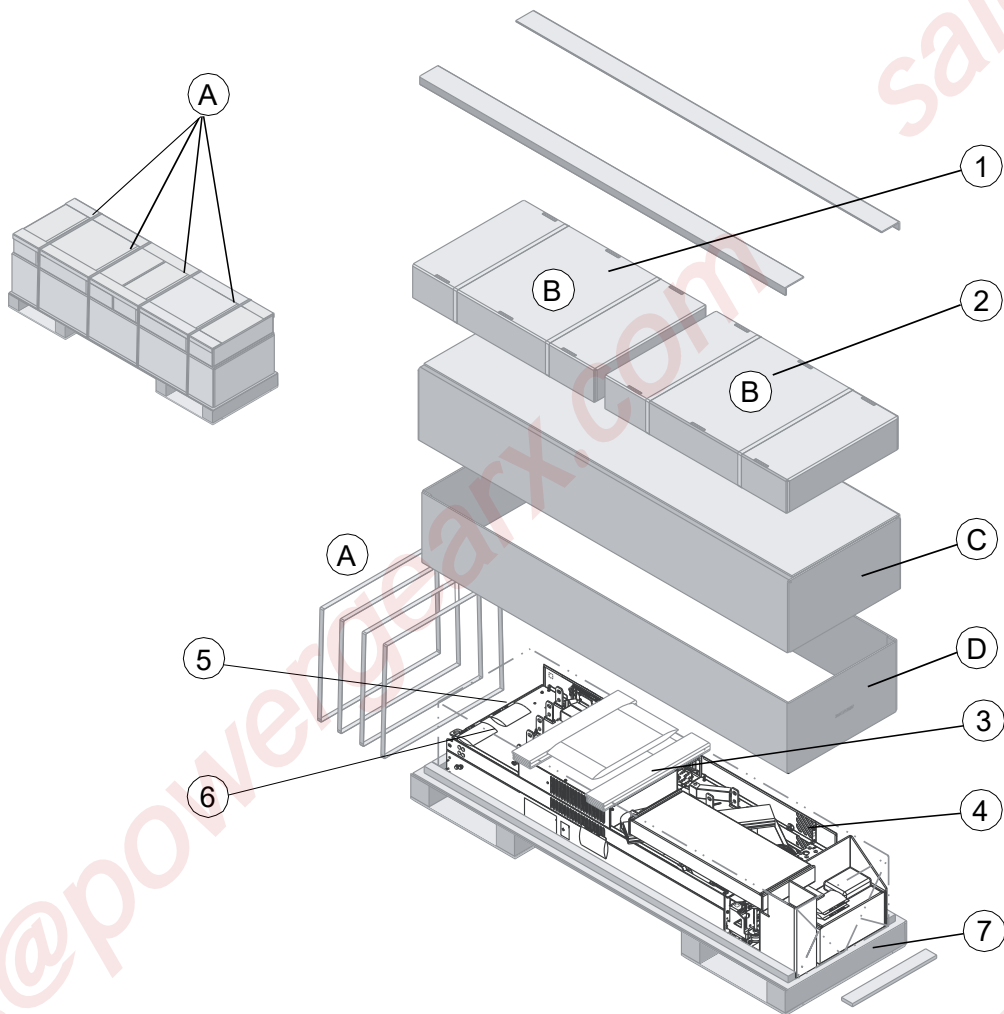
Do not install the drive on a 525...690 V corner-grounded or midpoint-grounded delta system. Disconnecting the EMC filter and ground-to-phase varistor does not prevent damage to the drive.

Move the drive to the installation site and unpack it

Move the drive module in its transport package to the installation site. Use a pallet truck when you move a heavy drive package.

To unpack the package:

- Cut the bands (A)
- Unpack the additional boxes (B)
- Remove the outer sheathing by lifting it (C)
- Remove the sheathing by lifting it (D).



3AUA0000101742

Transport package contents

1	<u>With standard drive module configuration:</u> Clear plastic shrouds. See below for the box contents.
2	<u>With standard drive module configuration:</u> Output cable connection terminals. See below for the box contents.
3	Plywood support
4	Drive module with factory installed options and multilingual residual voltage warning sticker, top guide plate, pedestal guide plate, telescopic ramp package, fastening screws in a plastic bag, external control unit with control cable clamp plate and factory installed option modules, control panel and cable or control panel with door mounting kit (option +J410), delivery documents and a printed multilingual quick installation and start-up guide. Other printed manuals with option +R7xx.
5	Pallet

3AXD50000013807

Box B1 contents (standard drive module configuration)	
1	Paper fill
2	Clear plastic shroud for output power cabling
3	Mounting bracket for bottom grille
4	Cardboard box bottom
5	Cardboard box cover
6	Bottom grille
7	Support
8	Straps
9	Screws in a plastic bag
10	Back clear plastic shroud (upper)
11	Back clear plastic shroud (lower)
12	Front clear plastic shroud
13	Clear plastic shroud for input power cabling
14	Top clear plastic shroud
15	Entry clear plastic shroud for side input cabling
16	Clear plastic bottom shroud 1
17	Clear plastic bottom shroud 2
18	Metallic shroud

EN

3AXD5000009515

Box B2 contains this box with standard drive module configuration	
1	Paper fill
2	Output cable connection terminal T3/W2
3	Output cable connection terminal T2/V2
4	Output cable connection terminal T1/U2
5	Grounding terminal
6	Cardboard box
7	Screws and insulators in a plastic bag

EN

Ramp box contents	
1	Screw package
2	Telescopic extraction and insertion ramp
3	Cardboard box

Accessory box contents: Assembly kit 3AXD50000453900	
1	Screw package, includes also spacers for FSO module installation
2	Rubber grommets for control unit cable entry holes in the middle front cover of the drive module
3	Fastener for Rittal VX25 enclosure
4	Bracket for attaching the drive module from top (3AUA0000096082). The bracket brings a gap for cooling air flow and prevents the drive module screws from chafing the plate.
5	Cardboard box

Measure the insulation resistance of the input and motor cables and the motor

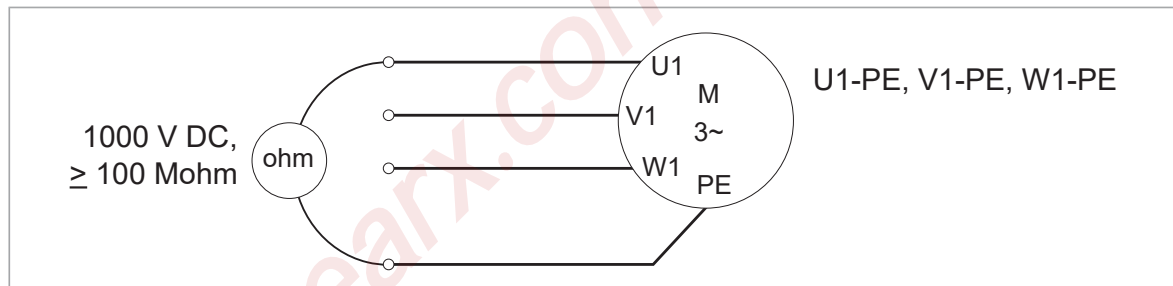
See figure H.

Before you connect the input power cable to the drive, measure its insulation resistance according to local regulations.

Ground the motor cable shield at the motor end. For minimal interference, make a 360° grounding at the cable entry, or keep the pig tail short.

Measure the insulation resistance of the motor and motor cable when the motor cable is disconnected from the drive. Measure the insulation resistance between each phase conductor and the Protective Earth conductor using a measuring voltage of 1000 V DC. The insulation resistance of an ABB motor must be greater than 100 Mohm (reference value at 25 °C or 77 °F). For the insulation resistance of other motors, consult the manufacturer's instructions.

Note: Moisture inside the motor casing will reduce the insulation resistance. If you suspect moisture, dry the motor and repeat the measurement.



EN

Ensure the cooling

See section [损耗和冷却数据 \(page 40\)](#) for the losses and the cooling air flow through the drive.

Install the drive module into a cabinet

See figure B:

- Install the punched section to the back of the cabinet frame.
- Remove the pedestal guide plate from the bottom of the drive module.
- Install the support rails and pedestal guide plate to the cabinet bottom frame.
- Install the telescopic insertion ramp to the pedestal guide plate.

See figure C:

- Remove the sheeting from the clear plastic shrouds from both sides.

See figure D:

- Install the bottom grille to the drive module if there is no bottom plate in the cabinet and degree of protection of IP20 is needed for the drive module from the bottom side.
- Install the mounting bracket to the drive module.
- Install the top metallic shroud to the drive module.
- Install the back shrouds to the drive module.


See figure E:

- Attach the drive module to the cabinet frame with chains.
- Push the drive module into the cabinet along the telescopic insertion ramp.
- Remove the ramp.

See figure F:

- Attach the drive module to the pedestal guide plate.
- Attach the drive module from top to the punched section at the cabinet

Connect the power cables and install the shrouds

Step	Task (motor cables)	Figure
1	Install the grounding terminal to the drive module base.	J
2	Run the motor cables to the cabinet. Ground the cable shields 360° at the cabinet entry.	K
3	Connect the twisted shields of the motor cables to the grounding terminal.	L
4	Screw in and tighten the insulators to the drive module by hand. Install the T3/W2 connection terminal to the insulators.  Do not use longer screws or bigger tightening torque than given in the installation drawing. They can cause damage to the insulator and cause dangerous voltage to be present at the module frame.	M
5	Connect the phase T3/W2 conductors to the T3/W2 terminal.	N
6	Install the T2/V2 connection terminal to the insulators. See the warning in step 4.	-
7	Connect the phase T2/V2 conductors to the T2/V2 connection terminal.	-
8	Install the T1/U2 connection terminal to the insulators. See the warning in step 4.	-
9	Connect the phase T1/U2 conductors to the T1/U2 terminal.	-
10	<u>If there is no bottom plate in the cabinet and degree of protection of IP20 is needed:</u> <ul style="list-style-type: none"> • Step drill carefully sufficiently big holes to the inner clear plastic shrouds for the motor cables to be connected. Smooth the hole edges. Cut the shroud from the holes to the edge to make it possible to put the shroud around the cables. • Remove the plastic sheeting from the shrouds from both sides. • Install the inner clear plastic shrouds around the motor cables. 	O, P
11	Remove the plastic sheeting from the outer clear plastic shroud from both sides. Install the shroud to the drive module.	Q
12	Install the lower front cover to the drive module.	Q

Step	Task (input cables)	Figure
1	Ground the input cable shields (if present) 360° at the cabinet entry.	-
2	Connect the twisted shields of the input cables and separate ground cable (if present) to the cabinet grounding busbar.	-
3	Step drill carefully sufficiently big holes to the clear plastic entry shroud for the cables to be connected. Align the holes in the vertical direction according to the alignment holes in the shroud. Smooth the hole edges. Remove the plastic sheeting from both sides of the shroud. Attach the cables firmly to the cabinet frame to prevent chafing against the hole edges.	R
4	Put the conductors of the input cables through the drilled holes in the clear plastic shroud.	S
5	Connect the input power cable conductors to the L1/U1, L2/V1 and L3/W1 connection busbars.	T
6	Move the clear plastic entry shroud along input cables to its final position. Install the front clear plastic shroud and upper front cover. Remove the cardboard protective covering from the drive module air outlet.	U

Step	Task (input cables)	Figure
7	Cut the hole for the clear plastic entry shroud in the side clear plastic shroud. Install the side and top clear plastic shrouds to the drive module.	V

Install the air baffles

See figure W and chapter Guidelines for planning the cabinet installation in the hardware manual.

Connect the control cables

See figure X.

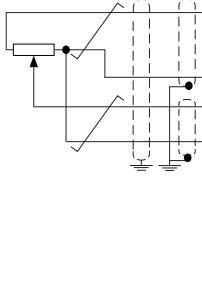
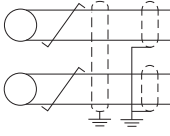
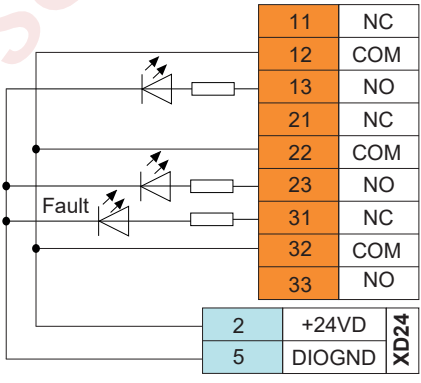
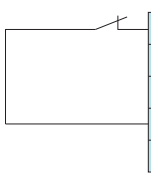
1. Disconnect the control panel cable from connector X13 on the control unit.
2. Loosen the mounting screws of the control panel holder and take the holder off.
3. Install the control cable grounding clamp plate to the control unit.
4. Connect the power supply, BGDR and fiber optic cables to the control unit.
5. Attach the control unit, for example, to a DIN rail.
6. Connect the power supply and BGDR cables to the drive module ZPOW and BGDR terminals. Drive modules with SOIA terminals: Connect the fiber optic cables to the SOIA terminals.
7. Ground the outer shields of all external control cables 360° at the cabinet entry.
8. Ground the pair-cable shields of external control cables to a grounding clamp below the control unit. 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.
9. Connect the conductors to the appropriate terminals of the control unit.
10. Wire the optional modules if included in the delivery.
11. Connect the control panel cable to connector X13.
12. Put the control panel holder on the control unit. Put the control panel to the recess if removed.

Default I/O diagram of the drive control unit (ZCU-1x)

Connection	Term	Description			
XPOW External power input					
	+24VI	24 V DC, 2 A min. (without optional modules)			
	GND				
<table border="1"> <tr> <td>1</td> <td>+24VI</td> </tr> <tr> <td>2</td> <td>GND</td> </tr> </table>	1		+24VI	2	GND
1	+24VI				
2	GND				

14 EN – Quick installation instructions

EN

Connection	Term	Description																		
XAI Reference voltage and analog inputs																				
 <table border="1" style="display: inline-table; vertical-align: middle;"> <tr><td>1</td><td>+VREF</td></tr> <tr><td>2</td><td>-VREF</td></tr> <tr><td>3</td><td>AGND</td></tr> <tr><td>4</td><td>AI1+</td></tr> <tr><td>5</td><td>AI1-</td></tr> <tr><td>6</td><td>AI2+</td></tr> <tr><td>7</td><td>AI2-</td></tr> <tr><td>AI2:I</td><td>AI1:I</td></tr> <tr><td>AI2:U</td><td>AI1:U</td></tr> </table>	1	+VREF	2	-VREF	3	AGND	4	AI1+	5	AI1-	6	AI2+	7	AI2-	AI2:I	AI1:I	AI2:U	AI1:U	+VREF	10 V DC, R_L 1...10 kohm
	1	+VREF																		
	2	-VREF																		
	3	AGND																		
	4	AI1+																		
	5	AI1-																		
	6	AI2+																		
	7	AI2-																		
	AI2:I	AI1:I																		
	AI2:U	AI1:U																		
-VREF	-10 V DC, R_L 1...10 kohm																			
AGND	Ground																			
AI1+	Speed reference																			
AI1-	0(2)...10 V, $R_{in} > 200$ kohm																			
AI2+	By default not in use.																			
AI2-	0(4)...20 mA, $R_{in} = 100$ ohm																			
J1	Current (I) / voltage (U) selection jumper for AI1																			
J2	Current (I) / voltage (U) selection jumper for AI2																			
XAO Analog outputs																				
 <table border="1" style="display: inline-table; vertical-align: middle;"> <tr><td>1</td><td>AO1</td></tr> <tr><td>2</td><td>AGND</td></tr> <tr><td>3</td><td>AO2</td></tr> <tr><td>4</td><td>AGND</td></tr> </table>	1	AO1	2	AGND	3	AO2	4	AGND	AO1	Motor speed rpm										
	1	AO1																		
	2	AGND																		
	3	AO2																		
4	AGND																			
AGND	0...20 mA, $R_L < 500$ ohm																			
AO2	Motor current																			
AGND	0...20 mA, $R_L < 500$ ohm																			
XD2D Drive-to-drive link																				
<table border="1" style="display: inline-table; vertical-align: middle;"> <tr><td>1</td><td>B</td></tr> <tr><td>2</td><td>A</td></tr> <tr><td>3</td><td>BGND</td></tr> <tr><td>4</td><td>Shield</td></tr> </table>	1	B	2	A	3	BGND	4	Shield	B	Master/follower, drive-to-drive or embedded fieldbus connection										
	1	B																		
	2	A																		
	3	BGND																		
	4	Shield																		
A																				
BGND																				
Shield																				
J3	Drive-to-drive link termination																			
XRO1, XRO2, XRO3 Relay outputs																				
	NC	Ready run																		
	COM	250 V AC / 30 V DC																		
	NO	2 A																		
	NC	Running																		
	COM	250 V AC / 30 V DC																		
	NO	2 A																		
	NC	Fault (-1)																		
	COM	250 V AC / 30 V DC																		
	NO	2 A																		
	2 +24VD																			
5 DIOGND																				
XD24 Auxiliary voltage output, digital interlock																				
 <table border="1" style="display: inline-table; vertical-align: middle;"> <tr><td>1</td><td>DIIL</td></tr> <tr><td>2</td><td>+24VD</td></tr> <tr><td>3</td><td>DICOM</td></tr> <tr><td>4</td><td>+24VD</td></tr> <tr><td>5</td><td>DIOGND</td></tr> </table>	1	DIIL	2	+24VD	3	DICOM	4	+24VD	5	DIOGND	DIIL	Run enable								
	1	DIIL																		
	2	+24VD																		
	3	DICOM																		
	4	+24VD																		
	5	DIOGND																		
+24VD	+24 V DC 200 mA																			
DICOM	Digital input ground																			
+24VD	+24 V DC 200 mA																			
DIOGND	Digital input/output ground																			
XDIO Digital input/outputs																				
<table border="1" style="display: inline-table; vertical-align: middle;"> <tr><td>1</td><td>DIO1</td></tr> <tr><td>2</td><td>DIO2</td></tr> </table>	1	DIO1	2	DIO2	DIO1	Output: Ready run														
	1	DIO1																		
	2	DIO2																		
DIO2	Output: Running																			
J6	Ground selection																			

Connection	Term	Description
XDI Digital inputs		
	DI1	Stop (0) / Start (1)
	DI2	Forward (0) / Reverse (1)
	DI3	Reset
	DI4	Acc/Dec time select
	DI5	Constant speed 1 (1 = On)
	DI6	By default, not in use.
	OUT	Safe torque off circuits must be closed for the drive to start.
	SGND	
	IN1	
	IN2	
X12	Safety options connection	
X13	Control panel connection	
X205	Memory unit connection	

EN








Start-up the drive



Before you start up the drive, make sure that the installation is completed. Make sure also that it is safe to start the motor. Disconnect the motor from other machinery if there is a risk of damage or injury.

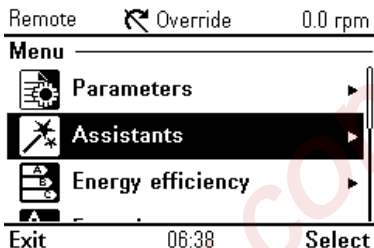
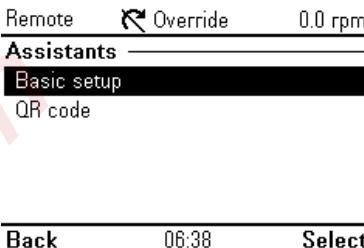
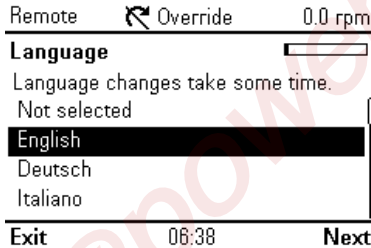
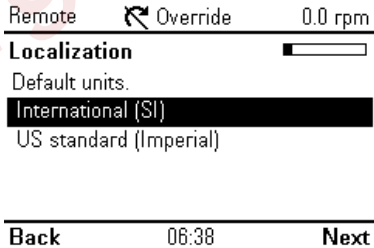
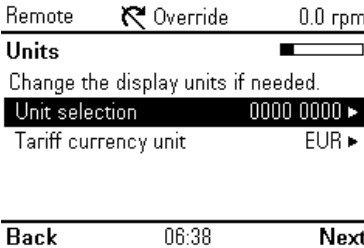
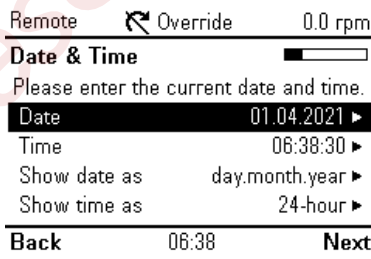
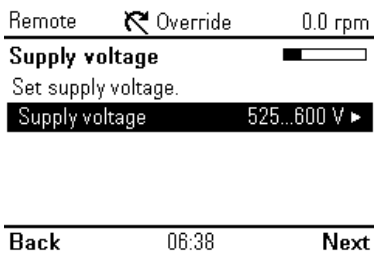
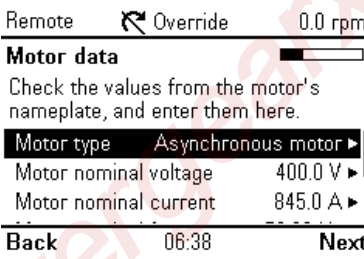
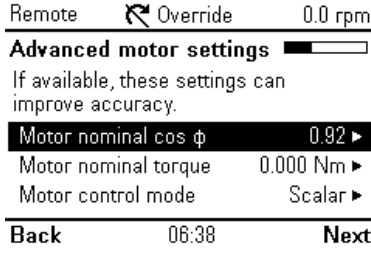
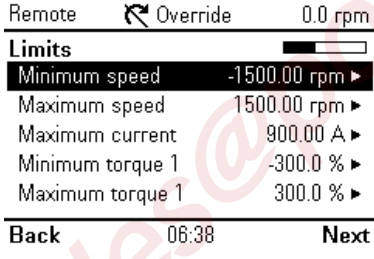
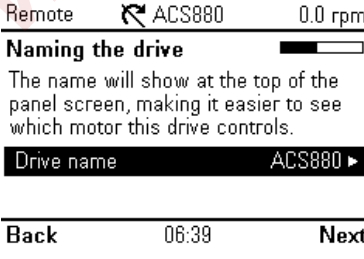


Before you activate the automatic fault reset or automatic restart functions of the drive control program, make sure that no dangerous situations can occur. These functions reset the drive automatically and continue operation after a fault or supply break. If these functions are activated, the installation must be clearly marked as defined in IEC/EN/UL 61800-5-1, subclause 6.5.3, for example, "THIS MACHINE STARTS AUTOMATICALLY".

Use the control panel to do the start-up procedure. The two commands at the bottom of the display show the functions of the two softkeys  and  located below the display. The commands assigned to the softkeys are different depending on the context. Use the arrow keys , ,  and  to move the cursor or change values depending on the active view. Key  shows a context-sensitive help page.

16 EN – Quick installation instructions

EN

<p>1. Power up the drive. Make sure that you have the motor name plate data available.</p>	<p>2. The First start assistant guides you through the first start-up. Select Menu and press ⏪ (Menu) to open the main Menu. Select Assistants and press ⏪ (Select).</p> 	<p>3. Select Basic setup and press ⏪ (Select).</p> 
<p>4. Select the language you want to use and press ⏪ (Next). Note: After you have selected the language, it takes a few minutes for the control panel to wake up.</p>	<p>5. Select the localization you want to use and press ⏪ (Next).</p>	<p>6. Do the following selections. After each, press ⏪ (Next).</p>
		
<p>7.</p> 	<p>8.</p> 	<p>9.</p> 
<p>10.</p> 	<p>11.</p> 	<p>12.</p> 
<p>13.</p>	<p>14.</p>	<p>15.</p>

Remote ACS880 0.0 rpm Direction test Spin the motor to check direction. No, skip the test Yes, test now Back 06:39 Next	Remote ACS880 0.0 rpm Make backup? Copies all settings into a backup file stored in the control panel. To restore a backup, go to Menu > Backups. Not now Backup Back 06:41 Next	Remote ACS880 0.0 rpm Set-up complete Drive is ready for use. Back 06:41 Done
---	--	--

■ **Motor overload protection**

The factory motor overload protection is not enabled by default. Motor thermal overload protection can be measured using motor temperature devices, can be estimated using a motor model defined by parameters, or can use measured motor current and motor Class curves. To enable protection using motor model parameters or measurement devices set parameter 35.11 and subsequent parameters through 35.55. To enable motor Class curves set parameter 35.56. Motor overload Class is defaulted to 20 and selectable in parameter 35.57.

Use the information key (?) on the drive control panel for more information on setting group 35 parameters. You must set the drive overload parameters correctly, or motor damage could occur.

■ **Fieldbus communication**

To configure the embedded fieldbus communication for Modbus RTU, you must set at least these parameters:

Parameter	Setting	Description
20.01 Ext1 commands	Embedded fieldbus	Selects fieldbus as the source for the start and stop commands when EXT1 is selected as the active control location.
22.11 Speed ref1 source	EFB ref1	Selects a reference received through the embedded fieldbus interface as speed reference 1.
26.11 Torque ref1 source	EFB ref1	Selects a reference received through the embedded fieldbus interface as torque reference 1.
28.11 Frequency ref1 source	EFB ref1	Selects a reference received through the embedded fieldbus interface as frequency reference 1.
58.01 Protocol enable	Modbus RTU	Initializes embedded fieldbus communication.
58.03 Node address	1 (default)	Node address. There must be no two nodes with the same node address on-line.
58.04 Baud rate	19.2 kbps (default)	Defines the communication speed of the link. Use the same setting as in the master station.
58.05 Parity	8 EVEN 1 (default)	Selects the parity and stop bit setting. Use the same setting as in the master station.
58.06 Communication control	Refresh settings	Validates any changed EFB configuration settings. Use this after changing any parameters in group 58.

Other parameters related to the fieldbus configuration:

58.14 Communication loss action	58.17 Transmit delay	58.28 EFB act1 type	58.34 Word order
---------------------------------	----------------------	---------------------	------------------

58.15 Communication loss mode	58.25 Control profile	58.31 EFB act1 transparent source	58.101 Data I/O 1 ...
58.16 Communication loss time	58.26 EFB ref1 type	58.33 Addressing mode	58.124 Data I/O 24 time

■ Warnings and faults

Warning	Fault	Aux. code	Description
A2A1	2281	Current calibration	<u>Warning:</u> Current calibration is done at the next start. <u>Fault:</u> Output phase current measurement fault.
-	2310	Overcurrent	The output current is more than the internal limit. This can also be caused by an earth fault or phase loss.
A2B3	2330	Earth leakage	A load unbalance that is typically caused by an earth fault in the motor or the motor cable.
A2B4	2340	Short circuit	There is a short-circuit in the motor or the motor cable.
-	3130	Input phase loss	The intermediate DC circuit voltage oscillates due to missing input power line phase.
-	3181	Wiring or earth fault	Incorrect input and motor cable connection.
A3A1	3210	DC link overvoltage	Intermediate DC circuit voltage is too high.
A3A2	3220	DC link undervoltage	Intermediate DC circuit voltage is too low.
-	3381	Output phase loss	All three phases are not connected to the motor.
-	5090	STO hardware failure	STO hardware diagnostics has detected hardware failure. Contact ABB.
A5A0	5091	Safe torque off	The Safe torque off (STO) function is active.
A7CE	6681	EFB comm loss	Break in embedded fieldbus communication.
A7C1	7510	FBA A communication	Communication lost between drive (or PLC) and fieldbus adapter.
ACAB	-	Extension I/O configuration failure	The I/O extension module types and locations specified by parameters do not match the detected configuration.
AFF6	-	Identification run	The motor ID run occurs at the next start.
-	FA81	Safe torque off 1 loss	The Safe torque off circuit 1 is broken.
-	FA82	Safe torque off 2 loss	The Safe torque off circuit 2 is broken.

Safe torque off (STO)

The drive has a Safe torque off (STO) function in accordance with IEC/EN 61800-5-2. It can be used, for example, as the final actuator device of safety circuits that stop the drive in case of danger (such as an emergency stop circuit).

When activated, the STO function disables the control voltage of the power semiconductors of the drive output stage, thus preventing the drive from generating the torque required to rotate the motor. The control program generates an indication as defined by parameter 31.22. If the motor is running when STO is activated, it coasts to a stop. Closing the activation switch deactivates STO. Any faults generated must be reset before restarting.

The STO function has a redundant architecture, that is, both channels must be used in the safety function implementation. The safety data given is calculated for redundant use, and does not apply if both channels are not used.



The Safe torque off function does not disconnect the voltage of the main and auxiliary circuits from the drive. Therefore maintenance work on electrical parts of the drive or the motor can only be carried out after isolating the drive from the main supply.

Note:

- If stopping by coasting is not acceptable, stop the drive and machinery using the appropriate stop mode before activating STO.
- The STO function overrides all other functions of the drive.

■ **Wiring**

The safety contacts must open/close within 200 ms of each other.

Double-shielded twisted-pair cable is recommended for the connection. The maximum length of the cabling between the switch and the drive control unit is 300 m (1000 ft). Ground the shield of the cable at the control unit only.

■ **Validation**

To ensure the safe operation of a safety function, a validation test is required. The test must be carried out by a competent person with adequate expertise and knowledge of the safety function. The test procedures and report must be documented and signed by this person. Validation instructions of the STO function can be found in the drive hardware manual.

■ **Technical data**

- The voltage at the STO input terminals of the control unit must be at least 17 V DC to be interpreted as “1”
- STO reaction time (shortest detectable break): 1 ms
- STO response time: 2 ms (typical), 30 ms (maximum)
- Fault detection time: Channels in different states for longer than 200 ms
- Fault reaction time: Fault detection time + 10 ms.
- STO fault indication (parameter 31.22) delay: < 500 ms
- STO warning indication (parameter 31.22) delay: < 1000 ms.
- Safety integrity level (SIL, EN 62061): 3
- Performance level (PL, EN ISO 13849-1): e

The STO is a type B safety component as defined in IEC 61508-2.

For the full safety data, exact failure rates and failure modes of the STO function, refer to the drive hardware manual.

sales@powergearx.com

sales@powergearx.com

sales@powergearx.com

sales@powergearx.com

sales@powergearx.com

中文 – 快速安装说明

本指南内容

本指南简要介绍将传动模块安装到 600 mm 宽 Rittal VX25 外壳体中的方法。其他柜体安装示例、更多详细说明、工程指导、技术数据和完整安全说明，请参阅硬件手册（3AUA0000128301 [英文]）。

遵循安全指导

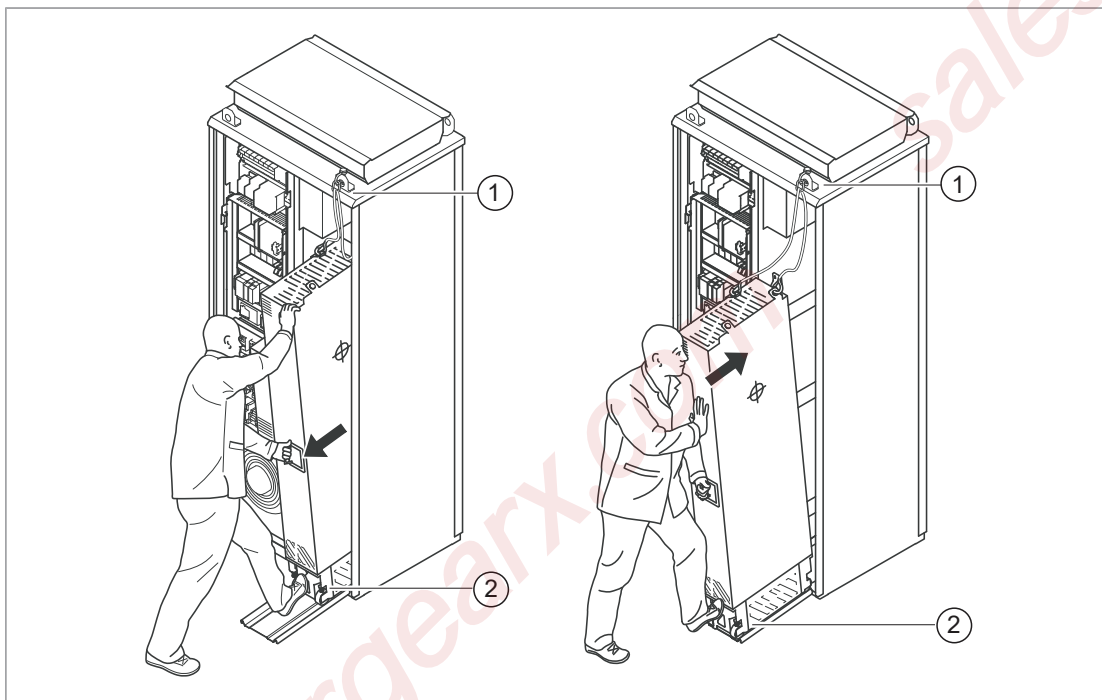
■ 安全须知

这些须知适用于对传动进行相关工作的所有人员。



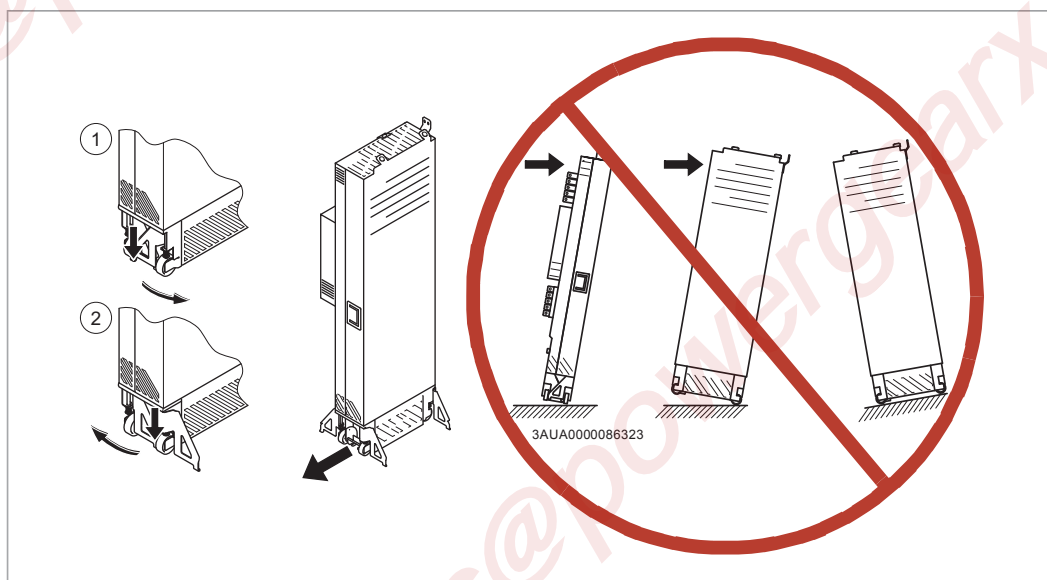
请遵循传动的安全须知。忽略这些安全须知可能会导致受伤、死亡或设备损坏。

- 在安装前将传动保留在包装内。在拆除包装后，避免沾染灰尘、残屑和湿气。
- 使用所需的个人防护装备：带金属鞋头的安全鞋、护目镜、防护手套和长袖套等。某些部件的边缘很锋利。
- 当传动或连接的设备带电时，切勿在传动、机电电缆、电机、控制电缆或控制电路上进行任何操作。
- 当旋转的永磁电机连接到传动时，请不要在传动上工作。旋转的永磁电机将使包括输入和输出动力端子在内的传动带电。
- 不要使用底座高度超过斜坡最大允许高度的模块提取/安装坡道。
- 仔细固定模块抽取/安装坡道。
- 为防止传动模块倾倒，在将模块推入柜体和从柜体中拉出前，将其顶部的吊耳与柜体（1）连接起来。最好是在另一个人的帮助下，把模块小心地推入柜体和从柜体中拉出来。将一只脚放在模块（2）的底座上，恒定施压，以防模块向后倾倒。



ZH

- 在地板上移动模块时，要防止传动模块倾倒。
 - 在适用的情况下使用支撑腿。要打开支撑腿，将每条支腿向下推并翻出(1, 2)。
 - 尽可能使用吊链来支撑模块。
 - 请勿倾斜模块。模块很重并且重心很高。
 - 不要无人看管地将模块留在倾斜的地板上。
 - 模块自带的轮子不能长距离使用，否则可能损坏轮子，还可能导致模块倾倒。



■ 电气安全预防措施

这些电气安全预防措施适用于所有对传动、电机电缆或电机进行操作的人员。



请遵守这些说明。忽略这些说明可能会导致受伤、死亡或设备损坏。

如果不是有资质的电气专业人员，请勿执行安装或维护作业。

请在开始任何安装或维护工作之前，完成如下步骤。

1. 做好准备工作：
 - 确认您清楚工作流程。
 - 进行现场风险评估或工作危害分析。
 - 确认您有正确的工具可用。
 - 确保人员是合格的。
 - 选择正确的个人防护装备。
 - 停止传动和电机。
2. 明确工作位置和设备。
3. 断开所有可能的电压源。确保无法重新连接。对隔离开关进行挂牌上锁。
 - 断开传动的主断路器。
 - 如果有充电开关，断开连接。
 - 断开供电变压器的隔离开关。（传动柜中的主断路器不会断开传动柜交流输入主回路母排的电压。）
 - 断开辅助电压隔离开关（如有），断开与传动连接的危险电压源。
 - 如果有永磁电机连接到传动，使用安全开关或其他方式断开电机与传动的连接。
 - 断开传动的主隔离设备。
 - 断开控制电路与外部危险电压源的连接。
 - 在断开传动电源后，务必等待五分钟让中间回路电容放电，然后再继续操作。
4. 保护工作场所的其他带电部件，避免接触，并在靠近裸露导线时采取特别预防措施。
5. 通过测量来确定设备已断电。使用合格的电压测试仪。如果测量要求移除或拆卸盖板或其它柜体结构件，请遵守有关带电工作的当地法律和法规（包括但不限于电击和电弧防护）。
 - 在对设备进行测量之前和之后，确认电压测量仪满足电压测量范围。
 - 确保传动输入电源端子（L1, L2, L3）与接地（PE）母排之间的电压为零。
 - 确保传动输入电源端子（U, V, W）与接地（PE）母排之间的电压为零。
重要提示！使用测试仪的直流电压设置进行重复测量。测量各相和各接地处的电压。由于电机电路有泄放电容，电机电路存在危险直流电压风险。这种电压可在传动断电后很长时间内保持带电状态。测量可以使其放电。
 - 确保传动直流端子（UDC+和UDC-）与接地（PE）端子之间的电压为零。
6. 按当地规范要求安装临时接地。
7. 从负责电气安装工作的人员处获得工作许可。

选择电缆和熔断器

选择电源电缆。遵循当地法律法规。

- **输入电源电缆：**使用对称的屏蔽电缆（VFD 电缆）以获得最佳的 EMC 性能。NEC 设备：允许使用连续的金属电缆导管，并且必须在两端接地。
- **电机电缆：**ABB 推荐使用对称屏蔽电机电缆来减少轴承电流、减少损耗和电机绝缘的冲击，从而实现最佳 EMC 性能。虽然不推荐，但也允许将连续导电导管内的导线用于 NEC 设备中。导管两端接地。使用单独导线连接电机和传动，用于接地保护。
- **额定电流：**最大持续负载电流。
- **额定电压（最小）：**IEC 设备：600 V AC 电缆最高可以用于 500 V AC 的应用、750 V AC 电缆最高可以用于 600 V AC 的应用、1000 V AC 电缆最高可以用于 690 V AC 的

应用。NEC 设备：600 V AC 电缆用于 230 V AC 的电机，1000 V AC 电缆用于 480 V AC 和 600 V AC 电机。600 V AC 电缆用于 230 V AC 和 480 V AC 电力线；1000 V AC 电缆用于 600 V AC 电力线。

- **额定温度**：IEC 设备：在长期使用的情况下，选择电缆的额定最高容许温度必须至少为 70°C。NEC 设备：使用可承受至少 75 °C 温度的导线。只要载流量是基于能承受 75°C 温度的导体，绝缘温度可以更高一些。

选择控制电缆。

- 使用双屏蔽或单屏蔽电缆传输数字、继电器和 I/O 信号。不得用同一根电缆传输 24 V 和 115/230 V 信号。

使用正确的熔断器保护传动和输入电源线。

有关典型动力电缆尺寸，请参阅 [典型电源电缆 \(页 42\)](#)。

有关正确的熔断器，请参阅 [熔断器 \(页 39\)](#)。

检查安装现场

检查安装现场。确保：

- 安装现场具备充足的通风或冷却，以利于传动散热。请参见技术数据。
- 传动的环境条件符合相关规范。请参见技术数据。
- 传动后侧、上侧和下侧均为阻燃材料。
- 传动周围有足够的空间用于散热、维护和操作。请参见传动安装空间的规定。
- 确保传动附近没有强磁场源，如大电流单芯导线或接触器线圈。强磁场会在传动的运行中造成干扰或导致误差。

电容重整

如果传动未通电一年或更长时间，则必须重整直流线路电容。请参阅[相关手册](#)或联系 ABB 技术支持。

确保传动与接地系统兼容

标准传动不带 EMC 滤波器且压敏电阻可以接入对称接地 TN-S 系统。如果您将传动安装至其他系统，您可能需要断开 EMC 滤波器和压敏电阻。参见 [ACS880 外形尺寸 R1 至 R11 EMC 滤波器和压敏电阻断开说明 \(3AUA0000125152\)](#) [【英文】](#)。



不要将带有 EMC 滤波器选件 +E200 的传动安装到滤波器不兼容的系统中。这可能导致危险，或损坏传动。



请勿在安装传动时将压敏电阻连接到不适合压敏电阻的系统上。否则，压敏电阻回路可能损坏。

■ 角接地和中点接地 525...690 V 三角形系统



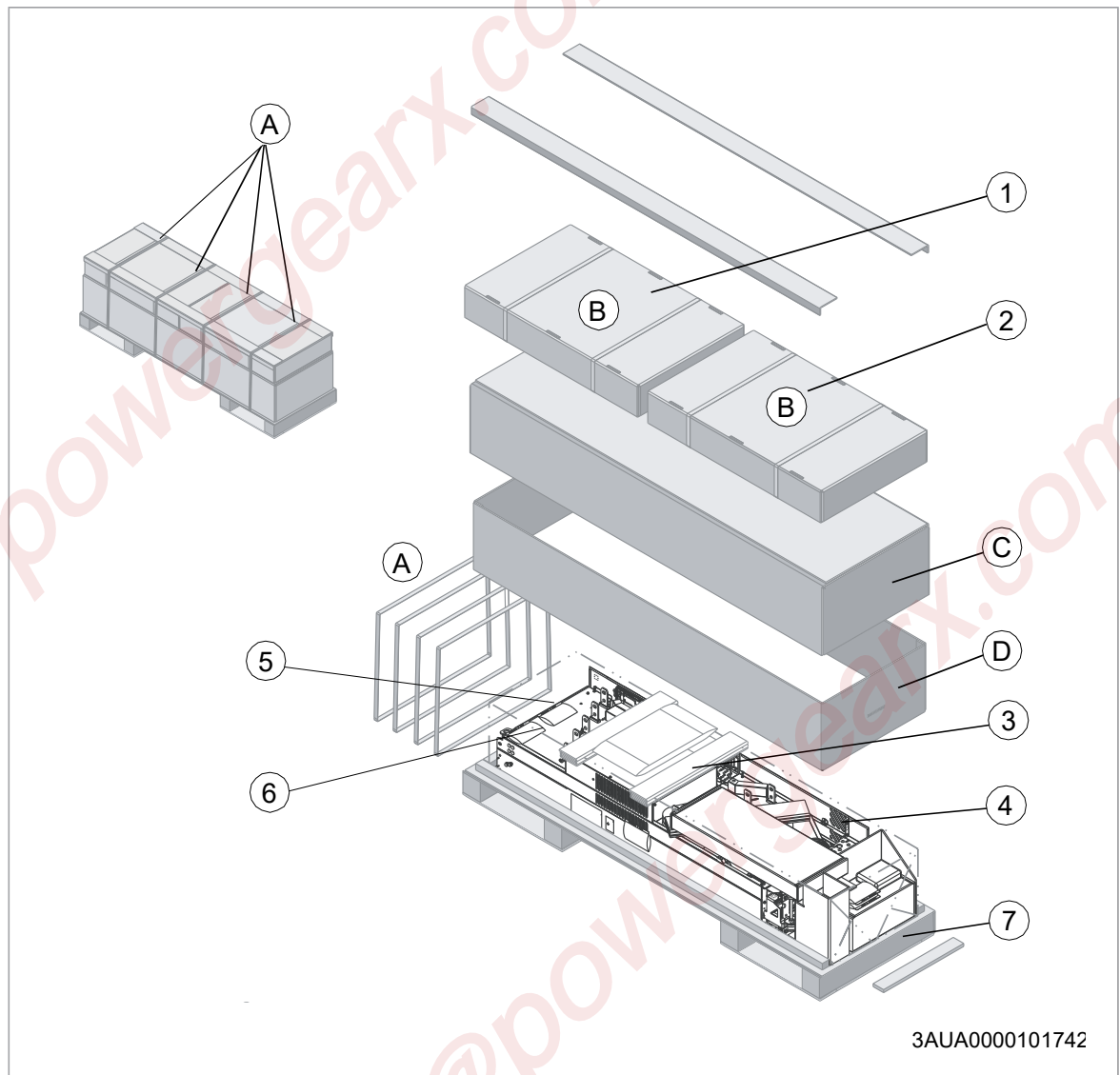
请勿在 525...690 V 角接地或中点接地三角形系统上安装传动。断开 EMC 滤波器和压敏电阻的连接不能防止传动损坏。

将传动移至安装地点并开箱

使用运输包装材料将传动模块送至安装现场。搬运重型传动模块包装箱时，请使用码垛车。

打开包装：

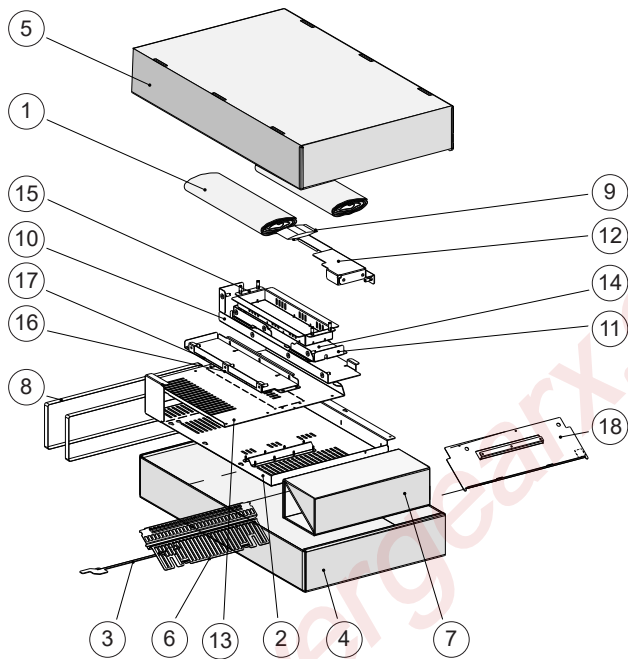
- 剪断打包带(A)
- 取出装有安装附件的包装箱(B)
- 提起外护罩，将其移除(C)
- 提起内护罩，将其移除(D)。



运输包装内容

1	传动模块标准配置：透明塑料盖板 箱中包含内容见下
2	传动模块标准配置：输出电缆连接端子。 箱中包含内容见下
3	胶合板支架
4	传动模块（带有出厂安装的选件和多语言残余电压警告贴纸）、顶部导轨板、底座导轨板、伸缩斜轨包装箱、紧固螺钉（置于塑料袋中）、外部控制单元（带有控制电缆安装板和出厂安装的可选模块）、控制盘及电缆或控制盘带柜门安装套件（选件 +J410）、交付文件、纸质多语言安装和启动快速指南。随选件 +R700 提供的其他纸质版手册。

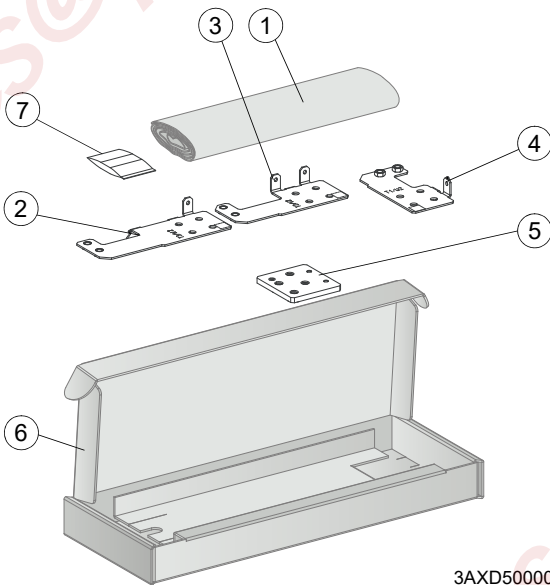
5 托盘



3AXD50000013807

B1 包装箱内容 (标准传动模块配置)

1	纸质填充物
2	用于输出电源线的透明塑料盖板
3	底部格栅的安装支架
4	纸板盒底
5	纸板盒盖
6	底部格栅
7	支撑
8	打包带
9	塑料袋中的螺钉
10	背部透明塑料盖板 (上部)
11	背部透明塑料盖板 (下部)
12	前部透明塑料盖板
13	用于输入电源线的透明塑料盖板
14	顶部透明塑料盖板
15	用于侧面输入电缆的进线透明塑料盖板
16	透明塑料底部盖板 1
17	透明塑料底部盖板 2
18	金属盖板

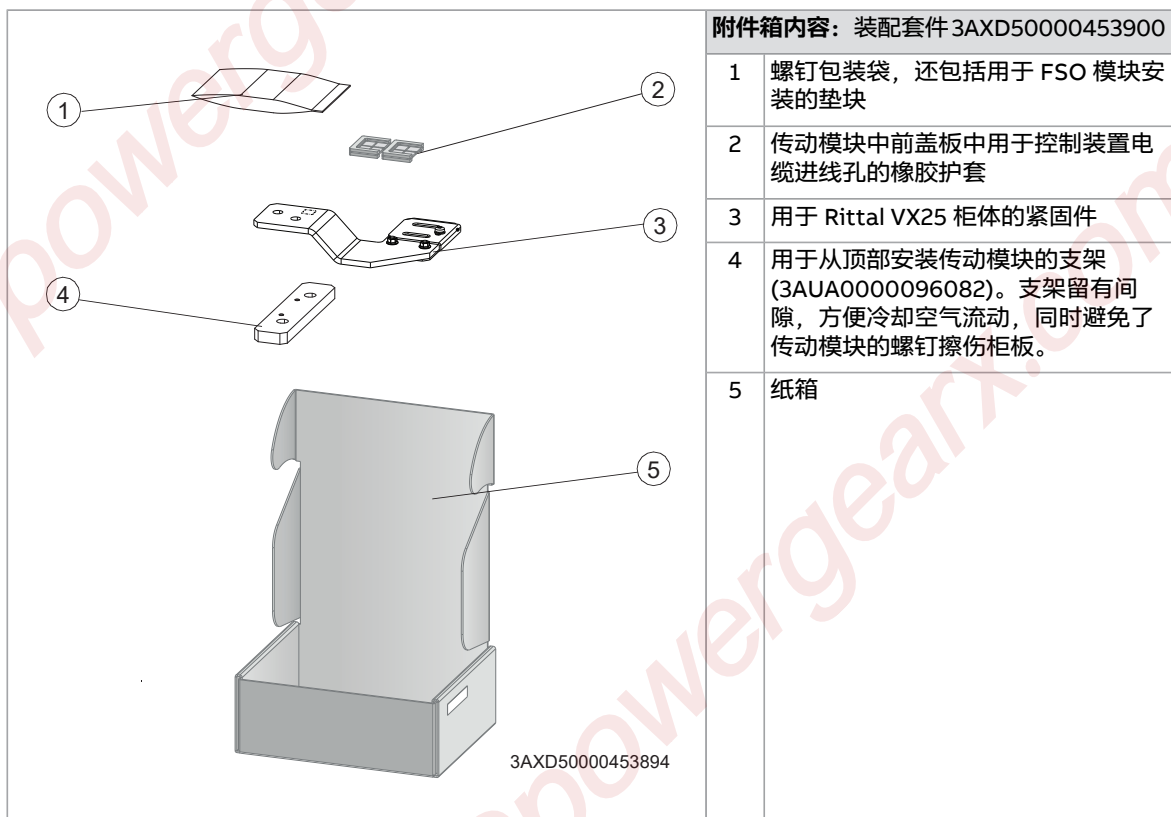
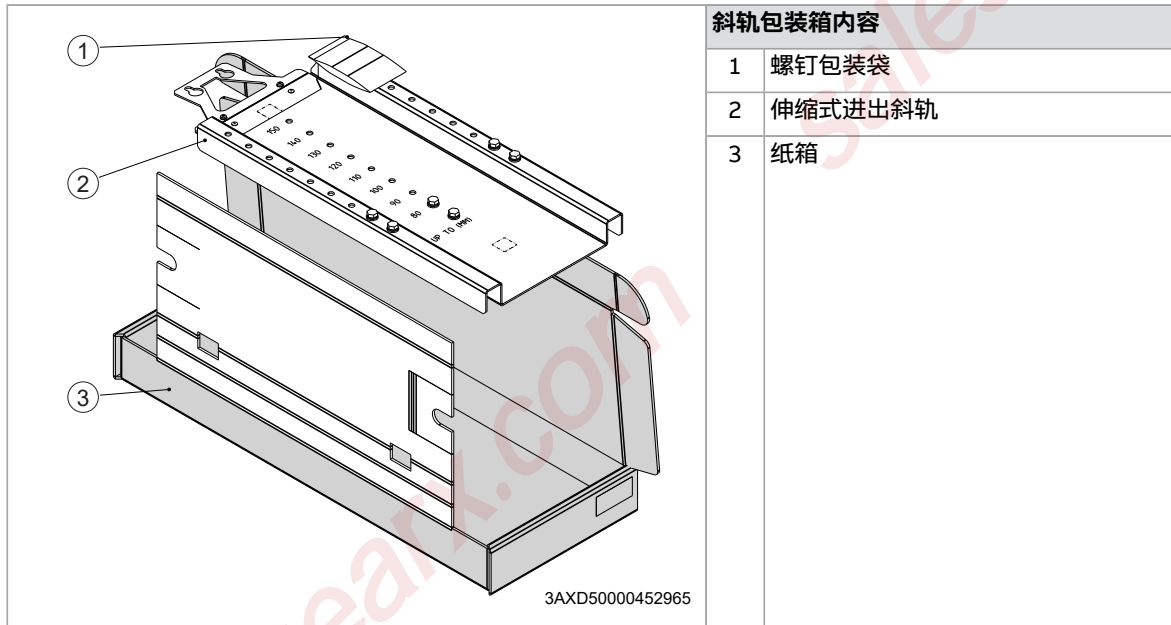


3AXD50000009515

箱 B2 包含此箱, 内有标准传动模块配置

1	纸质填充物
2	输出电缆连接端子 T3/W2
3	输出电缆连接端子 T2/V2
4	输出电缆连接端子 T1/U2
5	接地端子
6	纸箱
7	塑料袋中的螺钉和绝缘片

ZH



测量输入和电机电缆以及电机本身的绝缘电阻

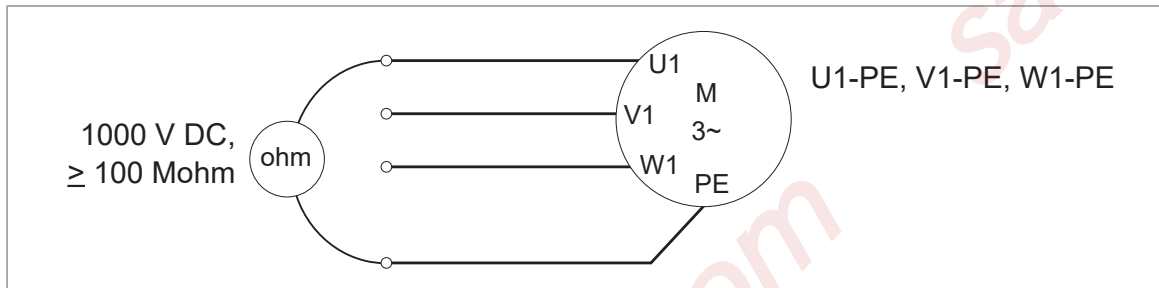
请参阅图片 H。

在把供电电缆连接到传动之前，请先根据当地法规测量其绝缘电阻。

在电机端将电机电缆屏蔽层接地。要使干扰降至最低水平，在线缆接入处提供 360° 接地或尽量缩短屏蔽层抽头。

当电机电缆与传动模块断开时，测量电机和电机电缆的绝缘电阻。使用 1000 V DC 的测量电压测量各相导体与保护接地导体之间的绝缘电阻。ABB 电机的绝缘电阻必须超过 100 Mohm (25°C 或 77°F 时的参考值)。对于其他电机的绝缘电阻，请查阅制造商的说明。

注： 电机外壳内的湿气会降低绝缘电阻。如果怀疑有湿气，请干燥电机并重新测量。



确保冷却

请参阅第 **损耗和冷却数据** (页 40) 节了解传动损耗和冷却空气流量。

将传动模块装入柜体

请参见图片 B:

- 将多孔横梁安装在柜体框架背面。
- 从传动模块底部取出基座导板。
- 将支撑轨和基座导板安装到柜体底架上。
- 将伸缩式进出斜轨安装到底座导轨板。

请参见图片 C:

- 将透明塑料盖板两侧的防护膜撕下。

请参见图片 D:

- 如果柜体无底板并且传动模块底部需要达到 IP20 级保护，应在传动模块安装底部格栅。
- 将安装支架安装到传动模块。
- 将顶部金属盖板安装到传动模块。
- 将背部盖板安装到传动模块。

请参阅图片 E:


- 使用铰链将传动模块固定到柜体框架上。
- 将传动模块沿导轨推进柜体内。
- 移除斜轨。

请参阅图片 F:

- 将传动模块紧固在底座导轨板上。
- 在柜体上部将传动模块顶部固定到多孔横梁

连接动力电缆并安装护罩

步骤	任务（电机电缆）	图片
1	将接地端子安装到传动模块底座。	J
2	将电机电缆引至柜体。在柜体进线孔处对电缆屏蔽层进行 360 度接地。	K
3	将电机电缆的屏蔽层绞合在一起，并连接到接地端子	L

步骤	任务 (电机电缆)	图片
4	用手将绝缘片固定在传动模块上并紧固。将 T3/W2 连接端子安装到绝缘片上。  请勿使用比安装图纸中列出的更长或紧固力矩更大的螺钉。这些螺钉可能损坏绝缘片并导致模块框架带有危险电压。	M
5	将 T3/W2 相线连接到 T3/W2 端子。	N
6	将 T2/V2 连接端子安装到绝缘片上。参见步骤 4 中的警告。	-
7	将 T2/V2 相线连接到 T2/V2 连接端子。	-
8	将 T1/U2 连接端子安装到绝缘片。参见步骤 4 中的警告。	-
9	将 T1/U2 相线连接到 T1/U2 端子。	-
10	<u>如果柜体中无底板并且需要 IP20 级防护:</u> <ul style="list-style-type: none"> 小心钻削, 使钻削孔足以连接电机线缆内部透明塑料护罩。磨平钻孔边缘。切削孔到边缘之间的护罩, 使护罩围住线缆。 从护罩两侧拆下塑料保护膜。 将内部透明塑料护罩安装到电机线缆周围。 	O、P
11	从外透明塑料护罩两侧拆下塑料保护膜。将护罩安装到传动模块上。	Q
12	将下部前盖板安装到传动模块。	Q

步骤	任务 (输入电缆)	图片
1	在柜体进线孔处对输入电缆屏蔽层 (如有) 进行 360° 接地。	-
2	连接输入线缆辫状屏蔽层并分离到柜体接地母线的接地线缆 (如有)。	-
3	小心地分级进给钻削, 在进线孔透明塑料护罩上钻出足够大的孔, 以便进行电缆连接。将孔沿垂直方向与护罩上的对齐孔对齐。打磨孔的边缘。 撕下盖板两侧的塑料膜。 将线缆紧密固定到柜架上, 以防与孔边缘发生摩擦。	R
4	将输入电缆的导线穿过透明塑料盖板上钻好的孔。	S
5	将输入电源线缆导线连接到 L1/U1、L2/V1 和 L3/W1 连接母线上。	T
6	将透明塑料护罩以及输入线缆同时移至最终位置。安装前部透明塑料护罩和上部前盖板。从传动模块出气口取下纸板护盖。	U
7	在侧面透明塑料护罩中切削透明塑料护罩进线孔。将侧面和顶部透明塑料护罩安装到传动模块上。	V

安装空气隔板

请参阅图片 W 和硬件手册中的柜体安装规划指导章节。


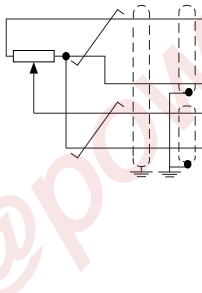
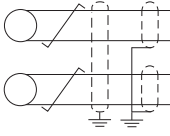
连接控制电缆

请参阅图片 X。

1. 从 X13 连接器上断开控制盘连接。
2. 松开控制盘支架上的安装螺丝, 取下控制盘支架。
3. 将控制电缆接地夹固板安装到控制单元上。
4. 连接传控制单元上的电源、BGDR 和光纤线缆。
5. 例如, 将控制单元安装到 DIN 导轨上。
6. 将电源线缆和 BGDR 线缆连接到传动模块的 ZPOW 和 BGDR 端子上。带 SOIA 端子的传动模块: 将光纤线缆连接到 SOIA 端子上。

7. 在柜体入口处为所有外部控制线缆屏蔽层提供 360° 接地。
8. 将外部控制线缆屏蔽层接地至控制单元下方的接地夹上。使屏蔽层另一端处于悬空或使用 3.3 nF/630 V 纳法高频电容间接接地。
9. 将导线连接到控制单元相应的端子上。
10. 如果交付的货物中包括选装模块，则为其连接电缆。
11. 将控制面板电缆连接到接口 X13 上。
12. 将控制盘支架放置在控制单元上。如果移除控制盘，要放置于凹槽处。

逆变器控制单元(ZCU-1x)的默认I/O图

连接	术语	说明																		
XPOW外部电源输入																				
 <table border="1" style="display: inline-table; vertical-align: middle;"> <tr><td>1</td><td>+24VI</td></tr> <tr><td>2</td><td>GND</td></tr> </table>	1	+24VI	2	GND	+24VI	24 V DC, 最小2A (不带可选件)														
	1	+24VI																		
2	GND																			
GND																				
XAI 参考电压和模拟输入																				
 <table border="1" style="display: inline-table; vertical-align: middle;"> <tr><td>1</td><td>+VREF</td></tr> <tr><td>2</td><td>-VREF</td></tr> <tr><td>3</td><td>AGND</td></tr> <tr><td>4</td><td>AI1+</td></tr> <tr><td>5</td><td>AI1-</td></tr> <tr><td>6</td><td>AI2+</td></tr> <tr><td>7</td><td>AI2-</td></tr> <tr><td>AI2:I</td><td>AI1:I</td></tr> <tr><td>AI2:U</td><td>AI1:U</td></tr> </table>	1	+VREF	2	-VREF	3	AGND	4	AI1+	5	AI1-	6	AI2+	7	AI2-	AI2:I	AI1:I	AI2:U	AI1:U	+VREF	10 V DC, R_L 1...10 kohm
	1	+VREF																		
	2	-VREF																		
	3	AGND																		
	4	AI1+																		
	5	AI1-																		
	6	AI2+																		
	7	AI2-																		
AI2:I	AI1:I																			
AI2:U	AI1:U																			
-VREF	-10 V DC, R_L 1...10 kohm																			
AGND	接地																			
AI1+	速度给定值																			
AI1-	0(2)...10 V, $R_{in} > 200$ kohm																			
AI2+	默认不使用。																			
AI2-	0(4)...20 mA, $R_{in} = 100$ ohm																			
J1	AI1 的电流 (I)/电压 (U) 选择跳线																			
J2	AI2 的电流 (I)/电压 (U) 选择跳线																			
XAO 模拟输出																				
 <table border="1" style="display: inline-table; vertical-align: middle;"> <tr><td>1</td><td>AO1</td></tr> <tr><td>2</td><td>AGND</td></tr> <tr><td>3</td><td>AO2</td></tr> <tr><td>4</td><td>AGND</td></tr> </table>	1	AO1	2	AGND	3	AO2	4	AGND	AO1	电机速度rpm										
	1	AO1																		
	2	AGND																		
	3	AO2																		
4	AGND																			
AGND	0...20 mA, $R_L < 500$ ohm																			
AO2	电机电流																			
AGND	0...20 mA, $R_L < 500$ ohm																			
XD2D 传动间链路																				
<table border="1" style="display: inline-table; vertical-align: middle;"> <tr><td>1</td><td>B</td></tr> <tr><td>2</td><td>A</td></tr> <tr><td>3</td><td>BGND</td></tr> <tr><td>4</td><td>Shield</td></tr> </table>	1	B	2	A	3	BGND	4	Shield	B	主站/从站, 传动-传动或内置现场总线连接										
	1	B																		
	2	A																		
	3	BGND																		
	4	Shield																		
A																				
BGND																				
屏蔽层																				
J3	D2D连接终端																			

连接	术语	说明				
XRO1, XRO2, XRO3 继电器输出						
	NC	运行就绪				
	COM	250 V AC / 30 V DC 2 A				
	NO					
	NC	正在运行				
	COM	250 V AC / 30 V DC 2 A				
	NO					
	NC	故障 (-1)				
	COM	250 V AC / 30 V DC 2 A				
	NO					
XD24 辅助电压输出, 数字互锁						
	DIIL	运行允许				
	+24VD	+24 V DC 200 mA				
	DICOM	数字输入公共端				
	+24VD	+24 V DC 200 mA				
	DIOGND	数字输入/输出接地				
XDIO 数字输入/输出						
<table border="1"> <tr><td>1</td><td>DIO1</td></tr> <tr><td>2</td><td>DIO2</td></tr> </table>	1	DIO1	2	DIO2	DIO1	输出: 准备运行
	1	DIO1				
	2	DIO2				
DIO2	输出: 运行					
J6	接地选择跳线					
XDI 数字输入						
	DI1	停止 (0) / 启动 (1)				
	DI2	正转 (0) / 反转 (1)				
	DI3	复位				
	DI4	加速/减速时间选择				
	DI5	恒速 1 (1 = On)				
	DI6	默认不使用。				
	OUT	安全转矩取消回路必须闭合, 否则传动无法启动。				
	SGND					
	IN1					
	IN2					
X12	安全选项连接					
X13	控制盘连接					
X205	存储单元连接					

启动传动



在启动传动前，应确保安装已完成。还要确保能安全地启动电机。如有机器损坏或人员受伤风险，应断开电机与其他机械的连接。



在启用传动控制程序的自动故障复位或自动重启功能之前，请确保不会发生危险情况。这些功能会自动复位传动，并能在故障复位或电源中断恢复后继续运行。如果这些功能被激活，安装时必须清楚地按照IEC/EN 61800-5-1,条款6.5.3的定义进行标记，例如，“本机自动启动”。

使用控制面板进行启动操作。显示屏底部的两个命令显示了屏幕下方的两个软键 和 的功能。分配给软键的命令在不同上下文环境中会有所不同。用箭头键 、、 和 移动光标或根据当前视图修改值。键 会显示一个上下文相关的帮助页面。

<p>1. 给传动上电。请确保可以获取电机铭牌上的数据。</p>	<p>2. 首次启动启动助手会引导您完成。选择菜单并按下 (菜单) 以打开主菜单。选择助手并按下 (选择)。</p> 	<p>3. 选择基本设置并按下 (选择)。</p> 
<p>4. 选择您想使用的语言并按下 (下一步)。 注：选择了语言后，控制面板需要几分钟时间来激活。</p>	<p>5. 选择希望使用的单位并按下 (下一步)。</p>	<p>6. 进行以下选择。每次选择之后，按下 (下一步)。</p>
		
<p>7.</p> 	<p>8.</p> 	<p>9.</p> 
<p>10.</p>	<p>11.</p>	<p>12.</p>

远程 ACS880 0.0 rpm 高级电机设置 如果可用，这些设置可提高精度。 电机额定功率因数 0.00 ▶ 电机额定转矩 0.000 Nm ▶ 电机控制模式 DTC ▶ 返回 11:30 下一步	远程 ACS880 -0.1 rpm 限值 最小速度 -1500.00 rpm ▶ 最大速度 1500.00 rpm ▶ 最大电流 3.06 A ▶ 最小转矩1 -300.0 % ▶ 最大转矩1 300.0 % ▶ 返回 11:30 下一步	远程 ACS880 0.0 rpm 变频器命名 这个名字将显示在控制盘屏幕顶部， 便于区分变频器控制哪个电机。 变频器名称 ACS880 ▶ 返回 11:30 下一步
13.	14.	15.
远程 ACS880 0.0 rpm 方向测试 旋转电机以检查方向。 不，跳过测试 是的，现在测试 返回 11:30 下一步	远程 ACS880 0.0 rpm 制作备份? 复制所有设置到控制盘中的备份文件。 若要还原备份，选择菜单>备份。 稍后备份 返回 11:30 下一步	远程 ACS880 0.0 rpm 设置完成 变频器准备好使用。 返回 11:30 完成

■ 电机过载保护

出厂时，并没有默认启用电机过载保护。电机热过载保护可以使用电机温度设备测量，可以使用由参数定义的电机模型进行估算，或者可以使用测量的电机电流和电机过载保护等级曲线。要通过电机模型参数或测量设备来启用保护，请设置参数 35.11 到 35.55。要启用电机等级曲线，请设置参数 35.56。默认情况下，电机过载等级为 20，并可在参数 35.57 中选择。

使用传动控制面板上的信息键 (?) 获取有关设置第 35 组参数的更多信息。必须正确设置传动过载参数，否则电机可能损坏。

■ 现场总线通信

为了配置 Modbus RTU 的内置现场总线通信，您必须至少设置下列参数：

参数	设置	说明
20.01 外部1命令	内置现场总线	当 EXT1 被选为激活控制位置时，选择现场总线作为启动和停止命令源。
22.11 速度给定值 1 信号源	EFB-给定值 1	将通过内置现场总线接口接收的给定选择作为转速给定值 1。
26.11 转矩给定值 1 选择	EFB-给定值 1	将通过内置现场总线接口接收的给定选择作为转矩给定值 1。
28.11 频率给定值 1 信号源	EFB-给定值 1	将通过内置总线通信接口接收的给定值选择作为频率给定值 1。
58.01 通信协议使能	Modbus RTU	初始化内置现场总线通讯。
58.03 节点地址	1 (默认)	节点地址。不得有节点地址相同的两个节点在线。
58.04 波特率	19.2 kbps (默认)	定义链路的通信速度。使用与主站相同的设置。
58.05 奇偶校验	8 EVEN 1 (默认)	选择奇偶校验和停止位设置。使用与主站相同的设置。
58.06 通信控制	刷新设置	验证所有更改的 EFB 配置设置。在更改第 58 组中的所有参数后使用此设置。

与现场总线配置有关的其他参数：

58.14 通信丢失动作	58.17 发送延时	58.28 内置现场总线-实际值 1类型	58.34 传输字序
--------------	------------	-------------------------	------------

58.15 通信丢失模式	58.25 控制协议	58.31 内置现场总线-实际值 1-透明信号源	58.101 数据 I/O 1 ... 58.124 数据 I/O 24 时间
58.16 通信丢失时间	58.26 内置现场总线-给定值 1类型	58.33 寻址方式	

警告和故障

警告	故障	辅助代码	说明
A2A1	2281	电流校准	警告: 电流校准将在下次启动时完成。 故障: 输出相电流测量故障。
-	2310	过流	输出电流超出了内部限制。可能是因为接地故障或电机缺相导致的。
A2B3	2330	接地漏电	通常是电机或电机电缆接地故障导致的。
A2B4	2340	短路	电机或电机电缆存在短路。
-	3130	输入缺相	由于输入电源缺相, 中间的直流电路电压发生振荡。
-	3181	接线错误或接地故障	输入或电机电缆连接不正确。
A3A1	3210	直流回路过压	中间的直流电路电压过高。
A3A2	3220	直流母线欠压	中间的直流电路电压过低。
-	3381	输出缺相	三相均未连接到电机。
-	5090	STO 硬件故障	STO 硬件诊断检测到硬件故障。联系 ABB。
A5A0	5091	安全转矩取消	安全转矩取消 (STO) 功能已激活。
A7CE	6681	EFB 通信丢失	内置现场总线通信中断。
A7C1	7510	FBA A 通信	传动 (或 PLC) 与现场总线适配器之间的通信丢失。
ACAB	-	扩展 I/O 配置失败	参数指定的 I/O 扩展模块类型和位置与检测到的配置不匹配。
AFF6	-	辨识运行	下次启动会进行电机辨识运行。
-	FA81	安全转矩取消 1 丢失	安全转矩取消对路 1 断开。
-	FA82	安全转矩取消 2 丢失	安全转矩取消回路 2 断开。

安全转矩取消(STO)

该传动具有符合 IEC/EN 61800-5-2 标准的安全转矩取消功能 (STO)。例如, 可以作为安全电路的最终执行装置, 在发生危险时 停止传动 (如紧急停止电路)。

STO 功能激活时, 可使传动输出功率半导体的控制电压失效, 这样可防止传动产生使电机旋转的转矩。控制程序产生一个指示信息, 该指示由参数 31.22 定义。如果安全转矩取消功能激活时电机正在运行, 则电机自由停机。关闭激活开关将停用 STO。产生的任何故障必须在重新启动前复位。

STO 功能采用冗余架构, 即在安全功能实施中必须使用两个通道。本手册给出的安全数据是根据冗余应用计算的, 如果未使用两个 通道, 这些安全数据就不适用。



安全转矩取消功能不会断开主电路和辅助电路与传动的电压连接。因此, 仅将传动与主电源隔离后方可在传动或电机的电气部件上执行维护作业。

注:

- 如果不接受自由停止方式, 则在激活 STO 功能之前用合适的停止模式停止传动和设备。
- STO 功能优先级高于传动的所有其他功能。

■ 接线

安全触点必须在 200 毫秒内打开 / 关闭。

推荐使用双屏蔽双绞线电缆进行连接。开关和传动控制单元之间的电缆最大长度为 300 米（1000 英尺）。仅在控制单元处将电缆的屏蔽层接地。

■ 验证

为了确保安全转矩取消功能的安全运行，需要进行验证测试。该测试必须由具有足够专业知识和安全功能知识的合格人员进行。测试程序和报告必须形成文件并由此人签字。STO 功能的验证说明可以在传动硬件手册中找到。

■ 技术数据

- 控制单元的STO输入端子的电压至少须为17 V DC方可表示为“1”
- STO反应时间（最短可检测中断）：1 ms
- STO 响应时间: 2 ms (典型值), 30 ms (最大值)
- 故障检测时间：时间超过200 ms的不同通道状态
- 故障反应时间：故障检测时间+10 ms。
- STO 故障指示（参数 31.22）延迟：< 500 ms
- STO 警告指示（参数 31.22）延迟：< 1000 ms。
- 整体性安全等级 (SIL, EN 62061): 3
- 性能级别（PL, EN ISO 13849-1）：e

STO 是IEC 61508-2所定义的 B 型安全部件。

如要了解 STO 功能的全部安全数据、确切的故障率和故障模式，请参阅传动硬件手册。

sales@powergearx.com

sales@powergearx.com

sales@powergearx.com

sales@powergearx.com

sales@powergearx.com

技术数据和给定值

额定值

IEC 额定值												
ACS880-04-...	外形尺寸	输入 电流	输出额定值									
			额定应用					轻载应用		重过载应用		
			I_1	I_{max}	I_{max_start}	I_2	P_n	S_n	I_{Ld}	P_{Ld}	I_{Hd}	P_{Hd}
			A	A	A	A	kW	kVA	A	kW	A	kW
$U_n = 400\text{ V}$												
505A-3	R10	505	560	671	505	250	350	485	250	361	200	
585A-3	R10	585	730	828	585	315	405	575	315	429	250	
650A-3	R10	650	730	954	650	355	450	634	355	477	250	
725A-3	R11	725	1020	1100	725	400	502	715	400	566	315	
820A-3	R11	820	1020	1100	820	450	568	810	450	625	355	
880A-3	R11	880	1100	1100	880	500	610	865	500	725*	400	
$U_n = 500\text{ V}$												
460A-5	R10	460	560	671	460	315	398	450	315	330	200	
503A-5	R10	505	560	671	503	355	436	483	315	361	250	
583A-5	R10	585	730	828	583	400	505	573	400	414	250	
635A-5	R10	650	730	954	635	450	550	623	450	477	315	
715A-5	R11	725	850	1100	715	500	619	705	500	566	400	
820A-5	R11	820	1020	1100	820	560	710	807	560	625	450	
880A-5	R11	880	1100	1100	880	630	762	857	560	697**	500	
$U_n = 690\text{ V}$												
330A-7	R10	330	480	510	330	315	394	320	315	255	250	
370A-7	R10	370	520	650	370	355	442	360	355	325	315	
430A-7	R10	430	540	720	430	400	514	420	400	360***	355	
470A-7	R11	470	655	830	470	450	562	455	450	415	400	
522A-7	R11	522	685	910	522	500	624	505	500	455	450	
590A-7	R11	590	800	1010	590	560	705	571	560	505	500	
650A-7	R11	650	825	1100	650	630	777	630	630	571**	560	
721A-7	R11	721	825	1100	721	710	862	705	630	571**	560	

38 技术数据和给定值

UL/NEC RATINGS										
ACS880-04-...	外形尺寸	输入电流	最大电流			输出额定值				
						视在功率	轻载应用		重过载应用	
			I_1	I_{max}	I_{max_start}	S_n	I_{Ld}	P_{Ld}	I_{Hd}	P_{Hd}
			A	A	A	kVA	A	hp	A	hp
$U_n = 480\text{ V}$										
460A-5	R10	460	560	671	398	450	350	330	250	
503A-5	R10	503	560	671	435	483	400	361	300	
583A-5	R10	583	730	828	504	573	450	414	350	
635A-5	R10	635	730	954	549	623	500	477	400	
715A-5	R11	715	850	1100	619	705	600	566	450	
820A-5	R11	820	1020	1100	710	807	700	625	500	
880A-5	R11	880	1100	1100	762	857	700	697**	600	
$U_n = 575\text{ V}$										
330A-7	R10	330	480	510	393	336	350	255	250	
370A-7	R10	370	520	650	441	382	400	325	300	
430A-7	R10	430	520	720	513	424	450	360***	350	
470A-7	R11	470	655	830	562	472	500	415	450	
522A-7	R11	522	655	910	624	528	550	455	450	
590A-7	R11	590	800	1010	705	571	600	505	500	
650A-7	R11	650	820	1100	777	630	700	571**	600	
721A-7	R11	721	820	1100	862	705	700	571**	600	

* 连续输出电流有效值，允许每 5 分钟内有 1 分钟达到 40% 的过载

** 连续输出电流有效值，允许每 5 分钟内有 1 分钟达到 45% 过载

** 连续输出电流有效值，允许每 5 分钟内有 1 分钟达到 44% 过载

熔断器

传动型号	每个传动模块的快速 (aR) 熔断器						
	最小短路电流	输入电流	熔断器				
	A	A	A	A ² s	V	DIN 43653 型	尺寸
$U_n = 400\text{ V}$							
ACS880-04-505A-3	4500	505	800	465000	690	170M6012	3
ACS880-04-585A-3	6500	585	1000	945000	690	170M6014	3
ACS880-04-650A-3	6500	650	1000	945000	690	170M6014	3
ACS880-04-725A-3	9100	725	1250	1950000	690	170M6016	3
ACS880-04-820A-3	11000	820	1600	3900000	690	170M6019	3
ACS880-04-880A-3	11000	880	1600	3900000	690	170M6019	3
$U_n = 500\text{ V}$							
ACS880-04-460A-5	3000	460	630	210000	690	170M6010	3
ACS880-04-503A-5	4500	505	800	465000	690	170M6012	3
ACS880-04-583A-5	6500	585	1000	945000	690	170M6014	3
ACS880-04-635A-5	6500	650	1000	945000	690	170M6014	3
ACS880-04-715A-5	9100	725	1250	1950000	690	170M6016	3
ACS880-04-820A-5	11000	820	1600	3900000	690	170M6019	3
ACS880-04-880A-5	11000	880	1600	3900000	690	170M6019	3
$U_n = 690\text{ V}$							
ACS880-04-330A-7	3600	330	700	300000	690	170M6011	3
ACS880-04-370A-7	5600	370	900	670000	690	170M6013	3
ACS880-04-430A-7	6500	430	1000	945000	690	170M6014	3
ACS880-04-470A-7	7800	470	1100	1300000	690	170M6015	3
ACS880-04-522A-7	9100	522	1250	1950000	690	170M6016	3
ACS880-04-590A-7	10200	590	1400	2450000	690	170M6017	3
ACS880-04-650A-7	10500	650	1500	3100000	690	170M6018	3
ACS880-04-721A-7	10500	721	1500	3100000	690	170M6018	3

传动型号	每个传动模块的 UL 熔断器					
	输入电流 (A)	熔断器				
		A	V	制造商	UL等级	型号
$U_n = 480\text{ V}$						
ACS880-04-460A-5	460	600	600	Bussmann	T	JJS-600
ACS880-04-503A-5	505	600	600	Bussmann	T	JJS-600
ACS880-04-583A-5	585	800	600	Ferraz	L	A4BY800
ACS880-04-635A-5	650	800	600	Ferraz	L	A4BY800
ACS880-04-715A-5	725	1000	600	Ferraz	L	A4BY1000
ACS880-04-820A-5	820	1000	600	Ferraz	L	A4BY1000
ACS880-04-880A-5	880	1000	600	Ferraz	L	A4BY1000
$U_n = 575\text{ V}$						
ACS880-04-330A-7	330	500	600	Bussmann	T	JJS-500
ACS880-04-370A-7	370	500	600	Bussmann	T	JJS-500
ACS880-04-430A-7	430	500	600	Bussmann	T	JJS-500
ACS880-04-470A-7	470	600	600	Bussmann	T	JJS-600
ACS880-04-522A-7	522	600	600	Bussmann	T	JJS-600
ACS880-04-590A-7	590	800	600	Ferraz	L	A4BY800
ACS880-04-650A-7	650	800	600	Ferraz	L	A4BY800
ACS880-04-721A-7	721	800	600	Ferraz	L	A4BY800

■ UL 熔断器注释

1. 安装时必须使用熔断器，但其不包括在传动的基本配置中，必须另行购买。
2. 不得使用额定电流高于指定值的熔断器。
3. ABB 推荐的 UL 认证熔断器是符合 NEC 规定的分支电路保护装置。在断路器 (UL) 一节中列出的断路器也可作为分支电路保护装置。
4. 必须使用推荐尺寸或更小的 UL 认证的 248 快动、延时或高速熔断器，以保持传动的 UL 认证。可以使用额外的保护。请参考当地的法规和条例。
5. 如果新熔断器的 I_{peak} 和 βt 不大于指定熔断器的这些参数，可以在高故障额定值处使用不同等级的熔断器。
6. 如果其他制造商生产的 UL 认证的 248 快速、延时或高速熔断器符合上述规定中的相同等级和额定要求，则可以使用。
7. 在安装传动时，请务必遵循 ABB 的安装说明、NEC 要求和当地法规。
8. 如果替代熔断器符合特定的特性要求，则可以使用。关于替代熔断器，请参见 [ABB 传动支路电路保护器件补充手册 \(3AXD50000645015\)](#)。

损耗和冷却数据

传动型号	外形尺寸	气流		散热 ¹⁾	噪声
		m ³ /h	ft ³ /min	W	dB(A)
$U_n = 400\text{ V}$					
ACS880-04-505A-3	R10	1200	707	6493	72
ACS880-04-585A-3	R10	1200	707	6827	72

传动型号	外形尺寸	气流		散热 ¹⁾	噪声
		m ³ /h	ft ³ /min	W	dB(A)
ACS880-04-650A-3	R10	1200	707	8067	72
ACS880-04-725A-3	R11	1200	707	8127	72
ACS880-04-820A-3	R11	1200	707	9740	72
ACS880-04-880A-3	R11	1420	848	10986	71
U_n = 500 V					
ACS880-04-460A-5	R10	1200	707	5795	72
ACS880-04-503A-5	R10	1200	707	6661	72
ACS880-04-583A-5	R10	1200	707	6886	72
ACS880-04-635A-5	R10	1200	707	7923	72
ACS880-04-715A-5	R11	1200	707	8126	72
ACS880-04-820A-5	R11	1420	848	9995	71
ACS880-04-880A-5	R11	1420	848	11206	71
U_n = 690 V					
ACS880-04-330A-7	R10	1200	707	4863	72
ACS880-04-370A-7	R10	1200	707	5785	72
ACS880-04-430A-7	R10	1200	707	7166	72
ACS880-04-470A-7	R11	1200	707	6356	72
ACS880-04-522A-7	R11	1200	707	7375	72
ACS880-04-590A-7	R11	1200	707	8851	72
ACS880-04-650A-7	R11	1420	848	8427	71
ACS880-04-721A-7	R11	1420	848	9767	71

1) 当传动在 90% 的电机额定频率和 100% 的传动额定输出电流下运行时的常规传动损失（根据 IEC61800-9-2 标准计算）。

典型电源电缆

ACS880-04-...	IEC ¹⁾		US ²⁾	
	铜制电缆类型	铝制电缆类型	铜制电缆类型	铝制电缆类型
	mm ²	mm ²	AWG/kcmil	AWG/kcmil
U_n = 400 V				
505A-3	3×(3×95)	3×(3×150)	2×500 MCM 或 3×250 MCM	2×700 MCM or 3×350 MCM
585A-3	3×(3×120)	3×(3×185)	2×600 MCM or 3×300 MCM	3×400 MCM or 4×250 MCM
650A-3	3×(3×150)	3×(3×240)	2×700 MCM or 3×350 MCM	3×400 MCM or 4×250 MCM
725A-3	3×(3×185)	4×(3×185)	3×500 MCM 或 4×300 MCM	3×500 MCM 或 4×300 MCM
820A-3	3×(3×240)	4×(3×240)	3×600 MCM 或 4×400 MCM	3×700 MCM or 4×500 MCM
880A-3	3×(3×240)	4×(3×240)	3×600 MCM 或 4×400 MCM	4×500 MCM
U_n = 500 V				
460A-5	3×(3×95)	3×(3×150)	2×400 MCM or 3×4/0	2×600 MCM or 3×300 MCM
503A-5	3×(3×95)	3×(3×150)	2×500 MCM 或 3×250 MCM	2×700 MCM or 3×350 MCM
583A-5	3×(3×120)	3×(3×185)	2×600 MCM or 3×300 MCM	3×500 MCM 或 4×300 MCM
635A-5	3×(3×150)	3×(3×240)	2×700 MCM or 3×350 MCM	3×600 MCM 或 4×400 MCM
715A-5	3×(3×185)	4×(3×185)	3×500 MCM 或 4×300 MCM	3×600 MCM 或 4×400 MCM
820A-5	3×(3×240)	4×(3×240)	3×600 MCM 或 4×400 MCM	4×500 MCM
880A-5	3×(3×240)	4×(3×240)	3×600 MCM 或 4×400 MCM	4×500 MCM
U_n = 690 V				
330A-7	2×(3×95)	2×(3×120)	2×300 MCM or 3×3/0	2×350 MCM or 3×4/0
370A-7	2×(3×95)	2×(3×120)	2×300 MCM or 3×3/0	2×400 MCM or 3×4/0
430A-7	2×(3×95)	2×(3×120)	2×350 MCM or 3×4/0	2×500 MCM 或 3×250 MCM
470A-7	3×(3×95)	3×(3×150)	2×400 MCM or 3×4/0	2×600 MCM or 3×300 MCM
522A-7	3×(3×120)	3×(3×185)	2×500 MCM 或 3×250 MCM	2×700 MCM or 3×350 MCM
590A-7	3×(3×150)	3×(3×185)	2×600 MCM or 3×300 MCM	3×500 MCM 或 4×300 MCM
650A-7	3×(3×150)	3×(3×240)	2×700 MCM or 3×350 MCM	3×500 MCM 或 4×300 MCM
721A-7	3×(3×185)	4×(3×185)	3×500 MCM 或 4×300 MCM	3×600 MCM 或 4×400 MCM

1) 电缆尺寸是基于最多 9 根电缆并排敷设在电缆桥架内，三个梯式托盘一个接一个，环境温度 30 °C，PVC 绝缘，表面温度 70 °C (EN60204-1 和 IEC60364-5-52)。其他情况下，请根据当地的安全规定、适当的输入电压和驱动器的负载电流选择电缆。

2) 电缆选择基于 NEC 310-16 表，铜导线，在 75 °C (167 °F)，环境温度 40 °C (104 °F) 的绝缘情况。在同一个包线管或电缆或地下(直埋)中不超过三根载流导体。对其它情况，请依据当地安全规范选择电缆尺寸，使其与传动的输入电压和负载电流相匹配。

动力电缆的端子和进线孔数据

最大电缆尺寸	4 × (3 × 240) mm ² 或 4 × (3 × 500 MCM)
连接母线到传动模块输入和输出母线的螺钉尺寸	M12
紧固力矩	50...75 N·m (37...55 lbf·ft)

防护等级

防护等级 (IEC/EN 60529)	散热器: IP55
外壳类型 (UL 50/50E)	UL 开放式 散热器: UL Type 12
过压类别 (IEC/EN 60664-1)	III
防护等级 (IEC/EN 61800-5-1)	I

环境条件

安装海拔	对于 TN 和 TT 中性接地系统和 IT 非角接地系统: 海拔 0 到 4000 m (13123 ft) 对于角接地系统: 海拔 0 到 2000 m (6561 ft) 不允许安装在 525...690 V 角接地或中点接地三角系统 额定输出电流在海拔高于 1000 m (3281 ft) 时必须每 100 m (328 ft) 降容 1%。
环境气温	运行: -15 ...+55 °C (5...131 °F)。不得出现冷凝。额定输出电流在 40 °C (104 °F) 以上必须每 1 °C (1.8 °F) 降容 1%。 包装中保存: -40 到 +70 °C (-40 to +158 °F)。

标志

产品符合的标志显示在传动的类型标签上

								
CE	UL	TÜV	UKCA	EAC	EIP	RCM	KC	WEEE

符合性声明

ABB

EU Declaration of Conformity
Machinery Directive 2006/42/EC

We, Manufacturer: **ABB Oy**
Address: **Hietalahti 13, 00380 Helsinki, Finland**
Phone: **+358 10 22 11**

declare under our sole responsibility that the following products:

Frequency converters
ACS880-04/11/31
ACS880-04/04F/0404/14/34

with regard to the safety functions:

- Safe Torque Off
- Safe stop 1, Safe stop emergency, Safely-limited speed, Safe maximum speed, Safe brake control, Prevention of unexpected start-up (with F50-12 option module, +Q973, encoderless)
- Safe stop 2, Safe stop emergency, Safely-limited speed, Safe maximum speed, Safe brake control, Safe speed monitor, Safe direction, Prevention of unexpected start-up (with F50-24 and F50-26 option modules, +Q972 and +L521, encoder supported)
- Safe motor temperature (with FPFC-01 thermistor protection module, +L530)
- Safe stop 1 (S21-L, with FSPS-21 PROFIsafe module, +Q986)

are in conformity with all the relevant safety component requirements of EU Machinery Directive 2006/42/EC, when the listed safety functions are used for safety component functionality.

The following harmonized standards have been applied:

EN 61800-5-2:2007 Adjustable speed electrical power drive systems - Part 5-2: Safety requirements - Functional
EN IEC 62061:2011 Safety of machinery - Functional safety of safety-related control systems
EN ISO 13849-1:2015 Safety of machinery - Safety-related parts of control systems. Part 1: General requirements
EN ISO 13849-2:2012 Safety of machinery - Safety-related parts of the control systems. Part 2: Validation
EN 60204-1:2018 Safety of machinery - Electrical equipment of machines - Part 1: General requirements

The following other standards have been applied:

IEC 61508-2:2010 parts 1-2 Functional safety of electrical / electronic / programmable electronic safety-related systems
IEC 61800-5-2:2006 Adjustable speed electrical power drive systems - Part 5-2: Safety requirements - Functional

The product(s) referred in this Declaration of conformity fulfill(s) the relevant provisions of other European Union Directives which are notified in Single EU Declaration of conformity 3A02000128405.

Authorized to compile the technical file: **ABB Oy, Hietalahti 13, 00380 Helsinki, Finland.**

Helsinki, August 31, 2022
Signed for and on behalf of: *Mika Virtanen*
Mika Virtanen
Local Division Manager
ABB Oy

Document number 3A02000099664

Page 1 of 1

ABB

Declaration of Conformity
Supply of Machinery (Safety) Regulations 2008

We, Manufacturer: **ABB Oy**
Address: **Hietalahti 13, 00380 Helsinki, Finland**
Phone: **+358 10 22 11**

declare under our sole responsibility that the following products:

Frequency converters
ACS880-04/11/31
ACS880-04/04F/0404/14/34

with regard to the safety functions:

- Safe Torque Off
- Safe stop 1, Safe stop emergency, Safely-limited speed, Safe maximum speed, Safe brake control, Prevention of unexpected start-up (with F50-12 option module, +Q973, encoderless)
- Safe stop 2, Safe stop emergency, Safely-limited speed, Safe maximum speed, Safe brake control, Safe speed monitor, Safe direction, Prevention of unexpected start-up (with F50-24 and F50-26 option modules, +Q972 and +L521, encoder supported)
- Safe motor temperature (with FPFC-01 thermistor protection module, +L530)
- Safe stop 1 (S21-L, with FSPS-21 PROFIsafe module, +Q986)

are in conformity with all the relevant safety component requirements of the Supply of Machinery (Safety) Regulations 2008, when the listed safety functions are used for safety component functionality.

The following designated standards have been applied:

EN 61800-5-2:2007 Adjustable speed electrical power drive systems - Part 5-2: Safety requirements - Functional
EN IEC 62061:2011 Safety of machinery - Functional safety of safety-related control systems
EN ISO 13849-1:2015 Safety of machinery - Safety-related parts of control systems. Part 1: General requirements
EN ISO 13849-2:2012 Safety of machinery - Safety-related parts of the control systems. Part 2: Validation
EN 60204-1:2018 Safety of machinery - Electrical equipment of machines - Part 1: General requirements

The following other standards have been applied:

EN 61508-2:2010 parts 1-2 Functional safety of electrical / electronic / programmable electronic safety-related systems
EN 61800-5-2:2006 Adjustable speed electrical power drive systems - Part 5-2: Safety requirements - Functional

The product(s) referred in this declaration of conformity fulfill(s) the relevant provisions of other UK statutory requirements, which are notified in a single declaration of conformity 3A02000128405.

Authorized to compile the technical file: **ABB Limited, Daresbury Park, Cheshire, United Kingdom, W44 4BT.**

Helsinki, August 31, 2022
Signed for and on behalf of: *Mika Virtanen*
Mika Virtanen
Local Division Manager
ABB Oy

Document number 3A02000128405

Page 1 of 1

相关手册

名称	代码
ACS880-04 传动模块 (200 至 710 kW, 300 至 700 hp) 硬件手册	3AUA0000128301
ACS880-04 传动模块 (200 至 710 kW, 300 至 700 hp) 快速安装指导	3AXD50000009366
ACS-AP-I, -S, -W 和 ACH-AP-H, -W 助手型控制盘用户手册	3AXD50000022895
ACS880 基本控制程序固件手册	3AXD50000009105
Drive Composer 启动和维护 PC 工具用户手册	3AUA0000094606
变流器模块电容器重整说明	3BFE64059629[英文]

您可以在互联网上找到手册。见下面的二维码/链接。更多文档，请访问网站 www.abb.com/drives/documents。

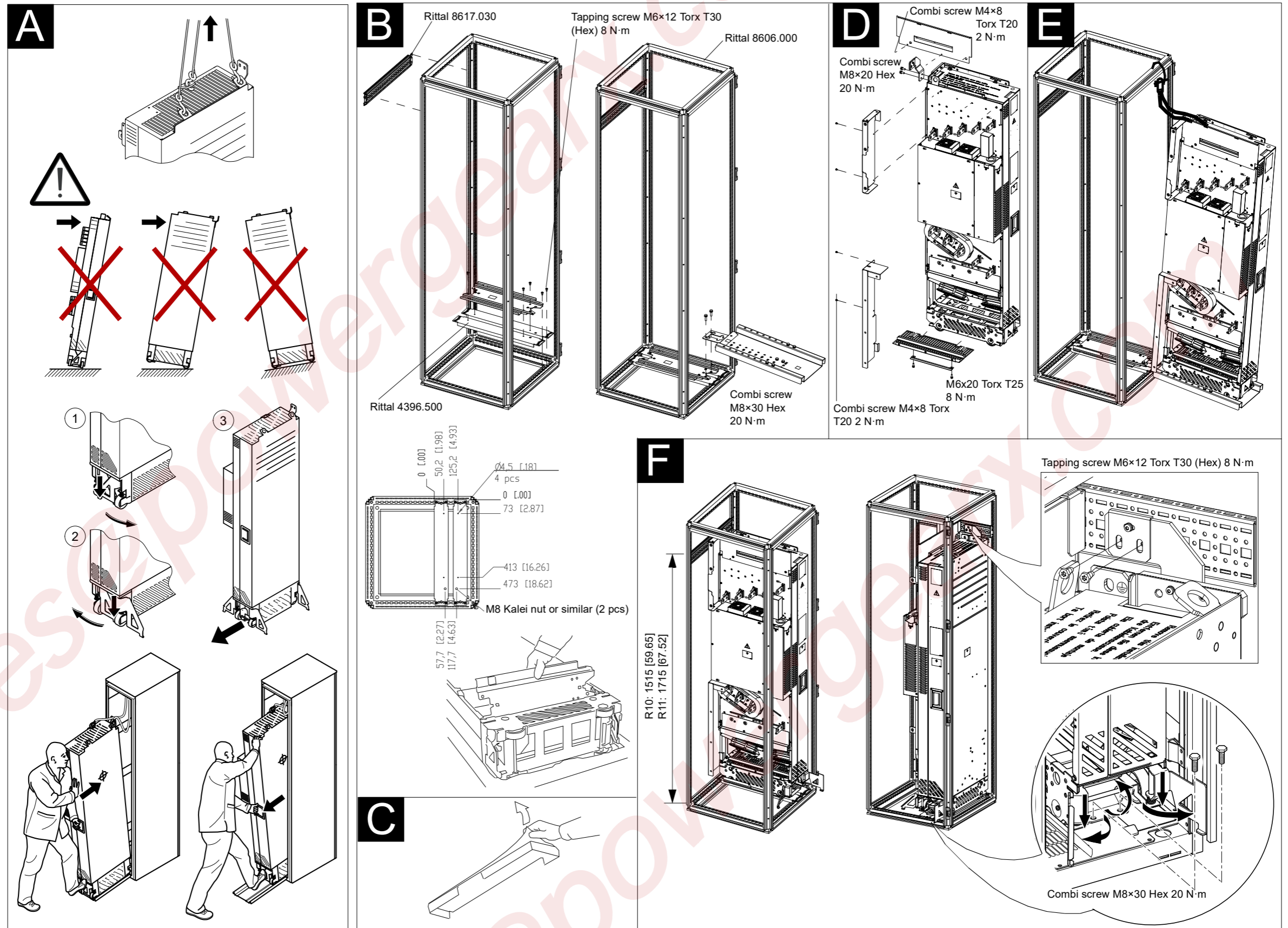


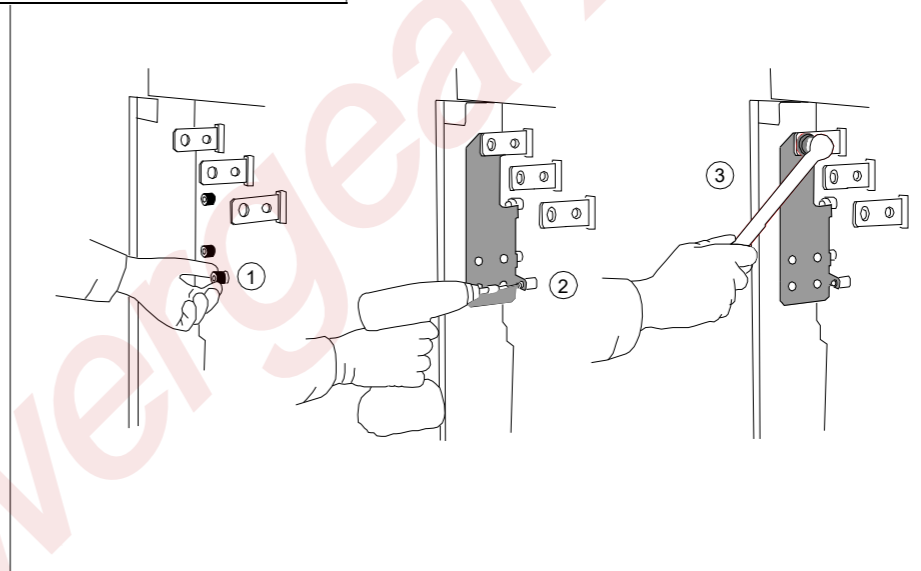
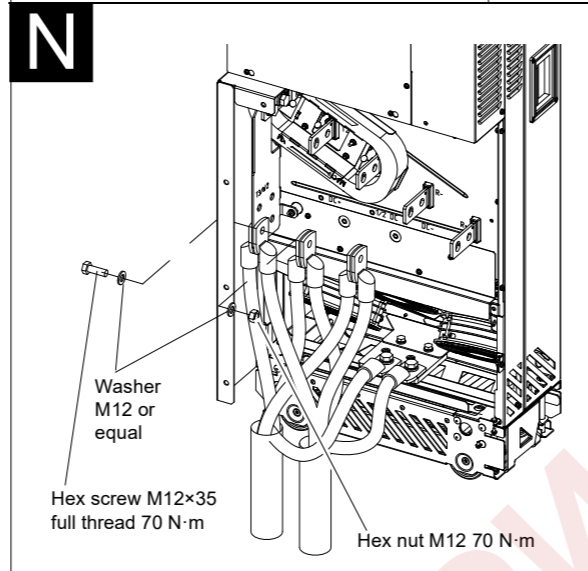
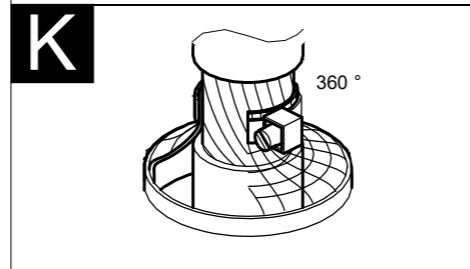
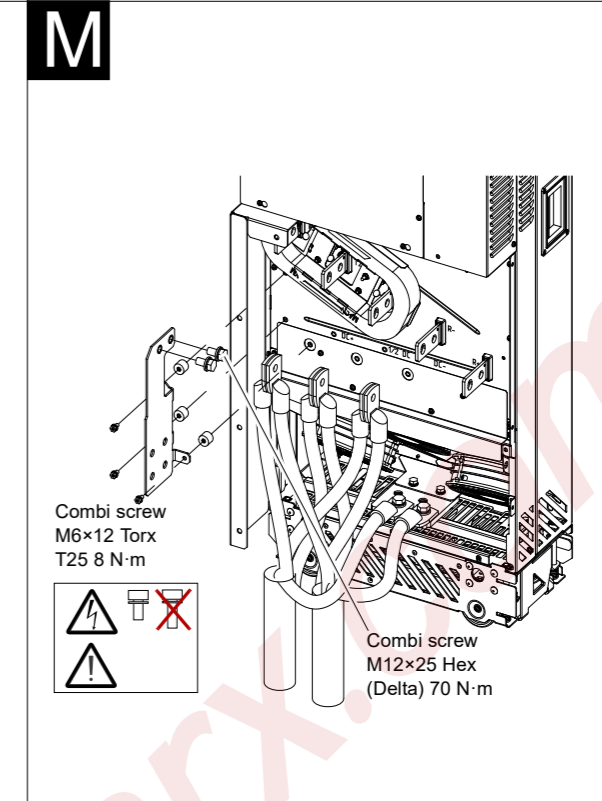
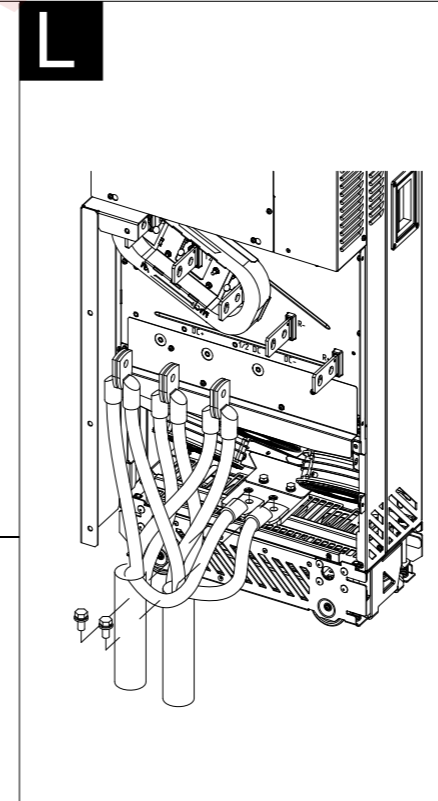
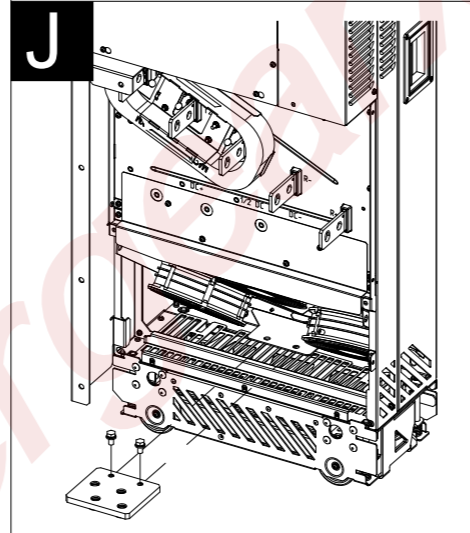
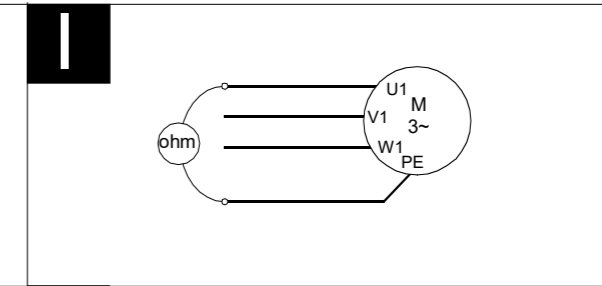
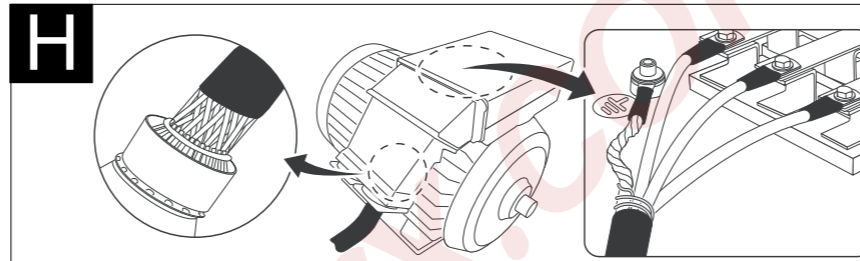
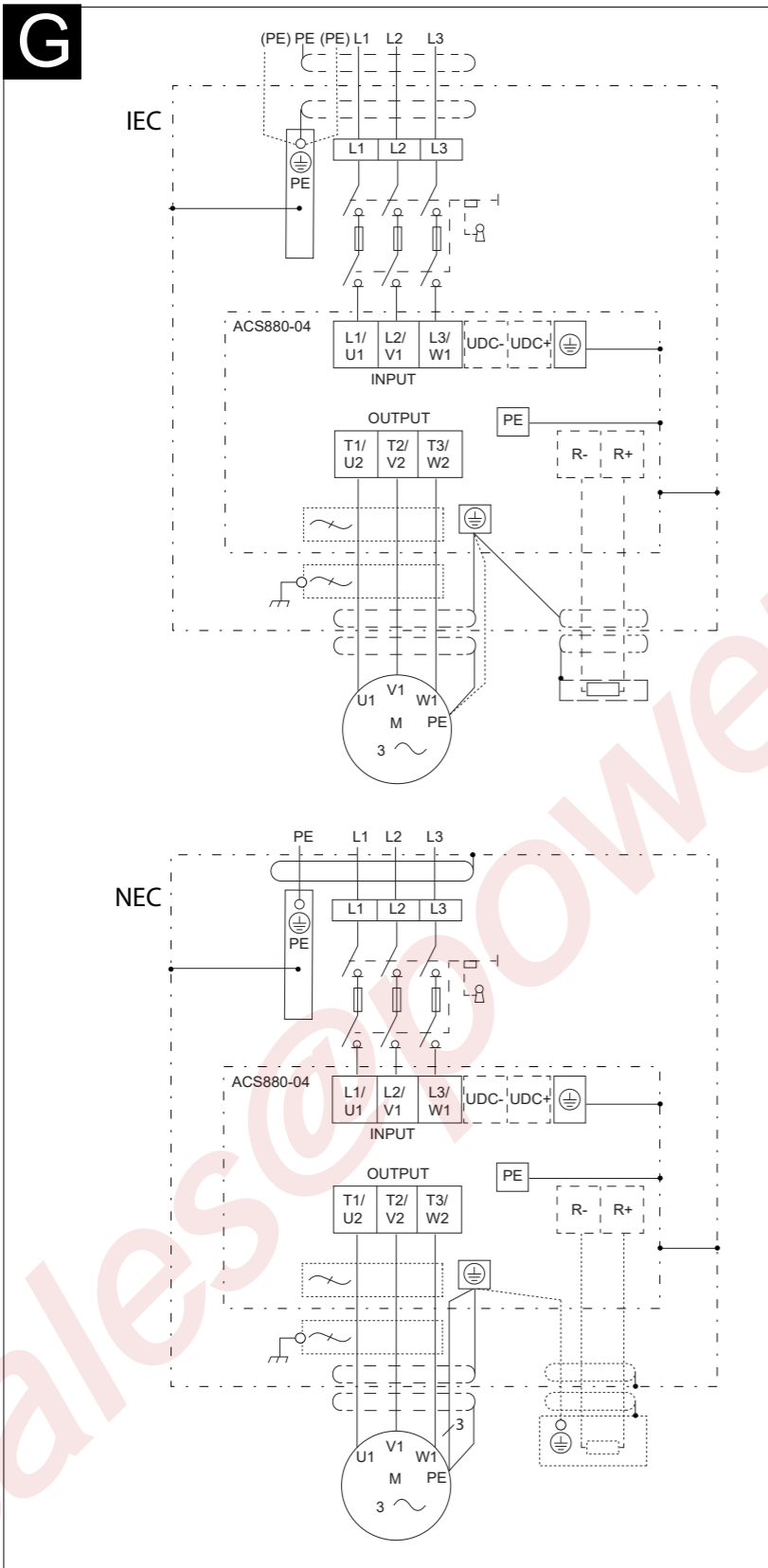
ACS880-04 用户手册

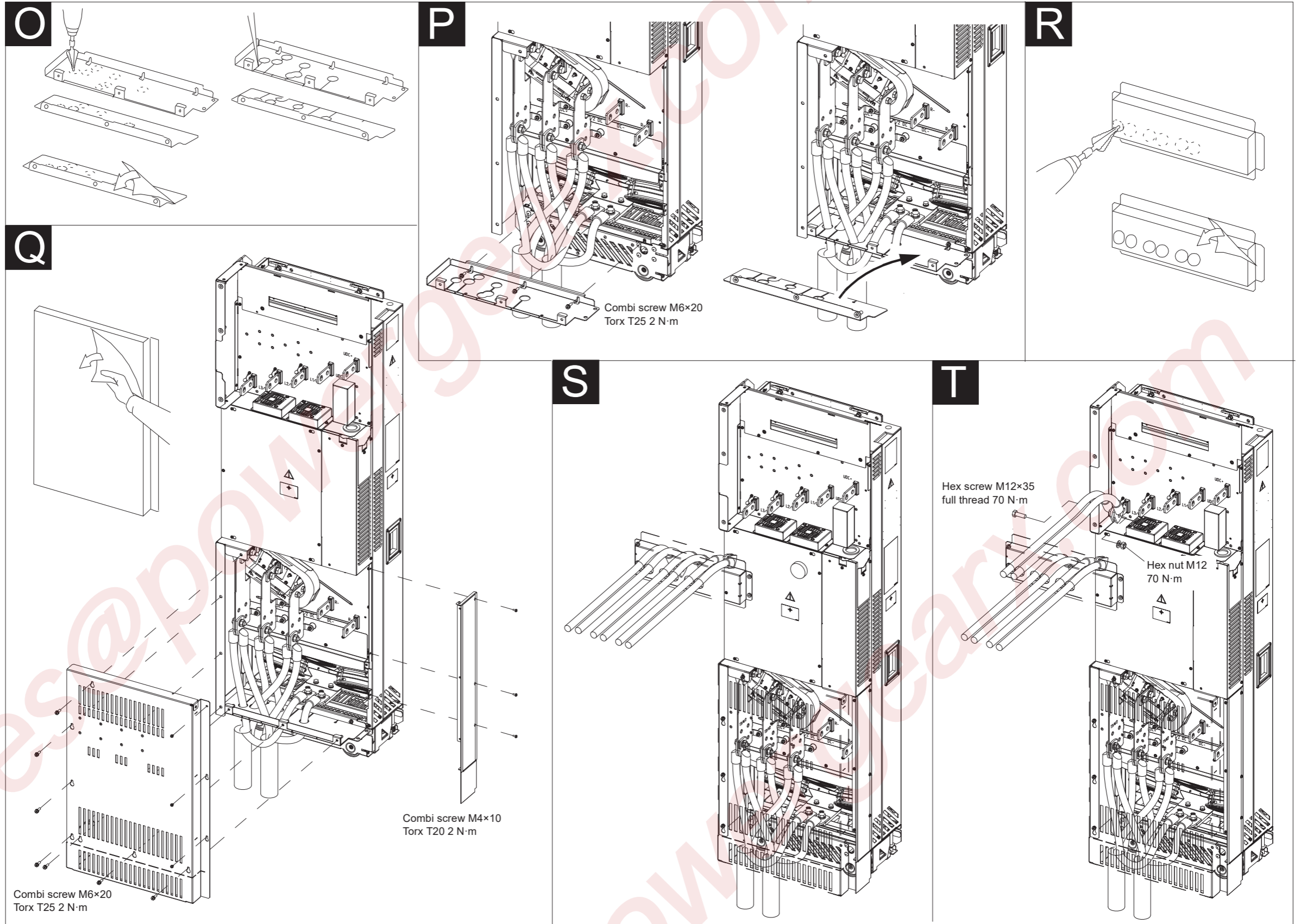


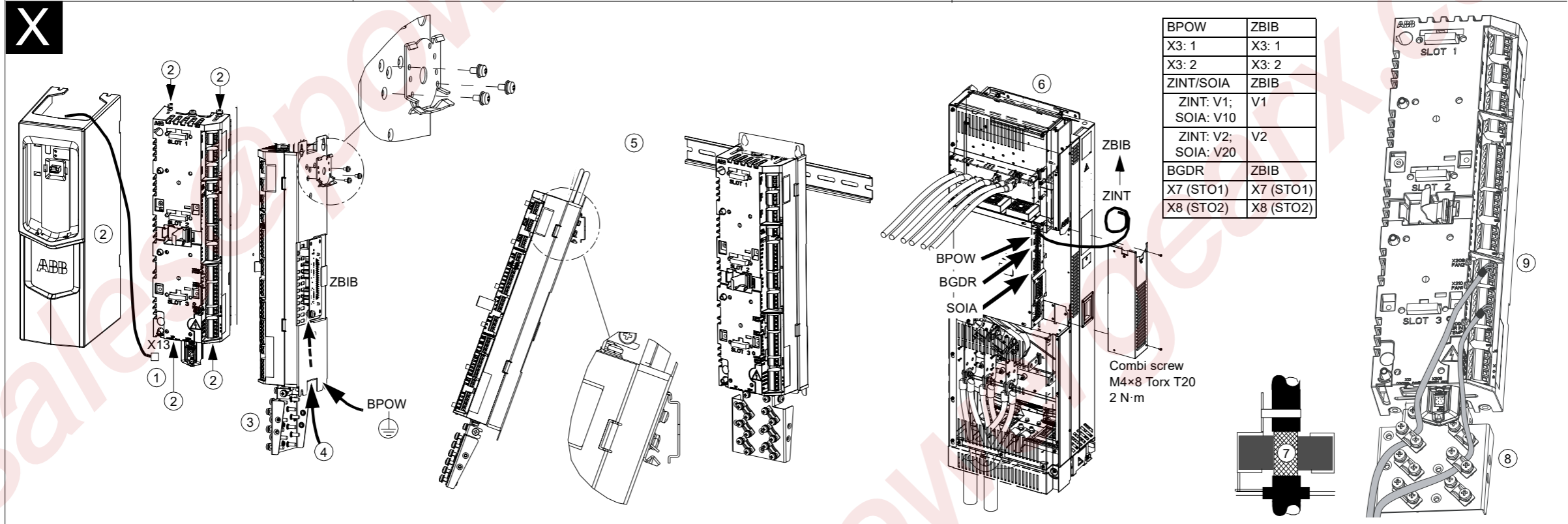
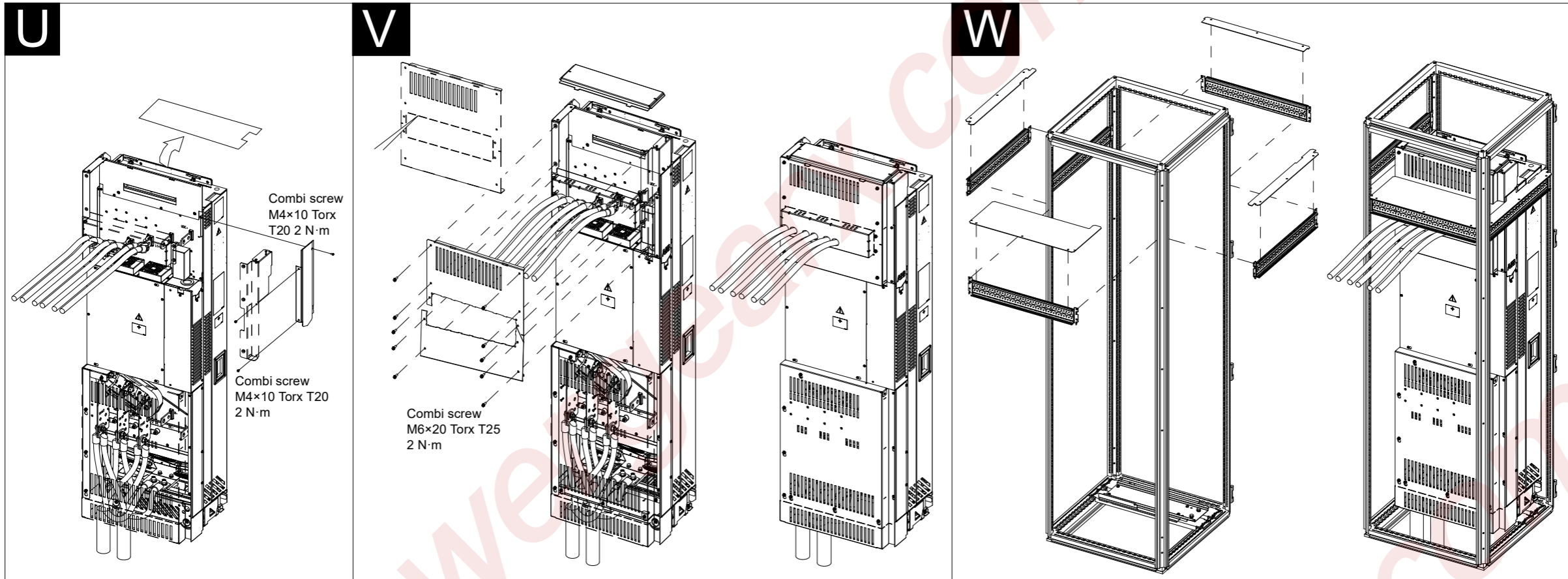
Ecodesign 信息 (EU 2019/1781 和 ACS880 China RoHS II DoC SI 2021 No. 745)











更多信息

服务查询

为了得到专业的ABB变频器维修服务及购买到原厂备件，请您选择ABB传动授权的服务站，我们将为您提供优质的服务。请关注下面的ABB传动微信公众号，或者致电ABB传动热线400 810 8885，查找就近的授权服务站。



ABB传动官方微信



ABB运动控制资料库

产品培训

有关ABB传动产品的面授培训课程安排和介绍，请扫描ABB传动培训中心官网二维码查询，或致电400 810 8885进一步了解培训流程。

有关ABB传动产品的免费在线直播课程，请扫描ABB传动培训直播平台二维码，选择所需课程，即可在线学习。



ABB传动培训中心官网



ABB传动培训直播平台

互联网文档库

您可以从互联网上找到PDF格式的手册和其他产品文件。请转到

www.abb.com/drives 并选择文档库 (Document Library)。您可以浏览文档库或在搜索字段内输入选择标准，例如文档代码。

联系我们

北京 ABB 电气传动系统有限公司

中国, 北京, 100015
北京市朝阳区酒仙桥北路甲 10 号 401 楼
电话: +86 10 58217788
7*24 技术热线: 400 810 8885
邮箱: cn-servicesales.support@abb.com
网址: www.new.abb.com/drives

全国各地销售代表处联系方式

上海 中国 上海市 200023 黄浦区中山南一路 768 号博荟广场 C座8楼 总机: 021-23288888 传真: 021-23288833	沈阳 中国 沈阳市 110063 沈河区青年大街 1-1 号市府恒隆广场办公楼 1 座 3610-3612 单元 总机: 024-31326688 传真: 024-31326699	昆明 中国 昆明市 650032 崇仁街 1 号东方首座 24 楼 2404 室 总机: 0871-63158188 传真: 0871-63158186	南宁 中国 南宁市 530021 金湖路 59 号地王国际商会中心 27 楼 E-F 单元 总机: 0771-2368316 传真: 0771-2368308
杭州 中国 杭州市 310020 江干区钱江路 1366 号华润大厦 A 座 802 室 总机: 0571-87901355 传真: 0571-87901151	大连 中国 大连市 116011 西岗区中山路 147 号申贸大厦 17 楼 总机: 0411-39893355 传真: 0411-39893359	深圳 中国 深圳市 518031 福田区华富路 1018 号中航中心 1504A 总机: 0755-88313088 传真: 0755-88313033	长春 中国 长春市 130022 亚泰大街 3218 号通钢国际大厦 A 座 A4 层 A403 室 总机: 0431-88620866 传真: 0431-88620899
郑州 中国 郑州市 450007 中原中路 220 号裕达国际贸易中心 A 座 1006 室 总机: 0371-67713588 传真: 0371-67713873	哈尔滨 中国 哈尔滨市 150089 南岗区哈尔滨大街 507 号华润凯旋门大厦 B 栋 2305-2306 室 总机: 0451-55562227 传真: 0451-55562295	济南 中国 济南市 250011 泉城路 17 号华能大厦 6 楼 8601 室 总机: 0531-55691599 传真: 0531-55691595	烟台 中国 烟台市 264003 莱山区山海路 117 号内 1 号烟台总部经济基地企业服务中心 1401 室 总机: 0535-2105198 传真: 0535-2105196
成都 中国 成都市 610041 四川省成都市人民南路四段三号来福士广场 T1-8 楼 总机: 028-85268800 传真: 028-85268900	呼和浩特 中国 呼和浩特市 010020 中山西路 1 号海亮广场 A 座 2708 室 总机: 0471-3819933 传真: 0471-5903121	青岛 中国 青岛市 266071 香港中路 12 号丰台广场 B 区 401 室 总机: 0532-85026396 传真: 0532-85026395	福州 中国 福州市 350028 仓山区金山街道浦上大道 272 号福州仓山万达广场 A1# 楼 7 层 06-09 室 总机: 0591-87858224 传真: 0591-87814889
重庆 中国 重庆市 400043 渝中区华盛路 10 号企业天地 2 号楼 27 层 1#1-3 单元 总机: 023-62826688 传真: 023-62805369	无锡 中国 无锡市 214023 永和路 6 号君来广场 1105 单元 总机: 0510-82791133 传真: 0510-82751236	贵阳 中国 贵阳市 550022 观山湖区金阳南路 6 号世纪金源购物中心 5 号楼 10 楼 总机: 0851-82215890 传真: 0851-82215900	宁波 中国 宁波市 315000 灵桥路 2 号南苑饭店 6 楼 616 室 总机: 0574-87173251 传真: 0574-87318179
广州 中国 广州市 510623 珠江新城珠江江西路 15 号珠江城大厦 29 楼 01-06A 单元 总机: 020-37850688 传真: 020-37850608	厦门 中国 厦门市 361101 翔安区舫山西二路 881 号 总机: 0592-7151881 传真: 0592-7211890	南昌 中国 南昌市 330038 红谷滩新区绿茵路 129 号联发广场写字楼 28 层 2804-2805 室 总机: 0791-86304927 传真: 0791-86304982	苏州 中国 苏州市 215123 苏州工业园区翠微路 9 号月亮湾国际中心 8 楼 801-802 室 总机: 0512-88881588 传真: 0512-88881599
西安 中国 西安市 710068 南关正街 88 号长安国际中心 E 座 1101 室 总机: 029-83695255 传真: 029-83695277	长沙 中国 长沙市 410002 天心区湘江中路 36 号华远国际中心 32 楼 10A-12 单元 总机: 0731-82683088 传真: 0731-84445519	合肥 中国 合肥市 230022 潜山路 320 号新华国际广场 A 座 12A 总机: 0551-65196150 传真: 0551-65196160	南京 中国 南京市 210005 建邺区燕山路 179 号中国人寿大厦 15A 层 总机: 025-86645645
兰州 中国 兰州市 730050 七里河区西津西路 16 号兰州国际贸易中心写字楼兰州中心 4303&4305 总机: 0931-8186799 传真: 0931-8186755	武汉 中国 武汉市 430060 武昌临江大道 96 号武汉万达中心写字楼 21 楼 总机: 027-88395888 传真: 027-88395999	太原 中国 太原市 030002 府西街 69 号山西国际贸易中心西塔楼 10 层 1009A 号 总机: 0351-8689292 传真: 0351-8689200	温州 中国 温州市 325003 温州市上江路 198 号新世纪商务大厦 A 幢 901-1 室 总机: 0577-88909292
		乌鲁木齐 中国 乌鲁木齐市 830011 北京南路 506 号美克大厦 806 室 总机: 0991-2834455	