DRIVES FOR HVAC

ACH580-01 drives, frames R6 to R9

Quick installation and start-up guide

R6-R9

EN

3AXD50000036602 Rev B MUL
EFFECTIVE: 2019-06-29

List of related manuals in English

Drive manuals and guides	Code (English)
ACH580 HVAC control program firmware manual	*3AXD50000027537*
ACH580-01 (0.75 to 250 kW, 1 to 350 hp) hardware manual	*3AXD50000044839*
ACH580-01 quick installation and start-up guide for frames R1 to R5	*3AXD50000044861*
ACH580-01 quick installation and start-up guide for frames R6 to R9	*3AXD50000036602*
ACH580 Installation, Operation, and Maintenance Manual (I, O & M) (US only)	*3AXD50000049127*
ACx-AP-X assistant control panels user's manual	3AUA0000085685

Option manuals and guides	
CPTC-02 ATEX-certified thermistor protection module, Ex II (2) GD (+L537+Q971) user's manual	*3AXD50000030058*
CDPI-01 communication adapter module user's manual	*3AXD50000009929*
DPMP-01 mounting platform for control panels	*3AUA0000100140*
DPMP-02/03 mounting platform for control panels	*3AUA0000136205*
FBIP-21 BACnet/IP adapter module	*3AXD50000028468*
FCAN-01 CANopen adapter module user's manual	*3AFE68615500*
FCNA-01 ControlNet adapter module user's manual	*3AUA0000141650*
FDNA-01 DeviceNet™ adapter module user's manual	*3AFE68573360*
FECA-01 EtherCAT adapter module user's manual	*3AUA0000068940*
FEIP-21 Ethernet/IP adapter module user's manual	*3AXD50000158621*
FENA-01/-11/-21 Ethernet adapter module user's manual	*3AUA0000093568*
FEPL-02 Ethernet POWERLINK adapter module user's manual	*3AUA0000123527*
FLON-01 LonWorks® adapter module user's manual	*3AUA0000041017*
FMBA-01 Modbus adapter module user's manual	*3AFE68586704*
FMBT-21 Modbus/TCP adapter module user's manual	*3AXD50000158607*
FPBA-01 PROFIBUS DP adapter module user's manual	*3AFE68573271*
FPNO-21 PROFINET adapter module user's manual	*3AXD50000158614*
FSCA-01 RS-485 adapter module user's manual	*3AUA0000109533*
Main switch and EMC C1 filter options (+F278, +F316, +E223) installation supplement for ACS580-01, ACH580-01 and ACH580-01 frames R1 to R5	*3AXD50000155132*
UL Type 12 hood quick installation guide for ACS580-01, ACH580-01 and ACQ580-01 frames R1 to R9	*3AXD50000196067*

Note: For UK gland plate and flange mounting kit manuals, see section Related documents in the drive *hardware manual*.

You can find manuals and other product documents in PDF format on the Internet.
See section *Document library on the Internet* on the inside of the back cover. For manuals not available in the Document library, contact your local ABB representative.
The QR code below opens an online listing of the manuals applicable to this product..

ACH580-01 manuals

Table of contents

Further information

DRIVES FOR HVAC

ACH580-01 drives

Quick installation guide
Frames R6 to R9

R6-R9

EN

3AXD50000036602 Rev B MUL
EFFECTIVE: 2019-06-29

Ratings and fuses

IEC ratings at U_N = 230 V, 400 V and 480 V

- U_N = 230 V

Type ACH580 -01-	Input rating	Output ratings			Heat dissipation	Air flow	Frame size
		Max. current	Nominal use				
	I_1	I_{max}	I_N	P_N			
	A	A	A	kW	W	m³/h	
3-phase U_N = 230 V							
144A-2	144	205	144	37	1035	435	R6
171A-2	171	257	171	45	1251	450	R7
213A-2	213	304	213	55	1521	450	R7
276A-2	276	380	276	75	2061	550	R8

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Type ACH580-01-	Input ratings	Output ratings		Frame size
	I_1	I_N	P_N	
	A	A[1)]	kW	
1-phase U_N = 230 V				
144A-2	137	68	18.5	R6
171A-2	153	80	22	R7
213A-2	209	104	30	R7
276A-2	258	130	37	R8

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[1)] Continuous current, no overloadability

- U_N = 400 V

Type ACH580 -01-	Input rating	Output ratings			Heat dissipation	Air flow	Frame size
		Max. current	Nominal use				
	I_1	I_{max}	I_N	P_N			
	A	A	A	kW	W	m³/h	
3-phase U_N = 400 V							
145A-4	145	178	145	75	1476	2492	R6
169A-4	169	247	169	90	1976	2536	R7
206A-4	206	287	206	110	2346	3391	R7
246A-4	246	350	246	132	3336	3945	R8
293A-4	293	418	293	160	3936	5174	R8
363A-4	363	498	363	200	4836	6294	R9
430A-4	430	545	430	250	6036	8231	R9

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U_N = 480 V

Type ACH580 -01-	Input rating	Output ratings			Heat dissipation	Air flow	Frame size
		Max. current	Nominal use				
	I_1	I_{max}	I_{Ld}	P_{Ld}			
	A	A	A	hp	W	m^3/h	
3-phase U_N = 480 V							
145A-4	124	178	124	100	1476	435	R6
169A-4	156	247	156	125	1976	450	R7
206A-4	180	287	180	150	2346	450	R7
246A-4	240	350	240	200	3336	550	R8
293A-4	260	418	260	200	3936	550	R8
363A-4	361	542	361	300	4836	1150	R9
430A-4	414	542	414	350	6036	1150	R9

R6-R9

3AXD00000586715.xls L

gG fuses

Type ACH580-01-	Min. short-circuit current[1)]	Input current	gG (IEC 60269)				
			Nominal current	I^2t	Voltage rating	ABB type	IEC 60269 size
	A	A	A	A^2s	V		
3-phase U_N = 230 V							
144A-2	1700	144.0	200	300000	500	OFAF0H200	0
171A-2	2300	171.0	250	600000	500	OFAF0H250	0
213A-2	3300	213.0	315	710000	500	OFAF1H315	1
276A-2	5500	276.0	400	1100000	500	OFAF2H400	2
3-phase U_N = 400 or 480 V							
145A-4	1700	145	160	185000	500	OFAF00H160	00
169A-4	3300	169	250	600000	500	OFAF0H250	0
206A-4	5500	206	315	710000	500	OFAF1H315	1
246A-4	6400	246	355	920000	500	OFAF1H355	1
293A-4	7800	293	425	1300000	500	OFAF2H425	2
363A-4	9400	363	500	2000000	500	OFAF2H500	2
430A-4	10200	430	630	2800000	500	OFAF3H630	3

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[1)] Minimum short-circuit current of the installation

uR or aR fuses

Type ACH580 -01-	Min. short-circuit current[1)]	Input current	uR or aR (DIN 43620 blade style)				
			Nominal current	I^2t	Voltage rating	Bussmann type	IEC 60269 size
	A	A	A	A^2s	V		
3-phase U_N = 230 V							
144A-2	1000	144.0	315	46500	690	170M3817	1
171A-2	1280	171.0	450	105000	690	170M5809	2
213A-2	1450	213.0	500	155000	690	170M5810	2
276A-2	2050	276.0	630	220000	690	170M6810	3
3-phase U_N = 400 or 480 V							
145A-4	1280	145	315	46500	690	170M3817	1
169A-4	1800	169	450	105000	690	170M5809	1
206A-4	2210	206	500	145000	690	170M5810	1
246A-4	3010	246	630	275000	690	170M5812	2
293A-4	4000	293	800	490000	690	170M6812D	2
363A-4	5550	363	1000	985000	690	170M6814D	2
430A-4	7800	430	1250	2150000	690	170M8554D	2

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[1)] Minimum short-circuit current of the installation

Type ACH580 -01-	Min. short-circuit current[1)]	Input current	uR or aR (DIN 43653 bolted tags)				
			Nominal current	I^2t	Voltage rating	Bussmann type	IEC 60269 size
	A	A	A	A^2s	V		
3-phase U_N = 400 or 480 V							
145A-4	1000	145	250	28500	690	170M3016	1
169A-4	1280	169	315	46500	690	170M3017	1
206A-4	1520	206	350	68500	690	170M3018	1
246A-4	2050	246	450	105000	690	170M5009	2
293A-4	2200	293	500	145000	690	170M5010	2
363A-4	3100	363	630	275000	690	170M5012	2
430A-4	3600	430	700	405000	690	170M5013	2

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[1)] Minimum short-circuit current of the installation

R6-
R9

EN – R6…R9 Quick installation guide

This guide briefly describes how to install the drive for IEC use. For complete information on installation, see *ACH580-01 (0.75 to 250 kW, 1 to 350 hp) hardware manual* (3AXD50000044839 [English]). For start-up instructions, see chapter *EN – Quick start-up guide* on page *23*.

To read a manual, go to www.abb.com/drives/documents and search for the document number.

R6-R9

EN

Obey the safety instructions

WARNING! 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 electrical installation work.
- Do not work on the drive, motor cable or motor when main power is applied. If the drive is already connected to the input power, wait for 5 minutes after disconnecting the input power.
- Do not work on the control cables when power is applied to the drive or to the external control circuits.
- 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.
- Make sure that debris from drilling, cutting and grinding does not enter the drive when installing.
- Make sure that the floor below the drive and the wall where the drive is installed are non-flammable.

Check if capacitors need to be reformed

The capacitors must be reformed if the drive has not been powered (either in storage or unused) for a year or more.

You can determine the manufacturing time from the serial number, which you find on the type designation label attached to the drive. The serial number is of format MYYWWRXXXX. YY and WW tell the manufacturing year and week as follows:

YY: 17, 18, 19, … for 2017, 2018, 2019, ...
WW: 01, 02, 03, … for week 1, week 2, week 3, ...

For information on reforming the capacitors, see *Converter module capacitor reforming instructions* (3BFE64059629 [English]), available on the Internet at www.abb.com/drives/documents.

Select the power cables

R6-R9

Size the power cables according to local regulations to carry the nominal current given on the type designation label of your drive.

Ensure the cooling

EN

See table *IEC ratings at UN = 230 V, 400 V and 480 V* on page 7 for the heat dissipation. The allowed operating temperature range of the drive is -15 to +50 °C (+5 to +122 °F). No condensation or frost is allowed. For more information on the ambient temperature and derating, see chapter *Technical data* in *ACH580-01 (0.75 to 250 kW, 1 to 350 hp) hardware manual* (3AXD50000044839 [English]).

Protect the drive and input power cable

See tables *gG fuses* (on page 8) and *uR or aR fuses* (on page 9) for the fuses.

If you use gG fuses, make sure that the operating time of the fuse is below 0.5 seconds. Follow the local regulations.

Install the drive on the wall

Warning! The drive module is heavy (42 to 103 kg / 93 to 227 lb). Use a suitable lifting device. Do not lift the module manually. Make sure that the wall and the fixing devices can carry the weight.

Install the drive on the wall

See figure *R6…R9 Figures A* on page 29.

Check the insulation of the power cables and the motor

Check the insulation of the input cable according to local regulations before connecting it to the drive.

See figure *B* on page 29.

1. Check the insulation of the motor cable and motor when the cable is disconnected from the drive. Measure the insulation resistance between each phase conductor and then between each phase conductor and the Protective Earth conductor using a measuring voltage of 1000 V DC. The insulation resistance of a typical

motor must exceed 100 Mohm (reference value at 25 °C or 77 °F). For the insulation resistance of motors, see the manufacturer's instructions.

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

Check the compatibility with IT (ungrounded), corner-grounded delta, midpoint-grounded delta, and TT systems

R6-R9

See figure *C* on page *29*.

EN

EMC filter

A drive with the internal EMC filter 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. See section *Checking the compatibility with IT (ungrounded), corner-grounded delta, midpoint-grounded delta, and TT systems* (for IEC) in *ACH580-01 (0.75 to 250 kW, 1 to 350 hp) hardware manual* (3AXD50000044839 [English]).

WARNING! Do not install a drive with the EMC filter connected to a system that the filter is not suitable for. This can cause danger, or damage the drive.

Note: When the internal EMC filter is disconnected, the EMC compatibility of the drive is considerably reduced. See section *EMC compatibility and motor cable length* in chapter *Technical data* in *ACH580-01 (0.75 to 250 kW, 1 to 350 hp) hardware manual* (3AXD50000044839 [English]).

Ground-to-phase varistor

A drive with 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 varistor. See section See section *Checking the compatibility with IT (ungrounded), corner-grounded delta, midpoint-grounded delta, and TT systems* (for IEC) in *ACH580-01 (0.75 to 250 kW, 1 to 350 hp) hardware manual* (3AXD50000044839 [English]).

WARNING! Do not install a drive with the ground-to-phase varistor connected to a system that the varistor is not suitable for. If you do, the varistor circuit can be damaged.

Connect the power cables

See figure *D* on page *30*. Use symmetrical shielded cable for motor cabling. If the cable shield is the sole PE conductor for drive or motor, make sure that is has sufficient conductivity for the PE.

1. Attach the residual voltage warning sticker in the local language next to the control board.

R6-R9

2. Remove the side plates of the cable entry box: Remove the retaining screws (2a) and slide the walls out (2b).
3. Remove the shroud on the power cable terminals by releasing the clips with a screwdriver (3a) and pulling the shroud out (3b).
4. Knock out holes in the shroud for the cables to be installed.

EN

5. Frames R8…R9: If you install parallel cables, also knock out holes in the lower shroud for the cables to be installed
6. Cut an adequate hole into the rubber grommet. Slide the grommet onto the cable.
7. Prepare the ends of the input power cable and motor cable as illustrated in the figure. If you use aluminum cables, put grease to the peeled aluminum cable before connecting it to the drive. Two different motor cable types are shown in the figures (7a, 7b). **Note:** The bare shield will be grounded 360 degrees. Mark the pigtail made from the shield as a PE conductor with yellow-and-green color.
8. Slide the cables through the holes in the cable entry and attach the grommets to the holes (the motor cable to the right and the input power cable to the left).
9. Connect the motor cable:
   - Ground the shield 360 degrees under the grounding clamp (9a).
   - Connect the twisted shield of the cable to the grounding terminal (9b).
   - Connect the phase conductors of the cable to terminals T1/U, T2/V and T3/W. Tighten the screws to the torque given in the figure (9c). **Note:** Phase conductors (R8, R9) are detachable.
10. Connect the input power cable as in step *9*. Use terminals L1, L2 and L3.
11. R8…R9: If you install parallel, install the second grounding shelf for the parallel power cables. Repeat steps *6*...*10*.
12. Install the grounding shelf for the control cables.
13. Reinstall the shroud on the power terminals.
14. Secure the cables outside the unit mechanically.
15. See figure *R6…R9 Figures E* on page *31*. Ground the motor cable shield at the motor end. For minimum radio frequency interference, ground the motor cable shield 360 degrees at the lead-through of the motor terminal box.

Connect the control cables

See figure *F* on page *31*. It shows an example with one analog signal cable and one digital signal cable. Make the connections according to the default configuration in use. The default connections of the HVAC default configuration are shown in section *Default I/O connections* on page *16*.

Example of connecting an analog signal cable:

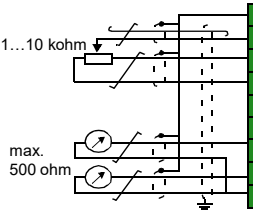
1. Cut an adequate hole into the rubber grommet and slide the grommet onto the cable. Slide the cable through a hole of the bottom plate and attach the grommet to the hole.
2. Ground the stripped outer shield of the cable 360 degrees under the grounding clamp. Keep the cable otherwise unstripped as close to the terminals of the control board as possible. For analog signal cables, ground also the pair-cable shields and grounding wire at the SCR1 terminal. Secure the cables mechanically at the clamps below the control board.
3. Route the cable as shown in the figure.
4. Connect the conductors to the appropriate terminals of the control board and tighten to 0.5…0.6 N·m (0.4 lbf·ft).
5. Tie all control cables to the provided cable tie mounts.
6. Put the unused rubber grommets to the holes in the lead-through plate.

R6-R9

EN

Default I/O connections

Default I/O connections of the HVAC default configuration are shown below.



X1		Reference voltage and analog inputs and outputs	
1	SCR	Signal cable shield (screen)	
2	AI1	**Output frequency/speed reference**: 0…10 V	
3	AGND	Analog input circuit common	
4	+10V	Reference voltage 10 V DC	
5	AI2	**Actual feedback:** 0…10 V	
6	AGND	Analog input circuit common	
7	AO1	**Output frequency:** 0…10 V	
8	AO2	**Output current:** 0…20 mA	
9	AGND	Analog output circuit common	
X2 & X3		Aux. voltage output and programmable digital inputs	
10	+24V	Aux. voltage output +24 V DC, max. 250 mA	
11	DGND	Aux. voltage output common	
12	DCOM	Digital input common for all	
13	DI1	**Stop (0) / Start (1)**	
14	DI2	Not configured	
15	DI3	**Constant frequency/speed selection**	
16	DI4	**Start interlock 1 (1 = allow start)**	
17	DI5	Not configured	
18	DI6	Not configured	
X6, X7, X8		Relay outputs	
Damper actuator			
19	RO1C	**Damper control** 250 V AC / 30 V DC 2 A	Energize damper 19 connected to 21
20	RO1A		
21	RO1B		
Run status			
22	RO2C	**Running** 250 V AC / 30 V DC 2 A	Running 22 connected to 24
23	RO2A		
24	RO2B		
Fault status			
25	RO3C	**Fault (-1)** 250 V AC / 30 V DC 2 A	Fault condition 25 connected to 26
26	RO3A		
27	RO3B		
X5		Embedded fieldbus	
29	B+	Embedded fieldbus, EFB (EIA-485)	
30	A-		
31	DGND		
S4	TERM	Termination switch	
S5	BIAS	Bias resistors switch	
X4		Safe torque off	
34	OUT1	Safe torque off. Factory connection. Both circuits must be closed for the drive to start. See chapter *The Safe torque off function* in *ACH580-01 (0.75 to 250 kW, 1 to 350 hp) hardware manual* (3AUA0000076331 [English]).	
35	OUT2		
36	SGND		
37	IN1		
38	IN2		
X10		24 V AC/DC	
40	24 V AC/DC- in	Ext. 24V AC/DC input to power up the control unit when the main supply is disconnected.	
41	24 V AC/DC+ in		

Total load capacity of the Auxiliary voltage output +24V (X2:10) is 6.0 W (250 mA / 24 V DC).
Wire sizes: 0.14…2.5 mm^2 (26…16 AWG): All terminals
Tightening torques: 0.5…0.6 N·m (0.4 lbf·ft)

Install optional modules, if any

See chapter *Electrical installation* in *ACH580-01 (0.75 to 250 kW, 1 to 350 hp) hardware manual* (3AXD50000044839 [English]).

Install side plates and covers

See figure *G* on page *31*.

R6-R9

IP21

1. Reinstall the side plates of the cable entry box (1a). Tighten the retaining screws with a screwdriver (1b).
2. Slide the cover of the cable entry box on the module from below until the cover snaps into place (2).
3. Reinstall the module cover (3a). Tighten the two retaining screws with a screwdriver (3b).

EN

IP55

1. Reinstall the module cover (1a). Tighten the two retaining screws with a screwdriver (1b).

For start-up instructions, see chapter *EN – Quick start-up guide* on page *23*

R6-
R9

EN

Compliance with the European Machinery Directive 2006/42/EC

Declaration of conformity

Power and productivity for a better world™

EU Declaration of Conformity

Machinery Directive 2006/42/EC

R6-R9

We

Manufacturer: ABB Oy
Address: Hiomotie 13, 00380 Helsinki, Finland.
Phone: +358 10 22 11

declare under our sole responsibility that the following product:

Frequency converter

ACH580-01/-31

with regard to the safety function

Safe torque off

is in conformity with all the relevant safety component requirements of EU Machinery Directive 2006/42/EC, when the listed safety function is 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 62061:2005 + AC:2010 + A1:2013 + A2:2015	*Safety of machinery – Functional safety of safety-related electrical, electronic and programmable electronic 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: 2006 + A1:2009 + AC:2010	*Safety of machinery – Electrical equipment of machines – Part 1: General requirements*

The following other standards have been applied:

IEC 61508:2010	Functional safety of electrical / electronic / programmable electronic safety-related systems
IEC 61800-5-2:2016	Adjustable speed electrical power drive systems – Part 5-2: Safety requirements - Functional

The product referred in this Declaration of conformity fulfils the relevant provisions of other European Union Directives which are notified in Single EU Declaration of conformity 3AXD10000497691.

Person authorized to compile the technical file:

Name and address: Risto Mynttinen, Hiomotie 13, 00380 Helsinki, Finland.

Helsinki, 15 Sep 2017

Manufacturer representative:

Vesa Kandell
Vice President, ABB Oy

R6-
R9

DRIVES FOR HVAC

ACH580-01 drives

Quick start-up guide
Frames R1 to R9

R1-R9

EN

3AXD50000036602 Rev B MUL
EFFECTIVE: 2019-06-29

EN – Quick start-up guide

This guide describes how to start-up the drive using the First start assistant on the HVAC control panel. For complete information on start-up, see *ACH580 HVAC control program firmware manual* (3AXD50000027537 [English]).

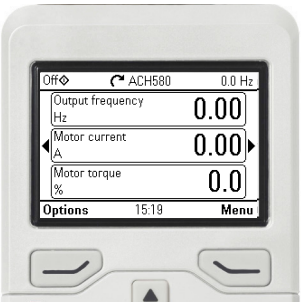
Before you start

Ensure that the drive has been installed as described in 1chapter *EN – R6…R9 Quick installation guide* on page *11* (frames R6…R9).

R1-R9

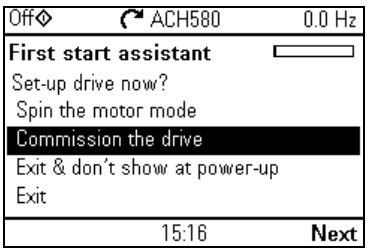
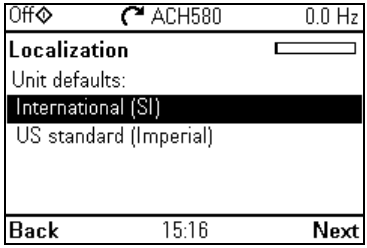
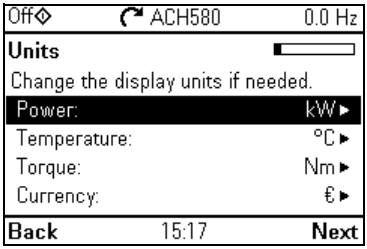
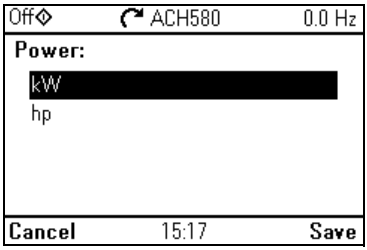
EN

Start-up with the First start assistant on an HVAC control panel

	Safety	
☐	Make sure that the installation work is complete. Make sure that cover of the drive and the cable box, if included, are on place.	
☐	Check that the starting of the motor does not cause any danger. **De-couple the driven machine** if there is a risk of damage in case of an incorrect direction of rotation.	
	Hints on using the assistant control panel	
	The two commands at the bottom of the display (**Options** and **Menu** in the figure on the right), show the functions of the two softkeys and located below the display. The commands assigned to the softkeys vary depending on the context. Use keys ◄, ►, ▲ and ▼ to move the cursor and/or change values depending on the active view. Key ? shows a context-sensitive help page.	
	1 – First start assistant guided settings: Language, motor nominal values, and date and time	
☐	Have the motor name plate data at hand. Power up the drive.	

R1-R9

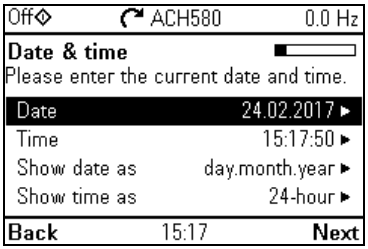
EN

☐ The First start assistant guides you through the first start-up. The assistant begins automatically. Wait until the control panel enters the view shown on the right. Select the language you want to use by highlighting it (if not already highlighted) and pressing (**OK**). **Note:** After you have selected the language, it takes a few minutes for the control panel to wake up.	
☐ Select **Commission the drive** and press (**Next**).	
☐ Select the localization you want to use and press (**Next**).	
☐ Change the units shown on the panel if needed. • Go to the edit view of a selected row by pressing . • Scroll the view with and . Go to the next view by pressing (**Next**).	
☐ To select a value in an edit view: • Use and to select the value. Press (**Save**) to accept the new setting, or press (**Cancel**) to go back to the previous view without making changes.	

☐ Set the date and time as well as date and time display formats.

- Go to the edit view of a selected row by pressing ▶.
- Scroll the view with ▲ and ▼.

Go to the next view by pressing (**Next**).



Refer to the motor nameplate for the following nominal value settings of the motor. Enter the values exactly as shown on the motor nameplate.

Example of a nameplate of an induction (asynchronous) motor:

ABB Motors CE

3 ~ motor	M2AA 200 MLA 4						
	IEC 200 M/L 55						
	No						
	Ins.cl. F				IP 55		
V	Hz	kW	r/min	A	cos φ	IA/IN	tE/s
690 Y	50	30	1475	32.5	0.83		
400 D	50	30	1475	56	0.83		
660 Y	50	30	1470	34	0.83		
380 D	50	30	1470	59	0.83		
415 D	50	30	1475	54	0.83		
440 D	60	35	1770	59	0.83		
Cat. no	3GAA 202 001 - ADA						
6312/C3		6210/C3			180 kg		
IEC 34-1							

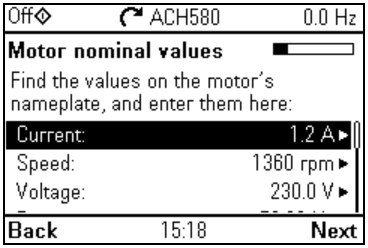
☐ Check that the motor data is correct. Values are predefined on the basis of the drive size but you should verify that they correspond to the motor.

Start with the motor type.

- Go to the edit view of a selected row by pressing ▶.
- Scroll the view with ▲ and ▼.

Motor nominal cos Φ and nominal torque are optional.

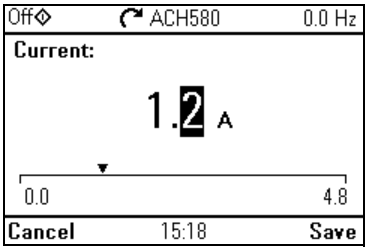
Press (**Next**) to continue.



☐ To change a value in an edit view:

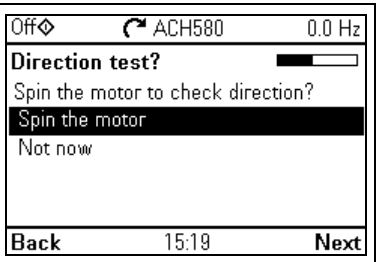
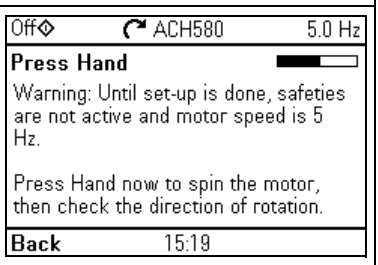
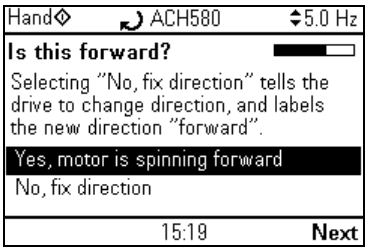
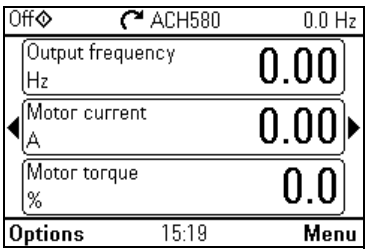
- Use ◀ and ▶ to move the cursor left and right.
- Use ▲ and ▼ to change the value.

Press (**Save**) to accept the new setting, or press (**Cancel**) to go back to the previous view without making changes.



R1-R9

EN

☐	This step is optional, and requires rotating the motor. Do not do this if it could cause any risk, or if the mechanical set-up does not allow it. To do the direction test, select **Spin the motor** and press ⌐ (**Next**).	
☐	Press the Hand key Hand on the panel to start the drive.	
☐	Check the direction of the motor. If it is forward, select **Yes, motor is spinning forward** and press ⌐ (**Next**) to continue. If the direction is not forward, select **No, fix direction** and press ⌐ (**Next**) to continue.	
☐	The first start is now complete and the drive is ready for use. Press ⌐ (**Done**) to enter the Home view.	
☐	The Home view 1 monitoring the values of the selected signals is shown on the panel. There are eight different Home view displays. Home view 1 is the default Home view. You can browse them with keys ◄ and ►.	

2 – Hand/Off/Auto operation

☐ The drive can be in remote control or local control, and in local control there are additionally two different modes.

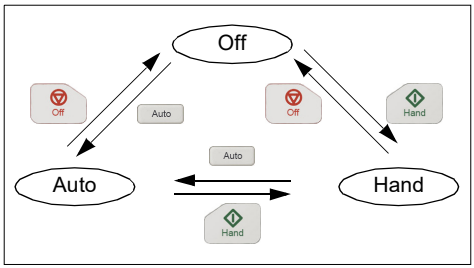
Remote control: Drive is controlled from the I/O or the fieldbus.

- Top row of the view shows Auto.

Local control: Drive is controlled from the control panel.

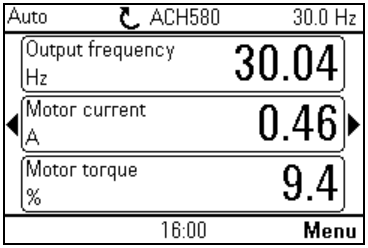
- Top row of the view shows Off, that is, the drive is in the Off mode. Drive is stopped.
- Top row of the view shows Hand, that is, the drive is in the Hand mode. Drive is running. The initial reference in the Hand mode is copied from the drive reference.
  Symbol ▲▼ on the top row indicates that you can change the reference with ▲ and ▼.

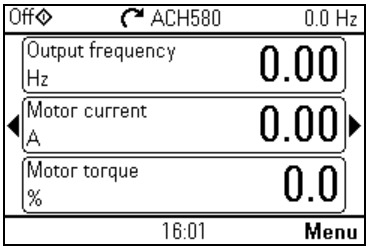
The following diagram shows the state transitions when you press the Hand, Off or Auto button:

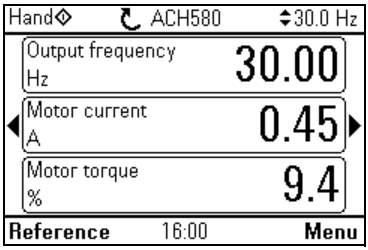


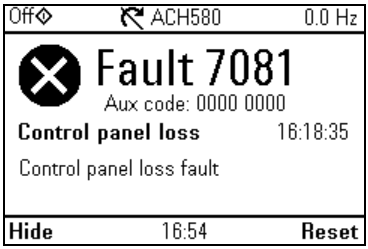
Note: When you restart the drive while fault 7081 Control panel loss is active, the mode changes from Hand or Off to Auto.

Note: Override operation overrides the actual running mode. See *ACH580 HVAC control program firmware manual* (3AXD50000027537 [English]).









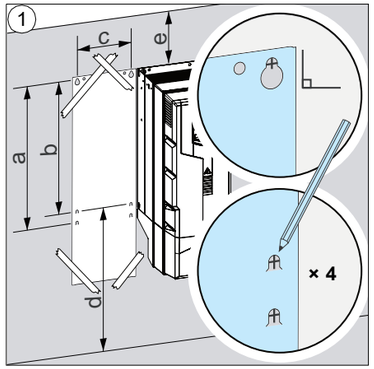
R1-R9

EN

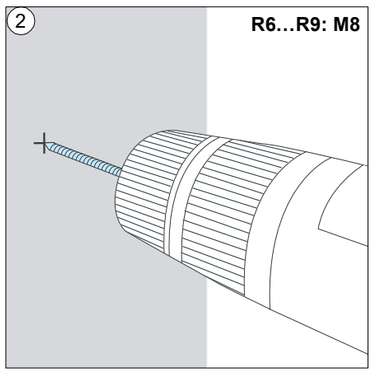
R1-
R9

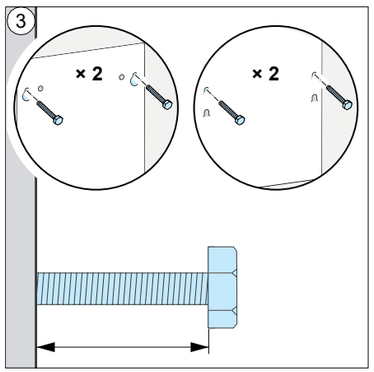
EN

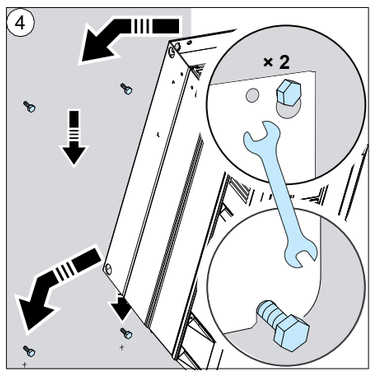
R6…R9 Figures A

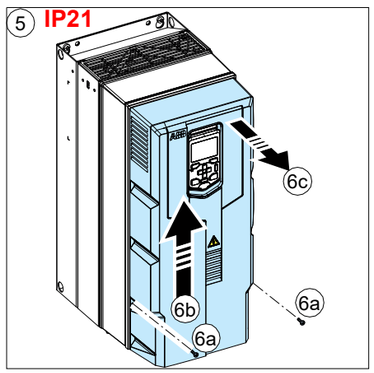


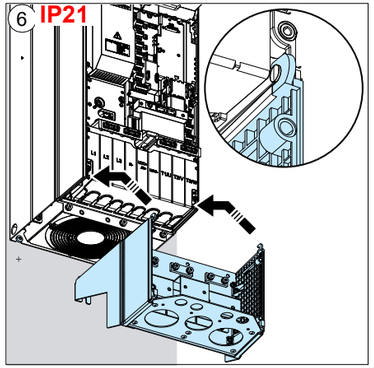
	R6	R7	R8	R9
a (mm/in)	571/ 22.5	623/ 24.5	701/ 27.6	718/ 28.3
b (mm/in)	531/ 20.9	583/ 23.0	658/ 25.9	658/ 25.9
c (mm/in)	213/ 8.4	245/ 9.7	263/ 10.3	345/ 13.6
d > (mm/in)	300/ 11.8	300/ 11.8	300/ 11.8	300/ 11.8
e > (mm/in)	155/ 6.1	155/ 6.1	155/ 6.1	200/ 7.9
kg/lb ⚠	IP21	IP21	IP21	IP21
	42/94	54/119	69/152	97/214
	IP55	IP55	IP55	IP55
	43/95	56/124	77/170	103/227

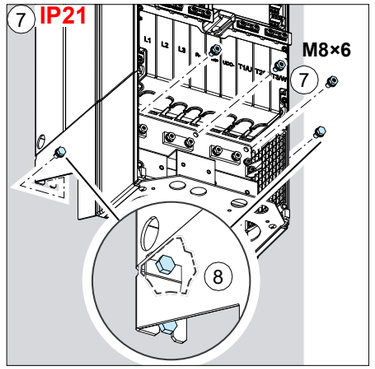


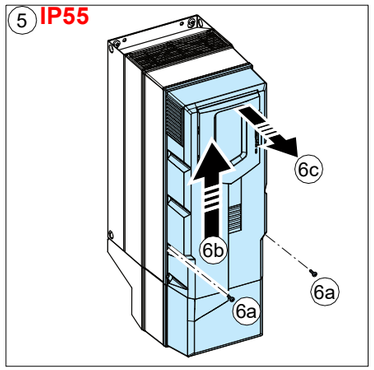




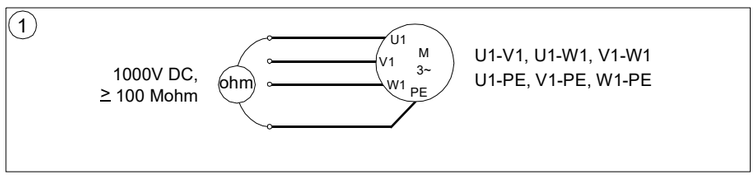




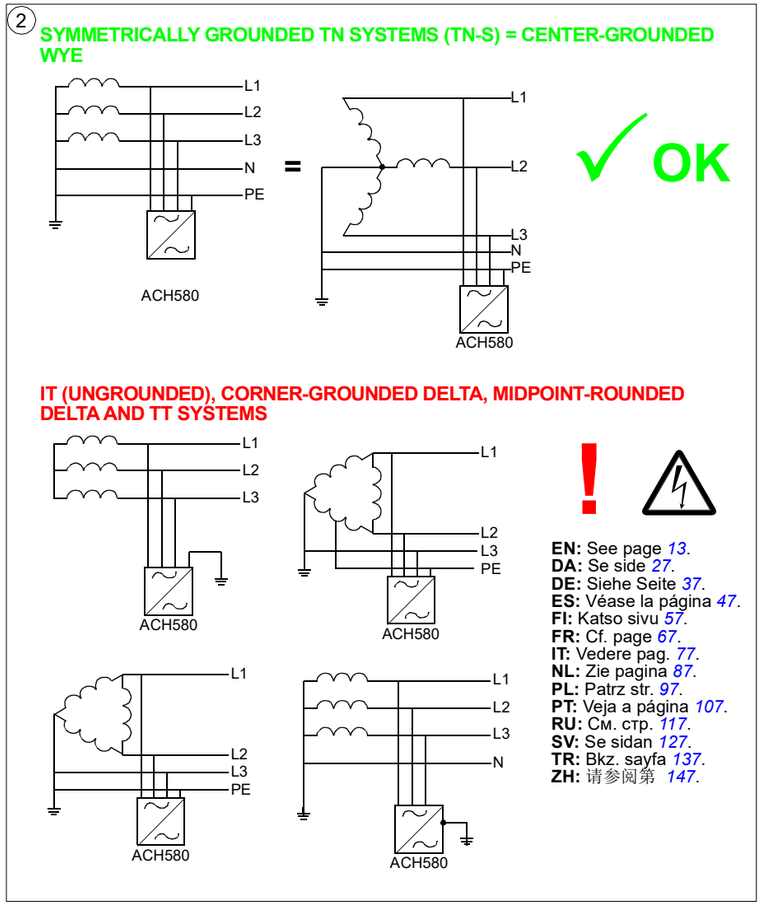


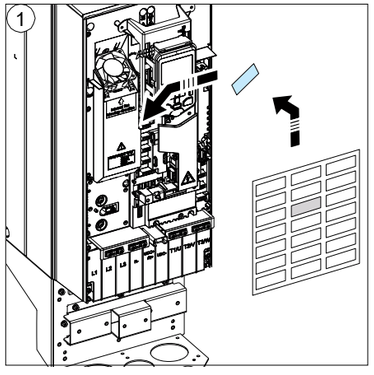


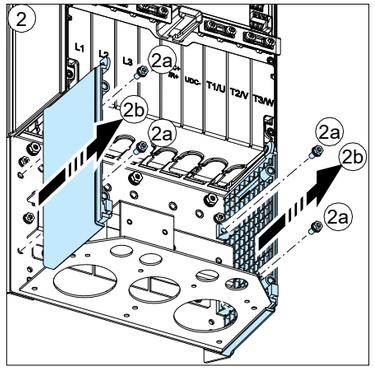
B



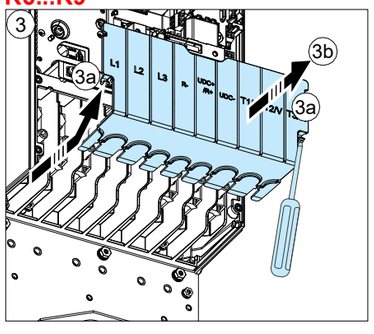
C



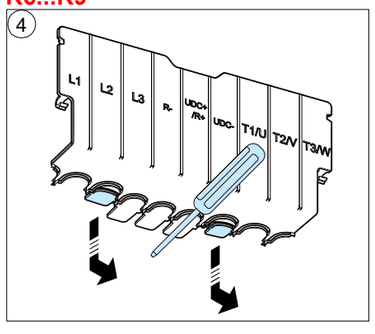




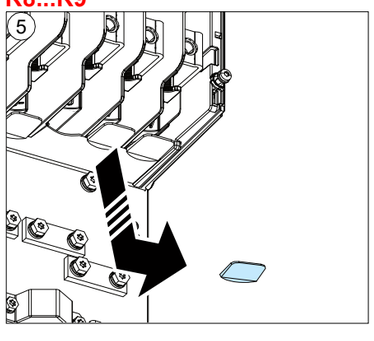
R6...R9

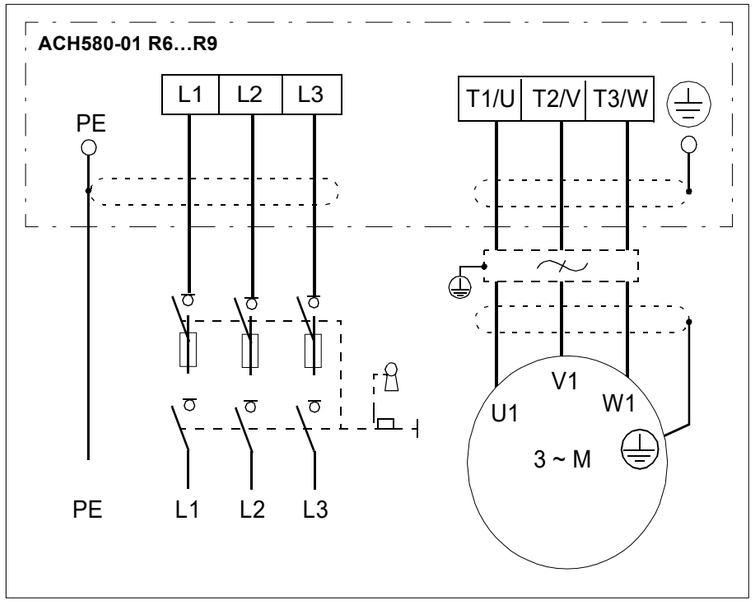


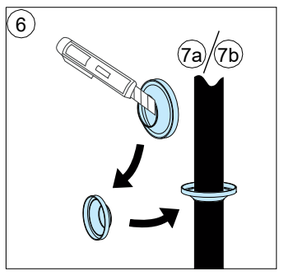
R6...R9

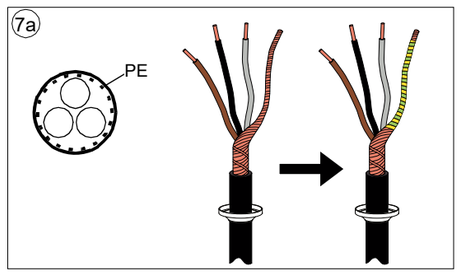


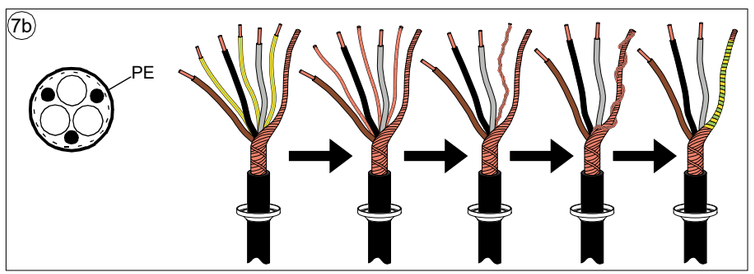
R8...R9

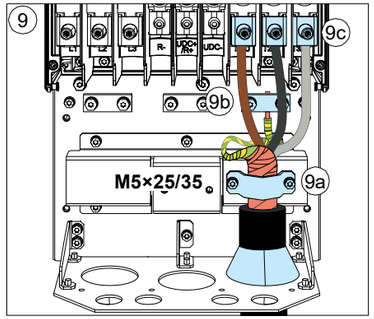


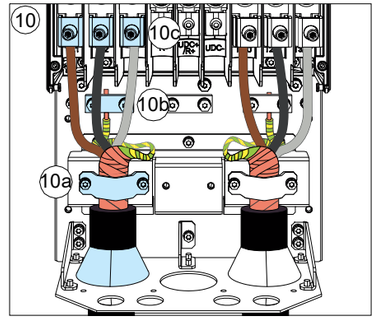






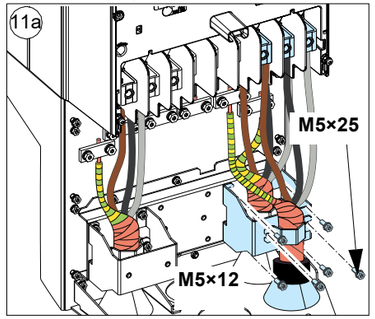


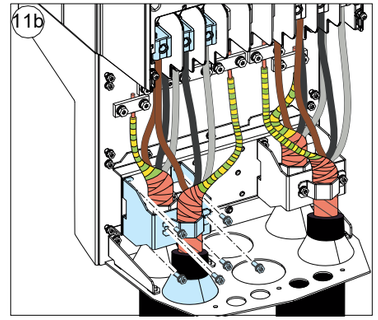


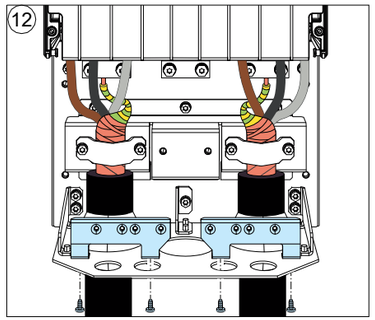


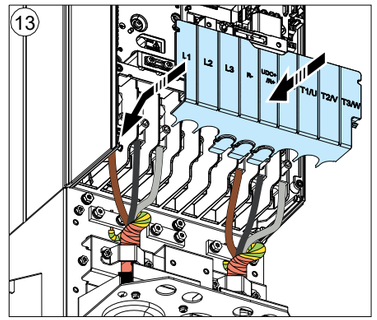
	R6		R7		R8		R9	
	N·m	lbf·ft	N·m	lbf·ft	N·m	lbf·ft	N·m	lbf·ft
L1, L2, L3, T1/U, T2/V, T3/W	30	22	40	30	40	30	70	52
PE, ⏚	10	7	10	7	10	7	10	7
⊚	1.2	0.9	1.2	0.9	1.2	0.9	1.2	0.9

R8...R9 only



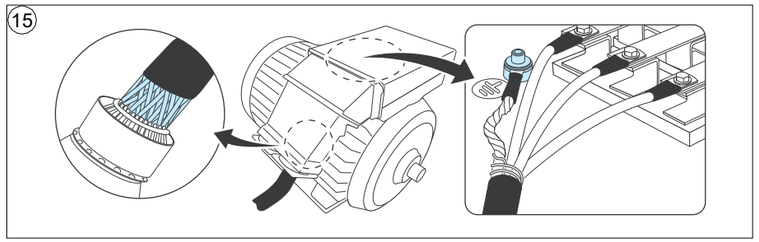




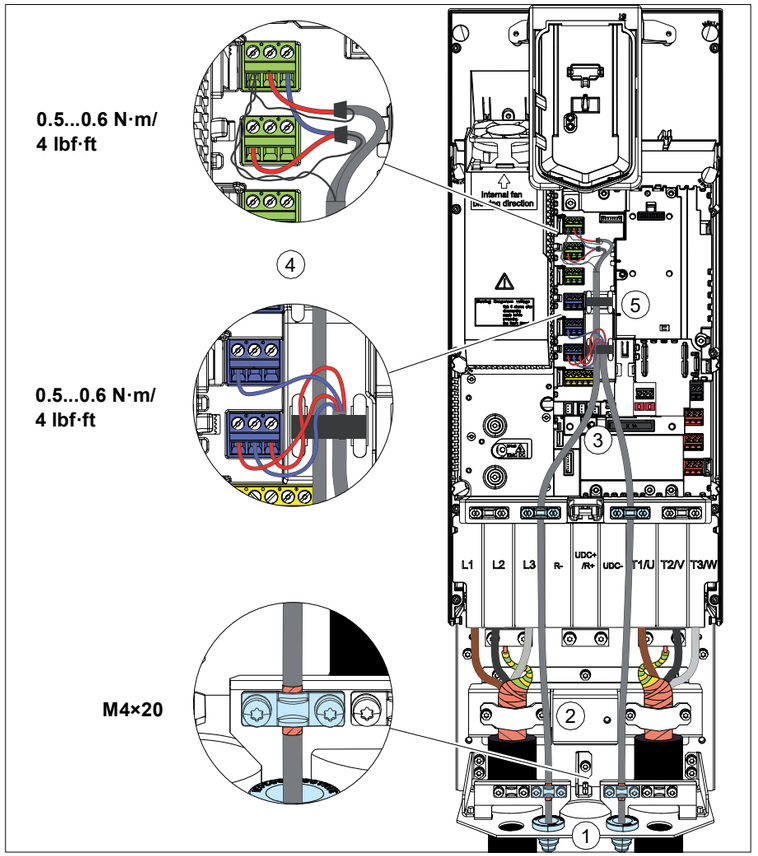


3AXD50000036602 Rev B

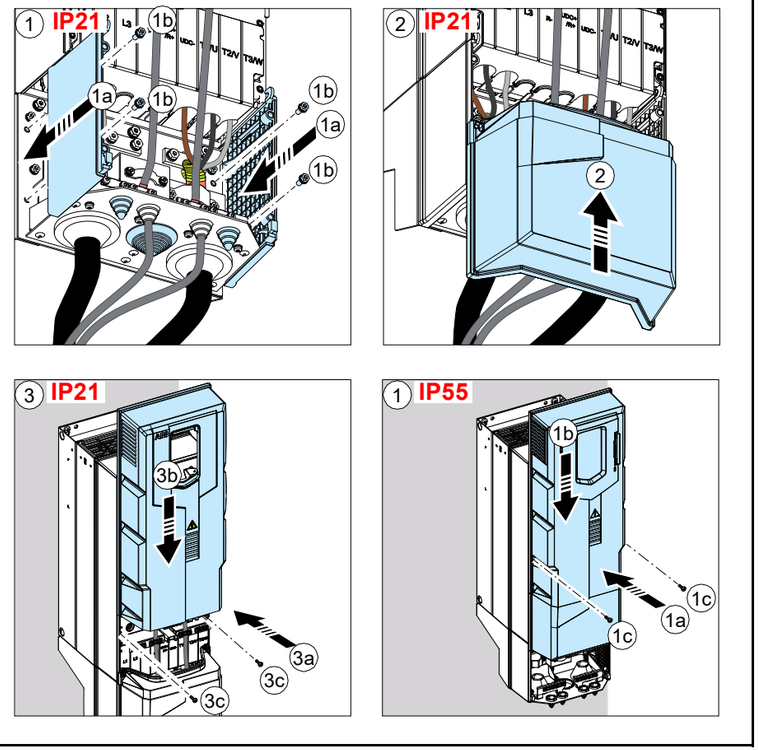
R6…R9 Figures E



F



G



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.

Product training

For information on ABB product training, navigate to new.abb.com/service/training.

Providing feedback on ABB Drives manuals

Your comments on our manuals are welcome. Navigate to new.abb.com/drives/manuals-feedback-form.

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