

Quick installation and start-up guide

ACS580-01 drives

Frames R0 to R3



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List of related manuals in English

Drive manuals and guides

Code (English)

<i>ACS580-01 user's manual</i>	3AUA0000076333
<i>ACS580-01 quick installation and start-up guide for frames R0 to R3</i>	3AUA0000076332
<i>ACS580-01 quick installation and start-up guide for frame R5</i>	3AXD50000007518
<i>ACS-AP-x assistant control panels user's manual</i>	3AUA0000085685

Option manuals and guides

<i>CDPI-01 communication adapter module user's manual</i>	3AXD50000009929
<i>DPMP-01 mounting platform for ACS-AP control panel</i>	3AUA0000100140
<i>DPMP-02 mounting platform for ACS-AP control panel</i>	3AUA0000136205
<i>FCAN-01 CANopen adapter module user's manual</i>	3AFE68615500
<i>FDNA-01 DeviceNet™ adapter module user's manual</i>	3AFE68573360
<i>FENA-01/-11/-21 Ethernet adapter module user's manual</i>	3AUA0000093568
<i>FLON-01 LonWorks® adapter module user's manual</i>	3AUA0000041017
<i>FPBA-01 PROFIBUS DP adapter module user's manual</i>	3AFE68573271
<i>FSCA-01 RS-485 adapter module user's manual</i>	3AUA0000109533
<i>NETA-21 remote monitoring tool user's manual</i>	3AUA00000969391
<i>NETA-21 remote monitoring tool installation and start-up guide</i>	3AUA0000096881

Tool and maintenance manuals and guides

<i>Drive composer PC tool user's manual</i>	3AUA0000094606
<i>Converter module capacitor reforming instructions</i>	3BFE64059629

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.

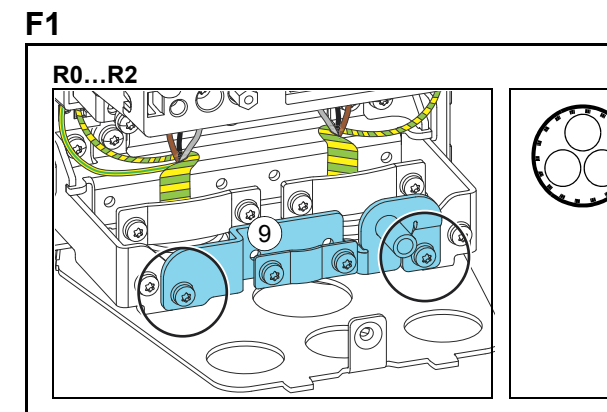
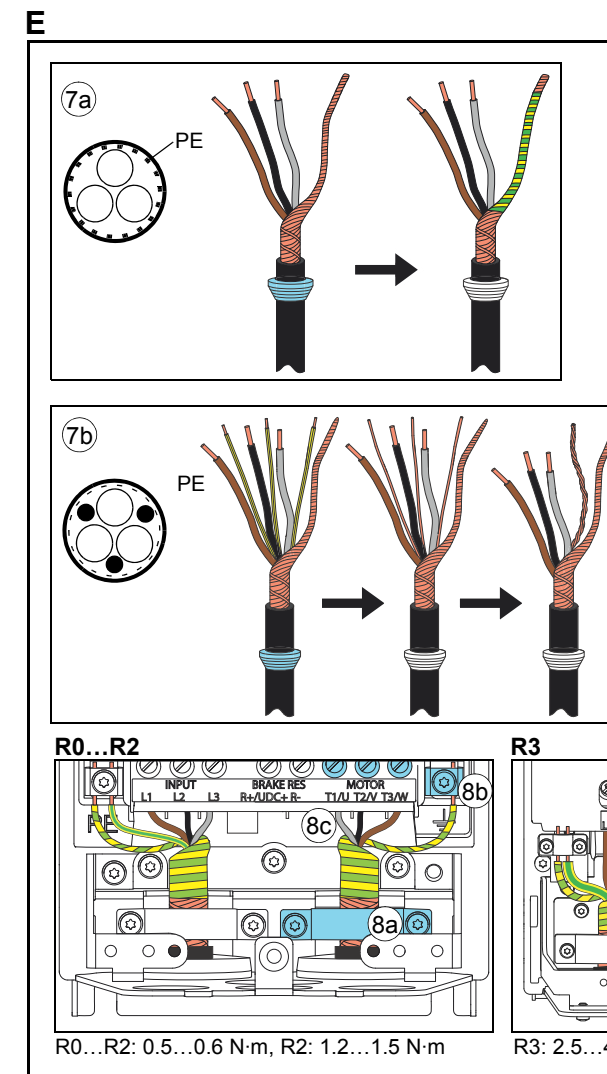
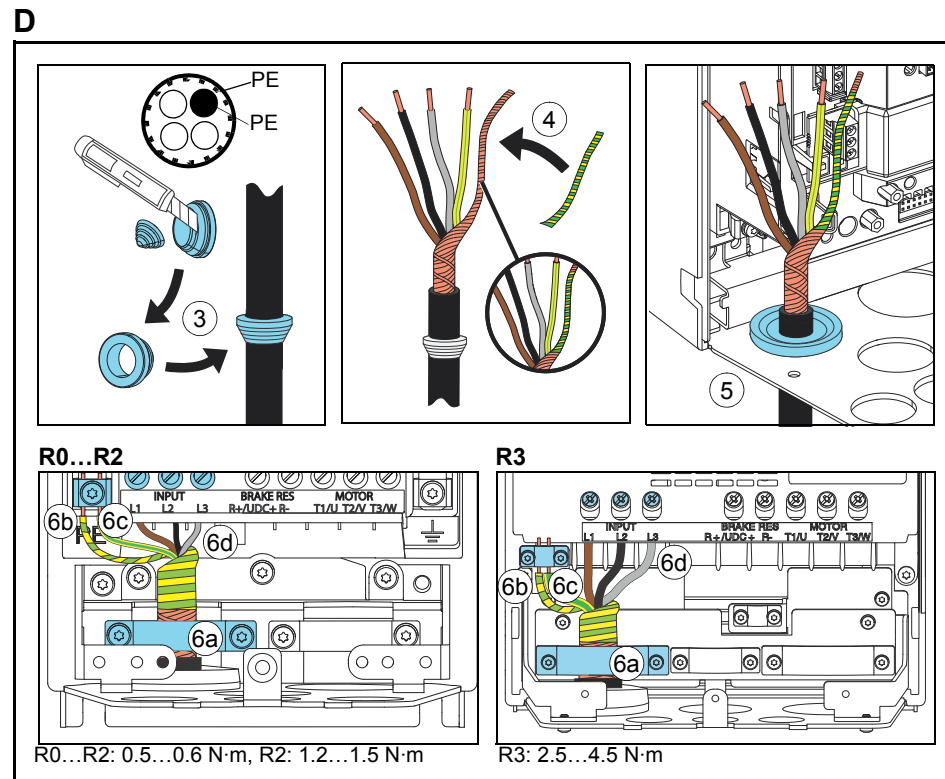
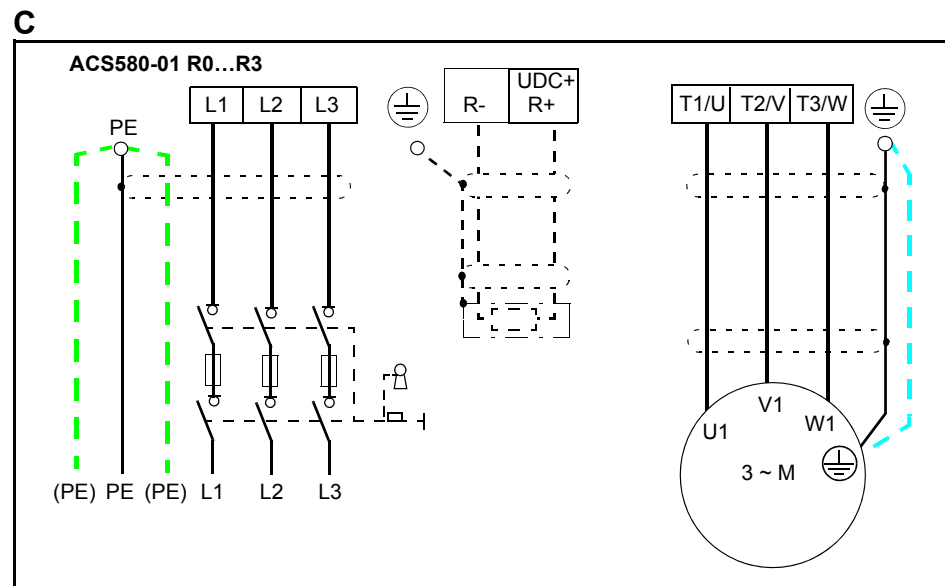
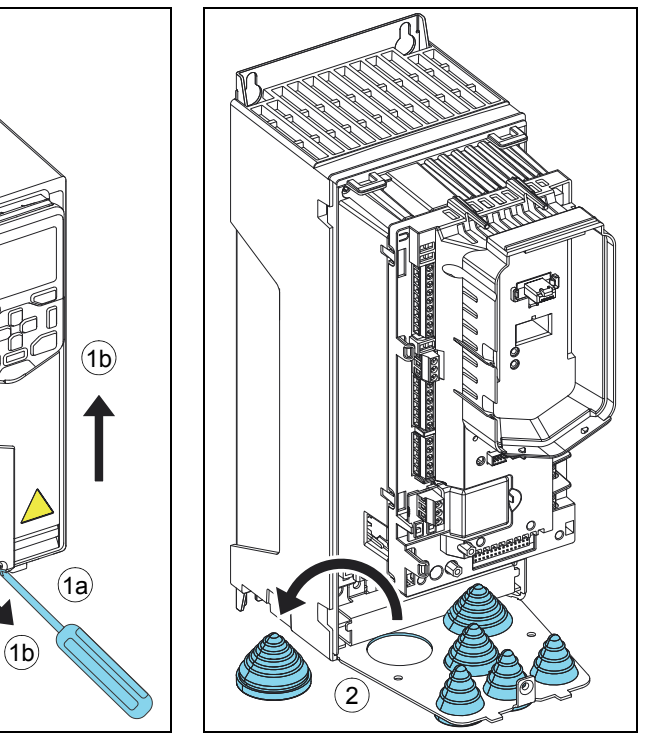
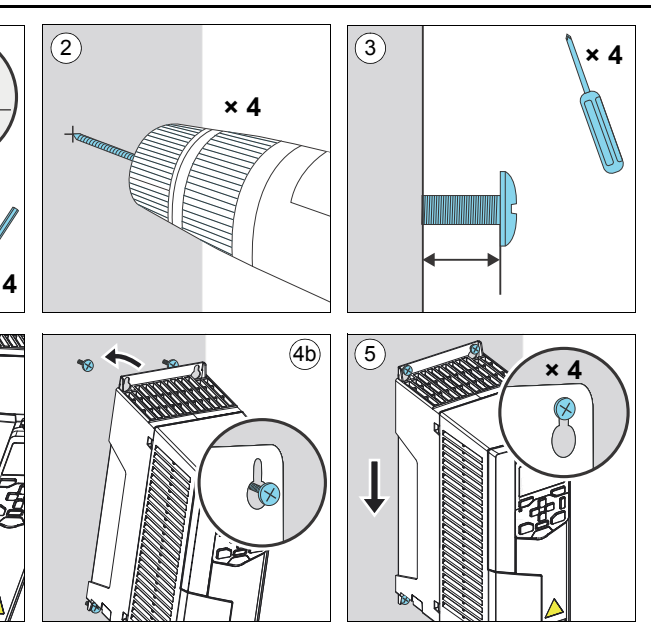
The QR code below opens an online listing of the manuals applicable to this product.

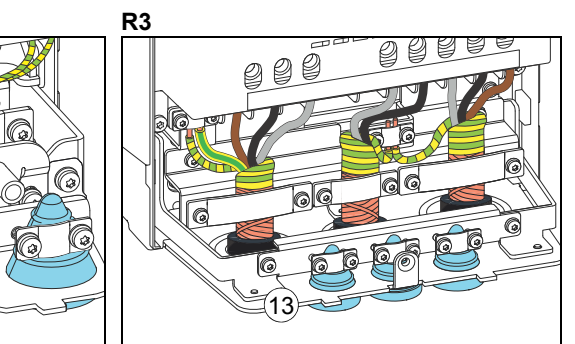
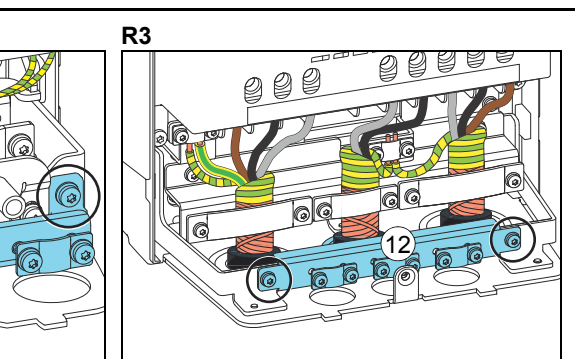
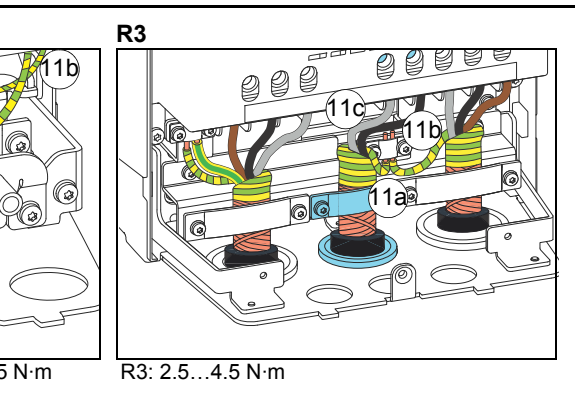


[ACS580-01 manuals](#)

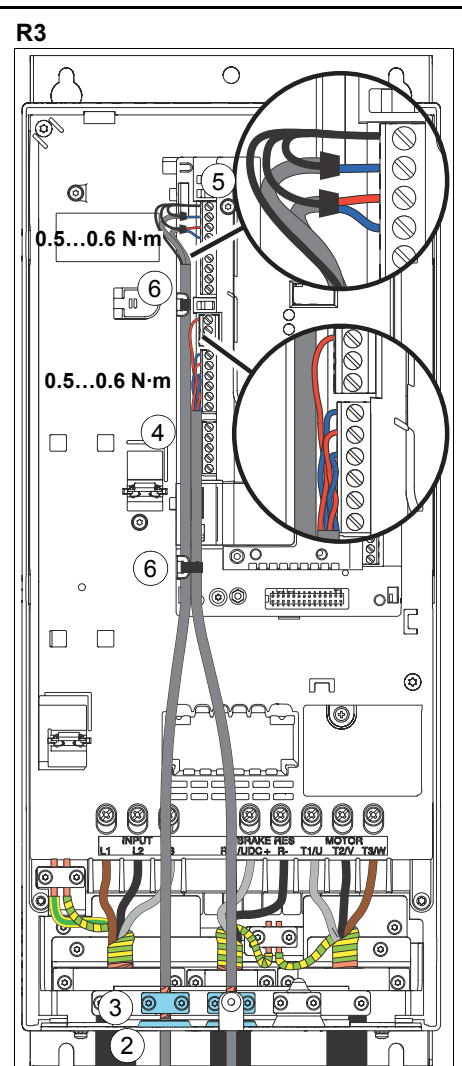
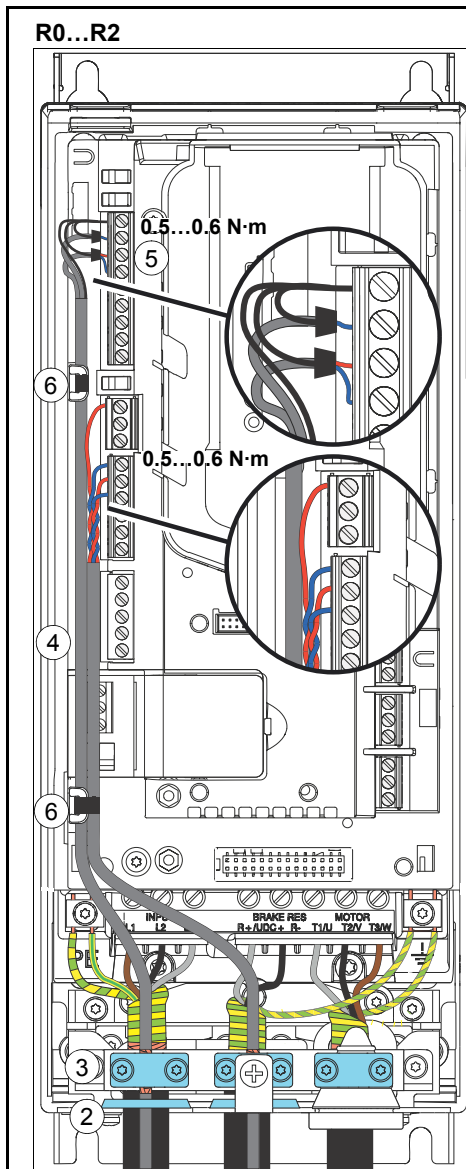
3AUA0000076332 Rev B
MUL
EFFECTIVE: 2013-10-01

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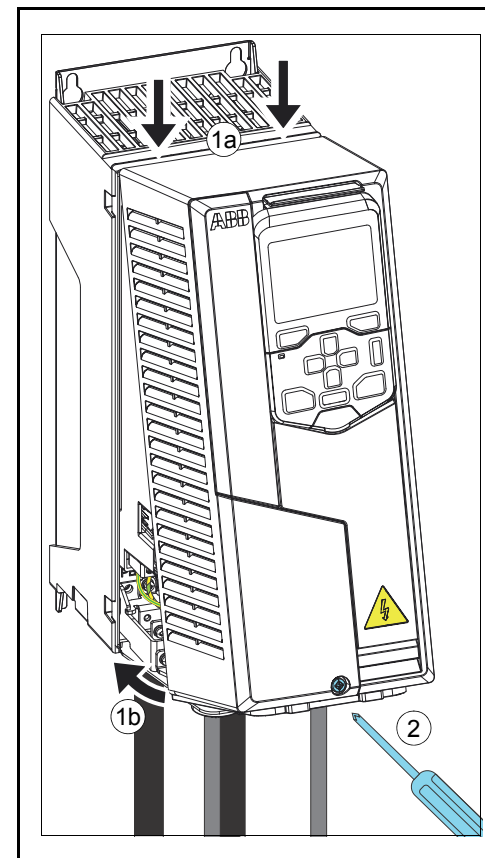




H



I



I

Type ACS580 -01-	Input rating	Output ratings						Maximum losses	Frame size	
		Nominal use				Heavy duty use				
		I_{1N}	I_N	P_N	I_{Ld}	P_{Ld}	I_{Hd}			P_{Hd}
		A	A	kW	A	kW	A			kW
3-phase $U_N = 380...415$ V (380, 400, 415 V)										
02A6-4	2.6	2.6	0.75	2,5	0.75	1.8	0.55	45	R0	
03A3-4	3.3	3.3	1.1	3,1	1.1	2.6	0,75	55	R0	
04A0-4	4.0	4.0	1.5	3,8	1.5	3.3	1.1	66	R0	
05A6-4	5.6	5.6	2.2	5,3	2.2	4.0	1.5	84	R0	
07A2-4	7.2	7.2	3.0	6,8	3.0	5.6	2.2	106	R1	
09A4-4	9.4	9.4	4.0	8,9	4.0	7.2	3.0	133	R1	
12A6-4	12.6	12.6	5.5	12,0	5.5	9.4	4.0	174	R1	
017A-4	17	17	7.5	16,2	7.5	12.6	5.5	228	R2	
025A-4	25	25	11.0	23,8	11.0	17.0	7.5	322	R2	
032A-4	32	32	15.0	30,4	15.0	24.6	11	430	R3	
038A-4	38	38	18.5	36,1	18.5	31.6	15	525	R3	
045A-4	45	45	22.0	42,8	22.0	37.7	18.5	619	R3	

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II

Type ACS580 -01-	Input rating	Output ratings				Maximum losses	Frame size	
		Nominal use		Heavy duty use				
		I_{1N}	I_{Ld}	P_{Ld}	I_{Hd}			P_{Hd}
		A	A	hp	A			hp
W								
3-phase $U_N = 440...480$ V (440, 460, 480 V)								
02A6-4	2.1	2.1	1.0	1.6	0.75	45	R0	
03A3-4	3.0	3.0	1.5	2.1	1.0	55	R0	
04A0-4	3.4	3.4	2.0	3.0	1.5	66	R0	
05A6-4	4.8	4.8	3.0	3.4	2.0	84	R0	
07A2-4	6.0	6.0	3.0	4.0	3.0	106	R1	
09A4-4	7.6	7.6	5.0	4.8	3.0	133	R1	
12A6-4	11.0	11.0	7.5	7.6	5.0	174	R1	
017A-4	14	14.0	10.0	11.0	7.5	228	R2	
025A-4	21	21.0	15.0	14.0	10.0	322	R2	
032A-4	27	27.0	20.0	21.0	15.0	430	R3	
038A-4	34	34.0	25.0	27.0	20.0	525	R3	
045A-4	40	40.0	30.0	34.0	25.0	619	R3	

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III

Type ACS580 -01-	gG (IEC 60269)			
	I_N	I^2t	Voltage rating	ABB type
	A	A ² s	V	
3-phase $U_N = 380...480\text{ V}$ (380, 400, 415, 440, 460, 480 V)				
02A6-4	4	55	500	OFAF000H4
03A3-4	6	110	500	OFAF000H6
04A0-4	6	110	500	OFAF000H6
05A6-4	10	360	500	OFAF000H10
07A2-4	10	360	500	OFAF000H10
09A4-4	16	740	500	OFAF000H16
12A6-4	16	740	500	OFAF000H16
017A-4	25	2500	500	OFAF000H25
025A-4	32	4000	500	OFAF000H32
032A-4	40	7700	500	OFAF000H40
038A-4	50	16000	500	OFAF000H50
045A-4	63	20100	500	OFAF000H63

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IV

Type ACS580 -01-	uR or aR			
	I_N	I^2t	Voltage rating	Cooper Bussmann type
	A	A ² s	V	
3-phase $U_N = 380 \dots 480 \text{ V}$ (380, 400, 415, 440, 460, 480 V)				
02A6-4	25	130	690	170M1561
03A3-4	25	130	690	170M1561
04A0-4	25	130	690	170M1561
05A6-4	25	130	690	170M1561
07A2-4	25	130	690	170M1561
09A4-4	25	130	690	170M1561
12A6-4	25	130	690	170M1561
017A-4	40	460	690	170M1563
025A-4	40	460	690	170M1563
032A-4	63	1450	690	170M1565
038A-4	63	1450	690	170M1565
045A-4	80	2550	690	170M1566

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V

Type ACS580 -01-	UL class T		
	I_N	Voltage rating	Cooper Bussmann type
	A	V	
3-phase $U_N = 440...480\text{ V}$ (440, 460, 480 V)			
02A6-4	6	600	JJS-6
03A3-4	6	600	JJS-6
04A0-4	6	600	JJS-6
05A6-4	10	600	JJS-10
07A2-4	10	600	JJS-10
09A4-4	15	600	JJS-15
12A6-4	15	600	JJS-15
017A-4	20	600	JJS-20
025A-4	30	600	JJS-30
032A-4	35	600	JJS-35
038A-4	45	600	JJS-45
045A-4	50	600	JJS-50

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EN – Quick installation and start-up guide

This guide briefly instructs how to install and start-up the drive. For complete information, see *ACS580-01 user's manual* (www.abb.com/drives: Select *Document Library* and search for document number 3AUA0000076333 [English]).

Installation

Obey the safety instructions

EN



WARNING! Obey these instructions. If you ignore them, injury or death, or damage to the equipment can occur:

- If you are not a qualified electrician, 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.
 - Make sure that debris from borings and grindings 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

If the drive has been stored for a year or more, you must reform the capacitors.

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: 13, 14, 15, ... for 2013, 2014, 2015, ...

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.

Select the power cables

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

See table I on page 5 (UL: table II on page 5) for the losses. The allowed operating temperature range of the drive without derating is -15 to +50 °C (+5 to +122 °F). No condensation or frost is allowed. For restrictions below 0 °C (+32 °F) and above +40 °C (+104 °F), see chapter *Technical data* in *ACS580-01 user's manual* (3AUA0000076333 [English]).

EN

Protect the drive and input power cable

See tables III (on page 6) and IV (on page 6); (UL: table V on page 7) for the fuses.

If you are going to use gG fuses, check on the fuse time-current curve to ensure the operating time of the fuse is below 0.5 seconds. Follow the local regulations.

Install the drive on the wall

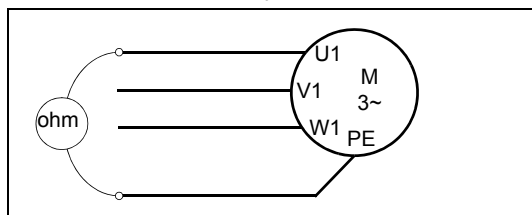
See figure A on page 3.

Check the insulation of the input and motor cables and the motor

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

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 the Protective Earth conductor using a measuring voltage of 1000 V DC. The insulation resistance of an ABB motor must exceed 100 Mohm (reference value at 25 °C or 77 °F). For the insulation resistance of other 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.



Connect the power cables

See figures [A](#), [B](#), [C](#), [D](#), [E](#), [F1](#), [F2](#) and [G](#). Use symmetrical shielded cable for motor cabling.

1. Remove the front cover: Loosen the retaining screw with a screwdriver (a) and lift the cover from the bottom outwards (b).
2. Remove the rubber grommets from the lead-through plate.
3. Cut an adequate hole into the rubber grommet. Slide the grommet onto the cable.
4. Prepare the ends of the input power cable as illustrated in the figure. **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.
5. Slide the cable through the hole of the bottom plate and attach the grommet to the hole.
6. Connect the input power cable:
 - Ground the shield 360 degrees by tightening the clamp of the power cable grounding shelf onto the stripped part of the cable. (6a)
 - Connect the twisted shield of the cable to the grounding terminal. (6b)
 - Connect the additional PE conductor of the cable (6c).
 - Connect the phase conductors of the cable to the L1, L2 and L3 terminals. Tighten the screws to the torque given in the figure. (6d)
7. Repeat steps [3...5](#) for the motor cable. Two different motor cable types are shown (7a, 7b).
8. Connect the motor cable. Tighten the screws to the torque given in the figure.
9. Install the grounding shelf for the brake resistor cable.
10. Repeat steps [3...5](#) for the brake resistor cable (if used). Cut off extra phase conductors (if any).
11. Connect the resistor cable. Tighten the screws to the torque given in the figure.
12. Install the grounding shelf.
13. Put the unused rubber grommets to the holes in the lead-through plate.
14. Secure the cables outside the unit mechanically.
15. 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 [H](#). It shows an example with one analog signal cable and one digital signal cable. Make the connections according to the macro in use. The default connections of the ABB standard macro are shown in section [Default I/O connections](#) on page [13](#).

1. Remove the front cover. See section [Connect the power cables](#) on page [11](#).

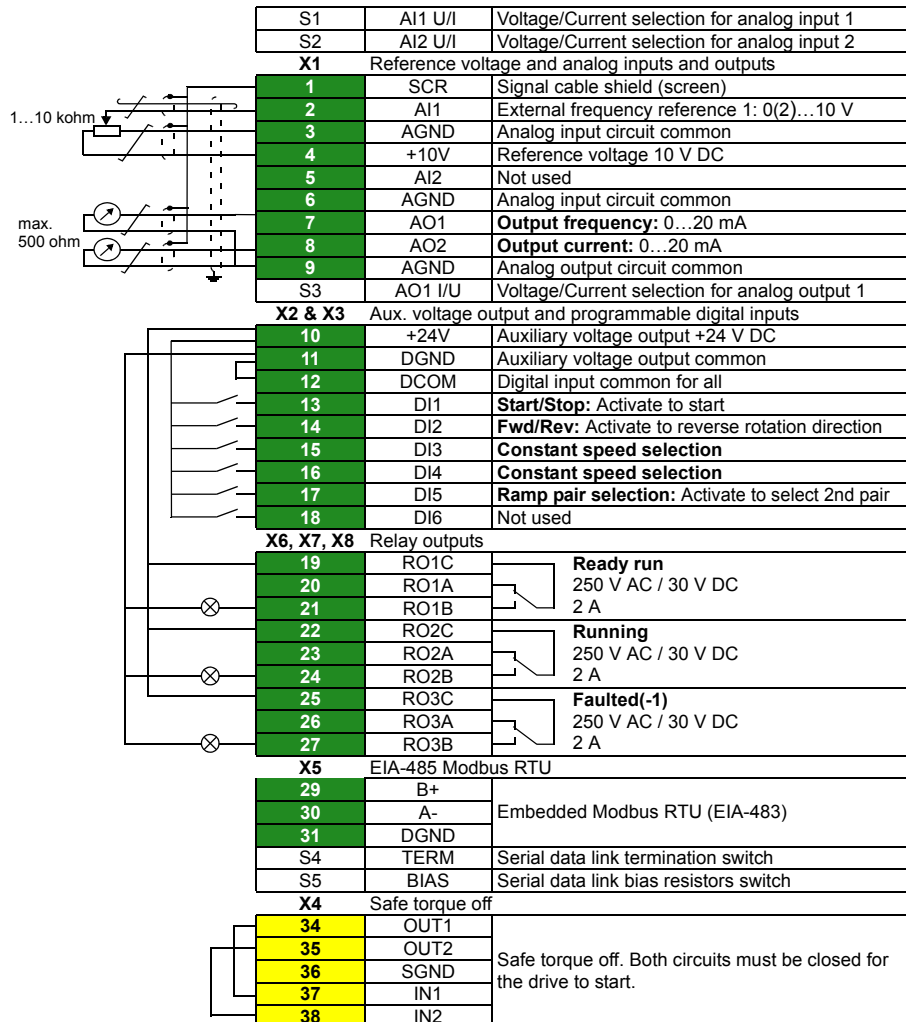
Connecting an analog signal cable:

2. 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.
3. Ground the outer shield of the cable 360 degrees under the grounding clamp. Keep the cable unstripped as close to the terminals of the control board as possible. Ground also the pair-cable shields and grounding wire at the SCR1 terminal.
4. Route the cable as shown in the figure.
5. Connect the conductors to the appropriate terminals of the control board and tighten to 0.5...0.6 N·m.
6. Tie all control cables to the provided cable tie mounts.

Default I/O connections

Default I/O connections of the ABB Standard macro are shown below.

ABB standard macro:



Total load capacity of the Auxiliary voltage output +24V (X2:10) is 6.0 W (250 mA / 24 V).

Wire sizes: 0.2...2.5 mm² (terminals +24V, DGND, DCOM)

0.14...1.5 mm² (terminals DI, AI, AOO, AGND, RO, STO)

Tightening torques: 0.5...0.6 N·m

Install optional modules, if any

See chapter *Electrical installation* in *ACS580-01 user's manual* (3AUA0000076333 [English]).

Check the compatibility with IT (ungrounded) and corner-grounded TN systems



WARNING! Do not install the drive with the internal EMC filter connected on an IT system (an ungrounded power system or a high-resistance-grounded [over 30 ohms] power system) or on a corner-grounded TN system.

EN

If you connect the drive to an IT (ungrounded) system or a corner-grounded TN system, disconnect the EMC filter before connecting the drive to the supply network. For information on how to do it, see chapter *Electrical installation* in *ACS580-01 user's manual* (3AUA0000076333 [English]).

Reinstall cover

See figure 1 on page 4.

1. Put the tabs on the inside of the cover top in their counterparts on the housing (a) and then press the cover at the bottom (b).
2. Tighten the retaining screw with a screwdriver.

Start-up












This chapter describes the start-up of the drive using the First start assistant on the assistant control panel.


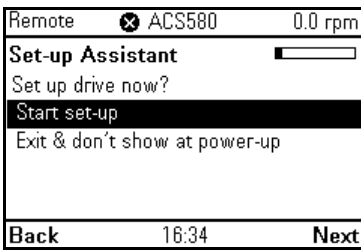




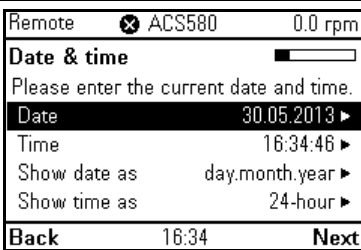









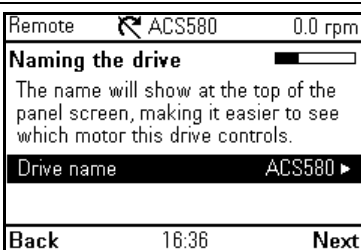
Complete documentation of the drive firmware: program features, parameters and fault tracing can be found in *ACS580-01 user's manual* (3AUA0000076333 [English]). For more information on using the assistant panels, see *ACS-AP-x assistant control panels user's manual* (3AUA0000085685 [English]).

Before you start

Ensure that the drive has been installed as described in chapter [Installation](#) on page 9.


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


Safety	
 Obey the safety instructions on page 9 during the start-up procedure.	
<input type="checkbox"/>	Check the installation.
<input type="checkbox"/>	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	
<p>The two commands at the bottom of the display (in the figure on the right, Options and Menu), show the functions of the two softkeys  and  located below the display. The commands assigned to the softkeys vary depending on the context.</p> <p>Use keys , ,  and  to move the cursor and/or change values depending on the active view.</p> <p>Key  shows a context-sensitive help page.</p>	
1 – First start assistant guided settings: Language, date and time, and motor nominal values	
<input type="checkbox"/>	Have the motor name plate data at hand. Power up the drive.
<input type="checkbox"/>	<p>The First start assistant guides you through the first start-up. The start-up begins automatically. Wait until the control panel enters the view shown on the right. Select the language you want to use by highlighting it and pressing  (OK).</p> 


<input type="checkbox"/>	<p>Highlight Start set-up (if not already highlighted) and press  (Next).</p>	
<input type="checkbox"/>	<p>Set the date, time, as well as date and time display formats.</p> <ul style="list-style-type: none"> Go to the edit view of a highlighted row by pressing . Scroll the view with  and . <p>Go to the next view by pressing  (Next).</p>	
<input type="checkbox"/>	<p>In an edit view:</p> <ul style="list-style-type: none"> 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. 	
<input type="checkbox"/>	<p>To give the drive a name that will be shown at the top, press .</p> <p>If you do not want to change the default name (ACS580), continue straight to the set-up of the motor nominal values by pressing  (Next).</p> <p>For information on editing text, see <i>ACS580-01 user's manual</i> (3AUA0000076333 [English]) or <i>ACS-AP-x assistant control panels user's manual</i> (3AUA0000085685 [English]).</p>	

Refer to the motor nameplate for the following nominal value settings of the motor. Whenever possible, enter the values exactly as shown on the motor nameplate.

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

ABB Motors 									
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 nominal current. Motor nominal cosφ and nominal torque are optional. Press  (**Next**) to continue.

Remote  ACS580 0.0 rpm

Motor nominal values


Find the values on the motor's nameplate, and enter them here:


Motor nominal current 1.8 A

Motor nominal voltage 400.0 V

Motor nominal frequency 50.00 Hz

Back 16:42 **Next**

- ☐ To do the direction test, highlight **Spin the motor** and press  (**Next**).

Remote  ACS580 45.9 Hz



Direction test?


Spin the motor to check direction?

Not now

Spin the motor

Back 16:49 **Next**

- ☐ First switch to local control by pressing the  key. Local control is indicated by the text "Local" on the top pane. Then press the Start key  on the panel to start the drive.



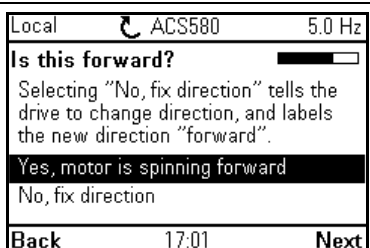


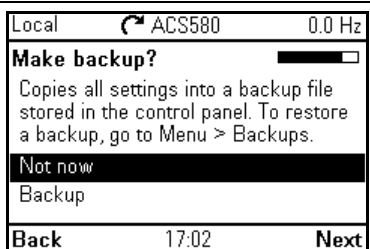

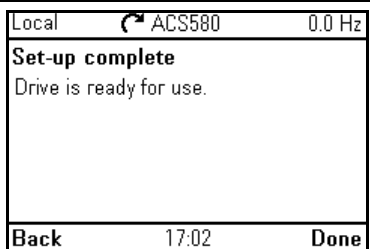
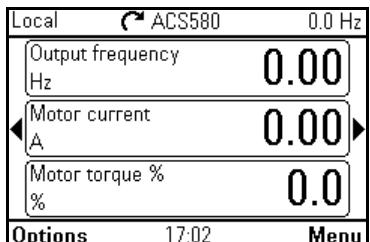

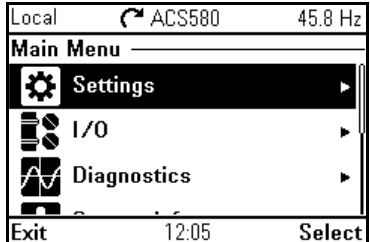
Local  ACS580 45.9 Hz

Press Start

Warning: Until set-up is done, safeties are not active and motor speed is 5 Hz.

Press Start now to spin the motor, then check the direction of rotation.

Back 16:51

	<p>Check the direction of the motor. If it is forward, highlight (if not already highlighted) Yes, motor is spinning forward and press  (Next) to continue. If the direction is not forward, highlight No, fix direction and press  (Next) to continue.</p>	
EN	<p>If you want to make a backup of the settings made so far, select Backup and press  (Next). If you do not want to make a backup, select Not now and press  (Next).</p>	
	<p>The set-up is now complete and the drive is ready for use. Press  (Done) to enter the Home view.</p>	
	<p>The Home view monitoring the values of the selected signals is shown on the panel.</p>	
<h2>2 – Additional settings: for example macro, ramps, limits</h2>		
	<p>Make any additional settings, for example macro, ramps, and limits starting from the Main menu - press  (Menu) to enter the Main menu. For more information, see the start-up procedure in <i>ACS580-01 user's manual</i> (3AUA0000076333 [English]),</p>	

Further information

Product and service inquiries

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

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