

ABB drives for HVAC

Quick start-up guide ACH580 drives with HVAC control program

English 3

EN



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EN – Quick start-up guide











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




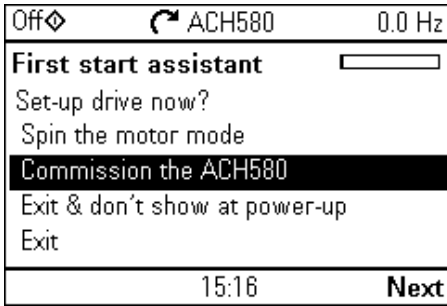

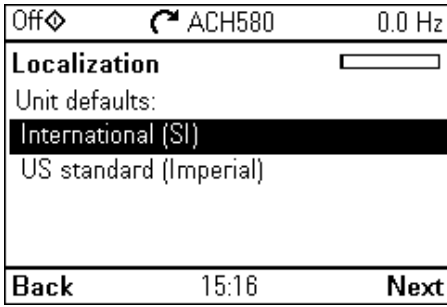




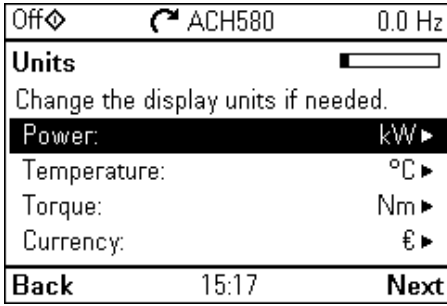
Note:

Automatic selection of supply voltage is not supported in ACH580-31. You must select the supply voltage manually using parameter *95.01*. See steps for Commissioning with parameters on page 9.

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Start-up with the First start assistant on an Hand-Off-Auto control panel

Safety	
<p> WARNING!</p> <p>Do not start-up the drive unless you are a qualified electrician.</p> <p>Read and obey the instructions in chapter <i>Safety instructions</i> at the beginning of the Hardware manual of the drive. Ignoring the instructions can cause physical injury or death, or damage to the equipment.</p>	
<p><input type="checkbox"/> Check the installation. See chapter <i>Installation checklist</i> in the Hardware manual of the drive.</p>	
<p><input type="checkbox"/>  WARNING!</p> <p>The drive will start up automatically at power-up if the external run command is on and the drive is in the external control mode.</p> <p>Check that the starting of the motor does not cause any danger.</p> <p>De-couple the driven machine if</p> <ul style="list-style-type: none"> • there is a risk of damage in case of an incorrect direction of rotation, or • a Normal ID run is required during the drive start-up, when the load torque is higher than 20% or the machinery is not able to withstand the nominal torque transient during the ID run. 	
Hints on using the assistant control panel	
<p>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.</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> <p>For more information, see <i>ACS-AP-x assistant control panels user's manual</i> (3AUA0000085685 [English]).</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"/>	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 to download the language file to the control panel.	
<input type="checkbox"/>	<u>ACH580-31 drives:</u> Select the supply voltage with parameter 95.01.	
<input type="checkbox"/>	Select Commission the ACH580 and press  (Next).	
<input type="checkbox"/>	Select the localization you want to use and press  (Next).	
<input type="checkbox"/>	Change the units shown on the panel if needed. <ul style="list-style-type: none"> • Go to the edit view of a selected row by pressing . • Scroll the view with  and . Go to the next view by pressing  (Next).	

<input type="checkbox"/> To select a value in an edit view: <ul style="list-style-type: none"> • 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.	
<input type="checkbox"/> Set the date and time as well as date and time display formats. <ul style="list-style-type: none"> • Go to the edit view of a selected row by pressing . • Scroll the view with and . Go to the next view by pressing (Next).	

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







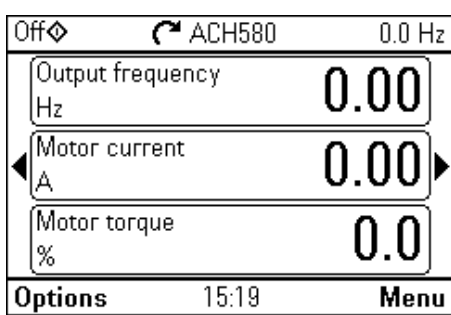

Refer to the motor nameplate for the following nominal value settings of the motor. Enter the values exactly as shown on the motor nameplate.

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

ABB Motors							
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	I _A /I _N	t _E /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							

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<input type="checkbox"/>	<p>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.</p> <ul style="list-style-type: none"> • Go to the edit view of a selected row by pressing • Scroll the view with and . <p>Motor nominal cos Φ and nominal torque are optional. Press (Next) to continue.</p>	
<input type="checkbox"/>	<p>To change a value 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. <p>Press (Save) to accept the new setting, or press (Cancel) to go back to the previous view without making changes.</p>	
<input type="checkbox"/>	<p>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).</p>	
<input type="checkbox"/>	<p>Press the Hand key on the panel to start the drive.</p>	


<input type="checkbox"/>	<p>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.</p>	 <p>Hand  ACH580 5.0 Hz Is this forward?  Selecting "No, fix direction" tells the drive to change direction, and labels the new direction "forward". Yes, motor is spinning forward No, fix direction 15:19 Next</p>
<input type="checkbox"/>	<p>The first start is now complete and the drive is ready for use. Press  (Done) to enter the Home view.</p>	 <p>Off  ACH580 0.0 Hz First start complete The drive is ready to run the motor. Press "Hand" to start the motor. To continue commissioning go to Menu > Primary settings. 15:19 Done</p>
<input type="checkbox"/>	<p>The Home view monitoring the values of the selected signals is shown on the panel.</p>	 <p>Off  ACH580 0.0 Hz Output frequency 0.00 Hz Motor current 0.00 A Motor torque 0.0 % Options 15:19 Menu</p>

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2 – Completion of commissioning

You can complete the commissioning in five different ways:

- **Start using the drive with no further adjustment:**

Press the Hand key  on the panel to start the motor, and set the reference on the panel.

- **Assistant commissioning:**


Go to **Menu** → **Primary settings** → **Start, stop reference** and complete the two assistants. For more details see the Firmware manual.

- **HVAC quick commissioning:**

Go to **Menu** → **Primary settings** → **HVAC quick setup**. Go through the items on the menu. This option is instructed in the rows below.

- **Commissioning with Primary settings:**

Go to **Menu** → **Primary settings**. Set the start/stop and reference, motor data, ramps and limits. You can


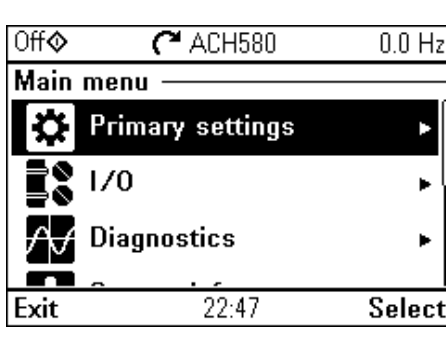






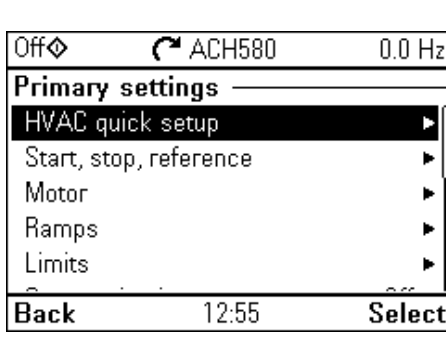








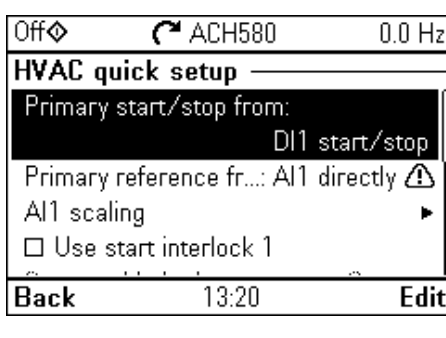



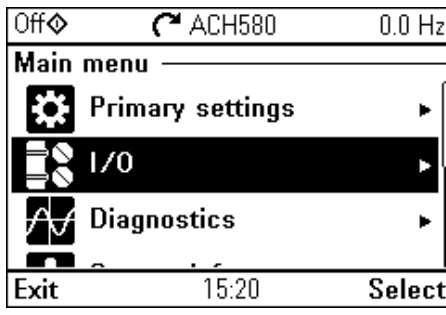




continue with further adjustment. See in the Firmware manual or press the  information on Primary settings menu items.



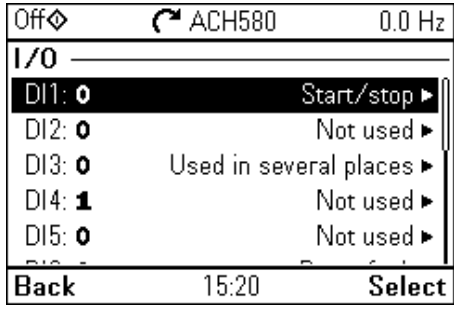


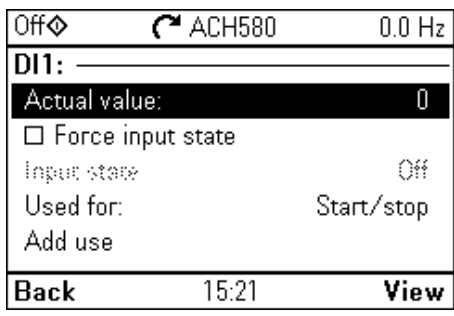








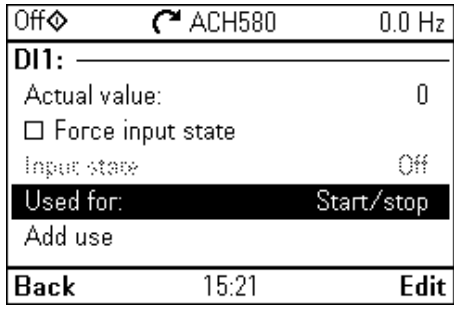

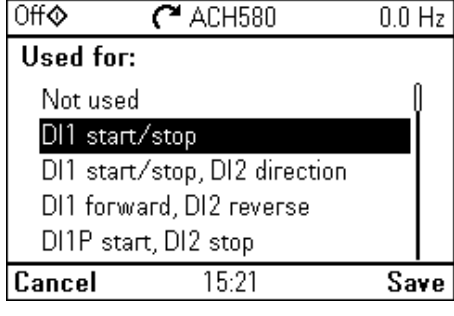

- **Commissioning with parameters (advanced users only):**

Go to **Menu** → **Parameters** → **Complete list**. See chapter *Parameters* in the Firmware manual.



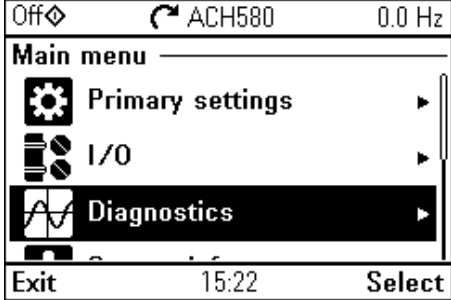


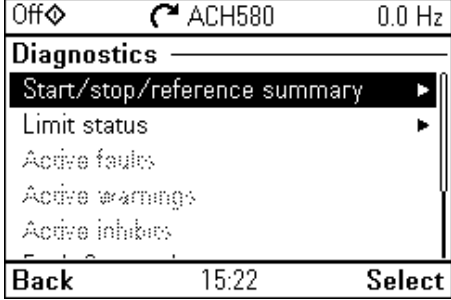
HVAC quick commissioning

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<input type="checkbox"/>	<p>In the Main menu, select Primary settings and press  (Select) to enter the Primary settings menu.</p>	 <p>Off  ACH580 0.0 Hz Main menu  Primary settings ▶  I/O ▶  Diagnostics ▶ Exit 22:47 Select</p>
<input type="checkbox"/>	<p>Select HVAC quick setup and press  (Select) (or ).</p>	 <p>Off  ACH580 0.0 Hz Primary settings HVAC quick setup ▶ Start, stop, reference ▶ Motor ▶ Ramps ▶ Limits ▶ Back 12:55 Select</p>
<input type="checkbox"/>	<p>Go through the items on the menu. To adjust the value of a parameter, press  (Edit), adjust the value using , ,  and  keys and press  (Save). Note that the actual wiring must match the new value. Go back to the Main menu by pressing  (Back) repeatedly.</p>	 <p>Off  ACH580 0.0 Hz HVAC quick setup Primary start/stop from: DI1 start/stop Primary reference fr...: AI1 directly  AI1 scaling ▶ <input type="checkbox"/> Use start interlock 1 Back 13:20 Edit</p>
3 – Additional settings in the Primary settings menu - I/O menu		
<input type="checkbox"/>	<p>Make sure that the actual I/O wiring matches the I/O used in the control program. In the Main menu, select a I/O and press  (Select) to enter the I/O menu.</p>	 <p>Off  ACH580 0.0 Hz Main menu  Primary settings ▶  I/O ▶  Diagnostics ▶ Exit 15:20 Select</p>

<input type="checkbox"/>	<p>Select a connection you want to check and press  (Select) (or ).</p>	 <p>Off  ACH580 0.0 Hz</p> <p>I/O</p> <p>DI1: 0 Start/stop ▶</p> <p>DI2: 0 Not used ▶</p> <p>DI3: 0 Used in several places ▶</p> <p>DI4: 1 Not used ▶</p> <p>DI5: 0 Not used ▶</p> <p>Back 15:20 Select</p>
<input type="checkbox"/>	<p>To view the details of a parameter that cannot be adjusted via the I/O menu, press  (View).</p>	 <p>Off  ACH580 0.0 Hz</p> <p>DI1:</p> <p>Actual value: 0</p> <p><input type="checkbox"/> Force input state</p> <p>Input state Off</p> <p>Used for: Start/stop</p> <p>Add use</p> <p>Back 15:21 View</p>
<input type="checkbox"/>	<p>To adjust the value of a parameter, press  (Edit), adjust the value using , ,  and  keys and press  (Save). Note that the actual wiring must match the new value.</p> <p>Go back to the Main menu by pressing  (Back) repeatedly.</p>	 <p>Off  ACH580 0.0 Hz</p> <p>DI1:</p> <p>Actual value: 0</p> <p><input type="checkbox"/> Force input state</p> <p>Input state Off</p> <p>Used for: Start/stop</p> <p>Add use</p> <p>Back 15:21 Edit</p>  <p>Off  ACH580 0.0 Hz</p> <p>Used for:</p> <p>Not used</p> <p>DI1 start/stop</p> <p>DI1 start/stop, DI2 direction</p> <p>DI1 forward, DI2 reverse</p> <p>DI1P start, DI2 stop</p> <p>Cancel 15:21 Save</p>

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4 – Diagnostics menu		
<input type="checkbox"/>	<p>Use the Diagnostics menu to make sure that the setup is functioning correctly.</p> <p>In the Main menu, select Diagnostics and press  (Select) (or ).</p>	 <p>The screenshot shows the 'Main menu' with the following items: 'Primary settings', 'I/O', 'Diagnostics' (highlighted), and 'Exit'. At the top, it displays 'Off', 'ACH580', and '0.0 Hz'. At the bottom, it shows 'Exit', '15:22', and 'Select'.</p>
<input type="checkbox"/>	<p>Select the diagnostics item you want to view and press  (Select).</p> <p>Return to the Diagnostics menu by pressing  (Back).</p>	 <p>The screenshot shows the 'Diagnostics' menu with the following items: 'Start/stop/reference summary' (highlighted), 'Limit status', 'Active faults', 'Active warnings', and 'Active inhibits'. At the top, it displays 'Off', 'ACH580', and '0.0 Hz'. At the bottom, it shows 'Back', '15:22', and 'Select'.</p>

Contact us

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