

Drive^{IT} Low Voltage AC Drives

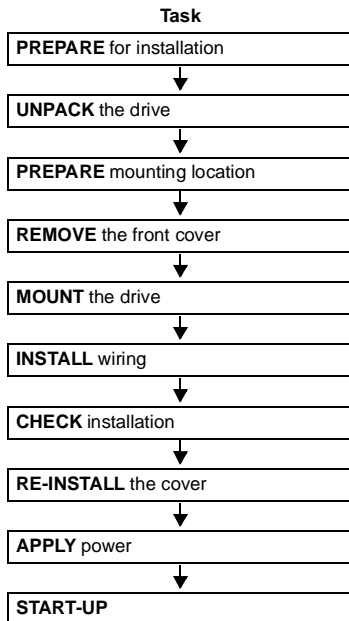
Quick Start Guide

ACS550-U1 Drives (1...150 HP)



Overview

The installation of the ACS550 adjustable speed AC drive follows the outline below.



Application

This guide provides a quick reference for installing ACS550-U1 drives having a standard enclosure.

Note! This guide does not provide detailed installation, safety or operational instructions. See the ACS550 User's Manual for complete information.

Prepare for Installation

Warning! The ACS550 should ONLY be installed by a qualified electrician.

Check

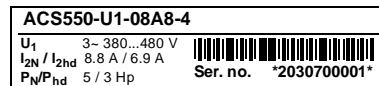
- Motor compatibility – Motor type, nominal current, frequency, and voltage range must match drive specifications.
- Suitable environment – Drive requires heated, indoor controlled environment that is suitable for the selected enclosure.
- Wiring – Follow local codes for wiring and fusing requirements.

Refer to User's manual and confirm that all preparations are complete.

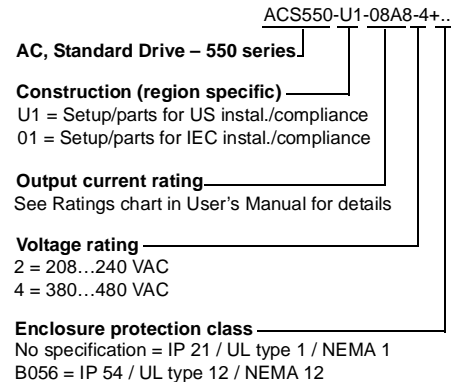
Tools Required

Screwdrivers, wire stripper, tape measure, mounting screws or bolts, and drill.

Drive Identification



Use the following chart to interpret the type code found on the drive label.



Collect Motor Data

Collect the following data from the motor nameplate plate for later use in the ACS550 startup:

- Voltage _____
- Nominal motor current _____
- Nominal frequency _____
- Nominal speed _____
- Nominal power _____

Unpack the Drive

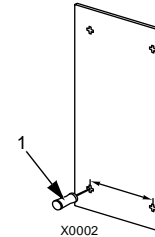
Note! Lift ACS550 by its chassis and not by its cover.

1. Unpack the drive.
2. Check for any damage.
3. Check the contents against the order / shipping label.

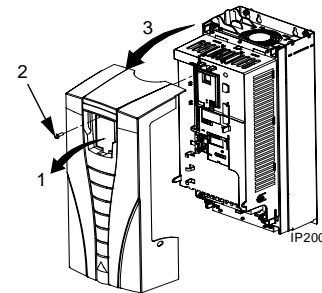
Prepare the Mounting Location

The drive requires a smooth, vertical, solid surface, free from heat and moisture, with free space for air flow – 200 mm (8 in) above and below, and 25 mm (1 in) around the sides of the drive.

1. Mark the mounting points.
2. Drill the mounting holes.

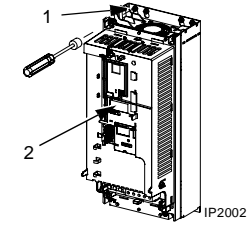


Remove the Front Cover



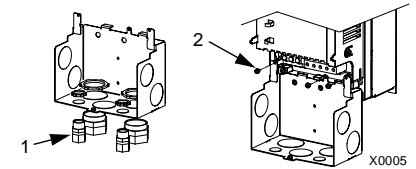
1. Remove the control panel, if attached.
2. Loosen the captive screw at the top.
3. Pull near the top to remove the cover.

Mount the Drive



1. Position the ACS550 and use screws or bolts to securely tighten all four corners.
2. Attach a warning sticker in the appropriate language on the inside plastic shell.

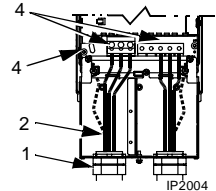
Install the Wiring



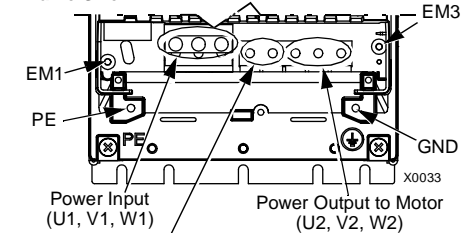
1. Install thin-wall conduit clamps (not supplied) in the conduit/gland box.
2. Install conduit/gland box.

Wiring Power

1. Connect conduit runs to box.
2. Route input power and motor wiring through conduits.
3. Strip wires.
4. Connect power, motor, and ground wires to the drive terminals. For details, see "Power Connections" in the User's Manual.



Frame Size R1...R4

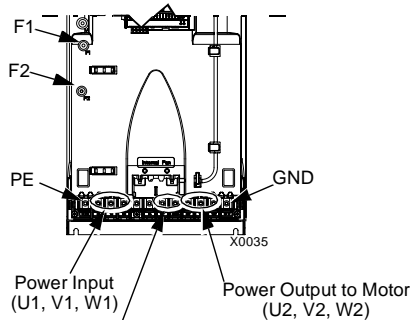


Frame Size	Terminal Labels	Brake Options
R1, R2	BRK+, BRK-	• Brake resistor
R3, R4	UDC+, UDC-	• Braking unit • Chopper and resistor



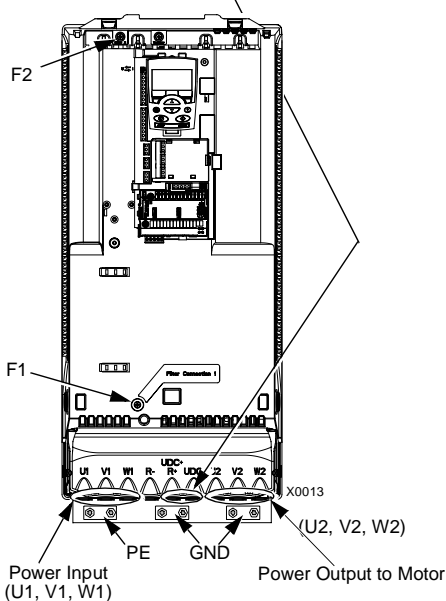
Warning! For floating networks remove screws at EM1 and EM3 on Frame sizes R1...R4.

Frame Size R5



Optional Braking		
Frame Size	Terminal Labels	Brake Options
R5, R6	UDC+, UDC-	<ul style="list-style-type: none"> Braking unit Chopper and resistor

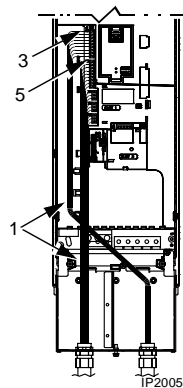
Frame Size R6



Warning! For floating networks remove screws at F1 and F2 on Frame sizes R5 or R6.

Wiring the Controls

1. Route the control cable(s) through the conduit.
2. Strip the control cable sheathing and twist the copper screen into a pig-tail.
3. Connect the copper screen pig-tail for digital and analog I/O cables at X1-1.
4. Connect the ground screen pig-tail for RS485 cables at X1-28 or X1-32.
5. Strip and connect the individual control wires to the drive terminals. The following shows the default configuration. For details, or other configurations, see "Control Connections" in the User's Manual.



X1		
1	SCR	Signal cable shield
2	AI1	Ext. freq. ref. 1: 0...10 V
3	AGND	Analog input com.
4	10V	Ref. voltage 10 VDC
5	AI2	Not used
6	AGND	Analog input com.
7	AO1	Output freq.: 0...20 mA
8	AO2	Output current: 0...20 mA
9	AGND	Analog output com
10	24V	Aux. volt. output +24 VDC
11	GND	Aux. volt. common
12	DCOM	Digital input com. for all
13	DI1	Start/Stop: Active = start
14	DI2	Fwd/Rev: Active = rev. dir.
15	DI3	Constant speed sel. ²
16	DI4	Constant speed sel. ²
17	DI5	Ramp pair: Active = 2 nd pair
18	DI6	Not used
19	RO1C	Relay output 1
20	RO1A	Default operation:
21	RO1B	Ready = 19/21 connected
22	RO2C	Relay output 2
23	RO2A	Default operation:
24	RO2B	Run'g = 22/24 connected
25	RO3C	Relay output 3
26	RO3A	Default operation:
27	RO3B	Fault(-1) =25/27 connected (Fault => 25/26 connected)

Note 1. Jumper setting:

J1		AI1: 0...10 V
		AI2: 0(4)...20 mA

Note 2. Code: 0 = open, 1 = connected

DI3	DI4	Output
0	0	Reference through AI1
1	0	CONSTANT SPEED 1 (1202)
0	1	CONSTANT SPEED 2 (1203)
1	1	CONSTANT SPEED 3 (1204)

6. Install the conduit/gland box cover (1 screw).

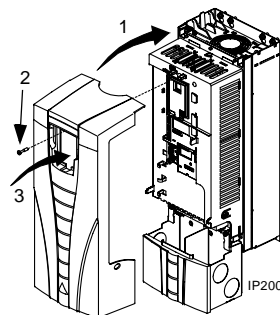
Check Installation

Before applying power, perform the following checks.

✓	Check
	Environment conforms to specifications.
	The drive is mounted securely.
	Proper cooling space around the drive.
	Motor and driven equipment are ready for start.
	Floating networks: Internal RFI filter disconnected.
	Drive is properly grounded.
	Input power (mains) voltage matches the drive nominal input voltage.
	The input power (mains) terminals, U1, V1, W1, are connected and tightened as specified.
	The input power (mains) fuses / mains switch installed.
	The motor terminals, U2, V2, W2, are connected and tightened as specified.
	Motor cable is routed away from other cables.
	NO power factor compensation capacitors are connected to the motor cable.
	Control terminals are wired and tightened as specified.
	NO tools or foreign objects (such as drill shavings) are inside the drive.
	NO alternate power source for the motor is connected – no input voltage is applied to the output of the drive.

Re-install the Cover

1. Align the cover and slide it on.
2. Tighten the captive screw.
3. Re-install the control panel.



Apply Power

Always re-install the front cover before turning power on.



Warning! The ACS550 will start up automatically upon power up, if the external run command is on.

1. Apply input power.
When power is applied to the ACS550, the green LED comes on.

Note! Before increasing motor speed, check that the motor is running in the desired direction.

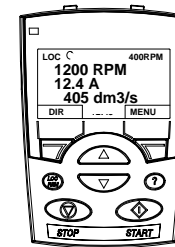
Start-up

In Start-up, enter motor data (collected earlier) and, if needed, edit parameters that define how the drive operates and communicates.

Assistant Control Panel

The Start-up Assistant steps through typical start-up selections, and runs automatically upon the initial power up. At other times, use the steps below to run the Start-up Assistant.

1. Use the MENU key to access the Menu list.
2. Select Assistants.
3. Select Start-up Assistant.
4. Follow the screen instructions to configure the system.



Note! For common parameters and menu items, use the Help key (?) to display descriptions.

If you encounter Alarms or Faults, use the Help key or refer to the Diagnostic section of the User's Manual.

Basic Control Panel

The Basic Control Panel does not include a Start-up Assistant. Edit parameters manually. Refer to the Start-up Section of the User's Manual.