

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

## Prepare for Installation



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

## 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.

## 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, circuit protection, and EMC 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.

## Collect Motor Data

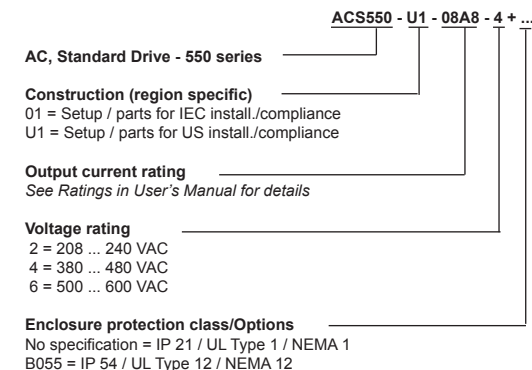
Collect the following motor data from the motor nameplate for later use in the ACS550 startup:

- Voltage \_\_\_\_\_
- Nominal motor current \_\_\_\_\_
- Nominal frequency \_\_\_\_\_
- Nominal speed \_\_\_\_\_
- Nominal power \_\_\_\_\_

## Drive Identification

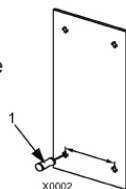
<b>ACS550-U1-08A8-4</b>			
<b>U1</b>	3~380...480V		
<b>I2N / I2hd</b>	8.8/6.9 A		
<b>PN/Phd</b>	5/3 Hp	S/N	*2030700001*

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



## Prepare the Mounting Location

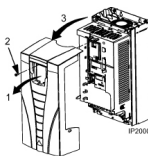
The drive requires a smooth, vertical, solid surface, free from heat and moisture, with free space for air flow - 200 mm (8 in) above and below, and 25 mm (1 in) around the sides of the drive.



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

**Note!** Lift the ACS550 by its metal chassis.

1. Position the ACS550 onto the mounting screws or bolts and securely tighten in all four corners.
2. Non-English speaking locations: Attach a warning sticker in the appropriate language over the existing warning on the top of the module.

## Drive<sup>IT</sup> Low Voltage AC Drives

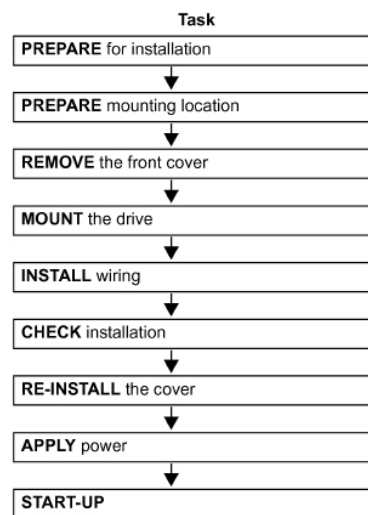
### Quick Start Guide

### ACS550-U1 Drives (1 to 200 Hp) UL Type 1 / NEMA 1 / IP21



## Overview

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



## Application

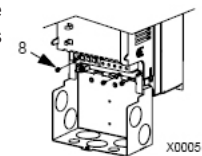
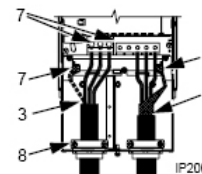
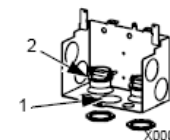
This guide provides a quick reference for installing ACS550-U1 drives having a standard UL Type 1 (NEMA 1) enclosure.

## Install the Wiring

**Note!** Use separate conduit runs for input power, motor and control wiring.

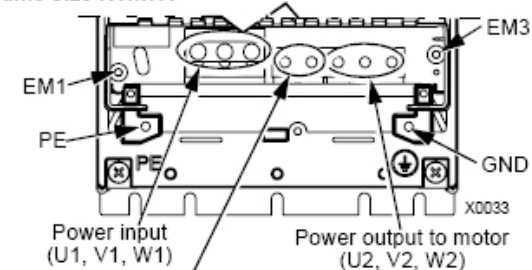
### Wiring power

1. Open the appropriate knockouts in the gland box.
2. Install the cable clamps for the power/motor cables.
3. On the input power cable, strip the sheathing back far enough to route individual wires.
4. On the motor cable, strip the sheathing back far enough to expose the copper wire screen so that the screen can be twisted into a pig-tail. Keep the pig-tail short to minimize noise radiation. - 360° grounding under the clamp is recommended for the motor cable to minimize noise radiation. In this case, remove the sheathing at the cable clamp.
5. Route both cables through the clamps.
6. Connect the pig-tail created from the motor cable screen to the GND terminal.
7. Strip and connect the power/motor wires, and the power ground wire to the drive terminals. See diagrams below, or Power connections in User's Manual.
8. Install conduit/gland box and tighten the cable clamps.



**Warning!** For IT systems and corner grounded TN systems, disconnect the internal EMC filter by removing screws: EM1 and EM3 (frame sizes R1-R4), or F1 and F2 (frame sizes R5-R6).

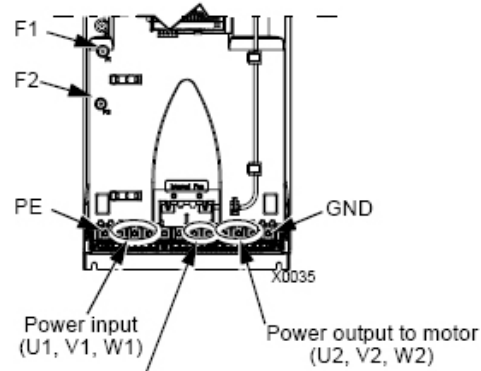
### Frame size R1...R4



### Optional braking

Frame size	Terminal labels	Brake options
R1, R2	BRK+, BRK-	Brake resistor
R3, R4	UDC+, UDC-	<ul style="list-style-type: none"> <li>• Braking unit</li> <li>• Chopper and resistor</li> </ul>

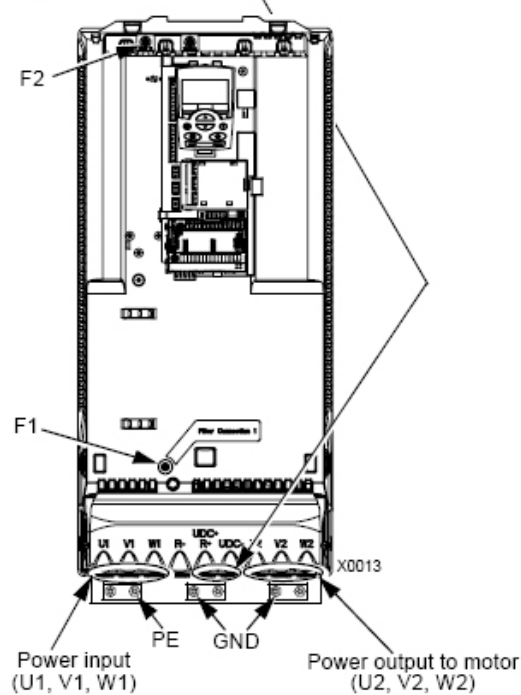
### Frame size R5



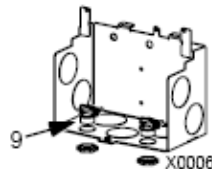
#### Optional braking

Frame size	Terminal labels	Brake options
R5, R6	UDC+, UDC-	<ul style="list-style-type: none"> <li>Braking unit</li> <li>Chopper and resistor</li> </ul>

### Frame size R6

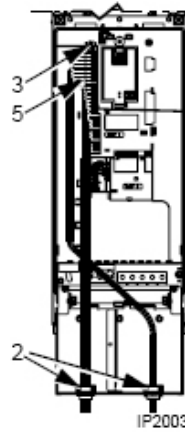


9. Install the cable clamp(s) for the control cable(s). (Power/motor cables and clamps not shown in the figure.)



### Wiring the controls

- Strip control cable sheathing and twist the copper screen into a pig-tail.
- Route control cable(s) through clamp(s) and tighten clamp(s).
- Connect the ground screen pig-tail for digital and analog I/O cables at X1-1. (Ground only at the drive end.)
- Connect the ground screen pig-tail for RS485 cables at X1-28 or X1-32. (Ground only at the drive end.)
- Strip and connect the individual control wires to the drive terminals. See Control connections below or, for more information, see User's Manual.



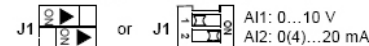
**Warning!** The maximum voltage for digital inputs is 30 V.

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

#### ABB Standard Macro

ABB Standard macro		
X1	1	SCR Signal cable shield (screen)
	2	AI1 Ext. freq. ref. 1: 0...10 V
	3	AGND Analog input com.
	4	10V Ref. voltage 10 V DC
	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 V DC
	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. <sup>2</sup>
	16	DI4 Constant speed sel. <sup>2</sup>
	17	DI5 Ramp pair: Active = 2 <sup>nd</sup> ramp 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 Running = 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 (two switch types possible):



**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)

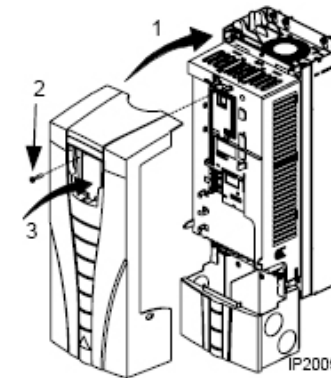
### Check installation

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.
	For IT systems and corner grounded TN systems: The internal EMC filter is disconnected (screws EM1 & EM3 or F1 & F2 removed).
	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 are 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 in 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.

### Reinstall the cover

- Align the cover and slide it on.
- Tighten the captive screw.
- Install the control panel.



### Apply power

Always reinstall the front cover before turning power on.



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

- 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.

- Use the MENU key to access the Main menu.
- Select ASSISTANTS.
- Select Start-up Assistant.
- 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 chapter Diagnostics in User's Manual.

#### Basic Control Panel

The Basic Control Panel does not include the Start-up Assistant. Refer to section "How to start up the drive" in the User's Manual and manually enter any parameter changes desired.