

Drive^{IT} Low Voltage AC Drives

Installation Supplement
ACS550-U2 Drives (150...550 HP)



ABB

ACS550 Drive Manuals

GENERAL MANUALS

ACS550-01/U1 User's Manual (0.75...90 kW) / (1...150 HP)

- Safety
- Installation
- Start-Up
- Diagnostics
- Maintenance
- Technical Data

ACS550-02/U2 User's Manual (110...355 kW) / (150...550 HP)

- Safety
- Installation
- Start-Up
- Diagnostics
- Maintenance
- Technical Data

ACS550 Technical Reference Manual

- Detailed Product Description
 - Technical product description including Dimensional drawings
 - Cabinet mounting information including power losses
 - Software and control including complete parameter descriptions
 - User interfaces and control connections
 - Complete options descriptions
 - Spare parts
 - Etc.
- Practical Engineering Guides
 - PID & PFC engineering guides
 - Dimensioning and sizing guidelines
 - Diagnostics and Maintenance information
 - Etc.

OPTION MANUALS

(Fieldbus Adapters, I/O Extension Modules etc., manuals delivered with optional equipment)

Relay Output Extension Module (typical title)

- Installation
 - Start-Up
 - Diagnostics
 - Technical Data
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Safety

General

In this manual, ACS550 refers, unless otherwise stated, to type ACS550-U2.



Warning! The ACS550 adjustable speed AC drive should **ONLY** be installed by a qualified electrician.



Warning! Even when the motor is stopped, dangerous voltage is present at the Power Circuit terminals U1, V1, W1 and U2, V2, W2 and UDC+, UDC-.



Warning! Even when power is removed from the input terminals of the ACS550, there may be dangerous voltage (from external sources) on the terminals of the relay outputs RO1...RO3 or on option modules.



Warning! Dangerous voltage is present when input power is connected. After disconnecting the supply, wait at least 5 minutes (to let the intermediate circuit capacitors discharge) before removing any covers.



Warning! The ACS550-U2 is field repairable by qualified personnel only. To service or repair a malfunctioning unit, contact your local Authorized Service Center.



Warning! The ACS550 will start up automatically after an input voltage interruption if the external run command is on.



Warning! When the control terminals of two or more drive units are connected in parallel, the auxiliary voltage for these control connections must be taken from a single source, which can either be one or the units, or an external supply.



Warning! The heat sink may reach a high temperature. See Technical Data chapter in User's Manual.

Use of Warnings and Notes

There are two types of safety instructions throughout this manual:

- Notes draw attention to a particular condition or fact, or give information on a subject.
- Warnings caution you about conditions which can result in serious injury or death and/or damage to the equipment. They also tell you how to avoid the danger. The warning symbols are used as follows:



Dangerous voltage warning warns of high voltage which can cause physical injury and/or damage to the equipment.



General warning warns about conditions, other than those caused by electricity, which can result in physical injury and/or damage to the equipment.

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Installation

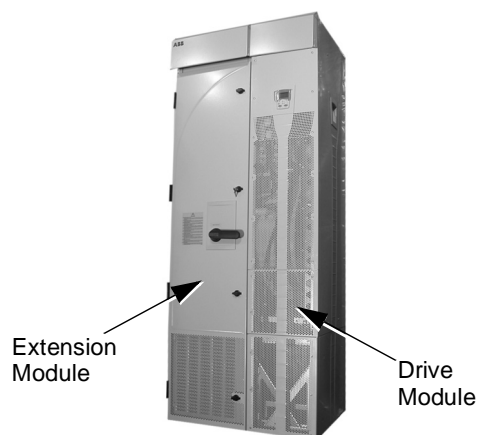
Introduction

ACS550-U2 drives include an extension module that is not covered in the ACS550-02/U2 User's Manual. The extension module is attached to the drive module at the factory.

This supplement provides the additional extension module information required for ACS550-U2 drives:

- Additional installation steps and considerations.
- Steps for separating the drive from the extension module for drive service access.
- Dimensions for the extension module.

This supplement requires and routinely refers to the document: ACS550-02/U2 User's Manual.



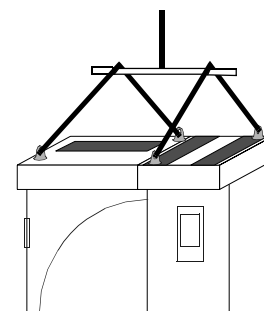
WARNING! Only qualified electricians are allowed to carry out the work described in this chapter. Follow requirements in "Safety" on the first pages of this manual. Ignoring the safety instructions can cause injury or death.

Planning

When planning for cable/conduit routing, refer to the ACS550-02/U2 User's Manual, but note that, for the ACS550-U2, all connections are routed through the top of the extension module.

Moving the Unit

1. Move the transport package by pallet truck to the installation site.
2. Unpack the transport package.
3. To position the unit, use a lift, connected as shown.



Mounting

Fastening the Unit

See the "Dimensional Drawings" in the "Technical Data" section of this document for the exact locations of the mounting points.

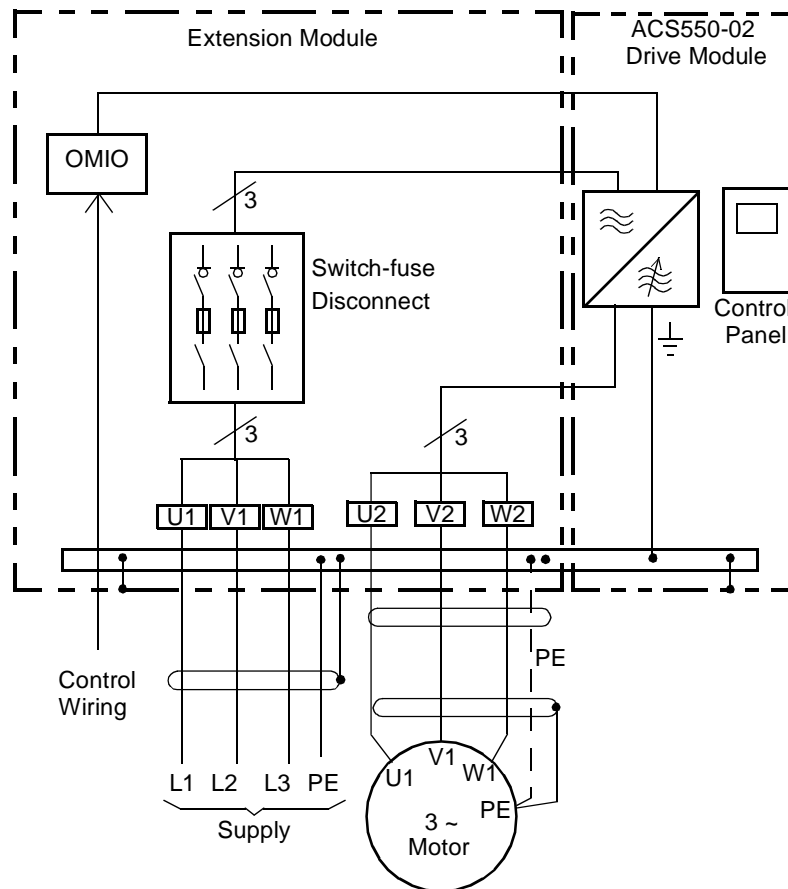
1. Use at least four screws – two at the front, two at the back – to attach the unit base plate to the floor.
2. Use at least two screws to attach the back of the enclosure to a wall.

There are two holes available at the top of each: the extension module and the drive module.

Connecting Power and Control Cables

Additional considerations that apply with the enclosure extension:

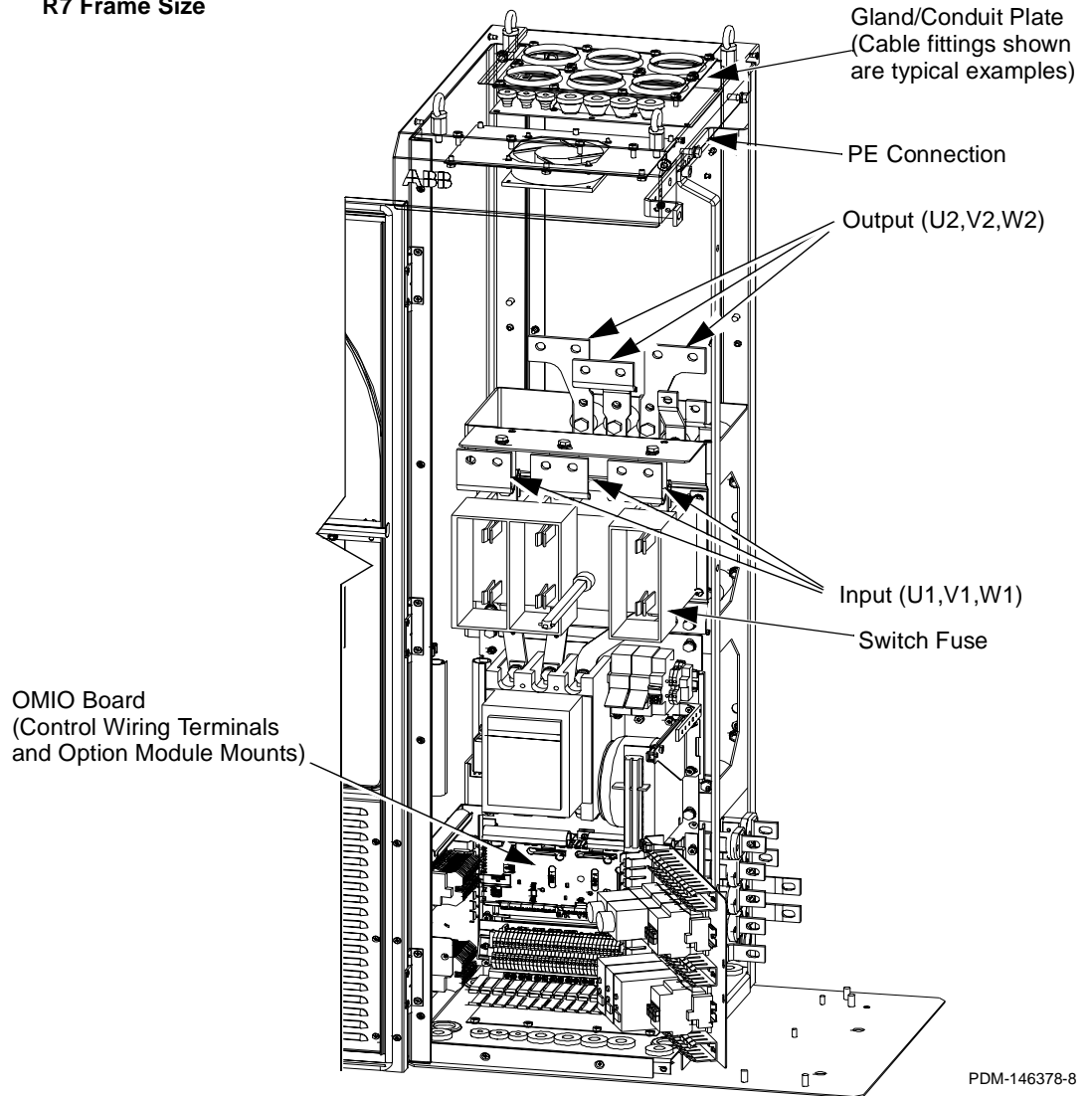
- The power cable connection diagram that applies for the ACS550-U2 is:



- Temporarily remove the upper high voltage shield (clear plastic) to gain access to the power connections in the extension module.
- To avoid metal shavings inside the cabinet, temporarily remove the gland/conduit plate at the top of the extension module. Then drill holes and mount conduit or cable fittings as needed.

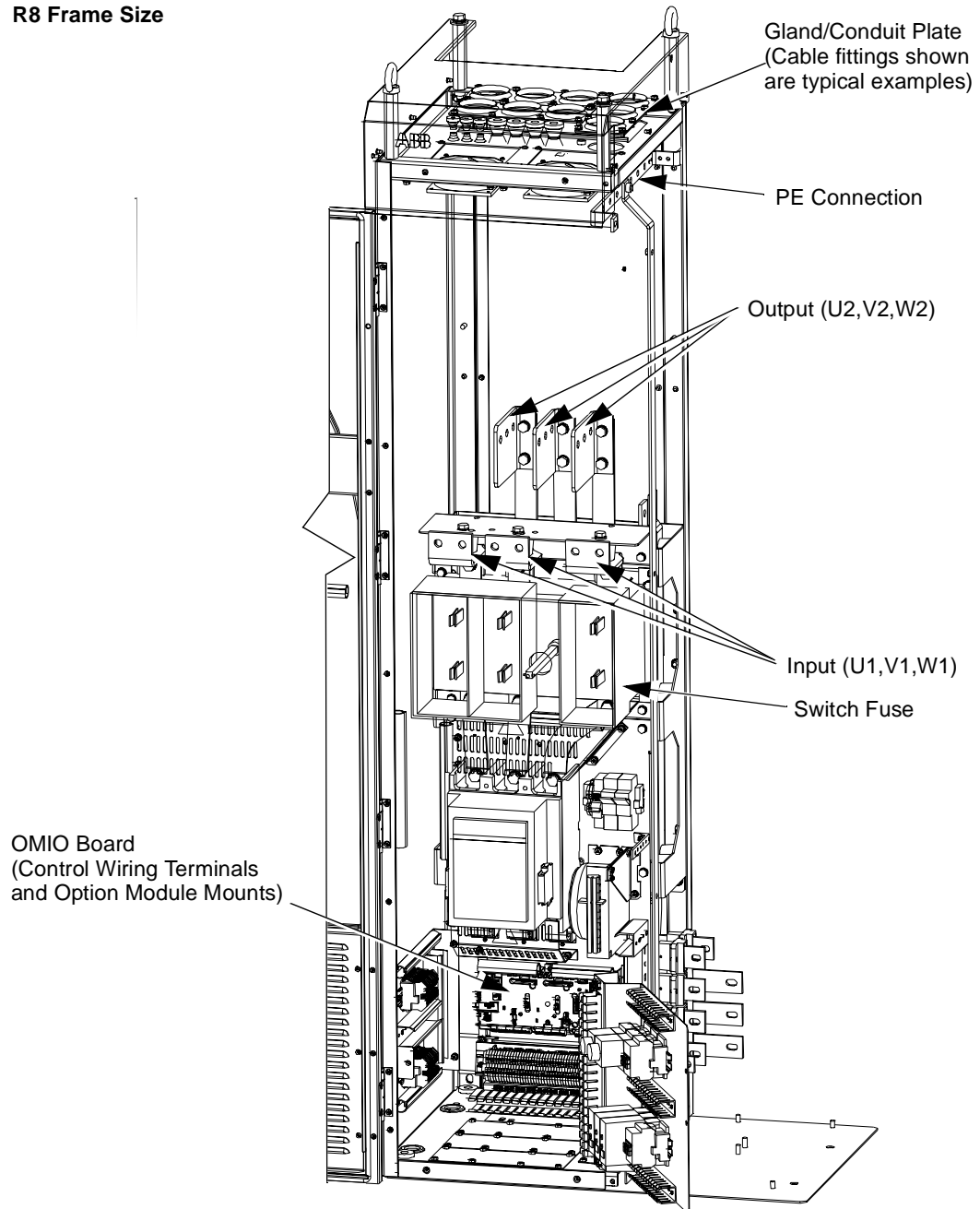
- Route all power and control wiring through the top of the extension module.
- The following diagram shows the power and control connection points in the enclosure module supplied with the R7 drive module.

R7 Frame Size



- The following diagram shows the power and control connection points in the enclosure module supplied with the R8 drive module.

R8 Frame Size



- Re-mount the high voltage shield.



Warning! Always replace all high voltage shields before applying power.

- See the ACS550-02/U2 User's Manual for detailed instructions on control connections, installation check list and drive start-up process.

Maintenance

This section describes the procedure for separating the drive and extension modules, which is required to provide service access to the drive module.

Safety



WARNING! Read "Safety" on the first pages of this manual before performing any maintenance on the equipment. Ignoring the safety instructions can cause injury or death. **Note:** There are parts carrying dangerous voltages near the OMIO board when the drive is powered.

Separating the Drive and Extension Modules

The drive module is mounted on a trolley that straddles a pedestal. The following procedure removes mechanical connections so that the drive module and trolley can roll forward for service access.

1. Disconnect all power sources from the drive/extension modules and wait at least 5 minutes for internal capacitors to fully discharge.
2. Remove all front covers from the drive module.
3. Disconnect the control panel cable.
4. Remove the upper side plate from the drive module if convenient.
5. Remove screws (if any) that fasten the drive module to the wall.
6. Inside the pedestal, toward the rear are screws that attach the drive bus bars to the pedestal bus bars. The connections are staggered for easy access using a wrench with an extension. Remove these screws (6).

Torque when re-assembling:

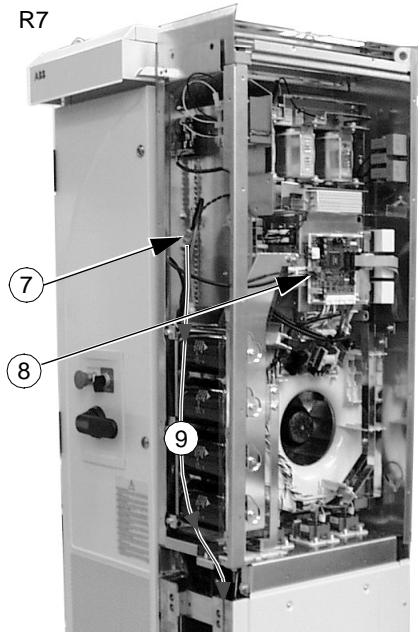
- R7: M8 (5/16 in) screws, 15...22 Nm (11...16 lb ft)
- R8: M10 (3/8 in) screws, 30...44 Nm (22...32 lb ft)



Warning! Be careful not to drop screws inside the pedestal. Loose metal pieces inside the unit may cause damage.



7. The following cables between the drive and the extension module are split by a connector located at the front of the drive. Disconnect both cables at this location.
 - The power supply cable to the OMIO board.
 - The power supply cable to the extension module cooling fan.
8. At the OTIF board, disconnect the two fiber optic cables. Make note of the terminal colors for use when reconnecting.
9. Carefully remove the cables disconnected in the above steps: Pull the cables down inside the pedestal and bundle them so that they will not get damaged or caught in the trolley when the drive module is wheeled out.



10. Remove screws fastening the drive module trolley to the pedestal.



Warning! These screws are an important step during re-assembly – the screws are required for grounding the drive.

11. **R8:** The front of the trolley includes support braces that fold out. Lift each brace slightly and fold it out.
12. Remove screws that fasten the drive module to the extension module.



CAUTION! The drive module is now separated and could tip over. Use care when moving the drive module.

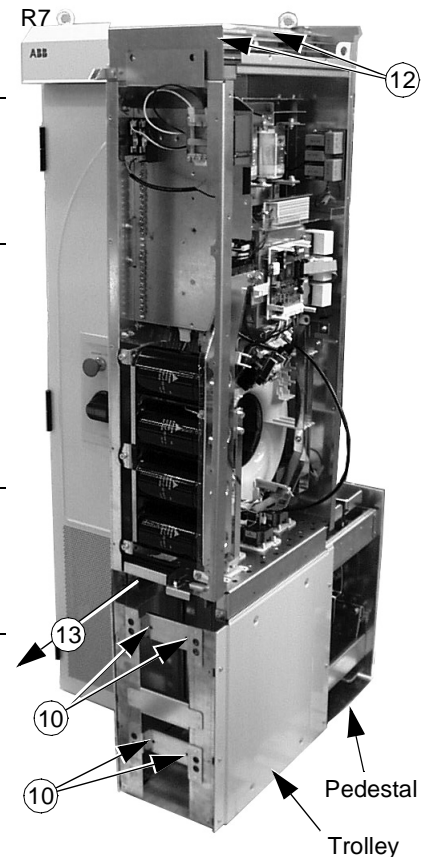
13. Pull on the handle to wheel the drive module out.

Drive Maintenance

See the ACS550-02/U2 User's Manual for drive maintenance procedures.

Re-Assembly

Re-attach the modules in reverse order to the above.



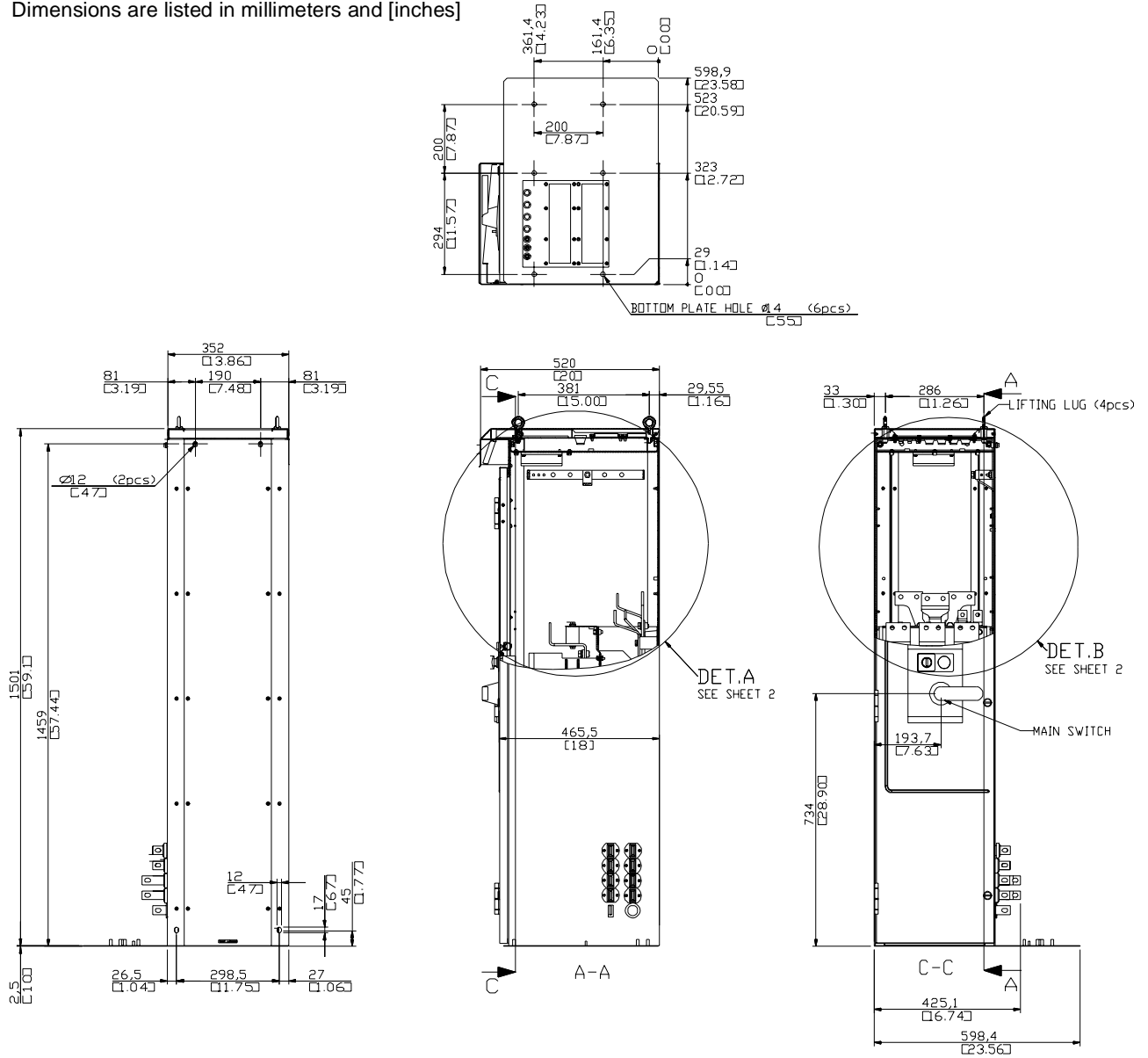
Technical Data

Dimensional Drawings

See the ACS550-02/U2 User's Manual for drive module dimensions.

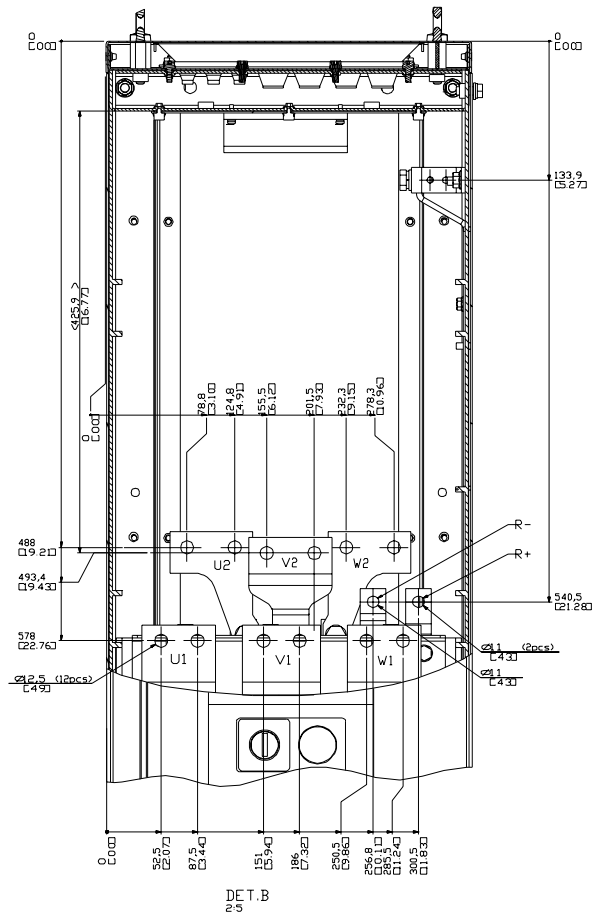
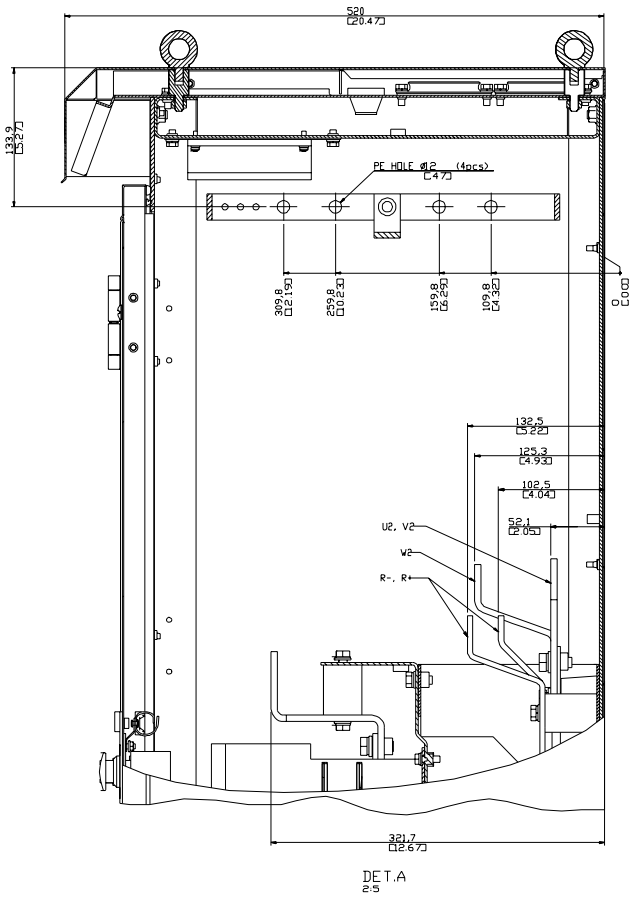
Extension Module R7

Dimensions are listed in millimeters and [inches]



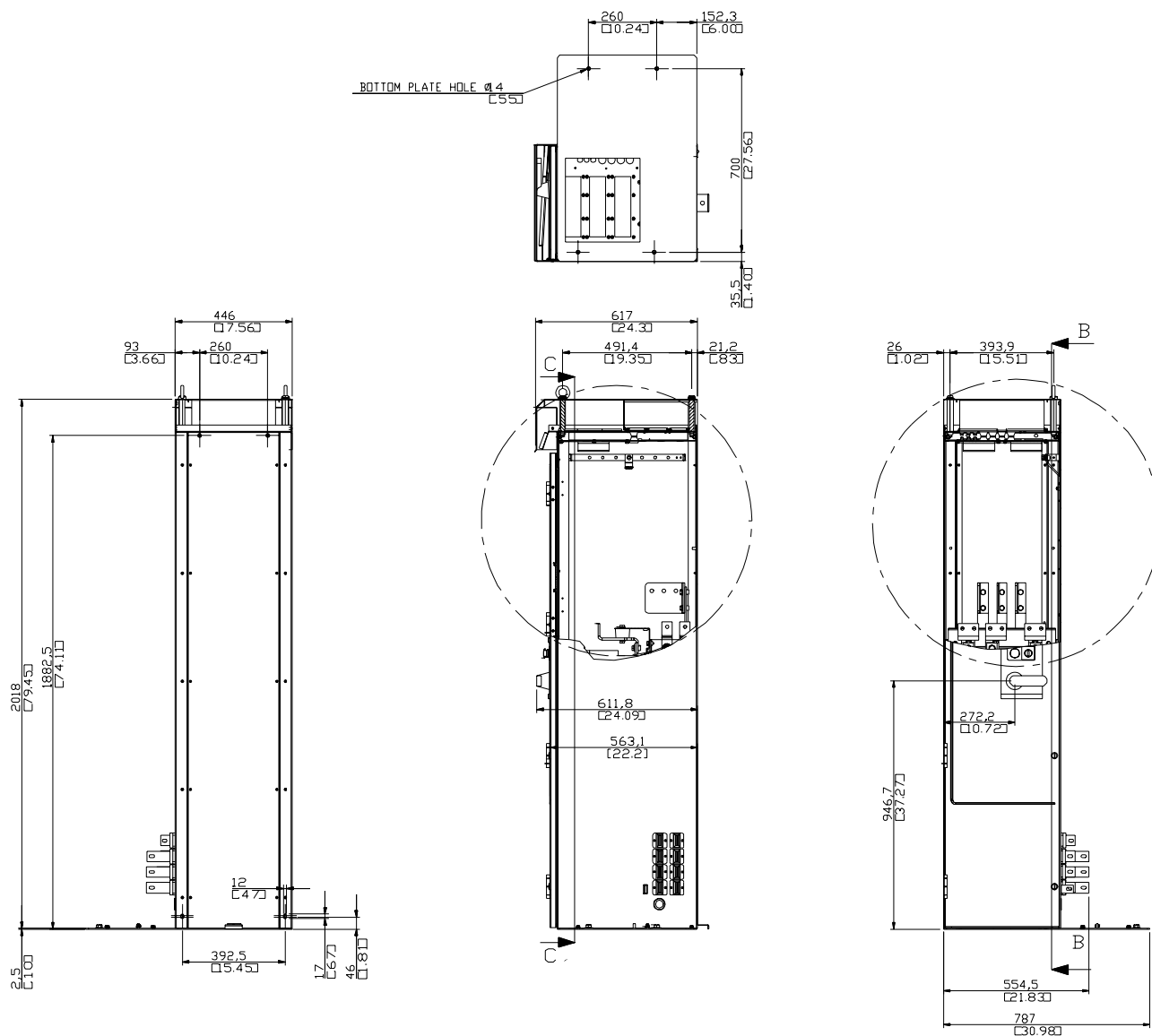
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Detail



Dimensions are listed in millimeters and [inches]

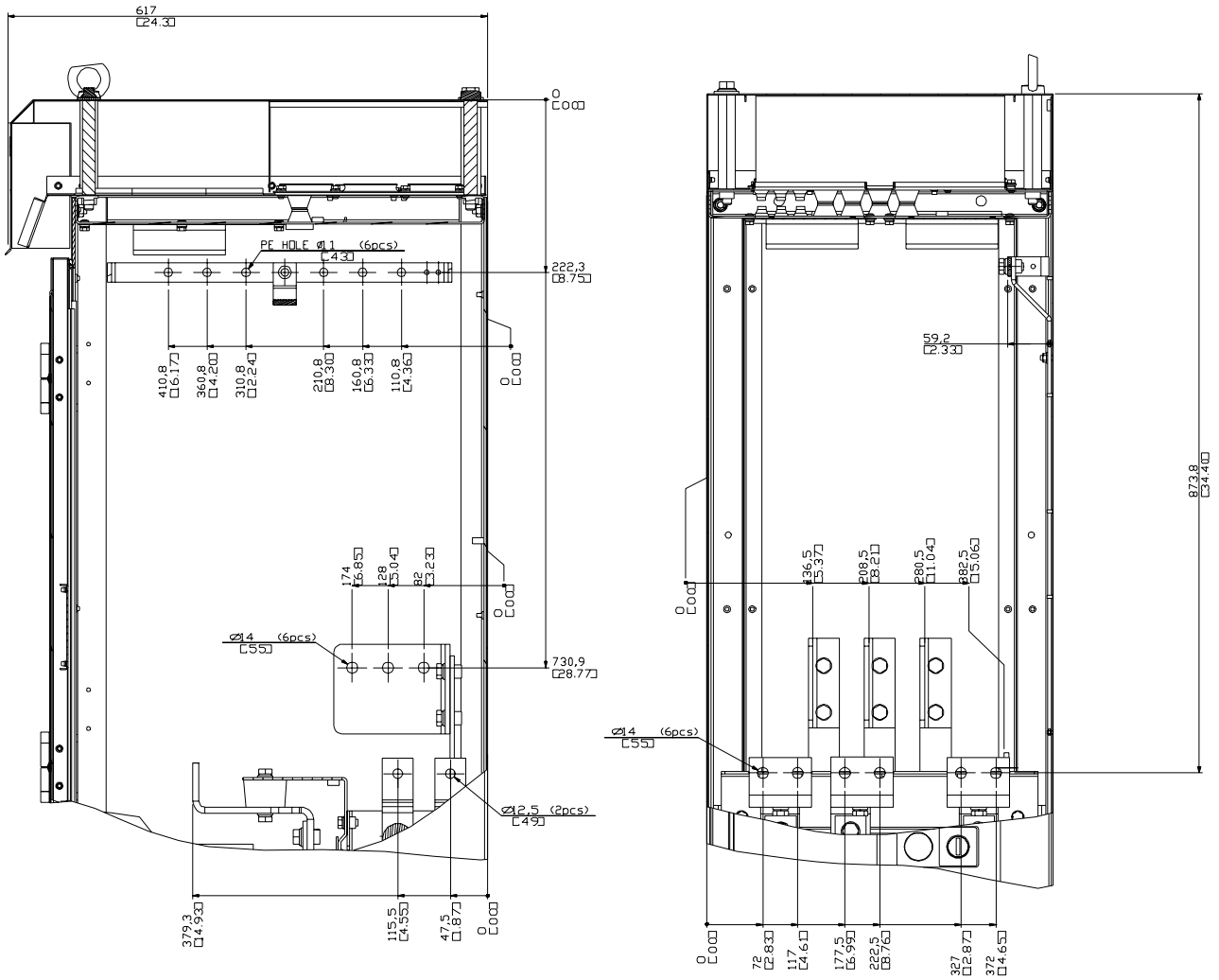
Extension Module R8



Dimensions are listed in millimeters and [inches]

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Detail



Dimensions are listed in millimeters and [inches]



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