To install the drive to a DIN rail
1. Move the locking part to the left.
2. Push and hold the locking button down.
3. Put the top tabs of the drive onto the top of the DIN rail.
4. Put the bottom end of the DIN rail installation tab in position.
5. Release the locking button.
6. Move the locking part to the right.
7. Make sure that the drive is correctly installed.
8. To remove the drive, use a flat-head screwdriver to open the locking part.

3. Measure the insulation resistance
Drive: Do not do voltage tolerance or insulation resistance tests on the drive, because this can cause damage to the drive.
Input power cable: Before you connect the input power cable, measure the insulation of the input power cable. Obey the local regulations.
Motor and motor cable:
1. Make sure that the motor cable is connected to the motor and disconnected from the drive input terminals (U1, T1, V1, and W1).
2. Use a voltage of 550 V DC to measure the insulation resistance between each phase conductor and the protective earth conductor. The insulation resistance of an ABB motor must be more than 150 Mohm (at 25 °C/77 °F). For the insulation resistance of other motors, refer to the manufacturer’s documentation.
3. Make sure that there is moisture in the motor, dry the motor and do the measurement again.

4. Select the cables
Input power cable: For the best EMC performance, use a symmetrical shielded cable and separate the cables on the outside of the drive.
Motor cable: Use a symmetrical shielded cable.
Control cable: Use a double-shielded twisted-pair cable for the analog signals. Use a double-or single-shielded cable for the digital, noisy and I/O signals. Do not use 24 and 115/230 V signals in the same cable.

5. Connect the power cables

6. Install the drive to the DIN rail
1. Move the locking part to the left.
2. Push and hold the locking button down.
3. Put the top tabs of the drive onto the top of the DIN rail.
4. Put the bottom end of the DIN rail installation tab in position.

7. Connect the control cables

8. Connecting the I/O cables (ABB standard macro)

9. Connecting EIA-485 Modbus RTU terminal to the drive
Connect the fieldbus to the EIA-485 Modbus RTU terminal on the BMIO-01 module which is attached to the control of the drive. The connection diagram is shown below.

To install the drive with screws
1. Make marks onto the surface for the mounting holes.
2. Make the holes for the mounting screws and insert suitable plugs or anchors.
3. Start to tighten the screws into the mounting holes.
4. Install the drive onto the mounting screws.
5. Tighten the mounting screws.

To install the drive without screws
1. Move the locking part to the left.
2. Push and hold the locking button down.
3. Put the top tabs of the drive onto the top of the DIN rail.
4. Put the bottom end of the DIN rail installation tab in position.

WARNING! Obey the safety instructions in the ACS480 Hardware manual (3AXD5000047392 [EN]) and ACS480 Firmware manual (3AXD5000047399 [EN]). You can download these manuals from the ABB website or order hard copies of the manuals with the delivery. Keep this guide near the unit at all times.

1. Examine the installation area
The drive is intended for cabinet installation and has an ingress protection rating of IP54.

Make sure that the installation area:
• There is sufficient space above and below the drive maintenance work. Refer to Free space requirements.

2. Install the drive
You can install the drive with screws or to a DIN rail.

Termination requirement
• Make sure that there is a minimum of 75 mm of free space at the top and bottom of the drive for cooling air.
• You can install the R1, R2, R3 and R4 drives tilted by up to 90 degrees, from left to fully horizontal orientation.
• You can install several drives side by side. Side-mounted options require detailed instructions. Refer to the detailed instructions in the Dimensions and weights.

WARNING! Do not install the drive upside down. Make sure that the cooling air exhaust (at the top) is always above the cooling air inlet (at the bottom).
### Fieldbus communications

You can connect the drive to a serial communication link via a fieldbus adapter module or the embedded fieldbus interface. The embedded fieldbus interface is included in the I/O module, and it supports the Modbus RTU protocol. The table shows the minimum set of parameters for embedded Modbus communication. For the fieldbus adapter modules, refer to the appropriate documentation.

#### Note

Embedded Modbus is validated with the I/O module.

To configure embedded Modbus communications:

1. Connect the fieldbus cable and the required I/O signals. Refer to Default I/O connections (ABB standard manual).
2. If it is necessary, set the termination switch to ON.
3. Power up the drive.
4. Select the I/O-BUS 2-wire macro from Primary settings or with parameter 96.04.
5. Configure fieldbus communications from the parameter list.
6. The minimum parameters that apply to embedded Modbus RTU.

### Fuses

For more information on fuses, circuit breakers and manual motor protectors, refer to the ACS480 Hardware manual (3AXD50000047399 [EN]).

#### Ambient conditions

Required parameters:

- Location
- Setting
- Nominal use
- Heavy-duty use
- Frame size

#### Dimensions and weights

Free space requirements

<table>
<thead>
<tr>
<th>Name</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1</td>
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<td>M3</td>
<td>11</td>
</tr>
<tr>
<td>M4</td>
<td>11</td>
</tr>
</tbody>
</table>

#### Certifications

The applicable certifications are shown on the product’s type label.

#### Declaration of conformity

In conformity with all the relevant safety component requirements of EU Machinery Directive 2006/42/EC, the drive is supplied with the necessary safety function to use the safety component functionality.

The following harmonised standards have been applied:

- ABB limited macro is not selected.

The products referred in this Declaration of Conformity fulfill the relevant positions of other European Union Directives which are notified in Single Declaration of Conformity 3AXD50000047481.

Person authorized to compile the technical file.

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Helsinki, 19 June 2018

Manufacturer representative: Arto Helle

### Related documents

- ACS480 Hardware manual
- ACS480 Firmware manual
- ACS480 Quick installation and start-up guide
- FDA0-01 DeviceNet adapter module quick guide
- FEM0-01/15 ETHERCAT adapter module user’s manual
- FMBT-01 Modbus/TCP adapter module quick guide
- FPB-01 PRO/IBUS DP adapter module user’s manual
- FPQ-01 PROFINET adapter module quick guide

Online list of the manuals applicable to this product:

- 3AXD50000047481

Online installation videos


- https://www.youtube.com/watch?v=0aTWO7U2fas

- https://www.youtube.com/watch?v=nICGj9ntzA0


- https://www.youtube.com/watch?v=L-rGHZ8I1zg
