List of related manuals

<table>
<thead>
<tr>
<th>Drive manuals and guides</th>
<th>Code (English)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACH580 HVAC control program firmware manual</td>
<td>3AXD50000047658</td>
</tr>
<tr>
<td>Quick start-up guide for ACH580 HVAC control program</td>
<td>3AXD50000037066</td>
</tr>
<tr>
<td>ACH580-31 hardware manual</td>
<td>3AXD50000048001</td>
</tr>
<tr>
<td>ACH580-31 quick installation guide</td>
<td>3AXD50000048001</td>
</tr>
<tr>
<td>ACH580-31+<em>x</em> control panels user's manual</td>
<td>3AXD50000086885</td>
</tr>
</tbody>
</table>

Option manuals and guides

| ACH580-31+*x* control panels modules R4, R5, R9 to R13       | 3AXD50000010305 |
| AC5580-MM1 and ACH580+*x* control panels modules R3, R5, R9 (supplement) | 3AXD50000010711 |
| CDP-1 Communication adapter module user's manual            | 3AXD50000059209 |
| FPB-1/or/FPB adapter module                                 | 3AXD50000029848 |
| FCAM-01 CANopen adapter module user's manual                | 3AXD50000059880 |
| FCNA-01 ControlNet adapter module user's manual             | 3AXD50000149850 |
| FDMA-01 DeviceNet adapter module user's manual               | 3AXD50000150980 |
| FCA-01 EtherCAT adapter module user's manual                 | 3AXD50000089040 |
| FENA-01-11-21 Ethernet adapter module user's manual          | 3AXD50000038568 |
| FEPL-02 Ethernet POWERLINK adapter module user's manual      | 3AXD50000122527 |
| FLDS-01 LowVoltage adapter module user's manual              | 3AXD50000040877 |
| FFBA-01 PROFIBUS DP adapter module user's manual             | 3AXD50000171277 |
| FSCA-01 RS-485 adapter module user's manual                  | 3AXD50000170533 |

Tool and maintenance manuals and guides

| Drive composer PC tool user's manual                         | 3AXD50000074656 |
| Converter module capacitor reforming instructions           | 3AUF000009663 |
| NETA-21 remote monitoring tool user's manual                 | 3AXD50000089339 |
| NETA-21 remote monitoring tool installation and start-up guide | 3AXD50000089881 |

You can find manuals and other product documents in PDF format on the Internet. See section Document library on the Internet on the inside of the back cover. For manuals not available in the Document library, contact your local ABB representative.
EN – Quick installation guide

This guide briefly describes how to install the drive. For complete information on installation, see ACH580-31 drives hardware manual (3AXD50000037066 [English]). For start-up instructions, see ACH580 drives with HVAC control program quick start-up guide (3AXD50000047685 [English]).

To read a manual, go to www.abb.com/drives/documents and search for the document number.

Obey the safety instructions

**WARNING!** Obey these instructions. If you ignore them, injury or death, or damage to the equipment can occur:

- Only qualified electrical professionals are allowed to install and maintain the drive.
- Never work on the drive, motor cable or motor when main power is applied. If the drive is already connected to the input power, wait for 5 minutes after disconnecting the input power.
- Never work on the control cables when power is applied to the drive or to the external control circuits.
- Do not connect the drive to a voltage higher than what is marked on the type designation label.
- Always ground the drive, the motor and adjoining equipment to the protective earth (PE) bus of the power supply.
- Frames R6: The drive module is heavy and its center of gravity is high. Use a lifting device for lifting. Do not tilt the drive. Manual lifting, or overturning due to the tilting, can cause physical injury. Make sure that the wall and the fixing devices can carry the weight.
- Make sure that debris from drilling, cutting and grinding does not enter the drive.
- Make sure that the floor below the drive and the wall where the drive is installed are non-flammable.

Check if capacitors need to be reformed

If the drive has not been powered (either in storage or unused) for over three years, you must reform the capacitors.

You can determine the manufacturing date from the serial number, which you find on the type designation label attached to the drive. The serial number is of format MYYWWRRXXX. YY and WW tell the manufacturing year and week as follows:
YY: 17, 18, 19, ... for 2017, 2018, 2019, ...
WW: 01, 02, 03, ... for week 1, week 2, week 3, ...

For information on reforming the capacitors, see Converter module capacitor reforming instructions (3BFE64059629 [English]), available on the Internet at www.abb.com/drives/documents.

Data

**IEC ratings**

<table>
<thead>
<tr>
<th>ACRE580-3F-</th>
<th>Cable Cu (mm²)</th>
<th>aR fuse</th>
<th>Losses (W)</th>
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<tr>
<td>3-phase Uₚ = 400 V (380...415 V)</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>09A-4</td>
<td>3×2.5+2.5</td>
<td>170M1561</td>
<td>228</td>
</tr>
<tr>
<td>12A-4</td>
<td>3×2.5+2.5</td>
<td>170M1561</td>
<td>329</td>
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<tr>
<td>18A-4</td>
<td>3×6+6</td>
<td>170M1563</td>
<td>379</td>
</tr>
<tr>
<td>18A-4</td>
<td>3×6+6</td>
<td>170M1563</td>
<td>379</td>
</tr>
<tr>
<td>033A-4</td>
<td>3×10+10</td>
<td>170M1565</td>
<td>625</td>
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<tr>
<td>033A-4</td>
<td>3×10+10</td>
<td>170M1565</td>
<td>751</td>
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<tr>
<td>045A-4</td>
<td>3×15+10</td>
<td>170M1565</td>
<td>972</td>
</tr>
<tr>
<td>062A-4</td>
<td>3×25+16</td>
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<tr>
<td>073A-4</td>
<td>3×35+16</td>
<td>170M1566</td>
<td>1502</td>
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<tr>
<td>088A-4</td>
<td>3×50+25</td>
<td>170M1566</td>
<td>1904</td>
</tr>
</tbody>
</table>

Select the power cables

See Data on page 4.

Ensure cooling

See Data on page 4. No condensation or frost is allowed. The allowed operating temperature range of the drive without derating is -15 to +40 °C.

Protect the drive and input power cable

See Data on page 4.

A – Install the drive on the wall

See figure A on page 19.

B – Remove the cover

Remove the cover/s. See figures B (R3) and B (R6)... on page 19.
C – Check the compatibility with IT (ungrounded) and
corner-grounded delta systems

See figure C on page 19.

⚠️ WARNING! If the drive will be connected on an IT (ungrounded or high-resistance grounded) system or on a corner-grounded delta system, disconnect the EMC filter and ground-to-phase varistor. See the drive hardware manual.

D – Check the insulation of the power cables and the motor

Connect the motor cable at the motor end. For minimum radio frequency interference, ground the motor cable shield 360 degrees at the cable entry of the motor terminal box. See figure D on page 19.

Check the insulation of motor and motor cable. See figure D on page 19. Note: Moisture inside the motor casing will reduce the insulation resistance. If moisture is suspected, dry the motor and repeat the measurement.

Check the insulation of the input cable before connecting it to the drive. Obey the local regulations.

E – Attach the warning stickers in local languages

See figure E on page 20.

F – Connect the power cables

Use symmetrical shielded cable for motor cabling. If the cable shield is the sole PE conductor, make sure that is has sufficient conductivity for the PE.

Note for frame R3: Make sure that you have an additional PE conductor in the input power cabling. See the hardware manual for more information.

Procedure:
1. Frame R6: Remove the shroud on the power cable terminals. See figure F (R6)… on page 20.
2. Remove the rubber grommets from the bottom plate for the cables to be connected. See figure …F… on page 20.
3. Cut an adequate hole into the rubber grommets. Slide the grommets onto the cables.
4. Prepare the ends of the cables. See figure …F… on page 20.
6. **EN – Quick installation guide**

   The bare shield will be grounded 360 degrees. Mark the pigtail made from the shield as a PE conductor with yellow-and-green color.

   Two alternative symmetrical three-conductor cable types are shown, and one four-conductor cable type. The four-conductor cable is only allowed for the input power cabling.

   If you use aluminum cables, put grease to the peeled aluminum cable before connecting it to the drive.

5. Put the cables through the holes of the cable entry plate and attach the grommets to the holes.

6. Connect the cables (use the torques defined in the figure). See figures **…F…** on page 20:
   - Ground the shield 360 degrees by tightening the clamp of the power cable grounding shelf onto the stripped part of the cable.
   - Connect the twisted shield of the cable to the grounding terminal.
   - Use a separate grounding PE cable (6a) or a cable with a separate PE conductor (6b) if the conductivity of the shield does not meet the requirements for the PE conductor. If the protective PE conductor is smaller than 10 mm², you must use a second earthing conductor. See the hardware manual for more information.
   - Frame R3: Connect the additional PE conductor of the input power cabling.
   - Connect the phase conductors of the motor cable to the T1/U, T2/V and T3/W terminals and the phase conductors of the input cable to the L1, L2 and L3 terminals.

7. Frame R6 types bigger than -040A-x: Cut tabs in the shroud for the installed cables.

8. Frames R6: Install the shroud on the power cable terminals. See figure **…F (R6)…** on page 21.

9. Secure the cables outside the drive mechanically.

**G – Connect the control cables**

Procedure:

1. Remove the front cover(s) if not already removed.

2. **Frame R3:** Lift the control panel holder up. See figure **G (R3)…** on page 21.

3. Cut an adequate hole into the rubber grommet and slide the grommet onto the cable. Slide the cable through a hole in the bottom plate and attach the grommet to the hole.

4. Route the cables. **Frame R3:** See figure **…G (R3)…** on page 21.
   **Frame R6:** See figure **…G (R6)…** on page 21.
5. Ground the outer shield of the cable 360 degrees under the grounding clamp. Keep the cable unstripped as close to the terminals of the control board as possible.

6. Secure the cables inside the drive mechanically.

7. Ground the pair-cable shields and grounding wire at the grounding terminal (SCR) of the control unit.

8. Connect the conductors to the appropriate terminals of the control unit. See Default IO connection diagram on page 8.

9. Wire the optional modules if included in the delivery. See the option module user's manual or installation guide.

10. Secure the cables outside the drive mechanically.

**Note:**
- Leave the other ends of the control cable shields unconnected.
- Keep any signal wire pairs twisted as close to the terminals as possible.

**H – Reinstall cover(s)**

See figures H (R3, R6) on page 22.
### Default IO connection diagram

#### X1
- **Digital cable shield (screen)**
- **A1** Output frequency/speed reference 0…10 V
- **AI** Analog input circuit common
- **+10V** Reference voltage +10 V DC
- **AV** Actual feedback
- **AI** Analog input circuit common
- **AO** Output frequency 0…10 V
- **AL** Motor control 0…10 V
- **AO** Analog output circuit common

#### X2 & X3
- **AI** Aux. voltage output and programmable digital inputs
- **AI** Analog input output max. 250 mA

#### OL & O2
- **RO** Relay outputs
- **V** Damper control
- **RO** Running
- **RO** Fault (-1)

#### X4
- **S2** Embedded fieldbus, EFB (EIA-485)
- **S3** Embedd fieldbus connection
- **S4** Terminator switch
- **S5** Bias resistors switch

#### X5
- **SI** Safe torque off
- **DI** Constant frequency/speed selection
- **DF** Start interface T (T = allow start)

#### X6, X7, X8
- **RO** Relay outputs
- **AI** Analog output circuit common
- **AI** Analog input circuit common

### Notes
- **Total load capacity of the Auxiliary voltage output +24V (X2:10) is 6.0 W (250 mA / 24 V DC).**
- **Wire sizes:** 0.14…2.5 mm² (26…14 AWG), All terminals
- **Tightening torques:** 0.5…0.6 N·m (0.4 lbf·ft)
Declaration of Conformity (EU)

We, the Manufacturer: ABB Oy
Address: Kamppi 13, 00380 Helsinki, Finland.
Phone: +358 10 2211

declare under our sole responsibility that the following product:

Frequency converter

ACB080-01-31
with regard to the safety function

Safe torque off

is in conformity with all the relevant safety component requirements of EU Machinery Directives 2006/42/EC, when declared safe function is used for safety component functionality.

The following harmonized standards have been applied:

EN-60335-2-2007
EN-ISO 13849-1:2015
EN ISO 13849-2:2010
EN ISO 13849-1:2010
EN ISO 13849-3:2008
EN 50178:2016
EN 50178:2010
EN 55011:2009

The product referred to in this Declaration of conformity must be used in accordance with the relevant provisions of the European Union Directives which are notified in Single EU Declaration of conformity 2012/06/2017.

Person authorized to compile the technical file:
Name and address: Risto Myrmäki, Kamppi 13, 00380 Helsinki, Finland.

Malmin, 15 Sep 2017

Manufacturer representative:
Vesa Kandell
Vice President, ABB Oy

20170915A2723
EN – USA quick installation guide

This guide briefly describes how to install the drive. For complete information on installation, see ACH580-31 drives hardware manual (3AXD50000037088 [English]). For start-up instructions, see ACH580 drives with HVAC control program quick start-up guide (3AXD50000047658 [English]).

To read a manual, go to abb.com/drives/documents and search for the document number.

Obey the safety instructions

**WARNING!** Obey these instructions. If you ignore them, injury or death, or damage to the equipment can occur:

- Only qualified electrical professionals are allowed to install and maintain the drive.
- Never work on the drive, motor cable or motor when main power is applied. If the drive is already connected to the input power, wait for 5 minutes after disconnecting the input power.
- Never work on the control cables when power is applied to the drive or to the external control circuits.
- Do not connect the drive to a voltage higher than what is marked on the type designation label.
- Always ground the drive, the motor and adjoining equipment to the protective earth (PE) bus of the power supply.
- **Frames R6:** The drive module is heavy and its center of gravity is high. Use a lifting device for lifting. Do not tilt the drive. Manual lifting, or overturning due to the tilting, can cause physical injury. Make sure that the wall and the fixing devices can carry the weight.
- Make sure that debris from drilling, cutting and grinding does not enter the drive.
- Make sure that the floor below the drive and the wall where the drive is installed are non-flammable.

Check if capacitors need to be reformed

If the drive has not been powered (either in storage or unused) for over three years, you must reform the capacitors.

You can determine the manufacturing date from the serial number, which you find on the type designation label attached to the drive. The serial number is of format MYYWWRXXXX. YY and WW tell the manufacturing year and week as follows:
For information on reforming the capacitors, see Converter module capacitor reforming instructions (3BFE64059629 [English]), available on the Internet at abb.com/drives/documents.

Data

**IEC ratings**

<table>
<thead>
<tr>
<th>Device</th>
<th>Cu cable (AWG/kcmil)</th>
<th>UL fuse</th>
<th>Losses (W)</th>
</tr>
</thead>
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<td>JJS-15</td>
<td>219</td>
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<td>14</td>
<td>JJS-20</td>
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<td>06A6-4</td>
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<td>JJS-110</td>
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**UL (NEC) ratings**

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<th>Device</th>
<th>Cu cable (AWG/kcmil)</th>
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<th>Losses (W)</th>
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</thead>
<tbody>
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<tr>
<td>065A-4</td>
<td>2</td>
<td>JJS-110</td>
<td>1223</td>
</tr>
</tbody>
</table>

Select the power cables

See the Data table on page 12.
Ensure cooling
See the Data table on page 12. No condensation or frost is allowed. The allowed operating temperature range of the drive without derating is -15 to +40 °C.

Protect the drive and input power cable
Check on the fuse time-current curve to ensure that the operating time of the fuse is below 0.5 seconds for frames R3 and R6. Obey the local regulations.

A – Install the drive on the wall
See figure A on page 23.
Frames R6 of UL Type 12 (option +B056): Install an additional hood on top of the drive before you tighten the upper fastening screws. Place the vertical edge of the hood in between the wall and the drive back plate. Then tighten the screws to fasten the hood and drive on its place. See figure A (R6) on page 23.

B – Remove the cover
Remove the cover(s). See figures B (R3) and B (R6)... on page 23.

C – Check the compatibility with IT (ungrounded) and corner-grounded delta systems
See figure C on page 23.

⚠️ WARNING! If the drive will be connected on an IT (ungrounded or high-resistance grounded) system or on a corner-grounded delta system, disconnect the EMC filter and ground-to-phase varistor. See the drive hardware manual.

D – Check the insulation of the power cables and the motor
Check the insulation of motor and motor cable. See figure D on page 24. Note: Moisture inside the motor casing will reduce the insulation resistance. If moisture is suspected, dry the motor and repeat the measurement.
Check the insulation of the input cable before connecting it to the drive. Obey the local regulations.

E – Attach the warning stickers in local languages
See figure E on page 24.
F – Connect the power cables

Procedure:
1. Frame R6: Remove the shroud on the power cable terminals. See figure F (R6)… on page 24
2. Remove the rubber grommets from the bottom plate for the cable conduits to be installed. See figure …F… on page 24
3. Attach the cable conduits to the bottom plate holes. See figure …F… on page 24
4. Remove the cable shelves (4a). Reinstall the four screws to avoid moisture exchange through the empty holes! (4b). See figure …F (R6)… on page 24.
5. Strip the cable ends. (Note the extra length of the grounding conductors.) Slide the cables through the connectors. See figure …F… on page 24.
6. Connect the grounding conductors to the grounding terminals. Connect the conductors of the input and motor cables. Tighten the screws. See figures …F (R3)…, …F (R6)… on page 24.
   Connect the phase conductors of the motor cable to the T1/U, T2/V and T3/W terminals and the phase conductors of the input cable to the L1, L2 and L3 terminals.
   If the protective PE conductor is smaller than 10 mm², you must use a second earthing conductor (6a). See the hardware manual for more information.
7. Frame R6 types bigger than -040A-x: Cut tabs in the shroud for the installed cables.

G – Connect the control cables

Procedure:
1. Remove the front cover(s) if not already removed.
2. Frame R3: Lift the control panel holder up. See figure G (R3)… on page 25.
3. Remove the rubber grommets from the bottom plate for the cable conduits to be installed.
4. Attach the cable conduits to the bottom plate holes.
5. Strip the cable ends and cut to suitable length (note the extra length of the grounding conductors).
6. Route the cables. Frame R3: See figure …G (R3)… on page 25.
   Frame R6: See figure …G (R6)… on page 25.
7. Secure the cables inside the drive with cable ties.
8. Ground the pair-cable shields and grounding wire at the grounding terminal (SCR) of the control unit.

9. Connect the conductors to the appropriate terminals of the control unit. See Default IO connection diagram on page 16.

10. Wire the optional modules if included in the delivery. See the option module user's manual or installation guide.

Note:
+ Leave the other ends of the control cable shields unconnected.
+ Keep any signal wire pairs twisted as close to the terminals as possible.

H – Reinstall cover(s)

See figures H (R2, R6)... on page 26.
Default IO connection diagram

**X1** Reference voltage and analog inputs and outputs

1. 1...10 kΩ
2. A10 Output frequency/speed reference 0...10 V
3. AGND Analog input circuit common
4. +10V Reference voltage +10 V DC
5. AV Actual feedback 0...30 V DC
6. AGND Analog input circuit common
7. AV1 Output frequency 0...10 V
8. AGND Analog input circuit common
9. +24V Aux. voltage output +24 V DC, max. 250 mA
10. DGND Aux. voltage output common
11. DCOM Digital input common for all
12. DI1 Stop (0) / Start (1)
13. DI2 Not configured
14. DI3 Constant frequency/speed selection
15. DI4 Start interlock 1 (1 = allow start
16. DI5 Not configured
17. DI6 Not configured

**X2 & X3** Aux. voltage output and programmable digital inputs

18. COM Analog output circuit common
19. RO1C Damper control 250 V AC / 30 V DC 2 A
20. RO1A Running 250 V AC / 30 V DC 2 A
21. RO1B Fault (-1) 250 V AC / 30 V DC 2 A
22. RO2C Safe torque off 250 V AC / 30 V DC 2 A
23. RO2A Safe torque off. Factory connection. Both circuits must be closed for the drive to start.

**X5** Embedded fieldbus

25. B+ Embedded fieldbus, EFB (EIA-485)
26. A- Termination switch
27. BIAS Bias resistors switch
28. TERM Termination switch

**X4** Output voltage and control

29. OUT1 24 V AC/DC input to power up control unit when the main supply is disconnected.
30. OUT2 24 V AC/DC + input
31. SGND

Total load capacity of the Auxiliary voltage output +24V (X2.10) is 6.0 W (250 mA / 24 V DC).
Wire sizes: 0.14...2.5 mm² (26...14 AWG); All terminals
Tightening torques: 0.5...0.6 N m (0.4-0.6 lbf·ft)
UL checklist

WARNING! Operation of this drive requires detailed installation and operation instructions provided in the hardware and software manuals. The manuals are provided in electric format in the drive package or on the Internet. Retain the manuals with the drive at all times. Hard copies of the manuals can be ordered through the manufacturer.

• Make sure that the drive type designation label includes the cULus Listed marking.

• CAUTION - Risk of electric shock. After disconnecting the input power, always wait for 5 minutes to let the intermediate circuit capacitors discharge before you start working on the drive, motor or motor cable.

• The drive is to be used in a heated, indoor controlled environment. The drive must be installed in clean air according to enclosure classification. Cooling air must be clean, free from corrosive materials and electrically conductive dust. See the hardware manual.

• The maximum surrounding air temperature is 50 °C (122 °F) at rated current. The current is derated for 40 to 50 °C (104 to 122 °F).

• The drive is suitable for use in a circuit capable of delivering not more than 100,000 rms symmetrical amperes, 480 V maximum when protected by the UL fuses on page 12. The ampere rating is based on tests done according to the appropriate UL standard.

• The cables located within the motor circuit must be rated for at least 75 °C (167 °F) in UL-compliant installations.

• Integral solid state short circuit protection does not provide branch circuit protection. The input cable must be protected with fuses. Suitable IEC (class aR) fuses and UL (class T) fuses are listed on pages 4 and 12. These fuses provide branch circuit protection in accordance with the National Electrical Code (NEC) and Canadian Electrical Code. For installation in the United States, obey any other applicable local codes. For installation in Canada, obey any applicable provincial codes.

• Note: Circuit breakers must not be used without fuses in the USA. Contact your local representative for suitable circuit breakers.

• WARNING! The opening of the branch-circuit protective device may be an indication that a fault current has been interrupted. To reduce the risk of fire or electric shock, current-carrying parts and other components of the controller should be examined and replaced if damaged.

• The drive provides motor overload protection. For adjustments, see the firmware manual.

• For the drive overvoltage category and pollution degree, see the hardware manual.
X1 Reference voltage and analog inputs and outputs

1. OUT1 Common/electrical neutral terminal
2. A11 Output frequency/speed reference 0…10 V
3. AGND Analog input circuit common
4. A7 Reference voltage 0 V DC
5. A2 Actual feedback 0…20 mA
6. AGND Analog input circuit common
7. A11 Output frequency 0…10 V
8. A2 Motor current 0…20 mA
9. AGND Analog output circuit common

X2 & X3 Aux. voltage output and programmable digital inputs

10. A11 Aux. voltage output 12 V DC, max. 250 mA
11. DO/DI Aux. voltage output common
12. DIO/DO Digital input/output for all
13. S1 Not configured
14. S2 Not configured
15. S3 Constant frequency/speed selection
16. S4 Start/stop 1 (1 = allow start)
17. S5 Not configured
18. DGND Not configured

X4, X7, A4 Relay outputs

19. RO1C Damper control 250 V AC / 30 V DC 2 A
20. RO1A Running 250 V AC / 30 V DC 2 A
21. RO1B Fault 250 V AC / 30 V DC 2 A
22. RO2A Fault 250 V AC / 30 V DC 2 A
23. RO2B Fault 250 V AC / 30 V DC 2 A
24. RO3A Safe torque off 250 V AC / 30 V DC 2 A
25. RO3B Safe torque off 250 V AC / 30 V DC 2 A
26. RO4C Safe torque off. Factory connection. Both circuits must be closed for the drive to start.
27. RO4A Safe torque off. Factory connection. Both circuits must be closed for the drive to start.
28. RO4B Safe torque off. Factory connection. Both circuits must be closed for the drive to start.
29. B+ Embedded fieldbus, EFB (EIA-485)
30. A- Embedded fieldbus, EFB (EIA-485)
31. DGND Terminal switch
32. S4 TERMINATION switch
33. S3 BIAS Bias resistors switch
34. S2 TERM Termination switch
35. S1 SW Terminal switch
36. OUT2 Safe torque off. Factory connection. Both circuits must be closed for the drive to start.
37. OUT1 Safe torque off. Factory connection. Both circuits must be closed for the drive to start.
38. IN1 24 V AC/DC
39. IN2 24 V AC/DC

Total load capacity of the Auxiliary voltage output +24V (X2:10) is 6.0 W (250 mA / 24 V DC).
Wire sizes: 0.14…2.5 mm² (26…14 AWG). All terminals
Tightening torques: 0.5…0.6 Nm (0.4 lb·ft)

R3 IP21
R3 IP55
R6 IP21
R6 IP55
Figures USA

A (R6)

1. [Diagram of UL Type 12]
2. [Diagram of UL Type 12]
3. [Diagram of UL Type 12]
4. [Diagram of UL Type 12]

B (R6)...

1. [Diagram of UL Type 12]
2. [Diagram of UL Type 12]
3. [Diagram of UL Type 12]
4. [Diagram of UL Type 12]

C

TN-S system
IT system
Corner-grounded delta system

See the hardware manual.
1000 V DC, ≥ 100 Mohm

Drive
L1, L2, L3, T1/U, T2/V, T3/W
1.7 N·m (1.2 lbf·ft)
L1, L2, L3, T1/U, T2/V, T3/W:
5.6 N·m (4.1 lbf·ft)
2.9 N·m (2.1 lbf·ft)

0.5…0.6 N·m (0.4 lbf·ft)
Further information

Product and service inquiries
Address any inquiries about the product to your local ABB representative, quoting the type designation and serial number of the unit in question. A listing of ABB sales, support and service contacts can be found by navigating to www.abb.com/searchchannels.

Product training
For information on ABB product training, navigate to new.abb.com/service/training.

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