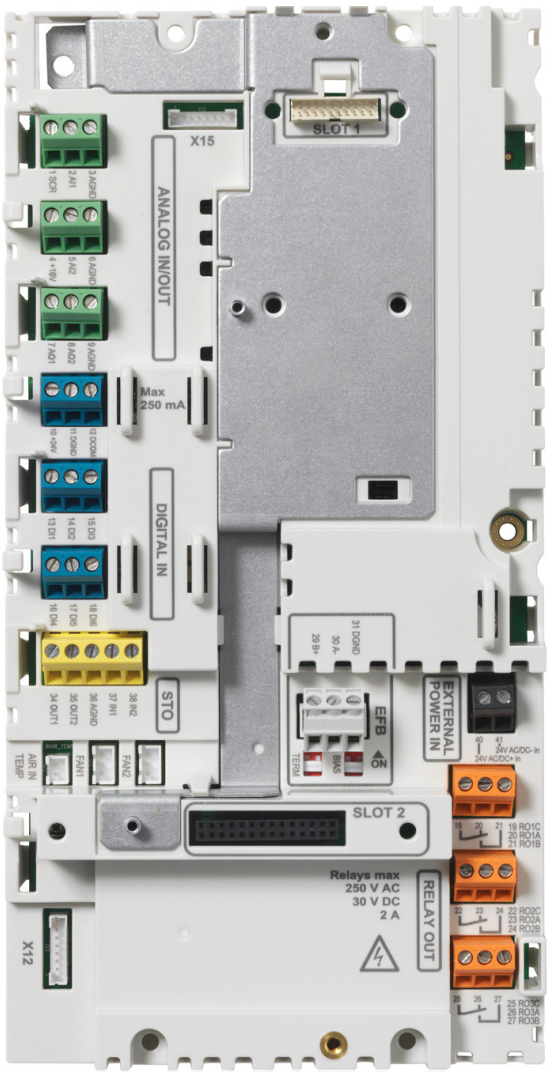
ABB low voltage drives

Supplement
External control unit (+P906) for ACH580-04, ACQ580-04 and ACS580-04 drives



List of related manuals

Drive hardware manuals and guides	Code (English)
External control unit (+P906) for ACH580-04, ACQ580-04 and ACS580-04 drives supplement	*3AXD50000167555*
ACH580-04 drive modules (250 to 500 kW) hardware manual	*3AXD50000048685*
ACH580-04 drive modules (250 to 500 kW) quick installation guide	*3AXD50000048686*
ACQ580-04 drive modules (250 to 500 kW) hardware manual	*3AXD50000048677*
ACQ580-04 drive modules (250 to 500 kW) quick installation guide	*3AXD50000048678*
ACS580-04 drive modules (250 to 500 kW) hardware manual	*3AXD50000015497*
ACS580-04 drive modules (250 to 500 kW) quick installation guide	*3AXD50000015469*
ACS-AP-x Assistant control panels user's manual	*3AUA0000085685*
DPMP-02/03 mounting platform for control panels installation guide	*3AUA0000136205*

Drive firmware manuals and guides	
ACH580 HVAC control program firmware manual	*3AXD50000027537*
ACH580 drives with HVAC control program quick start-up guide	*3AXD50000047658*
ACQ580 pump control program firmware manual	*3AXD50000035867*
ACQ580 drives with pump control program quick start-up guide	*3AXD50000048773*
ACS580 standard control program firmware manual	*3AXD50000016097*
ACS580 drives with standard control program quick start-up guide	*3AXD50000048035*

Option manuals and guides
Manuals and quick guides for I/O extension modules, fieldbus adapters, etc.

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.

The code below opens an online listing of the manuals applicable to the product:

ACH580-04 manuals

ACQ580-04 manuals

ACS580-04 manuals

External control unit (+P906) for ACH580-04, ACQ580-04 and ACS580-04 drives

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1

Introduction to the supplement

Safety

WARNING! Only qualified electricians are allowed to carry out the work described in this supplement. Read and obey the safety instructions in the product's hardware manual. If you ignore them, injury or death, or damage to the equipment can occur.

Contents of this manual

This supplement describes the unpacking and installation of the external control unit option (+P906) for use with the ACH580-04, ACQ580-04 and ACS580-04 drive modules, and the extra steps in the module replacement procedure vs. the drive with the internal control unit.

You will find links to drive hardware manuals in *List of related manuals*.

Disclaimer

The manufacturer shall have no obligation hereunder with respect to any product which (i) has been improperly repaired or altered; (ii) has been subjected to misuse, negligence or accident; (iii) has been used in a manner contrary to the Manufacturer's instructions; or (iv) has failed as a result of ordinary wear and tear.

Cybersecurity disclaimer

This product is designed to be connected to and to communicate information and data via a network interface. It is Customer's sole responsibility to provide and continuously ensure a secure connection between the product and Customer network or any other network (as

the case may be). Customer shall establish and maintain any appropriate measures (such as but not limited to the installation of firewalls, application of authentication measures, encryption of data, installation of anti-virus programs, etc) to protect the product, the network, its system and the interface against any kind of security breaches, unauthorized access, interference, intrusion, leakage and/or theft of data or information. ABB and its affiliates are not liable for damages and/or losses related to such security breaches, any unauthorized access, interference, intrusion, leakage and/or theft of data or information.

2

Hardware description

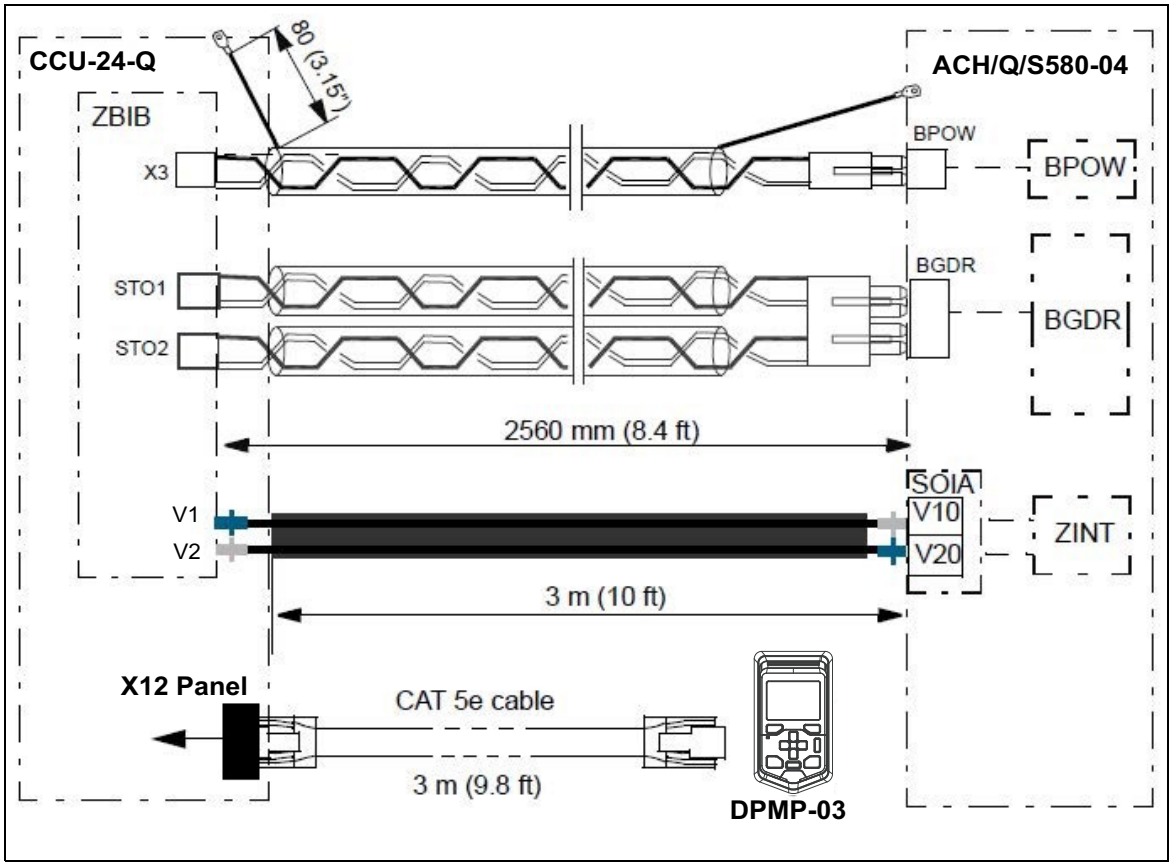
Overview

Option +P906 allows the drive control unit to be installed separately from the main drive module, for instance in a separate compartment. The external control unit option makes the drive module removal easier, as the customer control cabling can stay in place while the module is removed.

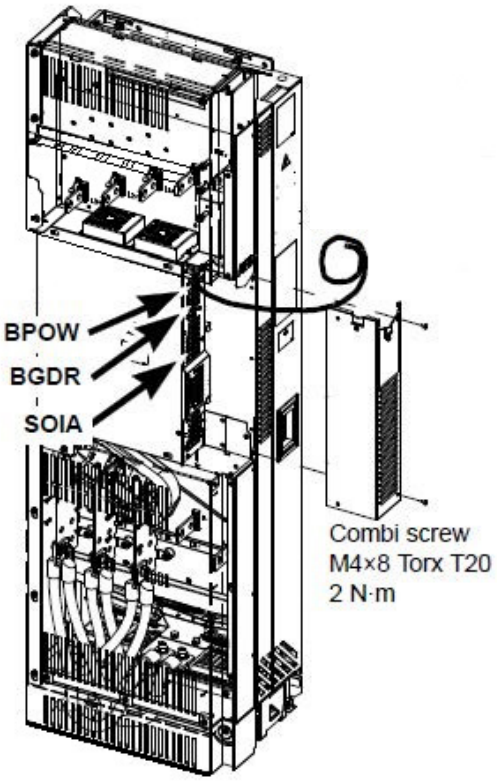
Several cables connect the control unit and the drive:

- 1 × 24 V power supply cable (with a ground connection)
- 2 × Safe Torque Off (STO) cables
- 1 × pair of optical cables for all major inverter power stack communication.

These cables are supplied with the module and come with plugs and sockets that allow disconnection at either end.



The connections at the module end are located behind one of the front covers. Details of the connections between the control unit and the module are shown below.



Control unit	Drive module
ZBIB	**BPOW**
X3:1	X3:1
X3:2	X3:2
ZBIB	**BGDR**
X7 (STO1)	X7 (STO1)
X8 (STO2)	X8 (STO2)
ZBIB	**SOIA**
V1 (gray)	V10 (black)
V2 (black)	V20 (gray)

3

Installation

Contents of this chapter

This chapter describes the unpacking and installation of the external control unit.

Unpacking the delivery and preparing the module for installation

The drive module delivery includes several boxes. The cartons on top of the main module box contain selected options (shrouds, etc., if ordered). The external control unit is in a separate box inside the main module box. Complete the instructions below to remove the cover plate and the control cable bundle from the drive, before you remove the drive module from the packing carton.

1. Cut the straps and remove the upper carton box.
2. Remove the top of the lower carton box to get access to the control unit and its cabling (still connected to the module).
3. Before you remove the module from the package, do these steps:

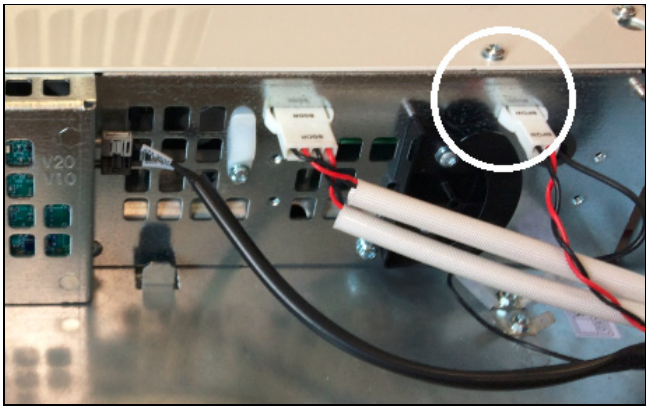
1	External control unit (+P906)
2	Control panel mounting platform (+J410)
3	Ramp
4	Control cables connected to the drive module

- a) Remove the additional boxes and fold back the plastic to show the main drive module. The control cables are delivered connected to the drive module for safe

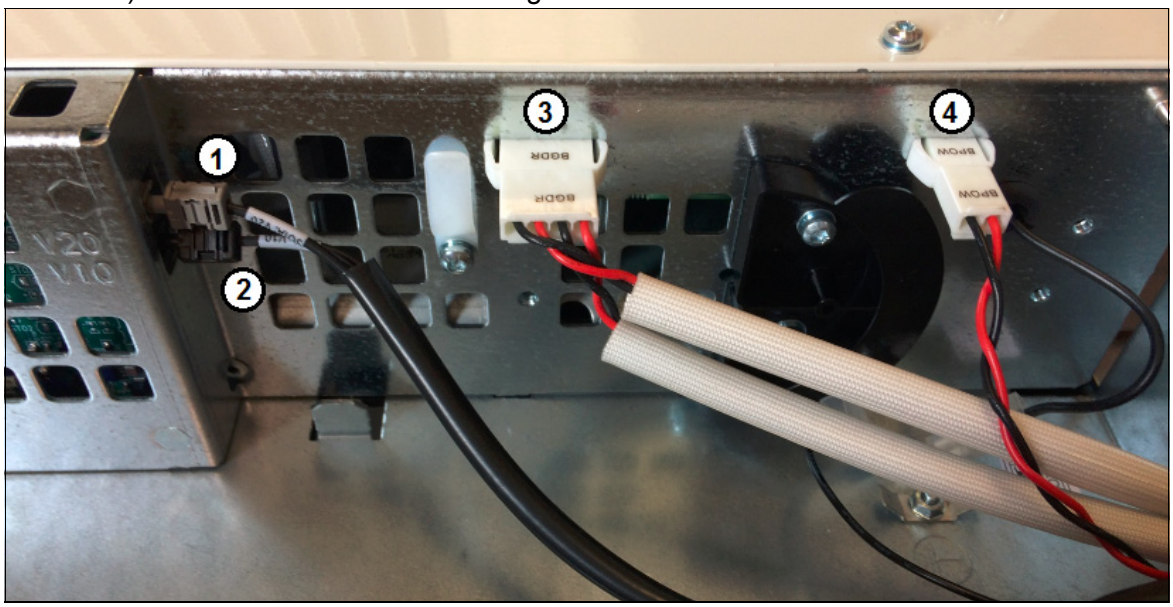
transit. It is recommended that these are removed from the module before installation.

- b) Use a T20 torx driver to remove the two screws that attach the front cover of the drive module.

- c) Pull the cover towards you until it is away from the locating pins, and place the cover to one side, to find the control connections at the drive module end.

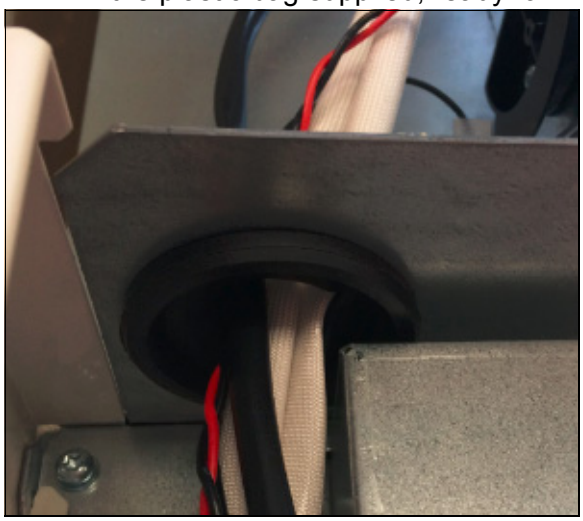


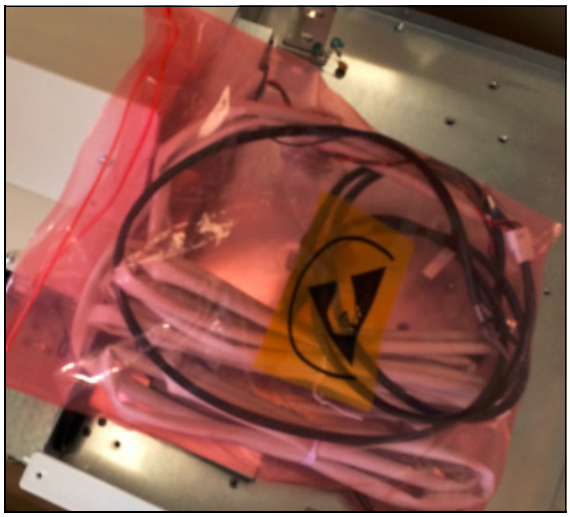
- d) Check the connection labelling for future reference.



1	V20	3	BPOW
2	V10	4	BGDR

- e) Disconnect the cables from the control connections and then carefully remove them from the drive module via the rubber grommet. Wind the cables carefully into the plastic bag supplied, ready for installation later.

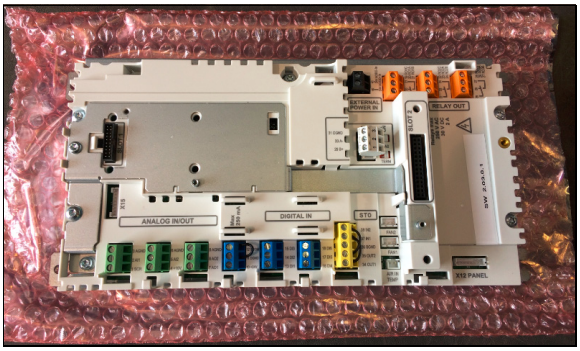
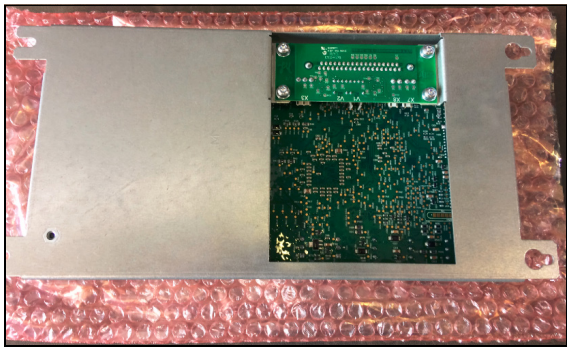




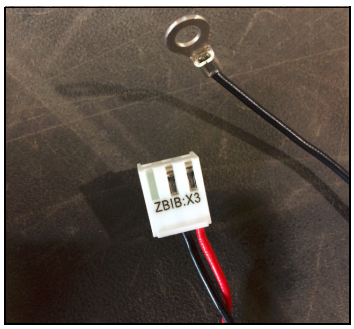
4. Remove the drive module from the packing carton. Continue with:
   - module installation: see the hardware manual,
   - installation and connections of the control unit: see section *Installing the external control unit* on page *15*.

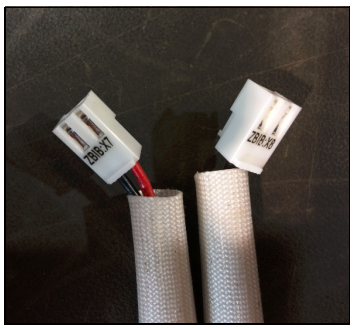
Installing the external control unit

1. Determine where the control unit is to be located. Take into account the cable lengths (see *Hardware description* on page *9*) and the physical dimensions of the control unit assembly (see *Dimension drawings* on page *21*). Install the unit inside an enclosure for protection.
2. Mark and drill the required holes to install the control unit (see *Dimension drawings* on page *21*). Be careful to control the swarf from the drill.
3. Before you attach the control unit to the cabinet plate, connect the control cables to the control unit as follows:
   - a) Remove the control unit from the anti-static bag and place it on top, then turn it over to find the rear connections.

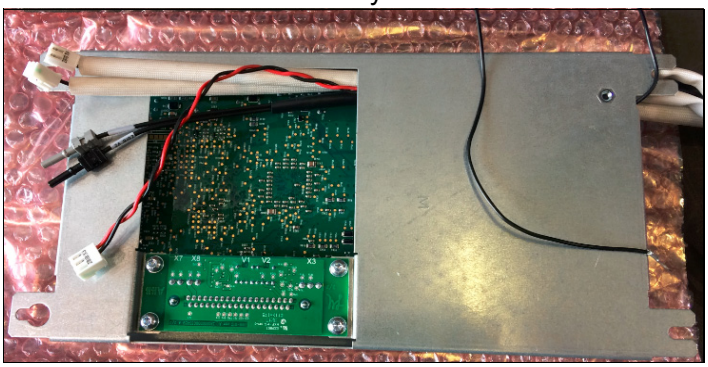



   - b) Identify the correct ends of the control cables (stored in the plastic bag earlier) to be connected to the control unit.





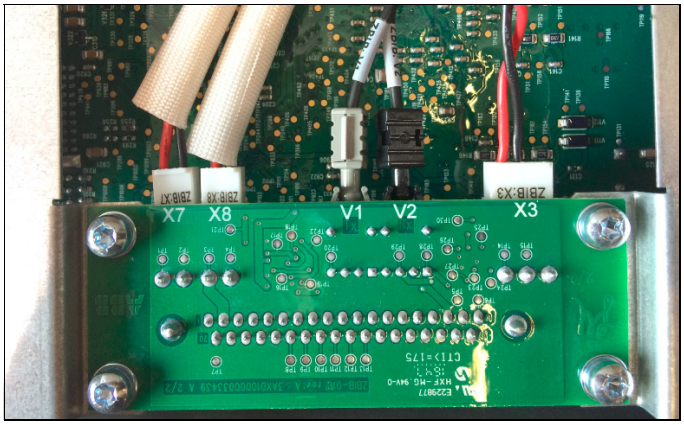
   - c) Pull the cables through the control unit assembly, so they appear in the opening at the rear of the control unit. Do not pull the ground connection through, leave it outside the assembly.



   - d) Check that the cables are not against sharp edges or bare live parts.

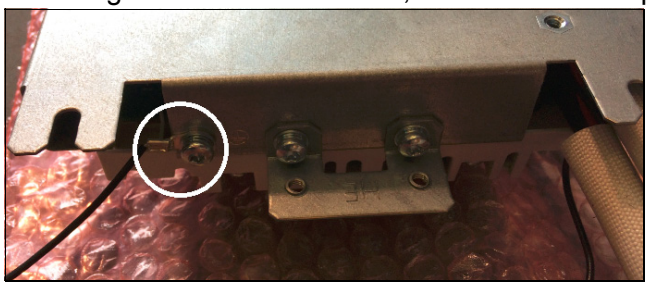
Note: Bending radius of the fibre optic cables is at least 3.5 cm (1.38 in.). Do not bend fibre optic cables during the assembly.

- e) Connect the cables to their connections on the ZBIB board (the ground connection is shown below in step 4).

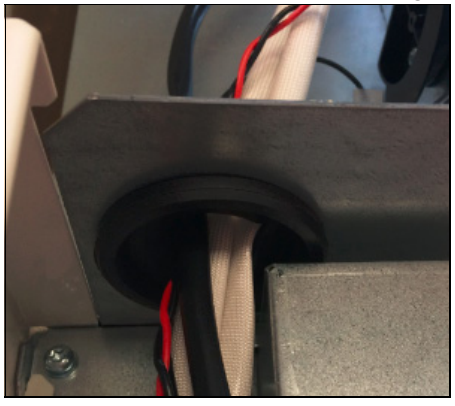


- f) Wind the remaining cables into the plastic bag again.

4. The kit includes a plate for the customer cable screens. Attach the small bracket and the ground connection first, then the full clamp plate.



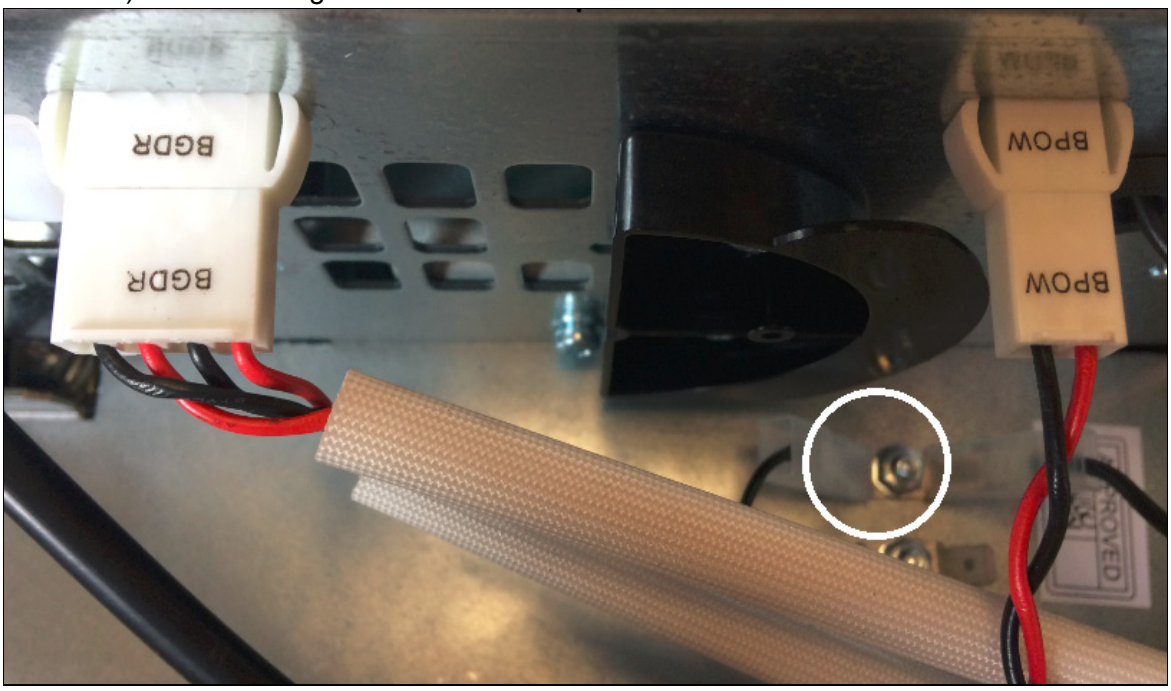
5. Attach the control unit into the cabinet. Use the fixings prepared earlier.
6. Continue to install the drive module and customer cabling as described in the hardware manual.
7. When installation is complete, connect the control cables to the drive module in reverse order to that described in *Unpacking the delivery and preparing the module for installation*. Make sure to:
   - a) Pull the cables through the rubber grommet.



   - b) Check that the cables are not against sharp edges or bare live parts.

Note: Bending radius of the fibre optic cables is at least 3.5 cm (1.38 in.). Do not bend fibre optic cables during the assembly.

- b) Connect the ground connection.



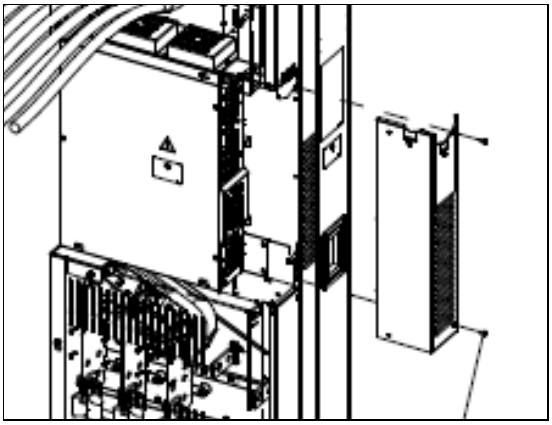
4

Maintenance

Removing the drive module

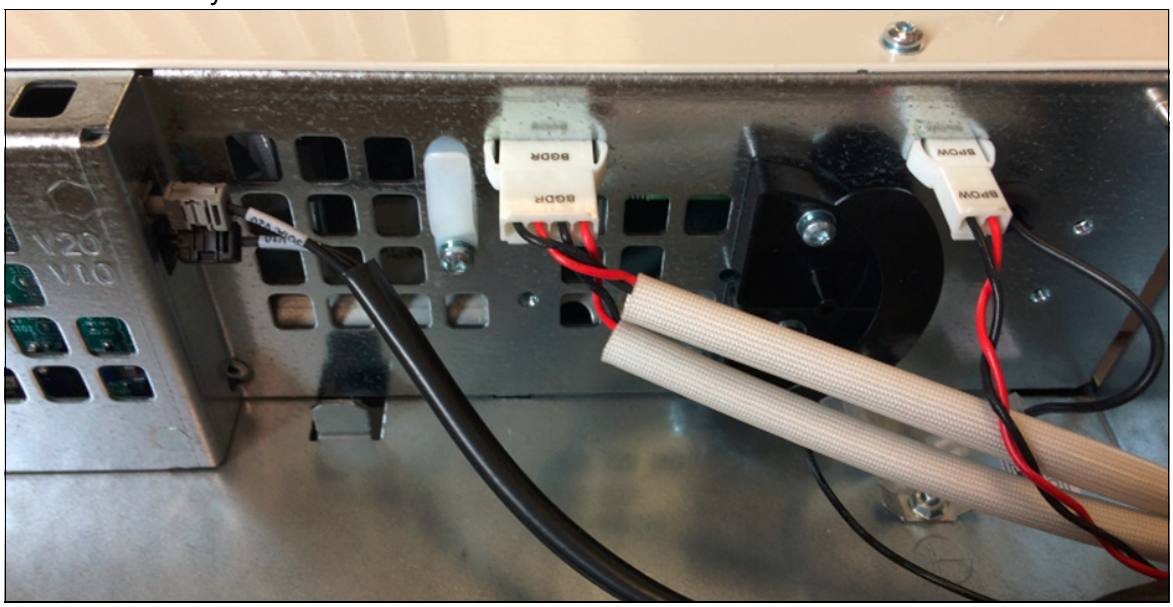
The drive hardware manual describes the removal/replacement of the drive module in full. With the external control unit option +P906, the module removal procedure differs slightly: before you detach the drive module, you must disconnect the control unit cables from the drive module in the following way:

1. Remove the front cover of the drive module to be able to disconnect the cables.



2 × Combi screws M4×8 torx T20 2 N·m

2. Disconnect the optical, 2 × STO, 24 V, and ground connections from the drive module, and carefully remove the cables from the drive.

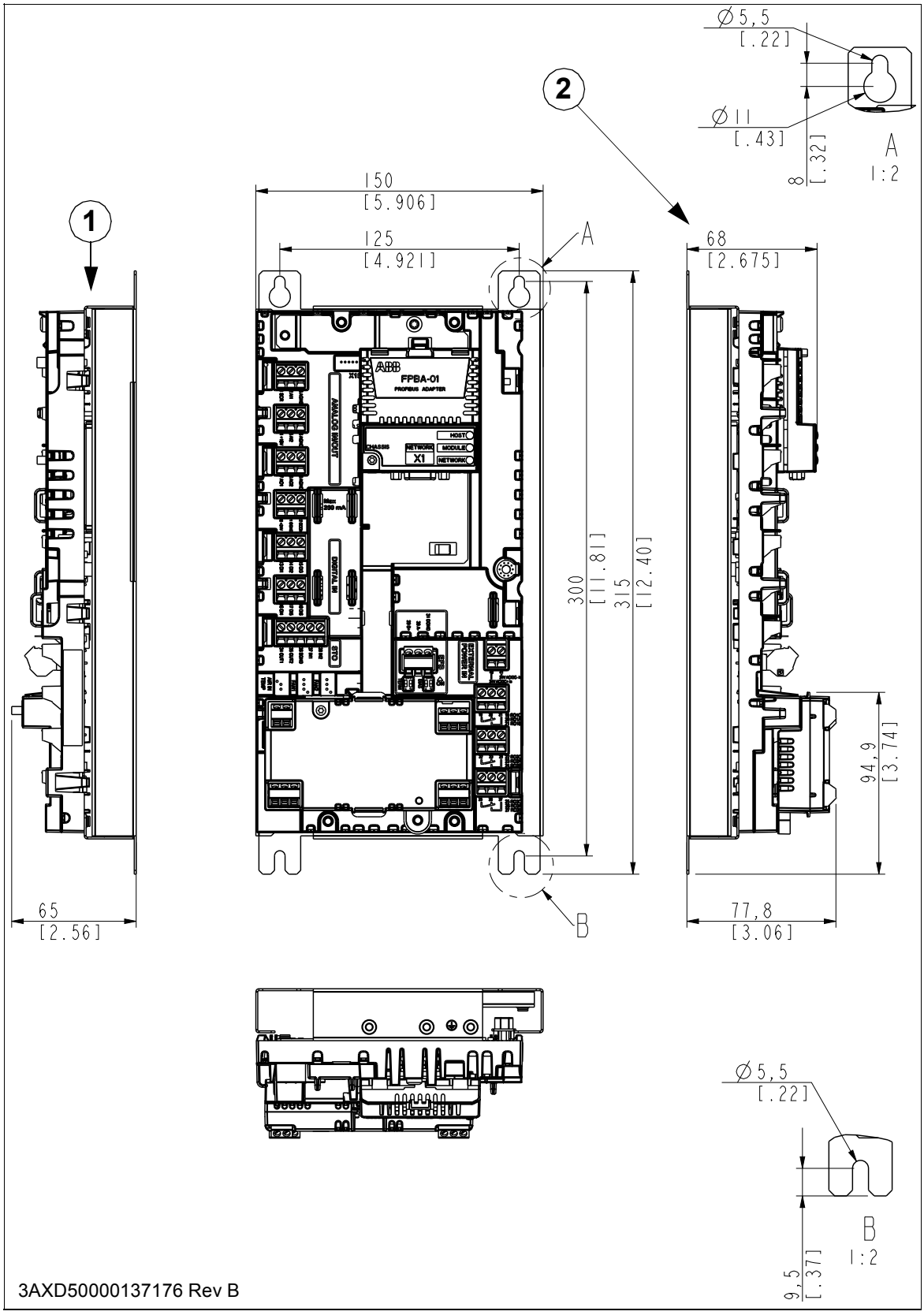


3. Wind the cables so they will not be damaged as the drive module is removed.
4. Continue the drive module removal procedure as described in the hardware manual.

5

Dimension drawings

Note: The control unit is equipped with two option modules.



Note: There are two side views in the drawing: the side view on the left (1) shows the control unit dimensions *without* option modules, the side view on the right (2) shows the dimensions *with* option modules.

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.

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