

Installation Guide

Functional Extension Options

iC7 Series



1 Instructions

1.1 Intended Use

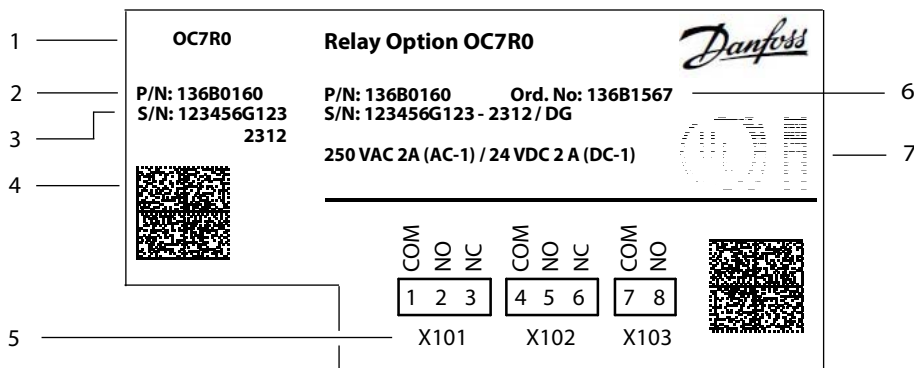
This manual is intended for qualified personnel and provides instructions on how to install an iC7 functional extension option into an iC7 system module, enclosed drive, and frequency converter. All iC7 series products are intended for use in industrial and commercial environments in accordance with local laws and standards. Do not use in applications which have non-compliant operating conditions and environments.

1.2 Verifying the Shipment and Contents

The functional extension option kit contains the following parts:

- Option board + connector(s)
- EMC plate
- Screw
- Option connector
- Metal clamp

Make sure that the items supplied and the information on the product label correspond to the order confirmation.



e30bk450.11

Illustration 1: Product Labels

| | | | |
|---|---|---|--|
| 1 | Product name of the functional extension | 5 | Identification of I/O connections on the option |
| 2 | Code number identifying the option | 6 | Order number identifying the option kit that was ordered |
| 3 | Serial number | 7 | Compliance and approval markings (if not covered by drive approvals) |
| 4 | 2D code containing code number, serial number, production year and week, and product name | | |

1.3 Safety Warnings

⚠ D A N G E R ⚠

DISCHARGE TIME

The drive contains DC-link capacitors, which can remain charged even when the drive is not powered. High voltage can be present even when the warning indicator lights are off.

Failure to wait the specified time after power has been removed before performing service or repair work could result in death or serious injury.

- Stop the motor.
- Disconnect all power sources, including permanent magnet type motors.
- Wait for the capacitors to discharge fully. The discharge time is shown on the exterior of the drive.
- Measure the voltage level to verify full discharge.

⚠ WARNING ⚠**SHOCK HAZARD FROM CONTROL TERMINALS**

The control terminals can have a dangerous voltage also when the drive is disconnected from mains. A contact with this voltage can lead to injury.

- Make sure that there is no voltage in the control terminals before touching the control terminals.

1.4 Installing an iC7 Functional Extension Option

The following steps are for basic installation of a functional extension option. For wiring configuration examples and more detailed installation content, download the comprehensive installation guide at www.danfoss.com/service-and-support.

1. Disconnect power to the unit and wait for the capacitors to discharge completely.

Installing or removing option boards with the power on can damage the option boards.

2. Identify the type of product into which the option is being installed.

The step-by-step illustrations are grouped by the iC7 product: [A] for system modules, [B] for enclosed drives, and [C] for frequency converters. Frequency converter illustrations are further labeled by frame designation.

3. Install the functional extension option by following the numbered steps within the appropriate section in the Step-by-Step Illustrations section.

- **a.** If necessary, remove any covers, panels, or doors on the unit to gain access to the option slots. Option slots for the system module do not have a cover and are fully exposed.
- **b.** Place the option board into the appropriate slot. The unit may not have all the options shown in the illustration, so follow the steps up until the last option is mounted.

The Encoder/Resolver Option (OC7M0) must be installed in option slot A.

- **c.** Connect the wiring to the option terminals. Make sure that all wiring complies with local and national regulations regarding cross-section and ambient temperature requirements.
4. Reinstall the control panel and all covers, if applicable. Ensure that all safety covers, panels, and doors are in place and securely fastened before applying power.
 5. Reconnect power to the unit.

1.5 Commissioning the Functional Extension Option

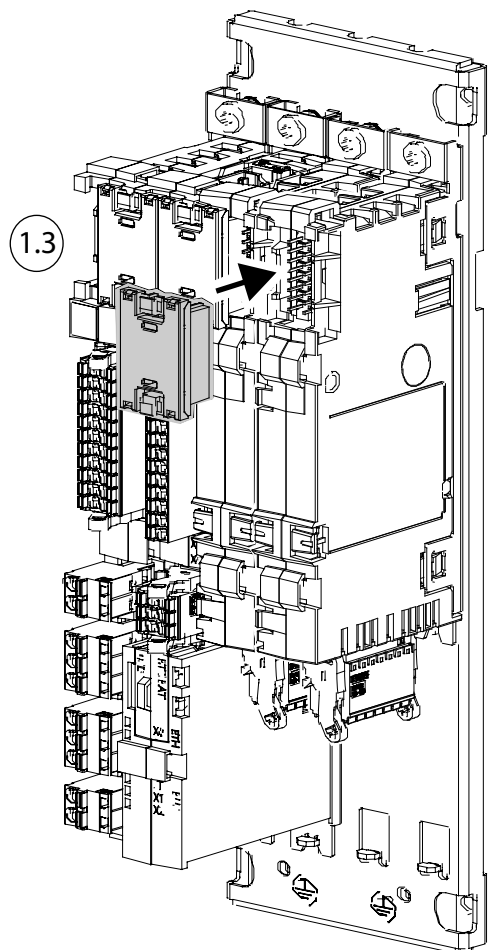
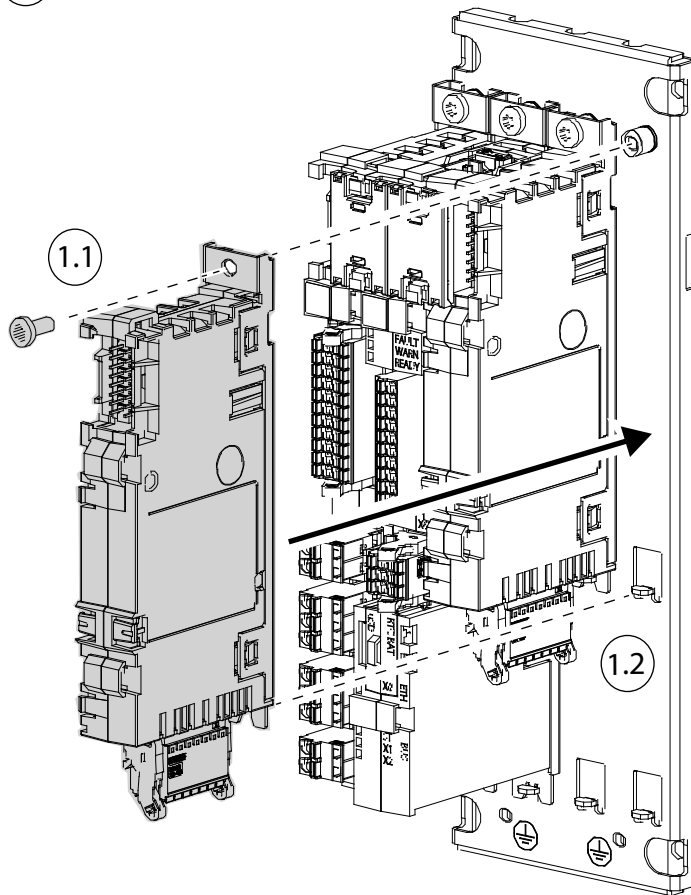
After a functional extension option is added to the unit and power is reconnected, the user interface shows a Node Commissioning prompt. The installer must follow the prompt to activate the new option. Later, if the option is removed from the unit, similar steps via the Node Commissioning prompt must be performed to deactivate the option.

1. Using the unit interface – MyDrive® Insight or the control panel – accept the prompt for Node Commissioning.
2. Configure the relevant parameters in *parameter group 9 I/O* for the specific option and application. For other configuration examples and parameter descriptions, see the *iC7 Frequency Converter Comprehensive Installation Guide*.

1.6 Step-by-Step Illustrations

A

1

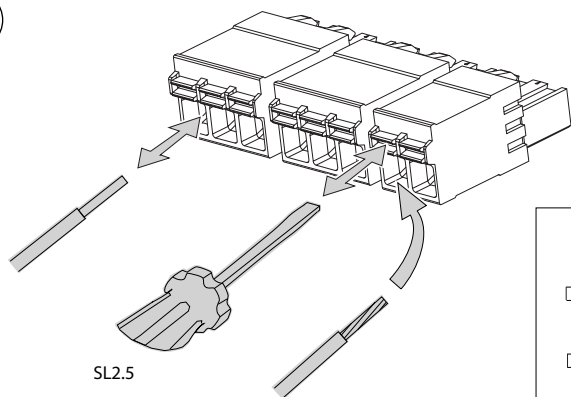


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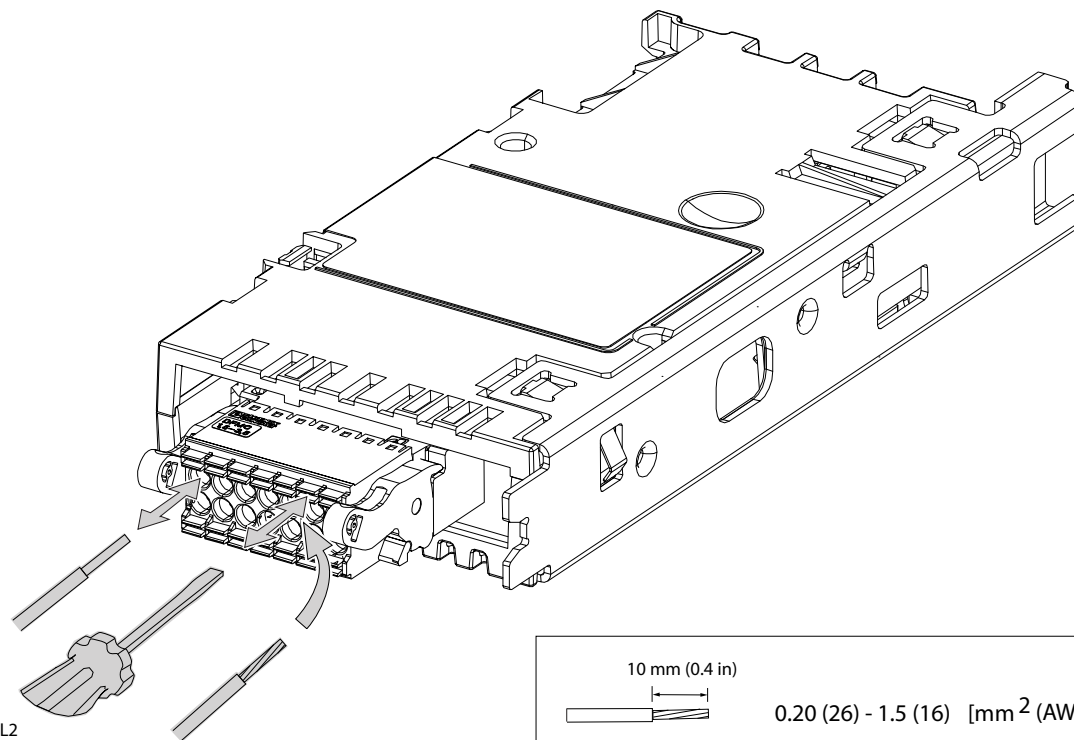
Illustration 2:

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2



| | |
|----------------|--|
| 10 mm (0.4 in) | |
| | 0.20 (26) - 1.5 (16) [mm ² (AWG)] |
| | 0.20 (26) - 2.5 (14) [mm ² (AWG)] |

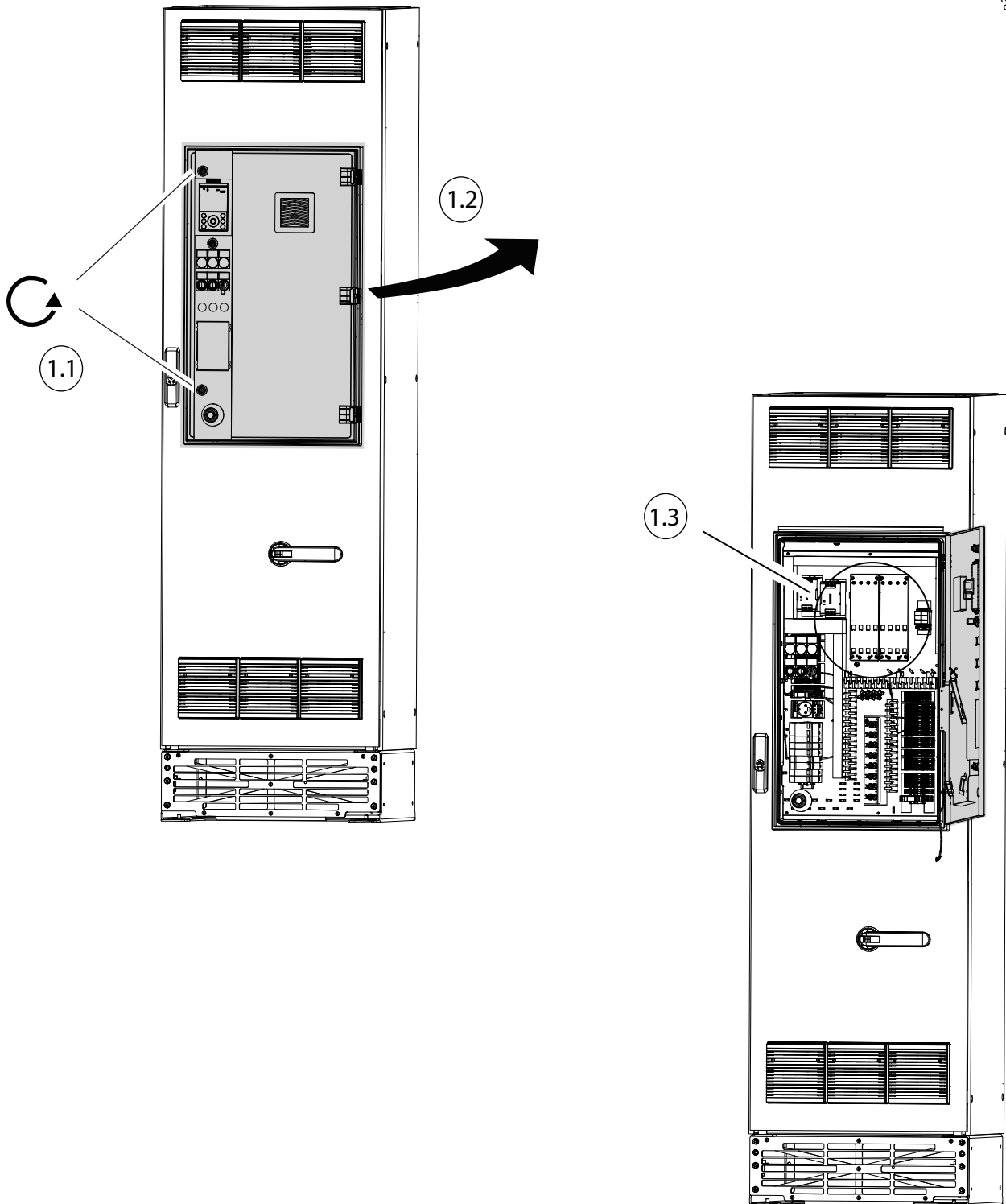


| | |
|----------------|--|
| 10 mm (0.4 in) | |
| | 0.20 (26) - 1.5 (16) [mm ² (AWG)] |
| 10 mm (0.4 in) | |
| | 0.20 (26) - 1.5 (16) [mm ² (AWG)] |
| 8 mm (0.3 in) | |
| | 0.14 (26) - .75 (18) [mm ² (AWG)] |

Illustration 3:

B

1



e305k788.10

Illustration 4:

e30bk799.10

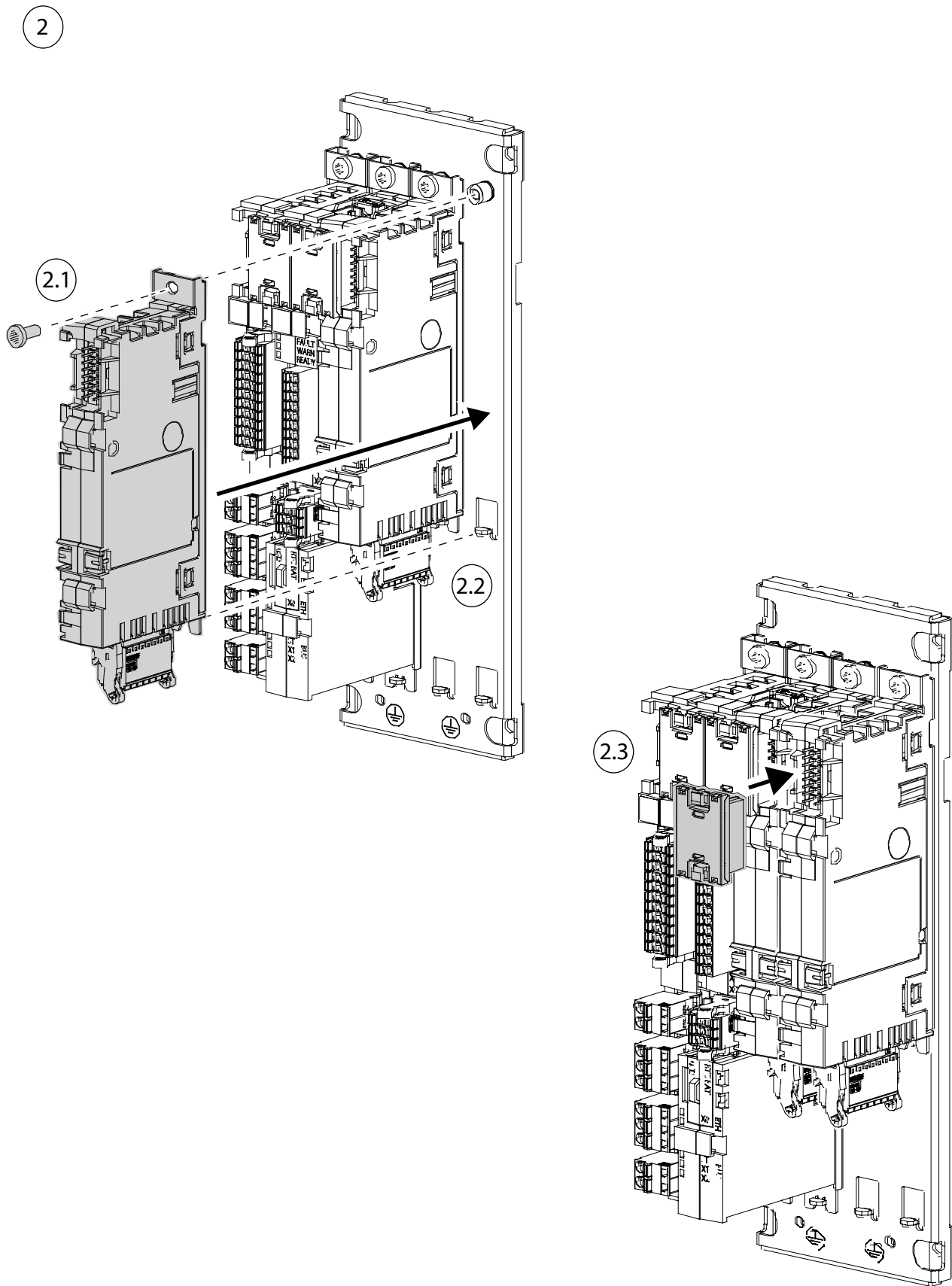


Illustration 5:

3

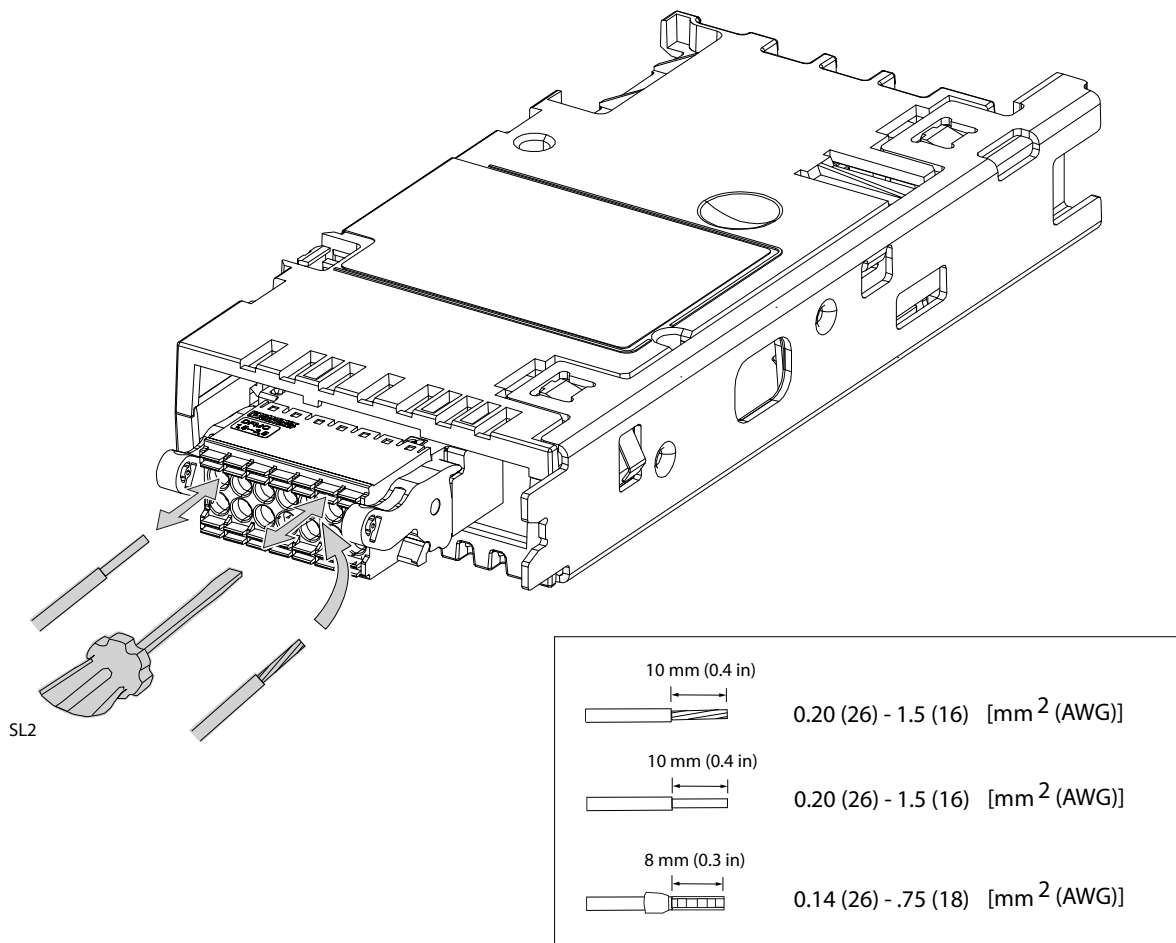
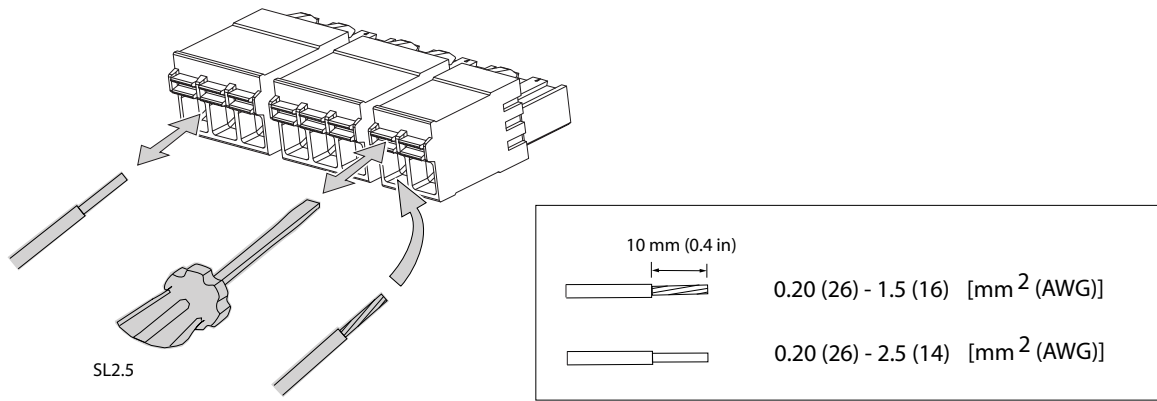
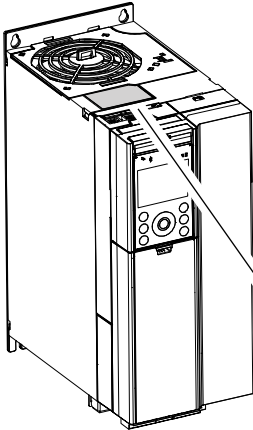


Illustration 6:

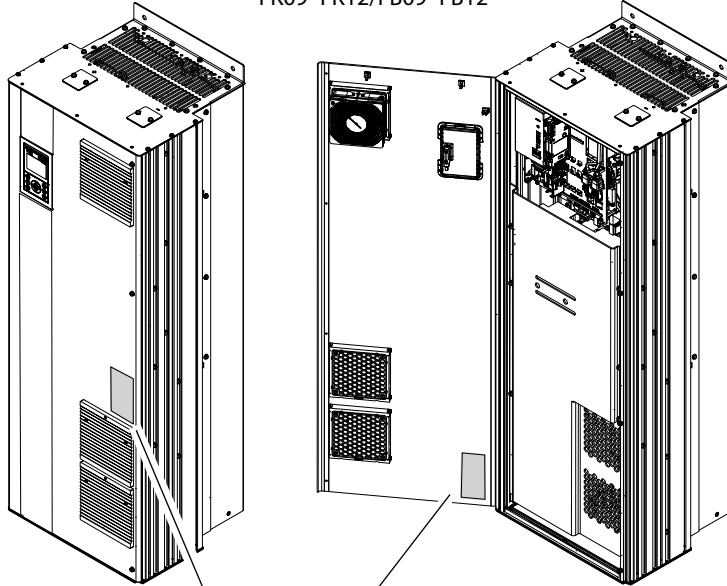
C

1

FA02-FA08/FK06-FK08

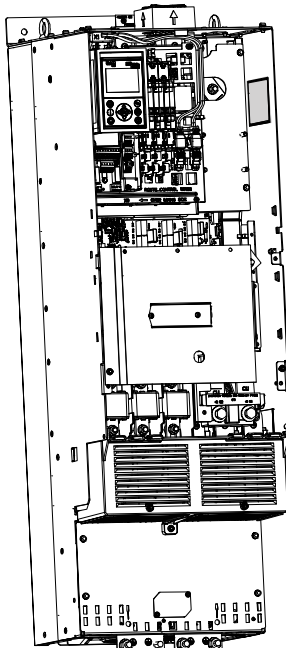


FK09-FK12/FB09-FB12

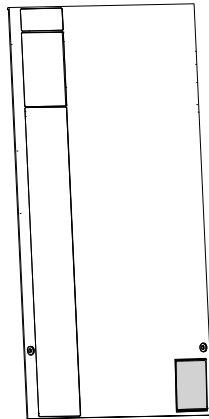


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FA09-FA12



1.1



1.2

iC7-Automation

M/C: IC7-60FA3N05-01A3E20C1.. S/N: DG1AB2C3 - 202...
 P/N: 136U3748
 POWER: 0.37KW(400V)/0.5HP(460V)
 IN: 3x380-500V 50/60Hz 1.1/0.9A
 OUT: 3x0-in 0-590Hz 1.3/1.2A
 ENCL: IP20 / Open Type
 Eff. Cls: IE2 - 5.41 %
 SCCR: 100kA

Tamb: -25-50°C

FA02a

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 DK-6430 Nordborg
 www.danfoss.com
 MADE IN DENMARK

IC7FA02T516A011111

MAC: X1/X2: 20-79-18-5F-47-9F / X0: 20-79-18-5F-47-A3

Illustration 7:

FA02a-FA05a/FA02b

e30bk673.10

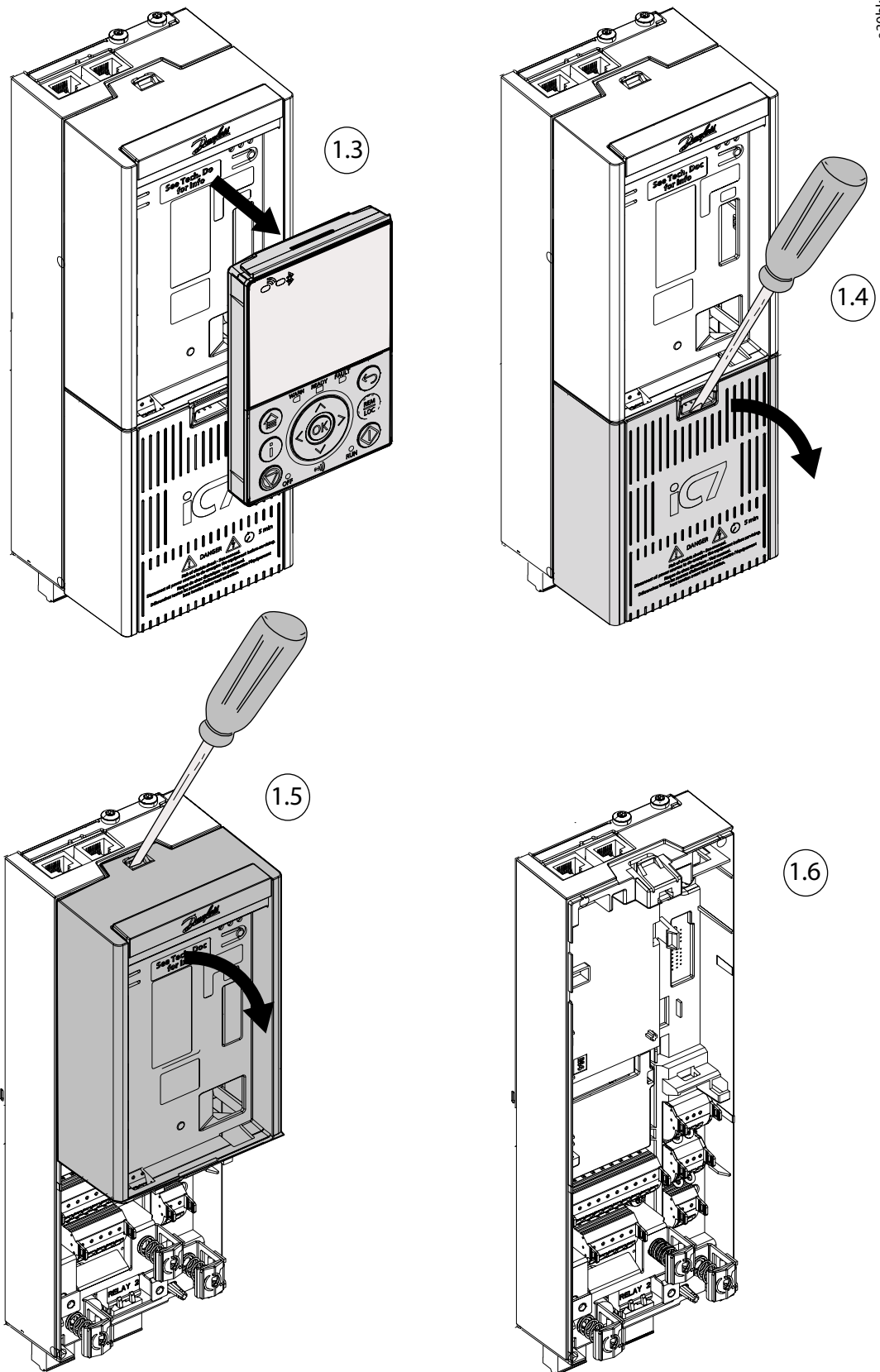


Illustration 8:

FA03b-FA05b

e-30bk690.10

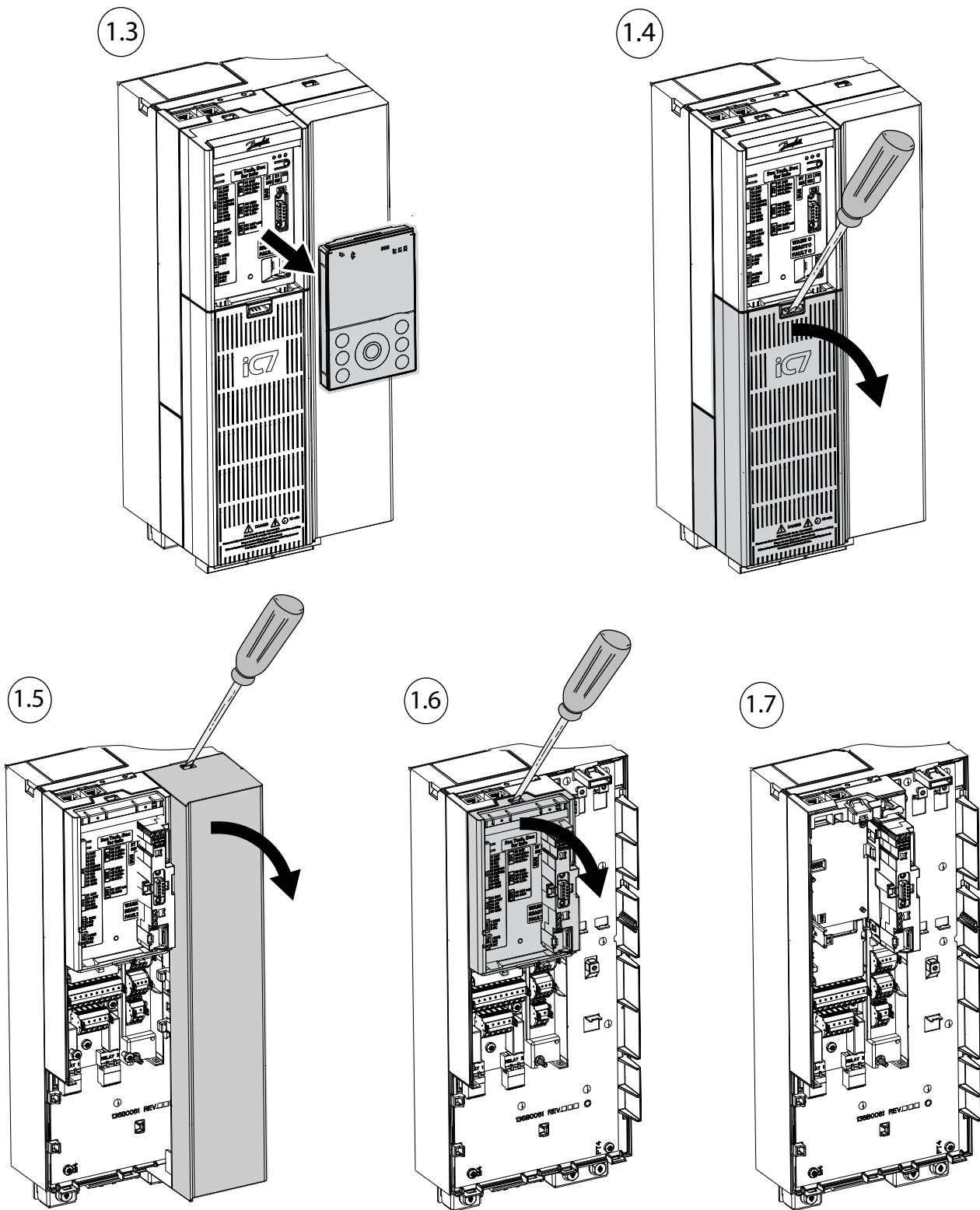
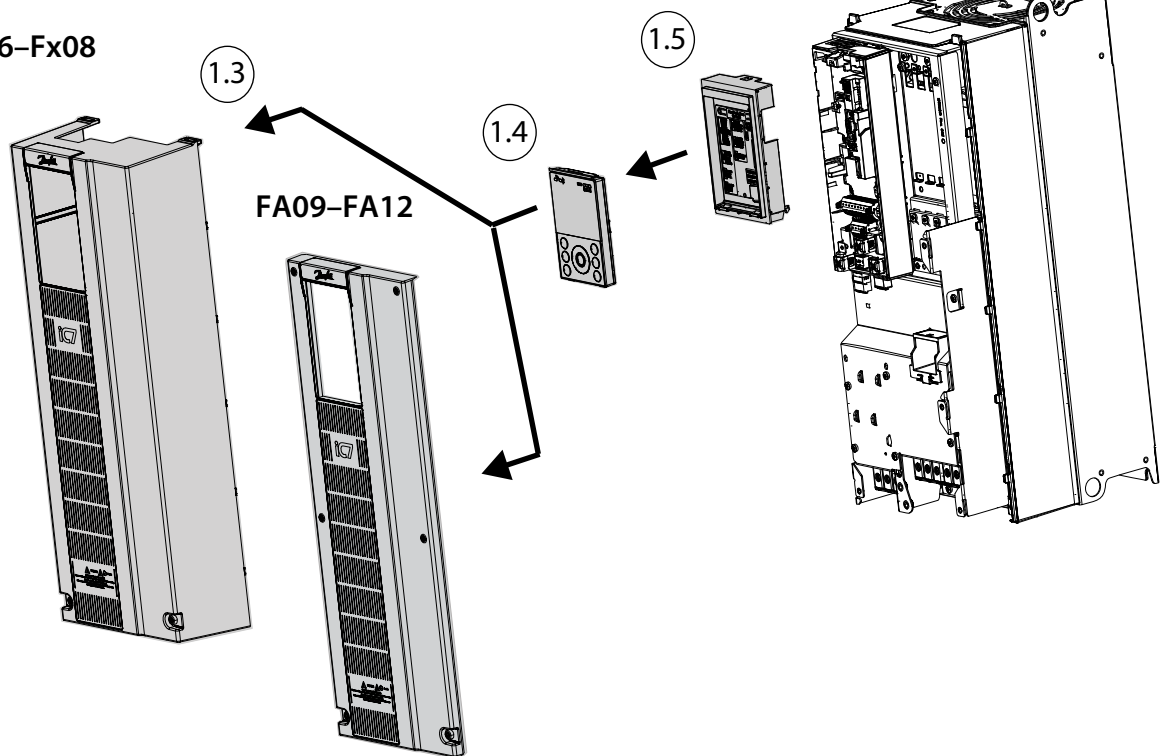


Illustration 9:

FA06–FA12/FK06–FK12/FB09–FB12

e30bk687.10

Fx06–Fx08



FK09–FK12/FB09–FB12

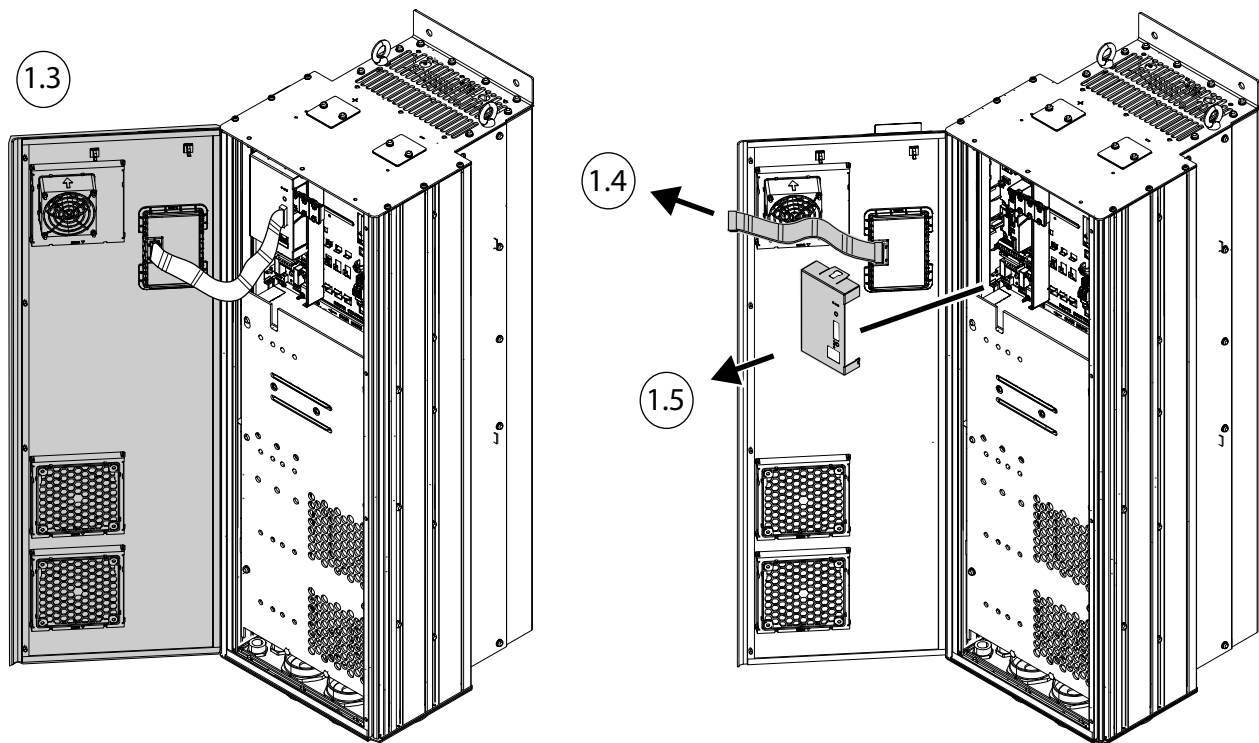


Illustration 10:

2 FA02a-FA05a

e30bi565.11

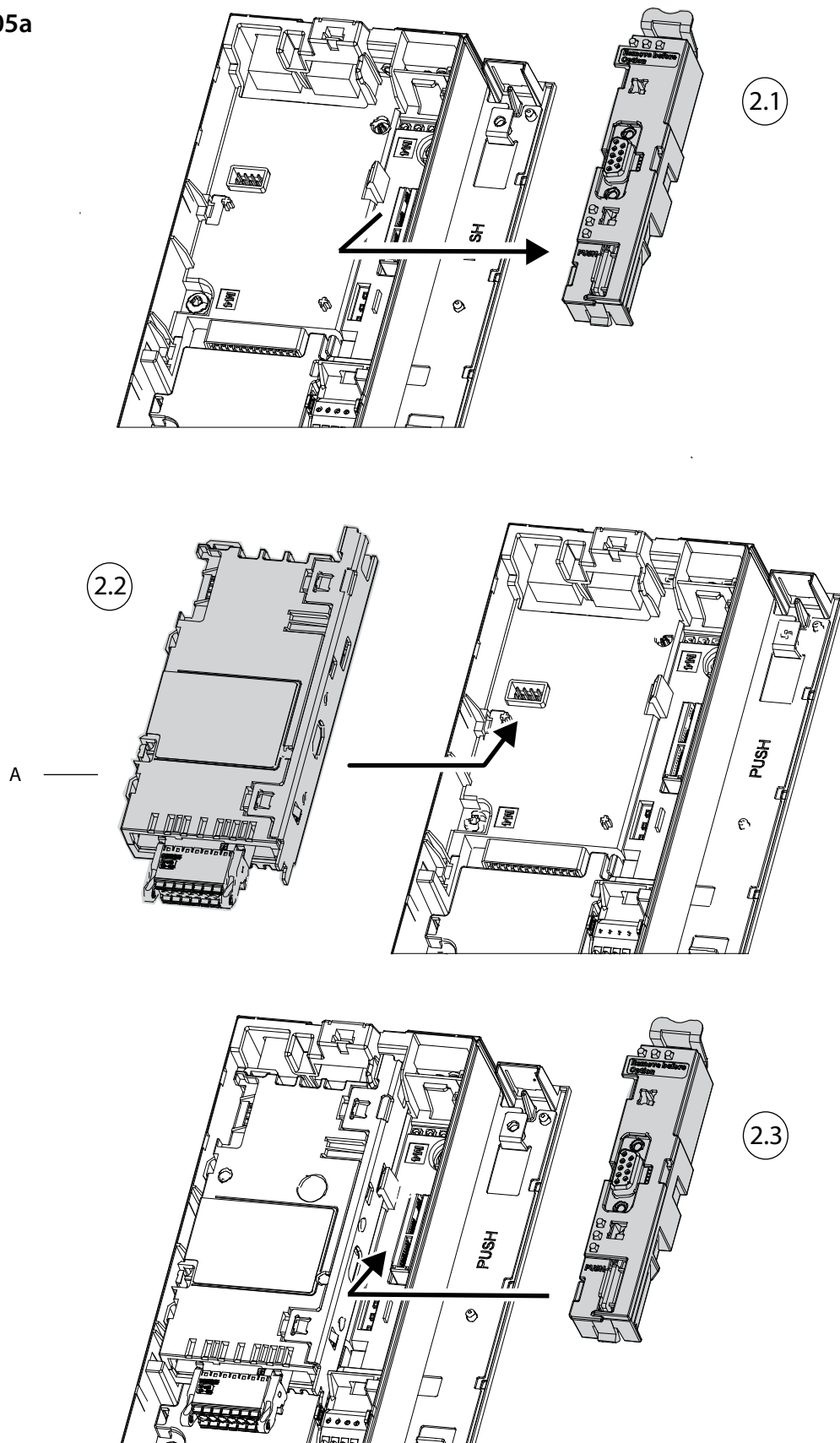


Illustration 11:

FA02b-FA05b

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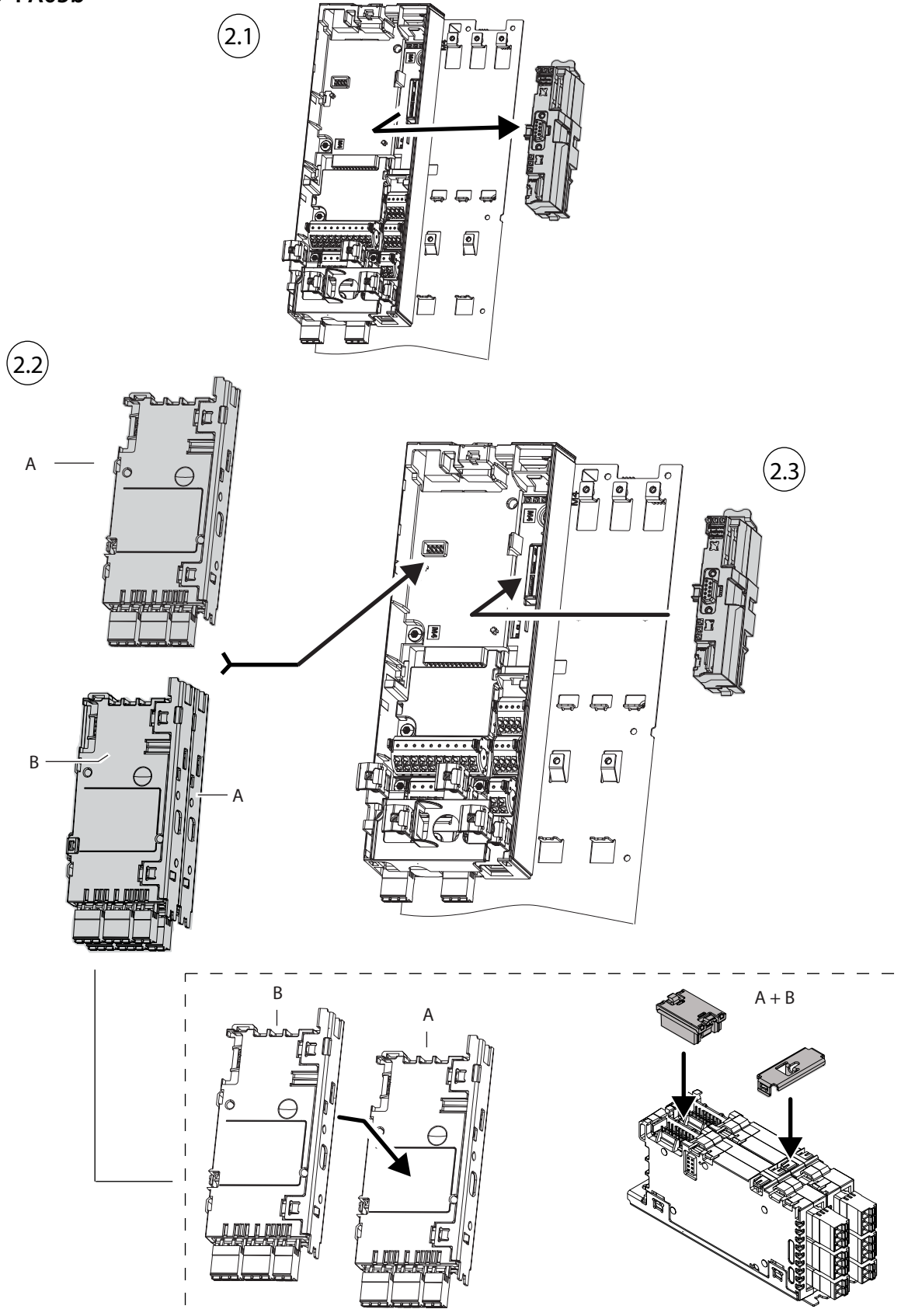


Illustration 12:

e30bk689.10

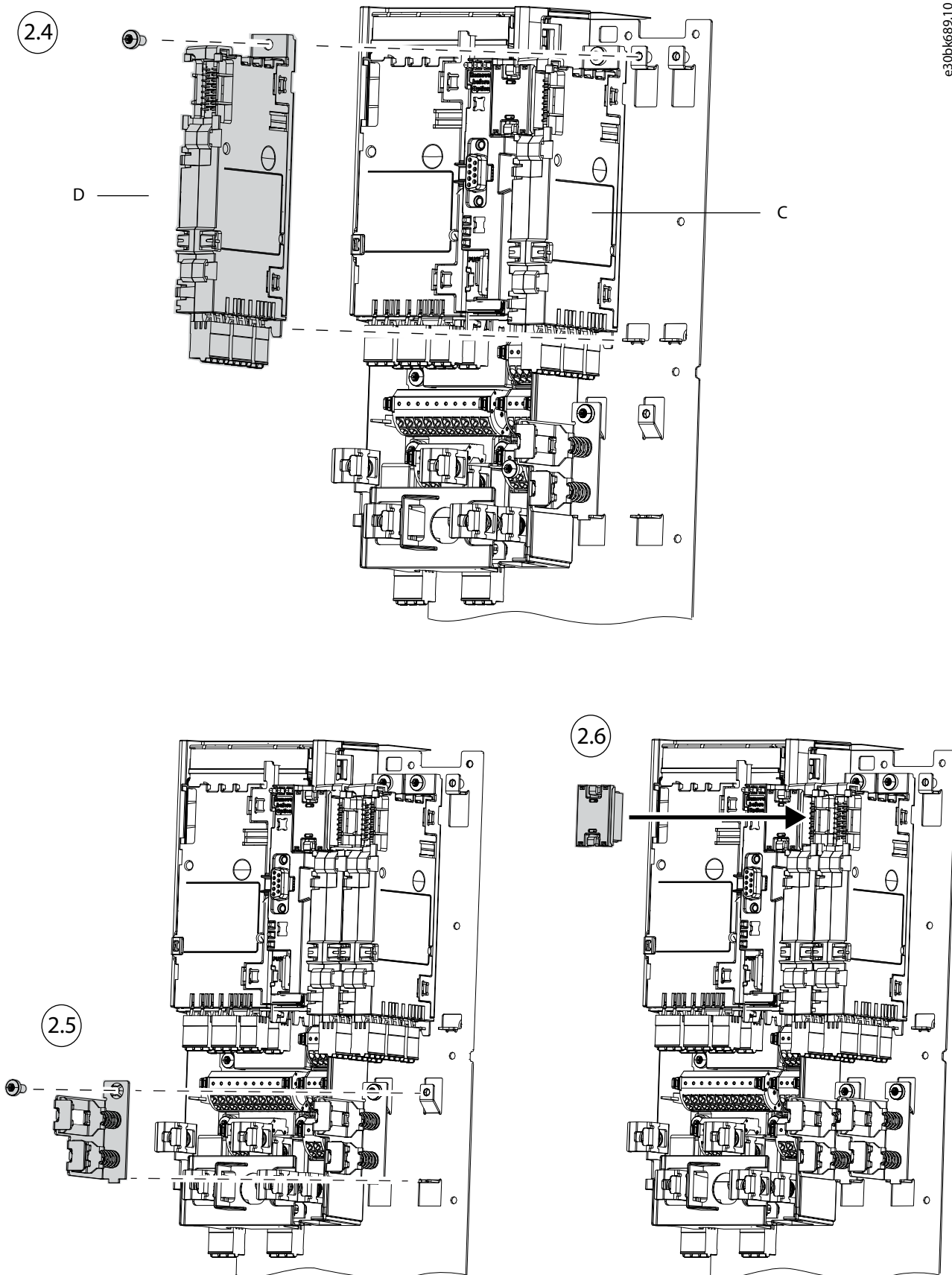
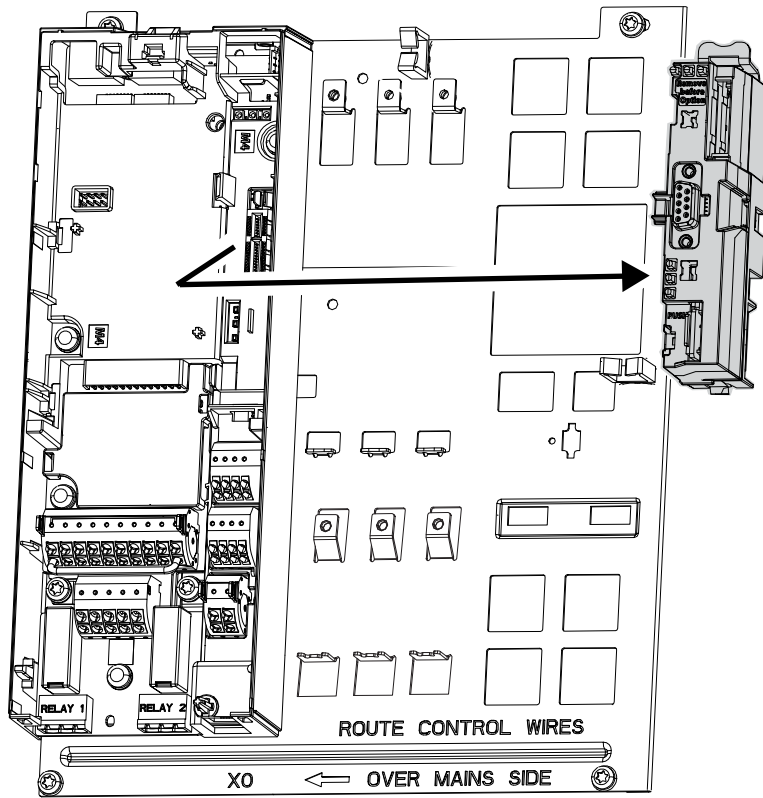


Illustration 13:

FK06–FK12/FB09–FB12

2.1

e30bk676.10



2.2

2.3

A

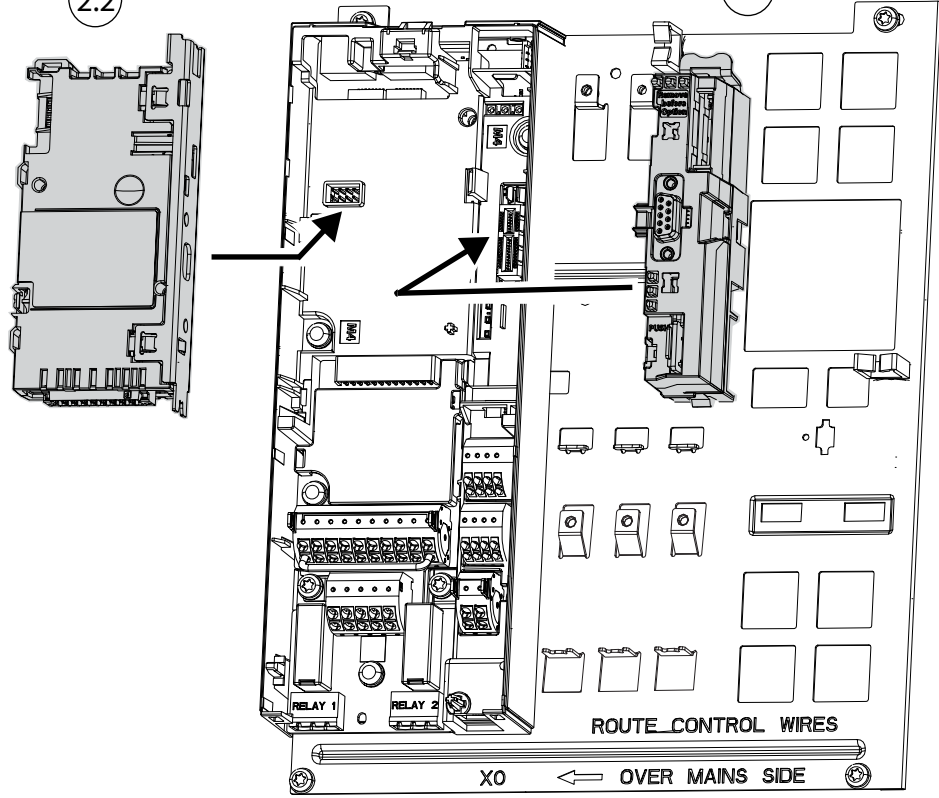


Illustration 14:

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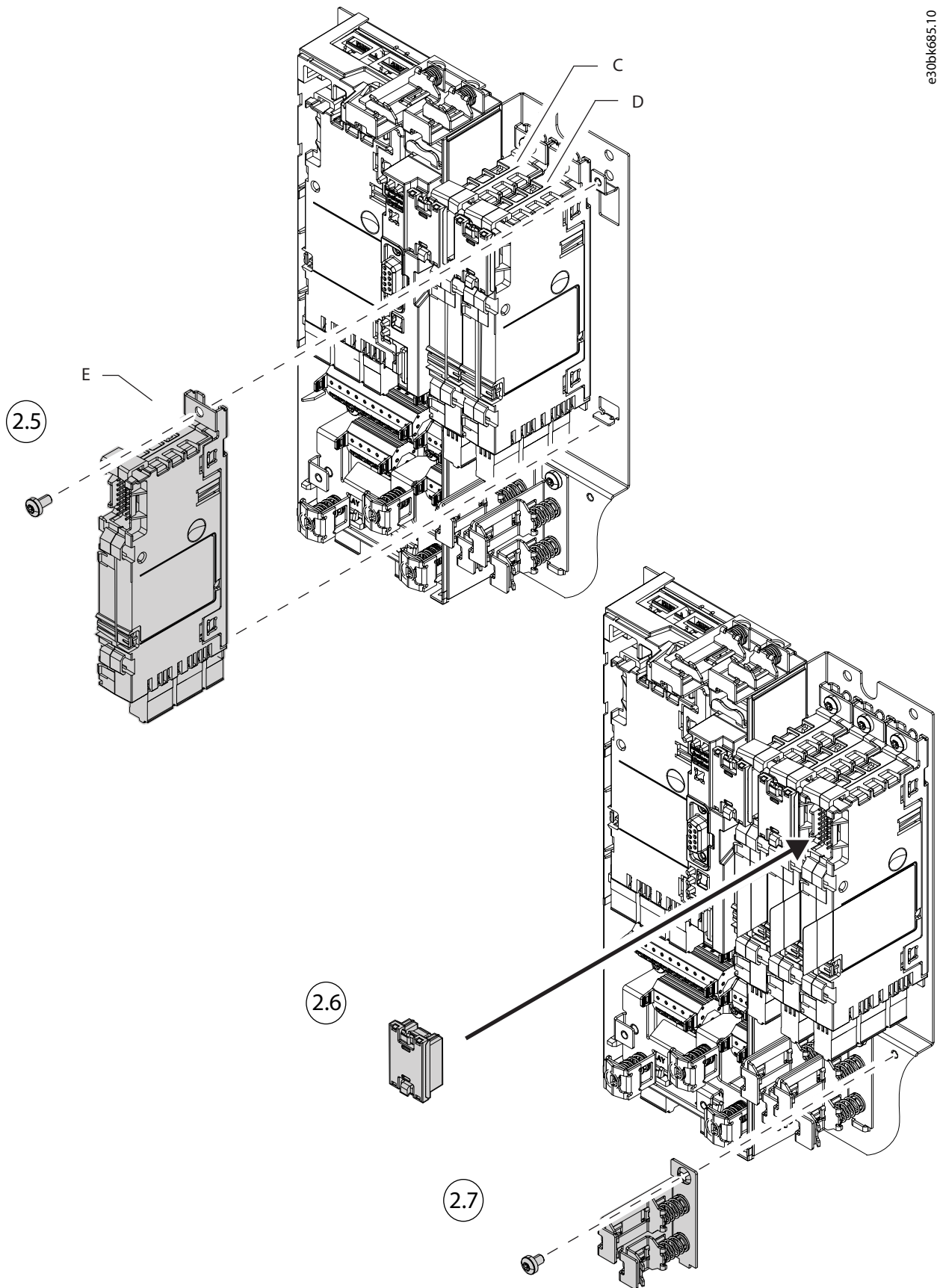
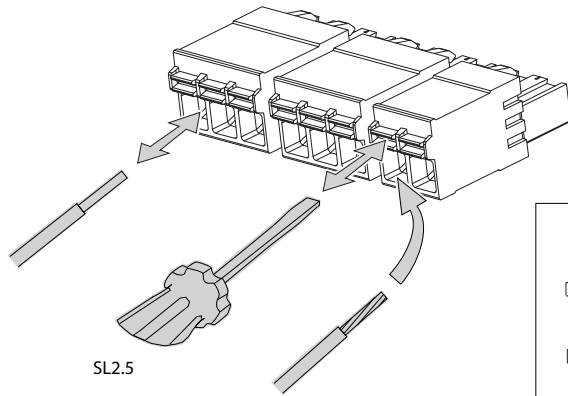


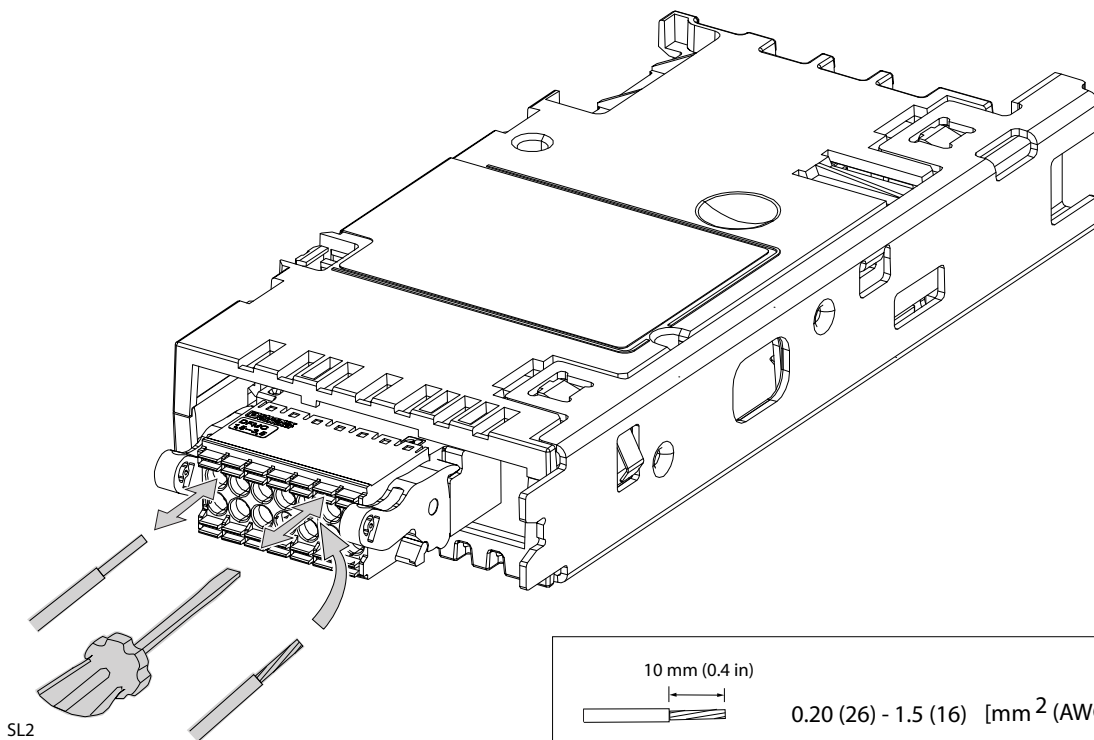
Illustration 15:

3

e30bk674.10



| | | |
|--|--|--|
| | 10 mm (0.4 in) | |
| | 0.20 (26) - 1.5 (16) [mm ² (AWG)] | |
| | 0.20 (26) - 2.5 (14) [mm ² (AWG)] | |



| | | |
|--|--|--|
| | 10 mm (0.4 in) | |
| | 0.20 (26) - 1.5 (16) [mm ² (AWG)] | |
| | 0.20 (26) - 1.5 (16) [mm ² (AWG)] | |
| | 8 mm (0.3 in) | |
| | 0.14 (26) - .75 (18) [mm ² (AWG)] | |

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