

INVEOR M

Frequency inverters

Short manual

Size A to D



Distributor for:

KOSTAL



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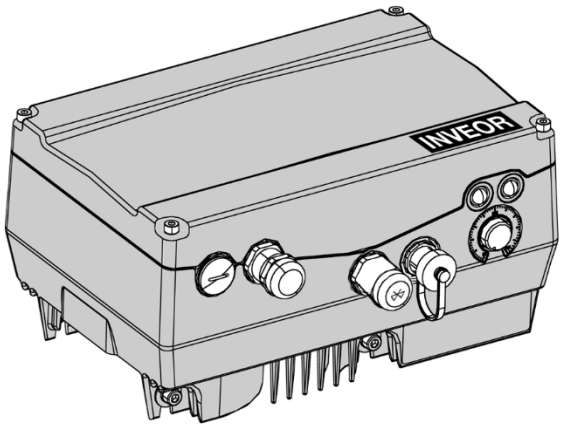
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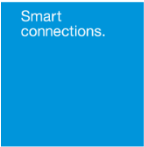




Short manual

INVEOR M EN

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Legal noticeDirect link to operating manual

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General note on gender equality

KOSTAL Industrie Elektrik GmbH is aware of the importance of language with regard to the equality of women and men and always makes an effort to reflect this in the documentation. Nevertheless, for the sake of readability we are unable to use non-gender-specific terms throughout and use the masculine form instead.

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Proper use

The INVEOR drive controller is a device for the speed control of three-phase AC motors. Before installing and using the INVEOR, the operator must have read and understood this document. Always use the drive controller as intended. The device may only be used within the permissible power range and under the permissible ambient conditions. The drive controller may not be operated in areas where there is a danger of explosion. The permitted operating range of all components must be observed at all times. Only use the product in accordance with the information provided in the detailed documentation (see http://www.kostal-industrie-elektrik.com/INVEOR_M_Antriebsregler) and in accordance with the standards and guidelines applicable on site. It is essential that the information provided in the technical data is observed. Material damage to the device and other equipment may occur if used improperly. The drive controller may therefore only be used for its intended purpose.

IMPORTANT INFORMATION
Using drive controllers in equipment that is not fixed is considered as an exceptional environmental condition and is only permitted if allowed by the standards and guidelines applicable on site.

- Only allow appropriately qualified staff to undertake assembly and disassembly.
- Only use staff who are trained in mounting, installation, commissioning and handling.
- Do not modify the drive controller.
- Observe general and national safety and accident prevention regulations
- The INVEOR may have touch currents of > 3.5 mA.
In accordance with DIN EN 61800-5-1, an extra protective grounding conductor of the same cross-section as the original protective grounding conductor should therefore be fitted. A second protective grounding conductor can be connected under the mains supply (position marked with a ground symbol) on the outside of the device. A M6 x 12 screw (4.0 Nm torque) suitable for this connection is provided with the adapter plate.
- If three-phase frequency inverters are used, the use of conventional type A FI protection switches, RCD (residual current-operated protective device), are not permissible as protection against direct or indirect contact!
According to DIN VDE 0160 and EN 50178, the FI protection switch must be universal current sensitive (RCD type B).

Markings

Signs and labels are applied to the housing of the drive controller. These signs and labels may not be altered or removed.

Symbol	Meaning
	Danger due to electrical shock and discharge
	Danger
	Danger due to burns
	Danger due to electrical shock and discharge. Wait two minutes (discharge time of the capacitors) after shut-down
	Additional earth connection
	Observe and read operating manual
	Type plate containing the most important technical data and serial number

1 | SAFETY INSTRUCTIONS

DANGER!
RISK OF DEATH DUE TO ELECTRICAL SHOCK AND DISCHARGE!
DEATH OR SERIOUS INJURY
Life-threatening voltages are present in the drive controller. Only a qualified electrician may open and perform work on the device. Always de-energise the drive controller during installation, maintenance and repairs, and secure it against being switched back on. The following terminals may lead to dangerous currents even when the motor is not running:

- Supply terminals X1: L1, L2, L3
- Motor connection terminals X2: U, V, W
- Connecting terminals X6, X7: Relay contacts for relays 1 and 2
- PTC terminals T1 / T2

DANGER!
RISK OF DEATH DUE TO ELECTRICAL SHOCK AND DISCHARGE!
DEATH OR SERIOUS INJURY
Always ground the device in accordance with DIN EN 61140; VDE 0140, NEC and other relevant standards. The drive controller must be grounded with the motor according to relevant regulations. Non-compliance may result in death or serious injury. If spring elements are not used when assembling the adapter plate, there must be an extra connection between the motor and drive controller to produce a correct protective conductor connection. Unused open cable ends in the motor terminal box must be insulated. Use suitable line circuit breakers with the prescribed nominal current between the mains and drive controller. Only ever replace damaged parts or components with original parts

Danger due to electrical shock and discharge. Wait two minutes (discharge time of the capacitors) after shut-down

CAUTION!
RISK OF BURNS FROM HOT SURFACES!
SERIOUS BURNS TO THE SKIN FROM HOT SURFACES!
Allow the drive controller's cooling elements to cool sufficiently.

DANGER!
RISK OF DEATH DUE TO RESTARTING MOTORS AND REVOLVING MECHANICAL PARTS!
Non-observance may result in death, serious injury or damage. Certain parameter settings and changing parameter settings during operation may result in the INVEOR drive controller restarting automatically after the supply voltage has failed, or in undesirable changes in the operating behaviour.

Installation surface and immediate surroundings (only with wall mounting)

The installation surface and its immediate surroundings must display the following properties: fixed, vertical, level, not highly flammable, not permanently vibrating. The installation surface must provide a hold for retaining bolts.

Transport and storage

Damage to property possible
Risk of damage to drive controller!
Risk of damage to drive controller from improper transport, storage, installation and assembly!
In general, transport the drive controller correctly in its original packaging on a pallet. Always store the drive controller properly. Only allow qualified staff to undertake installation and assembly.

Complete operating manual

You will find a detailed operating manual for the INVEOR drive controller online at http://www.kostal-industrie-elektrik.com/INVEOR_M_Antriebsregler.

EU Declaration of Conformity

KOSTAL Industrie Elektrik GmbH hereby declares that the drive controller described in this document complies with the basic requirements and other relevant conditions of the directives listed below.

- Directive 2014/30/EU (on the approximation of the laws of the Member States relating to electromagnetic compatibility (EMC))
- Directive 2014/35/EU (on the harmonisation of the laws of the Member States relating to the making available on the market of electrical equipment designed for use within certain voltage limits – in short: Low Voltage Directive)
- Directive 2011/65/EU (restriction of the use of certain hazardous substances in electrical and electronic equipment, in short: RoHS Directive)

You will find a detailed EU Declaration of Conformity online at <http://www.kostal-industrie-elektrik.com/de-DE/Download/Antriebstechnik>

Contact details and service

If you have any technical questions, please contact our service hotline.

Country	Phone	E-mail
Germany and other countries	+49 (0)2331 8040-848	INVEOR-service@kostal.com

2 | INSTALLATION

Scope of delivery

INVEOR A - C

1x

1x

INVEOR D

1x

1x

2x

2x

1x

Installation site

max. 2000 m

≤ 96 %

- 10...+ 40 °C
- 14...104 °F
1~

- 40...+ 50 °C
- 40...+ 122 °F
3~

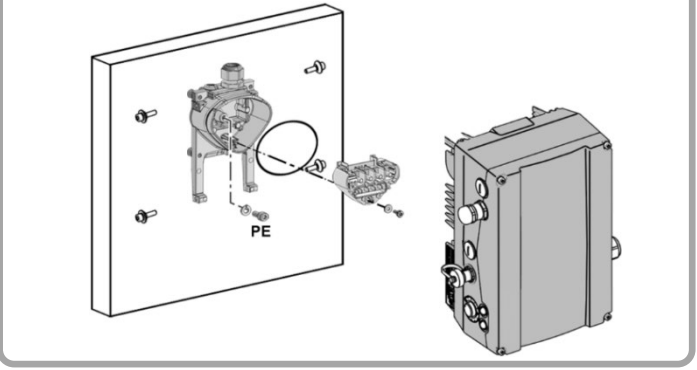
200 x 200 x 200

Installing drive controller

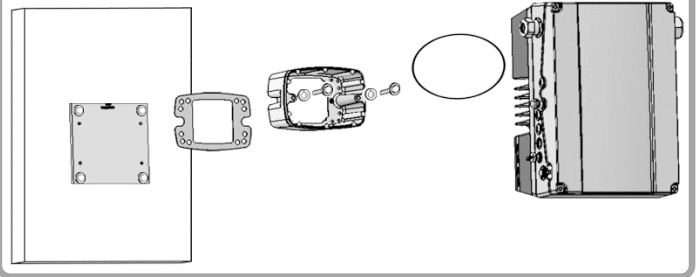
INVEOR A-C

INVEOR D

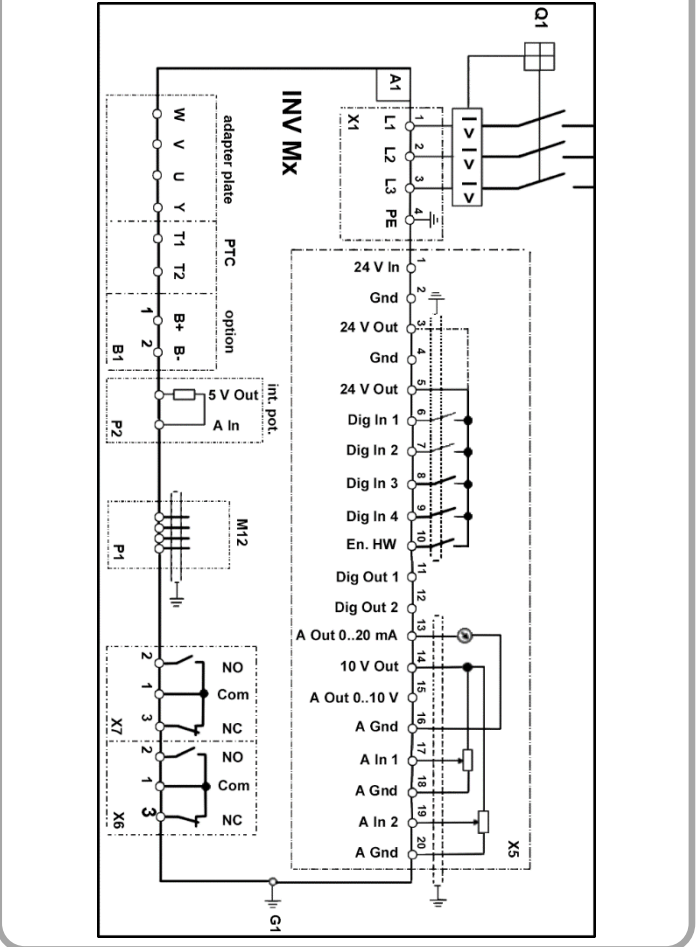
Wall mounting, sizes A - C



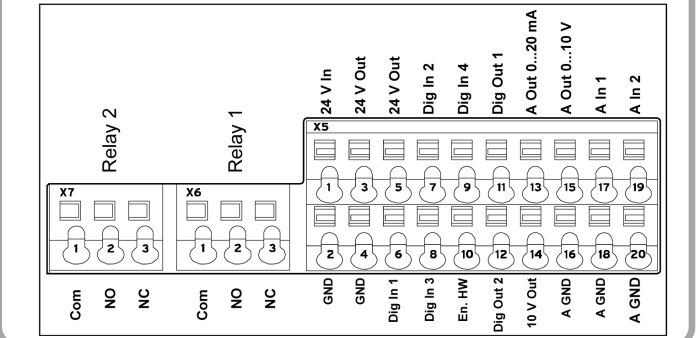
Wall mounting, size D



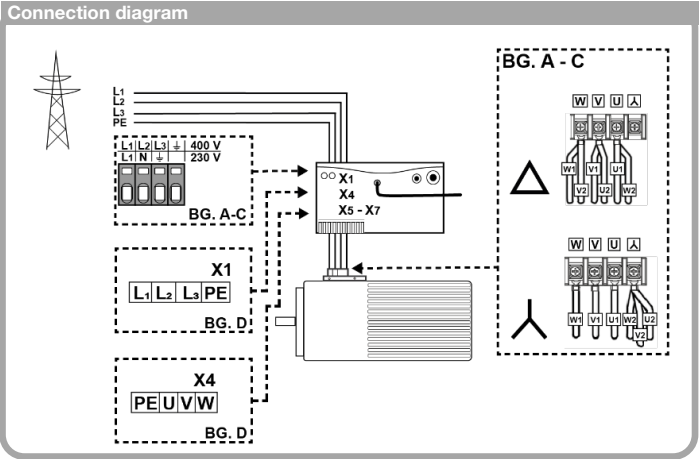
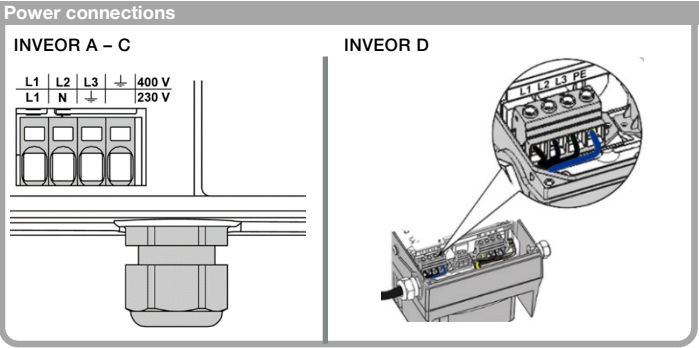
Connection diagram



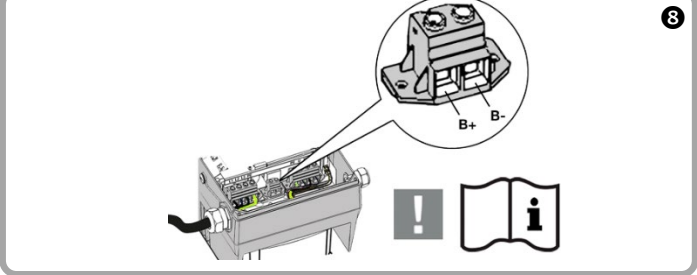
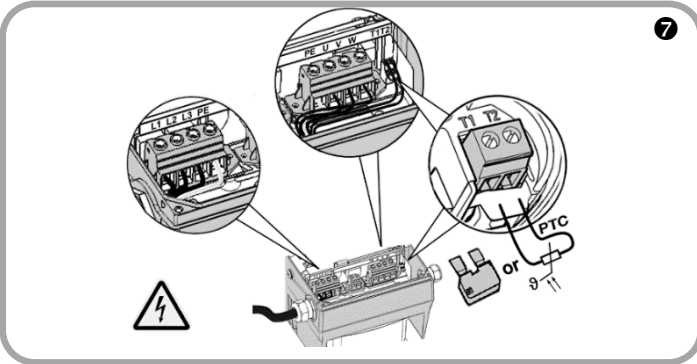
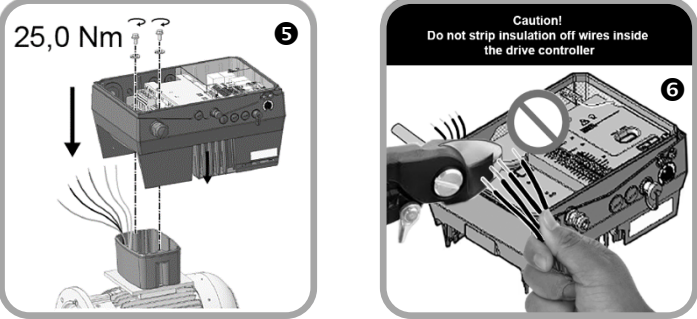
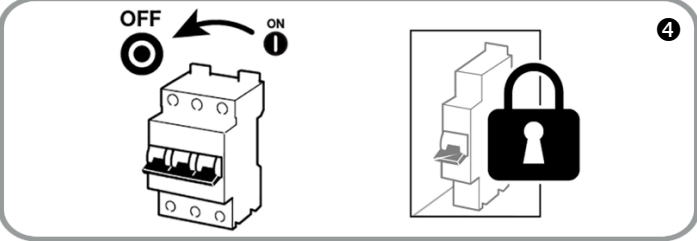
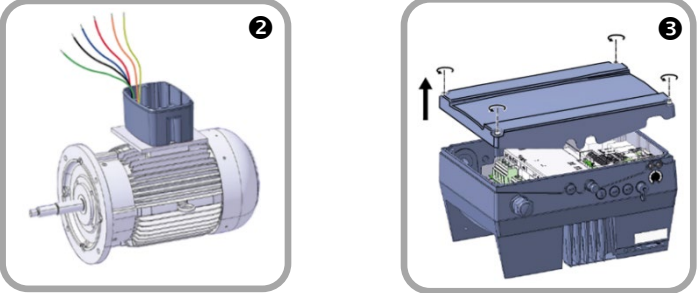
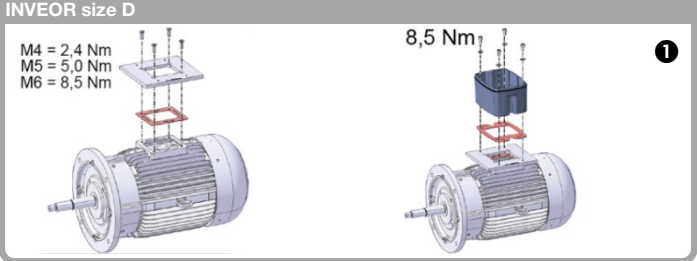
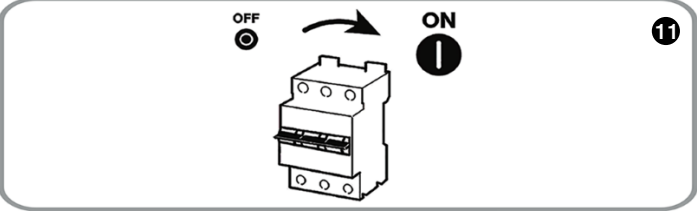
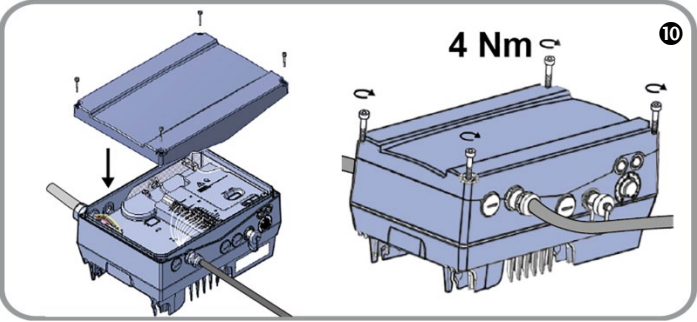
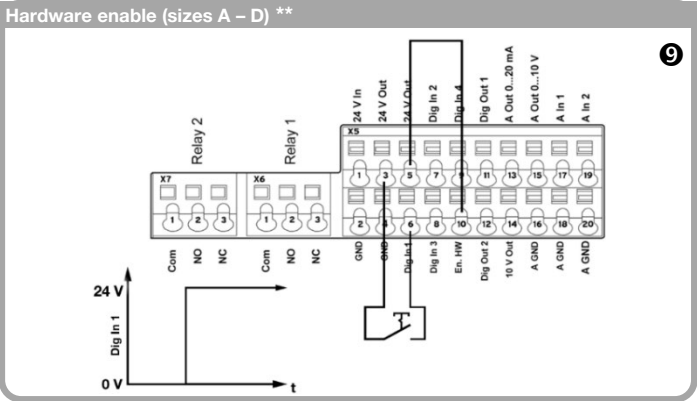
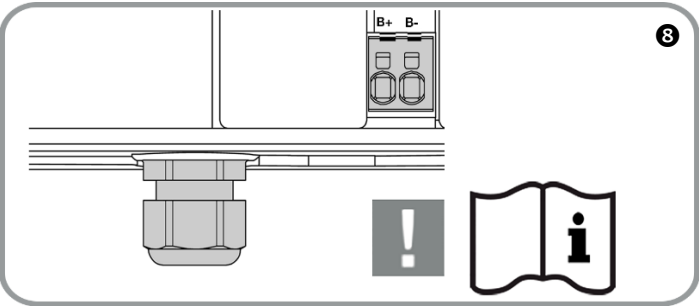
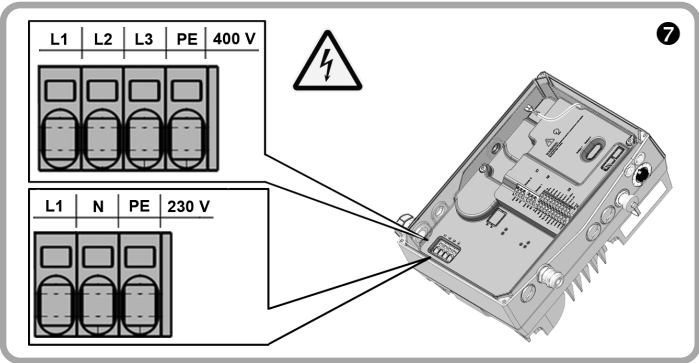
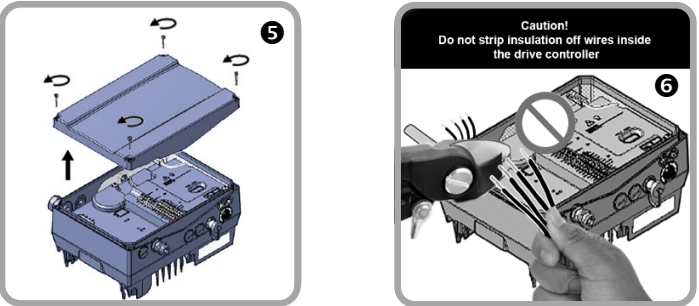
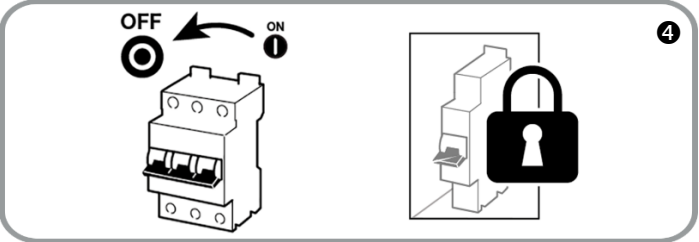
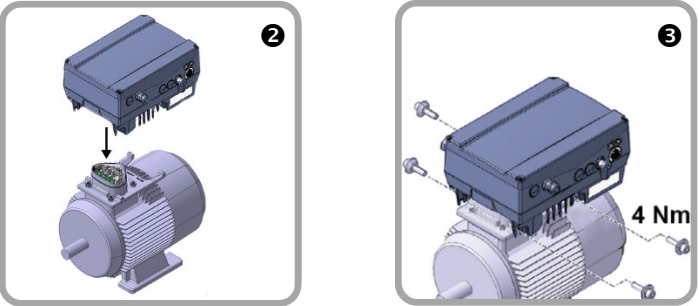
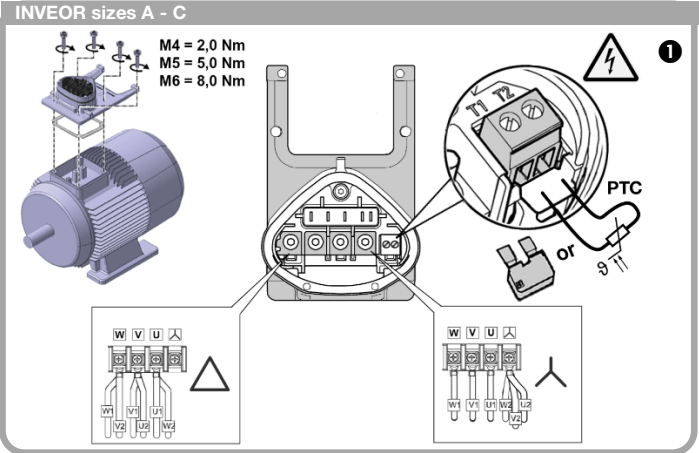
Control connections



Control connection, basic

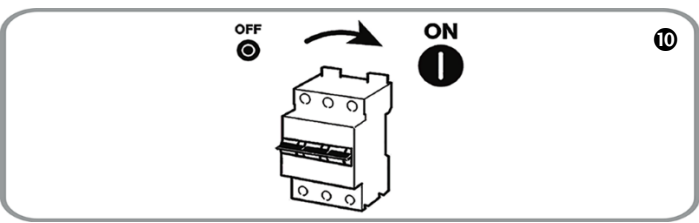
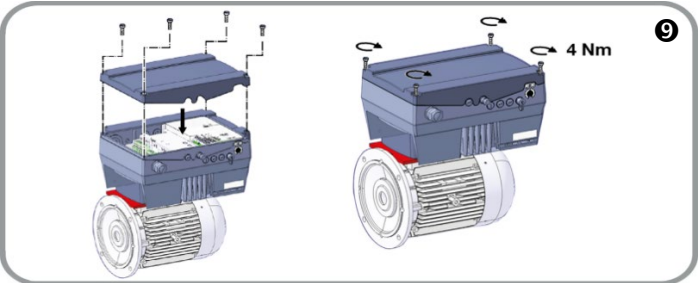


3 | CONNECTING DEVICE

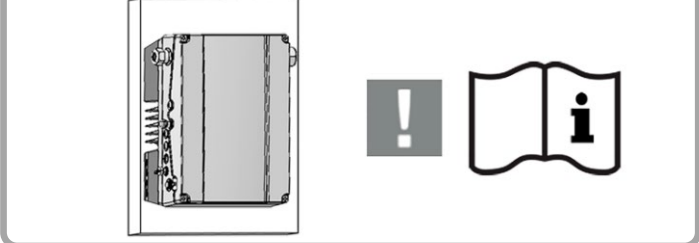


Hardware enable

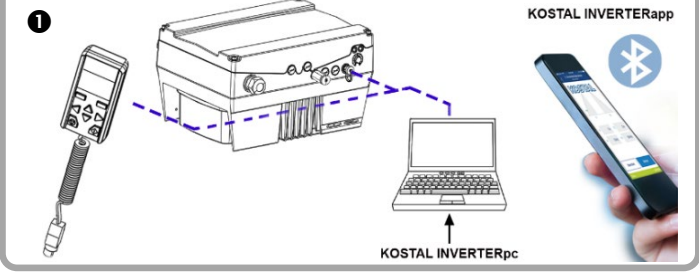
** (see diagram 9 "Hardware enable, sizes A – D")



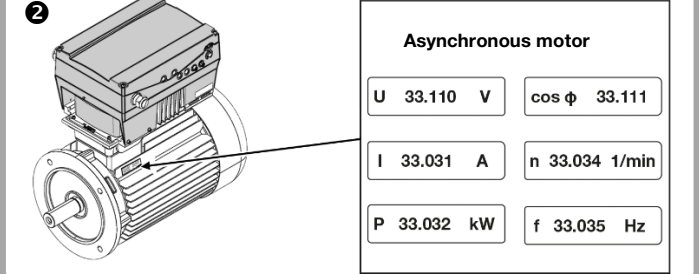
4 | CONNECTING DEVICE, WALL MOUNTING



5 | QUICKSTART GUIDE, ASM



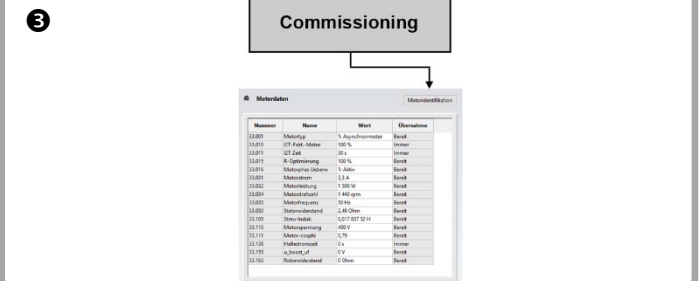
Parameters / motor data



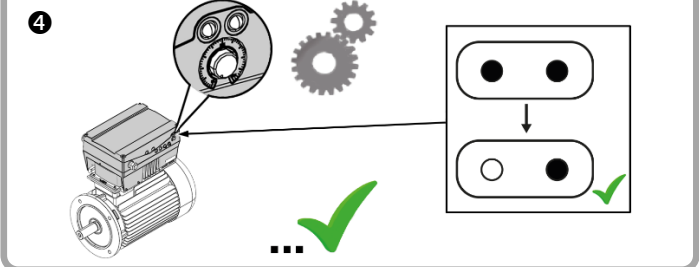
Hardware enable

** (see diagram 9 "Hardware enable, sizes A – D")

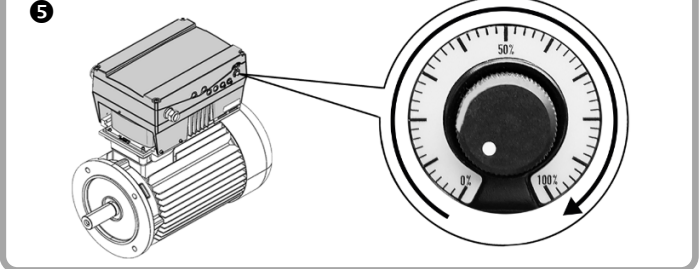
Motor identification



Motor data is being calculated



Speed setting via analogue input



6 | QUICKSTART GUIDE, PMSM

